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.		080395	1	237

(2) CONWAY SOUTH INTERCHANGE - HWY. 365 (GRADING & STRS.) (F)

"THIS PROJECT IS A FULLY CONTROLLED ACCESS FACILITY"
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS

CONWAY SOUTH INTERCHANGE - HWY. 365 (GRADING & STRS.)(F)

FAULKNER COUNTY

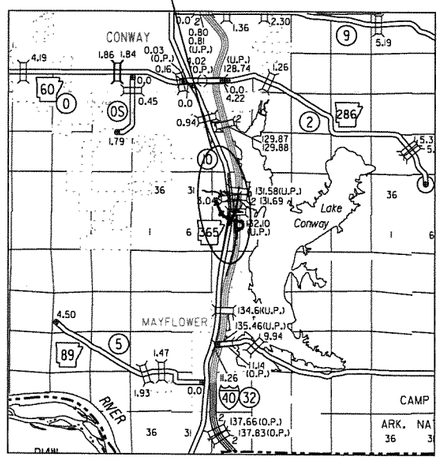
ROUTE I-40 SECTION 32

FEDERAL AID PROJECT NHPP-STPU-IMD-40-3(126)132

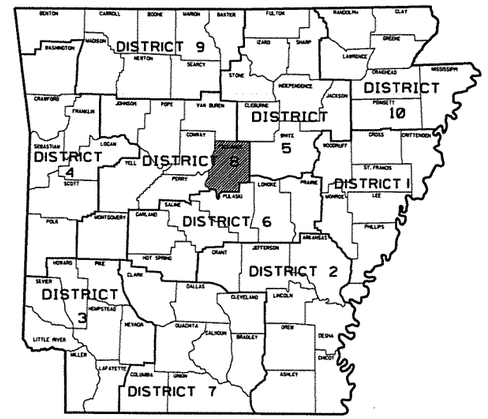
JOB 080395

NOT TO SCALE

PROJECT LOCATION

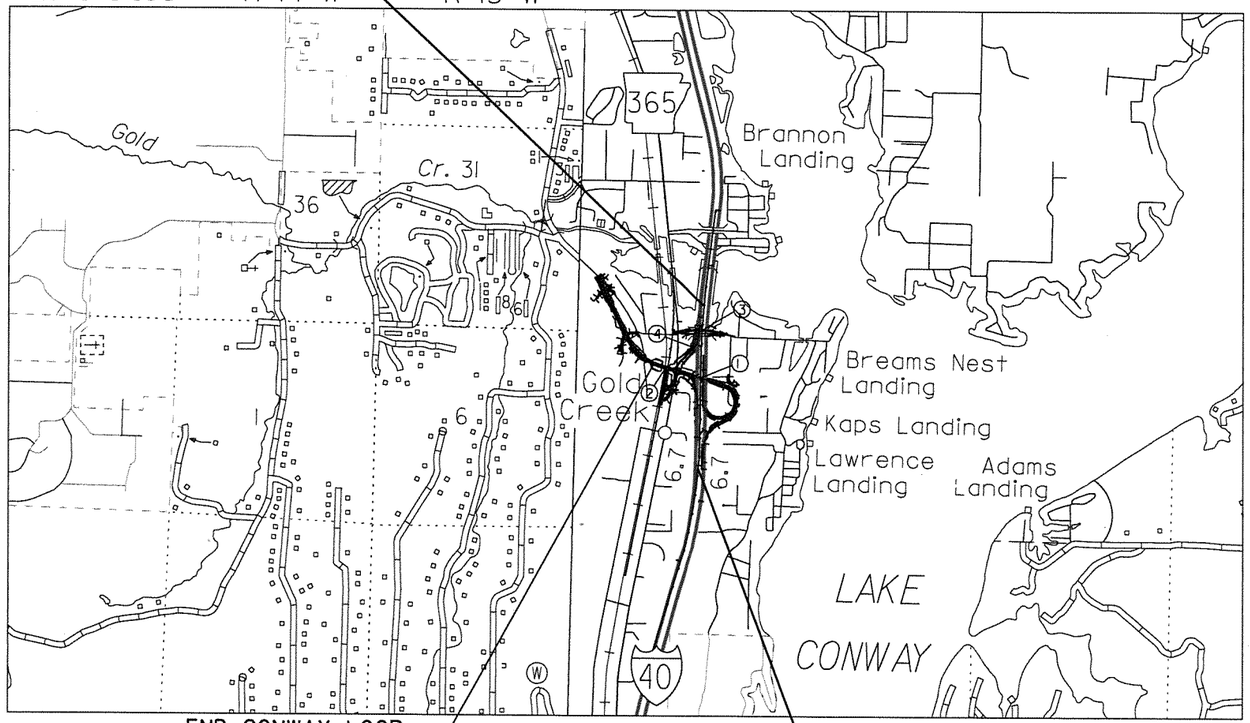


VICINITY MAP



ARKANSAS HIGHWAY DISTRICT 8

BEGIN JOB 080395
STA. 7413+98.59
L.M. 131.95



END CONWAY LOOP
CONST. STA. 33+00.00

END JOB 080395
STA. 7458+15.13

BRIDGE DATA

(1) STA. 18+83.88 BRIDGE END
BRIDGE NO. 07257 OVER INTERSTATE 40
218'-0" CONT. COMP. PLATE GIRDER UNIT
40'-0" CLEAR ROADWAY
15°42'54" RT. FORWARD SKEW
220'-3 " BRIDGE LENGTH
STA. 21+04.13 BRIDGE END

(2) STA. 28+50.31 BRIDGE END
BRIDGE NO. 07258 OVER HWY. 365 & UPRR
235'-0" CONT. COMP. PLATE GIRDER UNIT
64'-0" CLEAR ROADWAY
5°00'00" RT. FORWARD SKEW
237'-2⅛" BRIDGE LENGTH
STA. 30+87.49 BRIDGE END

(3) STA. 17+90.92 BRIDGE END
BRIDGE NO. 07259 OVER INTERSTATE 40
308'-0" CONT. COMP. PLATE GIRDER UNIT
40'-0" CLEAR ROADWAY
310'-2" BRIDGE LENGTH
STA. 21+01.08 BRIDGE END

STRUCTURES OVER 20'-0" SPAN

(4) RAMP I STA. 7426+50 CONSTRUCT
TRIPLE 8' X 4' X 104' R.C. BOX CULVERT
30° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 701 CFS DA = 406 ACRES
SPAN = 30.79'

DESIGN TRAFFIC DATA	I-40	CONWAY LOOP
DESIGN YEAR	2035	2035
2015 ADT	66,000	8,700
2035 ADT	101,200	22,000
2035 DHV	11,132	2,420
DIRECTIONAL DISTRIBUTION	60%	60%
TRUCKS	21%	8%
DESIGN SPEED	70 MPH	40 MPH

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 35°01'15"	N 35°0'53"	N 35°00'31"
LONGITUDE	W 92°24'35"	W 92°24'36"	W 92°24'37"
STATION	7413+98.59	7436+56.76	7458+15.13

LENGTH COMPUTED ALONG C.L. MEDIAN (I-40)

GROSS LENGTH OF PROJECT	4416.54 FEET OR	0.836 MILES
NET LENGTH OF ROADWAY	4416.54 FEET OR	0.836 MILES
NET LENGTH OF BRIDGES	0.00 FEET OR	0.000 MILES
NET LENGTH OF PROJECT	4416.54 FEET OR	0.836 MILES

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

P.E. JOB 080174
NON-PART.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 11655
TODD E. MUELLER
8-21-13

saroberson 8/19/2013 5:00:45 PM
WORKSPACE: HTD
N:\080395\080174\0 - Conway Western Arterial Loop\Drawings\PRJLGS\PRJLGS_05_CO_01.dgn
REVISED DATE:

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.		080395	2	237

(2) INDEX OF SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13885
TODD E. MUELLER
8-21-13

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188	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	10/15/2009
189	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER		TC-4	10/15/2009
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NOTE - CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS BUT MAY BE HAD UPON REQUEST.

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WORKSPACE: AHTD
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REVISED DATE:

INDEX OF SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-22-13				6	ARK.			
				JOB NO.		080395	3	237
				(2)	GOVERNING SPECIFICATIONS & GENERAL NOTES			

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON THE 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 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. 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 TO THE PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER ITEM NO. 210 UNCLASSIFIED EXCAVATION.
10. THIS PROJECT IS COVERED UNDER A SECTION 404 INDIVIDUAL PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION 2003, FOR PERMIT REQUIREMENTS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
BRIAN A. ROBBERSON

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, 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 - TRAINING PROGRAM - JOB 080395
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
606-2	PIPE CULVERTS
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
723-1	GENERAL REQUIREMENTS FOR SIGNS
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS

JOB 080395	ARCHITECTURAL FINISH
JOB 080395	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080395	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 080395	CHANNEL POST SIGN SUPPORT
JOB 080395	CONCRETE PULL BOX
JOB 080395	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 080395	COORDINATION OF WORK
JOB 080395	DRILLED SHAFT FOUNDATIONS
JOB 080395	ELECTRICAL SYSTEM INFRASTRUCTURE
JOB 080395	EXCAVATION AND EMBANKMENT
JOB 080395	FOUNDATION IMPROVEMENT - UNDERCUT AND BACKFILL
JOB 080395	FOUNDATION IMPROVEMENT - RAMMED AGGREGATE PIER
JOB 080395	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080395	HIGH PERFORMANCE PAVEMENT MARKING
JOB 080395	INSURANCE, CONSTRUCTION, AND FLAGGING REQUIREMENTS ON RAILROAD PROPERTY (UPRR)
JOB 080395	INTERNET BIDDING
JOB 080395	MAINTENANCE OF TRAFFIC
JOB 080395	NESTING SITES OF MIGRATORY BIRDS
JOB 080395	PAINTING STRUCTURAL STEEL
JOB 080395	PARTNERING REQUIREMENTS
JOB 080395	PLASTIC PIPE
JOB 080395	REMOVAL AND DISPOSAL OF GUARDRAIL
JOB 080395	RETAINING WALLS
JOB 080395	SHORING
JOB 080395	SILICONE JOINT SEALANT
JOB 080395	SOIL STABILIZATION
JOB 080395	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES OVER ROADWAYS
JOB 080395	STORM WATER POLLUTION PREVENTION PLAN
JOB 080395	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080395	TEMPORARY IMPACT ATTENUATION BARRIER
JOB 080395	TEMPORARY RETAINING WALLS
JOB 080395	TEXTURED COATING FINISH
JOB 080395	UTILITY ADJUSTMENTS
JOB 080395	VALUE ENGINEERING
JOB 080395	WARM MIX ASPHALT

GOVERNING SPECIFICATIONS & GENERAL NOTES

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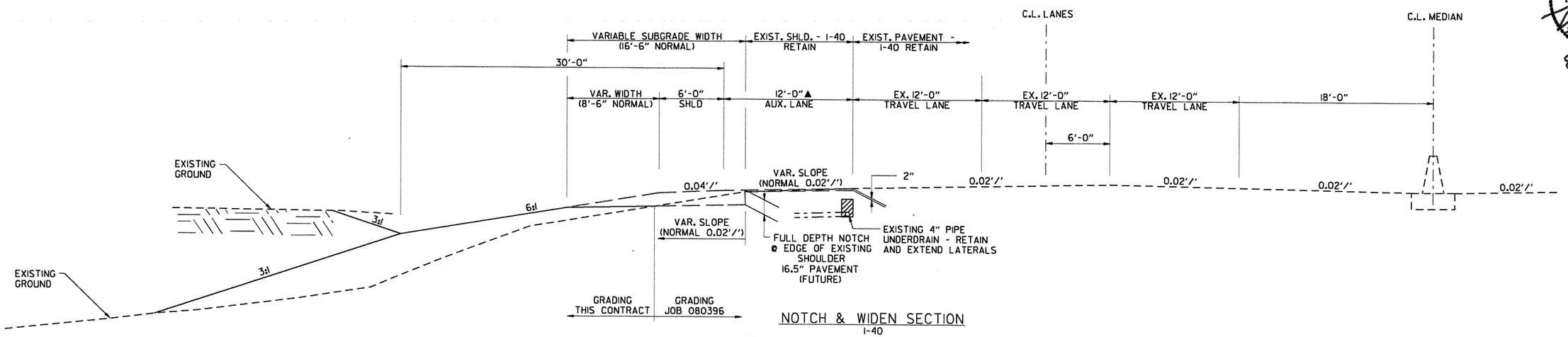
				JOB NO.		080395	4	237

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 14835
TODD P. MUELLER
8-21-13



NOTCH & WIDEN SECTION

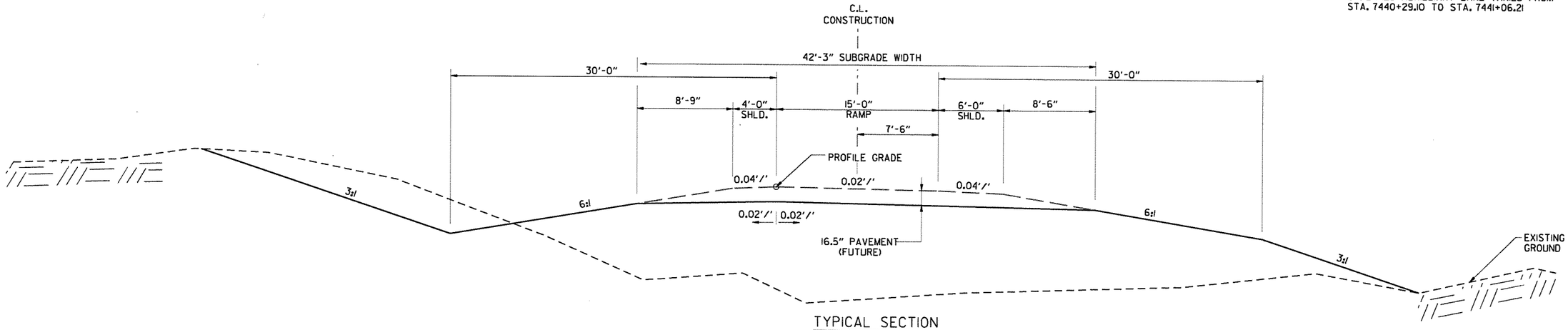
I-40

LEFT LANE SHOWN, RIGHT LANE SIMILAR BY ORIENTATION

RT. LANES - STA. 7413+98.59 TO STA. 7425+42.24
LT. LANES - STA. 7428+06.21 TO STA. 7441+06.21

▲ RT. LANES TRANSITION FROM 0' @ STA. 7413+98.59 TO 12' @ STA. 7415+98.59
LT. LANES TRANSITION FROM 0' @ STA. 7428+06.21 TO 12' @ STA. 7431+06.21

RT. LANES AUXILLIARY LANE VARIES FROM STA. 7420+38.59 TO STA. 7425+42.24
LT. LANES AUXILLIARY LANE VARIES FROM STA. 7440+29.10 TO STA. 7441+06.21



TYPICAL SECTION

RAMP

(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP I STA. 7429+01.48 TO STA. 7429+12.34

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES AND CROSS SECTIONS AS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH OF A FOOT WILL BE ALLOWED.

TYPICAL SECTIONS OF IMPROVEMENT

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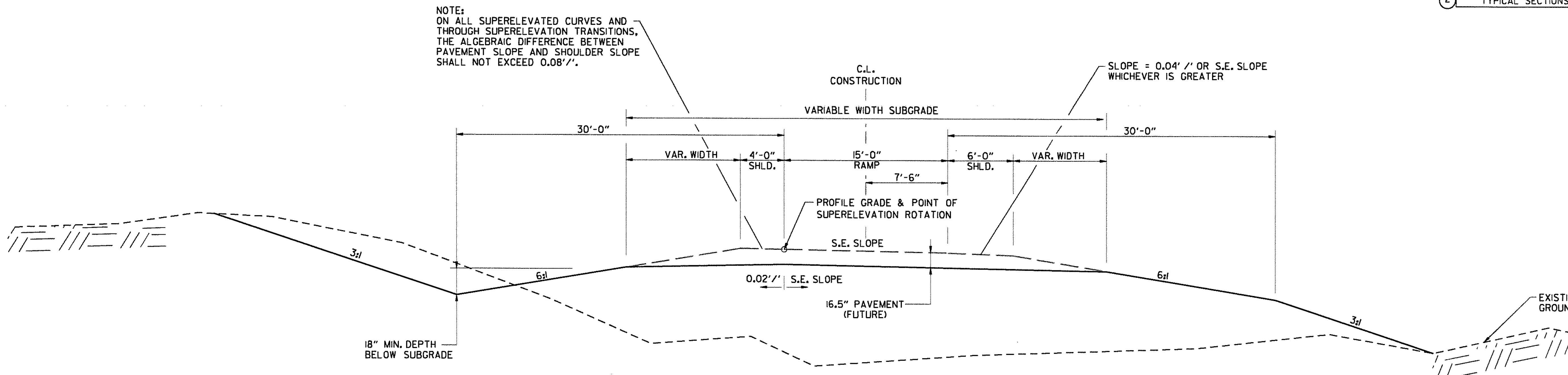
				JOB NO.		080395	5	237

(2) TYPICAL SECTIONS OF IMPROVEMENT

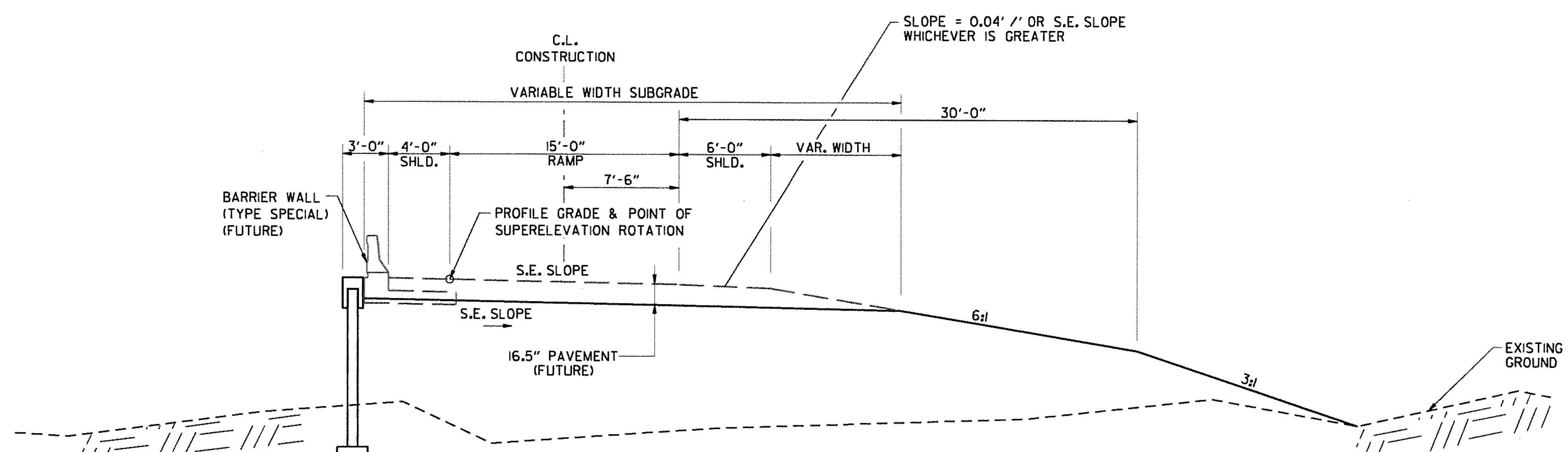
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11685 TODD E. MUELLER

8-21-13



SUPERELEVATED SECTION
RAMP
(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP 1 STA. 7423+44.25 TO STA. 7429+01.48
RAMP 1 STA. 7429+12.34 TO STA. 7434+11.39
RAMP 2 STA. 7432+74.42 TO STA. 7434+60.00
RAMP 3 STA. 7441+34.94 TO STA. 7450+00.00 (END GRADING)
RAMP 4 STA. 7441+05.30 TO STA. 7449+63.52



SUPERELEVATED SECTION
RAMP
(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP 2 STA. 7434+60.00 TO STA. 7437+70.00 (END GRADING)

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES AND CROSS SECTIONS AS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH OF A FOOT WILL BE ALLOWED.

