DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	1	76
				(2) HWY. 59 SLIDE REPAIR (WASHINGTON & CRAWFORD COS.) (S)				

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 59 SLIDE REPAIR (WASHINGTON & CRAWFORD COS.) (S)

WASHINGTON & CRAWFORD COUNTIES

ROUTE 59 SECTIONS 4 & 5

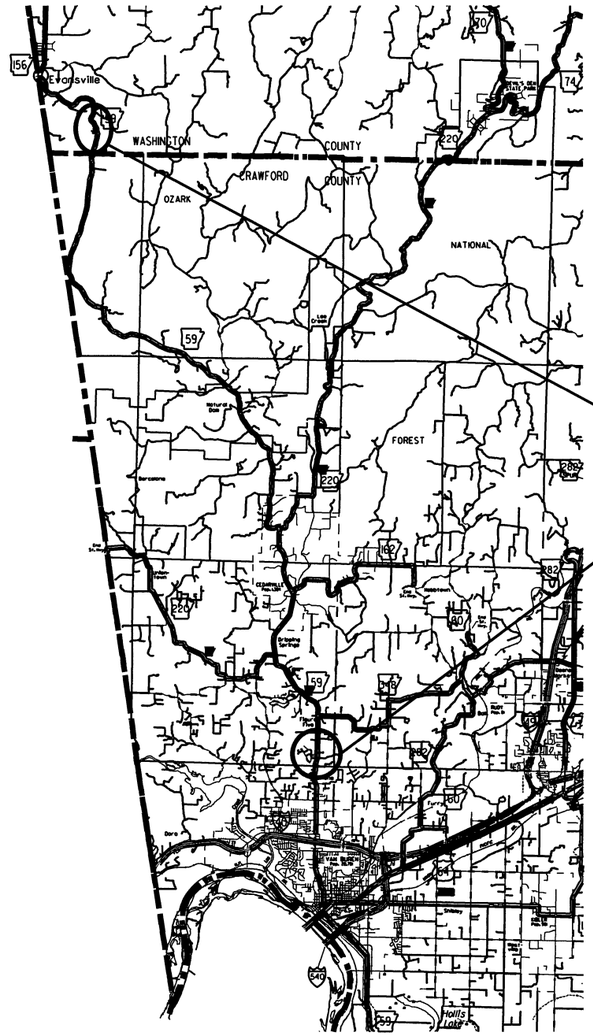
FEDERAL AID PROJ. ER-0072(51) (WASHINGTON CO.)

FEDERAL AID PROJ. ER-0017(43) (CRAWFORD CO.)

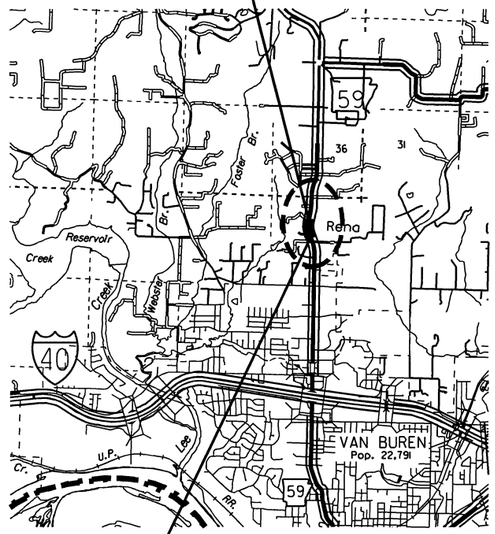
PROJECT LOCATIONS

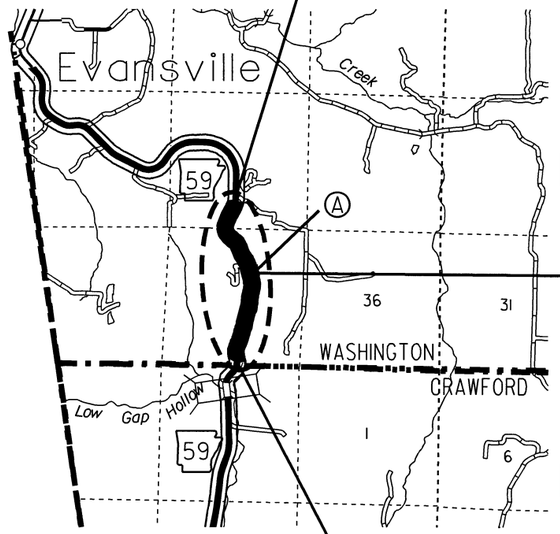
JOB 040750

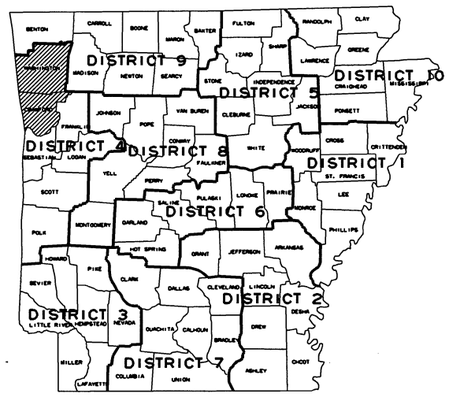
NOT TO SCALE



VICINITY MAP







ARK. HWY. DIST. NO. 4

DESIGN TRAFFIC DATA	SITE NO. 1	SITE NO. 2
DESIGN YEAR	2037	2037
2017 ADT	7980	1110
2037 ADT	9736	1356
2037 DHV	779	108
DIRECTIONAL DISTRIBUTION	60%	60%
TRUCKS	6%	11%
DESIGN SPEED	55 MPH	55 MPH

EQUATION:

STA. 49+40.10 AHEAD=

STA. 49+45.90 BACK

SITE NO. 1

BEGINNING OF PROJECT
LAT. = N 35°29'24"
LONG. = W 94°21'26"

MID-POINT OF PROJECT
LAT. = N 35°29'25"
LONG. = W 94°21'26"

END OF PROJECT
LAT. = N 35°29'26"
LONG. = W 94°21'25"

SITE NO. 2

BEGINNING OF PROJECT
LAT. = N 35°45'37"
LONG. = W 94°28'12"

MID-POINT OF PROJECT
LAT. = N 35°46'04"
LONG. = W 94°28'13"

END OF PROJECT
LAT. = N 35°46'31"
LONG. = W 94°28'14"

LENGTH COMPUTED ALONG C.L.

GROSS LENGTH OF PROJECT	6182.80	FEET OR MILES	1.171
NET LENGTH OF ROADWAY	6182.80	FEET OR MILES	1.171
NET LENGTH OF BRIDGES	0.00	FEET OR MILES	0.000
NET LENGTH OF PROJECT	6182.80	FEET OR MILES	1.171

CERTIFICATE OF AUTHORIZATION
CRAFTON, TULL & ASSOCIATES, INC.
No. 109
ARKANSAS ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9629
8/31/2017
HUBERT BURNS

P.E. JOB 040750

USER: on5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\misc\r040750.tit.dgn
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SCALE: 2:1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	2	76

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 9620
8/31/2017
HUBERT BURNS

INDEX OF SHEETS

SHEET NO.		TITLE
1		TITLE SHEET
2		INDEX OF SHEETS AND STANDARD DRAWINGS
3		GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 -	5	TYPICAL SECTIONS OF IMPROVEMENT
6		SPECIAL DETAILS
7 -	12	TEMPORARY EROSION CONTROL DETAILS
13 -	14	MAINTENANCE OF TRAFFIC DETAILS
15 -	33	SOIL BORINGS LOG
34 -	38	QUANTITIES
39		SUMMARY OF QUANTITIES AND REVISIONS
40 -	42	SURVEY CONTROL DETAILS
43 -	53	PLAN AND PROFILE SHEETS
54 -	76	CROSS SECTIONS

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
GR-8	GUARD RAIL DETAILS	7-14-10
GR-8A	GUARD RAIL DETAILS	7-14-10
GR-9	GUARD RAIL DETAILS	4-17-08
GR-9A	GUARD RAIL DETAILS	4-17-08
GR-10	GUARD RAIL DETAILS	7-14-10
GR-10A	GUARD RAIL DETAILS	7-14-10
GRT-1	GUARD RAIL DETAILS	7-14-10
IB-1	IMPACT ATTENUATION BARRIER	10-15-09
PBC-1	PRECAST CONCRETE BOX CULVERTS	1-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	2-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	2-27-14
PM-1	PAVEMENT MARKING DETAILS	6-01-17
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	7-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	4-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	2-27-14
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	10-15-09
TEC-1	TEMPORARY EROSION CONTROL DEVICES	12-15-11
TEC-2	TEMPORARY EROSION CONTROL DEVICES	6-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4	TEMPORARY EROSION CONTROL DEVICES	7-26-12

USER: an5106
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INDEX OF SHEETS AND STANDARD DRAWINGS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-19-17				6	ARK.			
				JOB NO.		040750	3	76
				(2)	GOVERNING SPECIFICATIONS AND GENERAL NOTES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
9/19/17
HUBERT PURKS

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
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
620-1_____	MULCH COVER
JOB 040750__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 040750__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 040750__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 040750__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 040750__	FLEXIBLE BEGINNING OF WORK
JOB 040750__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 040750__	LANDSLIDE REPAIR
JOB 040750__	MAINTENANCE OF TRAFFIC
JOB 040750__	MANDATORY ELECTRONIC CONTRACT
JOB 040750__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 040750__	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 040750__	PARTNERING REQUIREMENTS
JOB 040750__	PORTABLE TRAFFIC SIGNAL SYSTEM
JOB 040750__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 040750__	RESTRAINING CONDITION
JOB 040750__	SHORING FOR CULVERTS
JOB 040750__	STORM WATER POLLUTION PREVENTION PLAN
JOB 040750__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 040750__	UTILITY ADJUSTMENTS
JOB 040750__	VALUE ENGINEERING
JOB 040750__	WARM MIX ASPHALT

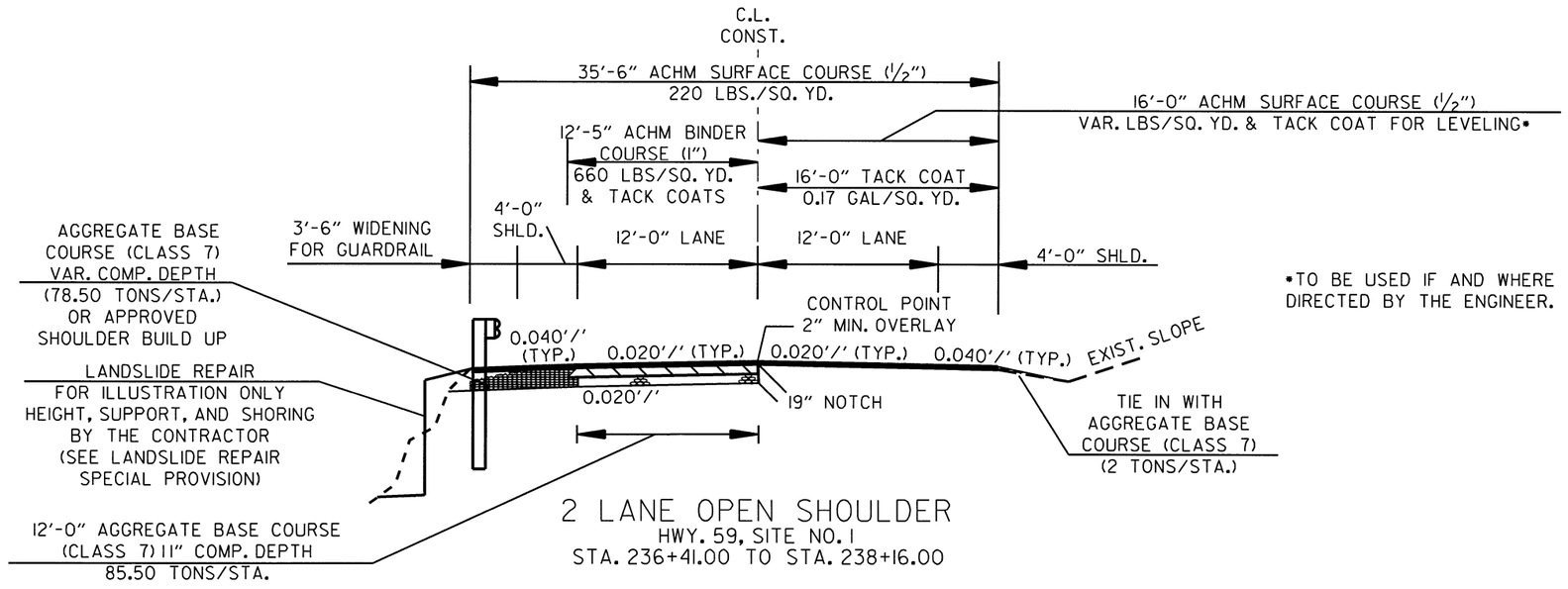
GENERAL NOTES

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. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. 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.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	4	76

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURNS



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

2 LANE OPEN SHOULDER
HWY. 59, SITE NO. 1
STA. 236+41.00 TO STA. 238+16.00

NOTES:

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE 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.

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

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

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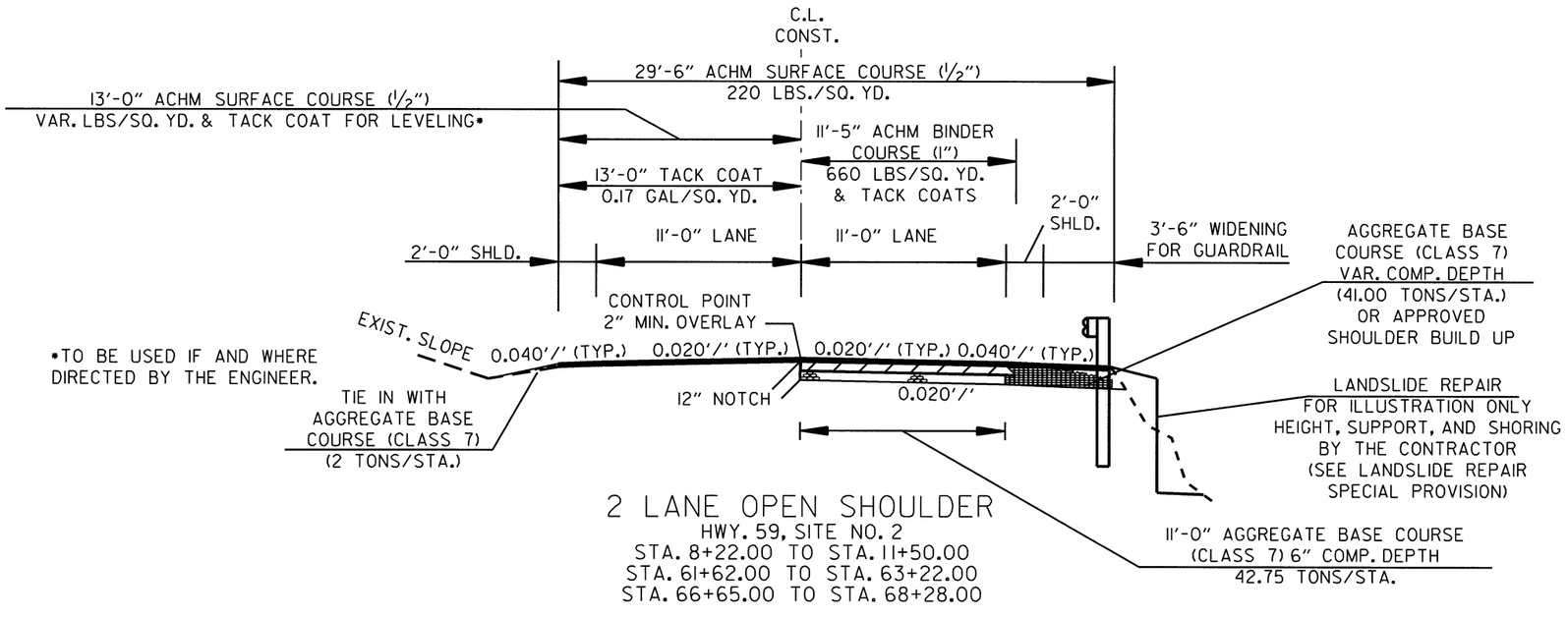

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

2 LANE OPEN SHOULDER
HWY. 59, SITE NO. 2
STA. 8+22.00 TO STA. 11+50.00
STA. 61+62.00 TO STA. 63+22.00
STA. 66+65.00 TO STA. 68+28.00

TYPICAL SECTIONS OF IMPROVEMENT

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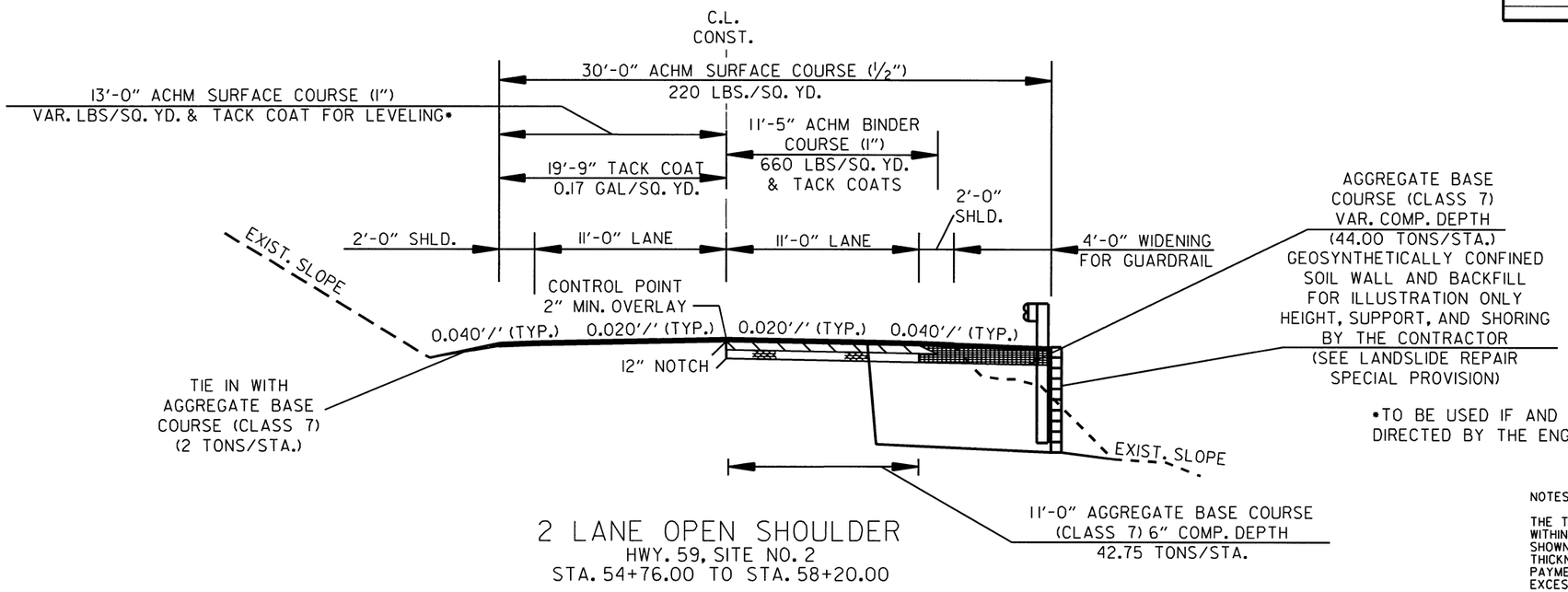
				6	ARK.			
				JOB NO.		040750	5	76

(2) TYPICAL SECTIONS OF IMPROVEMENT



2 LANE OPEN SHOULDER
HWY. 59, SITE NO. 2
STA. 54+76.00 TO STA. 58+20.00

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURNS

NOTES:

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TYPICAL SECTIONS OF IMPROVEMENT

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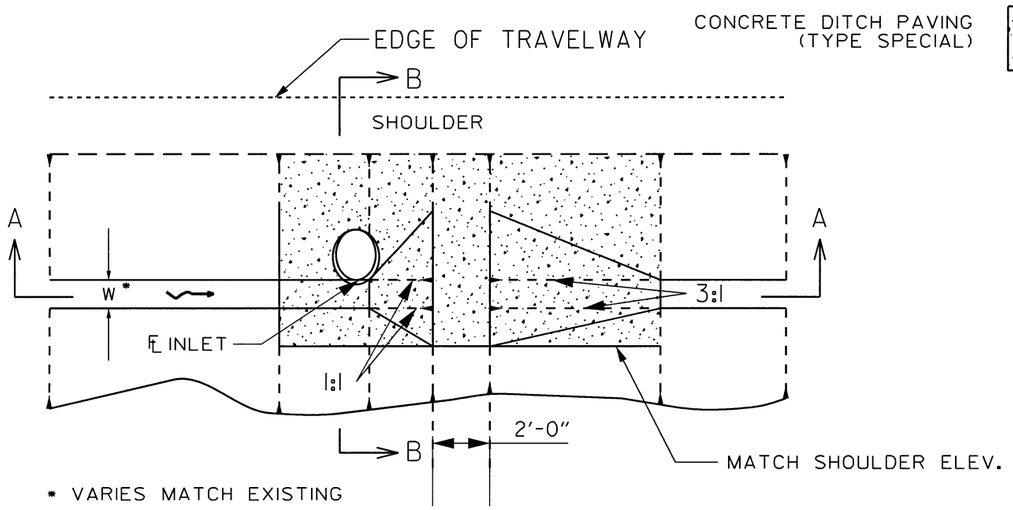
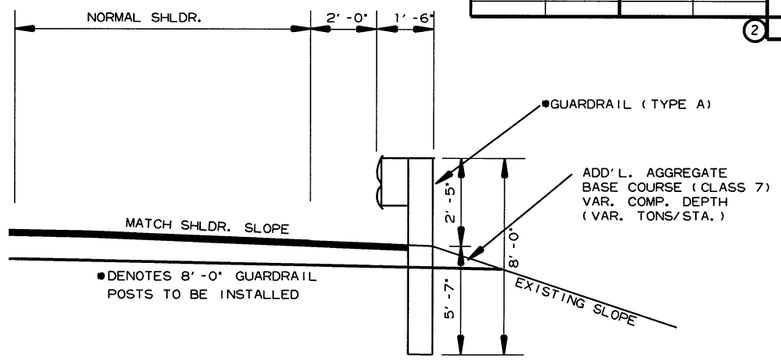
				6	ARK.			
				JOB NO.		040750	6	76

(2) SPECIAL DETAILS



CONCRETE DITCH PAVING (TYPE SPECIAL)

PLAN VIEW

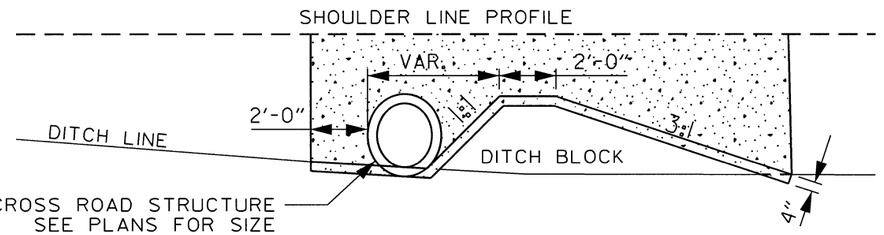


SECTION DETAIL FOR GUARDRAIL

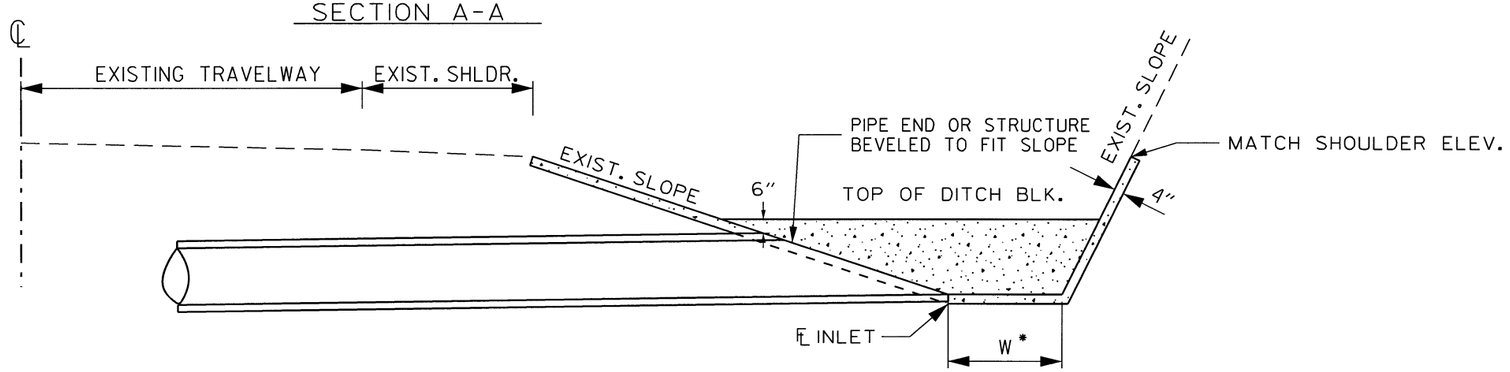
NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-9, GR-9A, GR-10 & GR-10A FOR ADDITIONAL INFORMATION.

STA. 235+91.00 TO STA. 238+66.00
STA. 7+67.00 TO STA. 12+05.00
STA. 54+23.00 TO STA. 58+73.00
STA. 61+10.50 TO STA. 63+73.50
STA. 65+14.29 TO STA. 68+74.00

STATE OF ARKANSAS HUBERT BURNS REGISTERED PROFESSIONAL ENGINEER No. 9620 8/31/2017



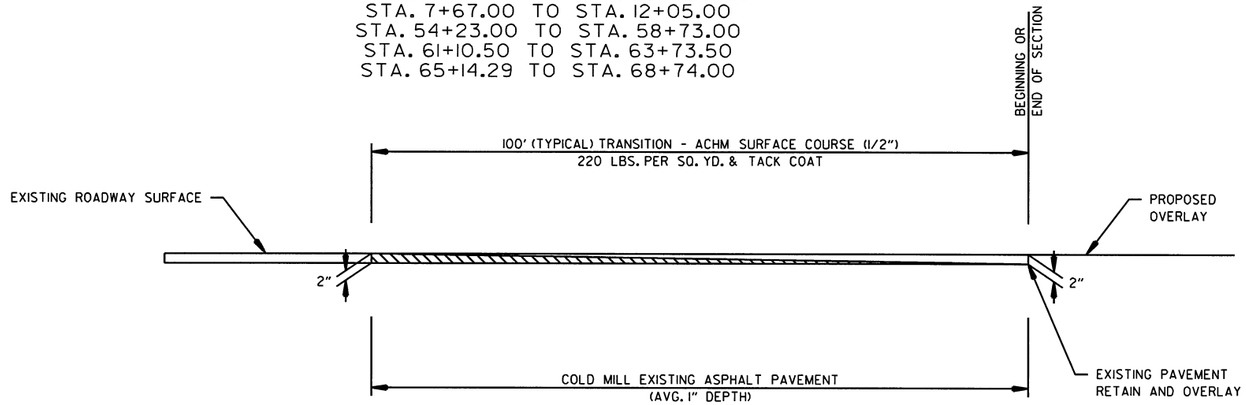
SECTION A-A



SECTION B-B

DITCH BLOCK IN ROADWAY DITCH AT CROSS CULVERT LOCATIONS

NOTE: CONSTRUCTION OF DITCH BLOCK IS SUBSIDIARY TO CONCRETE PAVED DITCH (TYPE SPECIAL).



DETAIL FOR PAVEMENT TRANSITIONS

100' TRANSITION @ BEGINNING & END OF JOB

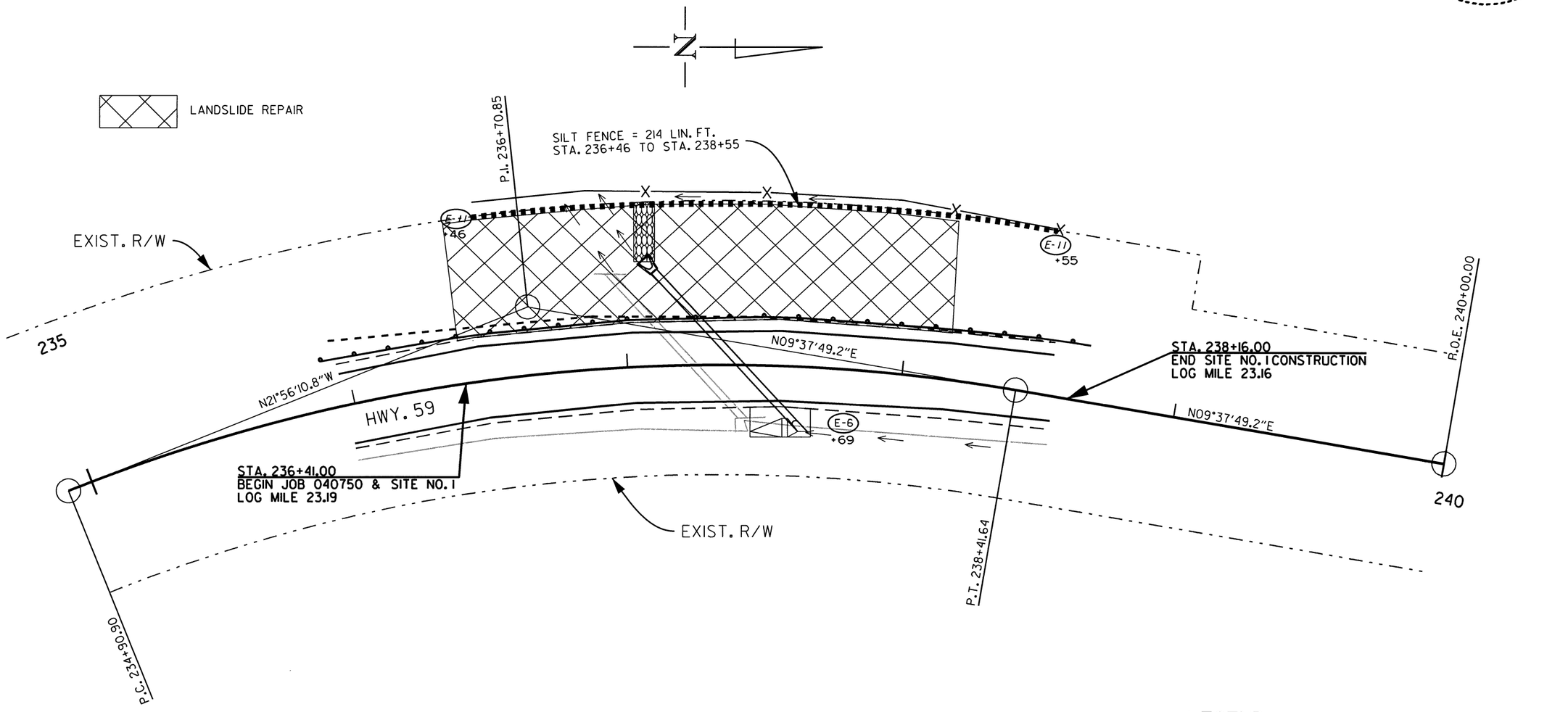
SPECIAL DETAILS

REVISIONS

DATE OF REVISION	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	7	76
				(2) TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No 9620
8/31/2017
HUBERT BURNS



LEGEND

E-6 = ROCK DITCH CHECKS E-11 = SILT FENCE ↘ = GENERAL SITE FLOW DIRECTION INDICATOR

SITE NO. 1
TEMPORARY EROSION CONTROL DETAILS

USER: an5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\erosion\040750 EROSION.dgn
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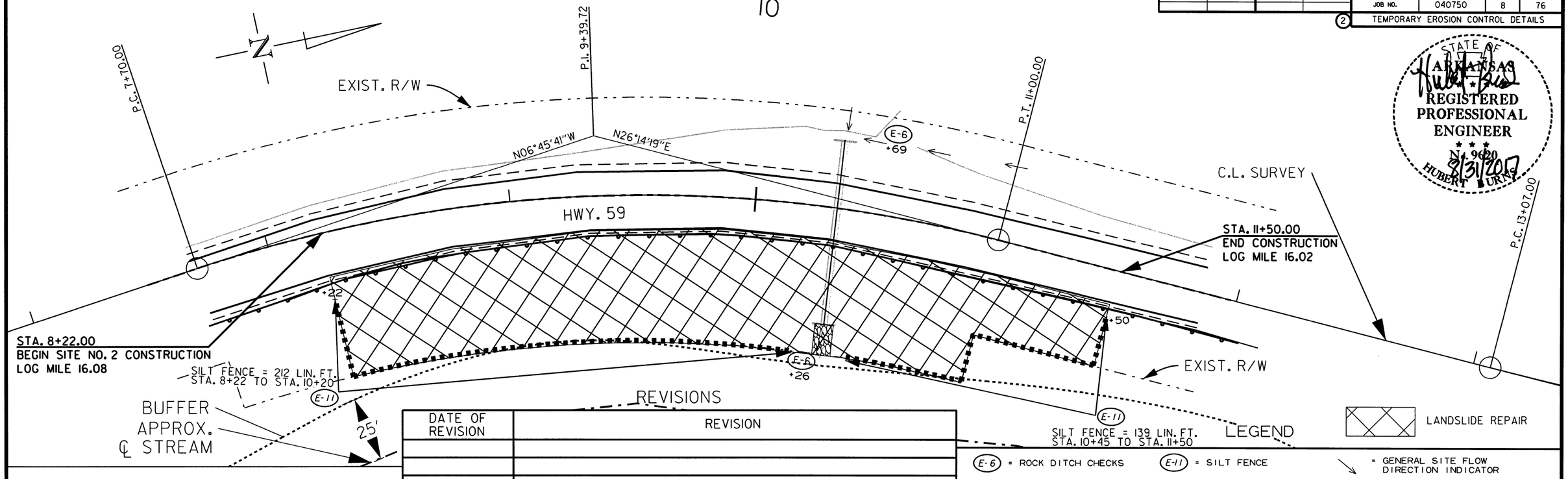
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	8	76

2 TEMPORARY EROSION CONTROL DETAILS

10



REVISIONS

DATE OF REVISION	REVISION

LEGEND

LANDSLIDE REPAIR

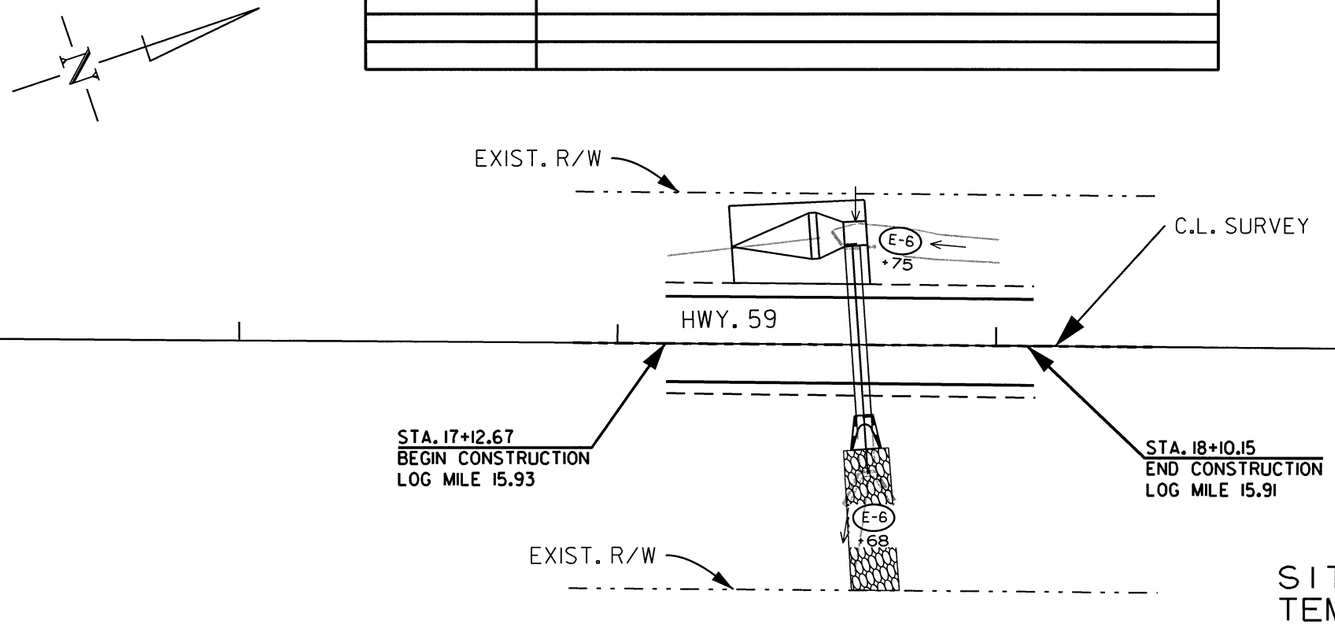
E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

= GENERAL SITE FLOW DIRECTION INDICATOR

15

20



SITE NO. 2
TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURNS

USER: on5106
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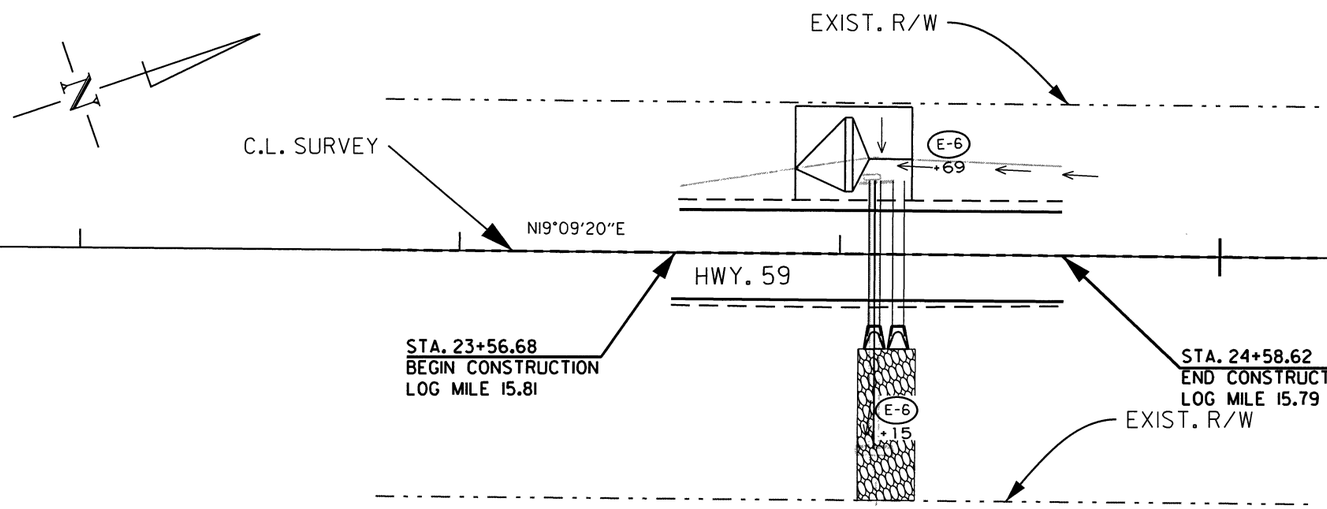
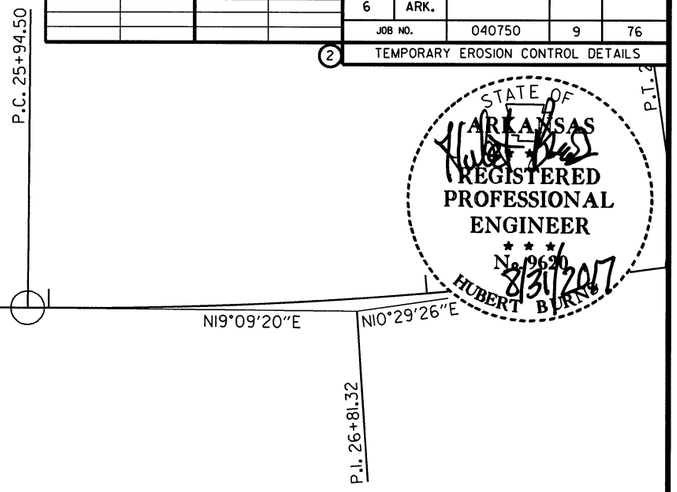
G:\17104300_Hwy59Slide\TRANSP\dgn\erosion\040750 EROSION.dgn 8/29/2017 16:30

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	9	76

(2) TEMPORARY EROSION CONTROL DETAILS

25



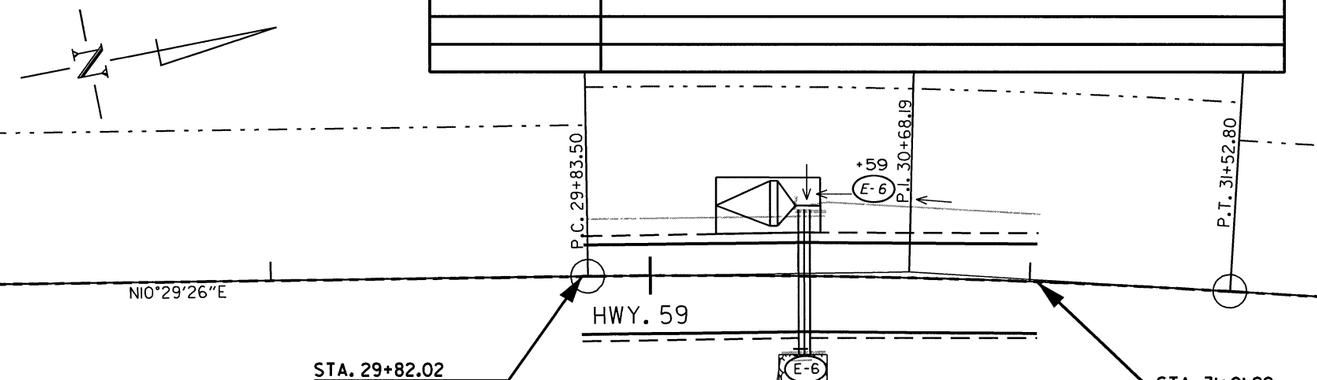


REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE = GENERAL SITE FLOW DIRECTION INDICATOR



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SITE NO. 2
TEMPORARY EROSION CONTROL DETAILS

USER: an5106
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PLOTTED: 8/29/2017 12:44
SCALE: 40'

G:\17104300_Hwy59Slide\TRANSP\dgn\erosion\040750 EROSION.dgn 8/29/2017 12:44

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	10	76

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9630
8/31/2017
HUBERT BURNS

35

P.C. 33+98.30

EXIST. R/W

C.L. SURVEY

HWY. 59

E-6 +25

E-6 +13

STA. 35+54.16
BEGIN CONSTRUCTION
LOG MILE 15.58

N14°43'23"E

STA. 36+67.75
END CONSTRUCTION
LOG MILE 15.56

REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-6) = ROCK DITCH CHECKS

(E-11) = SILT FENCE

= GENERAL SITE FLOW DIRECTION INDICATOR

45

P.T. 45+07.50

EXIST. R/W

C.L. SURVEY

P.C. 47+01.50

P.I. 48+24.37

N29°38'42"W

N14°58'51"W

EXIST. R/W

50

EQUATION:
P.T. 49+45.90 BK. =
P.T. 49+40.10 AHD.

E-6 +76

E-6 +58

E-6 +69

E-6 +34

HWY. 59

HWY. 59

STA. 45+03.80
BEGIN CONSTRUCTION
LOG MILE 15.42

STA. 46+16.73
END CONSTRUCTION
LOG MILE 15.40

STA. 48+78.05
BEGIN CONSTRUCTION
LOG MILE 15.35

STA. 49+86.26
END CONSTRUCTION
LOG MILE 15.33

SITE NO. 2
TEMPORARY EROSION CONTROL DETAILS

USER: on5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\erosion\040750 EROSION.dgn
PLOTTED: 8/29/2017 12:44
SCALE: 40:1

G:\17104300_Hwy59Slide\TRANSP\dgn\erosion\040750 EROSION.dgn 8/29/2017 12:44

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	11	76

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19620
8/31/2017
HUBERT H. BURNS

55

P.T. 54+23.60

EXIST. R/W

P.C. 56+23.90

C.L. SURVEY

+77 E-6

N44°28'51"W

HWY. 59

N44°28'51"W

STA. 54+76.00
BEGIN CONSTRUCTION
LOG MILE 15.24

+76

E-6 +33

E-11

EXIST. R/W

SILT FENCE = 344 LIN. FT.
STA. 54+76 TO STA. 58+20

E-6 +16

N44°28'51"W

HWY. 59

+20

STA. 58+20.00
END CONSTRUCTION
LOG MILE 15.17

E-6 +94

E-11

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS E-11 = SILT FENCE ↘ = GENERAL SITE FLOW DIRECTION INDICATOR

P.I. 60+52.52

N44°28'51"W

60

N29°07'09"E

X X

+46 E-6

EXIST. R/W

P.T. 63+59.90

65

C.L. SURVEY

HWY. 59

+62

+22

STA. 61+62.00
BEGIN CONSTRUCTION
LOG MILE 15.11

STA. 63+22.00
END CONSTRUCTION
LOG MILE 15.08

E-11

SILT FENCE = 114 LIN. FT.
STA. 62+28 TO STA. 63+22

EXIST. R/W

E-6 +15

E-11

SILT FENCE = 70 LIN. FT.
STA. 61+62 TO STA. 62+04

LANDSLIDE REPAIR

SITE NO. 2
TEMPORARY EROSION CONTROL DETAILS

USER: cn5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\erosion\040750 EROSION.dgn
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

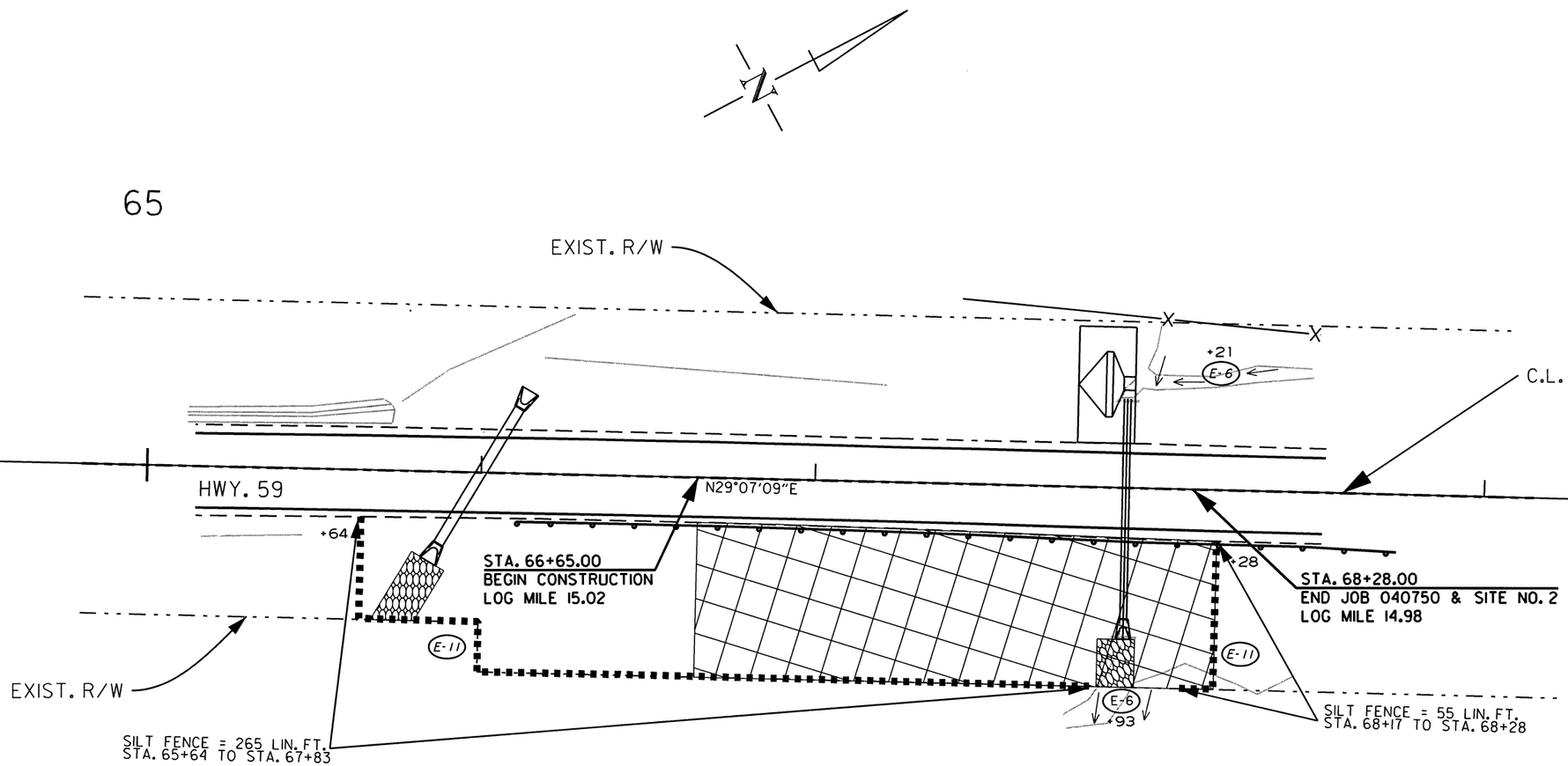
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	12	76
TEMPORARY EROSION CONTROL DETAILS				

(2)

STATE OF ARKANSAS
HUBERT BURNS
REGISTERED PROFESSIONAL ENGINEER
NO. 9620
8/31/2017

65

70



REVISIONS

DATE OF REVISION	REVISION

LANDSLIDE REPAIR

LEGEND

E-6 = ROCK DITCH CHECKS E-11 = SILT FENCE ↘ = GENERAL SITE FLOW DIRECTION INDICATOR

SITE NO. 2
TEMPORARY EROSION CONTROL DETAILS

USER: on5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\erosion\040750 EROSION.dgn
PLOTTED: 8/29/2017 16:40
SCALE: 40:1

G:\17104300_Hwy59Slide\TRANSP\dgn\erosion\040750 EROSION.dgn 8/29/2017 16:40

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	13	76

(2) MAINTENANCE OF TRAFFIC DETAILS

SITE NO. I CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND DEVICES.