TYPICAL SECTIONS OF IMPROVEMENT

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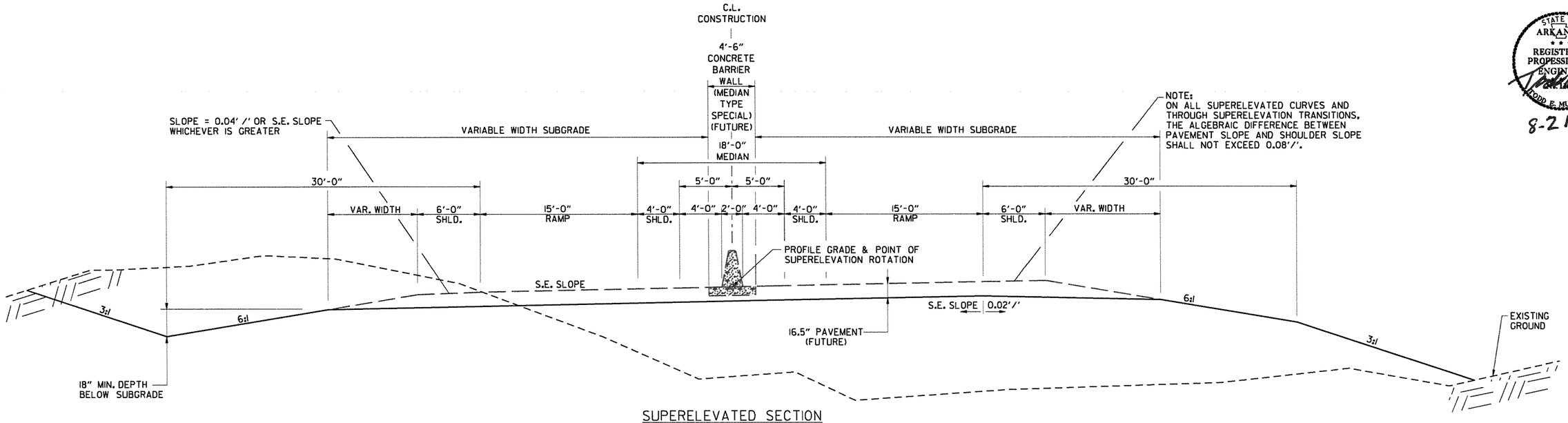
				JOB NO.		080395	6	237

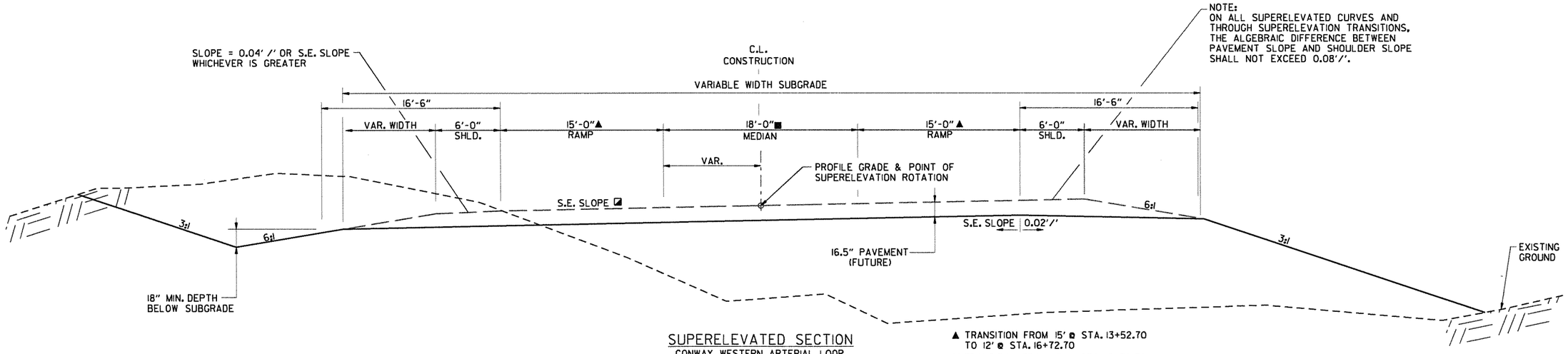
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
CERT. 13655
TODD E. MUELLER
8-21-13



SUPERELEVATED SECTION
MERGED RAMPS 3 & 4

STA. 7449+63.52 TO STA. 7460+23.33



SUPERELEVATED SECTION
CONWAY WESTERN ARTERIAL LOOP

STA. 13+52.70 TO STA. 16+72.70

▲ TRANSITION FROM 15' @ STA. 13+52.70 TO 12' @ STA. 16+72.70

■ TRANSITION FROM 18' @ STA. 13+52.70 TO 0' @ STA. 16+72.70

◪ TRANSITION FROM 0.070'/' SUPERELEVATION @ STA. 13+52.70 TO NORMAL CROWN @ STA. 15+77.70.

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES AND CROSS SECTIONS AS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH OF A FOOT WILL BE ALLOWED.

TYPICAL SECTIONS OF IMPROVEMENT

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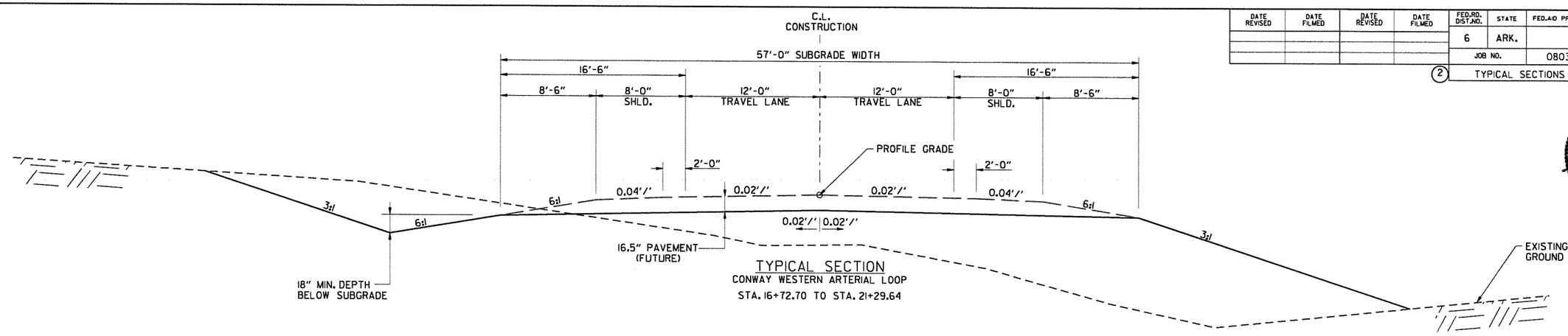
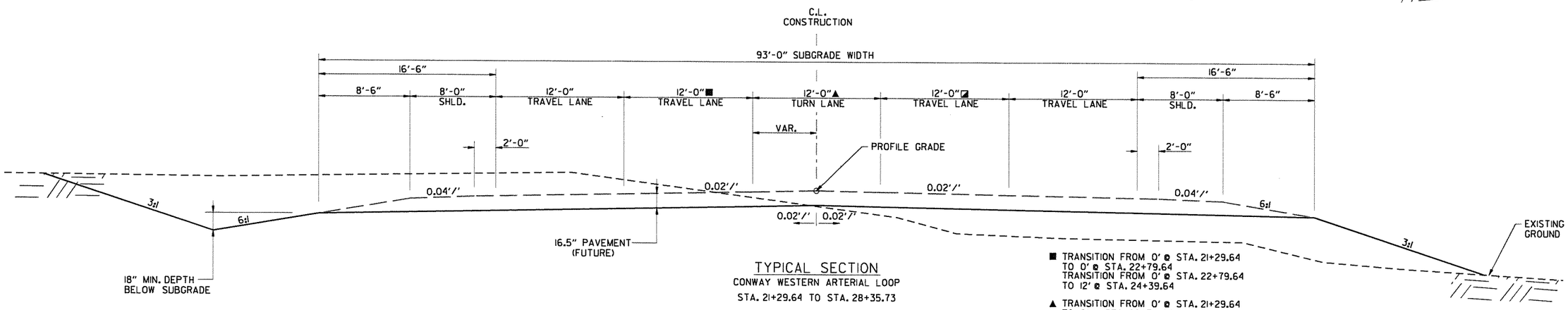
(2) TYPICAL SECTIONS OF IMPROVEMENT



TYPICAL SECTION
CONWAY WESTERN ARTERIAL LOOP
STA. 16+72.70 TO STA. 21+29.64

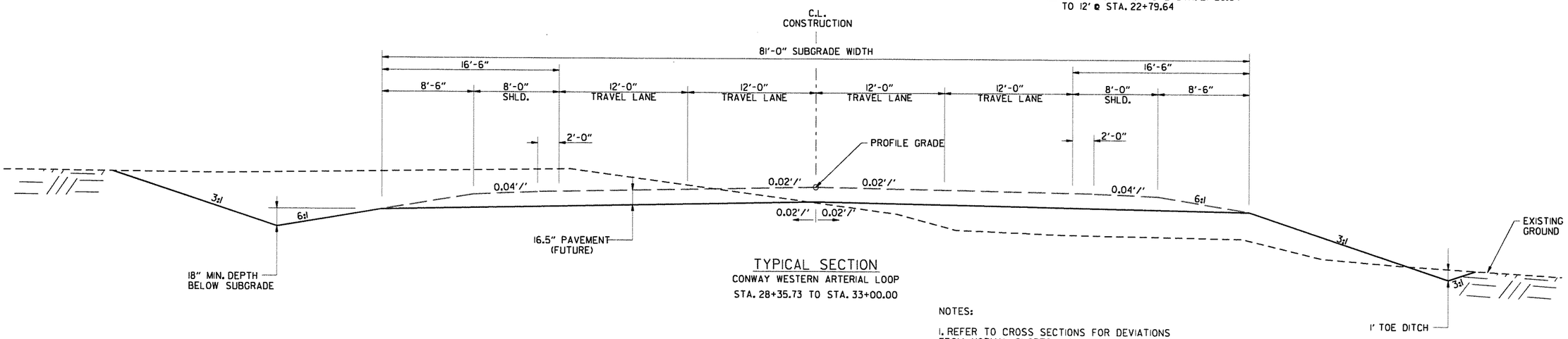


TYPICAL SECTION
CONWAY WESTERN ARTERIAL LOOP
STA. 21+29.64 TO STA. 28+35.73

■ TRANSITION FROM 0' @ STA. 21+29.64 TO 0' @ STA. 22+79.64
TRANSITION FROM 0' @ STA. 22+79.64 TO 12' @ STA. 24+39.64

▲ TRANSITION FROM 0' @ STA. 21+29.64 TO 0' @ STA. 22+79.64
TRANSITION FROM 0' @ STA. 22+79.64 TO 12' @ STA. 24+39.64
TRANSITION FROM 12' @ STA. 26+75.73 TO 0' @ STA. 28+35.73

◪ TRANSITION FROM 0' @ STA. 21+29.64 TO 12' @ STA. 22+79.64



TYPICAL SECTION
CONWAY WESTERN ARTERIAL LOOP
STA. 28+35.73 TO STA. 33+00.00

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES AND CROSS SECTIONS AS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH OF A FOOT WILL BE ALLOWED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER
8-21-13

TYPICAL SECTIONS OF IMPROVEMENT

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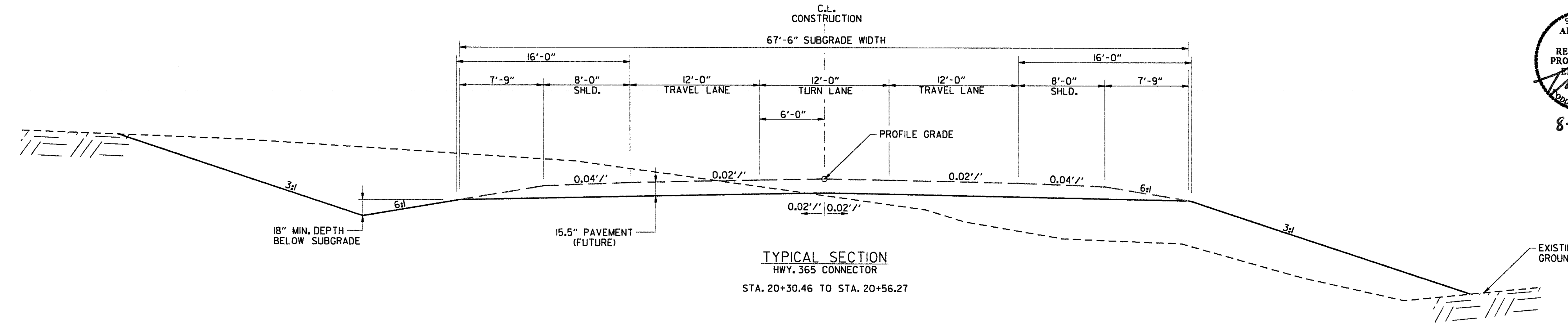
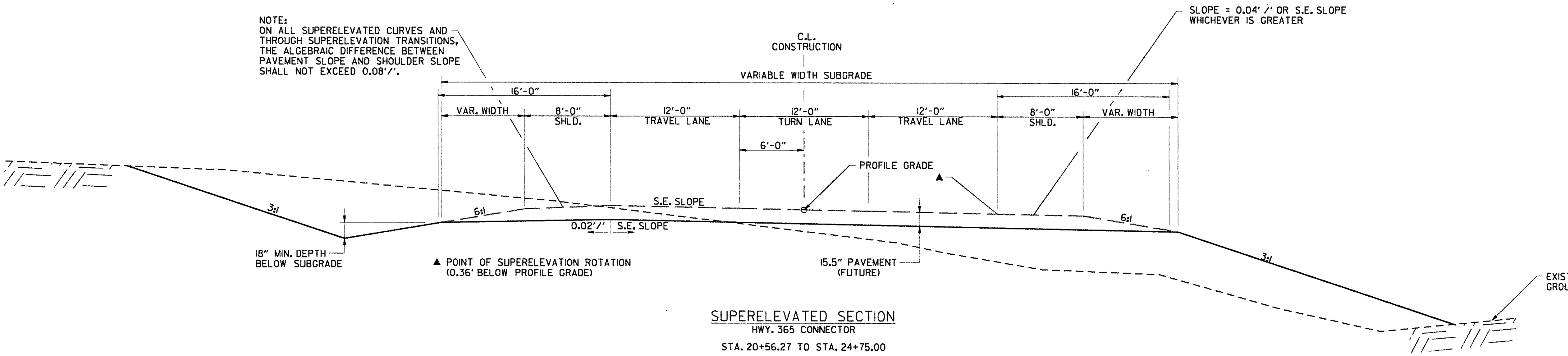
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER TODD E. MUELLER 8-21-13



TYPICAL SECTION
HWY. 365 CONNECTOR
STA. 20+30.46 TO STA. 20+56.27



SUPERELEVATED SECTION
HWY. 365 CONNECTOR
STA. 20+56.27 TO STA. 24+75.00

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES AND CROSS SECTIONS AS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH OF A FOOT WILL BE ALLOWED.