INSTALL TEMPORARY EROSION CONTROL DEVICES.

CONSTRUCT LANDSLIDE REPAIR MEASURES & PIPE CULVERT FROM STA. 236+41 TO STA. 238+16.

APPLY LEVEL COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

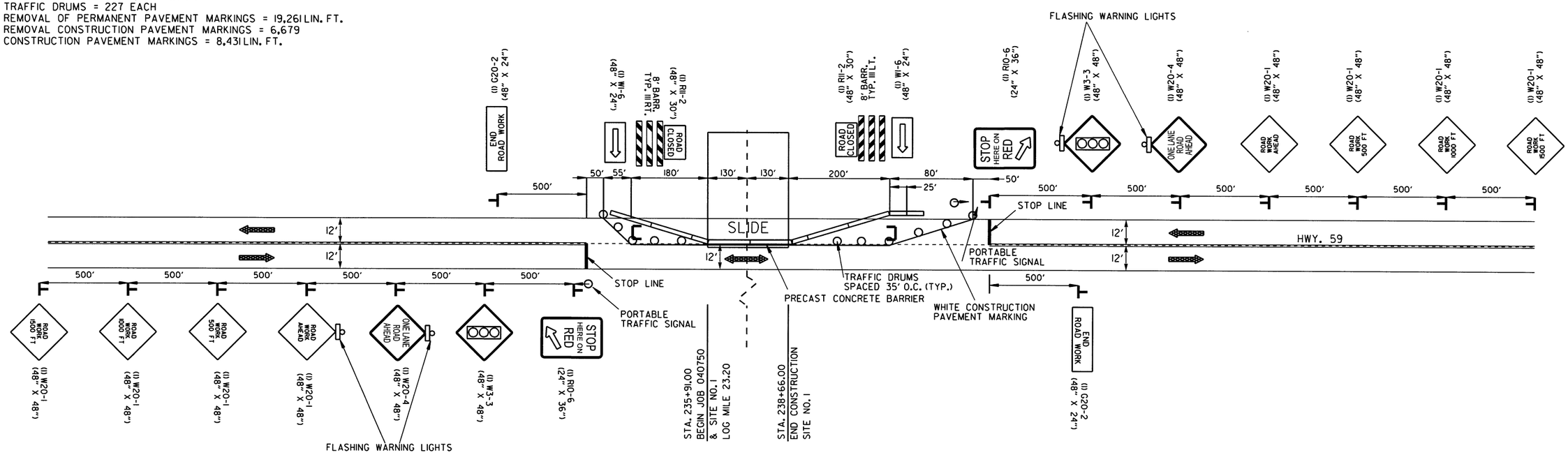
CONSTRUCT NEW PAVEMENT & GUARDRAIL FROM STA. 235+41.00 TO STA. 239+16.00.

APPLY FINAL 2" LIFT OF ACHM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKING AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS AND REFER TO STANDARD DRAWING PM-1.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9629
8/31/2017
HUBERT BURNS

QUANTITIES ENTIRE PROJECT

SIGNS = 3072 SQ. FT.
FURNISHING AND INSTALLING P.C.C.B. = 808 LIN. FT.
RELOCATING P.C.C.B. = 7,033 LIN. FT.
TRAFFIC DRUMS = 227 EACH
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 19,261 LIN. FT.
REMOVAL CONSTRUCTION PAVEMENT MARKINGS = 6,679
CONSTRUCTION PAVEMENT MARKINGS = 8,431 LIN. FT.



SITE NO. I
MAINTENANCE OF TRAFFIC DETAILS

USER: jd5103
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	14	76

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURNS

WORK ZONE LIMITS

STATION	STATION	DESCRIPTION OF WORK
8+22.00	11+50.00	LANDSLIDE REPAIR AND REPLACE PIPE CULVERT AT STA. 10+33
17+12.67	18+10.15	REPLACE ROCK CULVERT AND PIPE CULVERT EXTENSION
35+54.16	36+67.75	REPLACE ROCK CULVERT AND PIPE CULVERT EXTENSION
45+03.80	46+16.73	REPLACE R.C. BOX CULVERT
48+78.05	49+86.26	REPLACE ROCK CULVERT AND PIPE CULVERT EXTENSION
54+76.00	58+20.00	LANDSLIDE REPAIR AND REPLACE CULVERTS AT STA. 57+47 AND STA. 57+97
61+62.00	63+22.00	LANDSLIDE REPAIR AND REPLACE R.C. BOX CULVERT AT STA. 62+23
66+65.00	68+28.00	LANDSLIDE REPAIR AND REPLACE PIPE CULVERT AT STA. 67+93

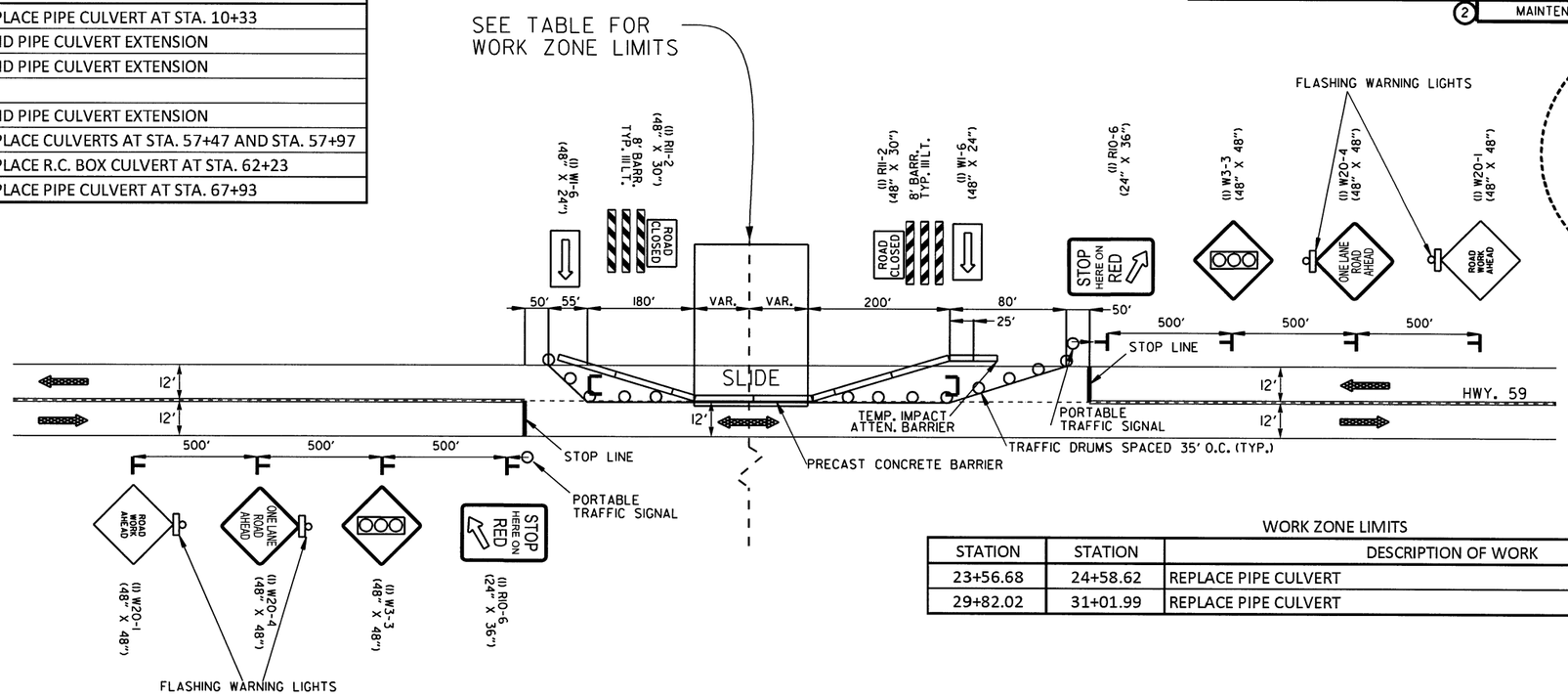
SITE NO. 2 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND DEVICES FOR OVERALL PROJECT.

FOR EACH SPECIFIC WORK ZONE AREA:
1) INSTALL ADVANCE WARNING SIGNS AND DEVICES.
2) INSTALL TEMPORARY EROSION CONTROL DEVICES.
3) CONSTRUCT LANDSLIDE REPAIR MEASURES AND/OR CULVERT REPLACEMENT/EXTENSION.
4) APPLY LEVEL COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.
5) CONSTRUCT NEW PAVEMENT.
6) CONSTRUCT NEW GUARDRAIL WHERE SHOWN ON PLANS.

APPLY FINAL 2" LIFT OF ACHM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKING AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS AND REFER TO STANDARD DRAWING PM-1.

ONE LANE IS TO BE CLOSED & FLAGGING IS TO BE PROVIDED WHERE PIPE CULVERTS ARE TO BE REPLACED AT WORK ZONES FROM STA. 23+56.68 TO STA. 24+58.62 & FROM STA. 29+82.02 TO STA. 31+01.99. REFER TO STANDARD DRAWING TC-2 FOR DETAILS.

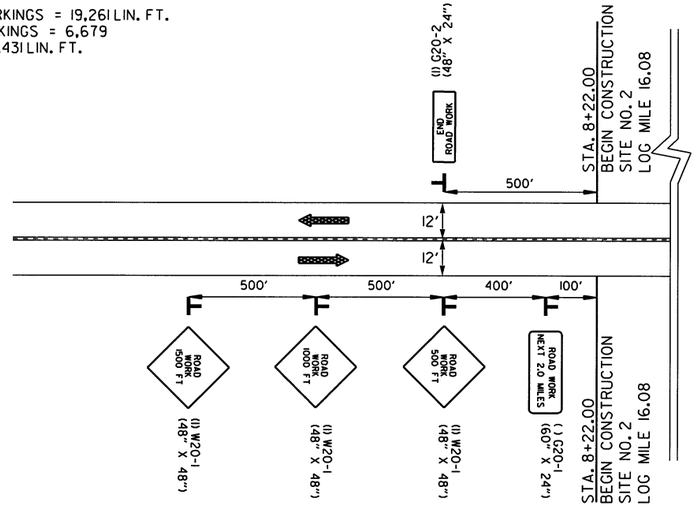


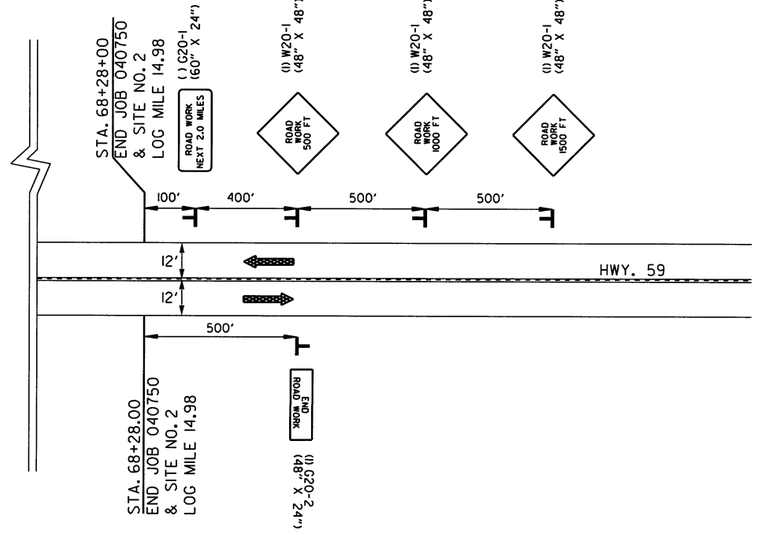
WORK ZONE LIMITS

STATION	STATION	DESCRIPTION OF WORK
23+56.68	24+58.62	REPLACE PIPE CULVERT
29+82.02	31+01.99	REPLACE PIPE CULVERT

QUANTITIES ENTIRE PROJECT

SIGNS = 3072 SQ. FT.
FURNISHING AND INSTALLING P.C.C.B. = 808 LIN. FT.
RELOCATING P.C.C.B. = 7,033 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 19,261 LIN. FT.
REMOVAL CONSTRUCTION PAVEMENT MARKINGS = 6,679
CONSTRUCTION PAVEMENT MARKINGS = 8,431 LIN. FT.





ADVANCE WARNING

MAINTENANCE OF TRAFFIC DETAILS

USER: jd5103
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\maint_of_traffic\040750 MOT.dgn
PLOTTED: 8/31/2017 15:35 SCALE: 60:1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	15	76

(2) SOIL BORINGS LOG

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 1
PAGE 1 OF 2

JOB NO. 040750 Crawford County
JOB NAME: Hwy 59 Slide Repair
STATION: 236+85
LOCATION: 13' Left of Centerline of Existing Roadway
LOGGED BY: Stanley Bates

DATE: June 3, 2015
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: CME 75
HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 43.8

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 500.1										
5		X	Dry, Very Loose, Brown Sand with Gravel (Sandstone Fragments)							2	1-1		
10		X	Dry, Very Loose, Brown Sand with some Gravel (Sandstone Fragments)							1	2-1		
15		X	Dry, Dense, Brown Sand with Gravel (Sandstone Fragments)							2	9-27		
20		X	Moist, Medium Dense, Brown Clayey Sand with Gravel (Sandstone Fragments)							7	8-6		
25			Sandstone Boulders							24	(0)	76	8
30												8	0
35		X	Sandy Clay with Cobbles and Boulders										

REMARKS:

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 1
PAGE 2 OF 2

JOB NO. 040750 Crawford County
JOB NAME: Hwy 59 Slide Repair
STATION: 236+85
LOCATION: 13' Left of Centerline of Existing Roadway
LOGGED BY: Stanley Bates

DATE: June 3, 2015
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: CME 75
HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 43.8

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 500.1										
40												8	0
			SHALE - Weathered to Slightly Weathered, Medium Hard, Slight Dip, Dark Gray									58	50
45			Boring Terminated										
50													
55													
60													
65													
70													

REMARKS:

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19620
8/31/2017
HUBERT BURNS

SITE NO. 1
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:44
SCALE: 2:1

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	16	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 19630 8/31/2017 HUBERT BURNS

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 2
PAGE 1 OF 1

JOB NO. 040750 Crawford County
JOB NAME: Hwy 59 Slide Repair
STATION: 237+48
LOCATION: 16' Right of Centerline of Existing Roadway
LOGGED BY: Stanley Bates

DATE: June 3, 2015
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: CME 75
HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 25.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 502.0									
5		X	Moist, Very Loose, Brown Clayey Sand with Some Gravel (Rock Fragments)							1 1-2		
10		X	Moist, Medium Dense, Brown Gravel (Sandstone Fragments) with Sand							6 6-6		
15		X	Moist, Loose, Brown Clayey Sand with Gravel (Sandstone Fragments)							3 3-5		
20			Wet, Loose, Brown Clayey Sand with Gravel (Sandstone Fragments)									
			SHALE - Weathered, Hard, Dark Gray							50 (1)		
25			SHALE WITH OCCASSIONAL SANDSTONE SEAMS - Medium Hard, Slightly Weathered, Slight Dip, Dark Gray								97 81	84 81
			Boring Terminated									
30												
35												

REMARKS:

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 3
PAGE 1 OF 1

JOB NO. 040750 Crawford County
JOB NAME: Hwy 59 Slide Repair
STATION: 237+58
LOCATION: 11' Left of Centerline of Existing Roadway
LOGGED BY: Stanley Bates

DATE: June 4, 2015
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: CME 75
HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 21.4

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 504.1									
5		X	Dry, Medium Dense, Brown Gravel (Sandstone Fragments) with Sand							6 6-5		
10		X	Moist, Medium Dense, Brown Clayey Sand with (Sandstone Fragments)							7 6-5		
15		X	Moist, Soft, Brown Sandy Clay with Some Gravel (Rock Fragments)							1 2-2		
20		X	Moist, Loose, Brown Sand with Gravel (Sandstone Fragments)							3 4-6		
			Boring Terminated									
25												
30												
35												

REMARKS:

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 1
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:44
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G:\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:44

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	17	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS
HUBERT BURNS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 4
PAGE 1 OF 1

JOB NO. 040750 Crawford County
JOB NAME: Hwy 59 Slide Repair

STATION: 237+67
LOCATION: 9' Left of Centerline of Existing Roadway
LOGGED BY: Stanley Bates

DATE: June 3, 2015
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: CME 75

HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 23.6

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 504.8								
5			Dry, Loose, Brown Sand with Gravel (Sandstone Fragments)						3 3-5		
10			Dry, Very Dense, Brown Sand with Gravel (Sandstone Fragments)						35 (1)	35	0
15			Sandstone Boulders with Sandy Clay							38	0
20			Reddish Brown Sandy Clay with Boulders							8	0
25			Boring Terminated								
30											
35											

REMARKS:

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 1
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:44 SCALE: 2:1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	18	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS
HUBERT BURKE
REGISTERED PROFESSIONAL ENGINEER
No. 9630
8/31/2017

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 1
PAGE 1 OF 1

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair
STATION: 10+56
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 6, 2011
TYPE OF DRILLING: Hollow Stem Auger &
EQUIPMENT: CME 75 w/ CME Automatic
HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 22.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 509.8								
5			Moist, Medium Stiff, Brown and Gray Clay with Gravel (Sandstone and Shale Fragments)						3 3-3		
10			SHALE - Brown and Gray, Highly Weathered, Soft						4 6-7		
15									4 4-3		
20			LIMESTONE - Gray, Thin Bedded, Slightly Weathered, Hard, with Slight Dip							100	65
25			Boring Terminated								
30											
35											

REMARKS: Long. = -94.46999941; Lat. = 35.760815801

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 2
PAGE 1 OF 1

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair
STATION: 11+11
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 5, 2011
TYPE OF DRILLING: Hollow Stem Auger &
EQUIPMENT: CME 75 w/ CME Automatic
HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 32.9

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 511.5								
5			Moist, Very Stiff, Brown Clay with Gravel (Sandstone Fragments)						3 7-9		
10			SHALE - Gray, Highly Weathered, Medium Hard						15 35-46		
15			SANDSTONE - Gray, Medium Bedded, Slightly Weathered, Calcareous, Well-Cemented, with Slight Dip						10 (0")	94	78
20			LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip							100	88
25			LIMESTONE - Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip *							100	94
30			LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip and Vertically Fractured Layers							100	68
35			Boring Terminated								

REMARKS: * Total water loss was encountered at 24.4'. Long. = -94.46992153; Lat. = 35.760968954

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:45
SCALE: 1.999796"

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:45

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	19	76

(2) SOIL BORINGS LOG

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 3
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 12+62
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 5, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 37.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 515.7	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
5			Moist, Hard, Brown Clay with Gravel (Sandstone Fragments) and Organic Matter							8 9-42			
10			SHALE - Brown and Gray, Highly Weathered, Soft							9 15-14			
15										10 (0")		100	72
20			SANDSTONE - Gray, Medium Bedded, Slightly Weathered, Calcareous, Well-Cemented, with Slight Dip *									100	92
25												100	84
30			SANDSTONE - Gray, Medium Bedded, Slightly Weathered, Calcareous, Well-Cemented, with Slight Dip with Vertically Fractured Layers									100	44
35			LIMESTONE WITH SHALE PARTINGS - Gray, Medium Bedded, Slightly Weathered, Hard, with										

REMARKS: * Total water loss was encountered at 24.8'. Long. = -94.46976702; Lat. = 35.761337648

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19620
HUBERT BURKS
8/31/2017

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 3
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 12+62
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 5, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 37.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 515.7	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			Moderate Dip									100	58
40			Boring Terminated										
45													
50													
55													
60													
65													
70													

REMARKS: * Total water loss was encountered at 24.8'. Long. = -94.46976702; Lat. = 35.761337648

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:45
SCALE: 1.999796sf

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:45

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	20	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — HUBERT BURKS — 9639 — 8/31/2017

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 4
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 24+58
LOCATION: 8' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 3, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 48.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 580.9								
5			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments)						6 6-5		
10			Moist, Meium Dense, Brown and Gray Sand with Gravel (Sandstone Fragments)						57 18-9		
15			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments)						3 9-6		
20			Moist, Dense, Brown and Gray Sand with Gravel (Sandstone Fragments)						18 9-22		
25			SANDSTONE - Brown, Very Thin Bedded, Slightly Weathered, Cemented, with Slight Dip							48	0
30			SANDSTONE WITH SHALE LAYERS - Gray, Very Thin Bedded, Slightly Weathered, Cemented, with Slight Dip							99	0
35											

REMARKS: Long. = -94.46858664; Lat. = 35.764474087

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 4
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 24+58
LOCATION: 8' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 3, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 48.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 580.9								
										100	28
40			SHALE WITH SANDSTONE LAYERS - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							100	44
45			SHALE WITH SLIGHTLY CALCAREOUS SANDSTONE LAYERS - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							100	56
50			Boring Terminated								
55											
60											
65											
70											

REMARKS: Long. = -94.46858664; Lat. = 35.764474087

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:45
SCALE: 1.999796il

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:45

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	21	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N.J. 9620
8/31/2017
HUBERT BURKS

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 5
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 26+46
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 3, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 43

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 595.1										
5			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments), Cobbles and Boulders							5	7-6		
10			Moist, Very Hard, Brown Clay with Gravel (Sandstone Fragments), Cobbles and Boulders							50	(2")		
15			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments) and Organic Matter							5	6-5		
20			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments)							2	5-6		
25			SANDSTONE - Gray, Thin Bedded, Slightly Weathered, Slightly Calcareous, Well-Cemented, with Slight Dip and Vertically Fractured Layers							10	(0")	100	54
30			SHALE WITH SANDSTONE LAYERS - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip and Vertically Fractured Layers									100	36
35													

REMARKS: Long. = -94.46842805; Lat. = 35.764979458

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 5
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 26+46
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 3, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 43

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 595.1										
			SANDSTONE WITH SHALE LAYERS - Gray, Thin Bedded, Slightly Weathered, Well-Cemented, with Slight Dip									100	16
40			SANDSTONE WITH SHALE LAYERS - Gray, Very Thin Bedded, Slightly Weathered, Well-Cemented, with Slight Dip									86	8
45			Boring Terminated										
50													
55													
60													
65													
70													

REMARKS: Long. = -94.46842805; Lat. = 35.764979458

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:45 SCALE: 1.999796sf

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	22	76
				(2)	SOIL BORINGS LOG			

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 6
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 27+36
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 3, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 38.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 601.8										
5			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments)							5	5-5		
10			Gravel (Sandstone Fragments), Cobbles and Boulders with Clay							30	(1")		
15			LIMESTONE - Brown and Gray, Thin Bedded, Slightly Weathered, Hard, with Slight Dip									80	24
20			LIMESTONE WITH SANDSTONE LAYERS AND SHALE SEAMS - Brown and Gray to Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip									100	48
25			SHALE WITH FREQUENT SANDSTONE LAYERS - Dark Gray, Laminated, Slightly Weathered, Hard, with Moderate Dip									48	8
30			SANDSTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Well-Cemented, with Slight Dip									100	72
35													

REMARKS: * Poor core recovery due to a piece of core lodged in core barrel. Long. = -94.46835546; Lat. = 35.765215686

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 6
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 27+36
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: October 3, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 38.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 601.8										
			ALTERNATING LAYERS OF SHALE AND SANDSTONE - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip (Shale); Gray, Very Thin Bedded, Slightly Weathered, Well-Cemented, with Slight Dip (Sandstone)									100	12
40			Boring Terminated										
45													
50													
55													
60													
65													
70													

REMARKS: * Poor core recovery due to a piece of core lodged in core barrel. Long. = -94.46835546; Lat. = 35.765215686

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
19629
HUBERT BURKS
8/31/2017

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:45
SCALE: 1.999796"

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:45

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	23	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS
HUBERT BURKS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 7
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 54+71
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 28, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 38

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 779.9								
5			Moist, Stiff, Brown and Gray Clay with Gravel (Sandstone Fragments)						3 4-5		
10									5 9-6		
15			LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip						10 (0")	63	73
			SHALE - Brown and Gray, Weathered, Medium Hard								
20			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip							78	74
25			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Moderate Dip							100	66
30										100	58
35			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip								

REMARKS: Long. = -94.47046255; Lat. = 35.772197193

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 7
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 54+71
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 28, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 38

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 779.9							100	88
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: Long. = -94.47046255; Lat. = 35.772197193

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:45 SCALE: 1.999796sl

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:45

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	24	76
				(2)		SOIL BORINGS LOG		

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 8
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 55+43
LOCATION: 9' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 27, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 43.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 784.8								
5			Moist, Medium Stiff, Brown and Gray Clay with Gravel (Sandstone Fragments)						3 3-5		
10			Moist, Medium Stiff, Brown and Gray Clay with Gravel (Sandstone and Shale Fragments)						2 3-3		
15			SHALE - Brown and Gray, Highly Weathered, Medium Hard						12 60 (5")		
20			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip and Vertically Fractured Layers							91	75
25										100	74
30										100	58
35			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip								

REMARKS: Long. = -94.47046255; Lat. = 35.772395017

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 8
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 55+43
LOCATION: 9' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 27, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 43.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 784.8								
40										100	96
										100	98
45			Boring Terminated								
50											
55											
60											
65											
70											

REMARKS: Long. = -94.47046255; Lat. = 35.772395017

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURNS

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:45 SCALE: 1.999796"

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:45

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	25	76

(2) SOIL BORINGS LOG

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 9
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 56+11
LOCATION: 8' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 27, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 43.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 789.1	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
5			SHALE - Brown and Gray, Highly Weathered, Soft							4 5-6			
10			Moist, Very Stiff, Brown and Gray Clay with Organic Matter							3 9-13			
15			SHALE - Brown and Gray, Highly Weathered, Medium Hard							17 10-54			
20			LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip							10 (0")		66	60
25			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip										
30			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip									100	60
35			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly									100	78

REMARKS: Long. = -94.4706128; Lat. = 35.772510805

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 9
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 56+11
LOCATION: 8' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 27, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 43.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 789.1	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			Weathered, Hard, with Slight Dip and Vertically Fractured Layers									100	70
40			CALCAREOUS SANDSTONE WITH SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Well-Cemented, with Slight Dip									90	58
45			Boring Terminated										
50													
55													
60													
65													
70													

REMARKS: Long. = -94.4706128; Lat. = 35.772510805

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
HUBERT BURNS
REGISTERED PROFESSIONAL ENGINEER
No. 9629
8/31/17

SITE NO. 2
SOIL BORINGS LOG

USER: an5106
DESIGN FILE: \\ROGFILE\Jobfiles\1704300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:45
SCALE: 1.999796

\\ROGFILE\Jobfiles\1704300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:45

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	26	76

(2) SOIL BORINGS LOG

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 10
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 57+27
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 29, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 42.9

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 797.2										
5		X	Sandstone Cobbles and Boulders							45	37-22		
10		X	Sandstone Cobbles and Boulders with some Clay							3	8-60 (9")		
			LIMESTONE WITH FREQUENT WEATHERED SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip									92	16
15			SHALE WITH FREQUENT LIMESTONE LAYERS - Dark Gray, Laminated, Weathered, Soft, with Slight Dip									56	12
20			SHALE WITH FREQUENT LIMESTONE LAYERS - Dark Gray, Laminated, Highly Weathered, Soft, with Slight Dip									24	0
25			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Thin Bedded, Slightly Weathered, Hard, with Slight Dip									100	54
30												100	50
35													

REMARKS: Long. = -94.47088392; Lat. = 35.772735804

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 10
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 57+27
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 29, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 42.9

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 797.2										
			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip									100	72
40												100	88
45			Boring Terminated										
50													
55													
60													
65													
70													

REMARKS: Long. = -94.47088392; Lat. = 35.772735804

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
HUBERT BURNETT
REGISTERED PROFESSIONAL ENGINEER
9629
8/31/2017

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\1710430O_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:46
SCALE: 1.999796in

\\ROGFILE\Jobfiles\1710430O_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:46

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	27	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS
HUBERT BURKS
NO. 19629
REGISTERED PROFESSIONAL ENGINEER
8/31/2017

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 11
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 58+17
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 26, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 55.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 803.2									
5			Moist, Very Stiff, Brown and Gray Clay with Gravel (Sandstone and Shale Fragments)							4 4-22		
10			Moist, Stiff, Brown and Gray Clay with Gravel (Sandstone Fragments)							3 6-7		
15			SHALE - Brown and Gray, Highly Weathered, Soft							3 3-6		
20			SHALE - Brown and Gray, Highly Weathered, Medium Hard							8 44-35		
25												
30			SHALE - Brown and Gray, Highly Weathered, Soft *							9 5-5		
35										4 1-0		
										10		

REMARKS: * Sample at 30.2' was wet. Long. = -94.47104165; Lat. = 35.772933392

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 11
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 58+17
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 26, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 55.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 803.2							(0")		
40			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Thin Bedded, Slightly Weathered, Hard, with Slight Dip								100	48
45											100	52
50			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip								100	72
55			SHALE WITH FREQUENT LIMESTONE LAYERS - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip								98	98
			Boring Terminated								96	34
60												
65												
70												

REMARKS: * Sample at 30.2' was wet. Long. = -94.47104165; Lat. = 35.772933392

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 2
SOIL BORINGS LOG

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	28	76

(2) SOIL BORINGS LOG

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 12
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 59+53
LOCATION: 11' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 28, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 53.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 813.7										
5			Moist, Medium Stiff, Brown and Gray Clay with Gravel (Sandstone Fragments)								3 3-4		
10			Moist, Stiff, Brown and Gray Clay with Gravel (Sandstone and Shale Fragments)								2 4-8		
15			SHALE - Brown and Gray, Highly Weathered, Soft								9 11-12		
20			Moist, Stiff, Brown Clay								2 5-9		
25			SHALE - Brown and Gray, Highly Weathered, Medium Hard								44 60 (5")	100	0
30			SHALE - Brown and Gray, Laminated, Highly Soft, Weathered, with Slight Dip									58	0
35													

REMARKS: Long. = -94.47119574; Lat. = 35.773284367

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 12
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 59+53
LOCATION: 11' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 28, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 53.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 813.7										
			SHALE WITH FREQUENT LIMESTONE SEAMS - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip									60	12
40			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Thin Bedded, Slightly Weathered, Hard, with Slight Dip									99	64
45			LIMESTONE WITH FREQUENT SHALE LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip									100	72
50			LIMESTONE WITH FREQUENT SHALE SEAMS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip									100	86
55			Boring Terminated										
60													
65													
70													

REMARKS: Long. = -94.47119574; Lat. = 35.773284367

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9639
HUBERT BURKS
8/31/2017

SITE NO. 2
SOIL BORINGS LOG

USER: on5l06
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:46
SCALE: 1.999796sf

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	29	76
				(2)	SOIL BORINGS LOG			

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 13
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 62+28
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 21, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 58.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 832.4	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
5			Moist, Stiff, Gray and Brown Clay with Gravel (Limestone Fragments), Cobbles and Boulders							10 8-5		
10			Moist, Stiff, Gray and Brown Clay with Gravel (Shale Fragments)							3 4-5		
15			Moist, Stiff, Gray and Brown Clay with Gravel (Shale Fragments)							3 4-9		
20			Moist, Medium Stiff, Brown Clay with Gravel (Shale Fragments)							4 3-4		
25			Moist, Very Stiff, Brown Clay with Gravel (Sandstone Fragments)							6 11-19		
30			SHALE - Gray, Highly Weathered, Soft							13 26-12		
35												

REMARKS: Long. = -94.47122346; Lat. = 35.7774029437

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 13
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 62+28
LOCATION: 10' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 21, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 58.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 832.4	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SHALE WITH SANDSTONE FRAGMENTS - Gray, Weathered, Medium Hard							60 (4")		
40			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip and some Slickensides								96	20
45			SHALE WITH FREQUENT LIMESTONE LAYERS - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip								100	84
50			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip								92	56
55			LIMESTONE WITH FREQUENT SHALE SEAMS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip								96	72
60											100	96
65			Boring Terminated									
70												

REMARKS: Long. = -94.47122346; Lat. = 35.7774029437

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No 9620
HUBERT BURKS
8/31/2017

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:46 SCALE: 1.999796"

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:46

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	30	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER 9629 HUBERT BURNETT 8/31/2017

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 14
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 62+88
LOCATION: 9' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 21, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 38.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 837.3										
			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments), Cobbles and Boulders										
5											7		
			Moist, Stiff, Brown and Gray Clay with Gravel (Sandstone Fragments)								5-5		
10													
			Moist, Hard, Brown and Gray Clay with Gravel (Sandstone and Shale Fragments), Cobbles and Boulders								60 (4")		
15													
			SHALE WITH SANDSTONE FRAGMENTS - Gray, Weathered, Medium Hard								32		
			SHALE WITH SANDSTONE SEAMS - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip								60 (3")	73	0
20													
			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip									90	48
25												100	48
30			LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip									100	82
35													

REMARKS: Long. = -94.47116061; Lat. = 35.774214794

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 14
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 62+88
LOCATION: 9' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 21, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 38.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 837.3										
			LIMESTONE WITH FREQUENT SHALE SEAMS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip									100	90
40			Boring Terminated										
45													
50													
55													
60													
65													
70													

REMARKS: Long. = -94.47116061; Lat. = 35.774214794

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:46
SCALE: 1.999796ei

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:46

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	31	76

(2) SOIL BORINGS LOG

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No 9629 — HUBERT BURKE — 8/31/2017

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 15
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 65+69
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 20, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 43.8

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 857.2								
5			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments) and Cobbles						4 7-7		
10			Moist, Stiff, Brown Clay with Gravel (Sandstone Fragments)						4 6-6		
15			SHALE - Gray, Highly Weathered, Soft						7 7-9		
20			SHALE - Gray, Weathered, Medium Hard						60 (5")		
25			SHALE WITH SANDSTONE SEAMS - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							68 100	0 16
30			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							98	50
35											

REMARKS: Long. = -94.47078692; Lat. = 35.774880401

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 15
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 65+69
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 20, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 43.8

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 857.2								
40			SHALE WITH OCCASIONAL LIMESTONE LAYER - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							96	52
			LIMESTONE WITH OCCASIONAL SHALE SEAMS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip							100	72
45			Boring Terminated								
50											
55											
60											
65											
70											

REMARKS: Long. = -94.47078692; Lat. = 35.774880401

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:46
SCALE: 1.999796ai

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:46

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	32	76

(2) SOIL BORINGS LOG

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 16
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 66+31
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 20, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 52.9

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 861.3	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
5			Moist, Soft, Dark Gray Clay with Gravel (Shale Fragments)						1 1-3		
10			SHALE - Brown and Gray, Highly Weathered, Soft						1 4-2		
15			SHALE - Gray, Highly Weathered, Soft						2 2-2		
20									3 5-8		
25			SHALE - Gray and Brown, Highly Weathered, Soft						3 10-10		
30			SHALE - Gray, Weathered, Medium Hard						60 (4")		
			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							100	32
35											

REMARKS: * A water stratum was encountered at 15.0'. Long. = -94.47069335; Lat. = 35.775034639

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 16
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 66+31
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 20, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 52.9

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 861.3	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SHALE WITH OCCASIONAL LIMESTONE LAYER - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							88	50
40			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							100	88
45			LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip							100	72
50			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							94	82
55			Boring Terminated								
60											
65											
70											

REMARKS: * A water stratum was encountered at 15.0'. Long. = -94.47069335; Lat. = 35.775034639

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9630
8/31/2017
HUBERT BURNS

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:46 SCALE: 1.999796"

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:46

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	33	76

(2) SOIL BORINGS LOG

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 17
PAGE 1 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 66+90
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 15 & 19, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 62.4

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 865.5								
			Asphalt Pavement (4")								
5			Moist, Very Stiff, Gray Sandy Clay with Gravel (Limestone Fragments)						7 13-11		
10			Moist, Medium Stiff, Dark Gray Clay with Gravel (Sandstone Fragments)						4 4-4		
15			Boulder								
			Moist, Medium Stiff, Dark Gray Clay with Gravel (Shale Fragments)						3 3-4		
20			Moist, Very Stiff, Brown and Gray Clay with Trace of Gravel (Sandstone Fragments)						4 6-10		
25			Moist, Very Stiff, Brown Clay with Trace of Gravel (Sandstone Fragments) and Cemented Sand						4 5-12		
30			Moist, Stiff, Brown and Gray Clay with Gravel (Shale Fragments)						3 5-7		
35											

REMARKS: Long. = -94.47060263; Lat. = 35.7775180408

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 17
PAGE 2 OF 2

JOB NO. 040750 Washington County
JOB NAME: Hwy 59 Slide Repair

STATION: 66+90
LOCATION: 7' Right of Center Line of Hwy. 59
LOGGED BY: Wade Boughner

DATE: September 15 & 19, 2011
TYPE OF DRILLING: Hollow Stem Auger &

EQUIPMENT: CME 75 w/ CME Automatic

HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 62.4

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 865.5								
			Wet, Stiff, Brown Clay with Gravel (Shale Fragments)						4 5-7		
40			SHALE - Dark Gray, Weathered, Medium Hard						60 (5")		
			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							100	28
45			LIMESTONE WITH FREQUENT SHALE SEAMS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip							100	92
			LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip								
50			SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip							98	62
55			LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip							98	78
60			LIMESTONE WITH OCCASIONAL SHALE SEAMS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip							100	78
			Boring Terminated								
65											
70											

REMARKS: Long. = -94.47060263; Lat. = 35.7775180408

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
HUBERT BURNS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017

SITE NO. 2
SOIL BORINGS LOG

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn
PLOTTED: 8/29/2017 12:47 SCALE: 1.999796il

\\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\misc\040750 SOIL LOG.dgn 8/29/2017 12:47

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	34	76

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
HUBERT BURNS
8/31/2017

ADVANCE WARNING SIGNS AND DEVICES SITE NO. 1 (BOX 1 OF 2)

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	TEMP. IMPACT ATTEN.BARR. (REPAIR)	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED
								RIGHT	LEFT						
			LIN. FT. - EACH		NO.	SQ. FT.	EACH	LIN. FT.				EACH			LUMP SUM
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	32.0									
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	32.0									
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	32.0									
W20-1	ROAD WORK AHEAD W/ FLASHING WARNING LIGHT	48"x48"	2	2	2	32.0									
W20-4	ONE LANE ROAD AHEAD W/ FLASHING WARNING LIGHT	48"x48"	2	2	2	16.0									
G20-2	END ROAD WORK	48"x24"	2	2	2	20.0									
R11-2	ROAD CLOSED	48"x30"	2	2	2	32.0									
W1-6	LARGE ARROW	48"x24"	2	2	2	32.0									
W3-3	SIGNAL PICTORIAL	48"x48"	2	2	2	8.0									
R10-6	STOP HERE ON RED	24"x30"	2	2	2	20.0									
	TRAFFIC DRUMS						23								
	TYPE III BARRICADE-RT. (8')		1	1				8							
	TYPE III BARRICADE-LT. (8')		1	1					8						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER														
	RELOCATING PRECAST CONCRETE BARRIER										730				
	TEMPORARY IMPACT ATTENUATION BARRIER											2			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)													2	
	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED		0.50	0.50											0.50
SUBTOTALS SITE NO. 1:						**256.0**	**23**	**8**	**8**		**730**	**2**		**2**	**0.50**

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

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

ADVANCE WARNING SIGNS AND DEVICES SITE NO. 2 (BOX 2 OF 2)

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	TEMP. IMPACT ATTEN.BARR. (REPAIR)	* PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED
								RIGHT	LEFT						
			LIN. FT. - EACH		NO.	SQ. FT.	EACH	LIN. FT.				EACH			LUMP SUM
W20-1	ROAD WORK 1500 FT.	48"x48"	22	22	22	352.0									
W20-1	ROAD WORK 1000 FT.	48"x48"	22	22	22	352.0									
W20-1	ROAD WORK 500 FT.	48"x48"	22	22	22	352.0									
W20-1	ROAD WORK AHEAD W/ FLASHING WARNING LIGHT	48"x48"	22	22	22	352.0									
W20-4	ONE LANE ROAD AHEAD W/ FLASHING WARNING LIGHT	48"x48"	22	22	22	176.0									
G20-2	END ROAD WORK	48"x24"	22	22	22	220.0									
R11-2	ROAD CLOSED	48"x30"	22	22	22	352.0									
W1-6	LARGE ARROW	48"x24"	22	22	22	352.0									
W3-3	SIGNAL PICTORIAL	48"x48"	22	22	22	88.0									
R10-6	STOP HERE ON RED	24"x30"	22	22	22	220.0									
	TRAFFIC DRUMS						204								
	TYPE III BARRICADE-RT. (8')		11	11				88							
	TYPE III BARRICADE-LT. (8')		11	11					88						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER									808					
	RELOCATING PRECAST CONCRETE BARRIER										6303				
	TEMPORARY IMPACT ATTENUATION BARRIER												10		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)													10	
	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED		0.50	0.50											0.50
SUBTOTALS SITE NO. 1 (BOX 1 OF 2):						**256.0**	**23**	**8**	**8**		**730**	**2**		**2**	**0.50**
SUBTOTALS SITE NO. 2 (BOX 2 OF 2):						**2816.0**	**204**	**88**	**88**	**808**	**6303**		**10**	**10**	**0.50**
TOTALS:						**3072.0**	**227**	**96**	**96**	**808**	**7033**	**2**	**10**	**12**	**1.00**

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

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

QUANTITIES

USER: an5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\quantities\040750 QTY BOXES.dgn
PLOTTED: 8/29/2017 12:47
SCALE: 1.999796"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	35	76

(2) QUANTITIES

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL						
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (18") DITCH CHECKS (E-1)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	CU.YD.	LIN. FT.	CU. YD.
SITE NO. 1														
ENTIRE	SITE	CLEARING AND GRUBBING	0.30	0.60	0.30	30.6	0.06	0.30	0.30	6.1		3	214	52
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.21	0.42	0.21	21.4		1.00	1.00	20.4	250			
TOTALS SITE NO. 1:			**0.51**	**1.02**	**0.51**	**52.0**	**0.06**	**1.30**	**1.30**	**26.5**	**250**	**3**	**214**	**52**
SITE NO. 2														
ENTIRE	SITE	CLEARING AND GRUBBING	1.13	2.26	1.13	115.3	0.24	1.13	1.13	23.1		66	1203	89
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.79	1.58	0.79	80.6		1.00	1.00	20.4	1200			
TOTALS SITE NO. 2:			**1.92**	**3.84**	**1.92**	**195.9**	**0.24**	**2.13**	**2.13**	**43.5**	**1200**	**66**	**1203**	**89**
TOTALS:			**2.43**	**4.86**	**2.43**	**247.9**	**0.30**	**3.43**	**3.43**	**70.0**	**1450**	**69**	**1417**	**141**

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
WATTLE DITCH CHECKS.....9 LIN. FT. / 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.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
				TYPE II	6"	
				(WHITE/RED)	WHITE	YELLOW
	LIN. FT.		LIN. FT.	EACH	LIN. FT.	
SITE NO. 1						
REMOVAL OF PERMANENT PAVEMENT MARKINGS	1850					
CONSTRUCTION PAVEMENT MARKINGS		825				
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS						
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				4		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")					516	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")						516
TOTALS SITE NO. 1:	**1850**	**825**		**4**	**516**	**516**
SITE NO. 2						
REMOVAL OF PERMANENT PAVEMENT MARKINGS	17411					
CONSTRUCTION PAVEMENT MARKINGS		7606				
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS			6679			
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				31		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")					3882	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")						3882
TOTALS SITE NO. 2:	**17411**	**7606**	**6679**	**31**	**3882**	**3882**
TOTALS:	**19261**	**8431**	**6679**	**35**	**4398**	**4398**

NOTE: SITE NO. 1 IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
SITE NO. 2 IS A LOW TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT L. BURNS

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
SITE NO. 1		
237+24.07	PIPE CULVERT	14
TOTAL SITE NO. 1:		**14**
SITE NO. 2		
17+64	BOX CULVERT	15
24+09	PIPE CULVERT	8
45+61	BOX CULVERT	8
TOTAL SITE NO. 2:		**31**
TOTAL:		**45**

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS
		EACH	EACH
SITE NO. 1			
237+24	SITE NO. 1 HWY. 59	1	
TOTALS SITE NO. 1		**1**	
SITE NO. 2			
17+64	HWY. 59		1
24+09	HWY. 59	1	
30+41	HWY. 59	1	
36+17	HWY. 59		1
45+61	HWY. 59		1
49+33	HWY. 59		1
55+47	HWY. 59	1	
57+97	HWY. 59		1
62+23	HWY. 59		1
67+93	HWY. 59	1	
TOTALS SITE NO. 2		**4**	**6**
TOTALS:		**5**	**6**

NOTE: QUANTITIES SHOWN ABOVE SHALL INCLUDE REMOVAL & DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
SITE NO. 1				
235+41.00	236+41.00	MAIN LANES	32.00	355.56
238+16.00	239+16.00	MAIN LANES	32.00	355.56
TOTAL SITE NO. 1				**711.12**
SITE NO. 2				
07+21.61	08+21.61	MAIN LANES	26.00	288.89
11+50.39	12+50.39	MAIN LANES	26.00	288.89
53+76.00	54+76.00	MAIN LANES	26.00	288.89
58+20.00	59+20.00	MAIN LANES	26.00	288.89
60+62.00	61+62.00	MAIN LANES	26.00	288.89
63+22.00	64+22.00	MAIN LANES	26.00	288.89
65+65.00	66+65.00	MAIN LANES	26.00	288.89
68+28.00	69+28.00	MAIN LANES	26.00	288.89
TOTAL SITE NO. 2				**2311.12**
TOTAL:				**3022.24**

NOTE: AVERAGE MILLING DEPTH 1".