TYPICAL SECTIONS OF IMPROVEMENT

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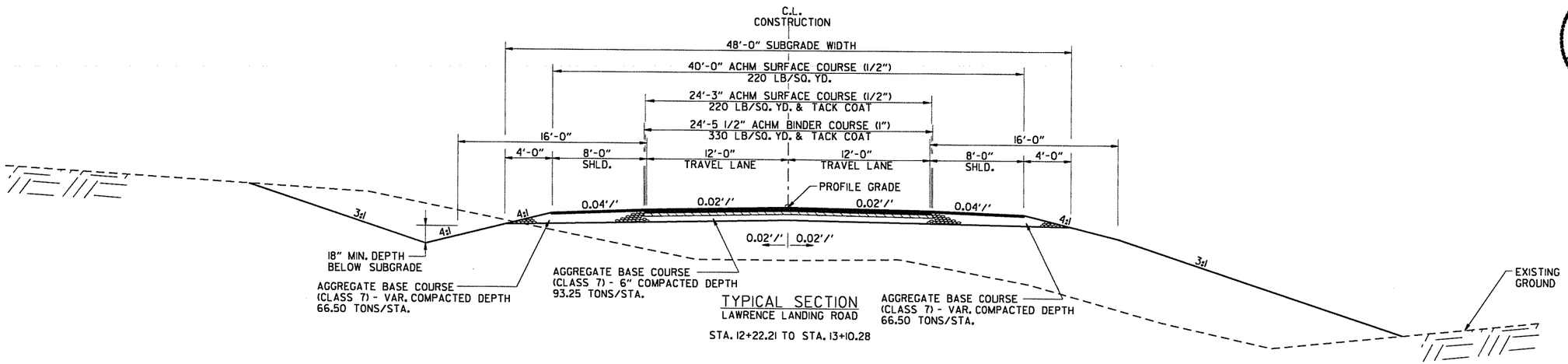
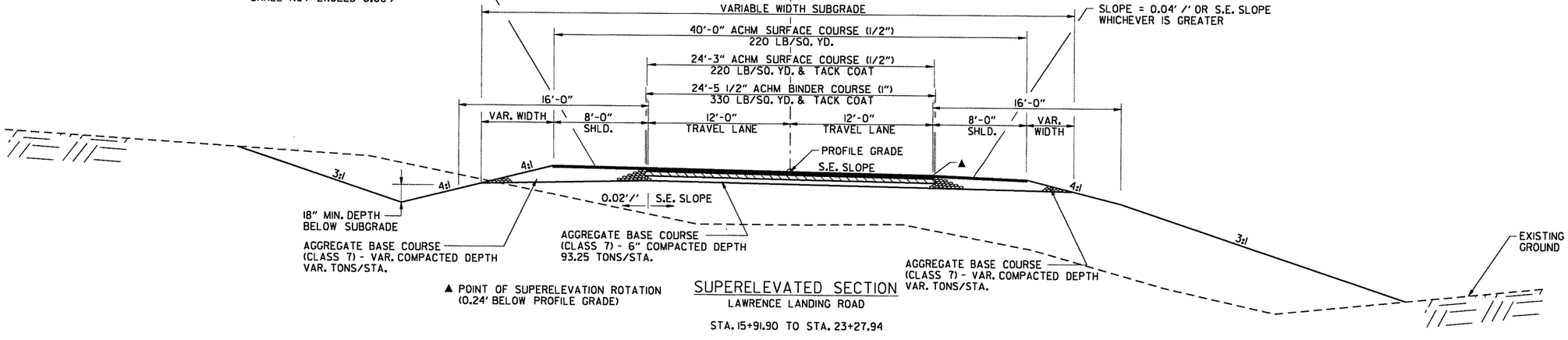
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER
8-21-13



TYPICAL SECTION
LAWRENCE LANDING ROAD
STA. 12+22.21 TO STA. 13+10.28

NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'



▲ POINT OF SUPERELEVATION ROTATION (0.24' BELOW PROFILE GRADE)

SUPERELEVATED SECTION
LAWRENCE LANDING ROAD
STA. 15+91.90 TO STA. 23+27.94

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

4. 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.

TYPICAL SECTIONS OF IMPROVEMENT

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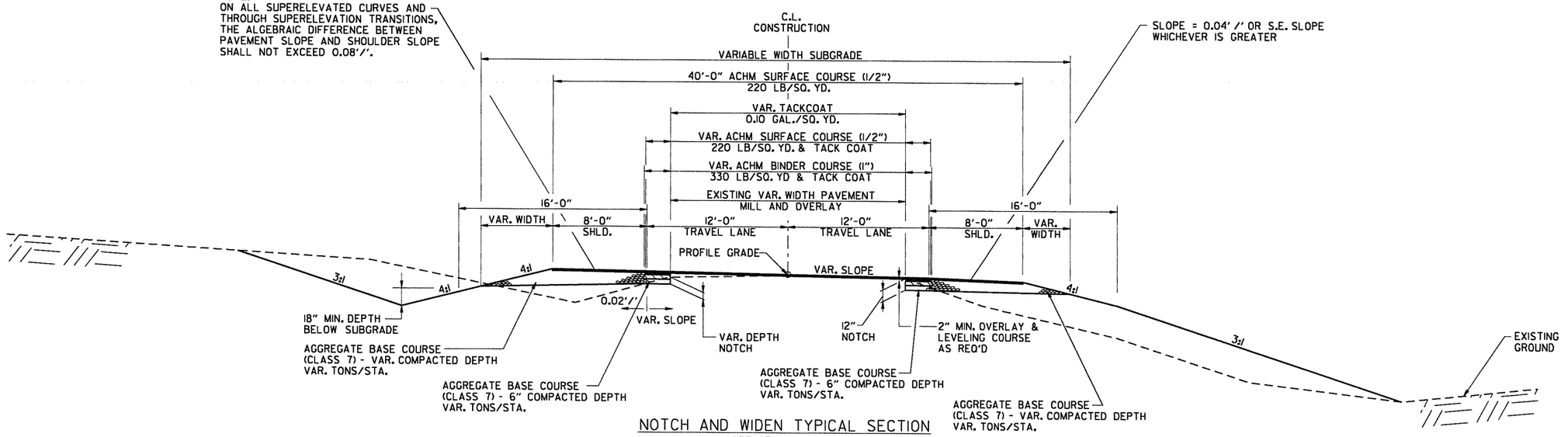
				JOB NO.		080395	10	237

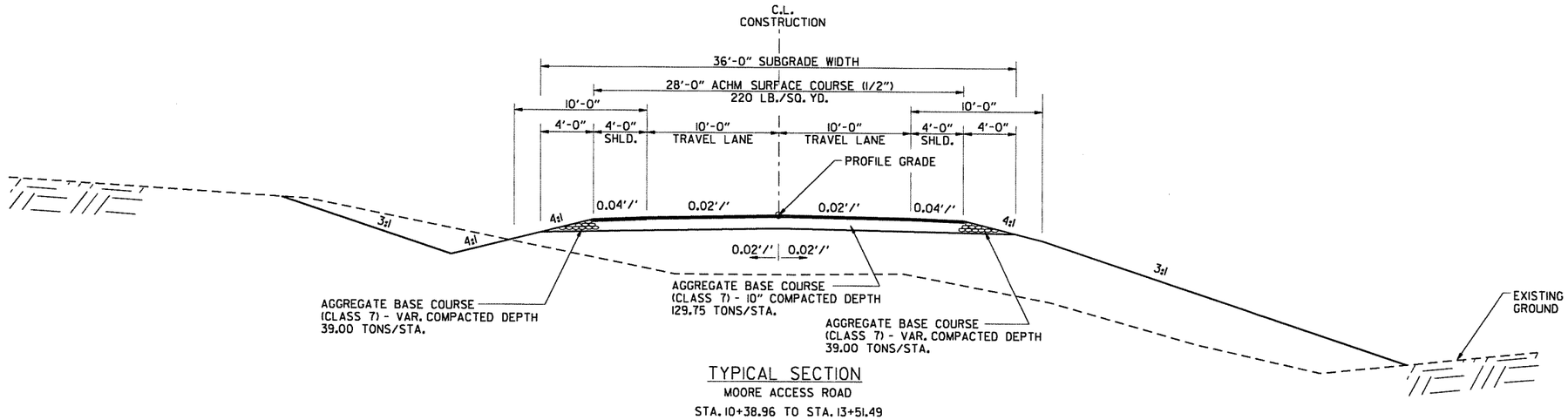
(2) TYPICAL SECTIONS OF IMPROVEMENT

NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.



NOTCH AND WIDEN TYPICAL SECTION
LAWRENCE LANDING ROAD

STA. 13+10.28 TO STA. 15+91.90
STA. 23+27.94 TO STA. 26+00.00



TYPICAL SECTION
MOORE ACCESS ROAD

STA. 10+38.96 TO STA. 13+51.49

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

3. 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 PAYMENTS WILL BE CONSIDERED INCLUDED IN THE VARIOUS ITEMS.

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

5. 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.

TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11833
TODD E. MUELLER
8-21-13

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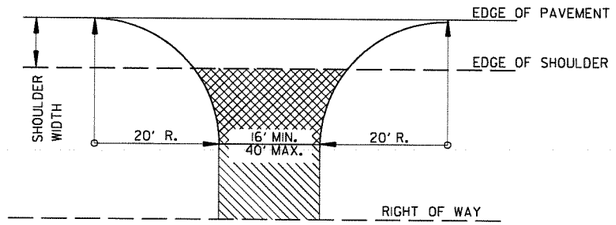
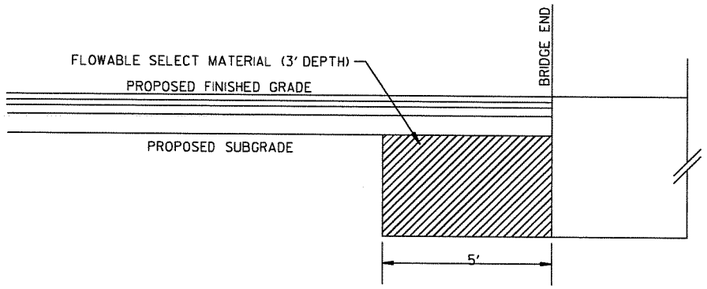
				(2)	SPECIAL DETAILS			



ASPHALT CONCRETE HOT MIX SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT DRIVE EXISTS, OR 6" CONCRETE IF CONCRETE DRIVE EXISTS.

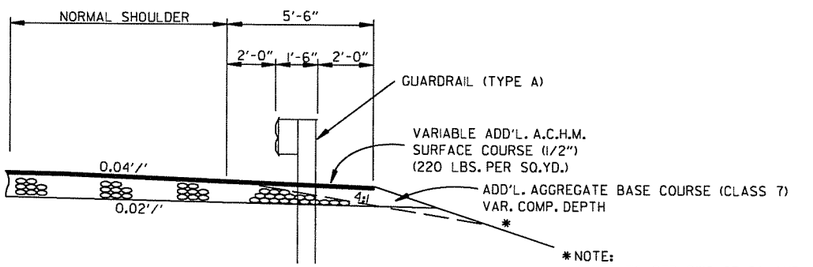
AGGREGATE BASE COURSE (CLASS 7) 9" COMP. DEPTH OR CONFORM TO EXISTING DRIVEWAY.

DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

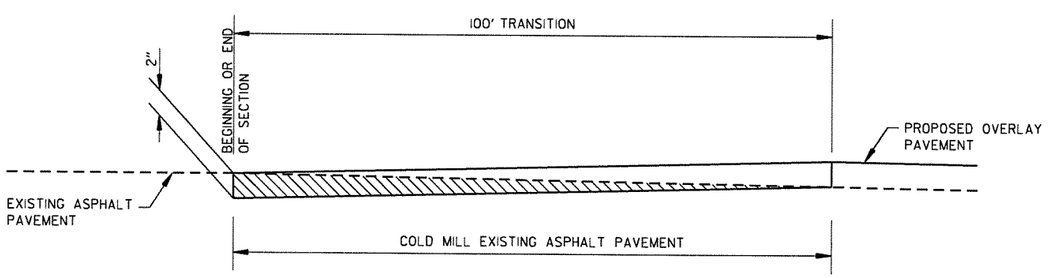


FLOWABLE SELECT MATERIAL AT PROPOSED BRIDGE ENDS

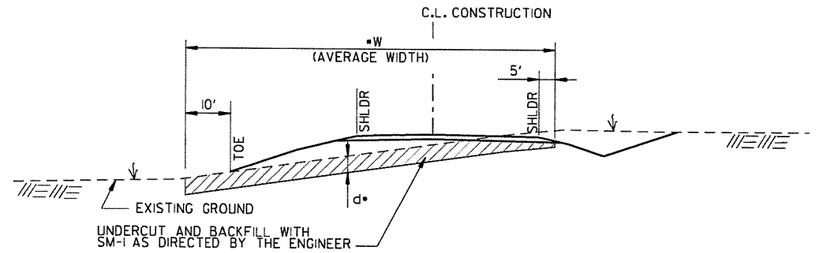
NOTE: EXCAVATION FOR PLACING FLOWABLE SELECT MATERIAL WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT SHALL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS BID ITEMS.



WIDENING FOR GUARDRAIL



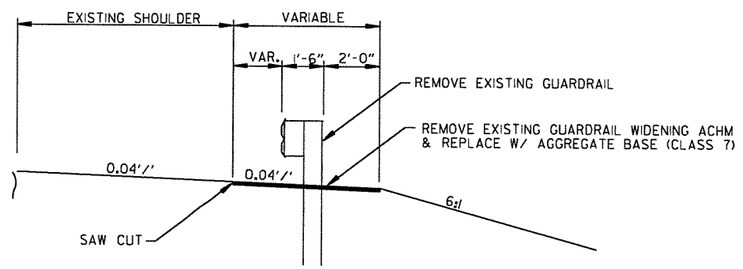
DETAIL FOR TRANSITIONS



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

DETAIL OF UNDERCUT

RAMP 1	d = 3'	W = 109'
RAMP 2	d = 2'	W = 103'
RAMP 3	d = 2'	W = 96'
RAMP 4	d = 2.5'	W = 84'
MERGED RAMPS 3 AND 4	d = 2'	W = 145'
CONWAY LOOP STA. 26+00 TO 33+00	d = 2'	W = 215'
LAWRENCE LANDING ROAD	d = 2'	W = 108'



REPAIR OF GUARDRAIL WIDENING REMOVAL (I-40)

STA. 7422+17 TO STA. 7424+92

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11893
TODD E. MUELLER
8-21-13

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WORKSPACE: AHTD
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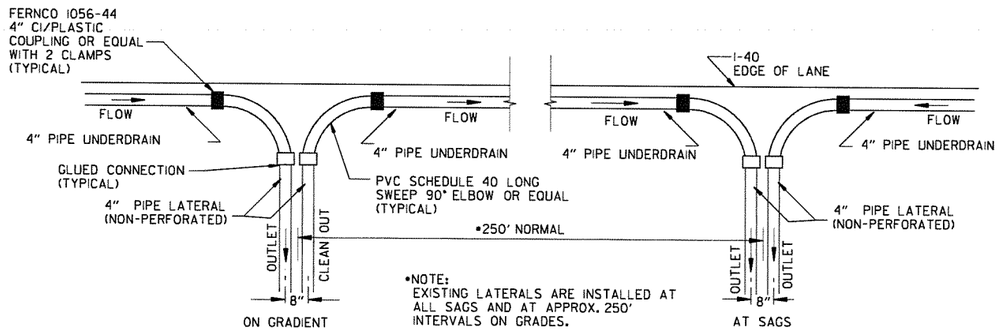
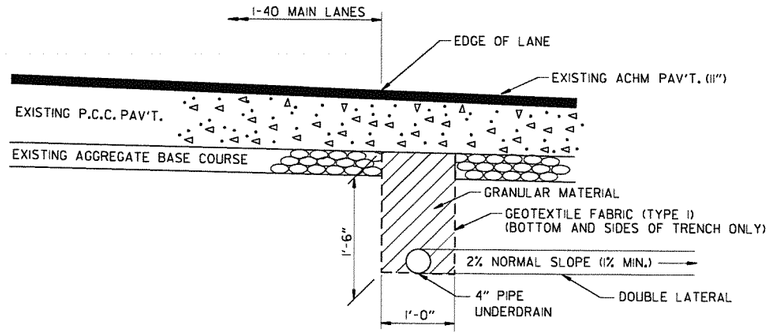
				JOB NO.		080395	12	237
				(2)	SPECIAL DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
12305
TODD E. MUELLER
8-21-13



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

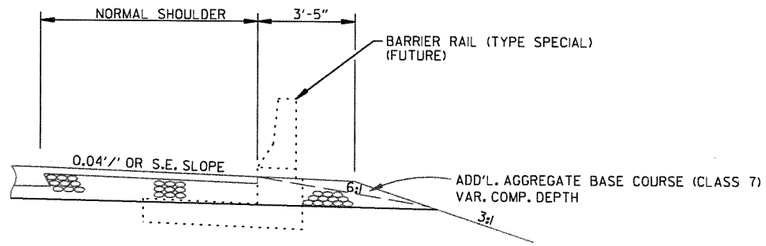
PLAN DETAIL OF EXISTING PIPE UNDERDRAIN LATERAL TO BE RETAINED AND EXTENDED



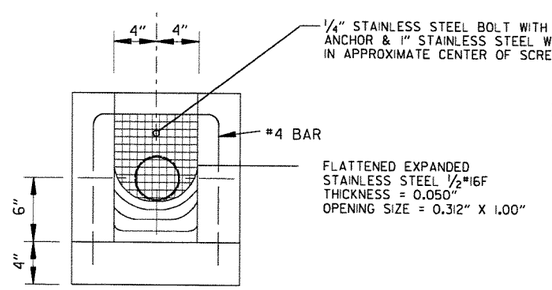
TYPICAL SECTION OF EXISTING PIPE UNDERDRAINS TO BE RETAINED AND EXTENDED

NOTES:

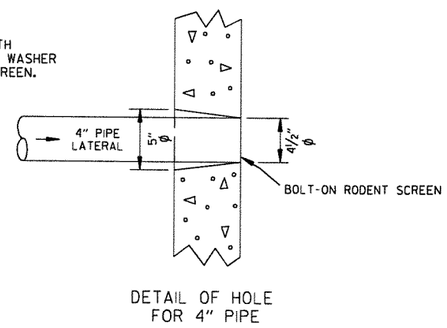
1. EXISTING 4" PIPE UNDERDRAIN LATERALS SHALL BE EXTENDED WHERE SHOWN ON THE PLANS OR WHERE DIRECTED BY THE ENGINEER. EXISTING OUTLET PROTECTORS SHOULD BE REMOVED AND RECONSTRUCTED. PAYMENT SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR 4" PIPE UNDERDRAINS.
2. ANY PIPE UNDERDRAIN OR LATERAL TO REMAIN IN PLACE THAT IS DAMAGED BY THE CONTRACTOR, SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
3. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



WIDENING FOR BARRIER RAIL (TYPE SPECIAL)



FRONT VIEW



DETAIL OF HOLE
FOR 4" PIPE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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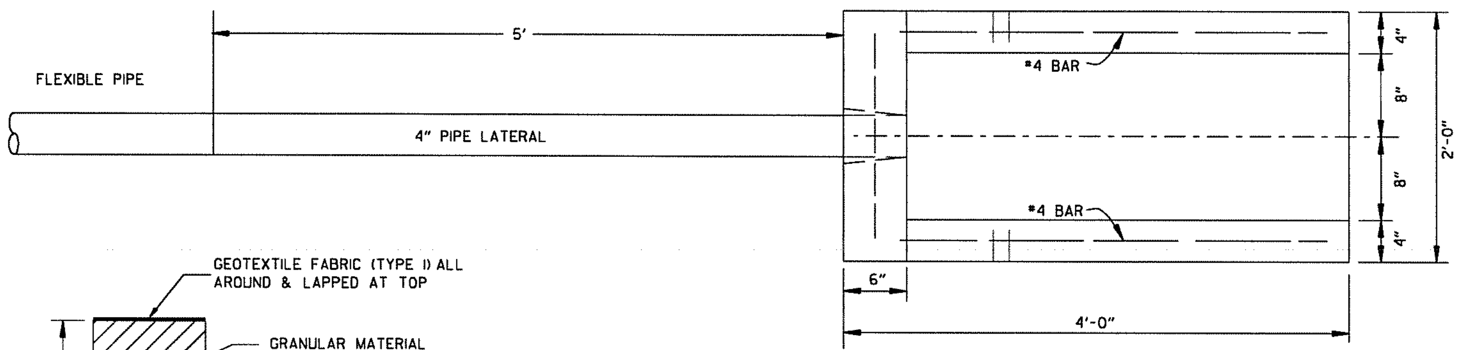
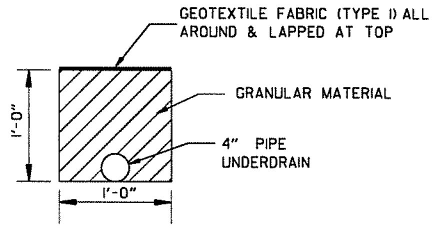
				JOB NO.		080395	13	237

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER
8-21-13



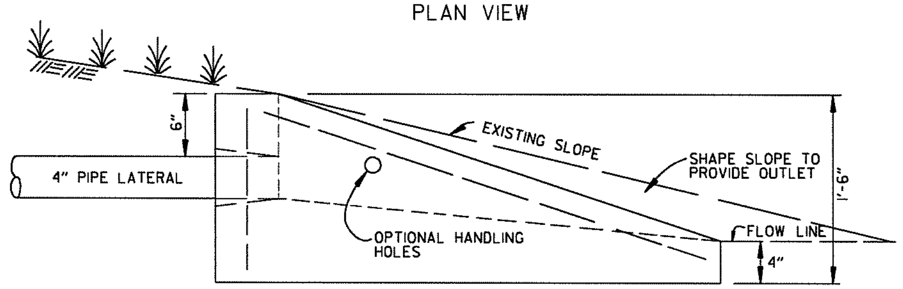
PLAN VIEW



DETAIL OF PIPE UNDERDRAINS

NOTE: 4" PIPE UNDERDRAINS AND OUTLET PROTECTORS AS SHOWN HEREON ARE TO BE INSTALLED AND PAID FOR AS SPECIFIED IN SP- EXCAVATION AND EMBANKMENT.

NO ADDITIONAL PAYMENT WILL BE MADE FOR THE 5' SCHEDULE 40 PORTIONS OF THE 4" PIPE LATERAL AND SHALL BE INCLUDED IN THE LINEAR FOOT BID PRICE.

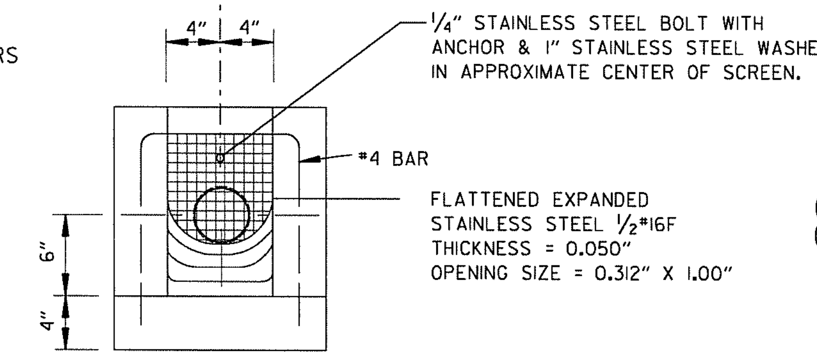


SIDE VIEW

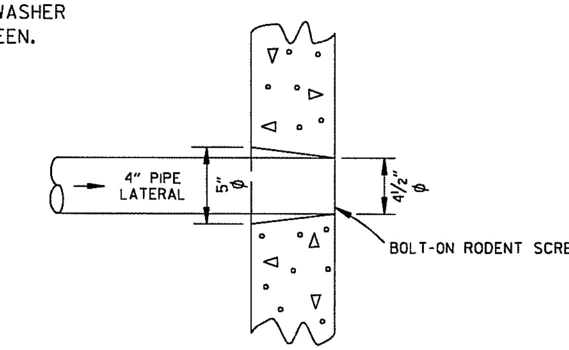
UNDERDRAIN OUTLET PROTECTORS

DETAILS OF INTERNAL DRAINAGE FOR EMBANKMENT CONSTRUCTION

(REFER TO SP- EXCAVATION AND EMBANKMENT FOR APPLICATION)



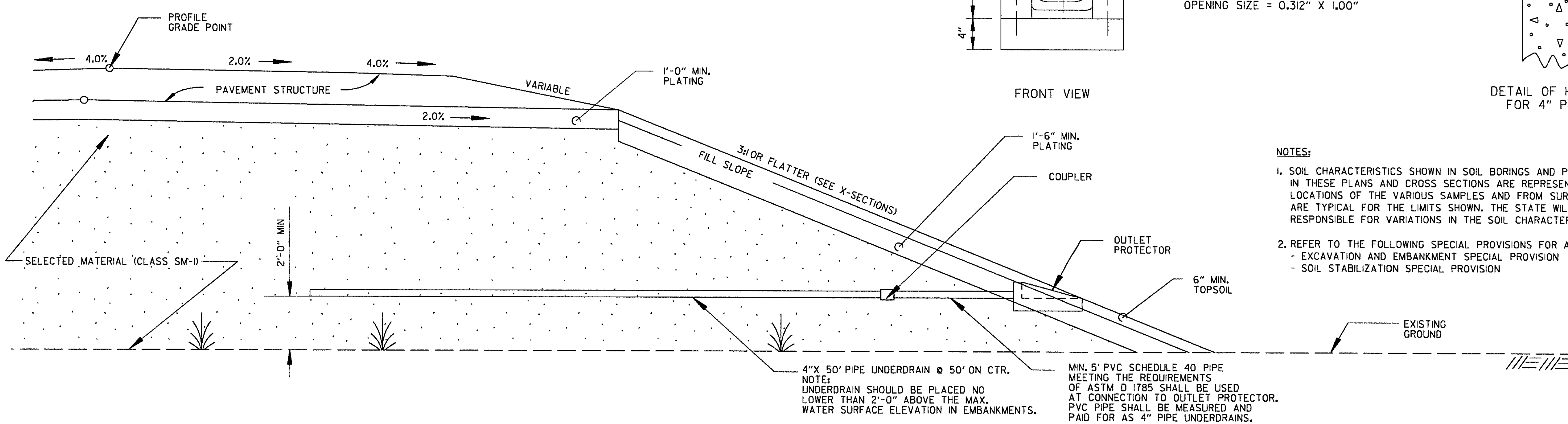
FRONT VIEW



DETAIL OF HOLE FOR 4" PIPE

NOTES:

1. SOIL CHARACTERISTICS SHOWN IN SOIL BORINGS AND PRESENTED IN THESE PLANS AND CROSS SECTIONS ARE REPRESENTATIVE AT THE LOCATIONS OF THE VARIOUS SAMPLES AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS.
2. REFER TO THE FOLLOWING SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION
   - EXCAVATION AND EMBANKMENT SPECIAL PROVISION
   - SOIL STABILIZATION SPECIAL PROVISION



HALF-SECTION OF BRIDGE END AND RAMP 2 EMBANKMENTS (SEE SPECIAL PROVISION - EXCAVATION AND EMBANKMENTS)

NOTES:
1. ALL EMBANKMENTS CONSTRUCTED OUT OF GRANULAR MATERIAL SHALL BE PLATED AS SHOWN.
2. THIS DETAIL SHALL BE USED FOR ALL EMBANKMENTS CONSTRUCTED OUT OF GRANULAR MATERIAL. HOWEVER, AT LOCATIONS OTHER THAN THOSE SHOWN ABOVE OR ON THE PLANS AND CONSTRUCTED WITH GRANULAR MATERIAL, INTERNAL DRAINAGE SHALL BE PROVIDED AS SHOWN AT NO COST TO THE DEPARTMENT AS DIRECTED BY THE ENGINEER.

DETAILS OF EMBANKMENT CONSTRUCTION SPECIAL DETAILS

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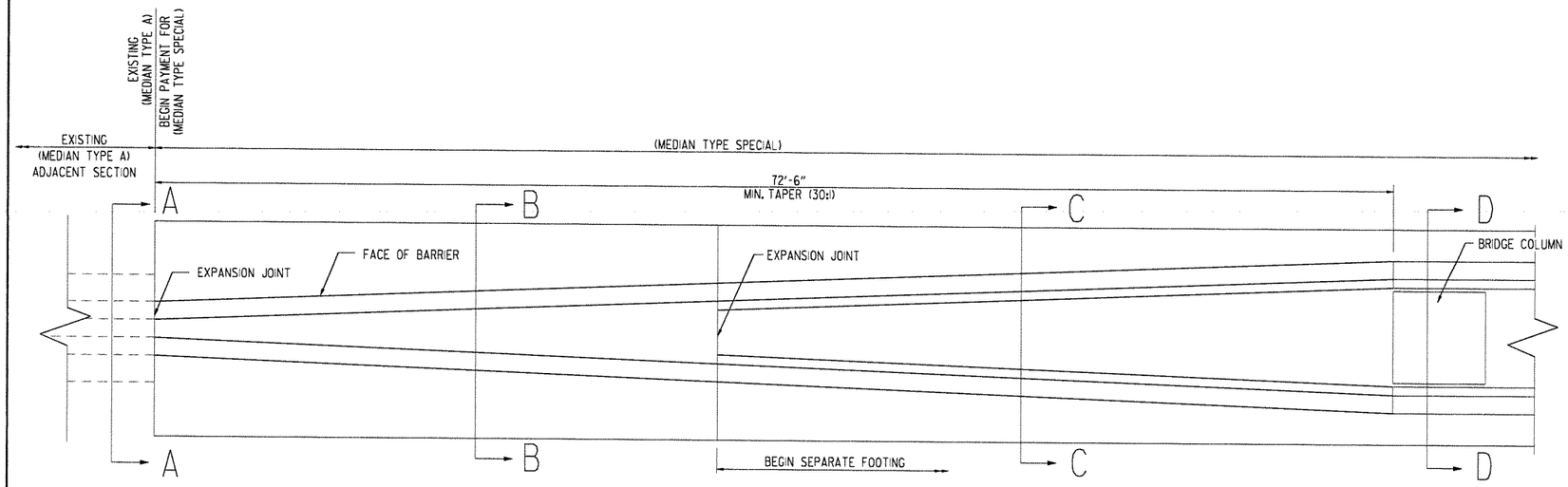


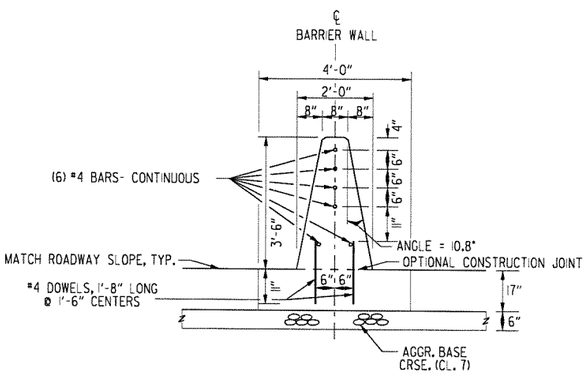
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13685
TODD E. MUELLER
8-21-13

GENERAL NOTES FOR CONCRETE BARRIER WALLS

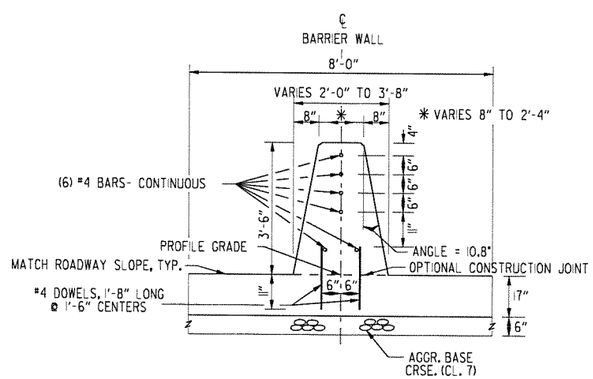
1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE STANDARD SPECIFICATIONS, 2003 EDITION.
2. CONTRACTION JOINS REQUIRED @ 15'-0" MAXIMUM SPACING FOR BARRIER SECTION AA & BB. A 30'-0" MAXIMUM SPACING IS REQUIRED FOR BARRIER SECTION CC. CONTRACTION JOINS ARE NOT PERMITTED AT THE DOWEL BAR LOCATIONS.
3. ALL CONTRACTION JOINTS TO BE FORMED IN FRESH CONCRETE ON TOP AND IN SIDES OF BARRIER WALL.
4. DOWEL BARS FOR BARRIER SECTION AA & BB WILL NOT BE REQUIRED IF BARRIER AND MINIMUM 8' WIDE BASE ARE CAST AS A COMPLETE UNIT.
5. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.
6. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT. FOR BARRIER. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.
7. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL OTHER REINFORCEMENT.
8. PAYMENT FOR COMPACTED AGGREGATE BASE COURSE (CL. 7) FILL TO BE INCLUDED WITH TRANSITION BARRIER.

CONCRETE BARRIER WALL - CONWAY LOOP BRIDGE

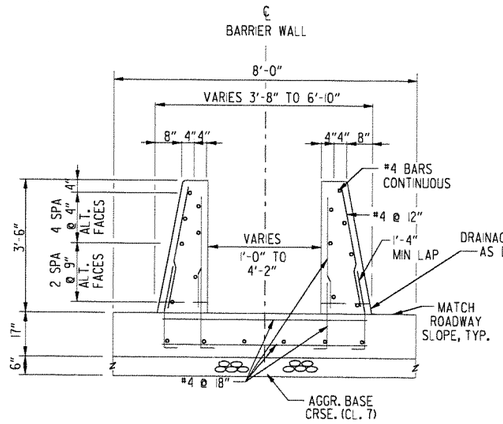
NOTE: TRANSITION FOR SOUTH SIDE SHOWN.
NORTH SIDE TRANSITION IS IDENTICAL.