QUANTITIES

USER: on5106
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\quantities\040750 QTY BOXES.dgn
PLOTTED: 8/29/2017 14:19 SCALE: 1.999796"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
9-28-17			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	36	76
(2)	QUANTITIES			

STATE OF ARKANSAS
Hubert Burns
REGISTERED PROFESSIONAL ENGINEER
No. 9620
9/28/17
HUBERT BURNS

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	"B"	CONC. DITCH PAVING (TYPE SPECIAL)	CONC. DITCH PAVING * (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	FEET	SQ. YD.		SQ. YD.	M. GAL.
SITE NO. 1									
237+45.16	237+67.97	PIPE CULVERT AT STA. 237+43 - RT.	22.81	14.32		36.29		10.14	0.13
TOTALS SITE NO. 1:						36.29		10.14	0.13
SITE NO. 2									
17+29.12	17+66.81	R.C. BOX CULVERT AT STA. 17+64 - LT.	37.69	22.01	6.00	92.17		16.75	0.21
23+88.03	24+18.76	PIPE CULVERT AT STA. 24+09 - LT.	30.73	24.63		84.10		13.66	0.17
30+17.24	30+44.35	PIPE CULVERT AT STA. 30+41 - LT.	27.11	14.47		43.59		12.05	0.15
35+93.11	36+22.76	R.C. BOX CULVERT AT STA. 36+17- LT.	29.65	13.54	3.00	44.61		13.18	0.17
45+56.50	45+77.00	R.C. BOX CULVERT AT STA. 45+61- LT.	20.50	26.04	8.00	59.13		9.11	0.11
49+11.81	49+38.39	R.C. BOX CULVERT AT STA. 49+33- LT.	26.58	48.62	5.00	143.59		11.81	0.15
* 54+76.00	58+20.00	LANDSLIDE REPAIR SITE NO. 3	VAR.	VAR.			150.00	13.33	0.17
55+39.39	55+58.75	PIPE CULVERT AT STA. 55+47 - LT.	19.36	22.15		47.65		8.60	0.11
* 61+62.00	63+22.00	LANDSLIDE REPAIR SITE NO. 4	VAR.	VAR.			80.00	8.89	0.11
* 66+65.00	68+20.00	LANDSLIDE REPAIR SITE NO. 5	VAR.	VAR.			80.00	8.89	0.11
67+78.00	67+95.00	PIPE CULVERT AT STA. 67+93 - LT.	17.00	35.19	4.00	66.47		7.56	0.10
ENTIRE PROJECT TO BE USED IF & WHERE DIRECTED BY THE ENGINEER:				6.00			390.00	260.00	3.28
TOTALS SITE NO. 2:						581.31	700.00	383.83	4.84
TOTALS:						617.60	700.00	393.97	4.97

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
* QUANTITY ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	GUARDRAIL
			LIN. FT.
SITE NO. 2			
8+02	12+13	SITE NO. 2 HWY. 59 RT.	402
TOTAL:			402

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 24"	30"	(CLASS V) 48"	42"	48"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	30"	42"	48"	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.					EACH				LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
SITE NO. 1																			
237+43	CONST. R.C. PIPE CULVERT W/ FES LT.		86					1									13	0.16	FES-1, FES-2, PCC-1
SITE NO. 1 TOTALS:			86					1									13	0.16	
SITE NO. 2																			
17+64	CONST. R.C. PIPE CULVERT W/ FES RT.			46						1									FES-1, FES-2, PCC-1
24+09	CONST. DBL R.C. PIPE CULVERT W/ FES RT.		90					2									14	0.18	FES-1, FES-2, PCC-1
30+41	CONST. R.C. PIPE CULVERT RT. & LT.			38															PCC-1
36+17	CONST. R.C. BOX CULVERT RT.										4	4	49	17.44	2349	18	5	0.06	R-100X-0, RCB-1, RCB-2
45+61	CONST. R.C. PIPE CULVERT W. FES RT.					51				1							29	0.37	FES-1, FES-2, PCC-1
49+33	CONST. R.C. PIPE CULVERT W/ FES RT.			33						1							29	0.37	R-100X-0, RCB-1, RCB-2
55+47	CONST. R.C. PIPE CULVERT W/ FES RT.				51				1								25	0.32	FES-1, FES-2, PCC-1
57+97	CONST. BOX CULVERT										5	3	59	22.42	3401	19	5	0.06	R-100X-0, RCB-1, RCB-2
62+23	CONST. R.C. BOX CULVERT										6	4	76	36.71	5327	26	7	0.09	R-100X-0, RCB-1, RCB-2
66+00	CONST. R.C. PIPE CULVERT W/ FES RT. & LT.		60					2									13		
67+93	CONST. R.C. PIPE CULVERT W/ FES RT.	73					1										8	0.10	FES-1, FES-2, PCC-1
SITE NO. 2 TOTALS:		73	150	117	51	51	1	4	1	3				76.57	11077	63	135	1.55	
TOTALS:		73	236	117	51	51	1	5	1	3				76.57	11077	63	148	1.71	

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.

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH
SITE NO. 1				
236+41.00	238+16.00	SITE NO. 1 HWY. 59 LEFT	175	2
TOTALS SITE NO.1:			175	2
SITE NO. 2				
8+17.00	11+55.00	SITE NO. 2 HWY. 59 RIGHT	338	2
54+73.00	58+23.00	SITE NO. 2 HWY. 59 RIGHT	350	2
61+60.50	63+23.50	SITE NO. 2 HWY. 59 RIGHT	163	2
66+61.00	68+24.00	SITE NO. 2 HWY. 59 RIGHT	163	2
TOTALS SITE NO.2:			1014	8
TOTALS:			1189	10

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
SITE NO. 1				
* 236+41	236+16	LANDSLIDE REPAIR SITE NO. 1	1000	100
TOTALS SITE 1:			1000	100
SITE NO. 2				
* 8+22	11+50	LANDSLIDE REPAIR SITE NO. 2	600	
* 54+76	58+20	LANDSLIDE REPAIR SITE NO. 3	1600	100
* 61+62	623+22	LANDSLIDE REPAIR SITE NO. 4	500	50
* 66+65	68+20	LANDSLIDE REPAIR SITE NO. 5	600	
TOTALS SITE NO 2:			3300	150
TOTALS:			4300	250

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

LANDSLIDE REPAIR

STATION	STATION	LOCATION	LUMP SUM	* NEAT CEMENT GROUT
				CU. FT.
SITE NO. 1				
236+41	238+16	SITE NO. 1	1.00	20.00
TOTALS SITE NO. 1:				20.00
SITE NO. 2				
8+22	11+50	SITE NO. 2	1.00	20.00
54+76	58+20	SITE NO. 3	1.00	60.00
61+62	63+22	SITE NO. 4	1.00	20.00
66+65	68+28	SITE NO. 5	1.00	20.00
TOTALS SITE NO. 2:				120.00
TOTALS:				140.00

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

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-28-17				6	ARK.			
				JOB NO.		040750	37	76
				(2)	QUANTITIES			

STATE OF ARKANSAS
Hubert Burns
REGISTERED PROFESSIONAL ENGINEER
No. 9620
9/28/17
HUBERT BURNS

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP (GROUTED)	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.		SQ. YD.
SITE NO. 1				
237+43	OUTLET OF PIPE CULVERT	5		10
	* SITE NO. 1		80	160
	DIRECTED BY THE ENGINEER			
TOTALS SITE NO. 1:		**5**	**80**	**170**
SITE NO. 2				
10+33	OUTLET OF PIPE CULVERT	14		27
17+64	OUTLET OF PIPE CULVERT	25		50
24+09	OUTLET OF PIPE CULVERT	34		67
30+41	OUTLET OF PIPE CULVERT	60		119
36+17	OUTLET OF PIPE CULVERT	54		107
45+61	OUTLET OF PIPE CULVERT	51		102
49+33	OUTLET OF PIPE CULVERT	54		108
55+47	OUTLET OF PIPE CULVERT	9		17
57+97	OUTLET OF PIPE CULVERT	7		14
66+00	OUTLET OF PIPE CULVERT	13		26
67+93	OUTLET OF PIPE CULVERT	4		7
	* SITE NO. 2			
	TO BE USED IF AND WHERE		920	1840
	DIRECTED BY THE ENGINEER			
TOTALS SITE NO. 2:		**325**	**920**	**2484**
TOTALS:		**330**	**1000**	**2654**

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

NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
SITE NO. 1				
236+41	238+16	SITE NO. 1 HWY. 59 LEFT	2	2
TOTALS SITE NO. 1:			**2**	**2**
SITE NO. 2				
8+22	11+50	SITE NO. 2 HWY. 59 RIGHT	4	4
17+12	18+10	SITE NO. 2 HWY. 59 RIGHT	1	1
23+56	24+59	SITE NO. 2 HWY. 59 RIGHT	1	1
30+00	31+02	SITE NO. 2 HWY. 59 RIGHT	1	1
35+50	36+50	SITE NO. 2 HWY. 59 RIGHT	1	1
45+00	46+00	SITE NO. 2 HWY. 59 RIGHT	1	1
48+75	49+75	SITE NO. 2 HWY. 59 RIGHT	1	1
54+76	58+20	SITE NO. 2 HWY. 59 RIGHT	4	4
61+62	63+22	SITE NO. 2 HWY. 59 RIGHT	2	2
65+64	68+28	SITE NO. 2 HWY. 59 RIGHT	3	3
TOTALS SITE NO. 2:			**19**	**19**
TOTALS:			**21**	**21**

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
SITE NO. 1				
237+43	HWY. 59	9.08	35	17
TOTAL SITE NO. 1:				**17**
SITE NO. 2				
17+64	HWY. 59	12.83	23	16
24+09	HWY. 59	15.67	24	21
30+41	HWY. 59	10.83	24	14
36+17	HWY. 59	12.83	23	16
45+61	HWY. 59	11.83	22	14
49+33	HWY. 59	15.17	24	20
55+47	HWY. 59	10.25	25	14
57+97	HWY. 59	14.00	24	18
62+23	HWY. 59	15.17	22	18
67+93	HWY. 59	8.50	24	11
68+00	HWY. 59	9.08	23	11
TOTAL SITE NO. 2:				**173**
TOTAL:				**190**

AVG. DEPTH = 9"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	38	76

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19639
8/31/2017
HUBERT BURCH

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")			
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22
			FEET			FEET				FEET			TON	FEET			TON
SITE NO. 1																	
MAIN LANES																	
235+41.00	236+41.00	HWY. 59 - TRANSITION	100.00	83.00	83.00									35.50	394.44	220.00	43.39
236+41.00	238+16.00	HWY. 59	175.00	166.00	290.50	28.42	552.61	0.05	27.63	12.42	241.50	660.00	79.70	35.50	690.28	220.00	75.93
238+16.00	239+16.00	HWY. 59 - TRANSITION	100.00	83.00	83.00									35.50	394.44	220.00	43.39
ADDITIONAL FOR LEVELING																	
236+41.00	238+16.00	HWY. 59	175.00			16.00	311.11	0.17	52.89					16.00	311.11	110.00	17.11
ADDITIONAL FOR GUARDRAIL WIDENING																	
235+91.00	236+41.00	HWY. 59	50.00	7.75	3.88									3.50	19.44	220.00	2.14
238+16.00	238+66.00	HWY. 59	50.00	7.75	3.88									3.50	19.44	220.00	2.14
TOTALS SITE NO. 1:					**464.26**		**863.72**		**80.52**		**241.50**		**79.70**		**1829.15**		**184.10**
SITE NO. 2																	
MAIN LANES																	
7+22.00	8+22.00	HWY. 59 - TRANSITION	100.00	42.88	42.88									29.50	327.78	220.00	36.06
8+22.00	11+50.00	HWY. 59	328.00	85.75	281.26	24.42	889.97	0.05	44.50	11.42	416.20	660.00	137.35	29.50	1075.11	220.00	118.26
11+50.00	12+50.00	HWY. 59 - TRANSITION	100.00	42.88	42.88									29.50	327.78	220.00	36.06
53+76.00	54+76.00	HWY. 59 - TRANSITION	100.00	44.38	44.38									30.00	333.33	220.00	36.67
54+76.00	55+96.00	HWY. 59	120.00	88.75	106.50	24.42	325.60	0.05	16.28	11.42	152.27	660.00	50.25	30.00	400.00	220.00	44.00
55+96.00	57+00.00	HWY. 59	104.00	85.75	89.18	24.42	282.19	0.05	14.11	11.42	131.96	660.00	43.55	29.50	340.89	220.00	37.50
57+00.00	58+20.00	HWY. 59	120.00	88.75	106.50	24.42	325.60	0.05	16.28	11.42	152.27	660.00	50.25	30.00	400.00	220.00	44.00
58+20.00	59+20.00	HWY. 59 - TRANSITION	100.00	44.38	44.38									30.00	333.33	220.00	36.67
60+62.00	61+62.00	HWY. 59 - TRANSITION	100.00	42.88	42.88									29.50	327.78	220.00	36.06
61+62.00	63+22.00	HWY. 59	160.00	85.75	137.20	24.42	434.13	0.05	21.71	11.42	203.02	660.00	67.00	29.50	524.44	220.00	57.69
63+22.00	64+22.00	HWY. 59 - TRANSITION	100.00	42.88	42.88									29.50	327.78	220.00	36.06
65+65.00	66+65.00	HWY. 59 - TRANSITION	100.00	42.88	42.88									29.50	327.78	220.00	36.06
66+65.00	68+28.00	HWY. 59	163.00	85.75	139.77	24.42	442.27	0.05	22.11	11.42	206.83	660.00	68.25	29.50	534.28	220.00	58.77
68+28.00	69+28.00	HWY. 59 - TRANSITION	100.00	42.88	42.88									29.50	327.78	220.00	36.06
ADDITIONAL FOR LEVELING																	
8+22.00	11+50.00	HWY. 59	328.00			13.00	473.78	0.17	80.54					13.00	473.78	110.00	26.06
54+76.00	58+20.00	HWY. 59	344.00			13.00	496.89	0.17	84.47					13.00	496.89	110.00	27.33
61+62.00	63+22.00	HWY. 59	160.00			13.00	231.11	0.17	39.29					13.00	231.11	110.00	12.71
66+65.00	68+28.00	HWY. 59	163.00			13.00	235.44	0.17	40.02					13.00	235.44	110.00	12.95
ADDITIONAL FOR GUARDRAIL WIDENING																	
7+67.00	8+22.00	HWY. 59	55.00	7.75	4.26									3.50	21.39	220.00	2.35
11+50.00	12+05.00	HWY. 59	55.00	7.75	4.26									3.50	21.39	220.00	2.35
54+23.00	54+76.00	HWY. 59	53.00	7.75	4.11									4.00	23.56	220.00	2.59
58+20.00	58+73.00	HWY. 59	53.00	7.75	4.11									4.00	23.56	220.00	2.59
61+10.50	61+62.00	HWY. 59	51.50	7.75	3.99									3.50	20.03	220.00	2.20
63+22.00	63+73.50	HWY. 59	51.50	7.75	3.99									3.50	20.03	220.00	2.20
66+11.00	66+65.00	HWY. 59	54.00	7.75	4.19									3.50	21.00	220.00	2.31
68+20.00	68+74.00	HWY. 59	54.00	7.75	4.19									3.50	21.00	220.00	2.31
TOTALS SITE NO. 2:					**1239.55**		**4136.98**		**379.31**		**1262.55**		**416.65**		**7517.24**		**747.87**
TOTALS:					**1703.81**		**5000.70**		**459.83**		**1504.05**		**496.35**		**9346.39**		**931.97**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....95.1% MIN. AGGR.....4.9% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

USER: jd5103
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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-11-17				6	ARK.			
9-19-17				JOB NO.		040750	39	76
9-28-17				(2)	SUMMARY OF QUANTITIES AND REVISIONS			

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	SITE NO. 1 ER-0017(43)	SITE NO. 2 ER-0072(51)	TOTAL	UNIT
201	CLEARING	2	19	21	STATION
201	GRUBBING	2	19	21	STATION
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	1	4	5	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS		6	6	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL		402	402	LIN. FT.
206	FLOWABLE SELECT MATERIAL	14	31	45	CU. YD.
210	UNCLASSIFIED EXCAVATION	1000	3300	4300	CU. YD.
210	COMPACTED EMBANKMENT	100	150	250	CU. YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	464	1240	1704	TON
SS & 401	TACK COAT	81	379	460	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	77	399	476	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	3	18	21	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	175	711	886	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	9	37	46	TON
412	COLD MILLING ASPHALT PAVEMENT	711	2311	3022	SQ. YD.
601	MOBILIZATION	0.15	0.85	1.00	LUMP SUM
SP & 603	MAINTENANCE OF TRAFFIC	0.15	0.85	1.00	LUMP SUM
SS & 604	SIGNS	256	2816	3072	SQ. FT.
SS & 604	BARRICADES	16	176	192	LIN. FT.
SS & 604	TRAFFIC DRUMS	23	204	227	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		808	808	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER	730	6303	7033	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	825	7606	8431	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		6679	6679	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	1850	17411	19261	LIN. FT.
605	CONCRETE DITCH PAVING (TYPE B)		700	700	SQ. YD.
605	CONCRETE DITCH PAVING (TYPE SPECIAL)	36	581	617	SQ. YD.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		73	73	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	86	150	236	LIN. FT.
606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		51	51	LIN. FT.
606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		117	117	LIN. FT.
606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		51	51	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		1	1	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	4	5	EACH
606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		1	1	EACH
606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		3	3	EACH
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	17	173	190	TON
617	GUARDRAIL (TYPE A)	175	1014	1189	LIN. FT.
617	GUARDRAIL TERMINAL (TYPE 2)	2	8	10	EACH
620	LIME	1	4	5	TON
620	SEEDING	0.51	1.92	2.43	ACRE
SS & 620	MULCH COVER	1.81	4.05	5.86	ACRE
620	WATER	78.8	245.8	324.6	M. GAL.
621	TEMPORARY SEEDING	1.30	2.13	3.43	ACRE
621	SILT FENCE	214	1203	1417	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	52	89	141	CU. YD.
621	ROCK DITCH CHECKS	3	66	69	CU. YD.
621	WATTLE (18")	250	1200	1450	LIN. FT.
623	SECOND SEEDING APPLICATION	0.06	0.24	0.30	ACRE
624	SOLID SODDING	23	519	542	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	0.15	0.85	1.00	LUMP SUM
SP	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	0.50	0.50	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	516	3882	4398	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	516	3882	4398	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	4	31	35	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	2		2	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	2	10	12	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)		10	10	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		63	63	CU. YD.
802	CLASS S CONCRETE-ROADWAY		76.57	76.57	CU. YD.
SP	NEAT CEMENT GROUT	20	120	140	CU. FT.
804	REINFORCING STEEL-ROADWAY (GRADE 60)		11077	11077	POUND
816	FILTER BLANKET	170	2484	2654	SQ. YD.
816	DUMPED RIPRAP	80	920	1000	CU. YD.
816	DUMPED RIPRAP (GROUTED)	5	325	330	CU. YD.
SP	LANDSLIDE REPAIR (SITE NO. 1)	1.00		1.00	LUMP SUM
SP	LANDSLIDE REPAIR (SITE NO. 2)		1.00	1.00	LUMP SUM
SP	LANDSLIDE REPAIR (SITE NO. 3)		1.00	1.00	LUMP SUM
SP	LANDSLIDE REPAIR (SITE NO. 4)		1.00	1.00	LUMP SUM
SP	LANDSLIDE REPAIR (SITE NO. 5)		1.00	1.00	LUMP SUM

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
9/28/17
HUBERT BURNS

REVISIONS

DATE	REVISION	SHEET NUMBER
9-11-17	LANDSLIDE REPAIR SPECIAL PROVISION REVISED	39
9-19-17	REVISED LANDSLIDE REPAIR SPECIAL PROVISION AND ADDED SP PRICE ADJUSTMENT FOR ASPHALT BINDER & SS 400-4 TO GOVERNING SPECIFICATIONS LIST	3 & 39
9-28-17	ADDED ADDITIONAL QUANTITIES FOR CLEARING AND GRUBBING. MOVED QUANTITY BOX	36, 37, & 39

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	40	76

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
HUBERT BURNS
8/31/2017

SURVEY CONTROL COORDINATES

Project Name: s040750RA
Date: 6/5/2017
Coordinate System: ALL COORDINATES ARE ASSUMED
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	10000.0000	10000.0000	500.000	TV	60D NAIL
2	10262.9510	10000.0000	516.356	TV	60D NAIL
1100	10095.8950	9990.9730	506.238	TV	60D NAIL
1101	10155.9350	9991.0250	509.413	TV	60D NAIL
1102	10208.3590	9994.0280	512.398	TV	60D NAIL

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).

ALL DISTANCES ARE GROUND.

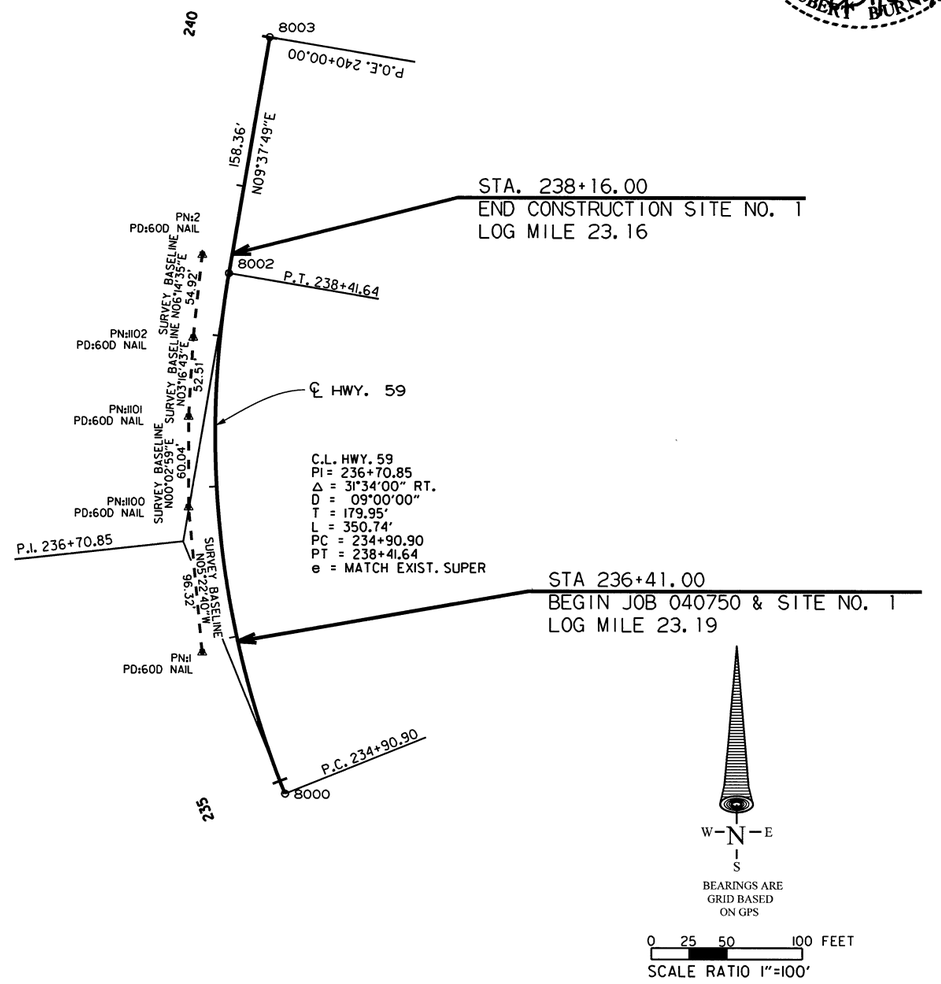
ASSUMED COORDINATES ARE STORED UNDER FILE NAME s040750RA.CTL

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED. REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ALL BEARINGS ARE GRID BASED ON ASSUMED BEARING.

040750 SITE NO. 1 CL - HIGHWAY 59

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	P.C.	234+90.90	9905.8079	10054.7075
	P.I.	236+70.85	10072.7251	9987.4843
8001	C.C.		10143.6338	10645.2359
8002	P.R.C.	238+41.64	10250.1345	10017.5875
8003	P.O.E.	240+00.00	10406.2629	10044.0796



SITE NO. 1
SURVEY CONTROL DETAILS

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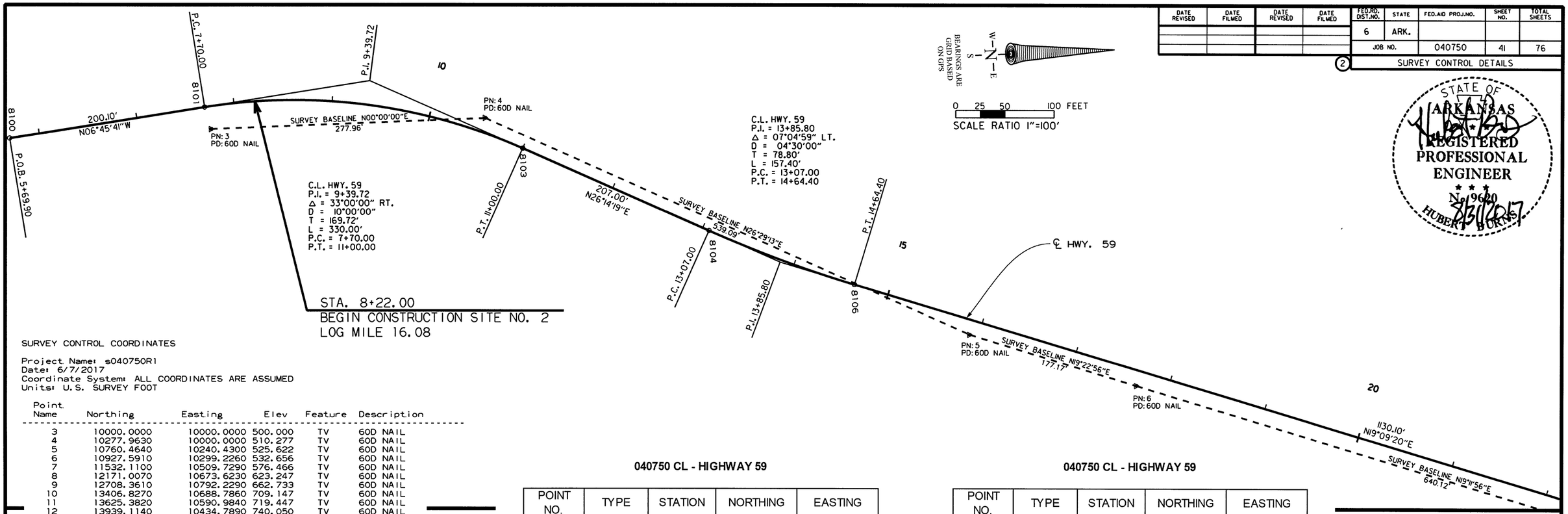
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	41	76

(2) SURVEY CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURNS

SURVEY CONTROL COORDINATES

Project Name: s040750R1
Date: 6/7/2017
Coordinate System: ALL COORDINATES ARE ASSUMED
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
3	10000.0000	10000.0000	500.000	TV	60D NAIL
4	10277.9630	10000.0000	510.277	TV	60D NAIL
5	10760.4640	10240.4300	525.622	TV	60D NAIL
6	10927.5910	10299.2260	532.656	TV	60D NAIL
7	11532.1100	10509.7290	576.466	TV	60D NAIL
8	12171.0070	10673.6230	623.247	TV	60D NAIL
9	12708.3610	10792.2290	662.733	TV	60D NAIL
10	13406.8270	10688.7860	709.147	TV	60D NAIL
11	13625.3820	10590.9840	719.447	TV	60D NAIL
12	13939.1140	10434.7890	740.050	TV	60D NAIL
13	14380.0560	10262.2140	772.284	TV	60D NAIL
14	14658.1620	9964.2580	800.881	TV	60D NAIL
15	15076.1400	9911.7060	830.969	TV	60D NAIL
16	15524.4940	10174.3320	866.526	TV	60D NAIL

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).

ALL DISTANCES ARE GROUND.

ASSUMED COORDINATES ARE STORED UNDER FILE NAME S040750RB.CTL

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED. REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

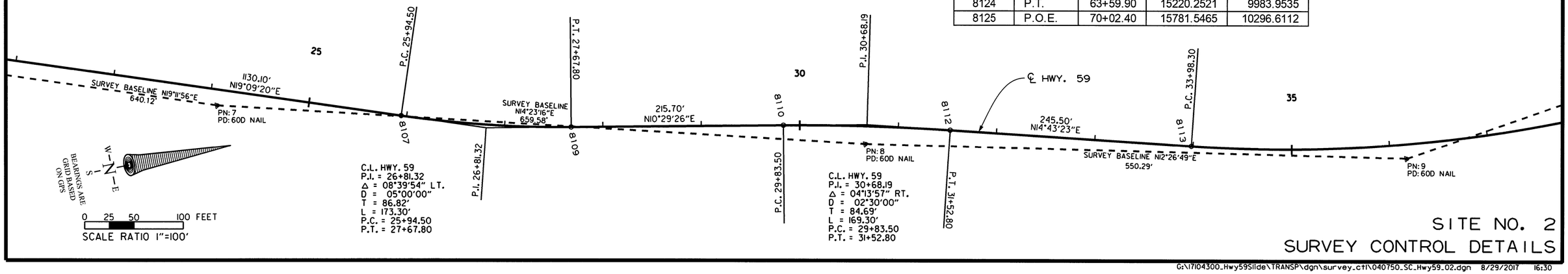
BASIS OF BEARING:
ALL BEARINGS ARE GRID BASED ON ASSUMED BEARING.

040750 CL - HIGHWAY 59

POINT NO.	TYPE	STATION	NORTHING	EASTING
8100	P.O.B.	5+69.90	9795.1210	10000.9738
8101	P.C.	7+70.00	9993.8293	9977.4151
	P.I.	9+39.72	10162.3674	9957.4333
8102	C.C.		10061.2866	10546.3902
8103	P.T.	11+00.00	10314.5982	10032.4676
8104	P.C.	13+07.00	10500.2690	10123.9845
	P.I.	13+85.80	10570.9499	10158.8229
8105	C.C.		11063.1817	8981.9383
8106	P.T.	14+64.40	10645.3872	10184.6801
8107	P.C.	25+94.50	11712.9146	10555.5053
	P.I.	26+81.32	11794.9235	10583.9926
8108	C.C.		12088.9309	9473.0339
8109	P.T.	27+67.80	11880.2882	10599.7996
8110	P.C.	29+83.50	12092.3828	10639.0730
	P.I.	30+68.19	12175.6556	10654.4926
8111	C.C.		11675.0993	12892.5945

040750 CL - HIGHWAY 59

POINT NO.	TYPE	STATION	NORTHING	EASTING
8112	P.T.	31+52.80	12257.5634	10676.0160
8113	P.C.	33+98.30	12495.0025	10738.4094
	P.I.	39+82.38	13059.9053	10886.8524
8114	C.C.		12859.0416	9353.0514
8115	P.T.	45+07.50	13567.5346	10597.9525
8116	P.C.	47+01.50	13736.1415	10501.9957
	P.I.	48+24.37	13842.9300	10441.2206
8117	C.C.		14208.4718	11331.9327
8118	P.T.	49+45.90	13961.6253	10409.4587
8119	P.C.	51+28.60	14143.7186	10360.7321
	P.I.	52+79.45	14289.4394	10321.7384
8120	C.C.		13995.6103	9807.2458
8121	P.T.	54+23.60	14397.0669	10216.0437
8122	P.C.	56+23.90	14539.9778	10075.6992
	P.I.	60+52.53	14845.7977	9775.3713
8123	C.C.		14941.4344	10484.4971
8124	P.T.	63+59.90	15220.2521	9983.9535
8125	P.O.E.	70+02.40	15781.5465	10296.6112



C.L. HWY. 59
P.I. = 39+82.38
Δ = 44°22'05" LT.
D = 04°00'00"
T = 584.08'
L = 1109.20'
P.C. = 33+98.30
P.T. = 45+07.50

SITE NO. 2
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	42	76

(2) SURVEY CONTROL DETAILS

BEARINGS ARE GRID BASED ON GPS

W – N – E – S

0 25 50 100 FEET

SCALE RATIO 1"=100'

C.L. HWY. 59
P.I. = 39+82.38
Δ = 44°22'05" LT.
D = 04°00'00"
T = 584.08'
L = 1109.20'
P.C. = 33+98.30
P.T. = 45+07.50

P.I. 39+82.38

40

SURVEY BASELINE N08°25'27"W
706.08'

P.T. 45+07.50

8115

45

℄ HWY. 59

194.00'
N29°38'42"W

PN: 10
PD: 60D NAIL

SURVEY BASELINE N24°06'30"W
239.44'

PN: 11
PD: 60D NAIL

P.C. 47+01.50

8116

SURVEY BASELINE N26°28'01"W
350.46'

C.L. HWY. 59
P.I. = 48+24.37
Δ = 14°39'50" RT.
D = 06°00'00"
T = 122.87'
L = 244.40'
P.C. = 47+01.50
P.T. = 49+45.90 BACK
49+40.10 AHEAD

P.I. 48+24.37

PN: 12
PD: 60D NAIL

8118

EQUATION
P.T. 49+45.90 BACK =
P.T. 49+40.10 AHEAD

50

188.50'
N14°58'51"W

8119

P.C. 51+28.60

SURVEY BASELINE N21°22'27"W
473.51'

PN: 13
PD: 60D NAIL

P.I. 52+79.45

C.L. HWY. 59
P.I. = 52+79.45
Δ = 29°30'00" LT.
D = 10°00'00"
T = 150.85'
L = 295.00'
P.C. = 51+28.60
P.T. = 54+23.60

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURKS

P.I. 60+52.53

60

℄ HWY. 59

PN: 14
PD: 60D NAIL

C.L. HWY. 59
P.I. = 60+52.53
Δ = 73°36'00" RT.
D = 10°00'00"
T = 428.63'
L = 736.00'
P.C. = 56+23.90
P.T. = 63+59.90

P.C. 56+23.90

8122

SURVEY BASELINE N07°09'58"W
421.27'

PN: 15
PD: 60D NAIL

8124

P.T. 63+59.90

65

SURVEY BASELINE N30°21'36"E
519.61'

642.50'
N29°07'09"E

PN: 16
PD: 60D NAIL

BEARINGS ARE GRID BASED ON GPS

W – N – E – S

0 25 50 100 FEET

SCALE RATIO 1"=100'

C.L. HWY. 59
P.I. = 52+79.45
Δ = 29°30'00" LT.
D = 10°00'00"
T = 150.85'
L = 295.00'
P.C. = 51+28.60
P.T. = 54+23.60

55

200.30'
N44°28'51"W

SURVEY BASELINE N46°58'25"W
401.58'

P.T. 54+23.60

8121

STA. 68+28.00
END JOB 040750 &
SITE NO. 2
LOG MILE 14.98

P.O.E. 70+02.40

8125

SITE NO. 2
SURVEY CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	43	76
(2) PLAN AND PROFILE SHEET - SITE NO. 1				

LANDSLIDE REPAIR (SITE NO. 1) - STA. 236+41 - STA. 238+16

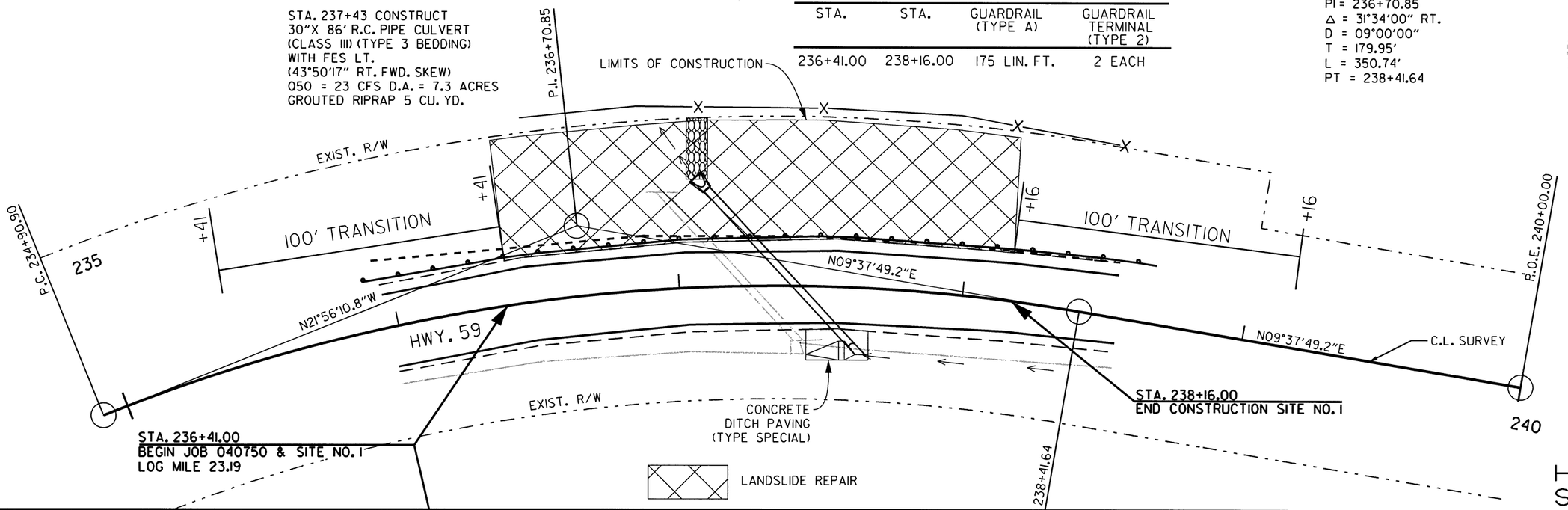
STA. 237+24 IN PLACE
30" X 74' R.C. PIPE CULVERT
43°50'17" RT. FWD. SKEW
(CLASS III) (TYPE 3 BEDDING)
WITH HEADWALLS LT. & RT.
REMOVE HEADWALLS & 5' PLASTIC PIPE
FILL & ABANDON PIPE

STA. 237+43 CONSTRUCT
30"X 86' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT.
(43°50'17" RT. FWD. SKEW)
050 = 23 CFS D.A. = 7.3 ACRES
GROUTED RIPRAP 5 CU. YD.

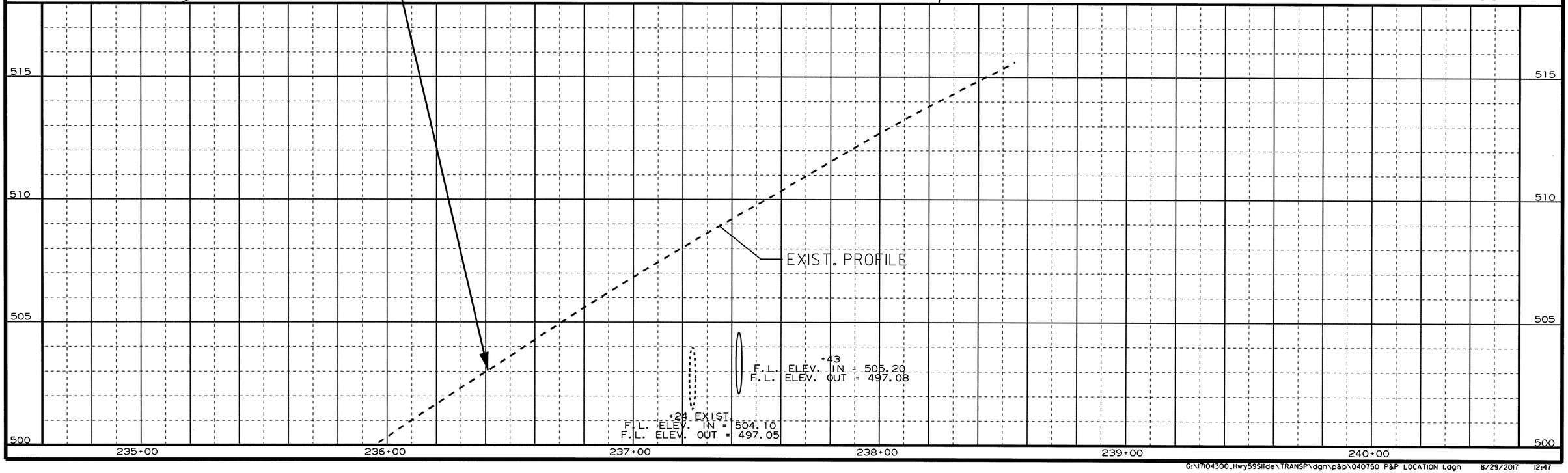
GUARDRAIL			
STA.	STA.	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)
236+41.00	238+16.00	175 LIN. FT.	2 EACH

C.L. HWY. 59
PI = 236+70.85
Δ = 31°34'00" RT.
D = 09°00'00"
T = 179.95'
L = 350.74'
PT = 238+41.64

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
HUBERT BORNE
8/31/2017



HWY. 59
SITE NO. 1



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	44	76

(2) PLAN AND PROFILE SHEET - SITE NO. 2

STA. 10+33 - IN PLACE
30" X 78' R.C. PIPE
WITH HEADWALLS LT. & RT.
RETAIN
GROUTED RIPRAP 14 CU. YD.

C.L. HWY. 59
P.I. = 9+39.72
Δ = 33°00'00" RT.
D = 10°00'00"
T = 169.72'
L = 330.00'
P.C. = 7+70.00
P.T. = 11+00.00

LANDSLIDE REPAIR (SITE NO. 2)- STA. 8+22 - STA. 11+50

10

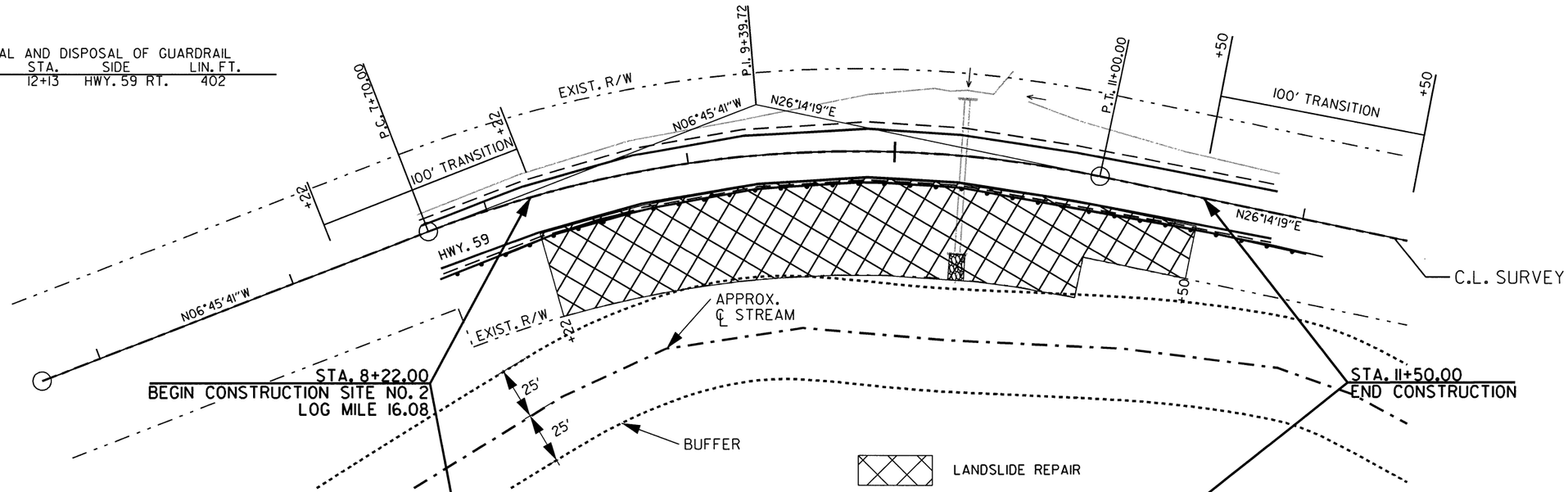
GUARDRAIL

STA.	STA.	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)
8+17.00	11+55.00	338 LIN. FT.	2 EACH

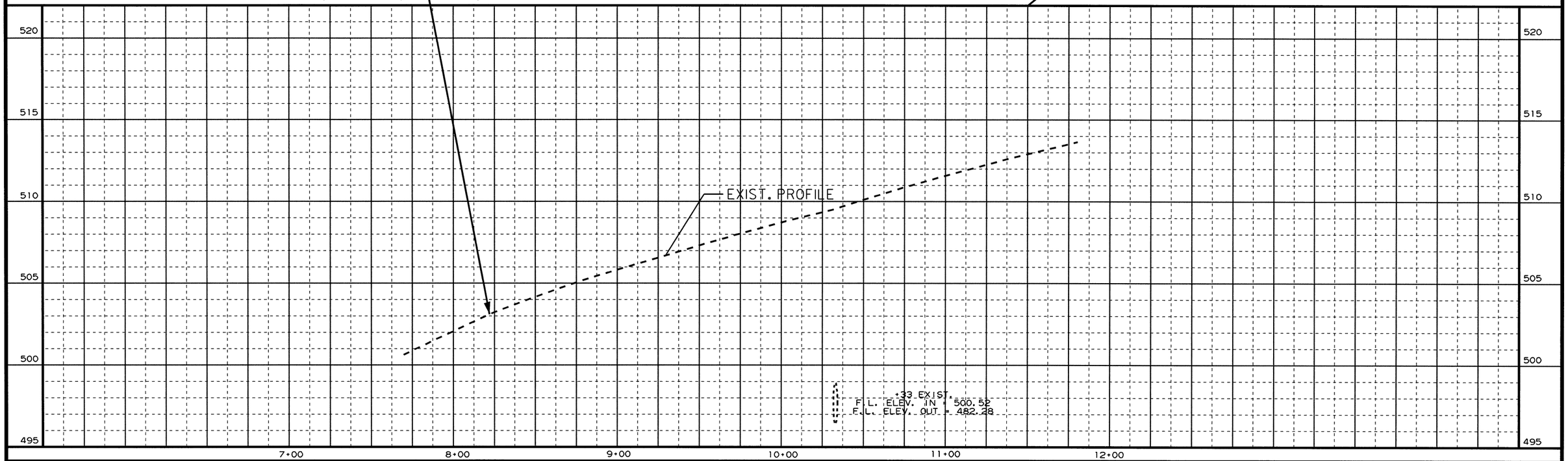
REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
8+02	12+13	HWY. 59 RT.	402

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
HUBERT BURKS
8/31/2017



HWY. 59
SITE NO. 2



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	45	76

(2) PLAN AND PROFILE SHEET - SITE NO. 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9630
HUBERT BURKS
8/31/2017

STA. 17+64 - IN PLACE
4' X 3' ROCK CULVERT &
36" R.C. CULVERT EXT.
61' OVERALL LENGTH
WITH HEADWALLS LT. & RT.
FILL AND ABANDON 34' RT.

STA. 17+64 - CONSTRUCT
48" X 46' R.C. PIPE CULVERT
WITH FES RT.
(CLASS III) (TYPE 3 BEDDING)
050 = 69 CFS D.A. = 22.2 ACRES
GROUTED RIPRAP = 25 CU. Y.D.

15 20

CONCRETE DITCH PAVING (TYPE SPECIAL)

EXIST. R/W — C.L. SURVEY

HWY. 59

N19^09'20"E

EXIST. R/W

STA. 17+12.67
BEGIN CONSTRUCTION
LOG MILE 15.93

STA. 18+10.15
END CONSTRUCTION
LOG MILE 15.91

BUFFER

25'

APPROX. ℄ STREAM

HWY. 59
SITE NO. 2

EXIST. PROFILE

+64 EXIST.
F.L. ELEV. IN = 526.06
F.L. ELEV. OUT = 517.82

+64
F.L. ELEV. IN = 526.06
F.L. ELEV. OUT = 525.56

545 540 535 530 525 520

16+00 17+00 18+00 19+00

USER: gn5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\p&p\040750 P&P LOCATION 2 17+64.dgn
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

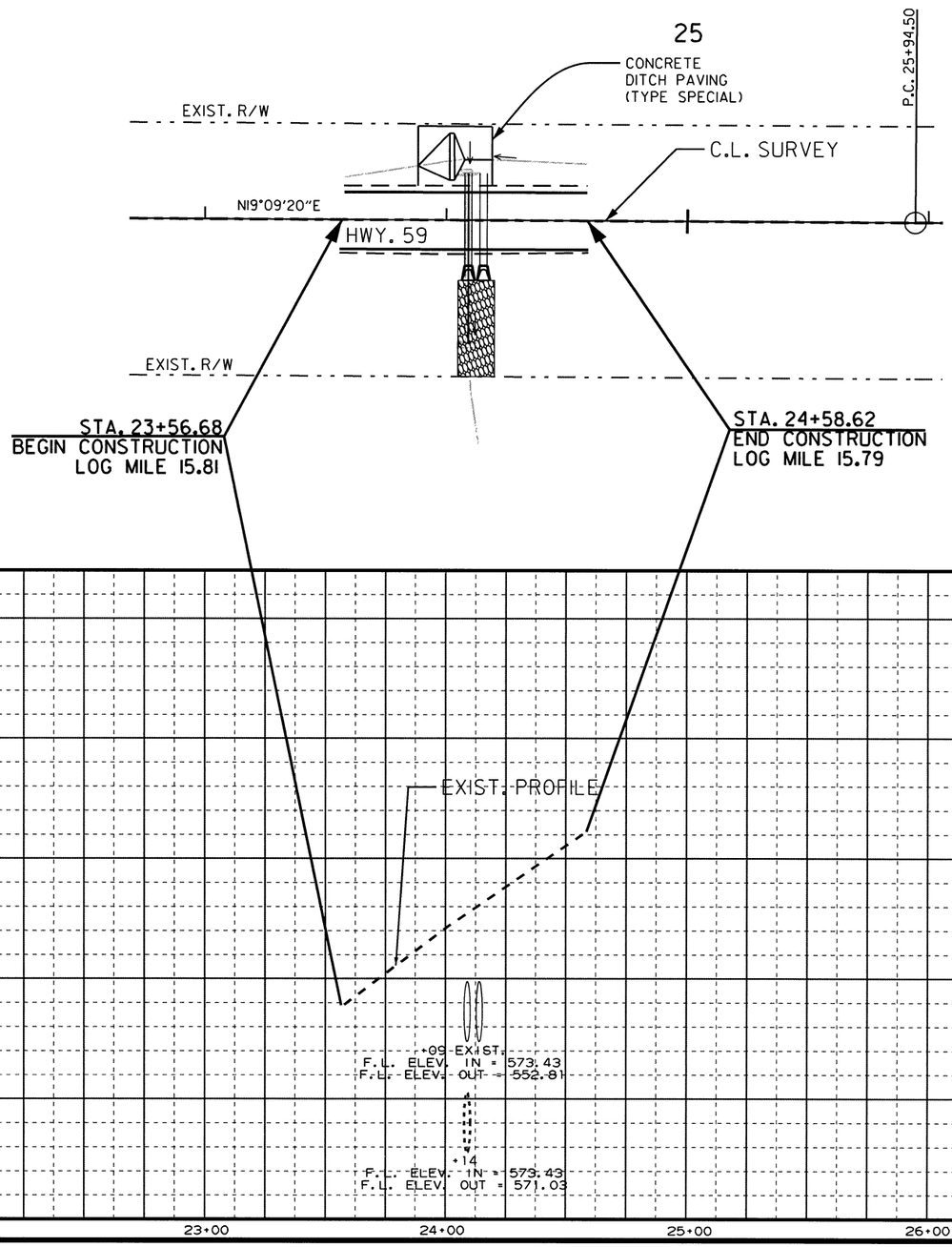
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	46	76

(2) PLAN AND PROFILE SHEET - SITE NO. 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19620
HUBERT BURKS
8/31/2017

STA. 24+09- IN PLACE
30" X 74' R.C. PIPE CULVERT
WITH HEADWALLS LT. & RT.
REMOVE 30' FROM LT.
AND FILL AND ABANDON 44' RT.

STA. 24+09 - CONSTRUCT
DOUBLE 30" X 45' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES RT.
Q50 = 61 CFS D.A. = 17.4 ACRES
GROUTED RIPRAP = 34 CU. YD.



HWY. 59
SITE NO. 2

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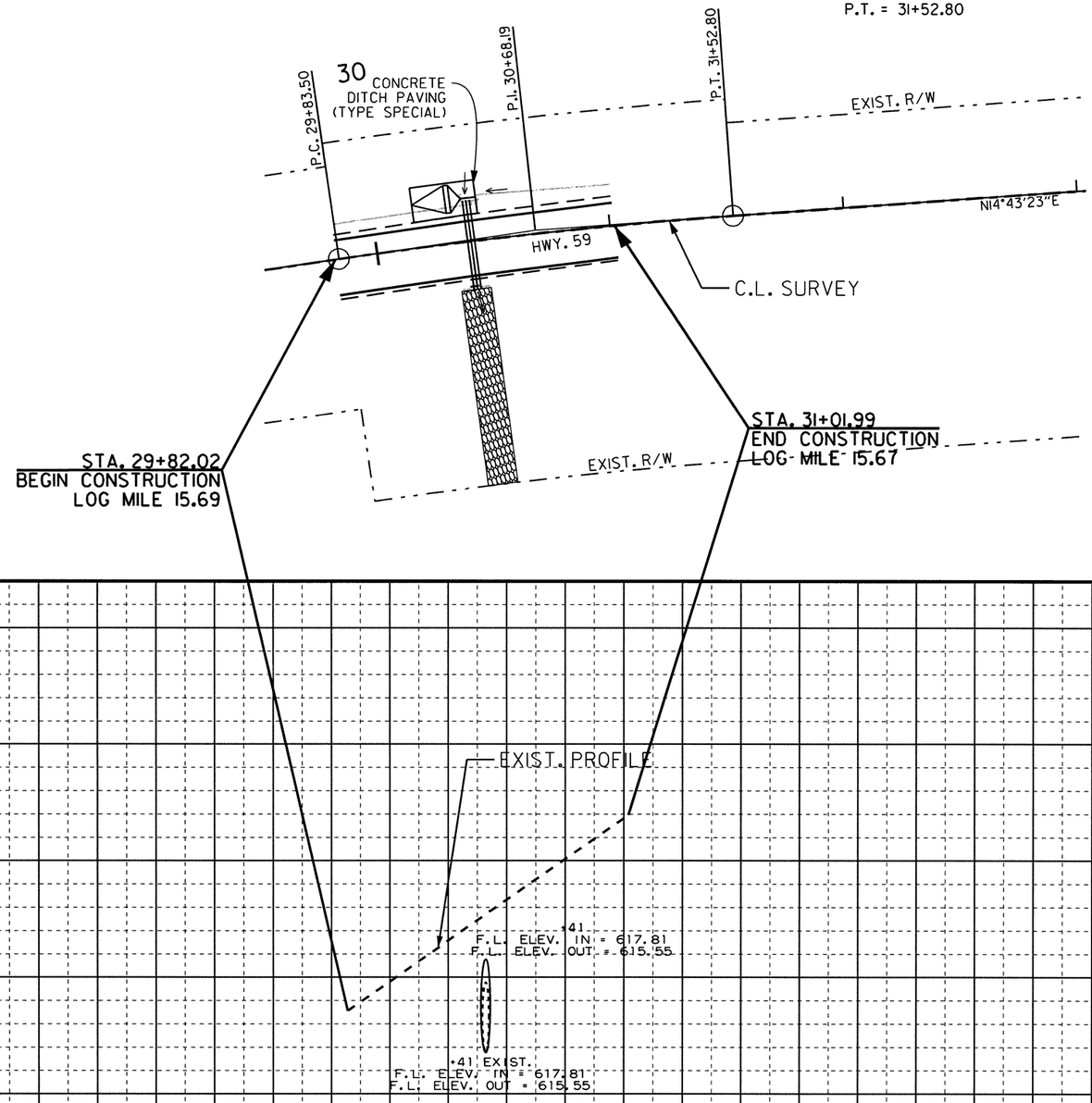
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	47	76
				(2)	PLAN AND PROFILE SHEET - SITE NO. 2			

STA. 30+41 - IN PLACE
36"X 38' R.C. PIPE CULVERT
WITH HEADWALLS LT. & RT.
REMOVE

STA. 30+41 - CONSTRUCT
48" X 38' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
050 = 46 CFS D.A. = 14.3 ACRES
GROUTED RIPRAP = 60 CU. YD.

C.L. HWY. 59
P.I. = 30+68.19
Δ = 04°13'57" RT.
D = 02°30'00"
T = 84.69'
L = 169.30'
P.C. = 29+83.50
P.T. = 31+52.80

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURNS



HWY. 59
SITE NO. 2

635 630 625 620 615 610

29+00 30+00 31+00 32+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	48	76
				(2) PLAN AND PROFILE SHEET - SITE NO. 2				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
HUBERT BURCH
8/31/2017

STA. 36+17 - IN PLACE
4' X 4' ROCK CULVERT AND
36" R.C. CULVERT EXT.
49' OVERALL LENGTH
WITH HEADWALLS LT. & RT.
REMOVE

STA. 36+17 - CONSTRUCT
4' X 4' X 49' R.C. BOX CULVERT
WITH 2:1 WINGWALLS RT.
Q50 = 75 CFS D.A. = 16.5 ACRES
GROUTED RIPRAP = 54 CU. YD.

C.L. HWY. 59
P.I. = 39+82.38
Δ = 44°22'05" LT.
D = 04°00'00"
T = 584.08'
L = 1109.20'
P.C. = 33+98.30
P.T. = 45+07.50

35 CONCRETE DITCH PAVING (TYPE SPECIAL)

EXIST. R/W

C.L. SURVEY

HWY. 59

N14°43'23"E

STA. 36+67.75
END CONSTRUCTION
LOG MILE 15.56

EXIST. R/W

STA. 35+54.16
BEGIN CONSTRUCTION
LOG MILE 15.58

HWY. 59
SITE NO. 2

EXIST. PROFILE

17 EXIST.
F.L. ELEV. IN = 656.46
F.L. ELEV. OUT = 649.24

17
F.L. ELEV. IN = 656.46
F.L. ELEV. OUT = 649.24

675 670 665 660 655 650

35+00 36+00 37+00

USER: on5106
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	49	76
(2) PLAN AND PROFILE SHEET - SITE NO. 2				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9620
8/31/2017
HUBERT BURGESS

C.L. HWY. 59
P.I. = 48+24.37
Δ = 14°39'50" RT.
D = 06°00'00"
T = 122.87'
L = 244.40'
P.C. = 47+01.50
P.T. = 49+45.90

STA. 45+61 - IN PLACE
4 'X 3' X 55' R.C. BOX CULVERT
WITH HEADWALLS LT. & RT.
REMOVE 37' FROM LT.
FILL AND ABANDON 18' RT.

STA. 45+61 - CONSTRUCT
48" X 51' R.C. PIPE CULVERT
W/FES RT.
(CLASS V)(TYPE 3 BEDDING)
Q50 = 36 CFS D.A. = 8.6 ACRES
GROUTED RIPRAP = 51 CU. YD.

STA. 45+03.80
BEGIN CONSTRUCTION
LOG MILE 15.42

STA. 46+16.73
END CONSTRUCTION
LOG MILE 15.40

45 P.T. 45+07.50

CONCRETE
DITCH PAVING
(TYPE SPECIAL)

EXIST. R/W

P.C. 47+01.50

C.L. SURVEY

HWY. 59

N29°38'42"W

EXIST. R/W

HWY. 59
SITE NO. 2

EXIST. PROFILE

+61
F.L. ELEV. IN = 714.95
F.L. ELEV. OUT = 714.55

+61 EXIST.
F.L. ELEV. IN = 714.95
F.L. ELEV. OUT = 708.64

730
725
720
715
710
705

45+00 45+00 46+00 47+00

USER: on5106
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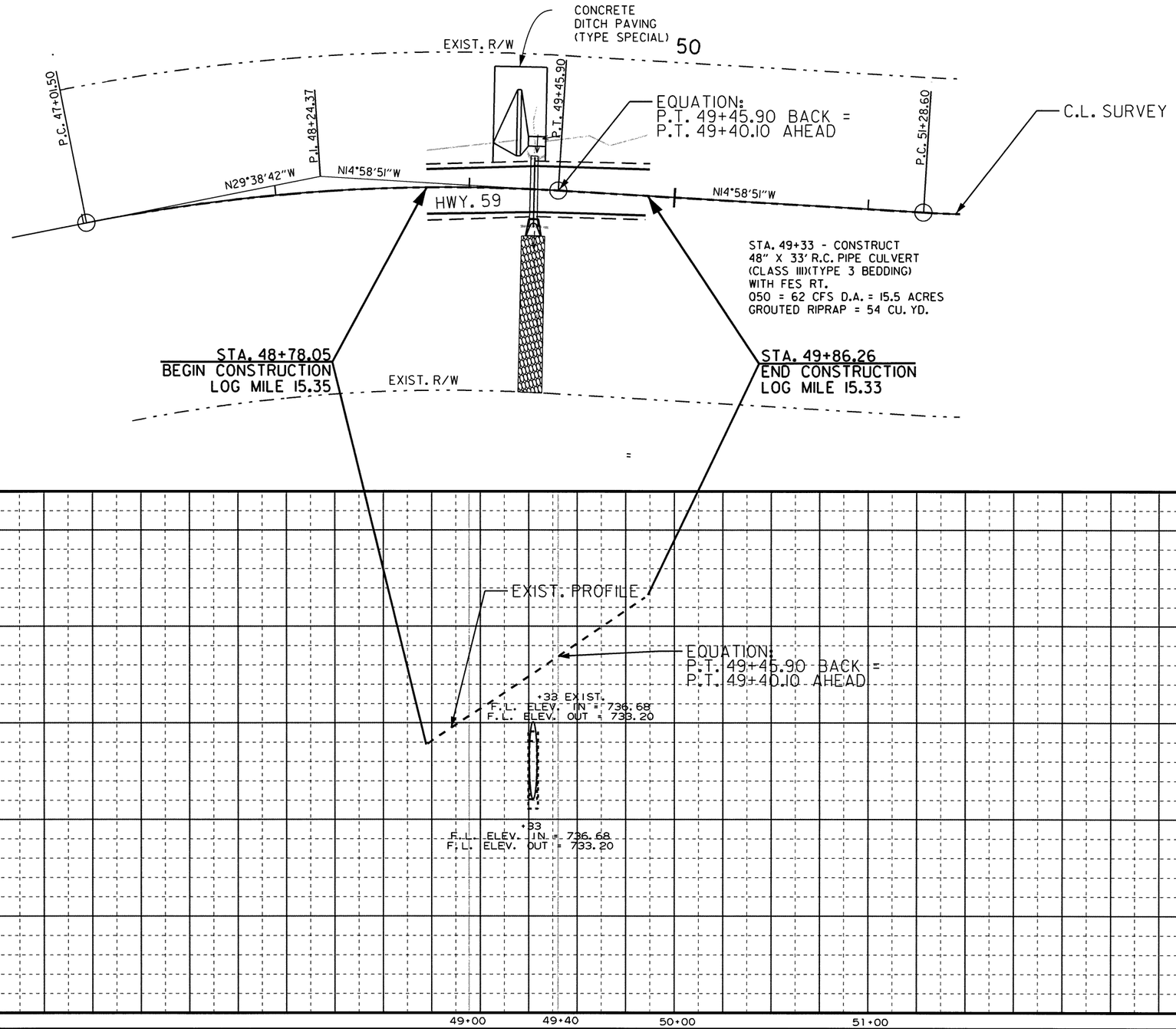
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	50	76

(2) PLAN AND PROFILE SHEET - SITE NO. 2

C.L. HWY. 59
P.I. = 48+24.37
Δ = 14°39'50" RT.
D = 06°00'00"
T = 122.87'
L = 244.40'
P.C. = 47+10.50
P.T. = 49+45.90

STA. 49+33 - IN PLACE
4' X 3' ROCK CULVERT AND
4' X 3' CULVERT EXT.
36' OVERALL LENGTH
WITH HEADWALLS LT. & RT.
REMOVE



HWY. 59
SITE NO. 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19620
HUBERT BURKS
8/31/2017

USER: on5106
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	51	76

(2) PLAN AND PROFILE SHEET - SITE NO. 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9629
HUBERT BURKS
8/31/2017

STA. 55+47 - IN PLACE
30" R.C. CULVERT AND
42" R.C. CULVERT EXT.
81' OVERALL LENGTH
WITH HEADWALLS LT.
REMOVE

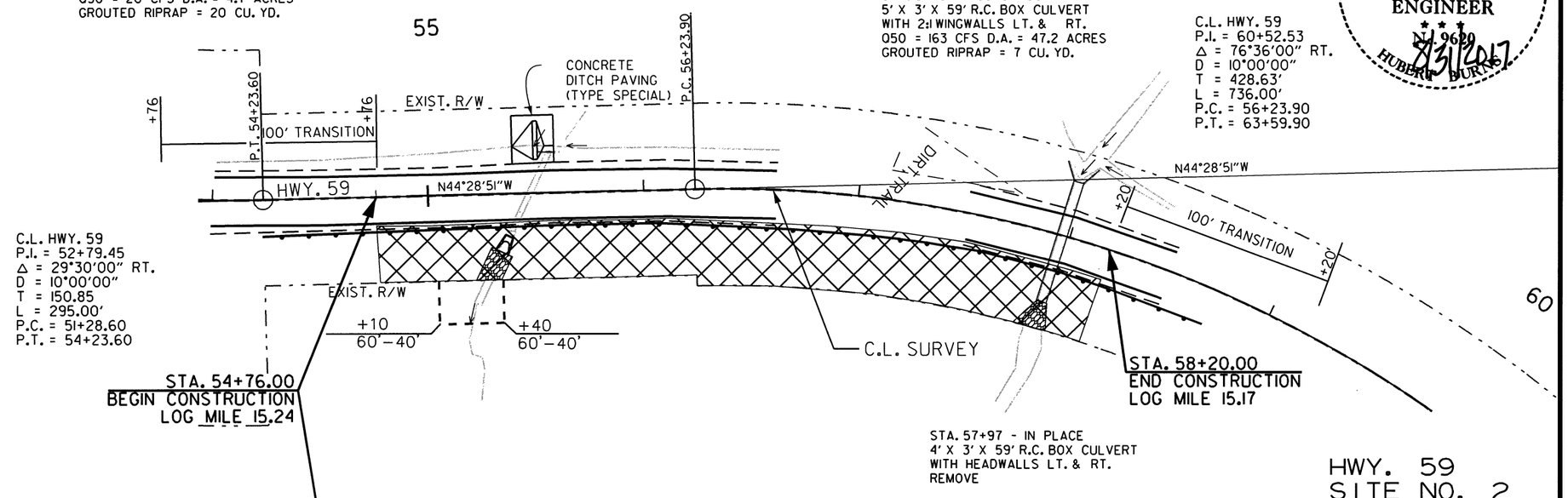
STA. 55+47 - CONSTRUCT
42" X 51' R.C. PIPE CULVERT
(29°03'32" LT. FWD. SKEW)
WITH FES RT.
(CLASS V) (TYPE 3 BEDDING)
050 = 20 CFS D.A. = 4.7 ACRES
GROUTED RIPRAP = 20 CU. YD.

LANDSLIDE REPAIR (SITE NO. 3) - STA. 54+76 - STA. 58+20

STA. 57+97 - CONSTRUCT
5' X 3' X 59' R.C. BOX CULVERT
WITH 2:1 WINGWALLS LT. & RT.
050 = 163 CFS D.A. = 47.2 ACRES
GROUTED RIPRAP = 7 CU. YD.

C.L. HWY. 59
P.I. = 60+52.53
Δ = 76°36'00" RT.
D = 10°00'00"
T = 428.63'
L = 736.00'
P.C. = 56+23.90
P.T. = 63+59.90

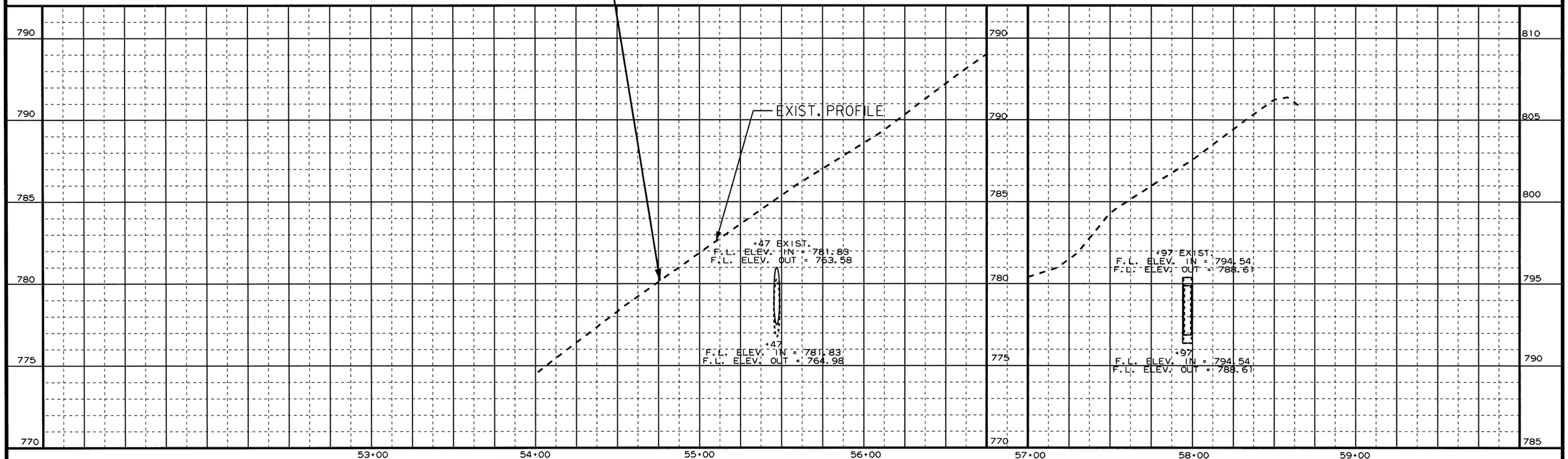
GUARDRAIL			
STA.	STA.	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)
54+73.00	58+23.00	350 LIN. FT.	2 EACH



C.L. HWY. 59
P.I. = 52+79.45
Δ = 29°30'00" RT.
D = 10°00'00"
T = 150.85
L = 295.00'
P.C. = 51+28.60
P.T. = 54+23.60

STA. 57+97 - IN PLACE
4' X 3' X 59' R.C. BOX CULVERT
WITH HEADWALLS LT. & RT.
REMOVE

HWY. 59
SITE NO. 2



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	52	76

(2) PLAN AND PROFILE SHEET - SITE NO. 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19639
HUBERT BURNS
8/31/2017

LANDSLIDE REPAIR (SITE NO. 4)- STA. 61+62 - STA. 63+22

STA. 62+23 - IN PLACE
6' X 4' X 76' R.C. BOX CULVERT
WITH HEADWALLS LT. & RT.
REMOVE
STA. 62+23 - CONSTRUCT
6' X 4' X 76' R.C. BOX CULVERT
(7°36'36" RT. FWD. SKEW)
WITH 2:1 WINGWALLS RT.
Q50 = 69 CFS D.A. = 21.6 ACRES
GROUTED RIPRAP = 10 CU. YD.

GUARDRAIL

STA.	STA.	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)
61+60.50	63+23.50	163 LIN. FT.	2 EACH

P.I. 60+52.53
N44°28'51"W
N29°07'09"E
60
65
100' TRANSITION
26+
26+
HWY. 59
10+
62
74+
22
22+
100' TRANSITION
EXIST. R/W
EXIST. R/W
P.T. 63+59.90
STA. 63+22.00
END CONSTRUCTION
LOG MILE 15.08
C.L. SURVEY
STA. 61+62.00
BEGIN CONSTRUCTION
LOG MILE 15.11

C.L. HWY. 59
P.I. = 60+52.53
Δ = 76°36'00" RT.
D = 10°00'00"
T = 428.63'
L = 736.00'
P.C. = 56+23.90
P.T. = 63+59.90

LANDSLIDE REPAIR

HWY. 59
SITE NO. 2

EXIST. PROFILE

+23 EXIST.
F.L. ELEV. IN = 820.58
F.L. ELEV. OUT = 814.38

+23
F.L. ELEV. IN = 820.58
F.L. ELEV. OUT = 814.38

840
835
830
825
820
815

61+00
62+00
63+00

USER: an5106
DESIGN FILE: G:\17104300_Hwy59Slide\TRANSP\dgn\p&p\040750 P&P LOCATION 2 62+23.dgn
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SCALE: 60H

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	53	76

(2) PLAN AND PROFILE SHEET - SITE NO. 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19620
HUBERT L. GRAY
3/31/2017

LANDSLIDE REPAIR (SITE NO. 5) - STA. 66+65 - STA. 68+20

STA. 66+00 - CONSTRUCT
30" X 60' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
GROUTED RIPRAP = 13 CU. YD.

STA. 67+93 CONSTRUCT
24" X 73' R.C. PIPE CULVERT
(CLASS III)(TYPE 3 BEDDING)
WITH FES RT.
Q50=36 CFS D.A. = 11.0 ACRES
GROUTED RIPRAP = 4 CU. YD.

65

70

+65

100' TRANSITION

+65

CONCRETE
DITCH PAVING
(TYPE SPECIAL)

EXIST. R/W

+28

100' TRANSITION

+28

HWY. 59

N29°07'09"E

+11

+74

C.L. SURVEY

EXIST. R/W

+65

+28

STA. 66+65.00
BEGIN CONSTRUCTION
LOG MILE 15.02

STA. 67+93 EXIST
24" X 73' R.C. PIPE CULVERT
WITH HEADWALLS LT. & RT.
REMOVE

STA. 68+28.00
END JOB 040750 & SITE NO. 2
LOG MILE 14.98

GUARDRAIL

STA.	STA.	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)
66+61.00	68+24.00	163 LIN. FT.	2 EACH

LANDSLIDE REPAIR

HWY. 59
SITE NO. 2

875
870
865
860
855
850

EXIST. PROFILE

+93 EXIST.
F.L. ELEV. IN = 861.63
F.L. ELEV. OUT = 848.77

+60
F.L. ELEV. IN = 855.71
F.L. ELEV. OUT = 851.18

65+00
66+00
67+00
68+00

USER: on5106
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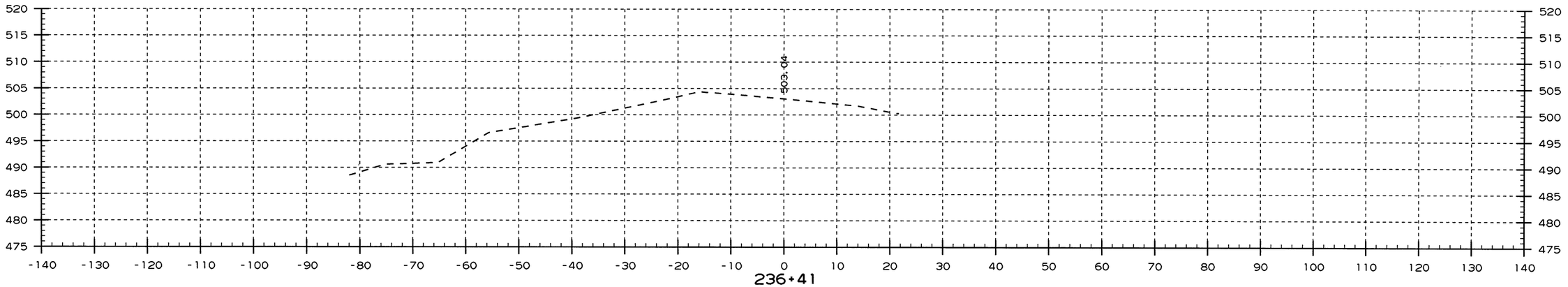
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

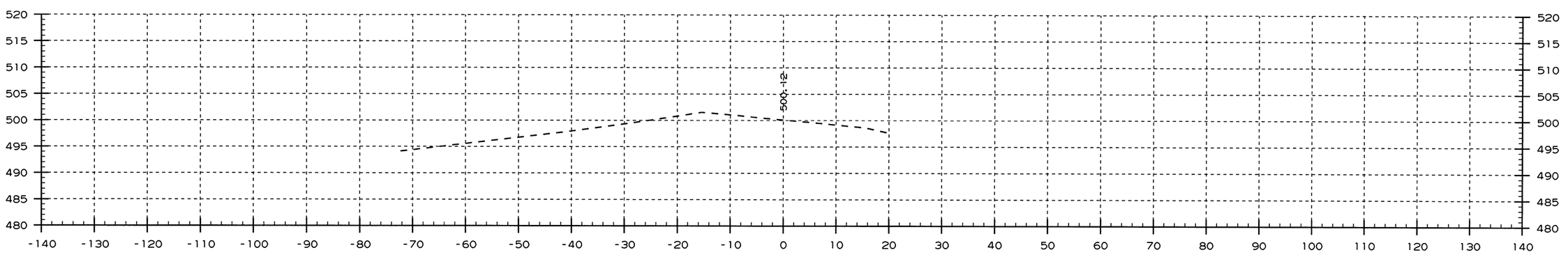
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	54	76

(2) CROSS SECTIONS



236+41

BEGIN LANDSLIDE REPAIR SITE NO. 1



235+97

CROSS SECTION STA. 235+97 TO STA. 236+47

USER: jd503
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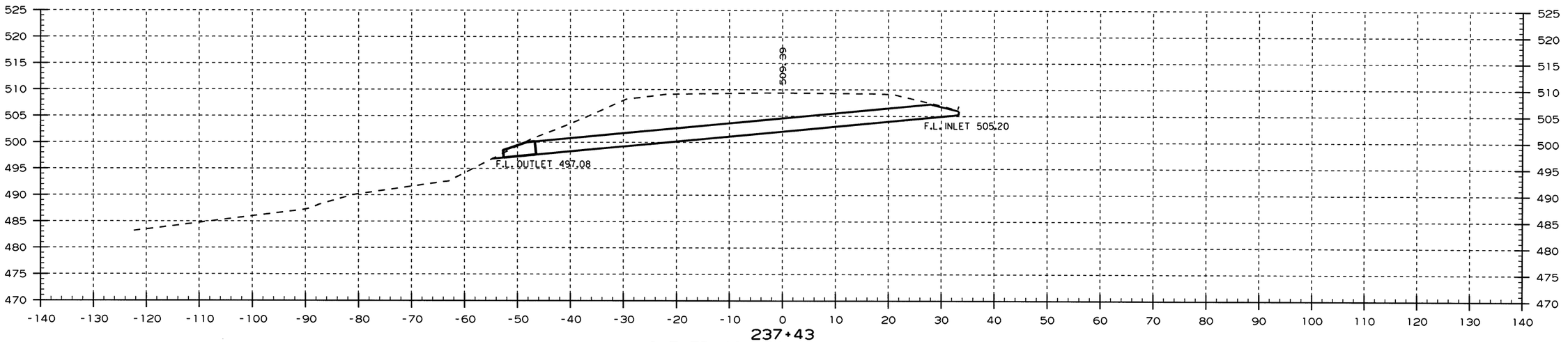
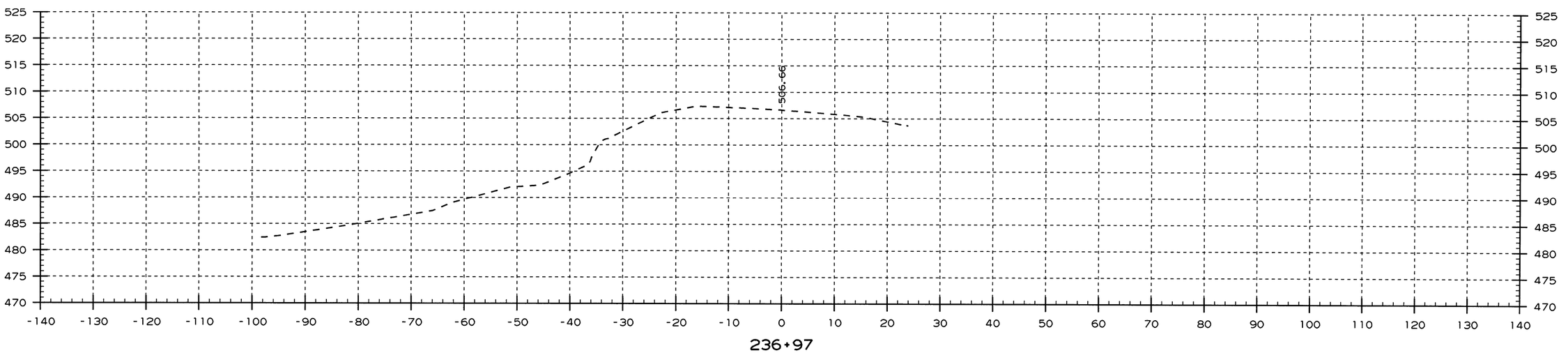
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	55	76
				(2)		CROSS SECTIONS		

STA. 237+24 - IN PLACE
30"X 74' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH HEADWALLS LT. & RT.
REMOVE HEADWALLS & 5' PLASTIC PIPE
FILL & ABANDON PIPE

STA. 237+43 - CONSTRUCT
30"X 86' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT.
Q50 = 23 CFS D.A. = 7.3 ACRES
GROUTED RIPRAP = 5 CU. YD.



237+43
SKEWED 43° 50' 17" RT. FWD.



236+97

CROSS SECTION STA. 236+97 TO STA. 237+43

USER: jd5103
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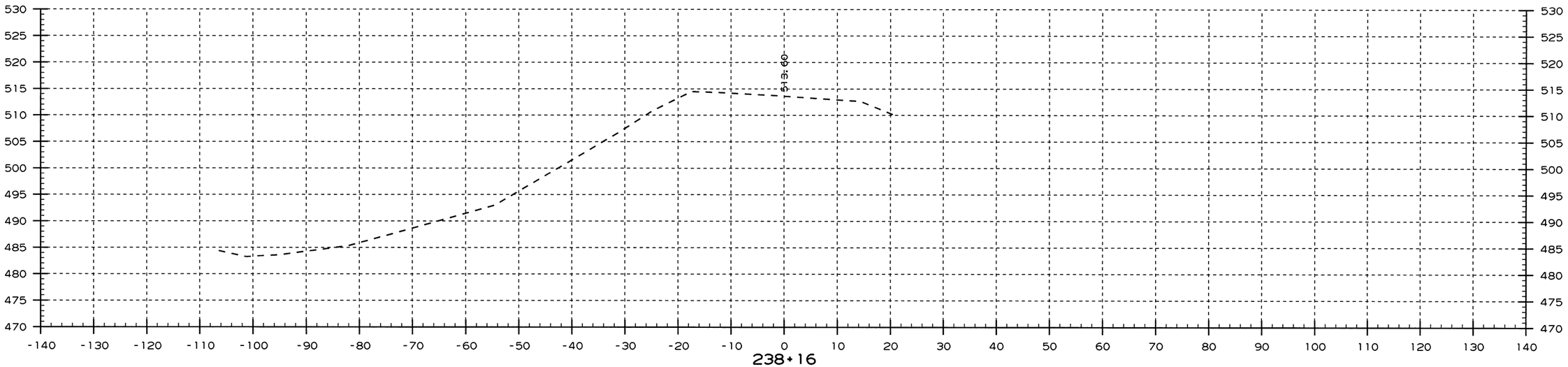
PLOTTED: 8/18/2017 16:57 SCALE: 19.999761

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

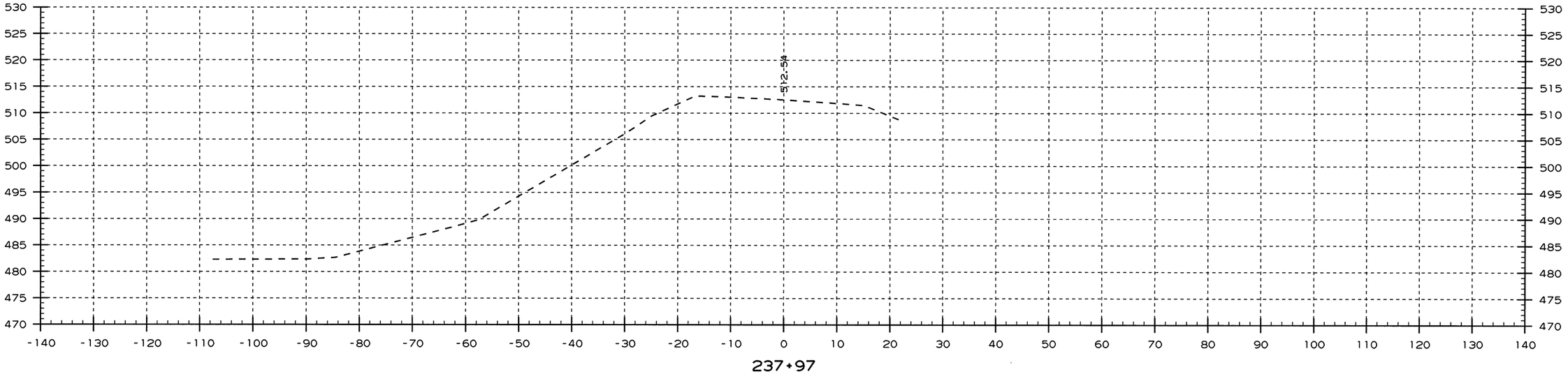
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	56	76

(2) CROSS SECTIONS



238+16

END LANDSLIDE REPAIR SITE NO. 1



237+97

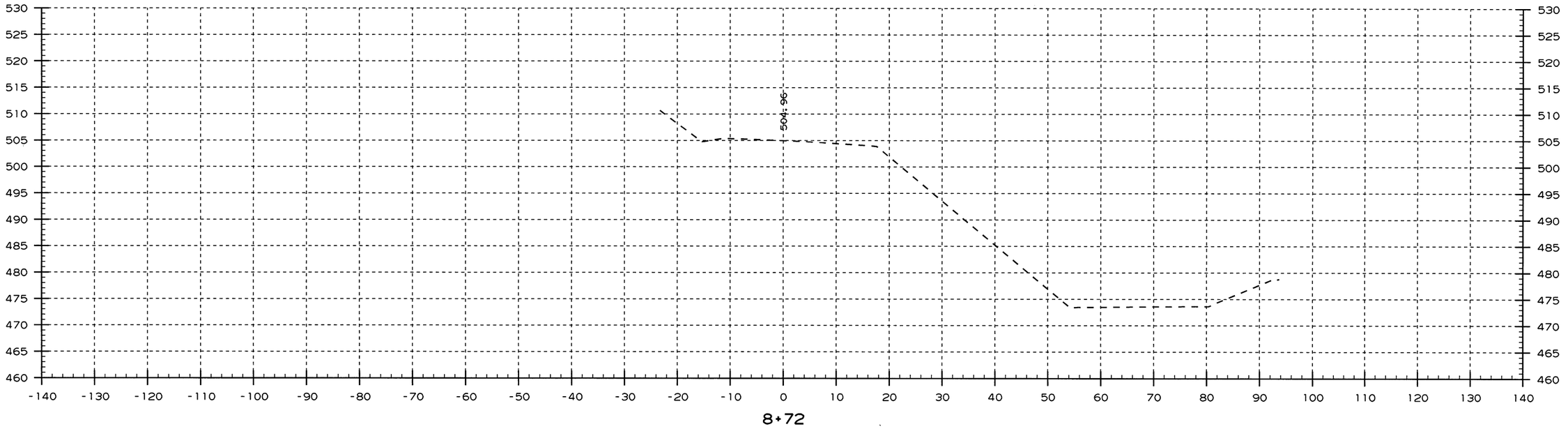
CROSS SECTION STA. 237+97 TO STA. 238+47

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 1.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.997961

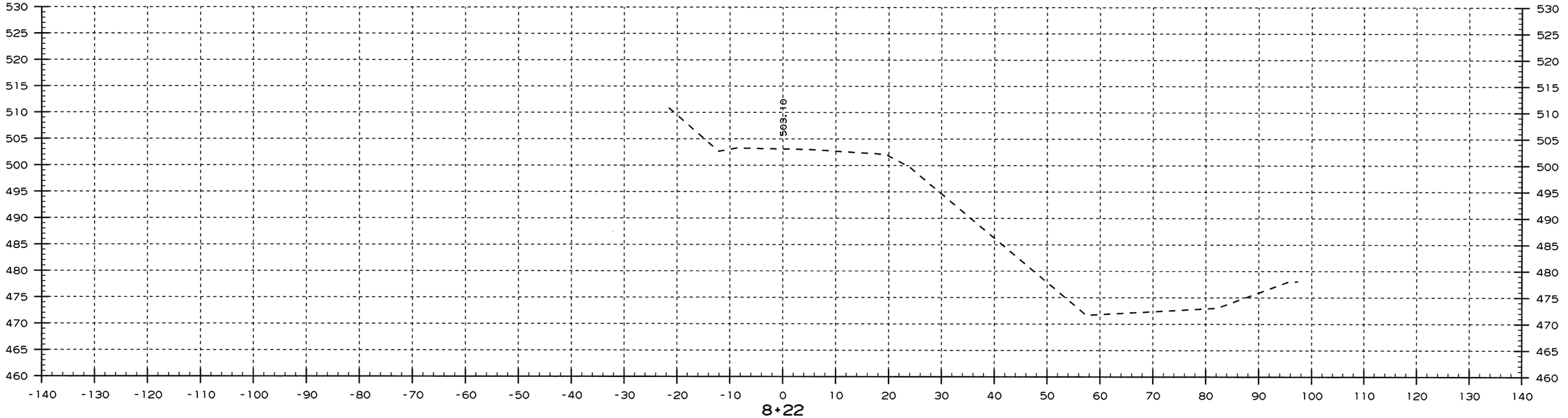
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	57	76

(2) CROSS SECTIONS



8+72



8+22

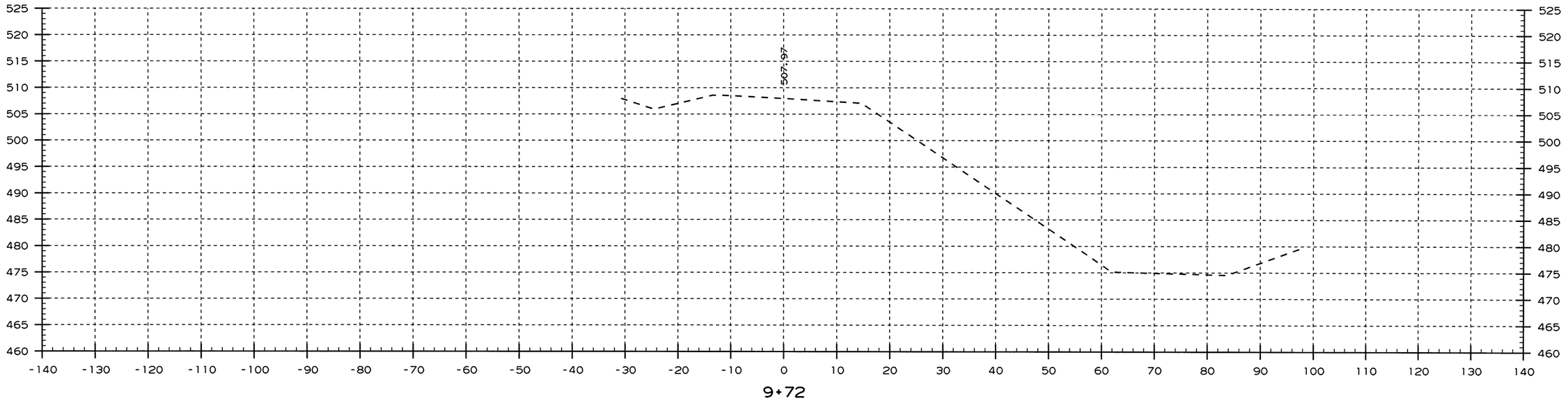
BEGIN LANDSLIDE REPAIR SITE NO. 2

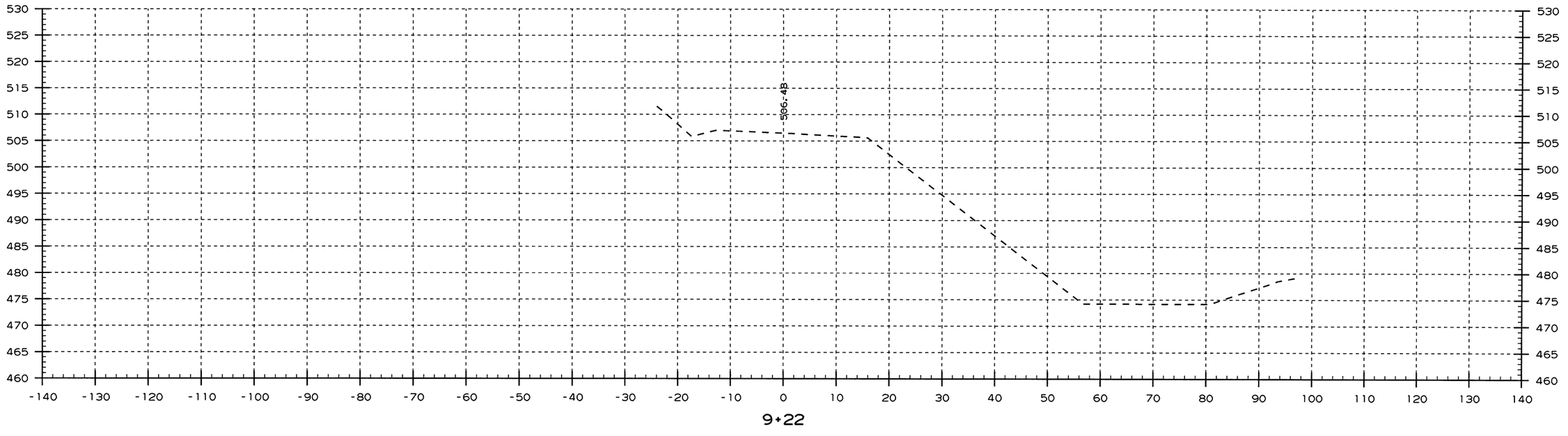
CROSS SECTION STA. 8+22 TO STA. 8+72

USER: jd503
DESIGN FILE: \\ROGFILE\Jobfiles\1710430O_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.99796l

\\ROGFILE\Jobfiles\1710430O_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn 8/18/2017 16:57

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	58	76
				(2)	CROSS SECTIONS			



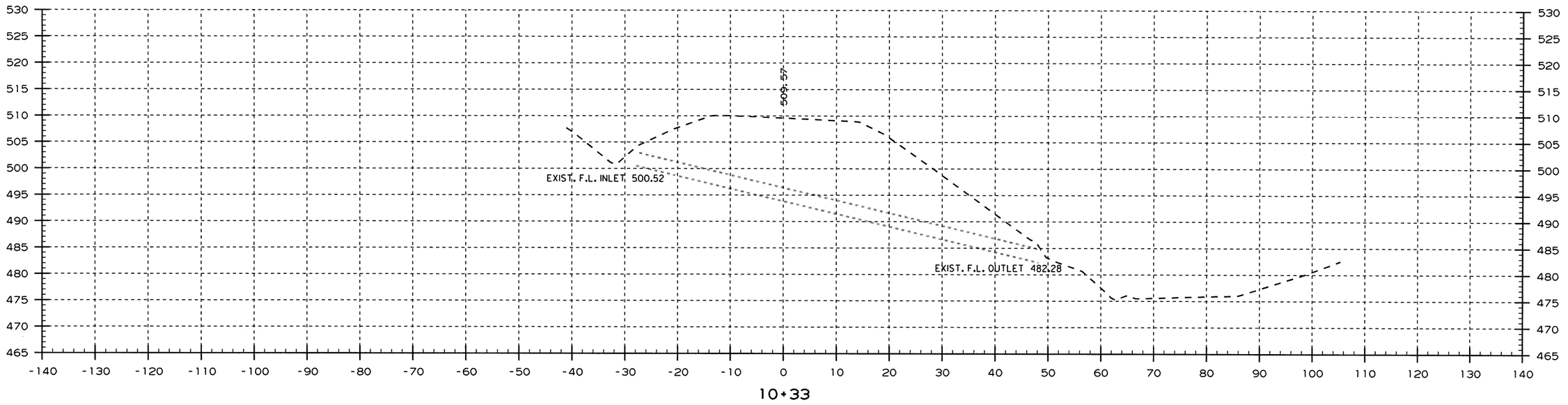


CROSS SECTION STA. 9+22 TO STA. 9+72

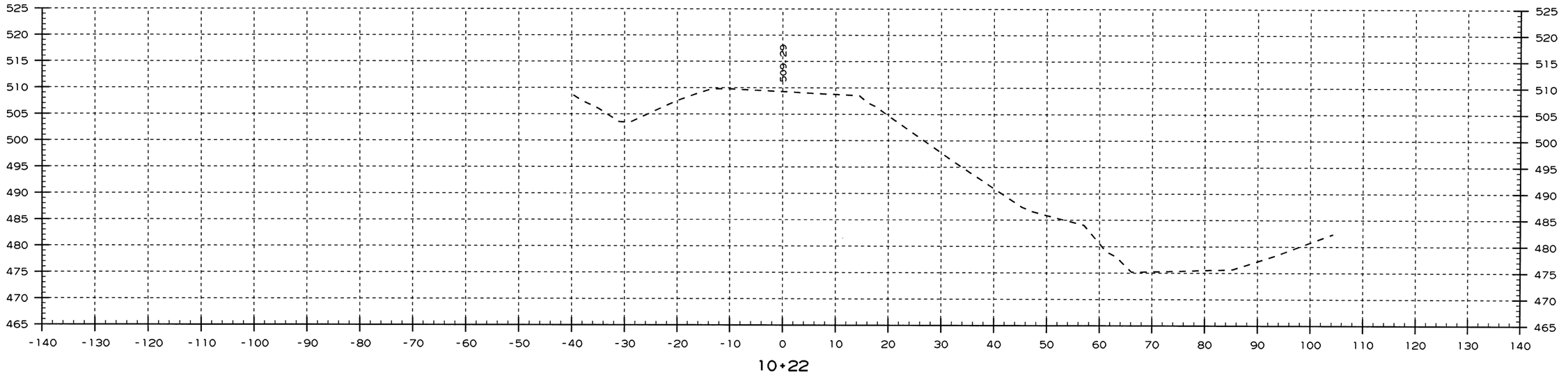
USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.99796:1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	59	76
				(2)	CROSS SECTIONS			

STA. 10+33 - IN PLACE
30" X 78' R.C. PIPE
WITH HEADWALLS LT. & RT.
RETAIN
GROUTED RIPRAP = 14 CU. YD.