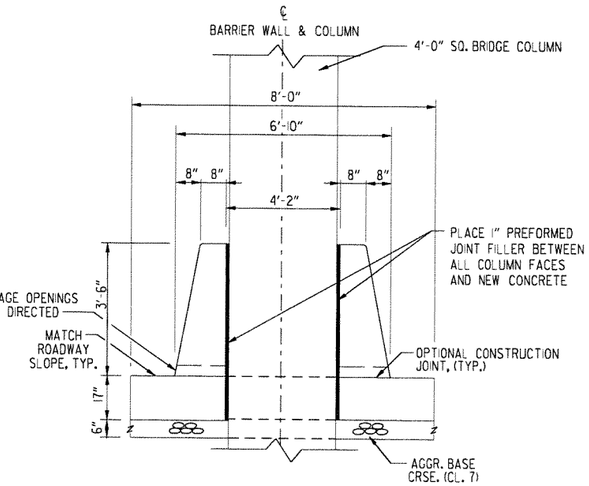
SECTION A-A
EXISTING
SHOWN FOR INFO. ONLY



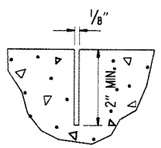
SECTION B-B



SECTION C-C



SECTION D-D
SEE SECTION C-C
FOR REINFORCEMENT



CONTRACTION JOINT DETAIL

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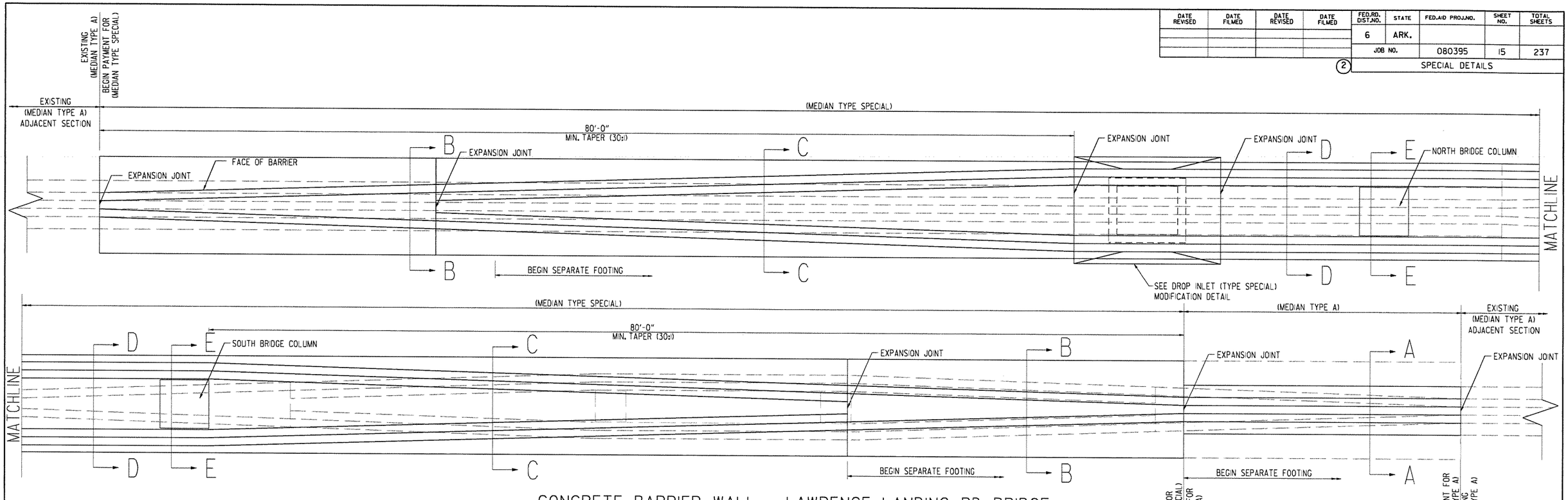
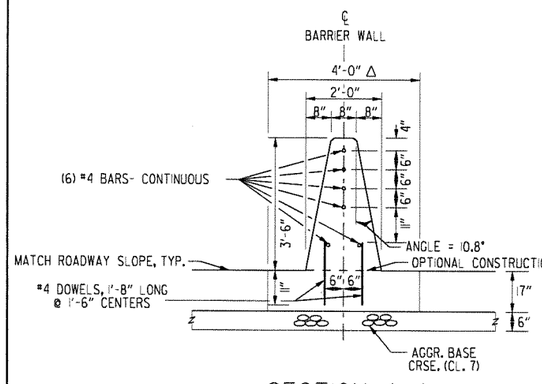
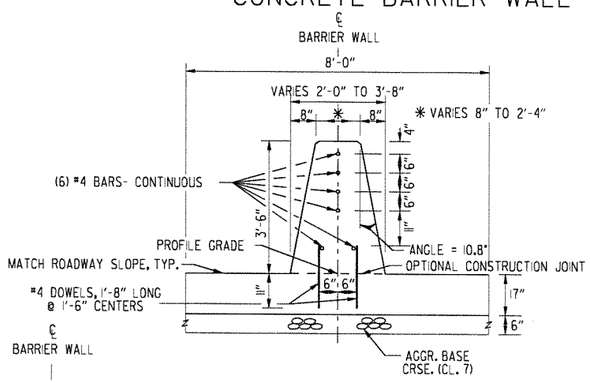


CONCRETE BARRIER WALL - LAWRENCE LANDING RD. BRIDGE

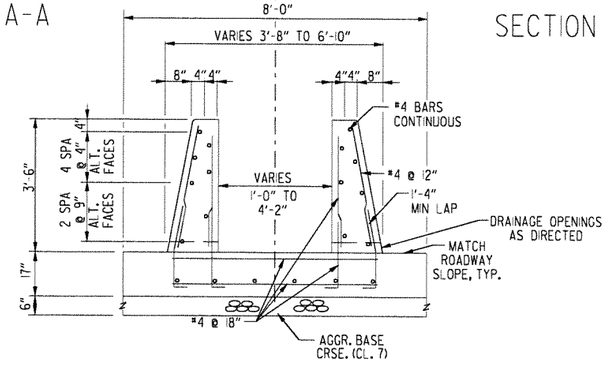


SECTION A-A

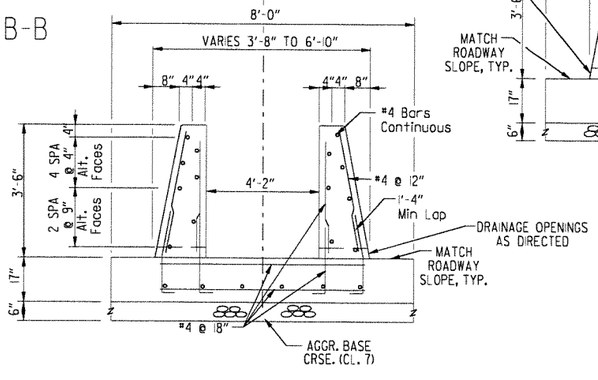


SECTION B-B

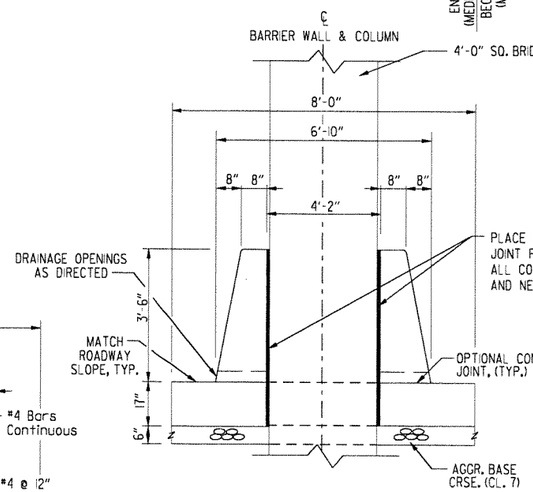
Δ ALTERNATIVELY, CONTRACTOR MAY UTILIZE EXISTING 8'-0" FOOTING WITH DOWELS AND CONSTRUCTION JOINT AS SHOWN IN SECTION A-A. EXISTING DOWELS TO BE REMOVED AND GROUTED BELOW PAVEMENT SURFACE.



SECTION C-C

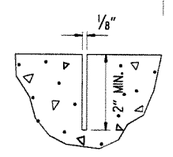


SECTION D-D



SECTION E-E

SEE SECTION C-C FOR REINFORCEMENT



CONTRACTION JOINT DETAIL

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER
8-21-13

GENERAL NOTES FOR CONCRETE BARRIER WALLS

1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE STANDARD SPECIFICATIONS, 2003 EDITION.
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5. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.
6. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT. FOR BARRIER. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.
7. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL OTHER REINFORCEMENT.
8. PAYMENT FOR COMPACTED AGGREGATE BASE COURSE (CL. 7) FILL TO BE INCLUDED WITH TRANSITION BARRIER.

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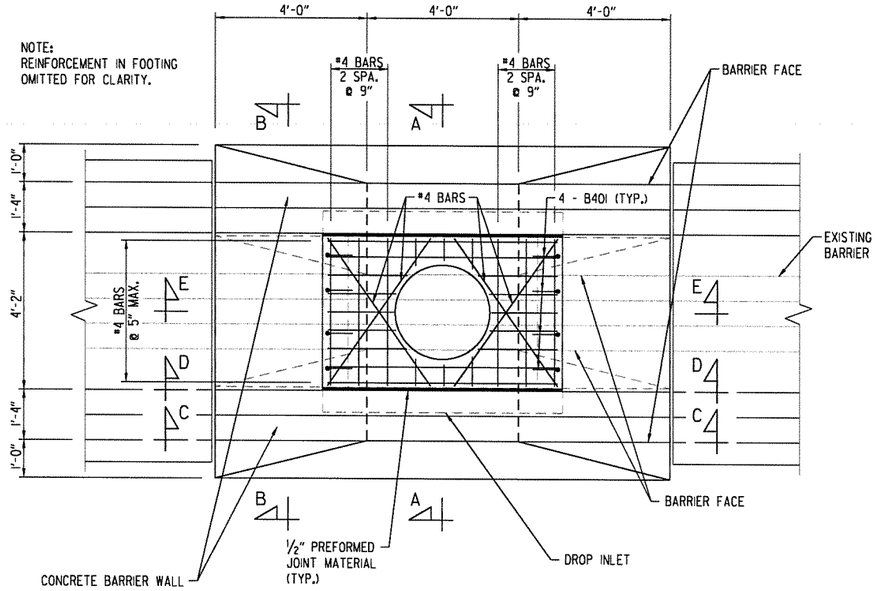
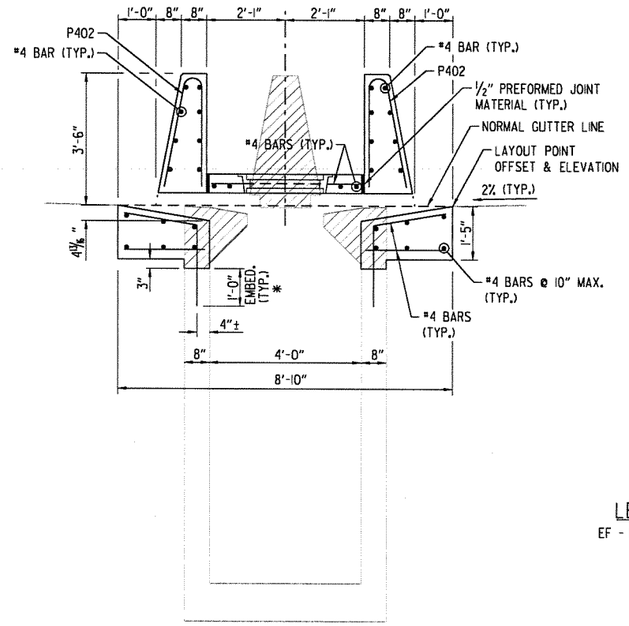
(2) SPECIAL DETAILS

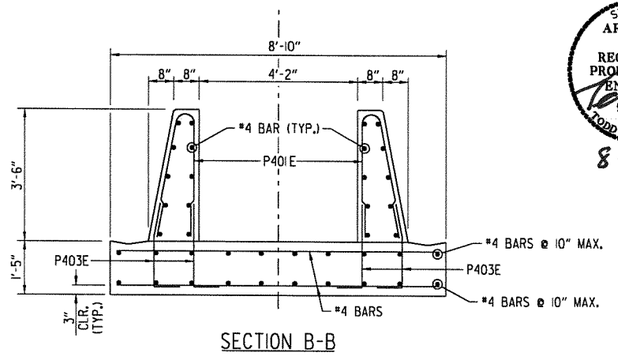
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER
8-21-13



DROP INLET (TYPE SPECIAL) MODIFICATION



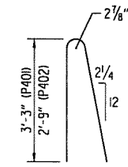
SECTION A-A



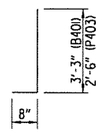
SECTION B-B

LEGEND
EF - EACH FACE

REMOVE EXISTING

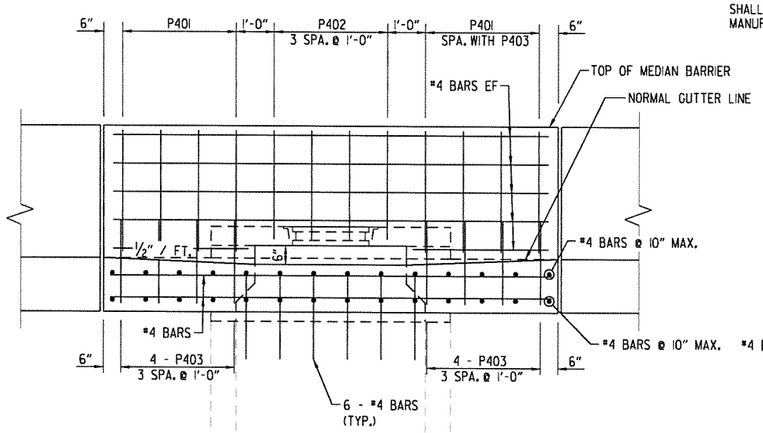


P401 & P402

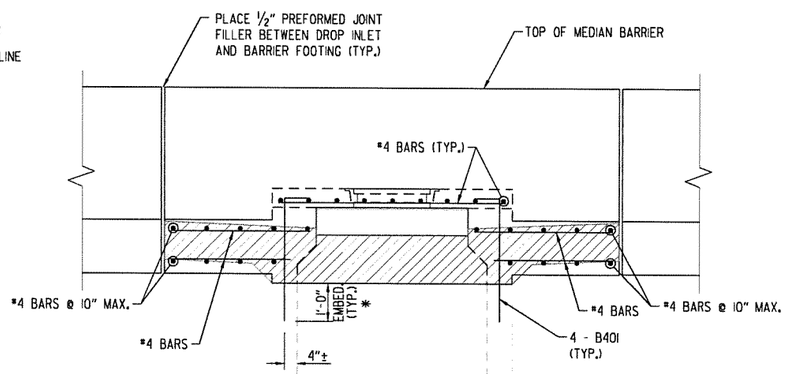


B401 & P403

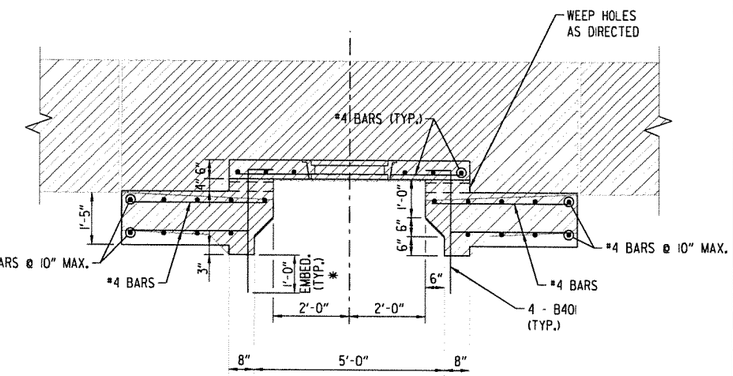
* DRILL AND GROUT INTO EXISTING DROP INLET USING AN APPROVED NON-SHRINK GROUT OR AN EPOXY GROUT LISTED ON THE OPL. DIAMETER OF THE HOLES AND INSTALLATION PROCEDURE SHALL BE AS RECOMMENDED BY THE GROUT MANUFACTURER.



SECTION C-C



SECTION D-D



SECTION E-E

GENERAL NOTES FOR DROP INLET MODIFICATION

1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE STANDARD SPECIFICATIONS, 2003 EDITION.
2. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A 3/4" CHAMFER.
3. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL OTHER REINFORCEMENT.