10+33



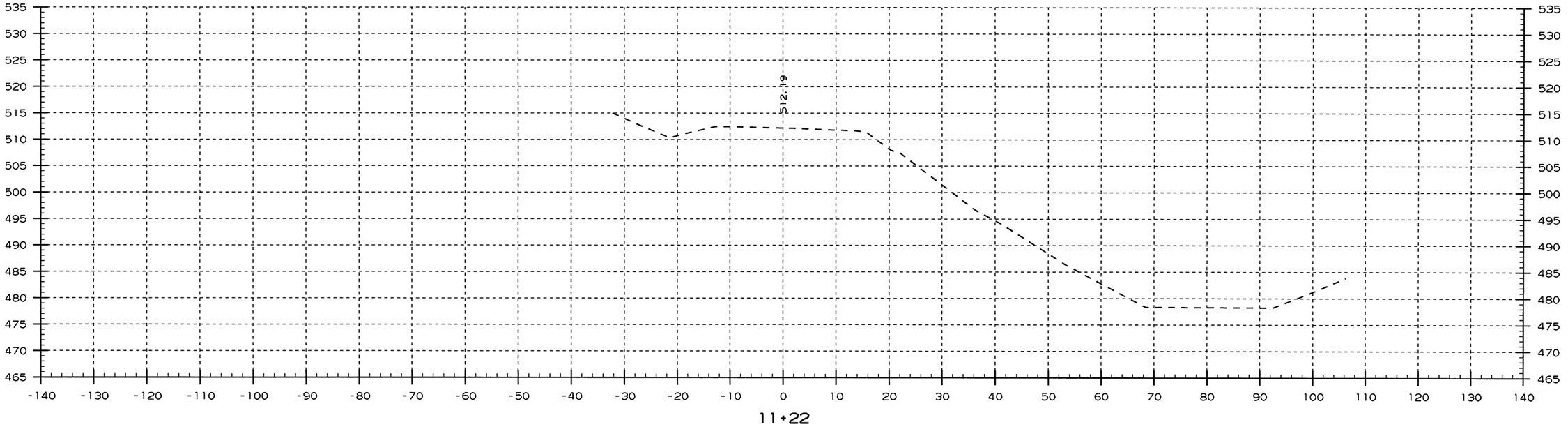
10+22

CROSS SECTION STA. 10+22 TO STA. 10+33

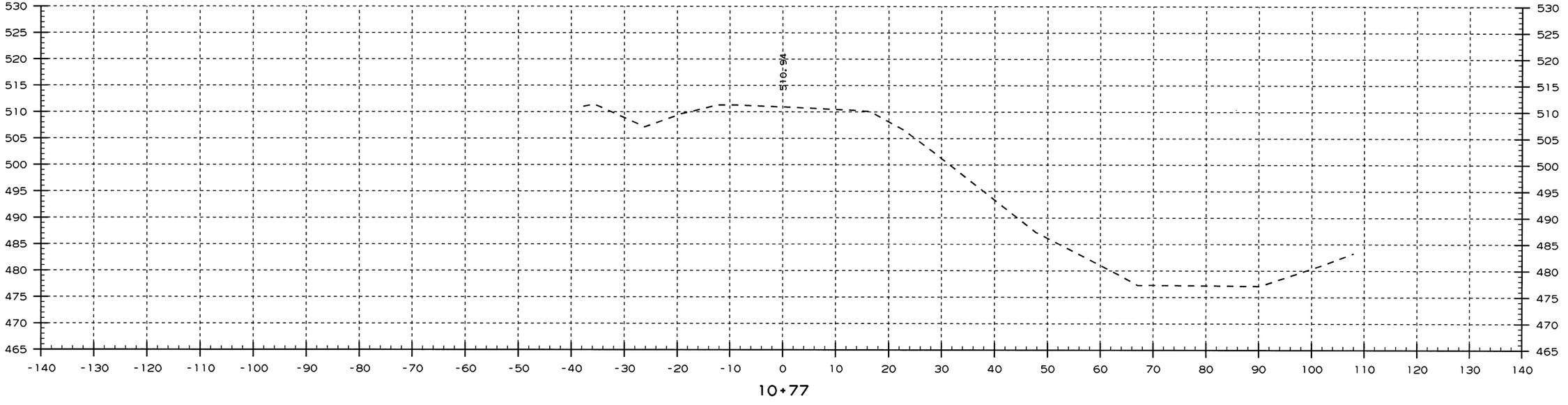
USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\1710430O_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/8/2017 16:57 SCALE: 19.997961

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	60	76

(2) CROSS SECTIONS



11+22



10+77

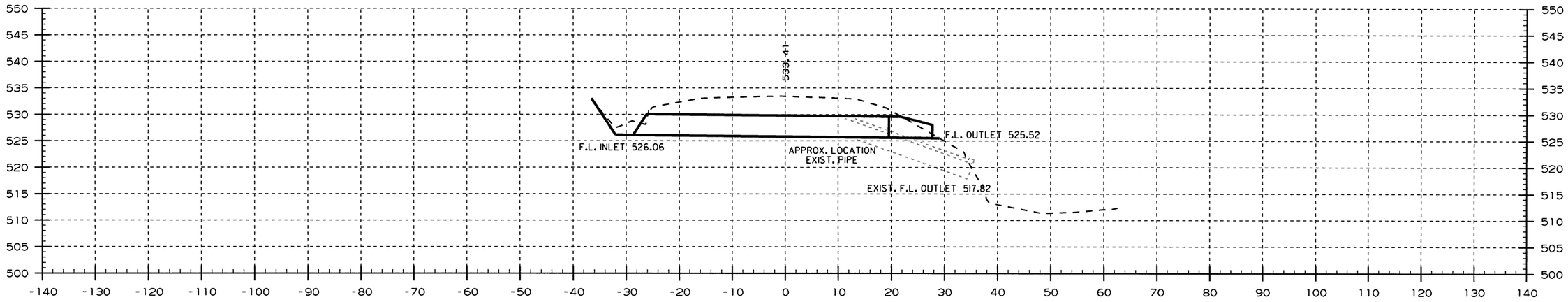
CROSS SECTION STA. 10+77 TO STA. 11+22

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.99796sf

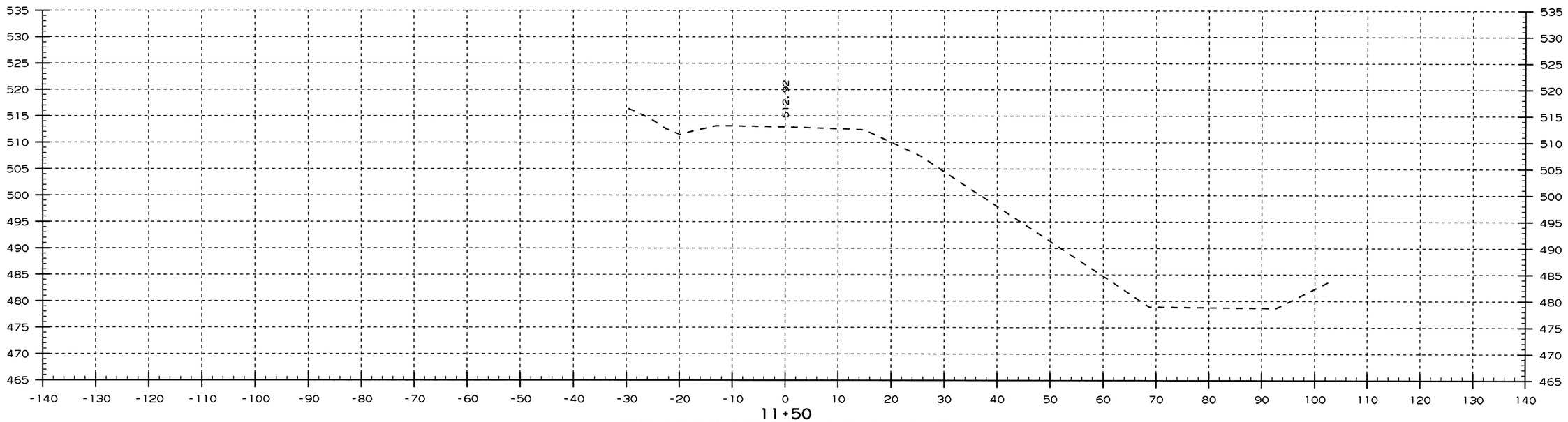
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	61	76
				(2)		CROSS SECTIONS		

STA. 17+64 IN PLACE
4'X3' ROCK CULVERT &
36" R.C. CULVERT EXT.
61' OVERALL LENGTH
WITH HEADWALLS LT. & RT.
REMOVE

STA. 17+64 - CONSTRUCT
48" X 46' R.C. PIPE CULVERT
WITH FES RT.
(CLASS III)(TYPE 3 BEDDING)
Q50 = 69 CFS D.A. = 22.2 ACRES
GROUTED RIPRAP = 25 CU. YD.



17+64



11+50

END LANDSLIDE REPAIR SITE NO. 2

CROSS SECTION STA. 11+50 TO STA. 17+64

USER: jd503
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.99796#

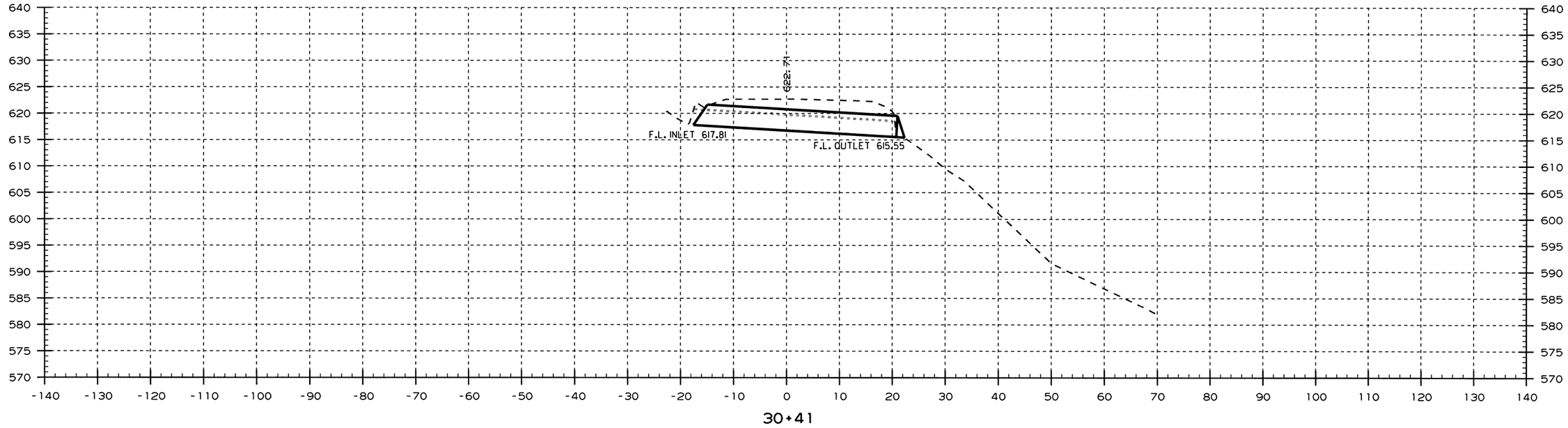
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	62	76

(2) CROSS SECTIONS

STA. 30+41 - IN PLACE
36" X 38' R.C. PIPE CULVERT
WITH HEADWALLS LT. & RT.
REMOVE

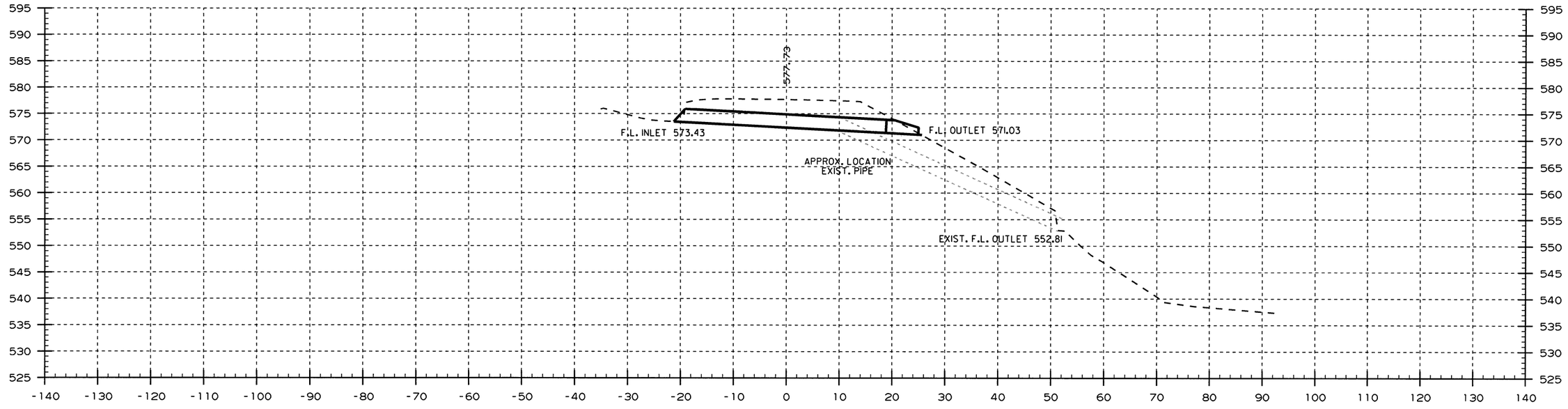
STA. 30+41 - CONSTRUCT
48" X 38' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
Q50 = 46 CFS D.A. = 14.3 ACRES
GROUTED RIPRAP = 60 CU. YD.



30+41

STA. 24+09 - IN PLACE
30" X 74' R.C. PIPE CULVERT
WITH HEADWALLS LT. & RT.
REMOVE 30' FROM LT.
AND FILL AND ABANDON 45' RT.

STA. 24+09 - CONSTRUCT
DOUBLE 30" X 45' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES RT.
Q50 = 61CFS D.A. = 17.4 ACRES
GROUTED RIPRAP = 11 CU. YD.



24+09

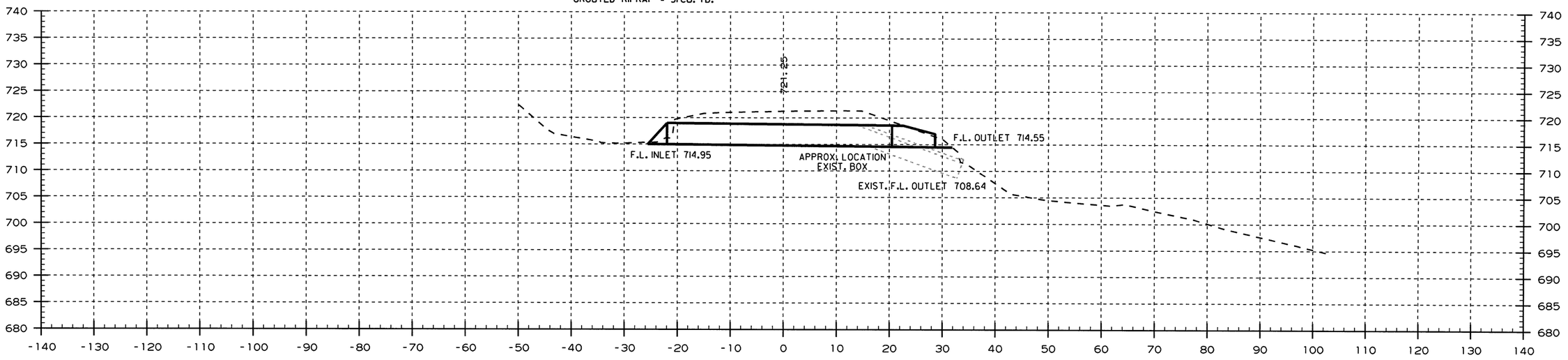
CROSS SECTION STA. 24+09 TO STA. 30+41

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 1:99796.81

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	63	76
				(2)		CROSS SECTIONS		

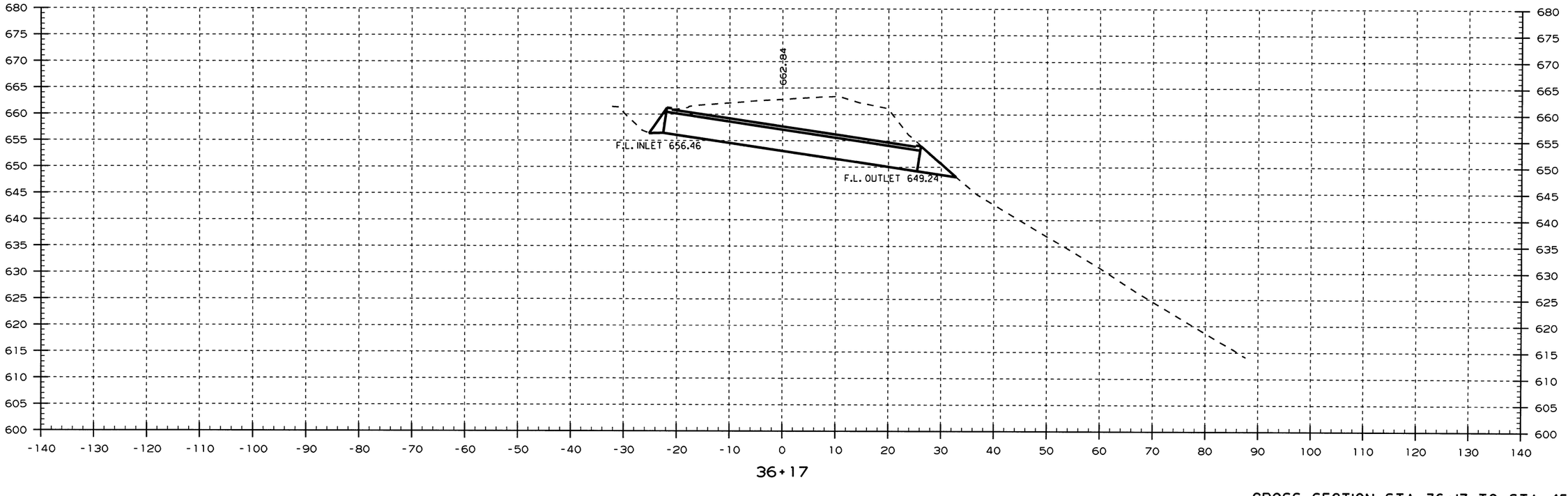
STA. 45+61 - IN PLACE
4' X 3' X 55' R.C. BOX CULVERT
WITH HEADWALLS LT. & RT.
REMOVE 37' FROM LT.
FILL & ABANDON 18' RT.

STA. 45+61 - CONSTRUCT
48" X 51' R.C. PIPE CULVERT
WITH FES RT.
(CLASS III)(TYPE 3 BEDDING)
Q50 = 36 CFS D.A. = 8.6 ACRES
GROUTED RIPRAP = 51 CU. YD.



STA. 36+17 - IN PLACE
4' X 4' ROCK CULVERT AND
36" R.C. CULVERT EXT.
49' OVERALL LENGTH
WITH HEADWALLS LT. & RT.
REMOVE

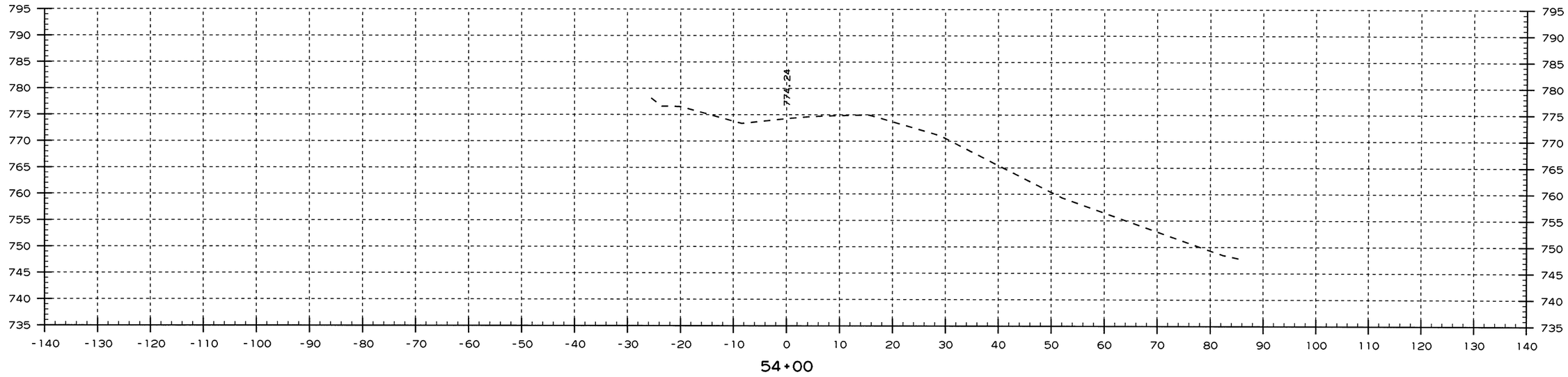
STA. 36+17 - CONSTRUCT
4' X 4' X 49' R.C. BOX CULVERT
WITH 21 WINGWALLS LT. & RT.
Q50 = 75 CFS D.A. = 16.5 ACRES
GROUTED RIPRAP = 54 CU. YD.



CROSS SECTION STA. 36+17 TO STA. 45+61

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\1710430O_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.999961

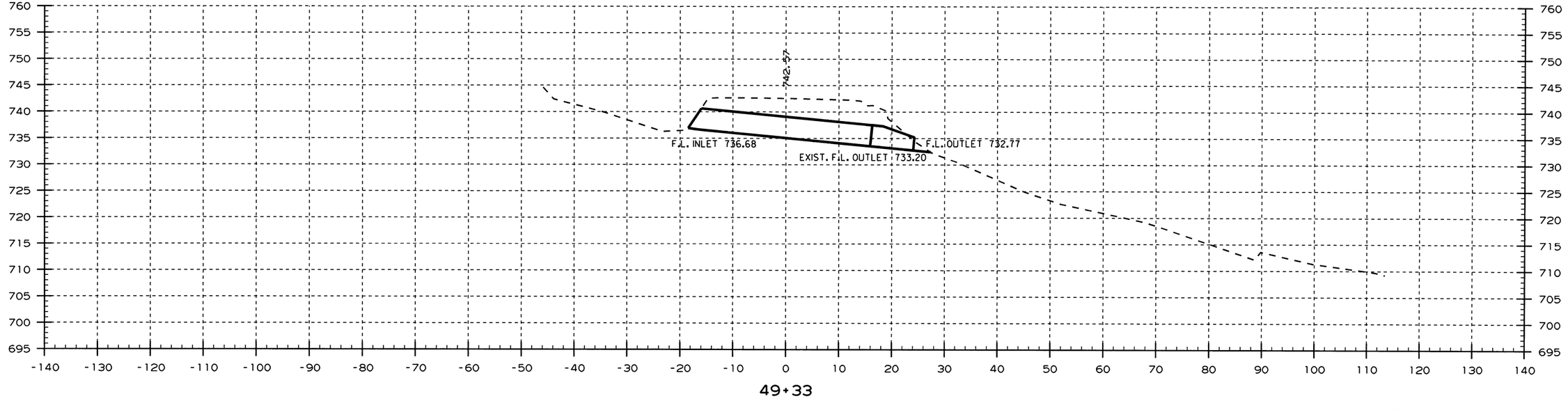
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	64	76
				(2)	CROSS SECTIONS			



54+00

STA. 49+33 - IN PLACE
4' X 3' ROCK CULVERT AND
4' X 3' CULVERT EXT.
36' OVERALL LENGTH
WITH HEADWALLS LT. & RT.
REMOVE

STA. 49+33 - CONSTRUCT
48" X 33' R.C. PIPE CULVERT
(CLASS III)(TYPE 3 BEDDING)
WITH FES RT.
Q50 = 62 CFS D.A. = 15.5 ACRES
GROUTED RIPRAP = 54 CU. YD.



49+33

CROSS SECTION STA. 49+33 TO STA. 54+00

USER: jd503
DESIGN FILE: \\ROGFILE\Jobfiles\1704300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
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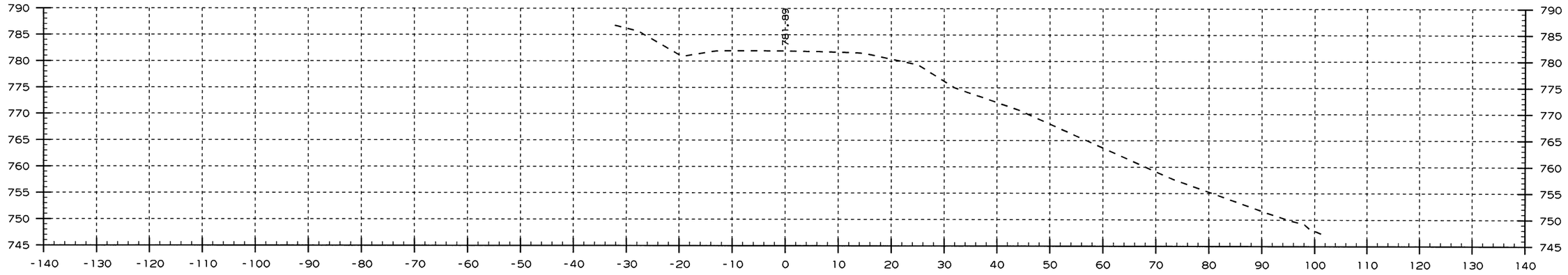
SCALE: 19.99796si

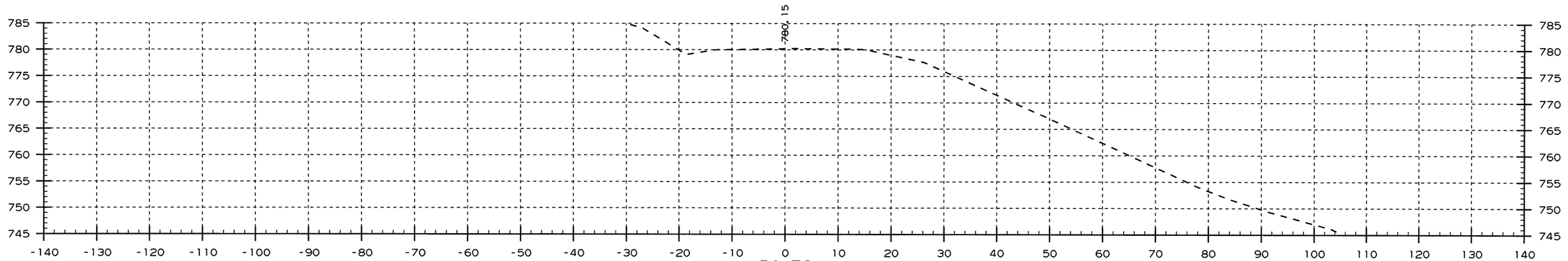
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	65	76

(2) CROSS SECTIONS

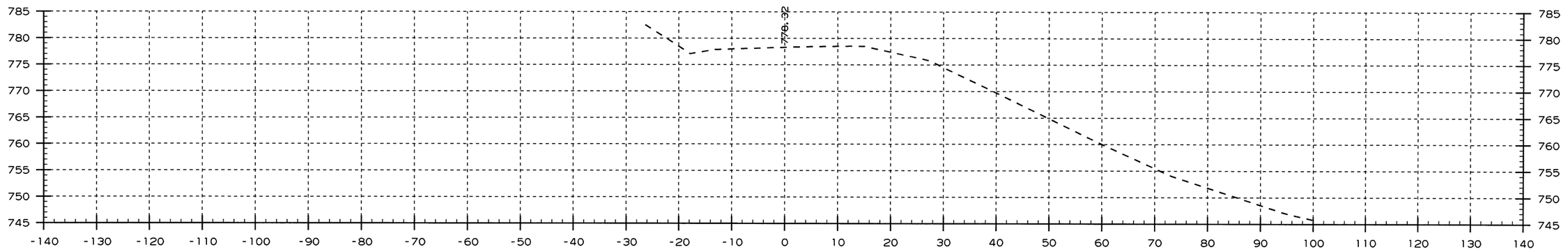


55+00



54+76

BEGIN LANDSLIDE REPAIR SITE NO. 3



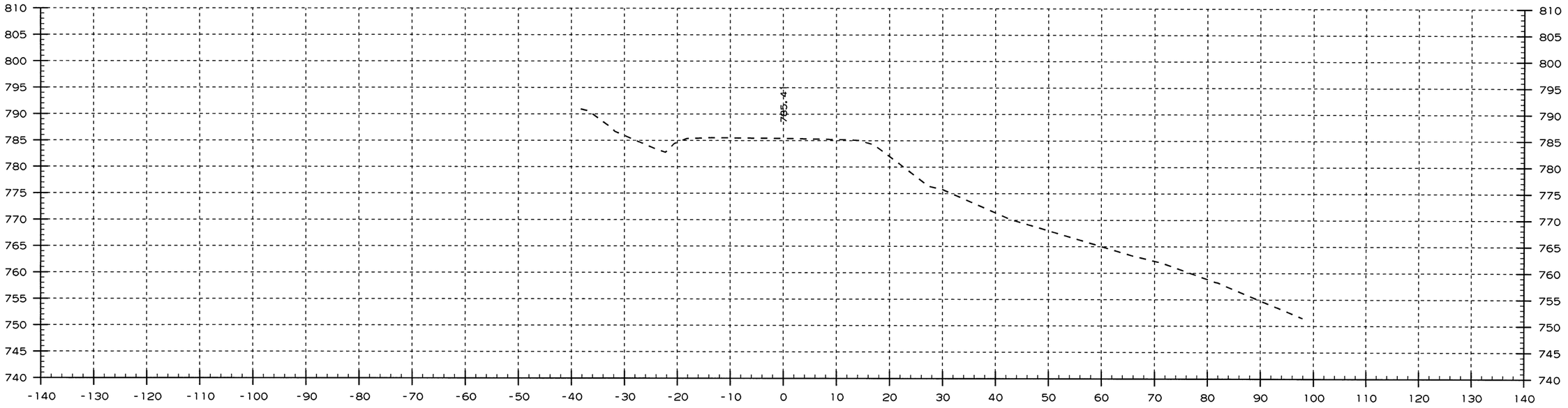
54+50

CROSS SECTION STA. 54+50 TO STA. 55+00

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.999961

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	66	76

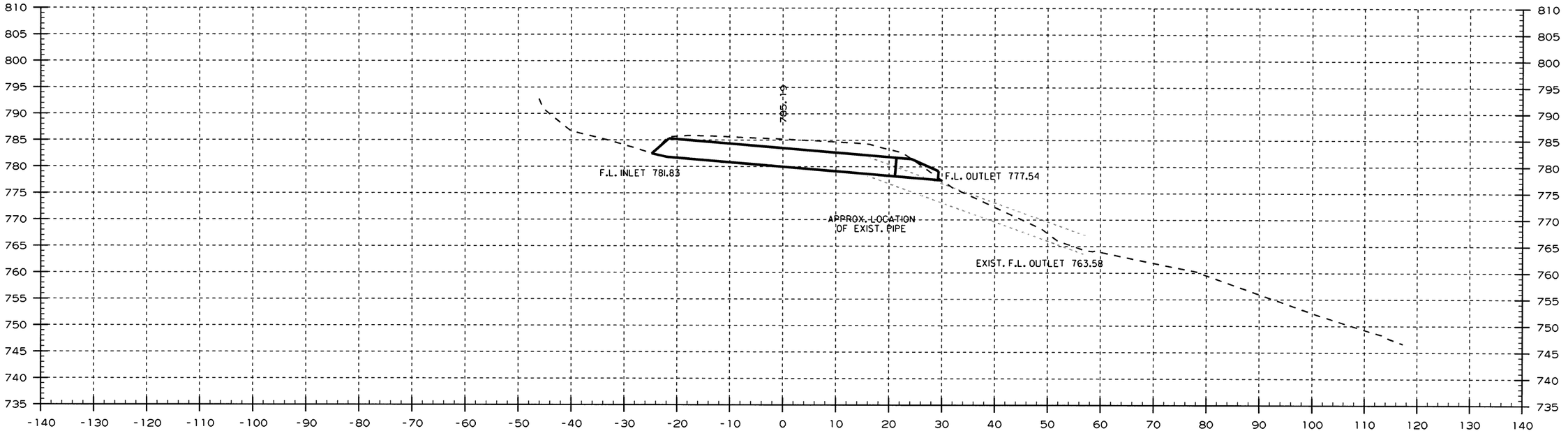
(2) CROSS SECTIONS



55+50

STA. 55+47 - IN PLACE
30" R.C. CULVERT AND
42" R.C. CULVERT EXT.
81' OVERALL LENGTH
WITH HEADWALLS LT.
REMOVE 37' LT.
FILL & ABANDON 45 RT.

STA. 55+47 - CONSTRUCT
42" X 51' R.C. PIPE CULVERT
(29°03'32" LT. FWD. SKEW)
(CLASS V) (TYPE 3 BEDDING)
WITH FES RT.
Q50 = 20 CFS D.A. = 4.7 ACRES
GROUTED RIPRAP = 9 CU. YD.



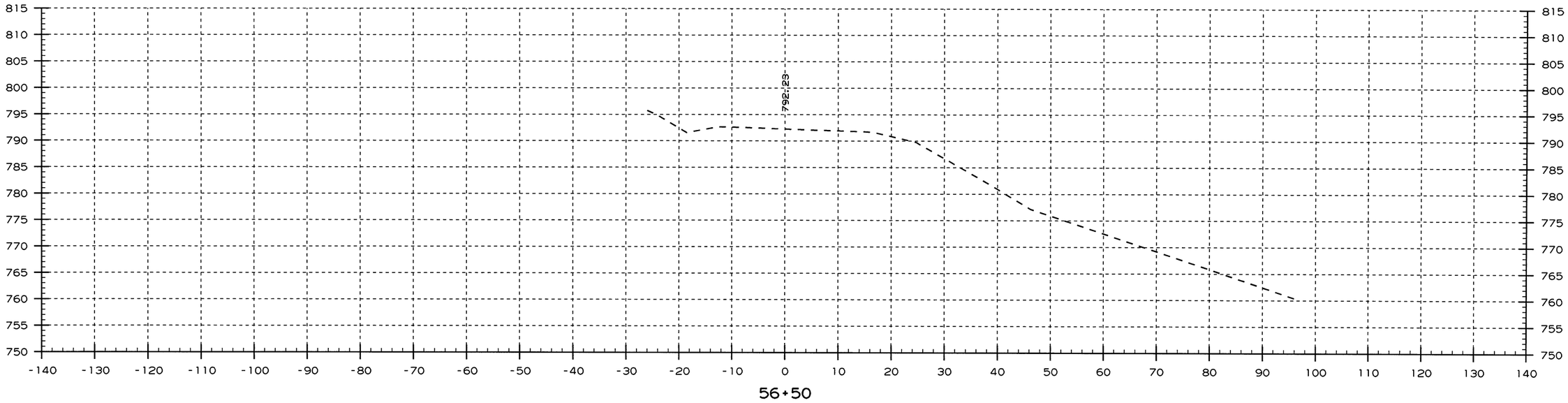
55+47
29°03'32" LT. FWD. SKEW

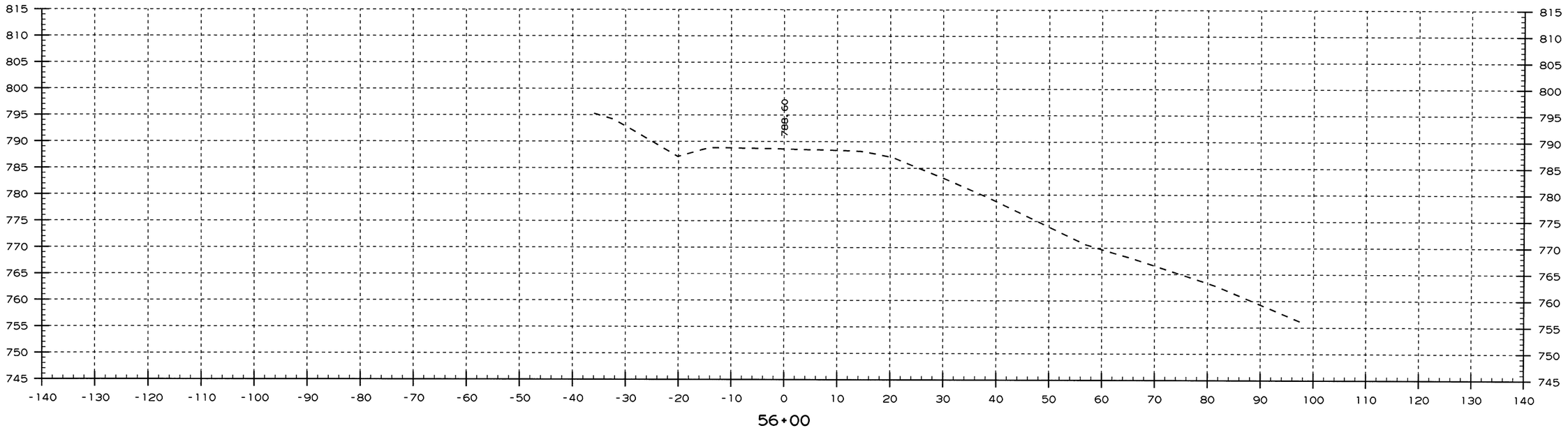
CROSS SECTION STA. 55+47 TO STA. 55+50

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\1710430O.Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC.LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.99796"

\\ROGFILE\Jobfiles\1710430O.Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC.LOCATION 2.dgn 8/18/2017 16:57

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	67	76
				(2)	CROSS SECTIONS			





CROSS SECTION STA. 56+00 TO STA. 56+50

USER: jd503
DESIGN FILE: \\ROGFILE\Jobfiles\1704300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
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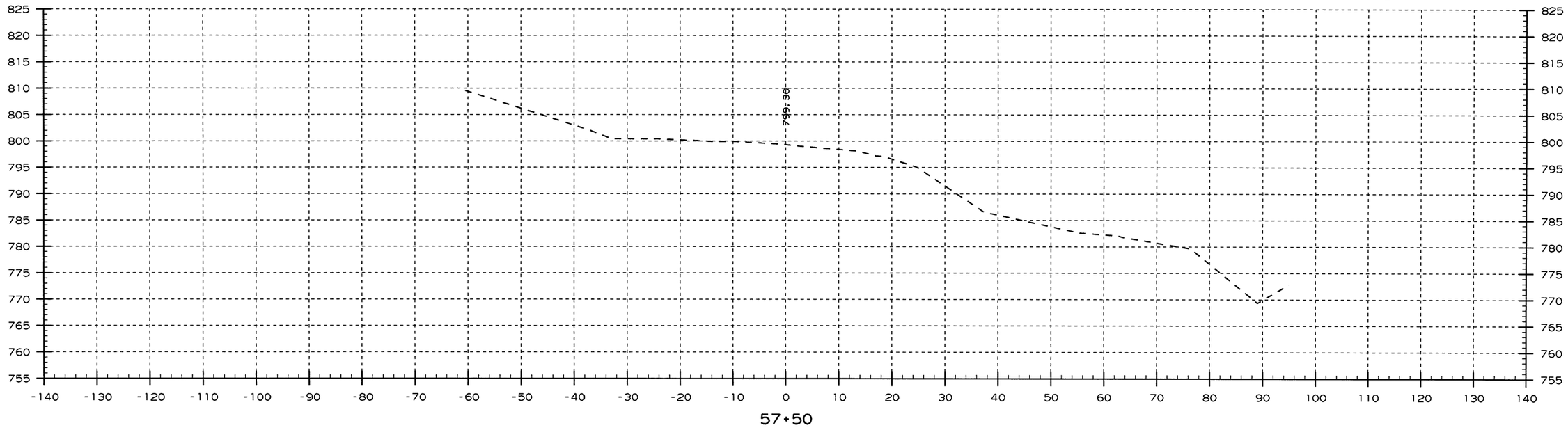
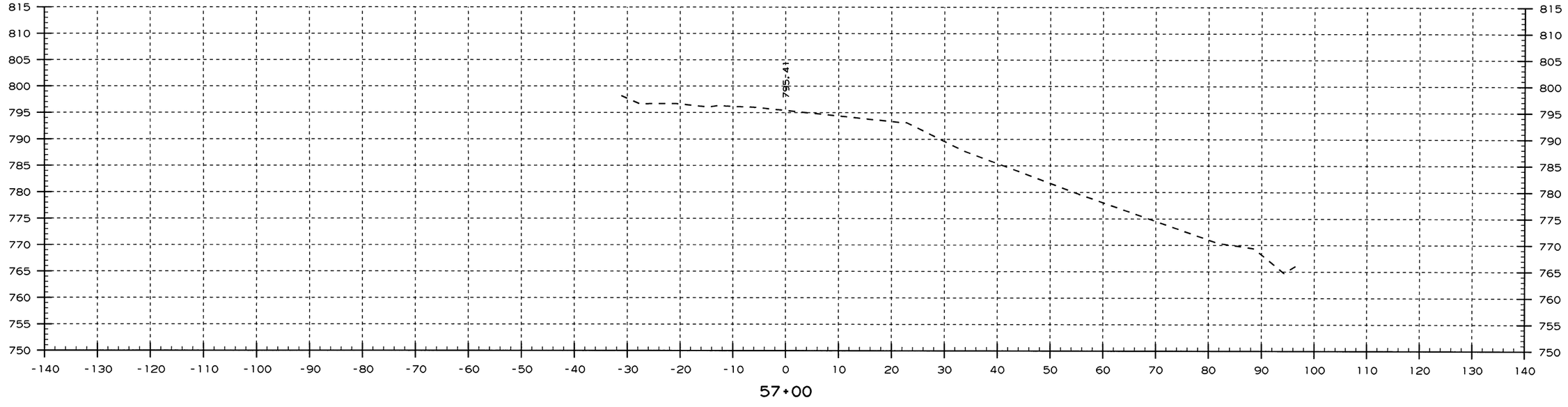
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	68	76

(2) CROSS SECTIONS





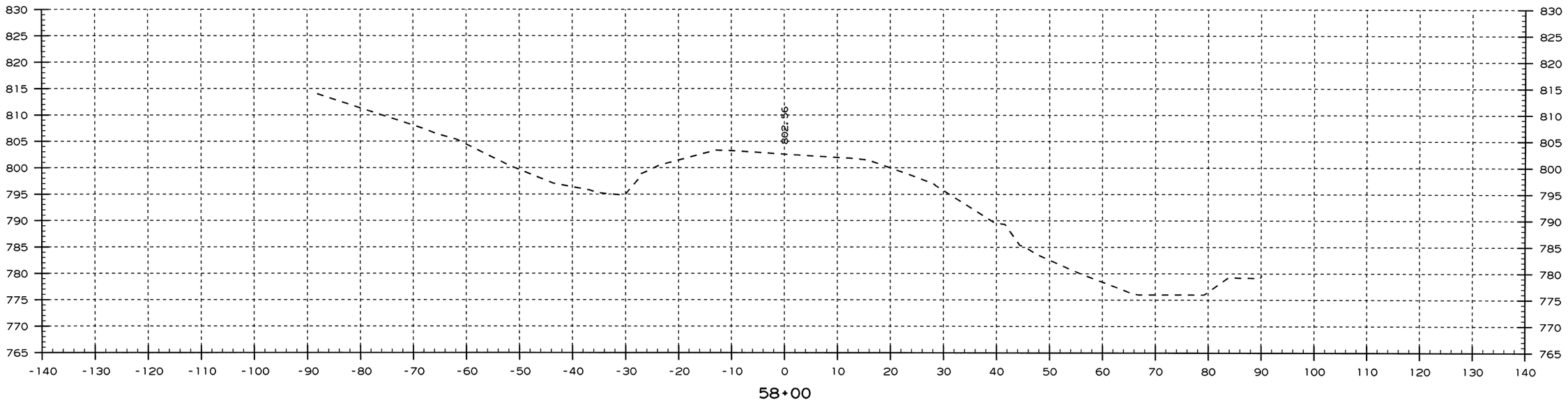
CROSS SECTION STA. 57+00 TO STA. 57+50

USER: jd503
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.99796:1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

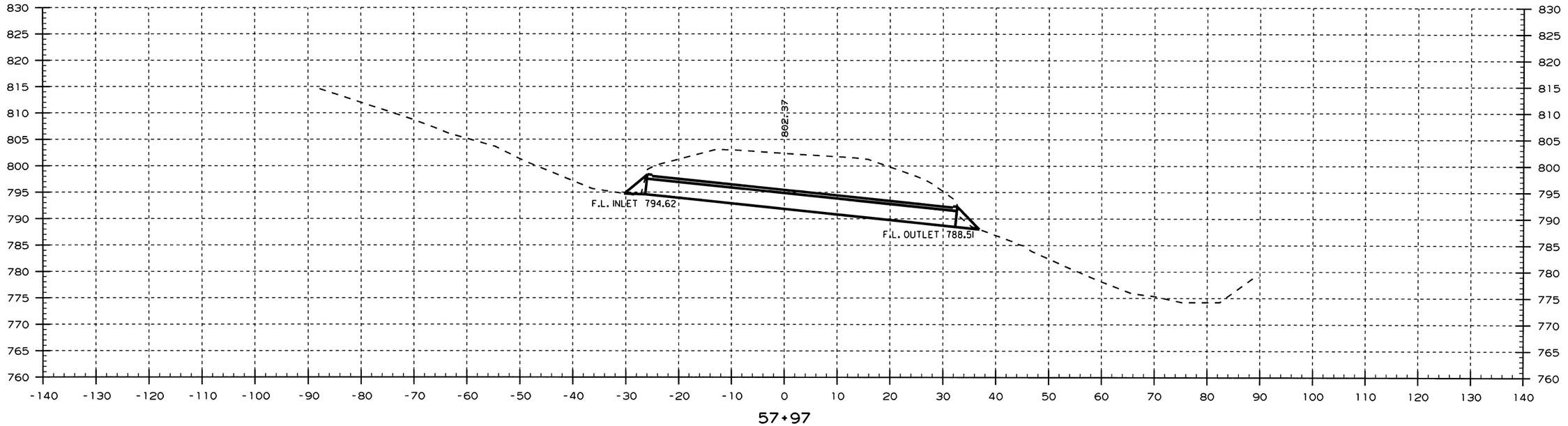
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	69	76

(2) CROSS SECTIONS



STA. 57+97 - IN PLACE
4' X 3' X 59' R.C. BOX CULVERT
WITH HEADWALLS LT. & RT.
REMOVE

STA. 57+97 - CONSTRUCT
5' X 3' X 59' R.C. BOX CULVERT
WITH 2:1 WINGWALLS LT & RT.
Q50 = 163 CFS D.A. = 47.2 ACRES
GROUTED RIPRAP = 7 CU. YD.