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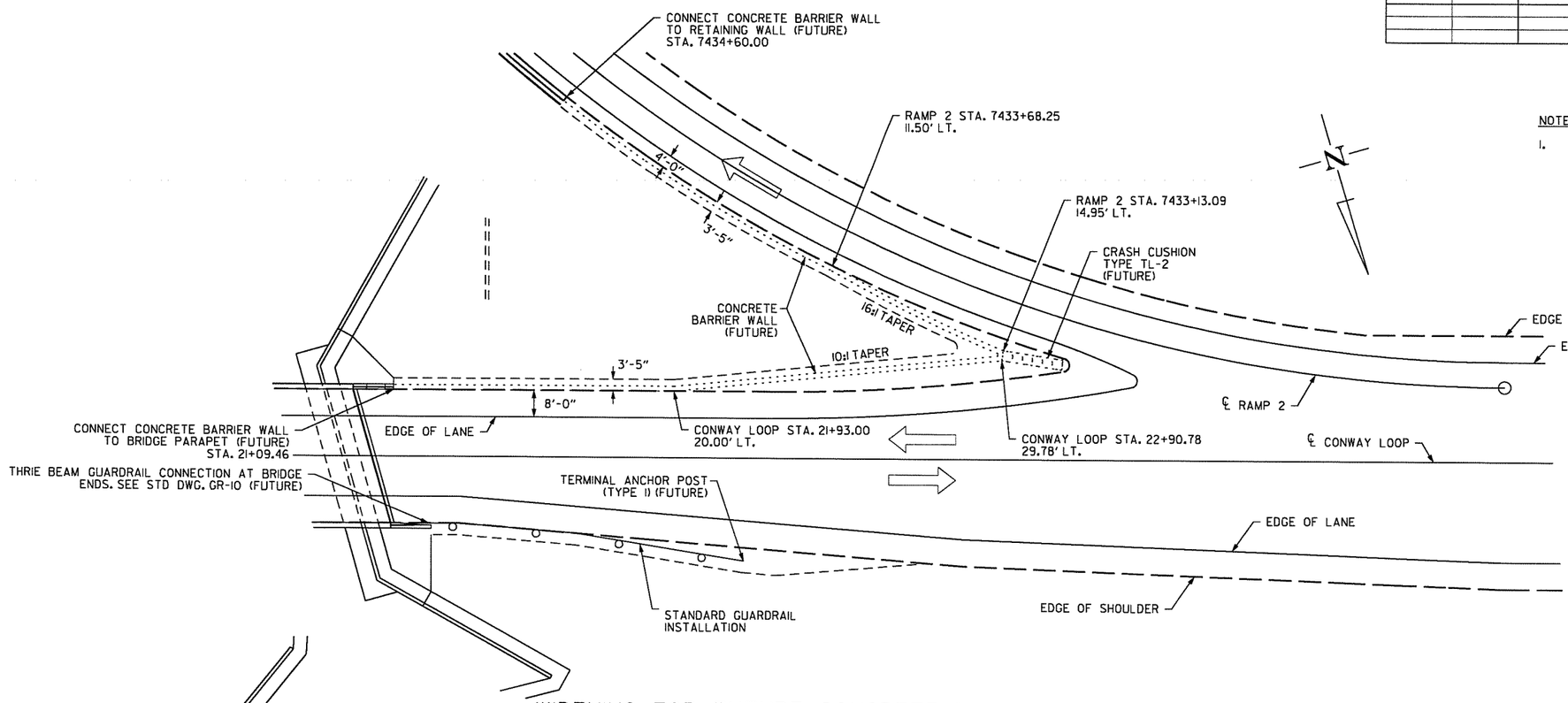


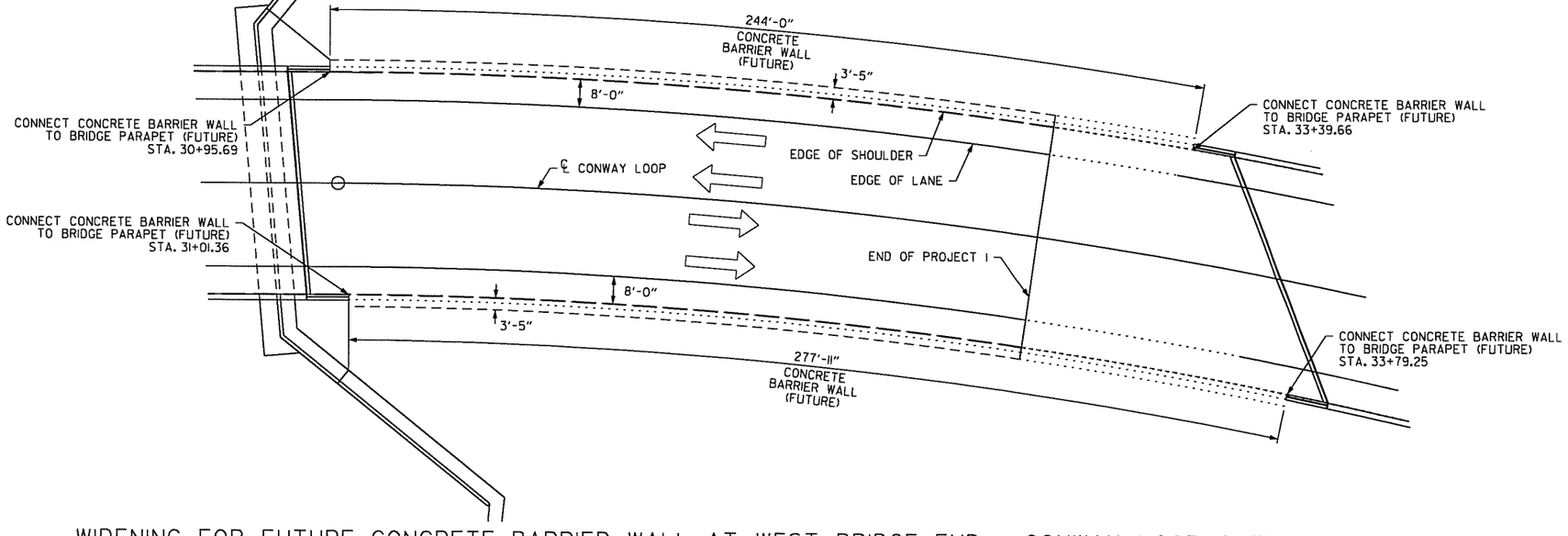
NOTES

1. ALL GUARDRAIL AND TAPER LENGTHS ARE MEASURED ALONG ℄.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER
8-21-13

WIDENING FOR FUTURE CONCRETE BARRIER WALL AT WEST BRIDGE END - CONWAY LOOP OVER I-40

NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-8A, GR-9, GR-9A, GR-10, GR-10A, GR-11, & GRT-1 FOR ADDITIONAL INFORMATION.



WIDENING FOR FUTURE CONCRETE BARRIER WALL AT WEST BRIDGE END - CONWAY LOOP OVER HWY. 365

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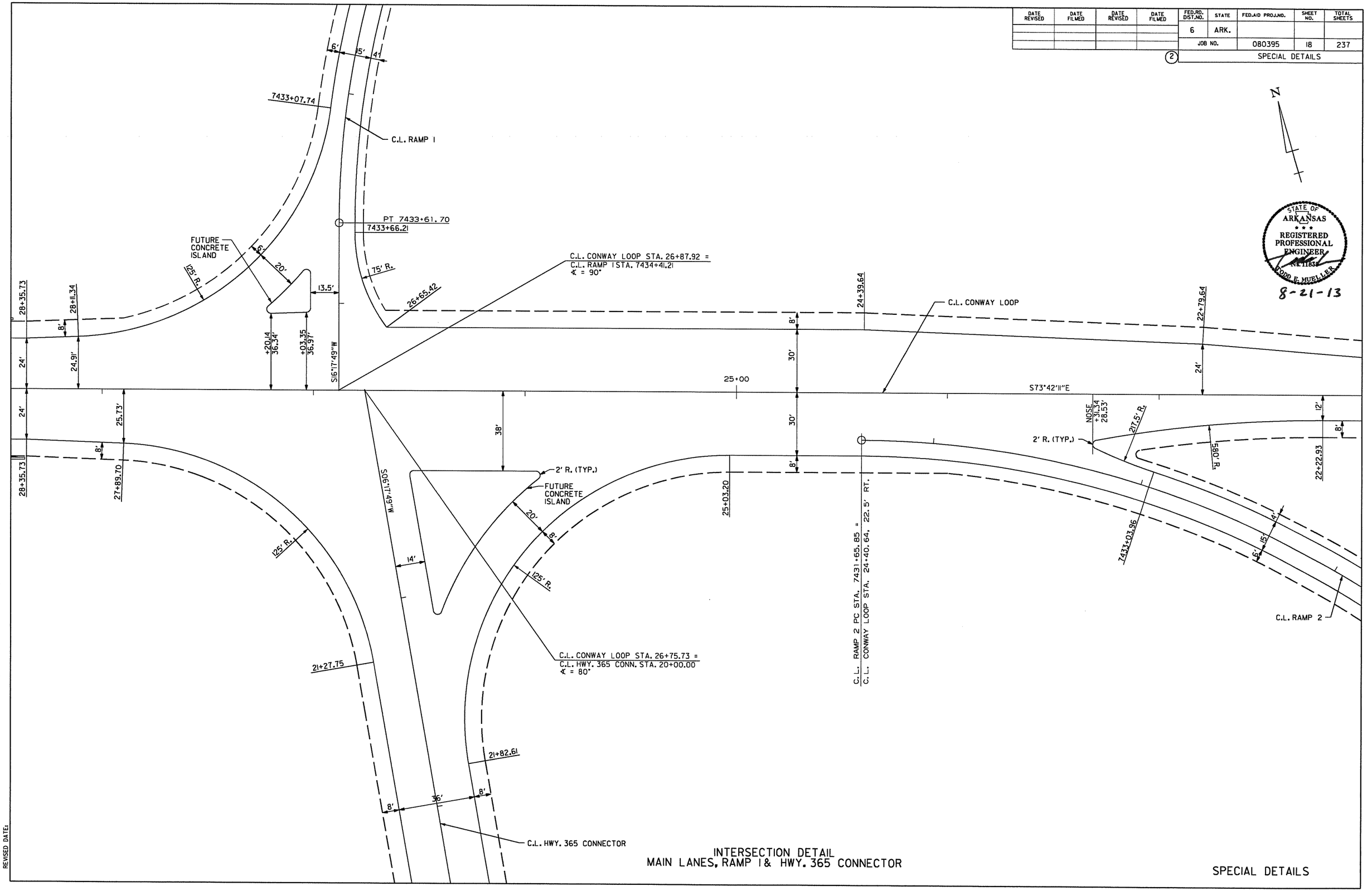
				JOB NO.		080395	18	237
				(2)	SPECIAL DETAILS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 11838
TODD E. MUELLER
8-21-13

INTERSECTION DETAIL
MAIN LANES, RAMP 1 & HWY. 365 CONNECTOR

SPECIAL DETAILS

CGGarvasini 8/9/2013 2:22:18 PM
WORKSPACE: AHTD
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REVISED DATE:

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.		080395	19	237
				(2)	SPECIAL DETAILS			

N

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11844
TODD E. MUELLER
8-21-13

C.L. HWY. 365

450+00

8'

40' R.

C.L. LAWRENCE LANDING RD. STA. 12+10.18 =
C.L. HWY. 365 STA. 449+02.08
∠ = 76°

SAW CUT ALONG A NEAT LINE

C.L. LAWRENCE LANDING RD.

8'

12'

13+00

N83°05'59"E

14+00

12'

48'

8'

8'

10' CONCRETE ISLAND

11'

12±1 MAX. SLOPE

32' DRIVEWAY

12±1 MAX. SLOPE

8'

40' R.

5' R.
12+55.75
18.00' RT.

5' R.
13+51.96
18.00' RT.

TYPE "C" CURB FACE
(TYPICAL ALL SIDES)

OHE

INTERSECTION DETAIL
LAWRENCE LANDING RD. & HWY. 365

SPECIAL DETAILS

CGervasini 8/19/2013 2:23:06 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	20	237

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
26'-4"	4'-0"	0'-9"	0'-8"	30	3:1	30'-4 7/8"	1'-0"	4'-10"	1'-4"	0	60	2'-2"	2'-3 3/4"	2'-7 7/8"	0'-7 3/4"	0'-3"	10'-6"	21'-0"	13'-4 5/8"	23'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
7.26	594

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	11	L Min 2'-4" / Max 5'-10"		-	-	-		-	-	-		4	18	4	Min 3'-4" / Max 7'-10"	4	18	2	10'-2"	4	18	7	L Min 3'-3" / Max 6'-3" / X Min 1'-4" / Max 1'-4" / Y Min 2'-0" / Max 5'-0"		4	6	14'-3"	4	18	7	Min 1'-8" / Max 1'-10"	-	-	-	Min - / Max -	4	2	10'-7"	4	2	11'-4"	6	12	4	L 3'-4" / X 1'-8"	216
WING B	4	12	21	L Min 2'-4" / Max 6'-2"		-	-	-		-	-	-		4	18	4	Min 6'-10" / Max 15'-10"	4	18	2	20'-8"	4	18	14	L Min 3'-1" / Max 6'-3" / X Min 1'-4" / Max 1'-4" / Y Min 1'-10" / Max 5'-0"		4	6	24'-9"	4	18	14	Min 1'-8" / Max 2'-2"	-	-	-	Min - / Max -	4	2	20'-10"	4	2	23'-7"	6	12	4	L 3'-4" / X 1'-8"	378

③ MID-SECTION

BAR LAP TABLE

# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft - 344.0 ft

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

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

TABULAR DATA BY: SAD DATE: 08/05/13
CHECKED BY: MRA DATE: 08/05/13

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.

For additional information and outlet sections, see Sheet 2 of 2.

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH

TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D
		Max / Min				Max / Min	

BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D
		Max / Min				Max / Min	

SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH

INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH

TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY
			Max / Min

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY
			Max / Min

SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH
			LONG / SHORT

INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
			LONG / SHORT

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h Y	h NO. REQ'D

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL
	10	8	4							

TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS.	"h" BARS SIZE	Y	LENGTH	NO. REQ'D
3"	35	4	0'-7"	1'-7"	28

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADTL. REINF. FOR HDWL LBS.
			0.24	64

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

Design Fill Depth	Range of Actual Fill Depth
2	0.0 ft - 2.0 ft
5	>2.0 ft - 5.0 ft
10	>5.0 ft - 10.0 ft
15	>10.0 ft - 15.0 ft
20	>15.0 ft - 20.0 ft
25	>20.0 ft - 25.0 ft
30	>25.0 ft - 30.0 ft
35	>30.0 ft - 35.0 ft
40	>35.0 ft - 40.0 ft

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL
A	10	8	4	8.5	9.5	6	8	26'-4"	5'-6"	104

TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D
	4 26'-0"	7	26'-4"	4	26'-0"	13	96

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D
	4 26'-0"	5	26'-4"	4	26'-0"	10	124

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
4	9	276	5'-2"

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
4	12	416	5'-2"

TOP SLAB DISTRIBUTION REINF. STEEL "g" SIZE	SPACING	NO. REQ'D
4	12	53

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" SIZE	SPACING	NO. REQ'D
4	10	65

SIDE WALL DISTRIBUTION REINF. STEEL "d1" SIZE	SPACING	NO. REQ'D
4	12	8

INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" SIZE	SPACING	NO. REQ'D
4	12	16

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS PER LIN. FT.	③ ADTL. STEEL PER LONG. LAP LOCATION (S) LBS.
1.81	274	166

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 7426+50

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	21	237

① SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13

TABULAR DATA BY: SAD DATE: 08/05/13
CHECKED BY: MRA DATE: 08/05/13

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
26'-4"	4'-0"	0'-9"	0'-8"	30	3:1	30'-4 7/8"	1'-0"	4'-10"	1'-4"	0	60	2'-2"	2'-3 3/4"	2'-7 7/8"	0'-7 3/4"	0'-3"	10'-6"	21'-0"	13'-4 5/8"	23'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
8.36	594

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS		F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS		F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY
WING A	4	12	11	L	Min	2'-4"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min
					Max	5'-10"														3'-4"
				X	Min	0'-9"				X	-				X	-				Max
					Max	0'-11"														7'-10"
				Y	Min	1'-8"				Y	-				Y	-				
					Max	5'-0"														
WING B	4	12	21	L	Min	2'-4"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min
					Max	6'-2"														6'-10"
				X	Min	0'-9"				X	-				X	-				Max
					Max	1'-3"														15'-10"
				Y	Min	1'-8"				Y	-				Y	-				
					Max	5'-0"														

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY		F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS		F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	2	10'-2"	4	18	7	L	Min	3'-3"	4	6	14'-3"	4	18	7	Min	1'-8"	-	-	-	Min	-	4	2	10'-7"	4	2	11'-4"	6	12	4	L	3'-4"	216
									Max	6'-3"							Max	1'-10"				Max	-												
								X	Min	1'-4"							Min	1'-8"				Min	1'-8"										X	1'-8"	
									Max	1'-4"							Max	1'-10"				Max	-												
								Y	Min	2'-0"																									
									Max	5'-0"																									
WING B	4	18	2	20'-8"	4	18	14	L	Min	3'-1"	4	6	24'-9"	4	18	14	Min	1'-8"	-	-	-	Min	-	4	2	20'-10"	4	2	23'-7"	6	12	4	L	3'-4"	378
									Max	6'-3"							Max	1'-10"				Max	-												
								X	Min	1'-4"							Min	2'-2"															X	1'-8"	
									Max	1'-4"																								
								Y	Min	1'-10"																									
									Max	5'-0"																									

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

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

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

OUTLET SKEWED END SECTION

SKEW (DEGREE) SK	SLOPE SL	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	SECTION LENGTH LL	TOP SLAB THK. T	HDWL THK. HW	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH

TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D
		Max				Max	
		Min				Min	

BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D
		Max				Max	
		Min				Min	

SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH

INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH

TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY
			Max
			Min

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY
			Max
			Min

SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH
			LONG
			SHORT

INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
			LONG
			SHORT

CLASS "S" CONCRETE (Includes HDWL.) CU. YDS.	② REINFORCING STEEL (GR 60) (Includes HDWL.) LBS.

k1 SIZE	k1 LENGTH	k1 NO. REQ'D

k2 SIZE	k2 LENGTH	k2 NO. REQ'D

h SIZE	h LENGTH	h Y	h NO. REQ'D

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL
10	8	4							

TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D

SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D

INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS.	"h" BARS SIZE	Y	LENGTH	NO. REQ'D
3"	35	4	0'-7"	1'-7"	28

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADTL. REINF. FOR HDWL LBS.
			0.24	64

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

The required number of bars shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 7426+50

SPECIAL DETAILS

CGGarvasini 8/20/2013 7:52:18 AM
WORKSPACE: AHTD
L:\2009\090720 - Conway Western Arterial Loop\Drawings\PRJ_GS\PRJ_GS_RCBC_RAMP_7426+50.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	22	237

ⓘ SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
8-21-13

TABULAR DATA BY: SAD DATE: 08/02/13
CHECKED BY: MRA DATE: 08/02/13

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
11'-1"	7'-0"	0'-9"	0'-8"	19	3:1	11'-8 5/8"	2'-0"	7'-10"	2'-4"	11	49	3'-2"	3'-7 3/4"	4'-2 1/8"	0'-9 5/8"	1'-1 3/4"	16'-6"	29'-0"	21'-1 3/8"	29'-7 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
11.52	1127

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY		F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	17	L	Min	3'-4"	4	12	3	X	1'-2"	-	-	-	X	-	4	18	6	Min	4	18	4	16'-2"
					Max	9'-2"														3'-4"							
				X	Min	0'-9"														Max							
					Max	1'-3"														12'-4"							
				Y	Min	2'-8"				Y	2'-6"				Y	-										
					Max	8'-0"																					
WING B	4	12	25	L	Min	3'-5"	4	12	5	X	1'-7"	-	-	-	X	-	4	18	6	Min	4	18	4	24'-8"
					Max	9'-8"														5'-2"							
				X	Min	0'-9"														Max							
					Max	1'-9"														18'-9"							
				Y	Min	2'-9"				Y	2'-6"				Y	-										
					Max	8'-0"																					