CROSS SECTION STA. 57+97 TO STA. 58+00

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:57 SCALE: 19.99796d

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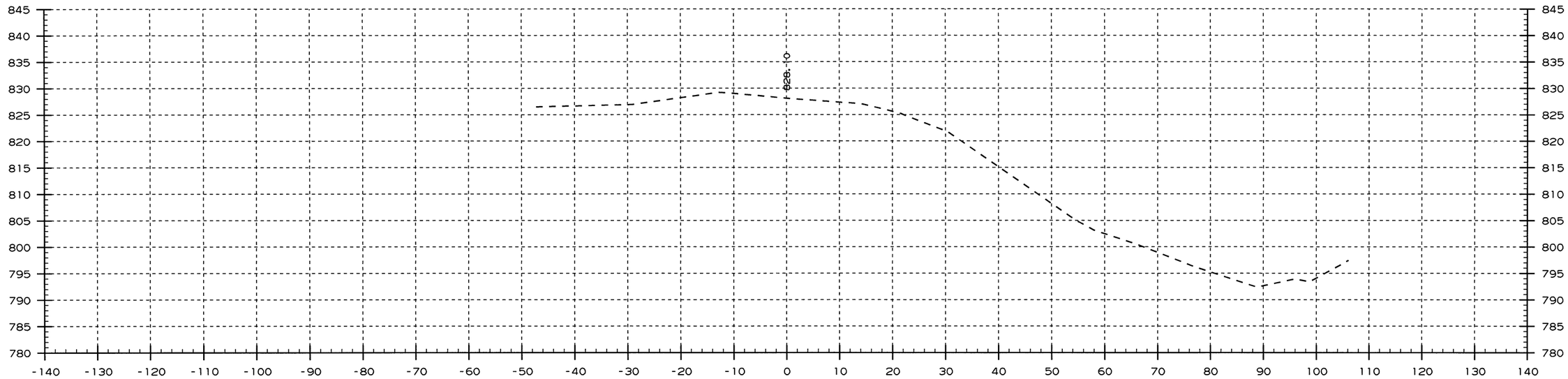
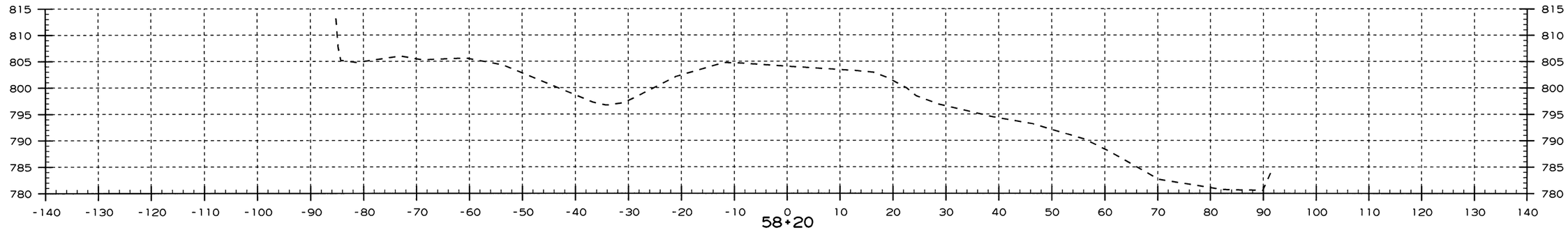
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	70	76

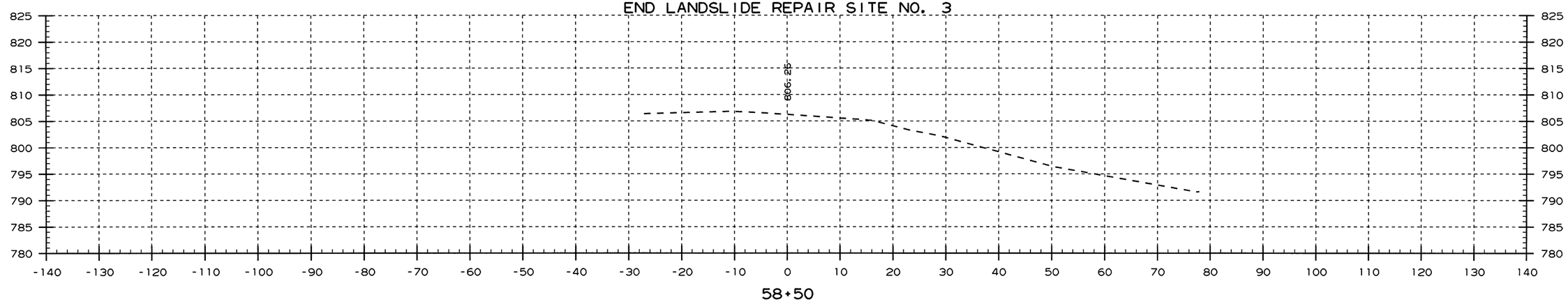
(2) CROSS SECTIONS



61+62
BEGIN LANDSLIDE REPAIR SITE NO. 4



58+20
END LANDSLIDE REPAIR SITE NO. 3



58+50

CROSS SECTION STA. 58+50 TO STA. 58+50

USER: jd503
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:58 SCALE: 19.999961

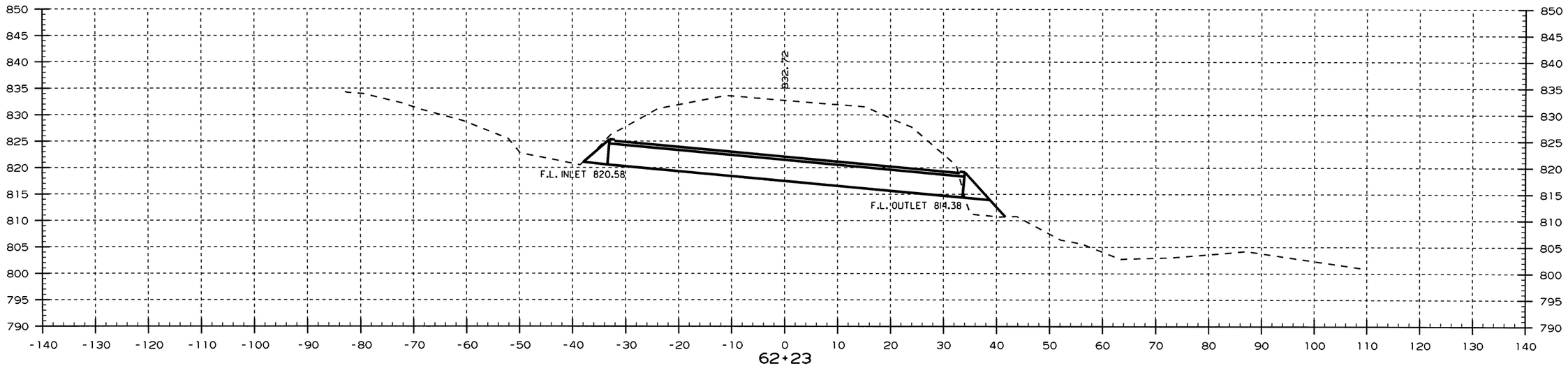
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	71	76

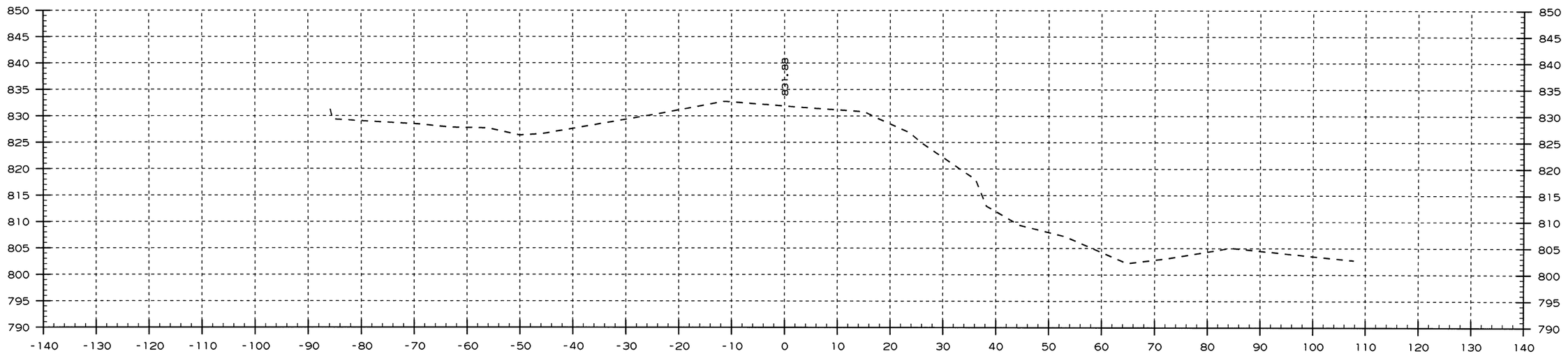
(2) CROSS SECTIONS

STA. 62+23 - IN PLACE
6' X 4' X 76' R.C. BOX CULVERT
WITH HEADWALLS LT. & RT.
REMOVE

STA. 62+23 - CONSTRUCT
6' X 4' X 76' R.C. BOX CULVERT
(7°36'36" RT. FWD. SKEW)
WITH 2:1 WINGWALLS RT.
Q50 = 69 CFS D.A. = 21.6 ACRES
GROUTED RIPRAP = 10 CU. YD.



62+23
7°36' 36" RT. FWD. SKEW

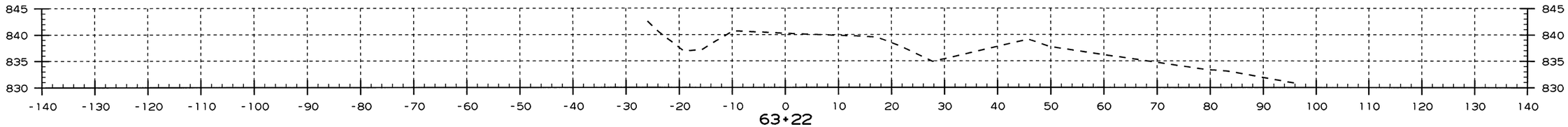


62+12

CROSS SECTION STA. 62+12 TO STA. 62+23

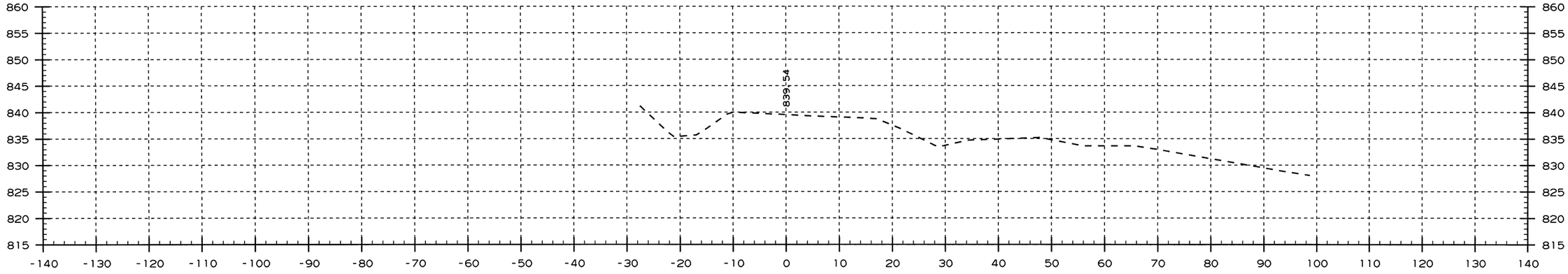
USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:58 SCALE: 1:99796.1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	72	76
				(2)		CROSS SECTIONS		

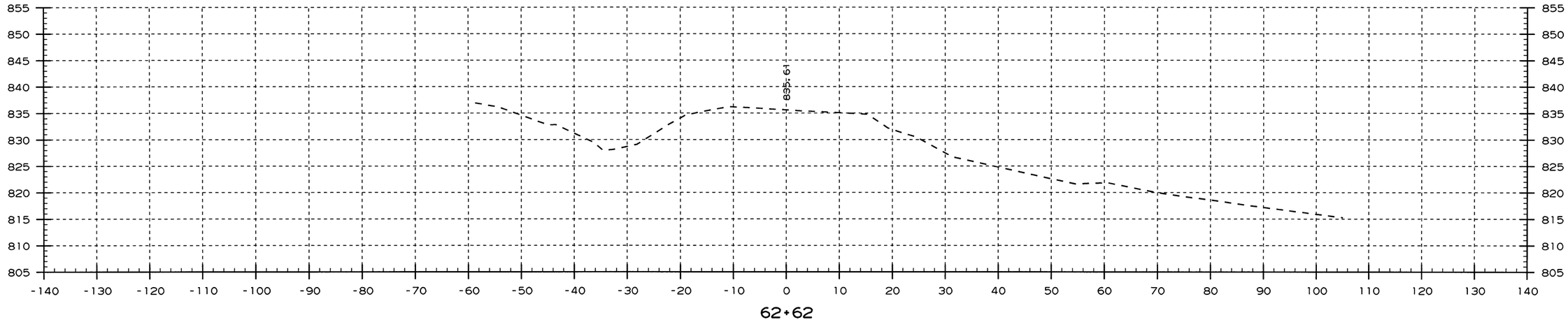


63+22

END LANDSLIDE REPAIR SITE NO. 4



63+12



62+62

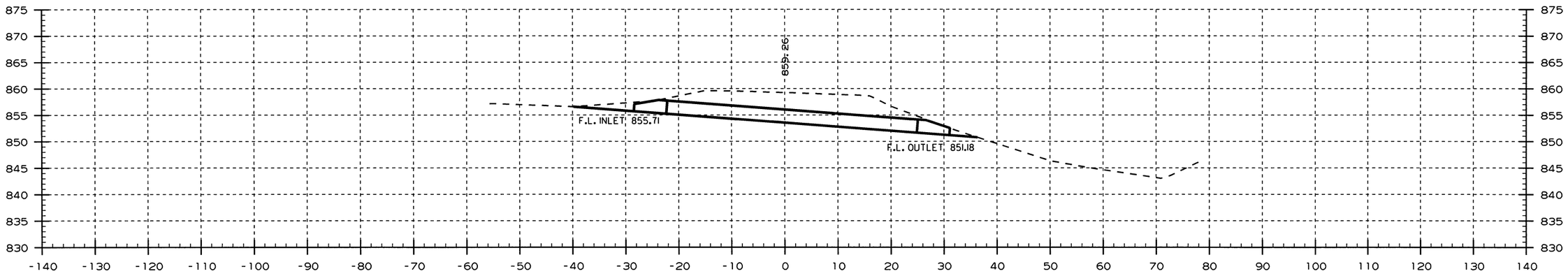
CROSS SECTION STA. 62+62 TO STA. 63+12

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\1710430O_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/8/2017 16:58 SCALE: 19.99796d

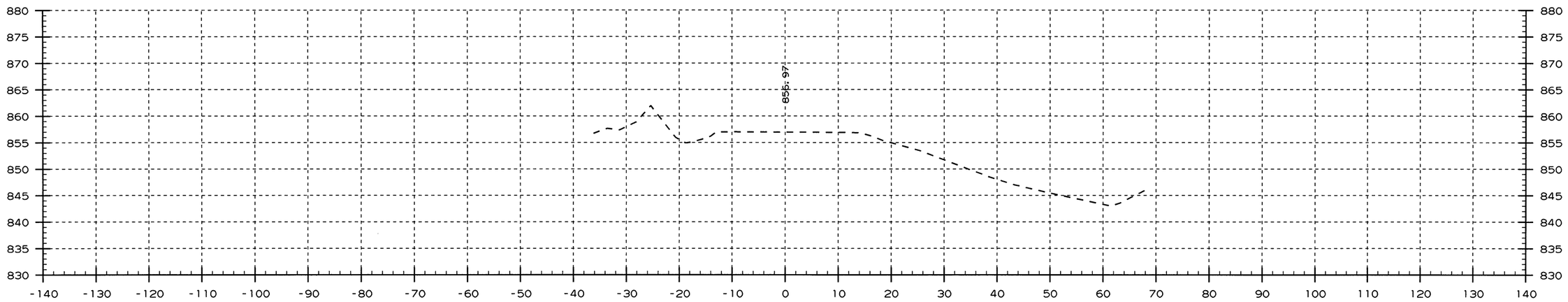
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	73	76
(2)	CROSS SECTIONS			

STA. 66+00 CONSTRUCT
30" X 60' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
GROUTED RIPRAP = 13 CU YD.



66+00



65+65

CROSS SECTION STA. 65+65 TO STA. 66+15

USER: jd503
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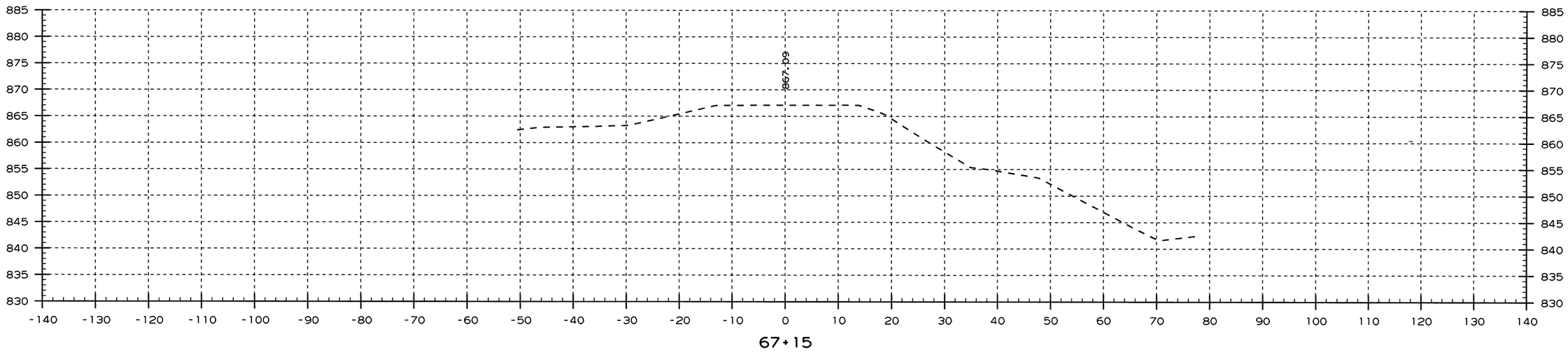
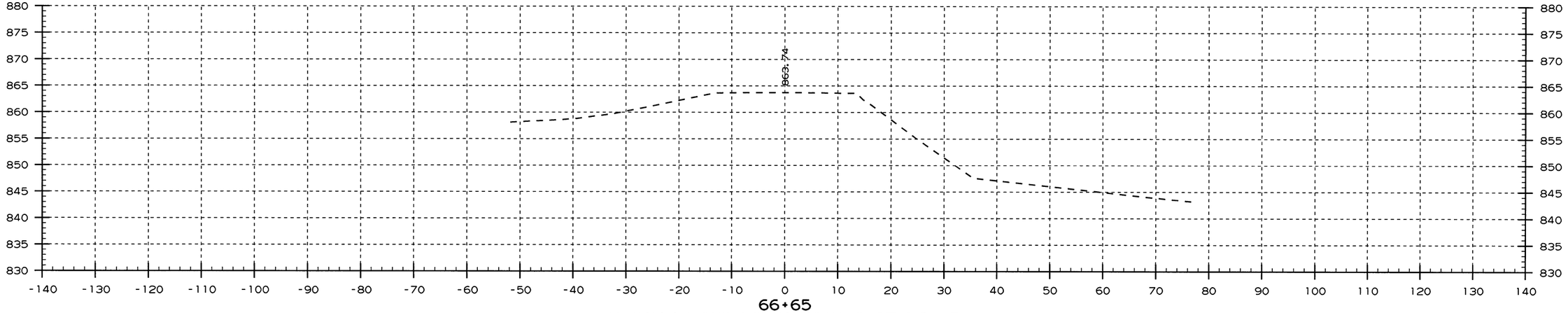
PLOTTED: 8/8/2017 16:58 SCALE: 19.99796#

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	74	76

(2) CROSS SECTIONS



67+15



66+65

BEGIN LANDSLIDE REPAIR SITE NO. 5

CROSS SECTION STA. 66+65 TO STA. 67+15

USER: jd5103
DESIGN FILE: \\ROGFILE\Jobfiles\17104300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/18/2017 16:58 SCALE: 19.997961

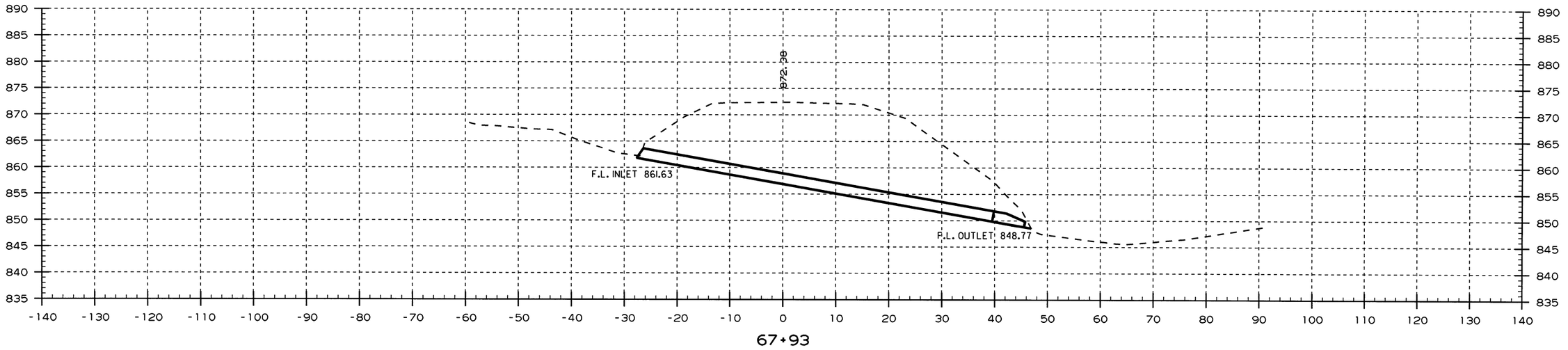
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040750	75	76

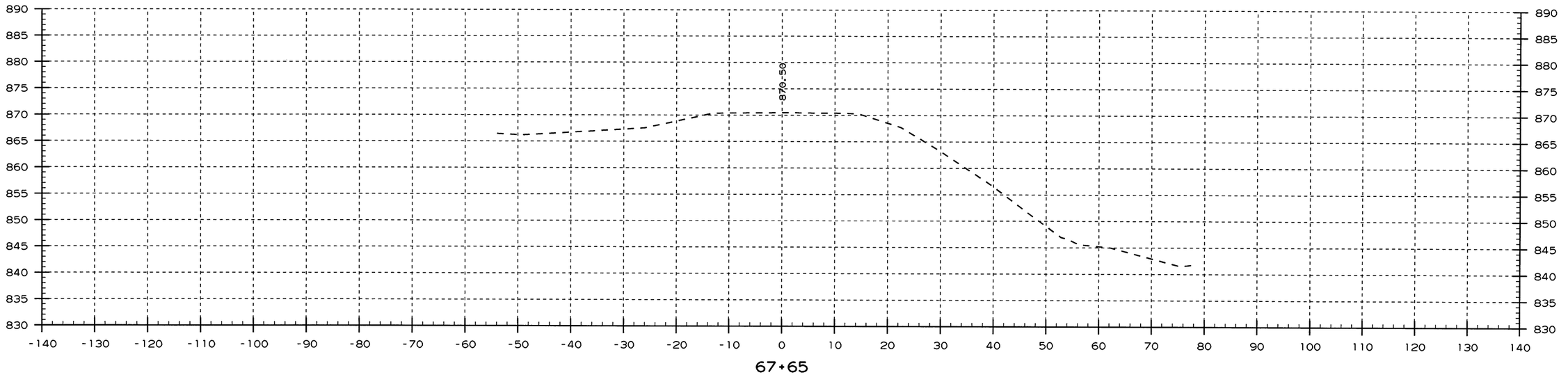
(2) CROSS SECTIONS

STA. 67+93 - IN PLACE
24"X 73' R.C. PIPE CULVERT
WITH HEADWALLS LT. & RT.
REMOVE

STA. 67+93 - CONSTRUCT
24"X 73' R.C. PIPE CULVERT
(CLASS III)(TYPE 3 BEDDING)
WITH FES RT.
Q50=36 CFS D.A. = 11.0 ACRES
GROUTED RIPRAP = 4 CU. YD.



67+93



67+65

CROSS SECTION STA. 67+65 TO STA. 67+93

USER: jd5103
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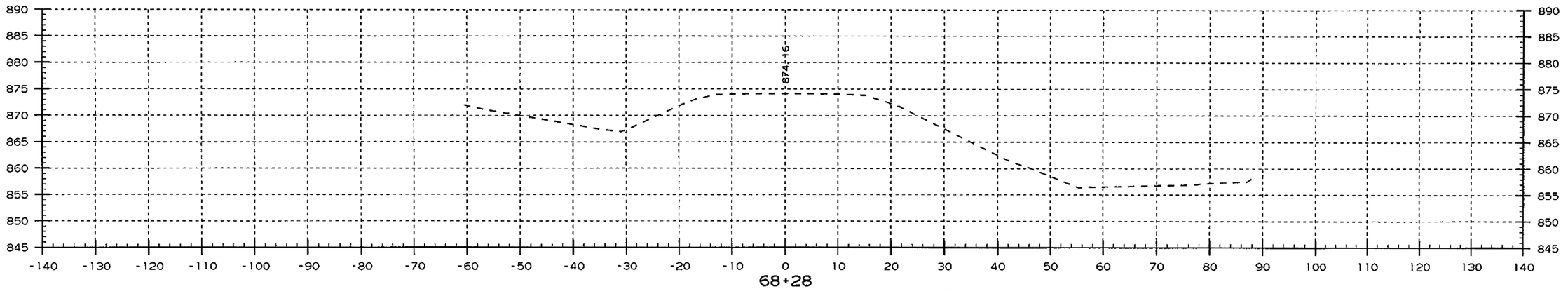
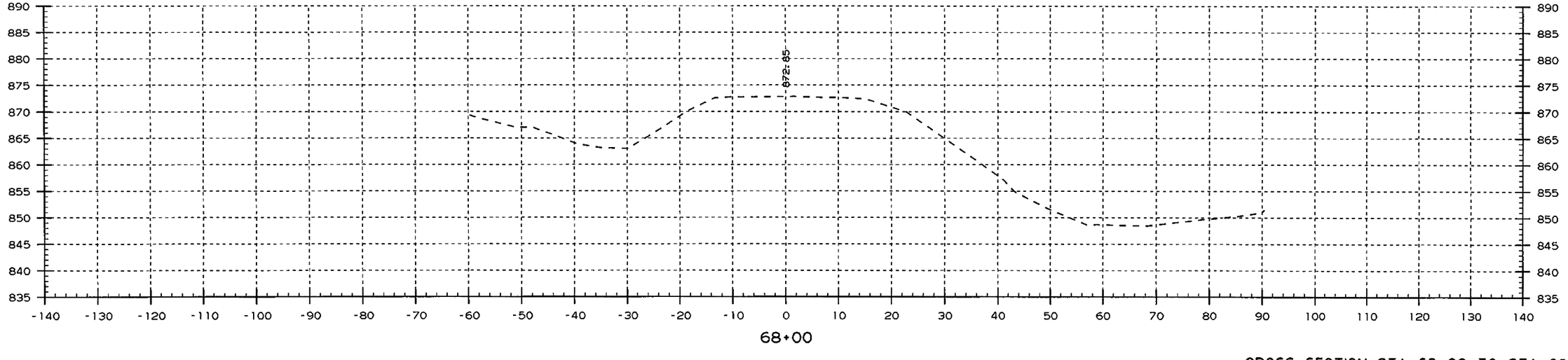
PLOTTED: 8/18/2017 16:58 SCALE: 19.99796%

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040750	76	76
				(2)		CROSS SECTIONS		



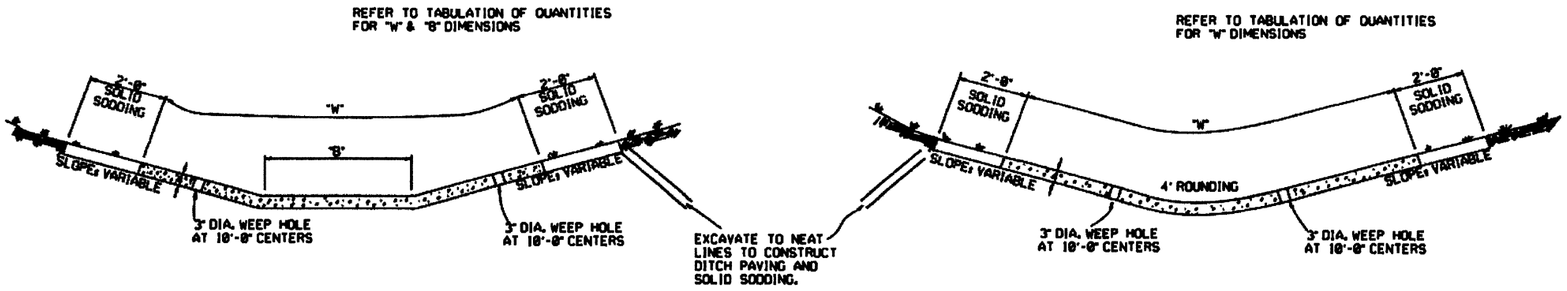
68+28
END LANDSLIDE REPAIR SITE NO. 5



68+00

CROSS SECTION STA. 68+00 TO STA. 68+20

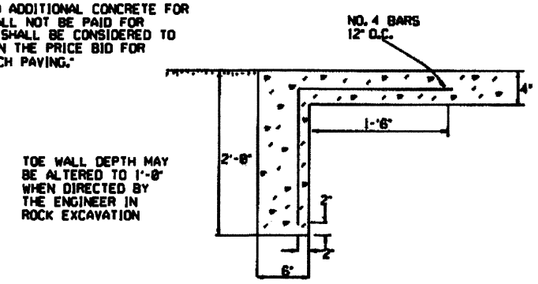
USER: on506
DESIGN FILE: \\ROCFILE\Jobfiles\1704300_Hwy59Slide\TRANSP\dgn\xsect\040750 XSEC_LOCATION 2.dgn
PLOTTED: 8/29/2017 13:14 SCALE: 19.99796:1



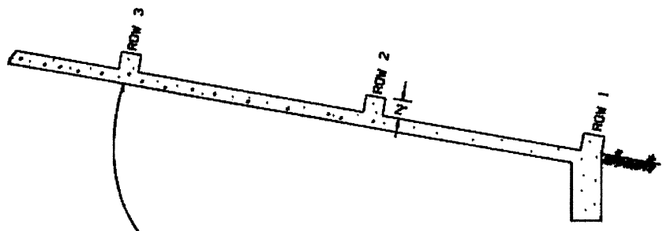
TYPE A

TYPE B

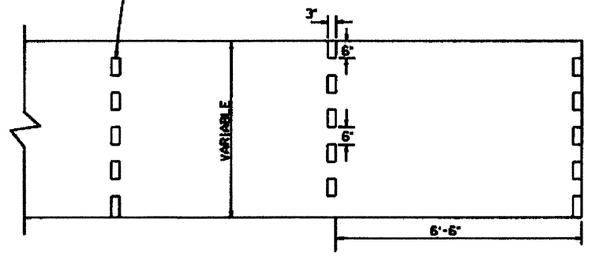
THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."



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.

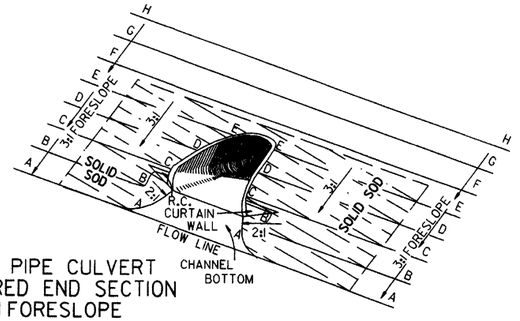
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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. NOS. OF ELEMENTS	11-30-89
7-11-88	REVISED DISSIPATOR NOTE	604-7-11-88
4-2-87	REVISED ENERGY DISSIPATOR	671-4-2-87
1-5-87	MODIFIED NOTE ON ENERGY DISS.	1432-1-5-87
11-2-86	ADDED NOTE TO ENERGY DISS.	1398-12-2-86
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

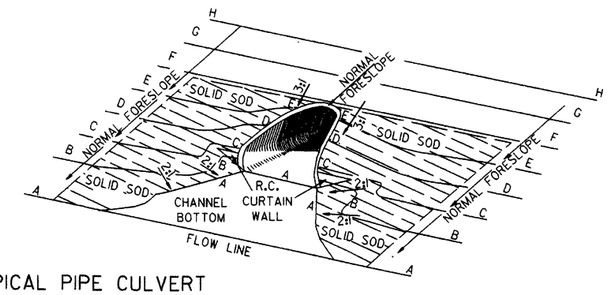
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

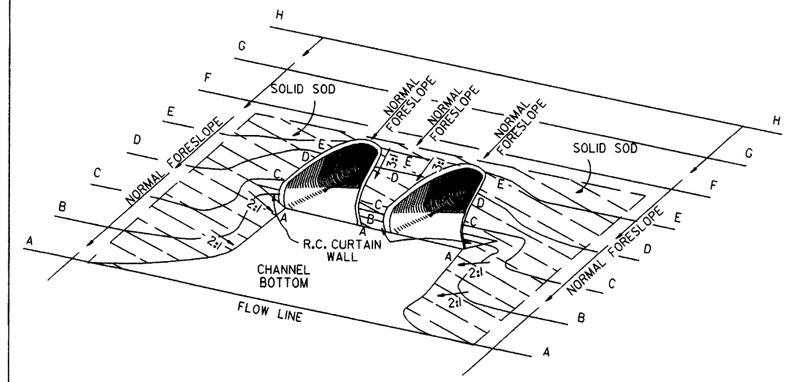
STANDARD DRAWING CDP-1



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

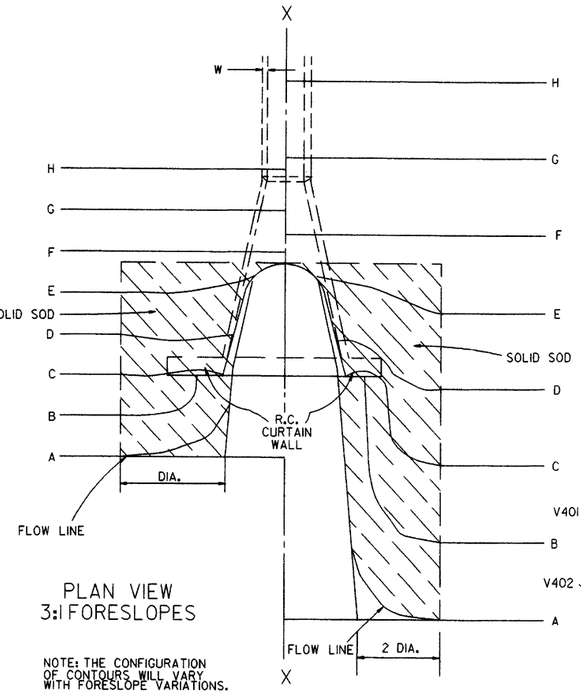
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	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.

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

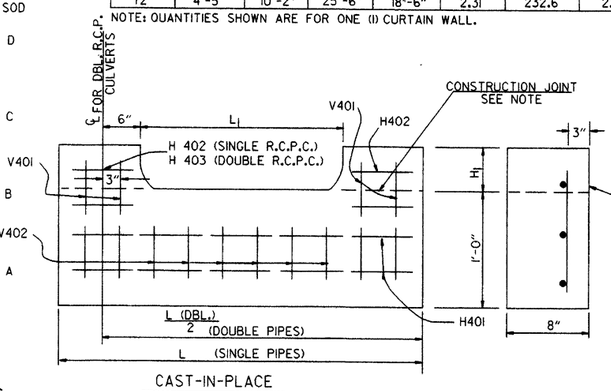
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

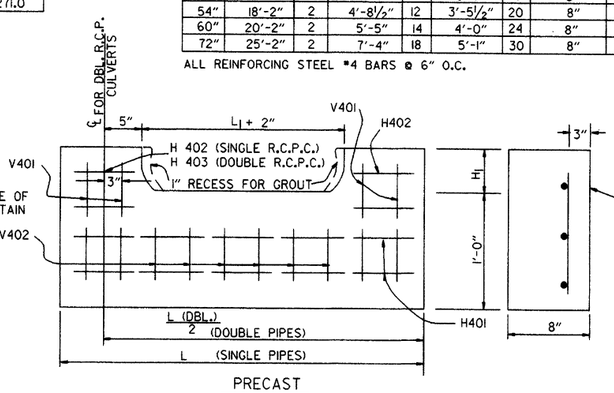
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

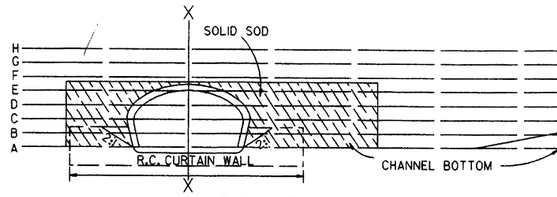
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



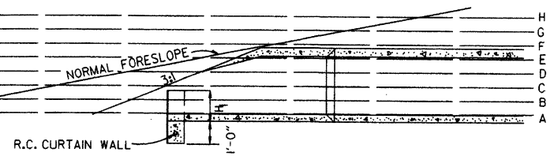
PRECAST

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



END VIEW



SECTIONAL VIEW "X-X"

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	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 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.

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	10-18-96
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

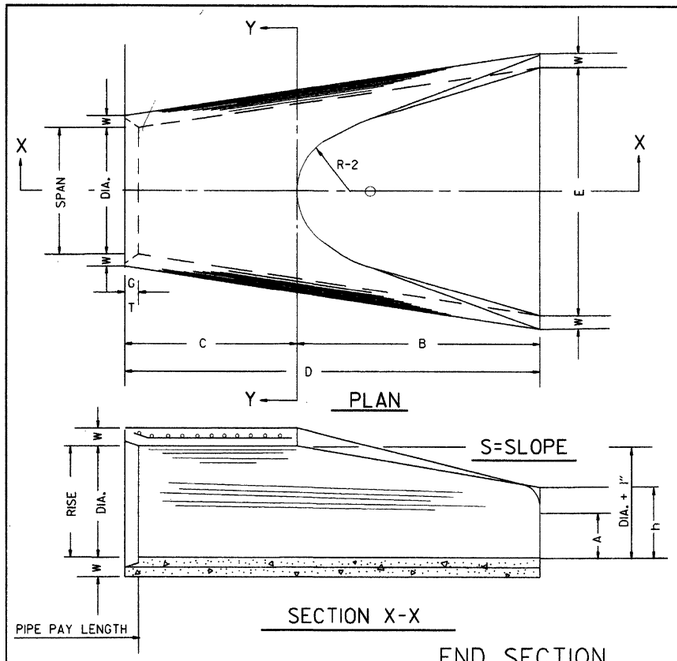
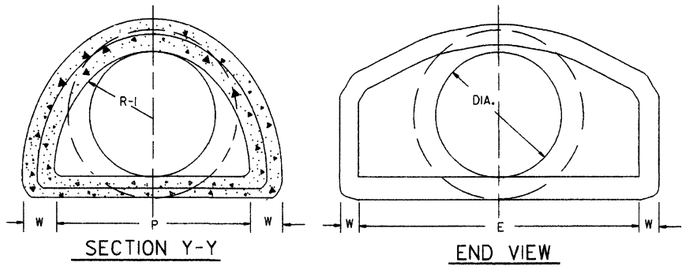


TABLE OF DIMENSIONS

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"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7 3/4"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1¾"	6'-0"	3:1	37"	47 13/16"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"



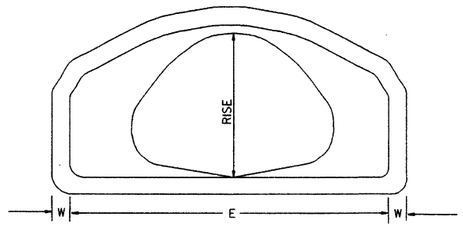
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

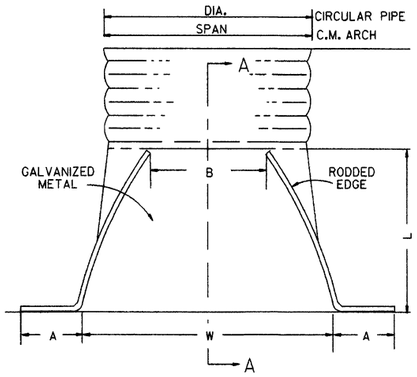
ARCH PIPE

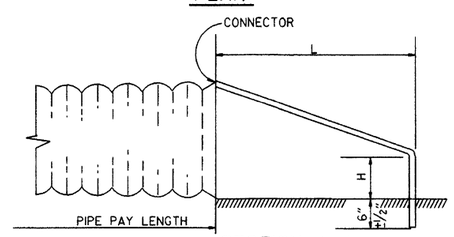
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 13/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2¼:1

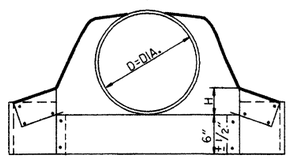
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE



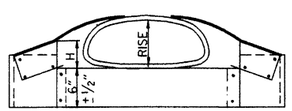




CIRCULAR PIPE

CIRCULAR PIPE

D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1



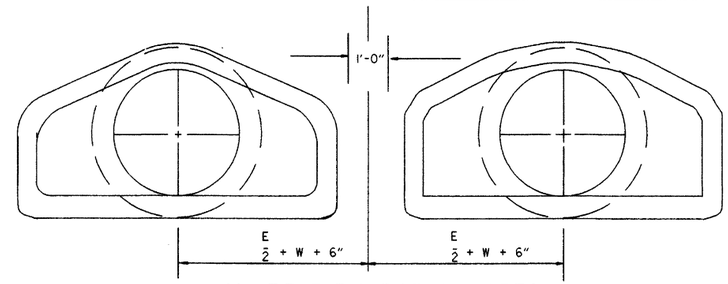
C.M. ARCH PIPE

C.M. ARCH PIPE

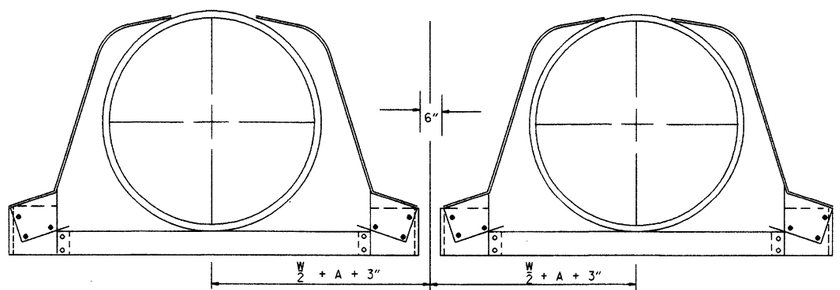
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
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

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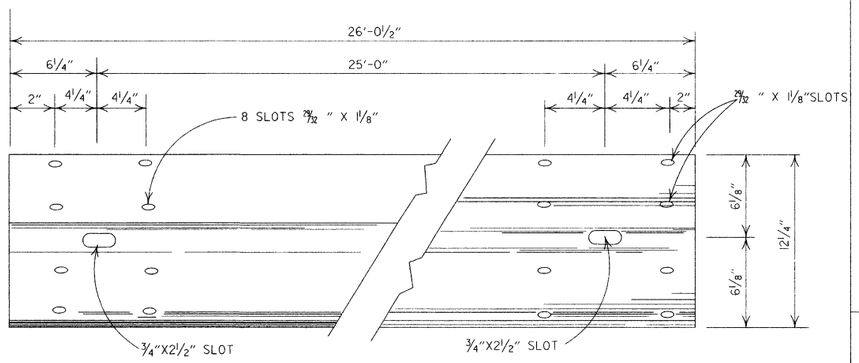
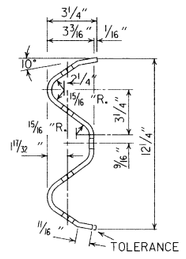
FLARED END SECTION

STANDARD DRAWING FES-2

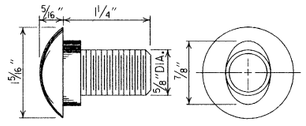
stdfes2.dgn



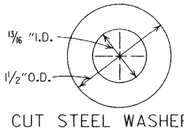


DETAILS OF
W-BEAM GUARD RAIL

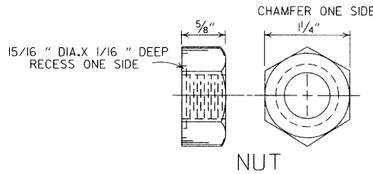
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



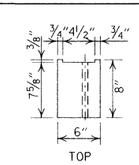
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

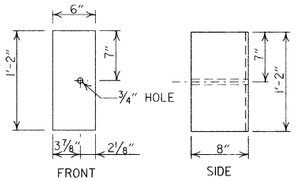


NUT



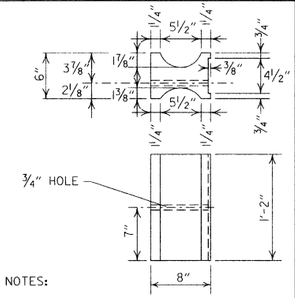
WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

TOP



FRONT SIDE

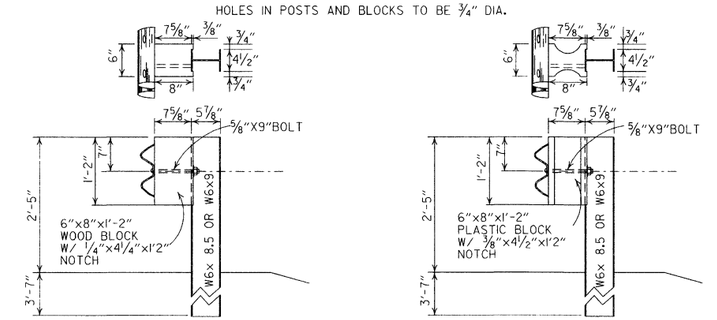
WOOD BLOCKOUT
(W-BEAM)



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

PLASTIC BLOCKOUT
(W-BEAM)

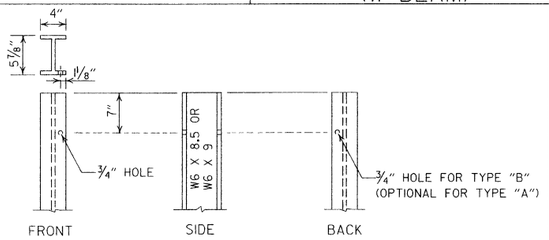
HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.



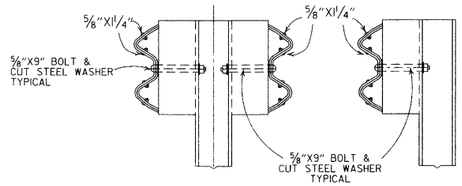
WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS
(W-BEAM)



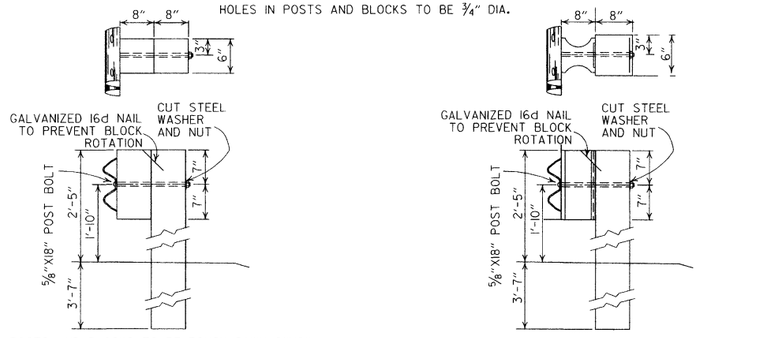
STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS
(W-BEAM)

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)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

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

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

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

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

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

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-12-00	ADDED PLASTIC BLOCKOUT	
8-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE. REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED ALT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DEPHT OF ANC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-9-87	REDRAWN & REVISED	802-10-9-87

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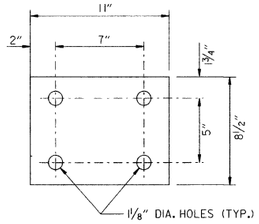
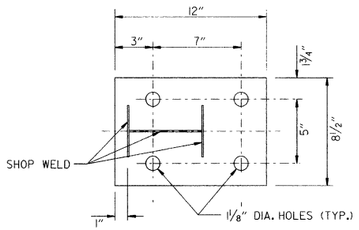
GUARD RAIL DETAILS

STANDARD DRAWING GR-8

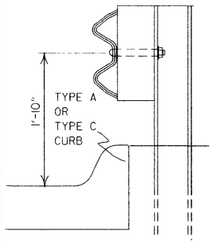


WASHER PLATE



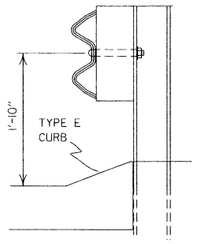
BASE PLATE

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



FOR DESIGN SPEEDS OF 50 MPH OR LESS

ALIGN FACE OF GUARD RAIL WITH FACE OF CURB.