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY			F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS			F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS			REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	11	L	Min	5'-3"	4	8	21'-11"	4	18	11	Min	2'-8"		-	-	-	Min	-		4	2	16'-11"	4	2	17'-6"	6	12	7	L	3'-4"		437
					Max	10'-3"							Max	2'-4"					Max	-															
				X	Min	2'-4"									X																	X	1'-8"		
					Max	2'-4"																												
				Y	Min	3'-0"									Y																				
					Max	8'-0"																												
WING B	4	18	17	L	Min	5'-0"	4	8	30'-5"	4	18	17	Min	2'-8"		4	18	2	Min	39'-9"		4	2	25'-1"	4	2	27'-8"	6	12	7	L	3'-4"		690
					Max	10'-3"							Max	3'-8"					Max	39'-9"														
				X	Min	2'-4"									X																	X	1'-8"		
					Max	2'-4"																												
				Y	Min	2'-9"									Y																				
					Max	8'-0"																												

INLET SKEWED END SECTION

SKEW (DEGREE) SK	SLOPE SL	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	SECTION LENGTH LL	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	HEADWALL HEIGHT HW	OVER ALL WIDTH OW	OVER ALL HEIGHT OH
19	3:1	10	10	7	2'-11"	9	9.5	6.5	3	11'-1"	8'-6 1/2"

TOP SLAB REINFORCING STEEL "a" SIZE	SPACING	LENGTHS VARY		NO. REQ'D
7	6.5	Max	10'-9"	4
		Min	4'-9"	
		10'-9"		2

BOTTOM SLAB REINFORCING STEEL "b" SIZE	SPACEING	LENGTHS VARY		NO. REQ'D
7	6.5	Max	10'-9"	4
		Min	4'-9"	
		10'-9"		2

SIDE WALL REINFORCING STEEL "f" SIZE	SPACING	NO. REQ'D	LENGTH
5	7	11	8'-3"

TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	SPACING	NO. REQ'D	LENGTHS VARY	
4	12	11	Max	4'-8"
			Min	0'-10"

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	SPACING	NO. REQ'D	LENGTHS VARY	
4	10	13	Max	4'-8"
			Min	0'-10"

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	SPACING	NO. REQ'D		LENGTH
4	12	7	LONG	4'-8"
		7	SHORT	0'-10"

HDWL "k1", "k2" & "h" BAR	SIZE	NO. REQ'D	LENGTH
k1	4	6	11'-5"
k2	4	6	11'-5"
h	4	13	1'-8"
			Y
			0'-8"

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
2.89	485

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL
A	10	10	7	9	9.5	6.5	11'-1"	8'-6 1/2"	19.08
B	15	10	7	11	11	7	11'-2"	8'-10"	11.00
C	20	10	7	12	12.5	8	11'-4"	9'-0 1/2"	11.00
D	25	10	7	13.5	13.5	8.5	11'-5"	9'-3"	26.00

TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH
7	6.5	35	10'-9"
6	4.5	29	10'-10"
8	6	22	11'-0"
8	6	52	11'-1"

BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH
7	6.5	35	10'-9"
8	7.5	17	10'-10"
8	6	22	11'-0"
8	6	52	11'-1"

SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
5	7	64	8'-2"
6	7.5	34	8'-6"
7	10	26	8'-8"
7	8.5	72	8'-11"

TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	12	11
4	10	13
4	9	14
4	7.5	17

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	10	13
4	8.5	15
4	7.5	17

SIDE WALL DISTRIBUTION REINF.STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	12	14
4	12	14
4	12	14
4	12	14

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	Y	LENGTH	NO. REQ'D

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
0.91	136	44		
1.06	157	47		
1.20	189	50		
1.32	202	56		

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

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

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

Design Fill Depth	Range of Actual Fill Depth
2	0.0 ft - 2.0 ft
5	>2.0 ft - 5.0 ft
10	>5.0 ft - 10.0 ft
15	>10.0 ft - 15.0 ft
20	>15.0 ft - 20.0 ft
25	>20.0 ft - 25.0 ft
30	>25.0 ft - 30.0 ft
35	>30.0 ft - 35.0 ft
40	>35.0 ft - 40.0 ft

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL
E	30	10	7	17.5	17.5	10	11'-8"	9'-11"	160.00

TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH
7	4.5	426	11'-4"

BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH
7	4.5	426	11'-4"

SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
8	10	384	9'-7"

TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	6	21

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	6	21

SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	10	16

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (Gr. 60) LBS. PER LIN. FT.	③ ADTL. REINF. PER LONG. LAP LOCATION(S) LBS.
1.69	224	68

③ MID-SECTION

BAR LAP TABLE

# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft - 344.0 ft

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 2 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF SINGLE-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 22+48

SPECIAL DETAILS

LRFD

CGGarvasini 8/20/2013 7:55:43 AM
WORKSPACE: AHTD
L:\2009\090730 - Conway Western Arterial\Loop\Drawings\PRJL.GS\PRJL.GS_RCBC_CLOOP_22+48.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	23	237

① SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
8-21-13

TABULAR DATA BY: SAD DATE: 08/02/13
CHECKED BY: MRA DATE: 08/02/13

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	OUTLET	OUTLET
11'-1"	7'-0"	0'-9"	0'-8"	19	3:1	11'-8 5/8"	2'-0"	7'-10"	2'-4"	11	49	3'-2"	3'-7 3/4"	4'-2 1/8"	0'-9 5/8"	1'-1 3/4"	16'-6"	25'-0"	21'-1 3/8"	29'-7 3/8"	CU.YD	LBS.
																					12.27	1127

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	17	L	Min	3'-4"	4	12	3	L	3'-7"				L	-	4	18	6	Min	4	18	4	16'-2"	4	18	11	L	Min	5'-3"	4	8	21'-11"	4	18	11	Min	-	-	-	Min	4	2	16'-11"	4	2	17'-6"	6	12	7	L	3'-4"	437
					Max	9'-2"														3'-4"								Max	10'-3"							2'-8"			Max												
				X	Min	0'-9"				X	1'-2"		-	-	-	X	-			Max							X	Min	2'-4"							Max													X	1'-8"	
					Max	1'-3"														12'-4"								Max	2'-4"							3'-2"														
				Y	Min	2'-8"				Y	2'-6"					Y	-			Min							Y	Min	3'-0"							Min														
					Max	8'-0"																						Max	8'-0"							-														
WING B	4	12	25	L	Min	3'-5"	4	12	5	L	4'-0"				L	-	4	18	6	Min	4	18	4	24'-8"	4	18	17	L	Min	5'-0"	4	8	30'-5"	4	18	17	Min	-	-	-	Min	4	2	25'-1"	4	2	27'-8"	6	12	7	L	3'-4"	690
					Max	9'-8"														5'-2"								Max	10'-3"							2'-8"			Max												
				X	Min	0'-9"				X	1'-7"		-	-	-	X	-			Max							X	Min	2'-4"							Max													X	1'-8"	
					Max	1'-9"														18'-9"								Max	2'-4"							3'-8"			Max												
				Y	Min	2'-9"				Y	2'-6"					Y	-			Min							Y	Min	2'-9"							Min														
					Max	8'-0"																						Max	8'-0"							39'-9"														
																																							39'-9"														

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH																														
19	3:1	10	10	7	2'-11"	9	9.5	6.5	3	11'-1"	8'-6 1/2"	7	6.5	Max 10'-9" / Min 4'-9"	4	7	6.5	Max 10'-9" / Min 4'-9"	4	5	7	11	8'-3"	4	12	Max 4'-8" / Min 0'-10"	11	4	10	13	Max 4'-8" / Min 0'-10"	4	12	7	LONG 4'-8" / SHORT 0'-10"	k1	4	6	11'-5"
																																						k2	4	6	11'-5"
														10'-9"	2			10'-9"	2																			h	4	13	1'-8" / Y 0'-8"

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR. 60) (Includes HDWL) LBS.
2.89	485

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

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
A	10	10	7	9	9.5	6.5	11'-1"	8'-6 1/2"	21	7	6.5	38	10'-9"	7	6.5	38	10'-9"	5	7	72	8'-2"	4	12	11	4	10	13	4	12	14
B	15	10	7	11	11	7	11'-2"	8'-10"	11	6	4.5	29	10'-10"	8	7.5	17	10'-10"	6	7.5	34	8'-6"	4	10	13	4	10	13	4	12	14
C	20	10	7	12	12.5	8	11'-4"	9'-0 1/2"	11	8	6	22	11'-0"	8	6	22	11'-0"	7	10	26	8'-8"	4	9	14	4	8.5	15	4	12	14
D	25	10	7	13.5	13.5	8.5	11'-5"	9'-3"	11	8	6	22	11'-1"	8	6	22	11'-1"	7	8.5	30	8'-11"	4	7.5	17	4	7.5	17	4	12	14

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	Y	LENGTH	NO. REQ'D

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF FOR HDWL LBS.
0.91	136	44		
1.06	157	47		
1.20	189	50		
1.32	202	56		

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

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

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

The required number of bars shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 22+48

SPECIAL DETAILS

CGarvasini 8/20/2013 7:56:07 AM
WORKSPACE: AHTD
L:\2009\090723O - Conway Western ArterialLoop\Drawings\PRJL.DS\PRJL.DS\RCBC.CLOOP.22+48.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	24	237

(1) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13

TABULAR DATA BY: SAD DATE: 08/01/13
CHECKED BY: MRA DATE: 08/01/13

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
9'-0"	4'-0"	0'-9"	0'-8"	0	3:1	9'-0"	1'-0"	4'-10"	1'-4"	30	30	2'-2"	2'-5 3/4"	2'-5 3/4"	0'-4 3/8"	0'-4 3/8"	12'-0"	12'-0"	14'-10 5/8"	14'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
4.69	442

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	12	L Min	2'-6"	-	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	11'-8"
				L Max	6'-0"												3'-10"				
				X Min	0'-9"												Max				
				X Max	1'-1"												8'-0"				
				Y Min	1'-10"																
				Y Max	5'-0"																
WING B	4	12	12	L Min	2'-6"	-	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	11'-8"
				L Max	6'-0"												3'-10"				
				X Min	0'-9"												Max				
				X Max	1'-1"												8'-0"				
				Y Min	1'-10"																
				Y Max	5'-0"																

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F8 LENGTHS	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	8	L Min	3'-2"	4	6	15'-9"	4	18	8	Min		-	-	-	Min	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4"	221
				L Max	6'-3"							1'-8"					-											
				X Min	1'-4"							Max					Max										X 1'-8"	
				X Max	1'-4"							1'-0"					-											
				Y Min	1'-11"																							
				Y Max	5'-0"																							
WING B	4	18	8	L Min	3'-2"	4	6	15'-9"	4	18	8	Min		-	-	-	Min	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4"	221
				L Max	6'-3"							1'-8"					-											
				X Min	1'-4"							Max					Max										X 1'-8"	
				X Max	1'-4"							1'-0"					-											
				Y Min	1'-11"																							
				Y Max	5'-0"																							

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	"k1", "k2" & "h" SIZE	"k1", "k2" & "h" NO. REQ'D	"k1", "k2" & "h" LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH			Max				Max						Max			Max				LONG	k1				
																																k2			
														Min				Min						Min			Min				SHORT					
																																h			Y

CLASS "S" CONCRETE (Includes HDWL)	(1) REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.

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

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 2 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF SINGLE-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINF. STEEL "a" LENGTH = OW - 4" SIZE	"a" SPACING	"a" NO. REQ'D	"a" LENGTH	BOTTOM SLAB REINF. STEEL "b" LENGTH = OW - 4" SIZE	"b" SPACING	"b" NO. REQ'D	"b" LENGTH	SIDE WALL REINF. STEEL "f" LENGTH = OH - 4" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	"d" SPACING	"d" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
A	10	8	4	8	8	6	9'-0"	5'-4"	23.00	6	6	46	8'-8"	6	6.5	42	8'-8"	4	9	60	5'-0"	4	12	9	4	12	9	4	12	8
B	15	8	4	9	9	6	9'-0"	5'-6"	14.00	6	4.5	37	8'-8"	7	6.5	25	8'-8"	4	9	36	5'-2"	4	12	9	4	12	9	4	12	8

HDWL THK.	ADDITIONAL REINF. FOR HDWL HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	"h" bars Y	"h" bars LENGTH	"h" bars NO. REQ'D
	3"	26	4	0'-7"	1'-7"	10

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 50)	(2) ADTL. REINF. PER LONG. LAP LOCATION	ADDITIONAL CONCRETE FOR HDWL	TOTAL ADDITIONAL REINF. FOR HDWL
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.	CU. YDS.	LBS.
0.59	76	30	0.08	37
0.65	94	30		

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

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

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

Design Fill Depth	Range of Actual Fill Depth
2	0.0 ft - 2.0 ft
5	>2.0 ft - 5.0 ft
10	>5.0 ft - 10.0 ft
15	>10.0 ft - 15.0 ft
20	>15.0 ft - 20.0 ft
25	>20.0 ft - 25.0 ft
30	>25.0 ft - 30.0 ft
35	>30.0 ft - 35.0 ft
40	>35.0 ft - 40.0 ft

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINF. STEEL "a" LENGTH = OW - 4" SIZE	"a" SPACING	"a" NO. REQ'D	"a" LENGTH	BOTTOM SLAB REINF. STEEL "b" LENGTH = OW - 4" SIZE	"b" SPACING	"b" NO. REQ'D	"b" LENGTH	SIDE WALL REINF. STEEL "f" LENGTH = OH - 4" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	"d" SPACING	"d" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
C	20	8	4	11	11	6	9'-0"	5'-10"	97.00	7	5.5	211	8'-8"	7	5.5	211	8'-8"	4	6.5	358	5'-6"	4	10	10	4	10	10	4	12	8

CLASS "S" CONCRETE	REINFORCING STEEL (Gr. 60)	(3) ADTL. REINF. PER LONG. LAP LOCATION(S)
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.
0.76	110	33

(3) MID-SECTION

BAR LAP TABLE

# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft - 344.0 ft

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 22+80

SPECIAL DETAILS

LRFD

CGervasini 8/20/2013 7:57:36 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	25	237

① SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13

TABULAR DATA BY: SAD DATE: 08/01/13
CHECKED BY: MRA DATE: 08/01/13

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
9'-0"	4'-0"	0'-9"	0'-8"	0	3:1	9'-0"	1'-0"	4'-10"	1'-4"	30	30	2'-2"	2'-5 3/4"	2'-5 3/4"	0'-4 3/8"	0'-4 3/8"	12'-0"	12'-0"	14'-10 5/8"	14'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
5.18	442

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	12	L	Min	2'-6"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	2	11'-8"
					Max	6'-0"												3'-10"				
				X	Min	0'-9"				X -				X -				Max				
					Max	1'-1"												8'-0"				
				Y	Min	1'-10"				Y -				Y -								
					Max	5'-0"																
WING B	4	12	12	L	Min	2'-6"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	2	11'-8"
					Max	6'-0"												3'-10"				
				X	Min	0'-9"				X -				X -				Max				
					Max	1'-1"												8'-0"				
				Y	Min	1'-10"				Y -				Y -								
					Max	5'-0"																

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS			REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	8	L	Min	3'-2"	4	6	15'-9"	4	18	8	Min	-	-	-	Min	4	2	12'-0"	4	2	13'-4"	6	12	4	L	3'-4"	221
					Max	6'-3"							1'-8"				-												
				X	Min	1'-4"							Max				Max										X	1'-8"	
					Max	1'-4"							1'-0"				-												
				Y	Min	1'-11"																							
					Max	5'-0"																							
WING B	4	18	8	L	Min	3'-2"	4	6	15'-9"	4	18	8	Min	-	-	-	Min	4	2	12'-0"	4	2	13'-4"	6	12	4	L	3'-4"	221
					Max	6'-3"							1'-8"				-												
				X	Min	1'-4"							Max				Max										X	1'-8"	
					Max	1'-4"							1'-0"				-												
				Y	Min	1'-11"																							
					Max	5'-0"																							

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	"k1", "k2" & "h" SIZE	"k1", "k2" & "h" NO. REQ'D	"k1", "k2" & "h" LENGTH
SK	SL	D	S	H	SL	T	B	C	HW	OW	OH			Max				Max									Max					LONG	k1			
																																k2			
														Min				Min									Min					SHORT	h			Y

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR. 60) (Includes HDWL) LBS.