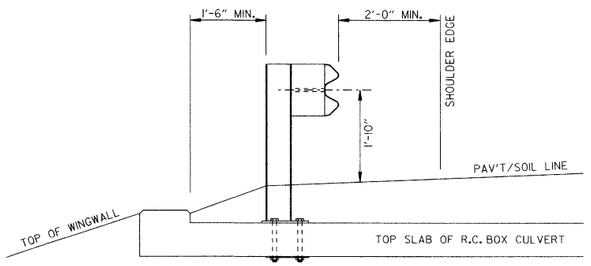


FOR DESIGN SPEEDS OF 55 MPH OR MORE

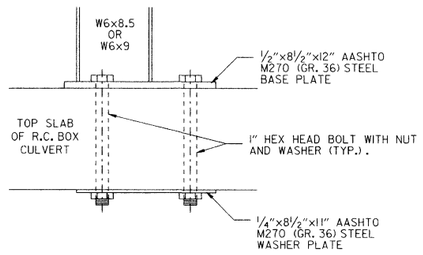
PLACE GUARD RAIL POSTS AGAINST BACK OF CURB.

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

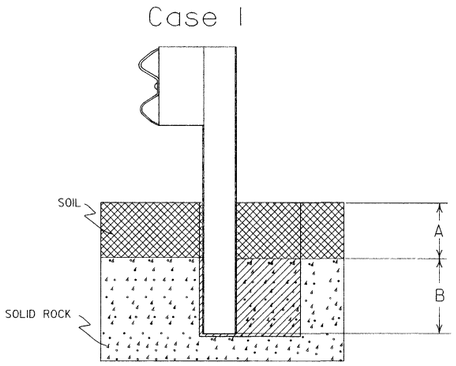
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

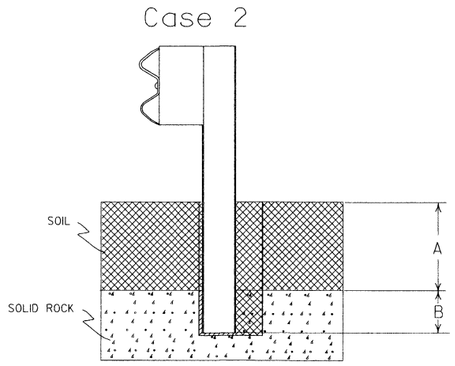


SECTION A-A



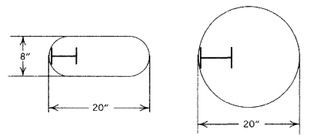
DETAIL OF CONNECTION

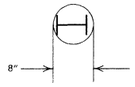




Plan View Steel Posts

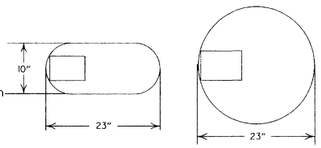
Either hole configuration acceptable

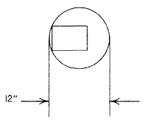




Plan View Wood Posts

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".

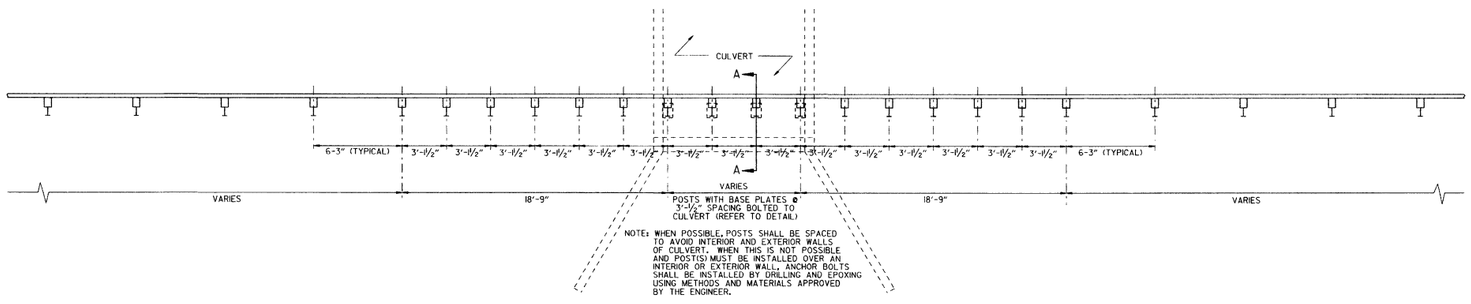
Zone A:
Backfill according to Section 617.03(a).

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

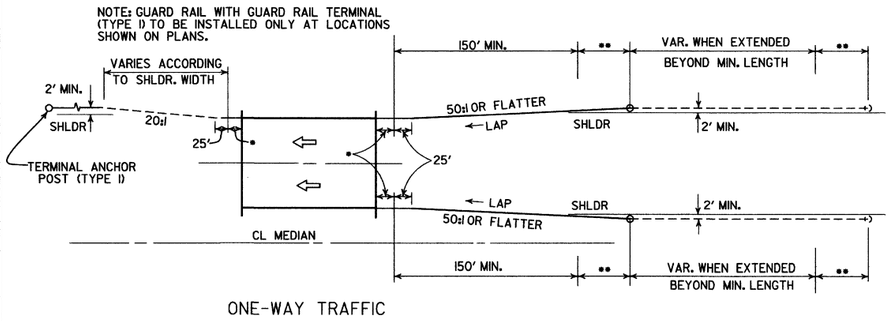
NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
8-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULVT. DELETED DET. OF STEEL LINE POST CONN.& ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
7-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87

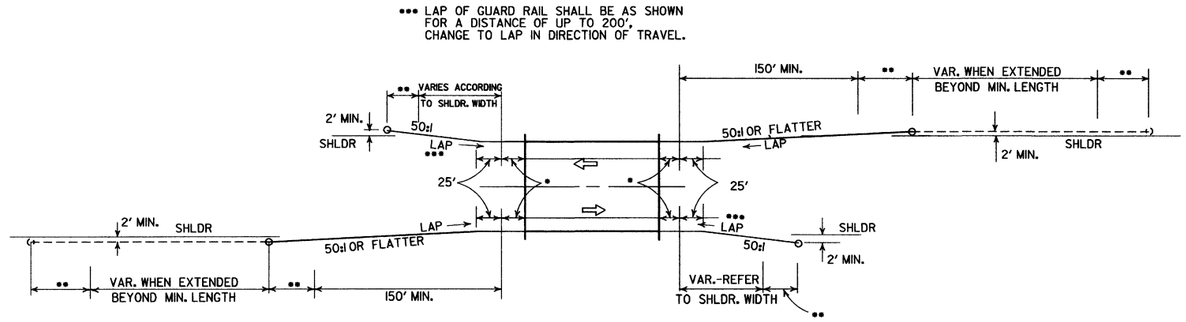
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8A



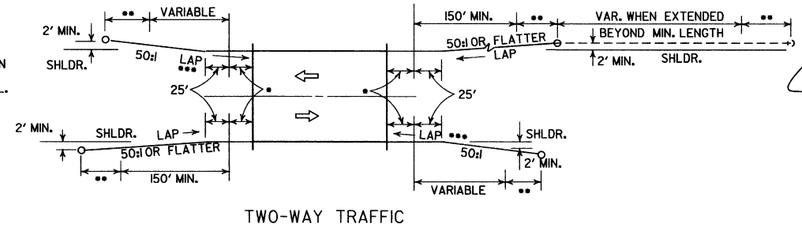
ONE-WAY TRAFFIC



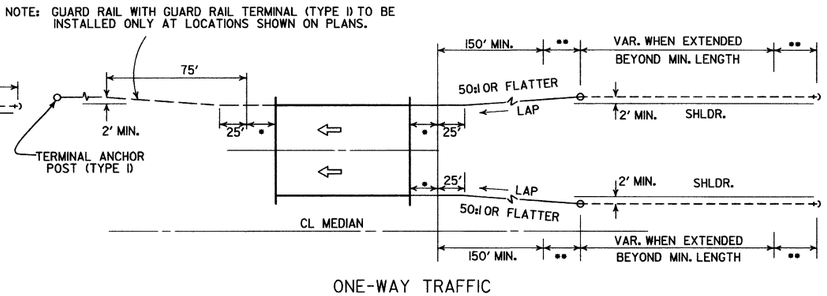
TWO-WAY TRAFFIC

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.



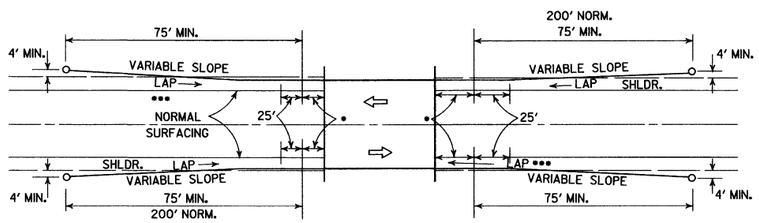
TWO-WAY TRAFFIC



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

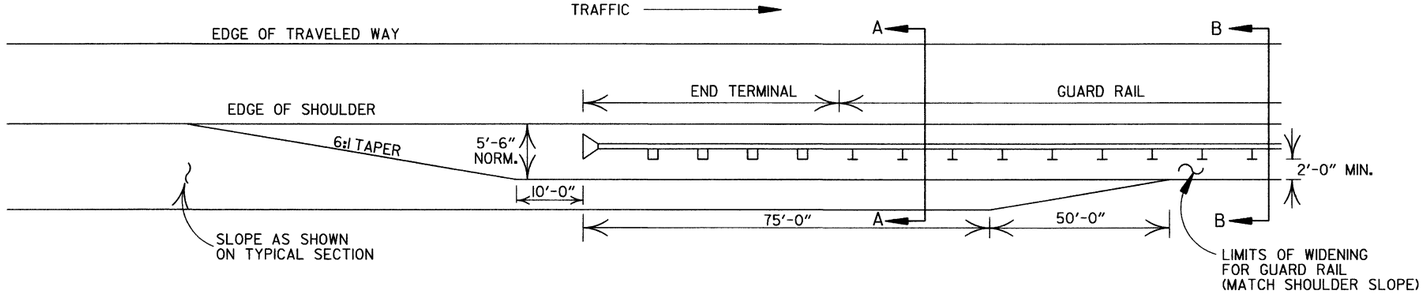
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

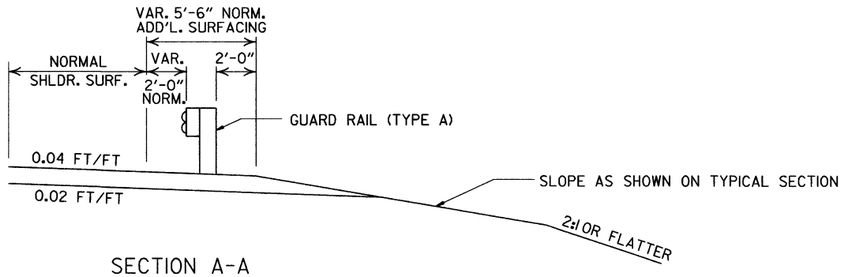
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87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

ARKANSAS STATE HIGHWAY COMMISSION

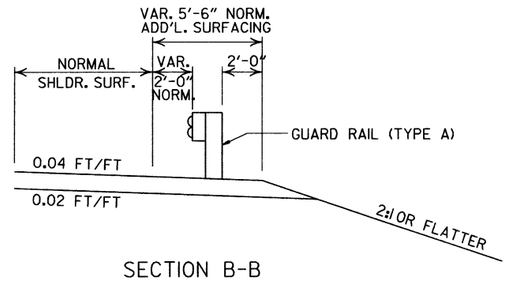
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





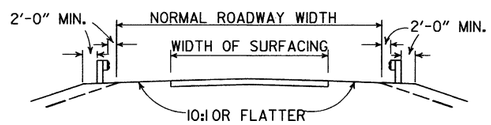
SECTION A-A



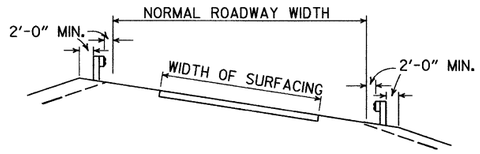
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

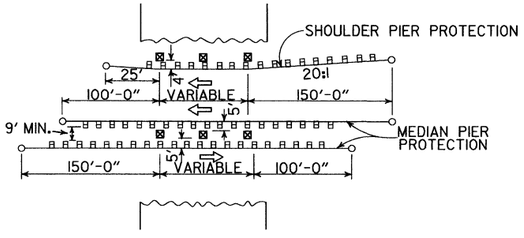


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



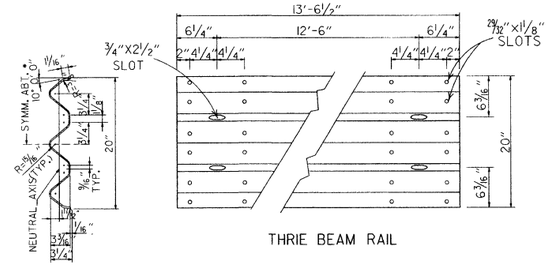
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

ARKANSAS STATE HIGHWAY COMMISSION

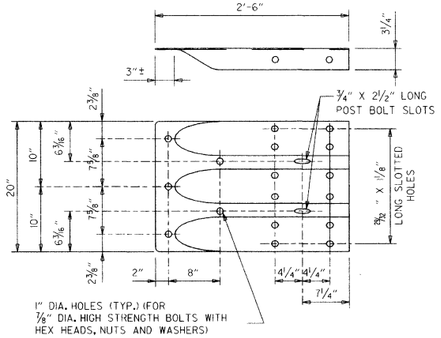
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

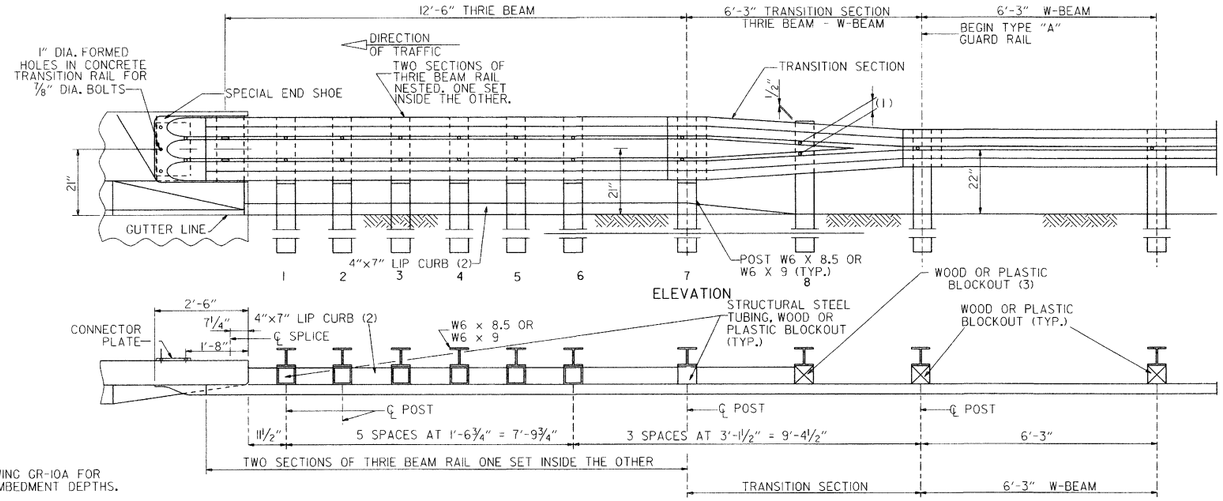


THRIE BEAM RAIL

SECTION THRU THRIE BEAM RAIL



SPECIAL END SHOE



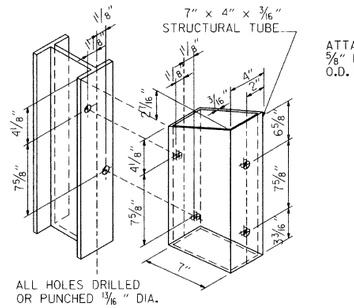
ELEVATION

PLAN

PLAN

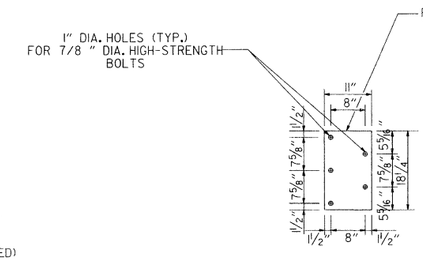
(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS



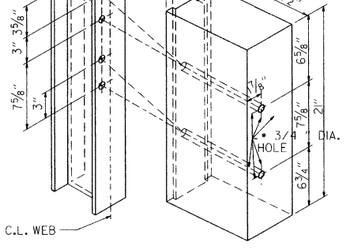
ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



CONNECTOR PLATE

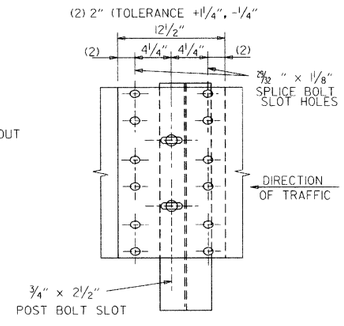
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS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



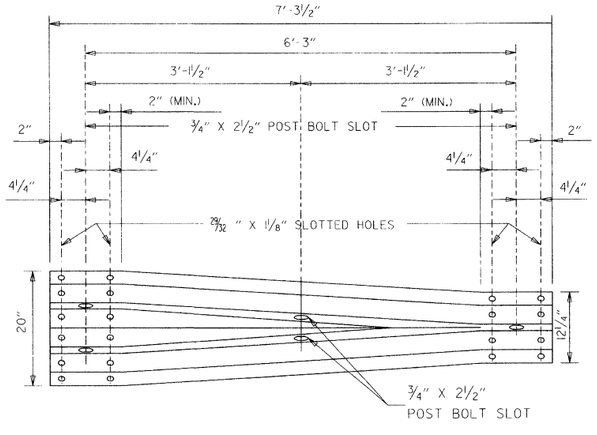
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

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



THRIE BEAM RAIL SPLICE AT POST



TRANSITION SECTION

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 ¾" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-11.

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

REFER TO STD. DRWG. GR-10A FOR POST DETAILS.

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

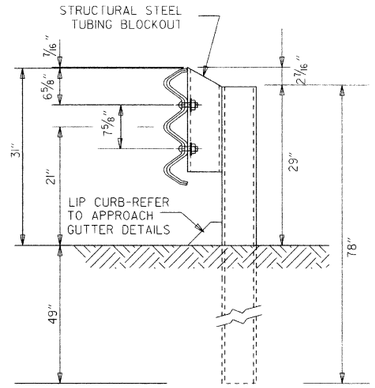
THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED NOTE (2)	
6-29-00	MOVED DIMENSION LINES	
5-18-00	ADDED NOTE	
3-30-00	DRAWN & ISSUED	

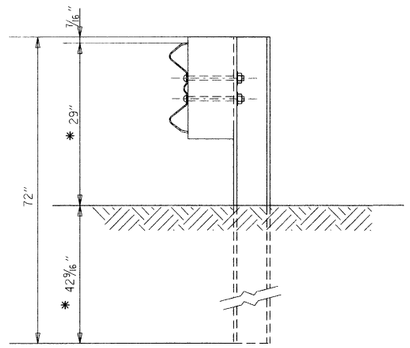
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10

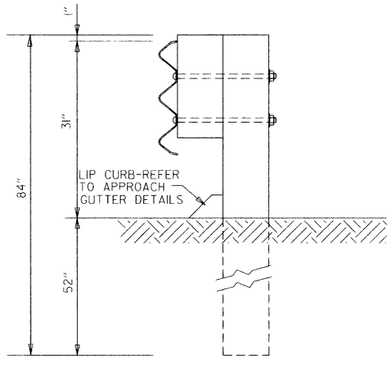


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

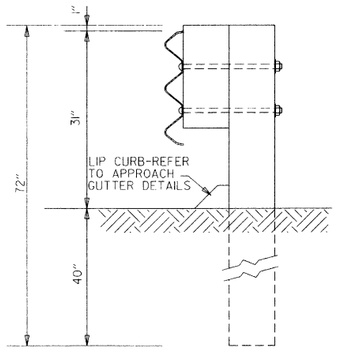


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

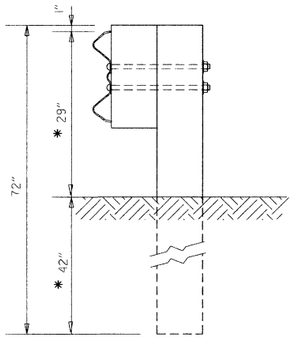
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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



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



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

GENERAL NOTES:

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

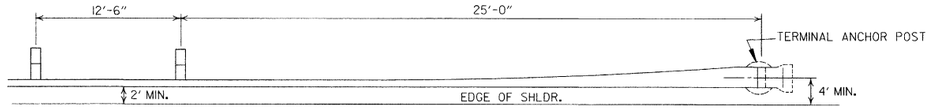
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	DATE FILM
7-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
8-22-02	REVISED LIP CURB NOTE	
3-30-00	DRAWN & ISSUED	

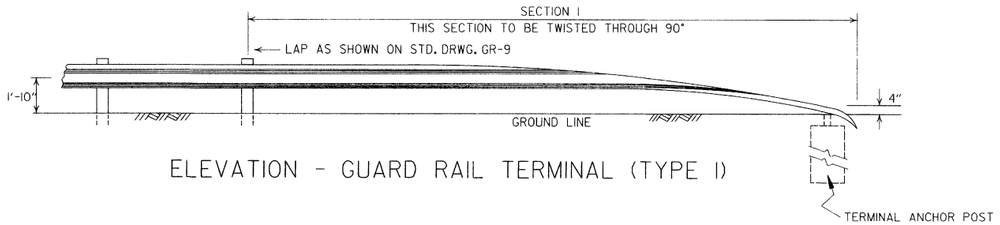
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

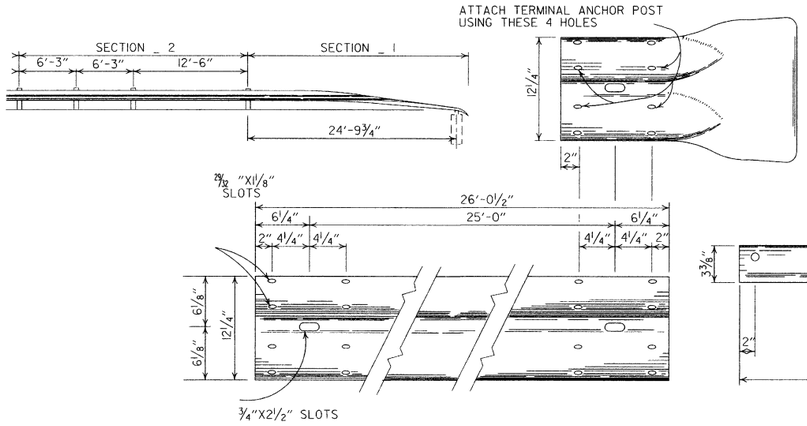


PLAN - GUARD RAIL TERMINAL (TYPE I)



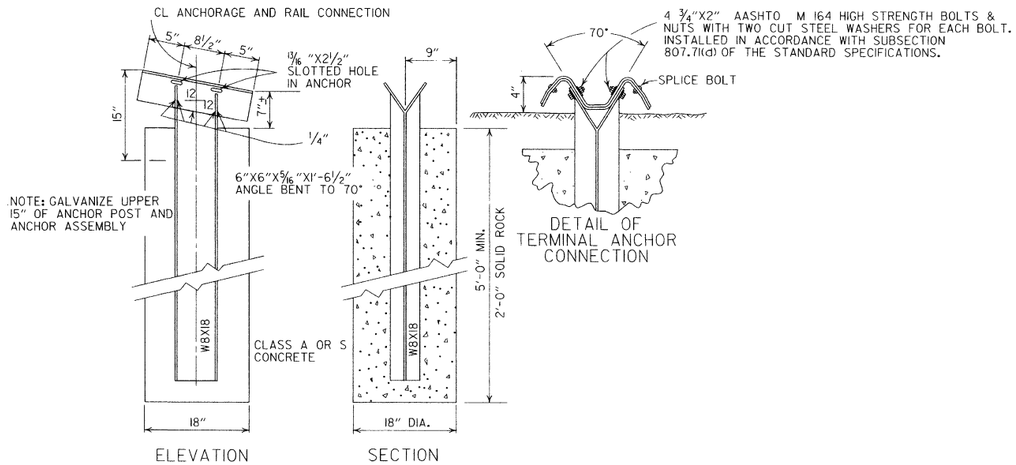
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

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



SECTION I

TERMINAL SECTION



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

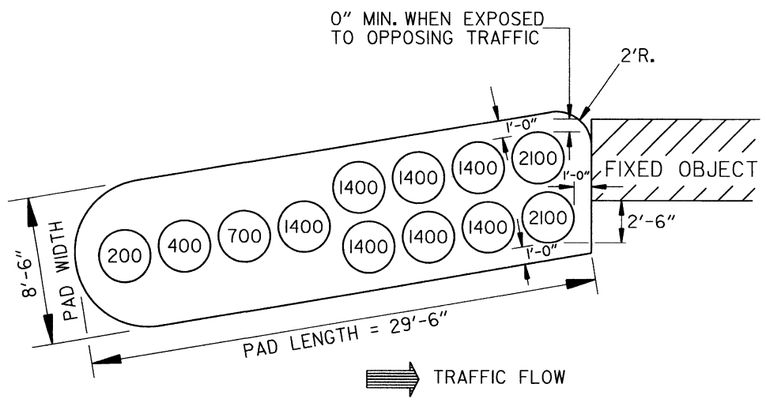
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

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

ARKANSAS STATE HIGHWAY COMMISSION

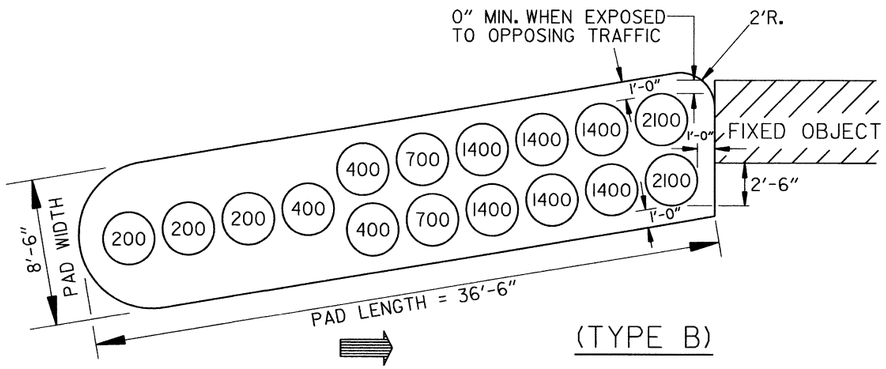
GUARD RAIL DETAILS

STANDARD DRAWING GRT-1



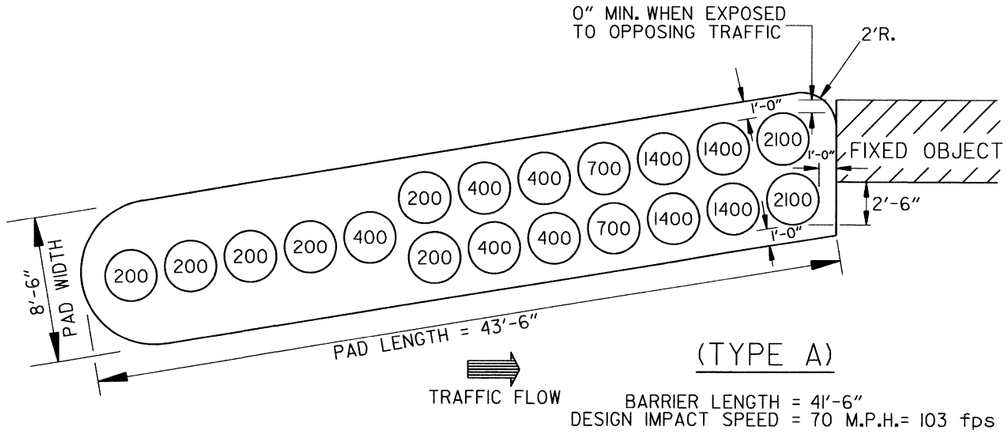
(TYPE C)

BARRIER LENGTH = 27'-6"
DESIGN IMPACT SPEED = 50 M.P.H.= 73.3 fps



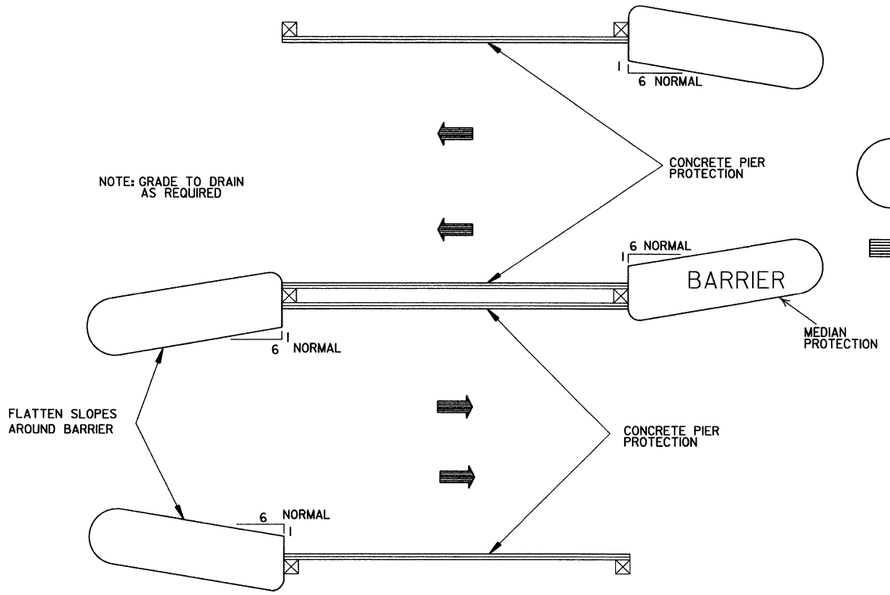
(TYPE B)

BARRIER LENGTH = 34'-6"
DESIGN IMPACT SPEED = 60 M.P.H.= 88 fps

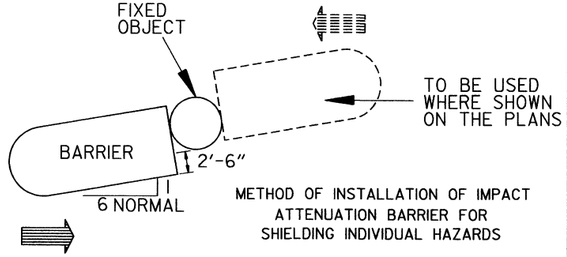


(TYPE A)

BARRIER LENGTH = 41'-6"
DESIGN IMPACT SPEED = 70 M.P.H.= 103 fps



METHOD OF INSTALLATION OF
IMPACT ATTENUATION BARRIER
FOR PIER PROTECTION



METHOD OF INSTALLATION OF IMPACT
ATTENUATION BARRIER FOR
SHIELDING INDIVIDUAL HAZARDS

APPROXIMATE QUANTITIES PER PAD

TYPE	ALTERNATE #1		ALTERNATE #2
	AGGR. BASE COURSE	A.C.H.M. SURFACE COURSE	P.C.CONC. BASE (4"U.T.)
	TONS	TONS	SQ.YDS.
A	9.7	4.6	41.6
B	8.1	3.8	34.9
C	6.6	3.1	28.3

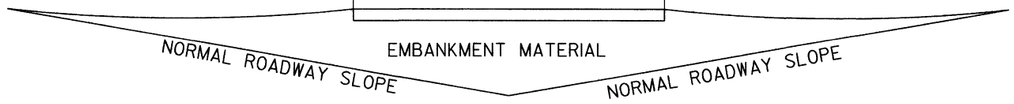
NOTE: APPROXIMATE QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. PAYMENT TO BE INCLUDED IN UNIT PRICE BID FOR IMPACT ATTENUATION BARRIER.

GENERAL NOTES

1. DIMENSIONS SHOWN ARE TO TOP OF PLASTIC MODULES.
2. SPACING BETWEEN PLASTIC MODULES SHALL NOT EXCEED 6" AT THE TOP.
3. PLASTIC MODULES SHALL MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

ALTERNATE #1
AVG. 8'-6" A.C.H.M. SURF. COURSE(1/2")
220 LBS. PER SQ. YD. &
AGGREGATE BASE COURSE
(4" COMPACTED DEPTH)

OR ALTERNATE #2
AVG. 8'-6" PORTLAND
CEMENT CONCRETE
BASE (4" U.T.)



DETAIL OF BARRIER PAD

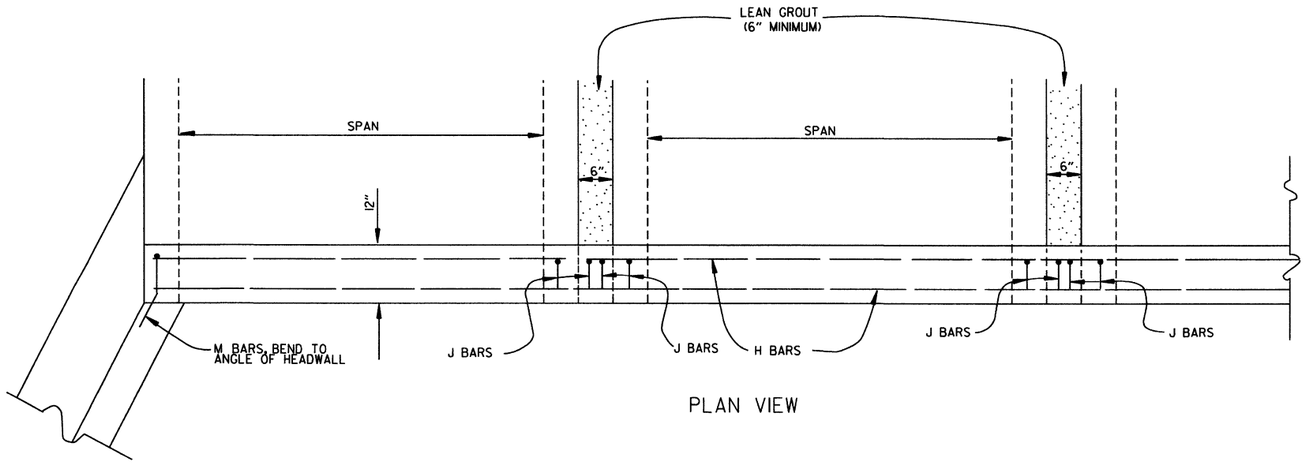
NOTE: BARRIER PAD TO BE SKEWED TOWARD ONCOMING TRAFFIC
A MAXIMUM OF 6:1 WITH 6:1 BEING NORMAL

DATE	REVISION	DATE FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-29-07	REVISED TY. A & TY. C ARRAYS	
11-19-98	REVISED FIXED OBJECT	
11-18-98	REV. NOTES & TYPE A MOD. WTS.	
10-18-96	REDRAWN	
7-15-88	CONFORMED TO 1988 SPECS	
7-29-87	REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

IMPACT ATTENUATION BARRIER

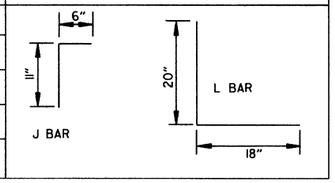
STANDARD DRAWING IB-1



PLAN VIEW

BAR LIST

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



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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE $\frac{3}{4}$" CHAMFERS.

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

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

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

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

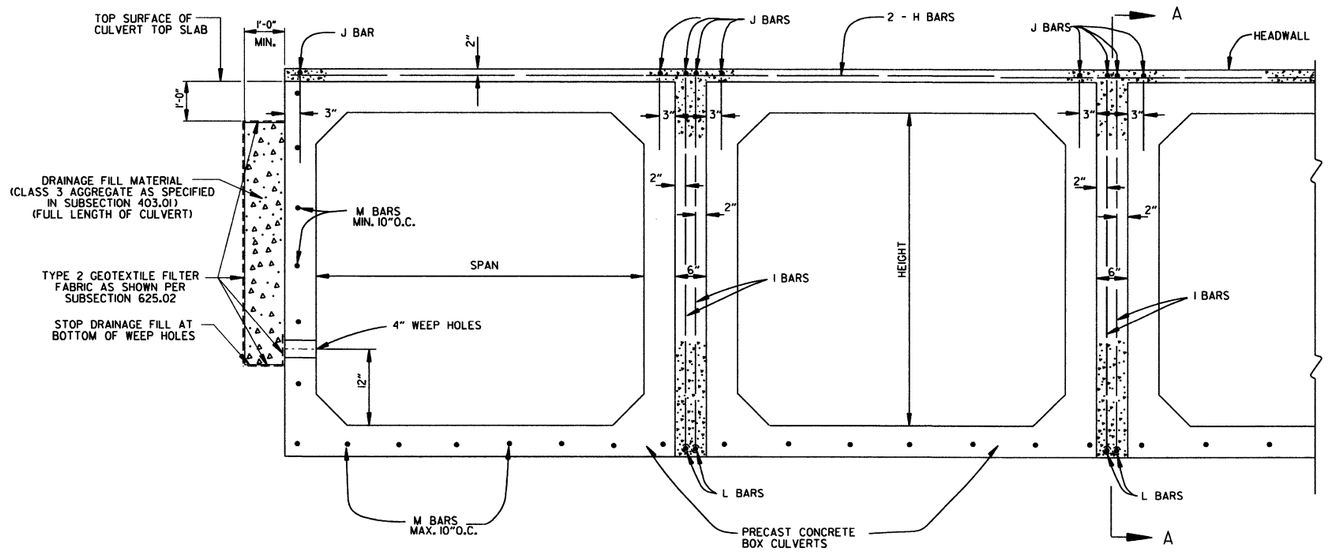
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

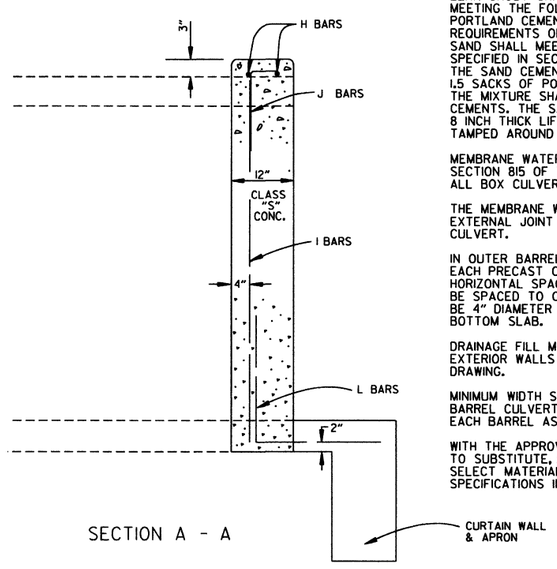
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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

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



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS.	
11-30-89	ISSUED; JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

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	96⅞	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.

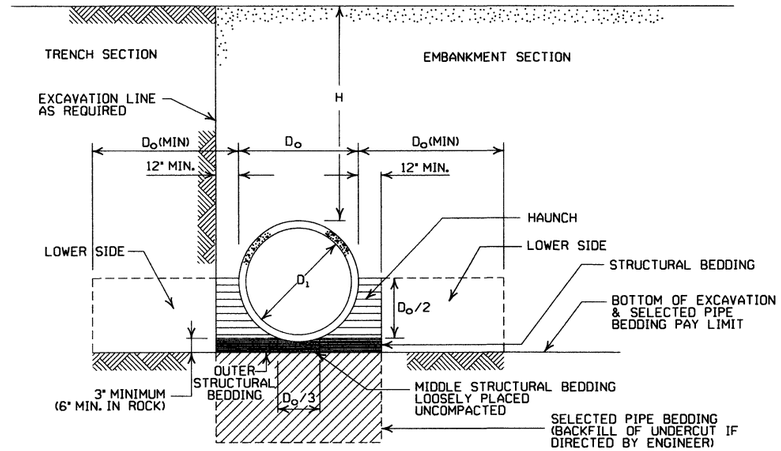
- LEGEND -

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

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			

			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			
				INSTALLATION		INSTALLATION
				TYPE 2	TYPE 1	TYPE 2	TYPE 1
36	40x31	5	0.079	3	2	12	15
42	46x36	6	0.079	3	2	13	15
48	53x41	7	0.079	3	2	13	15
54	60x46	8	0.079	3	2	13	15
60	66x51	9	0.079	3	2	13	15
66	73x55	12	0.079	3	2	15	15
72	81x59	14	0.079	3	2	15	15
78	87x63	14	0.079	3	2	15	15
84	95x67	16	0.109	3	2	15	15
90	103x71	16	0.109	3	2	15	15
96	112x75	18	0.109	3	2	15	15
102	117x79	18	0.109	3	2	15	15
108	128x83	18	0.138	3	2	15	15

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. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL 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 METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

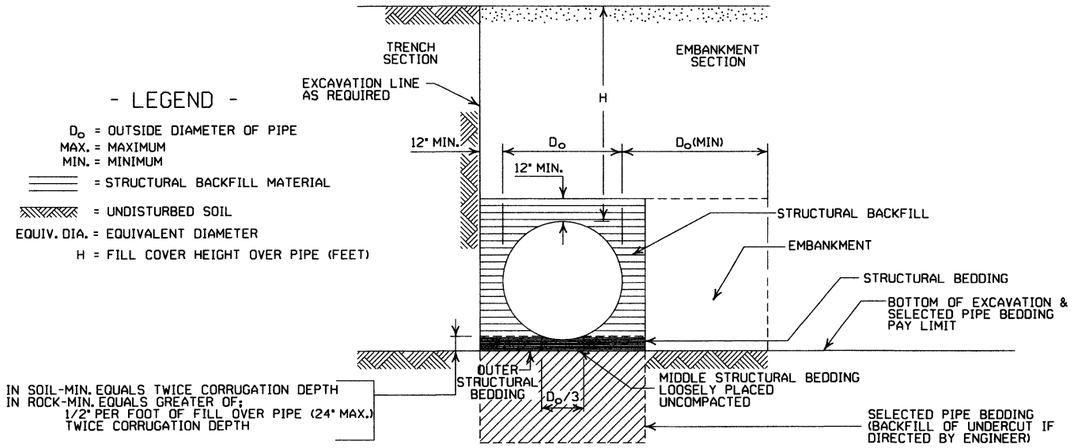
③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL 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. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
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. 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."
9. 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 AS STRUCTURAL BACKFILL), 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."

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

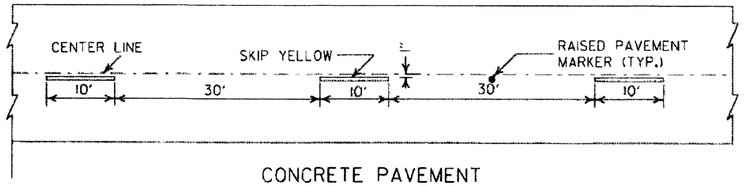
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

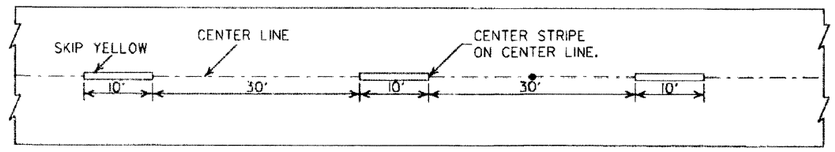
METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-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.

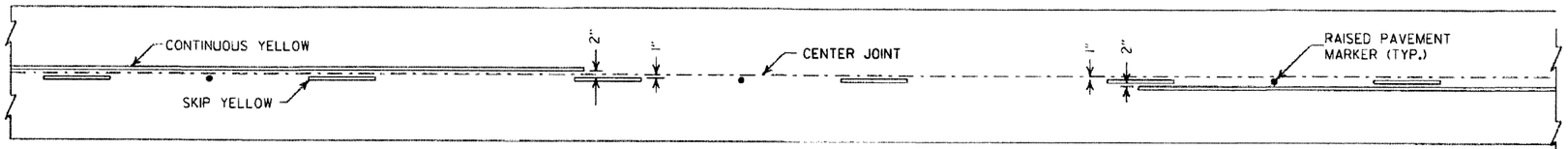


CONCRETE PAVEMENT

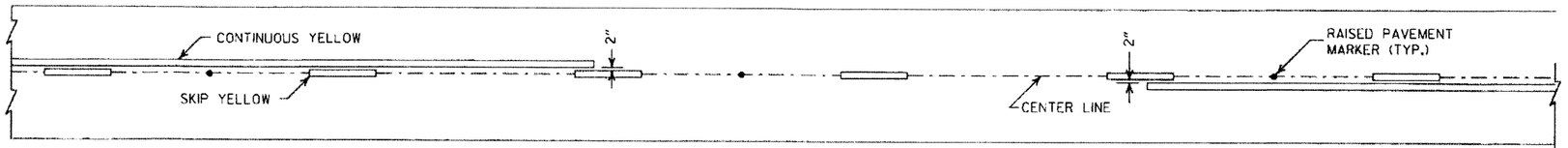


ASPHALT PAVEMENT

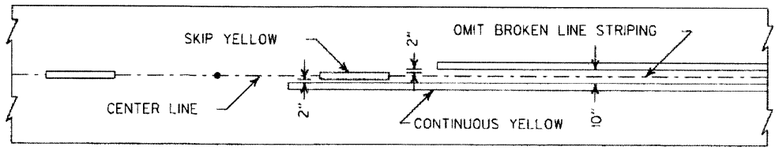
BROKEN LINE STRIPING



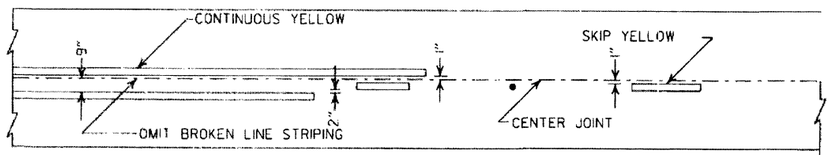
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

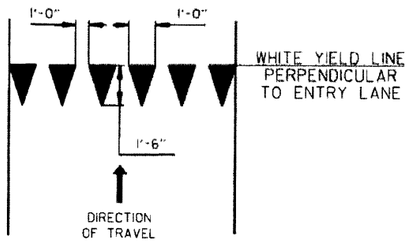


ASPHALT PAVEMENT

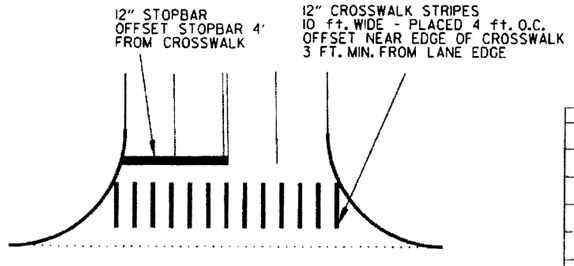


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

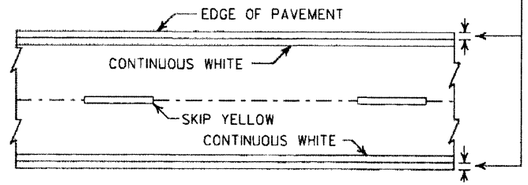


YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

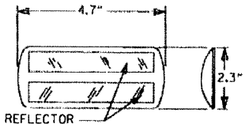
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



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

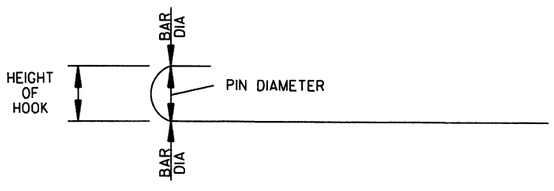
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

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

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

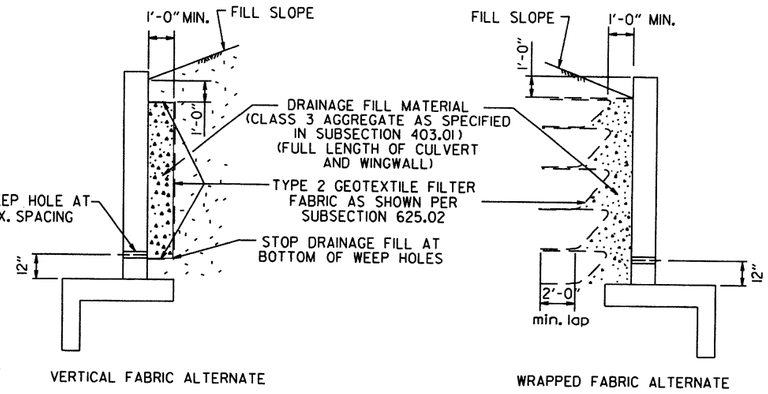
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

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

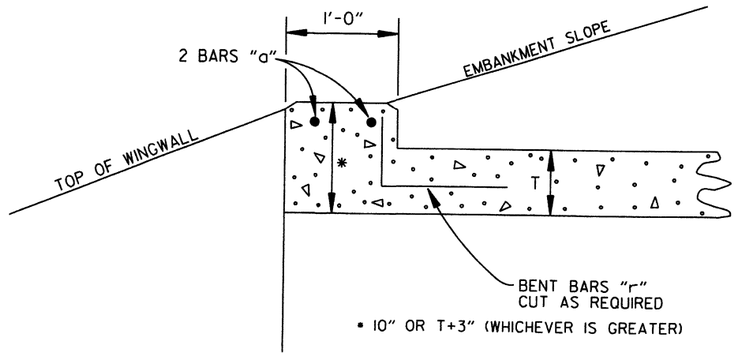
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

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



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

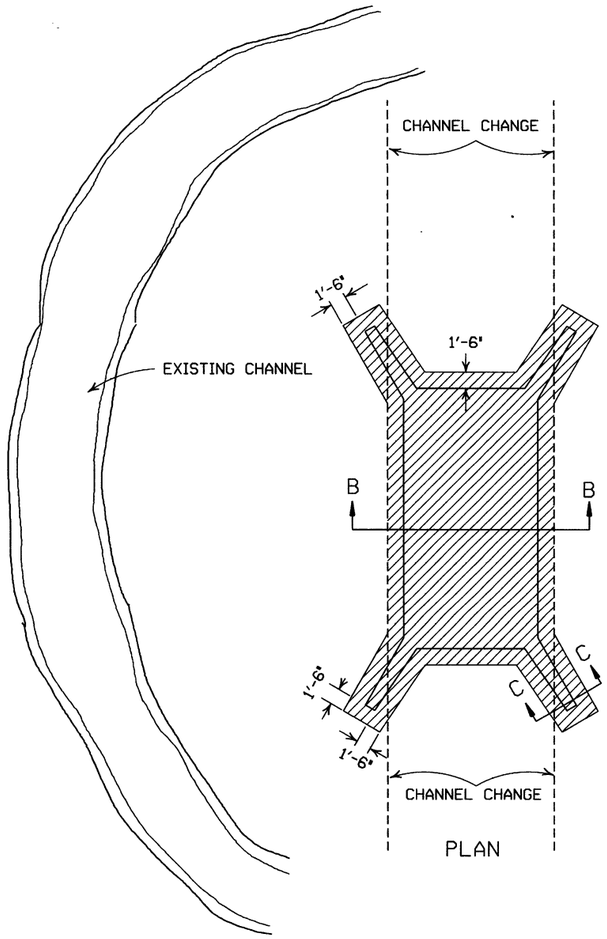
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

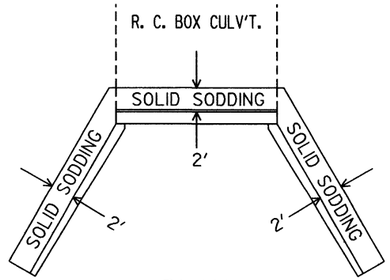
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

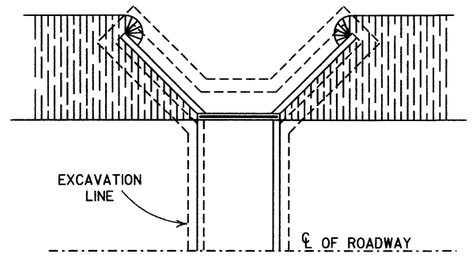
SOLID SODDING



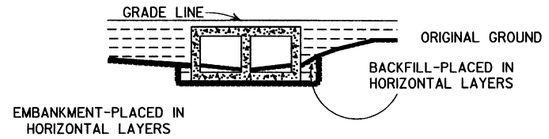
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

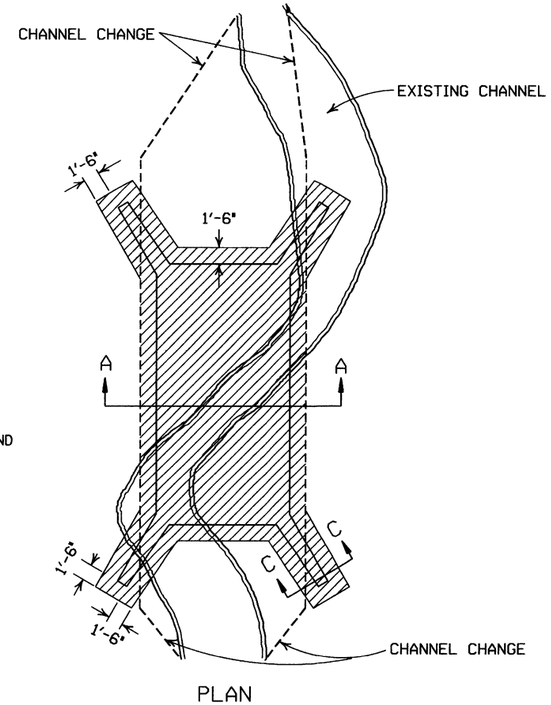


PLAN

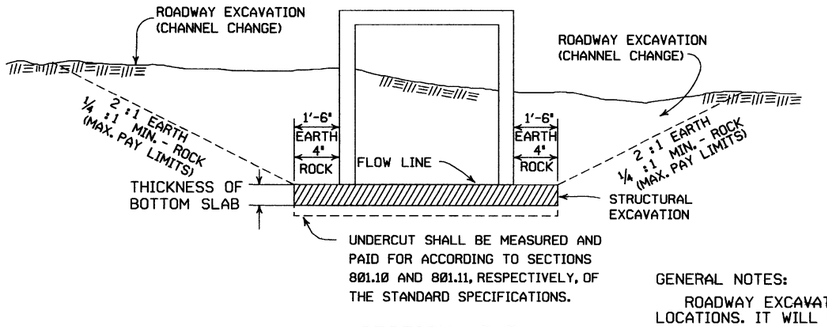


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

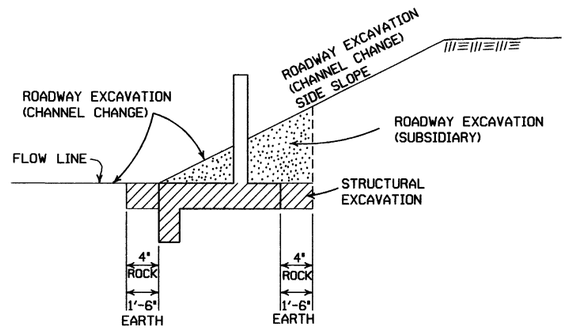


PLAN

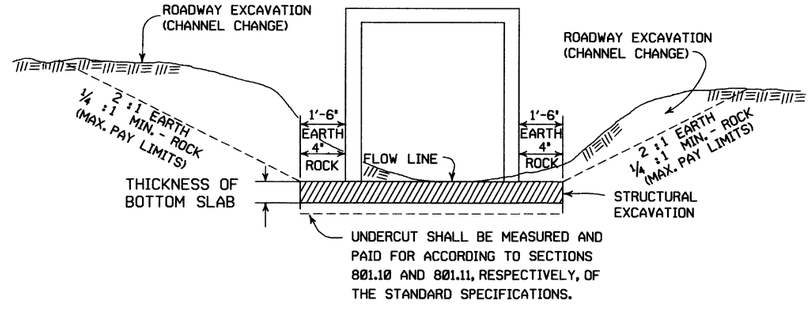


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

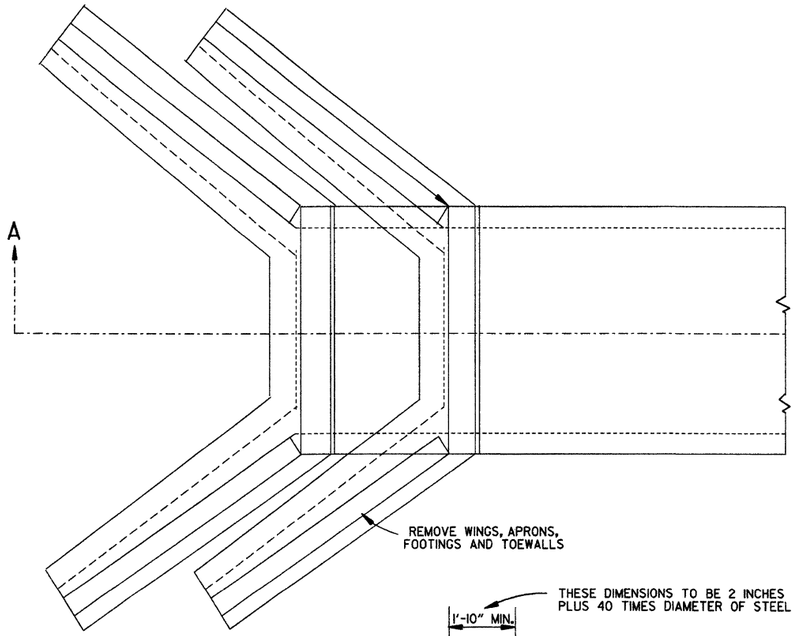
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

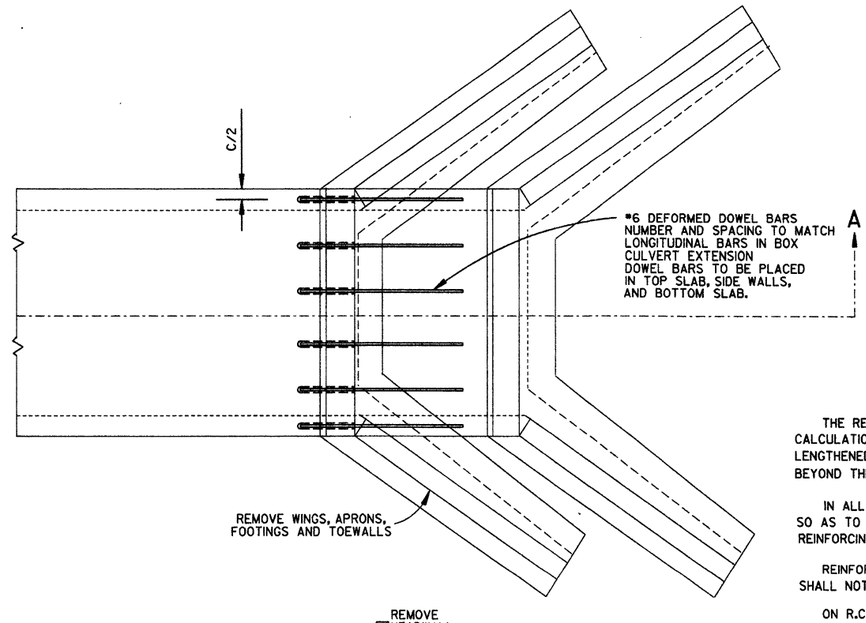
STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER, THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER, AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2, REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

ARKANSAS STATE HIGHWAY COMMISSION

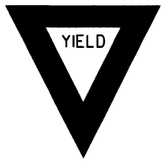
METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

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"

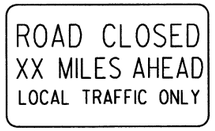
R5-1

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

R11-2

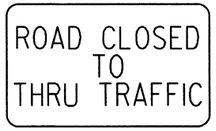
48"X30"

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"

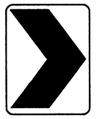
W1-4

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"

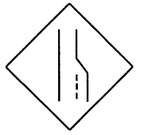
W3-1

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"

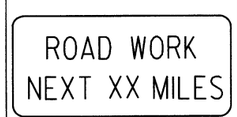
W8-11

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

W8-9

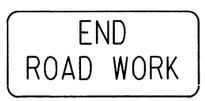
STD. 36"X36"
FWY. 48"X48"

G20-1



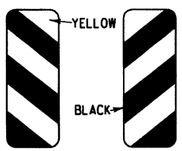
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

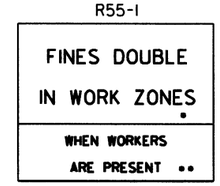
M4-9

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.

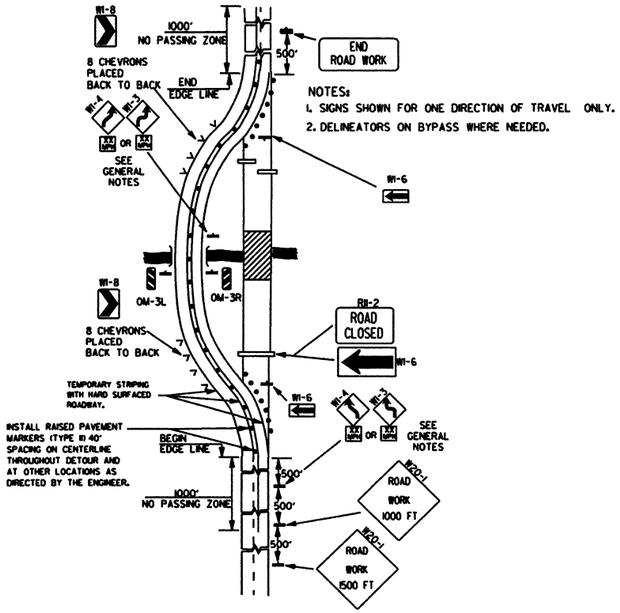
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

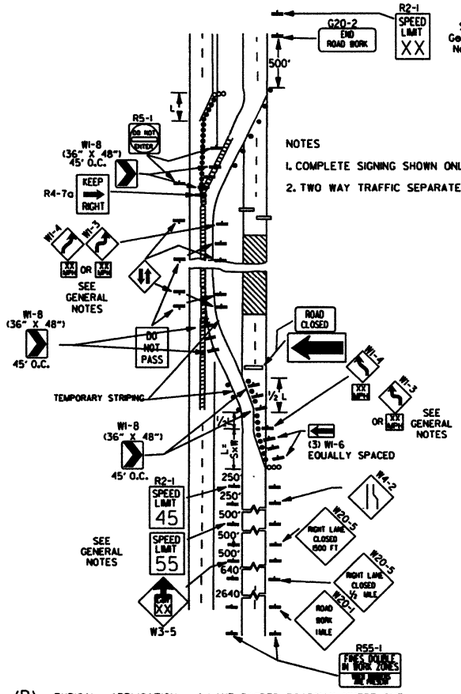
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

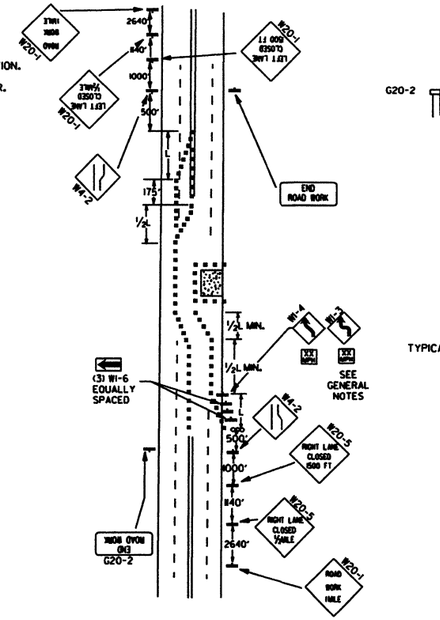
STANDARD DRAWING TC-1



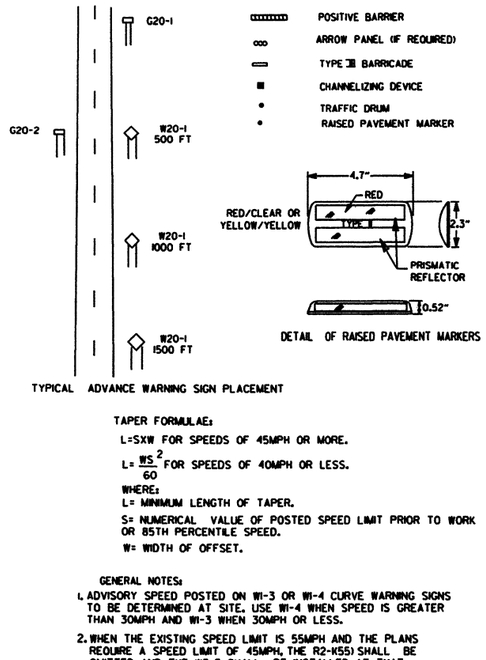
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



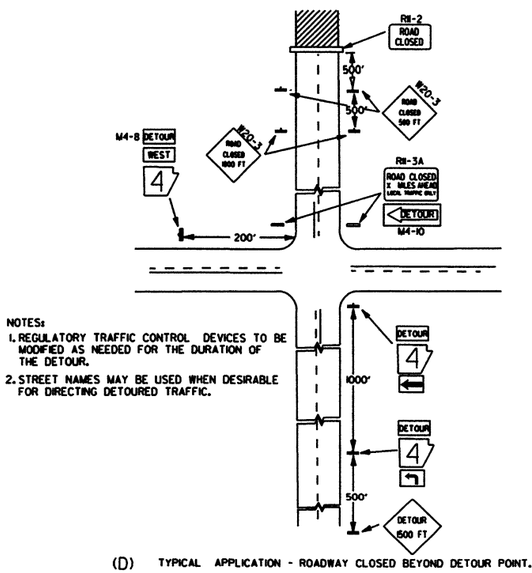
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



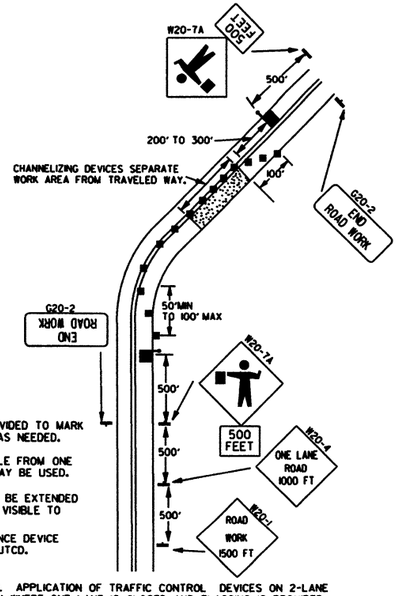
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



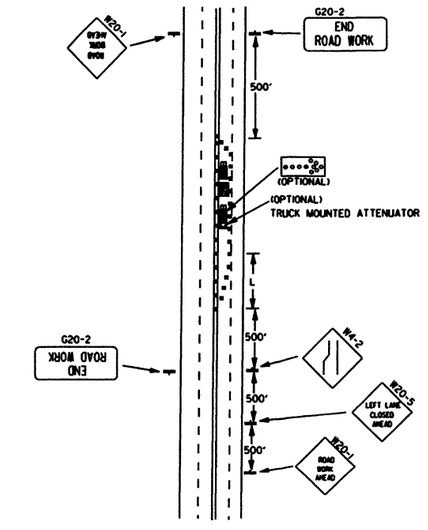
TYPICAL ADVANCE WARNING SIGN PLACEMENT



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



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



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

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:

L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

GENERAL NOTES:

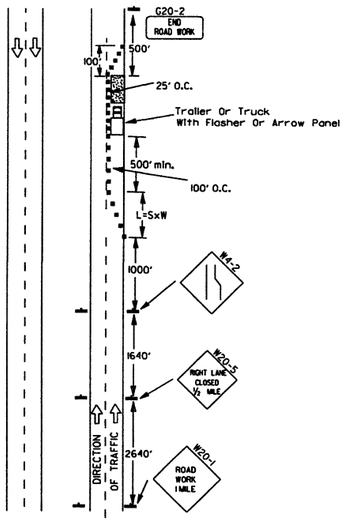
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-K55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-K45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

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	
3-4-10	ADDED (AFAD)	
8-20-08	REVISED SIGN DESIGNATIONS	
8-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

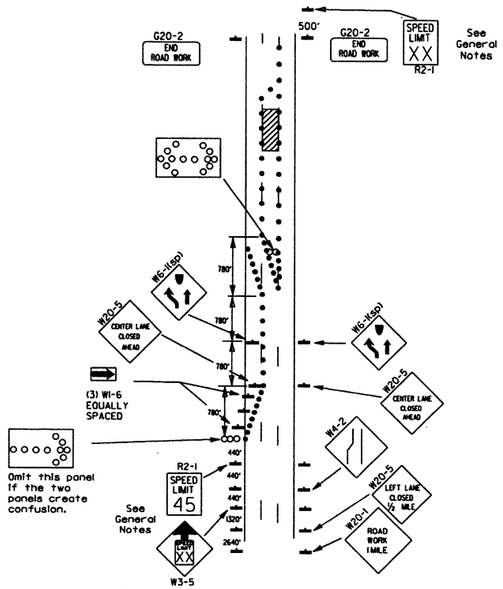
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

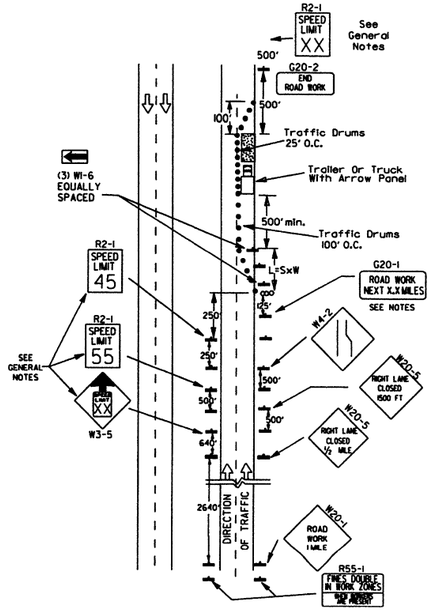
STANDARD DRAWING TC-2



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



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



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

KEY:

ooo Arrow Panel (If Required)

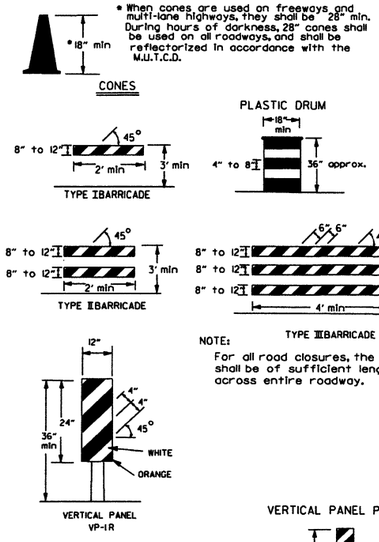
■ Channelizing Device

● 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



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

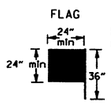
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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

* When shown on the plans concrete barrier will be used.

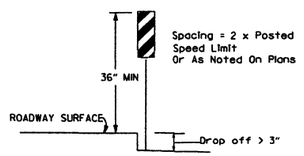
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

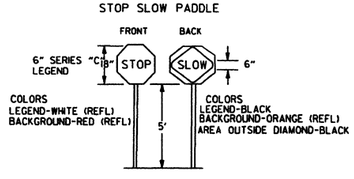


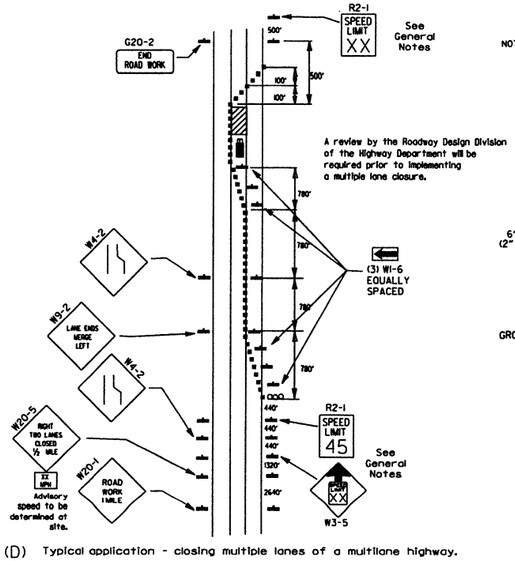
Flag shall be of good grade red material

VERTICAL PANEL PLACEMENT



STOP SLOW PADDLE





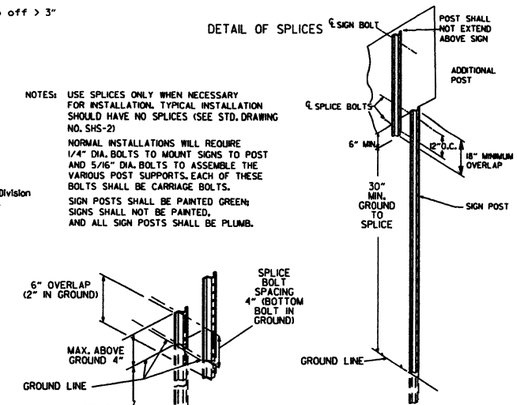
(D) Typical application - closing multiple lanes of a multilane highway.

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

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

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

DETAIL OF SPLICES



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

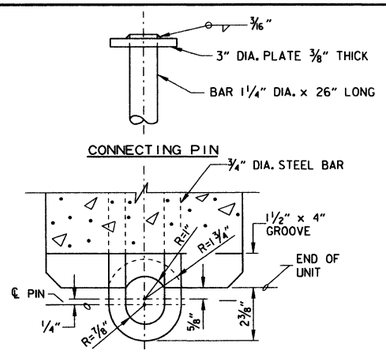
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

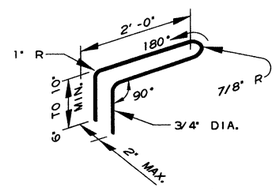
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

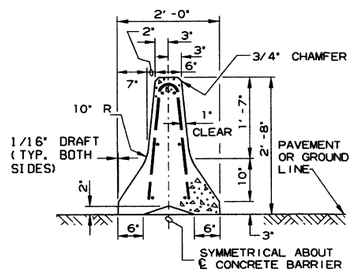
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ.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



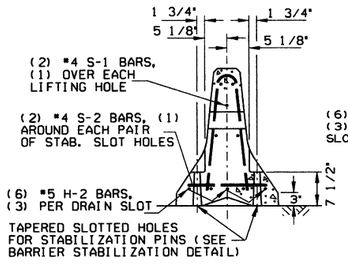
CONNECTION DETAILS



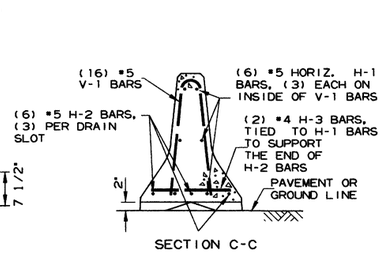
CONNECTION LOOP



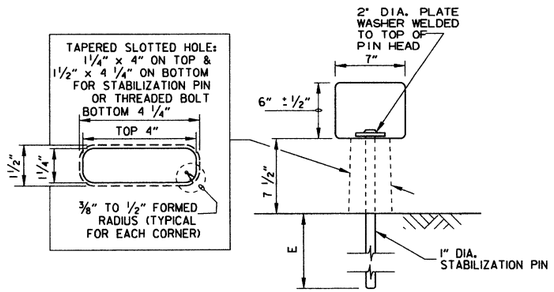
SECTION A-A



SECTION B-B



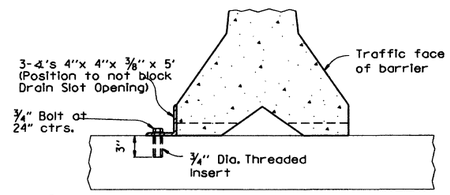
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

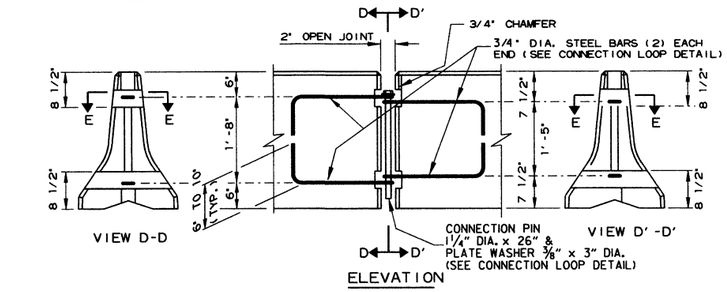
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



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

BARRIER STABILIZATION DETAIL

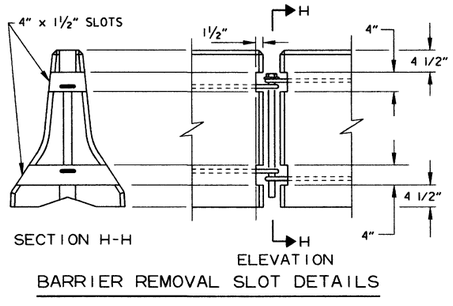
BRIDGE DECKS



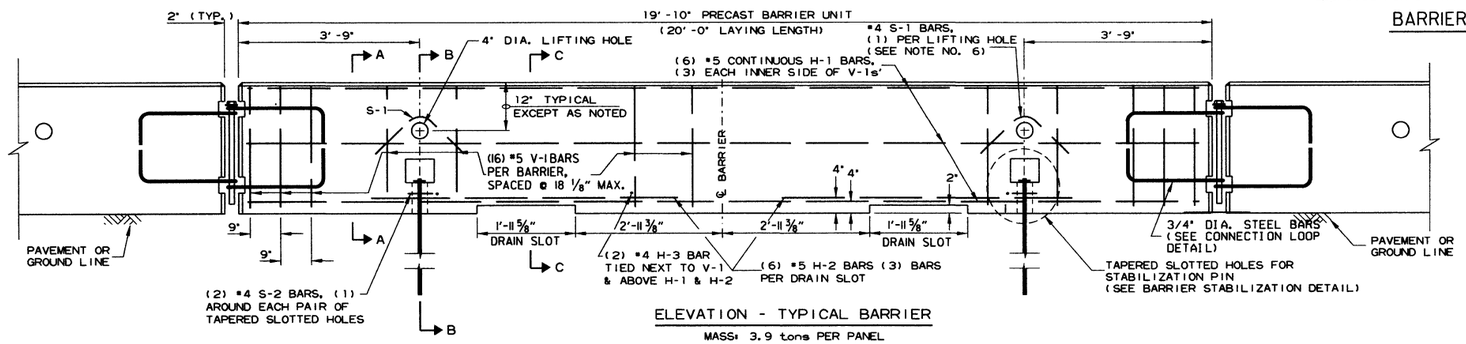
VIEW D-D

VIEW D'-D'

ELEVATION



BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

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 wall is 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.

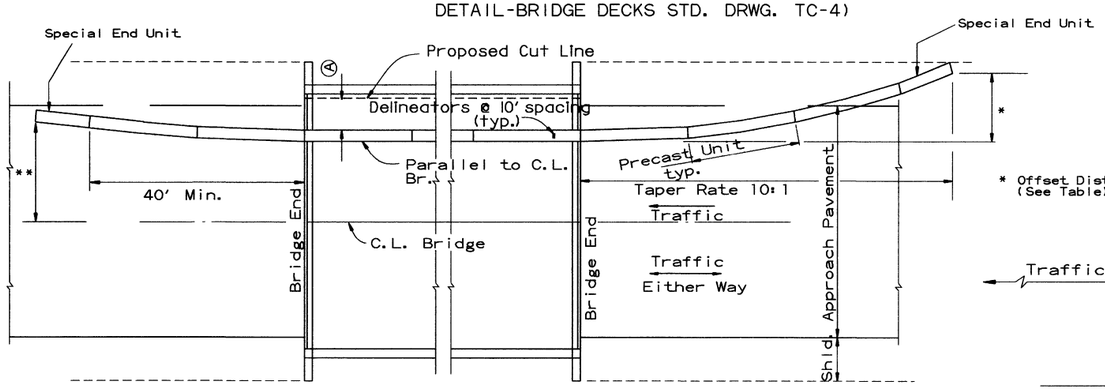
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

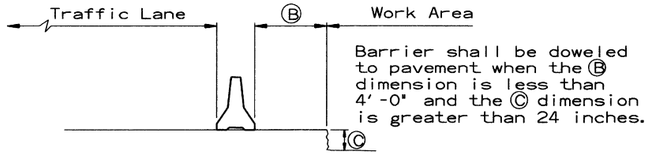
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

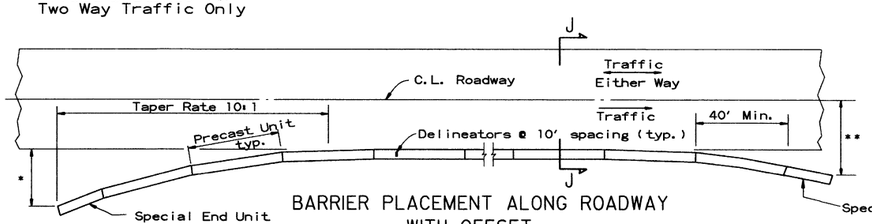


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

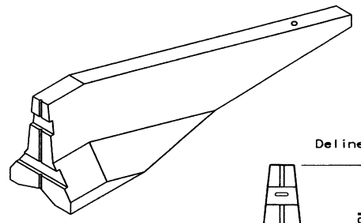
* Offset Distance (See Table)

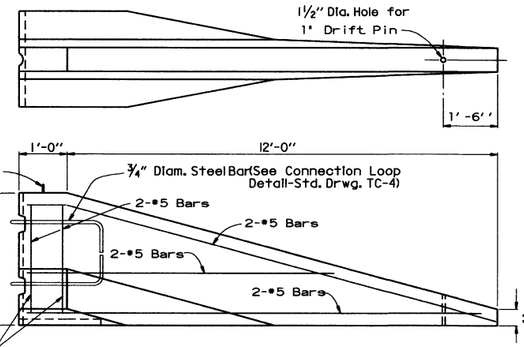
** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

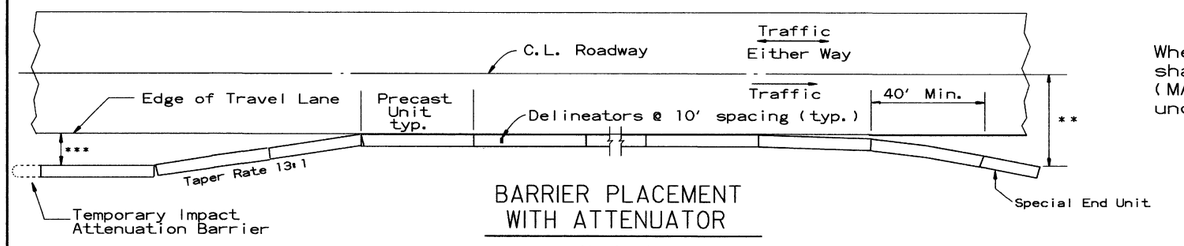
If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.





SPECIAL END UNIT

No Scale



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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

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	

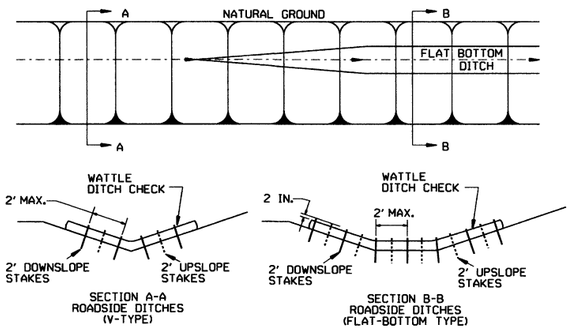
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

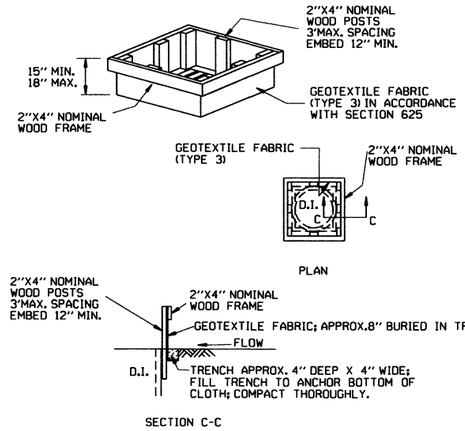
STANDARD DRAWING TC-5

GENERAL NOTES

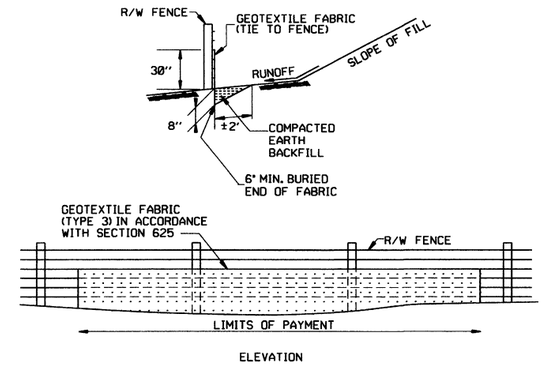
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

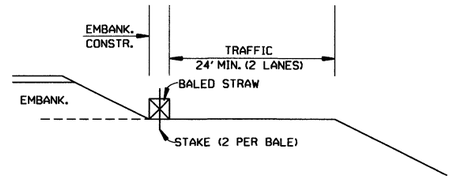
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

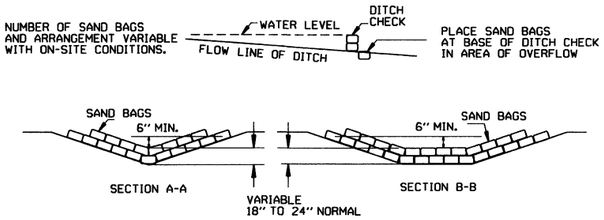
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

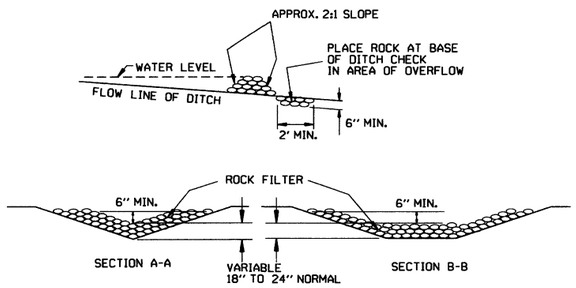
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



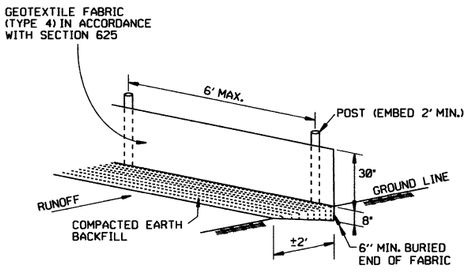
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

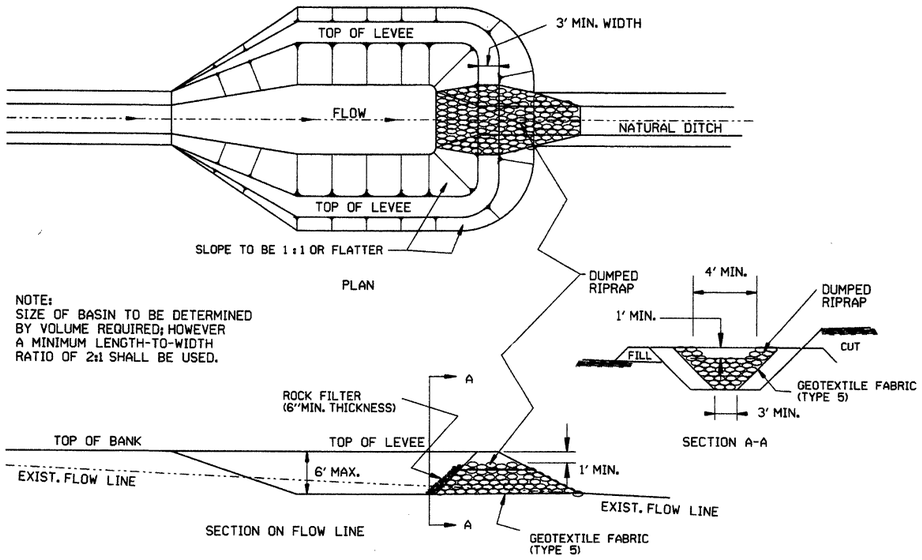
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

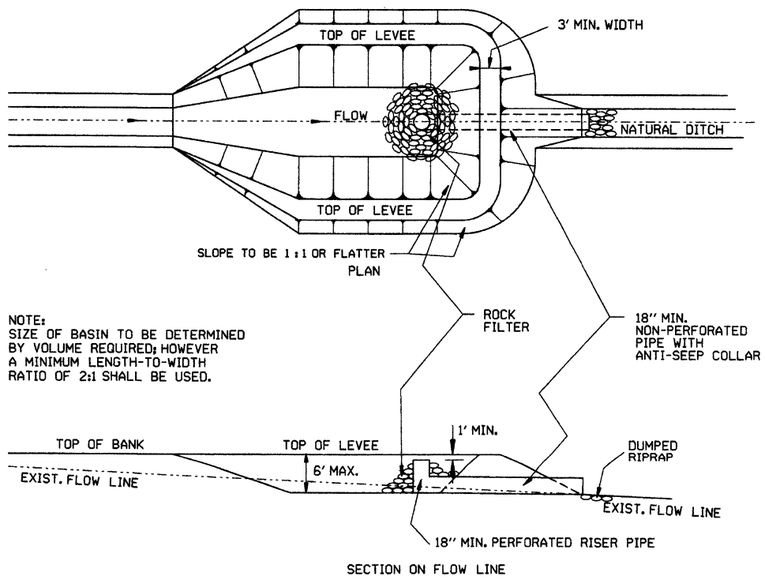
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

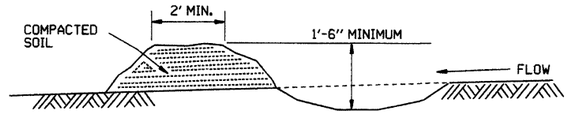
STANDARD DRAWING TEC-1



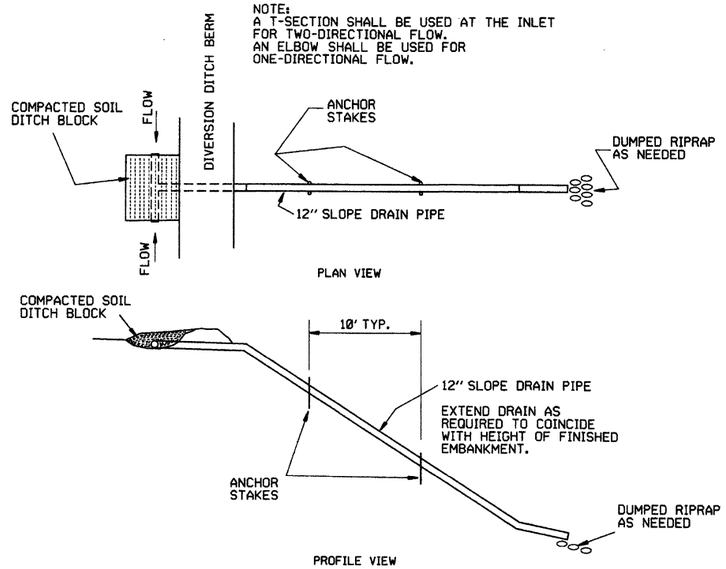
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



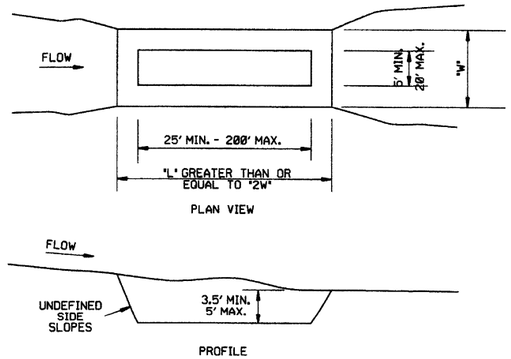
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

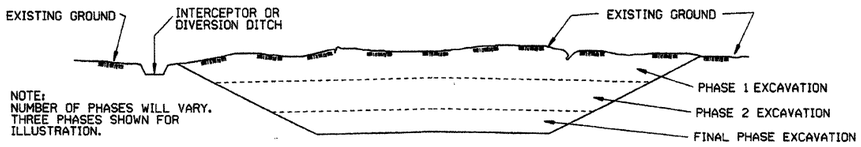
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



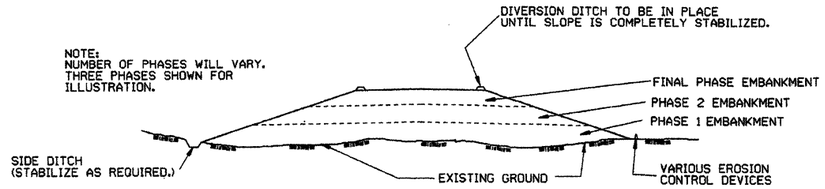
GENERAL NOTE

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.

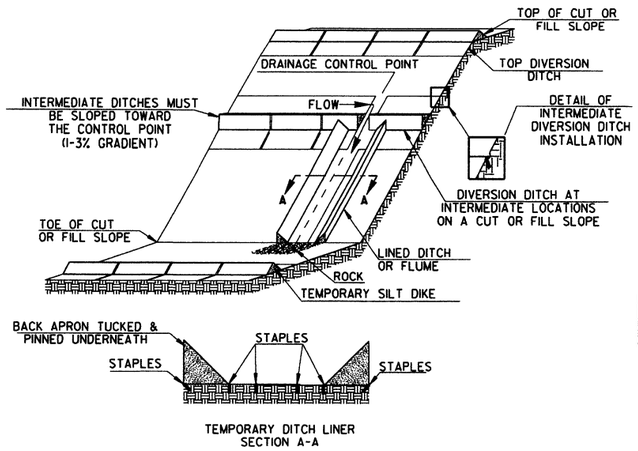
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

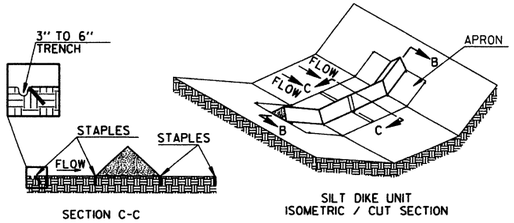
STANDARD DRAWING TEC-3

stdtec3.dgn



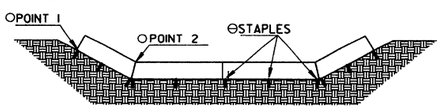
TEMPORARY DITCH LINER
SECTION A-A

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



SECTION C-C

SILT DIKE UNIT
ISOMETRIC / CUT SECTION

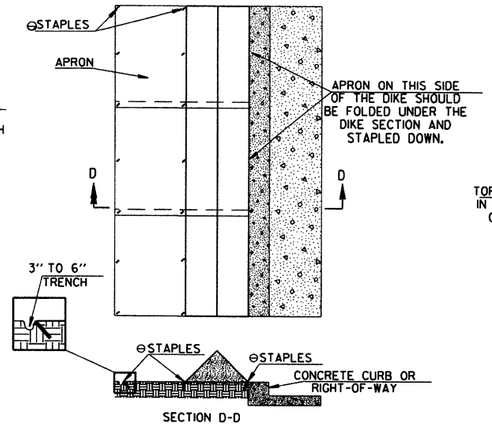


DIKE SECTION
SECTION B-B

TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

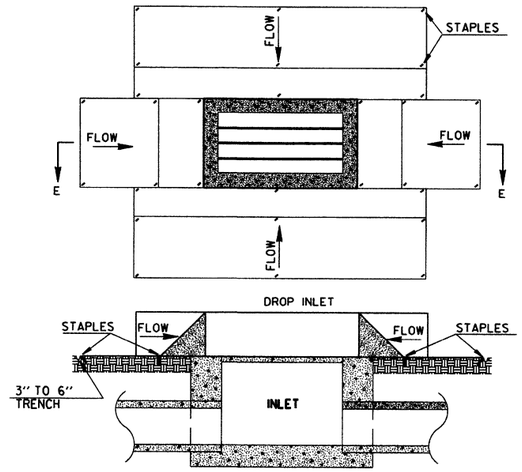
○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



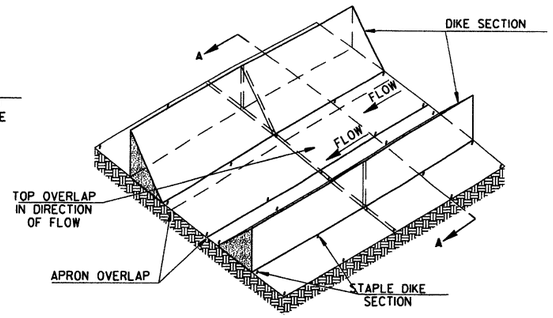
SECTION D-D

TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



SECTION E-E

TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

SYMBOLOGY
SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

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

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4