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

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
A	10	8	4	8	8	6	9'-0"	5'-4"	23	6	6	46	8'-8"	6	6.5	42	8'-8"	4	9	60	5'-0"	4	12	9	4	12	9	4	12	8
B	15	8	4	9	9	6	9'-0"	5'-6"	11	6	4.5	29	8'-8"	7	6.5	20	8'-8"	4	9	28	5'-2"	4	12	9	4	12	9	4	12	8

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	"h" bars Y	"h" bars LENGTH	"h" bars NO. REQ'D
3"	26	4	0'-7"	1'-7"	10

CLASS "S" CONCRETE CU YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
0.59	76	30	0.08	37
0.65	94	30		

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

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

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

The required number of bars shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 22+80

SPECIAL DETAILS

CGervasini 8/20/2013 7:58:04 AM
WORKSPACE: AHTD
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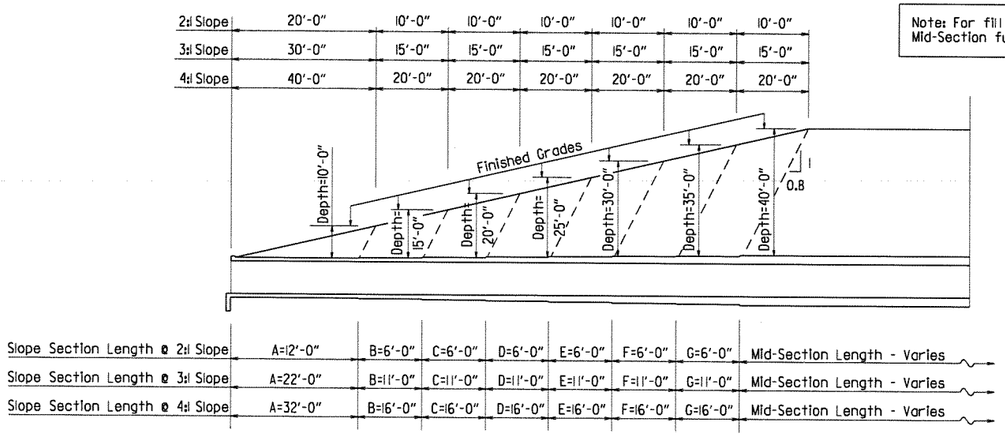
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	26	237
				①		SPECIAL DETAILS		

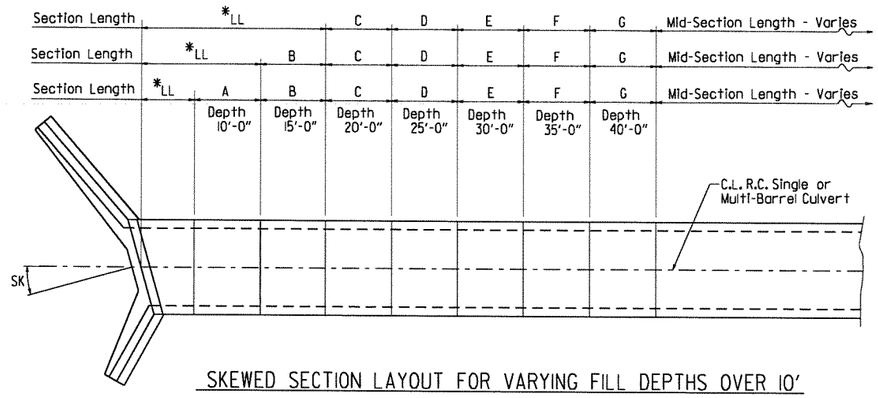


Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

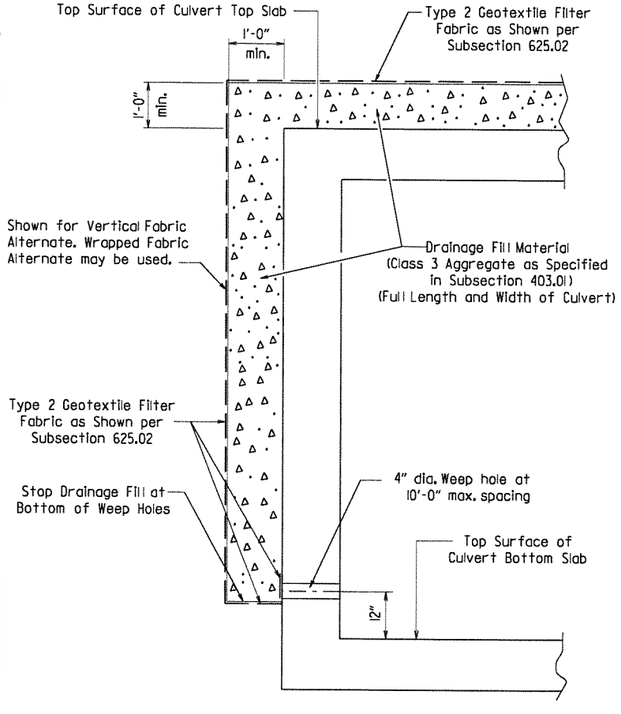
Lengths for Non-Skewed Boxes

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



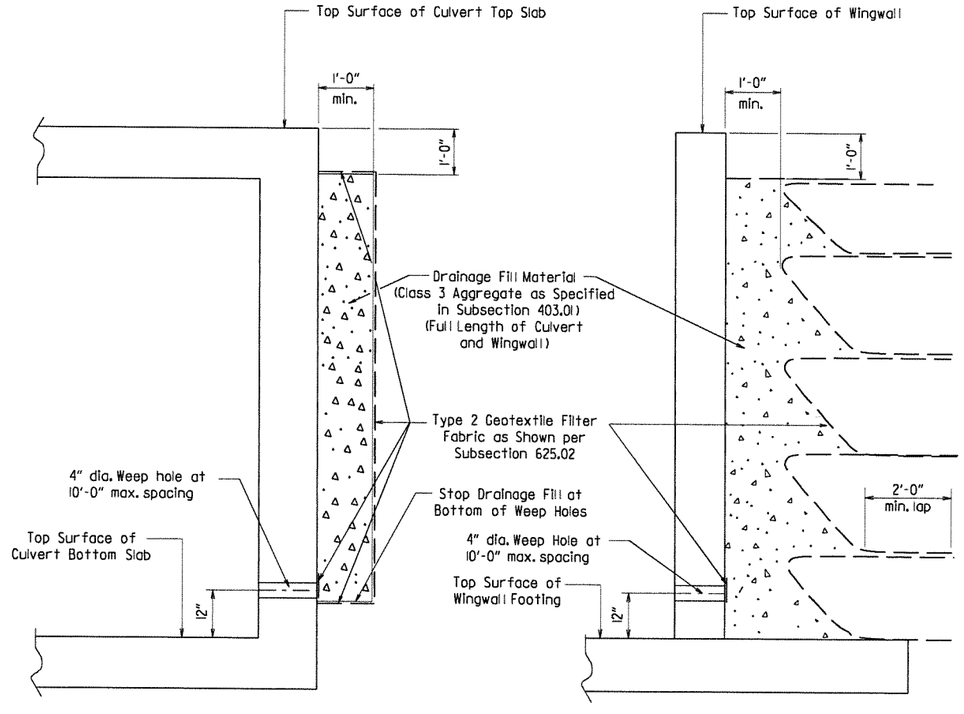
SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



VERTICAL FABRIC ALTERNATE
(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

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

WINGWALL & CULVERT DRAINAGE DETAIL

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

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

LIVE LOADING: HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have ¾" chamfers.

Reinforcing Steel shall be AASHTO M 31 or M 53, Grade 60.

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

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

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

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

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

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

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

When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Special Provision "LRFD Precast Reinforced Concrete Box Culverts".

SHEET 1 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

CGervasini 8/20/2013 8:00:00 AM
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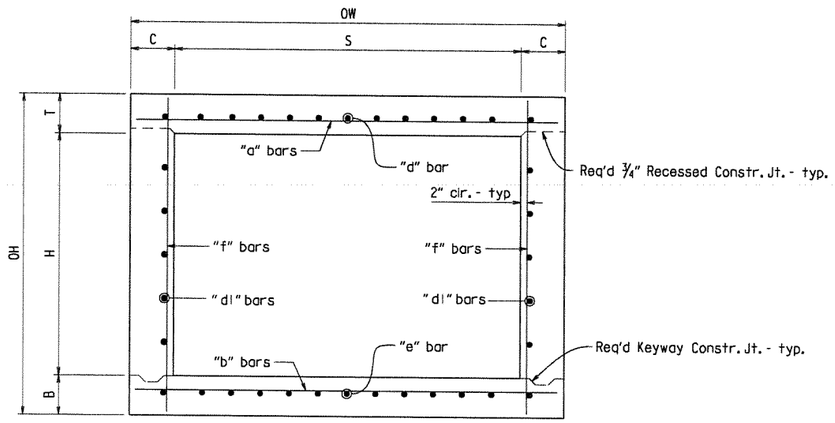
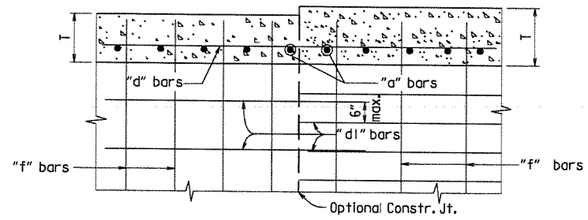
				JOB NO.		080395	27	237

(1) SPECIAL DETAILS



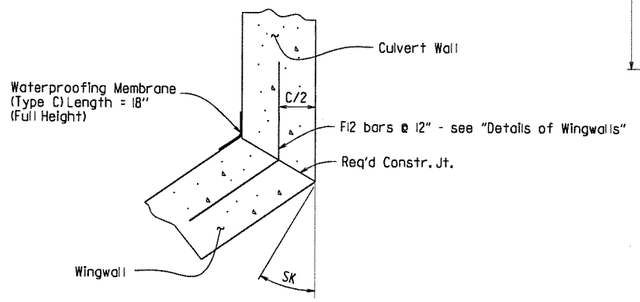
TYPICAL SECTION M-M



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

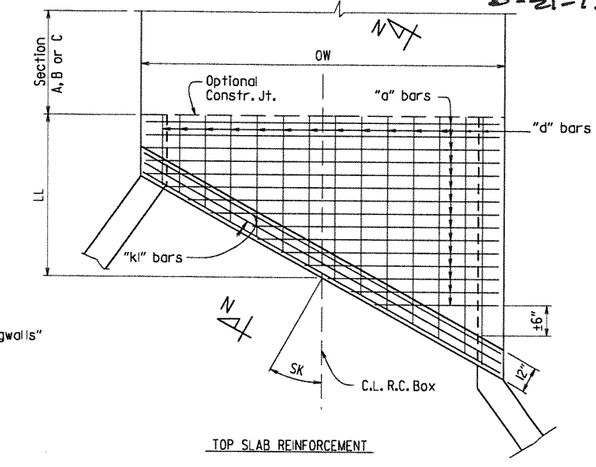
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

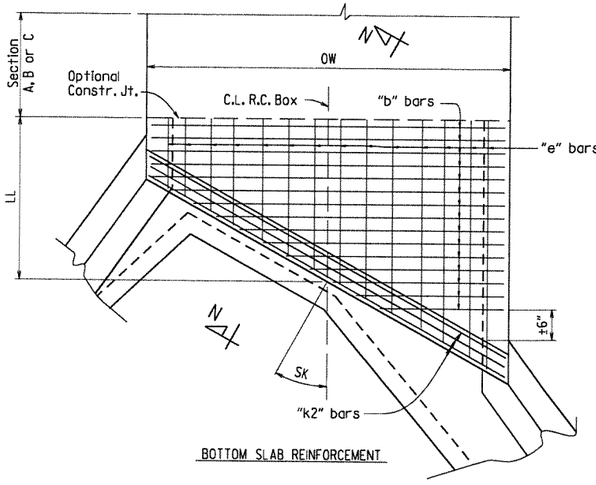


WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.

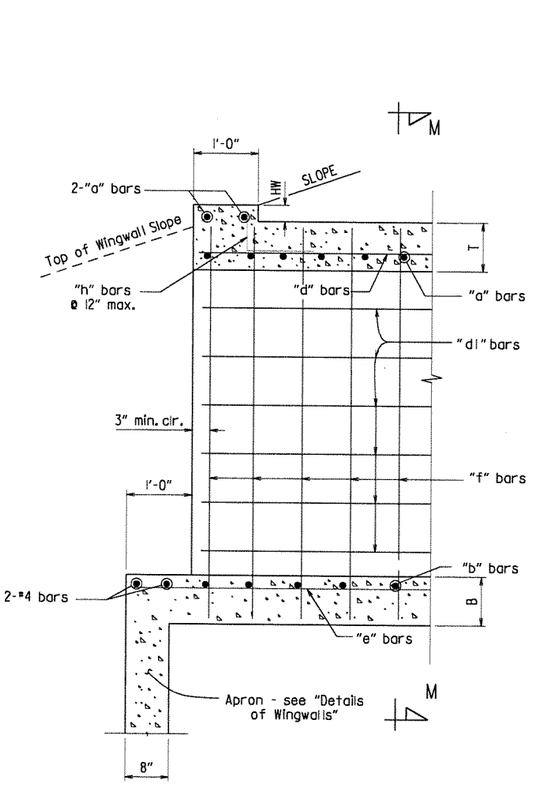


TOP SLAB REINFORCEMENT



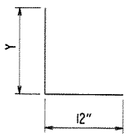
BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

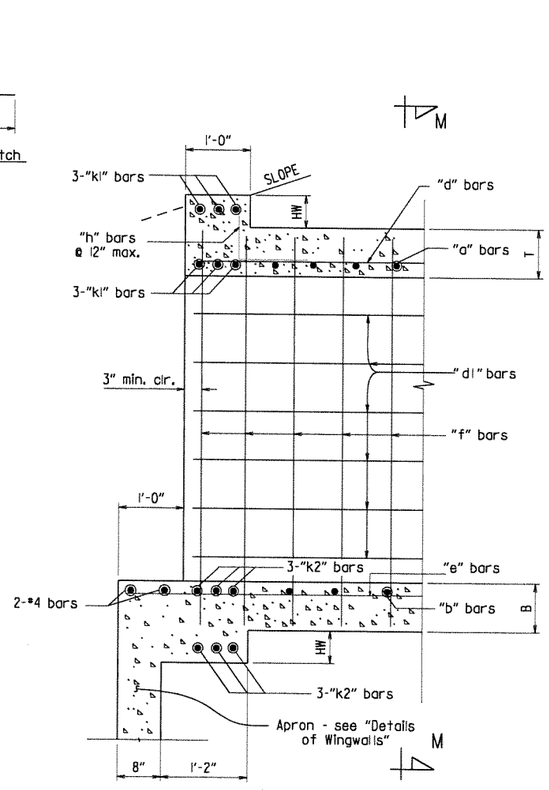


PART LONGITUDINAL SECTION

(Non-Skewed Ends)

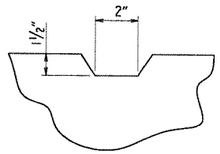


"h" bars sketch



PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)

SHEET 2 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL R.C. BOX CULVERT

SPECIAL DETAILS

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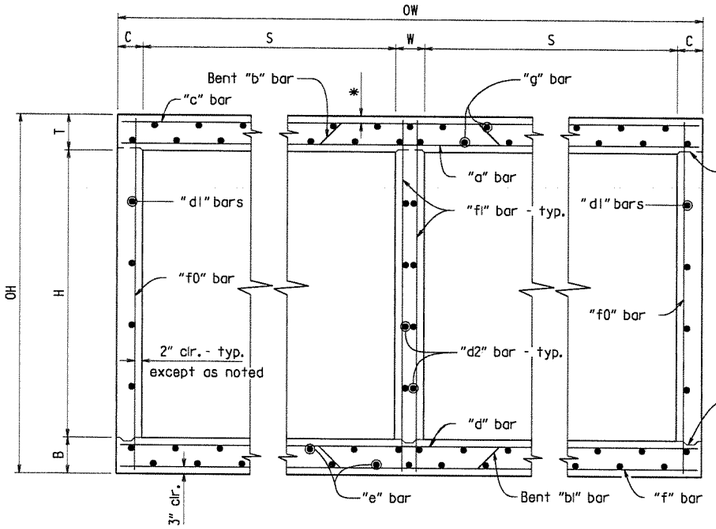
SPECIAL DETAILS

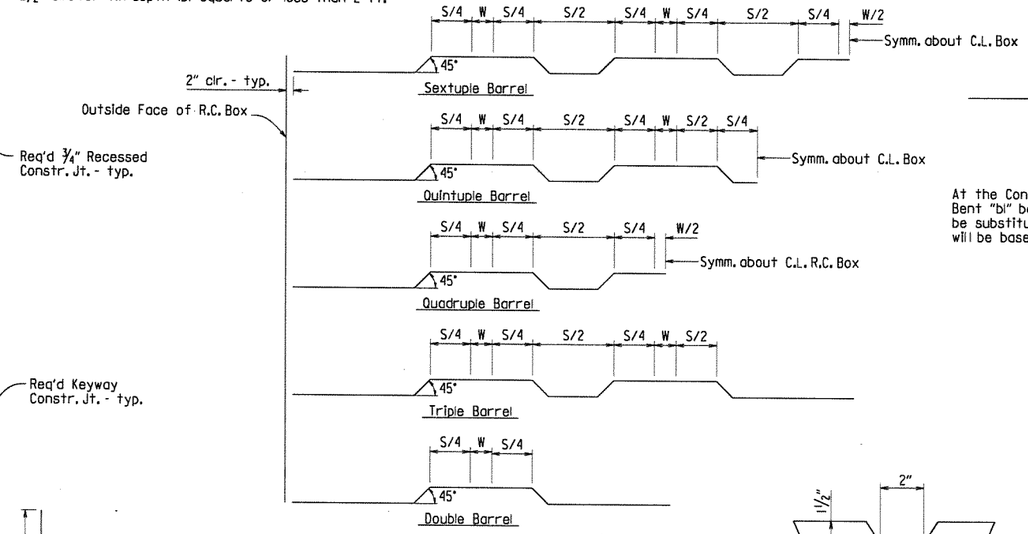


TYPICAL SECTION M-M

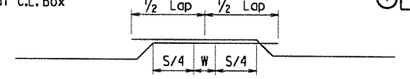
Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

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

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

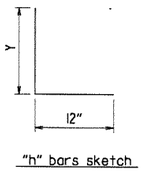


Bent "b" bars or Bent "bl" bars sketch

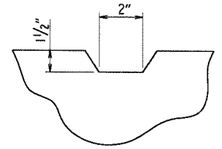


Optional Lap Detail
For Bent "b" bars and Bent "bl" bars

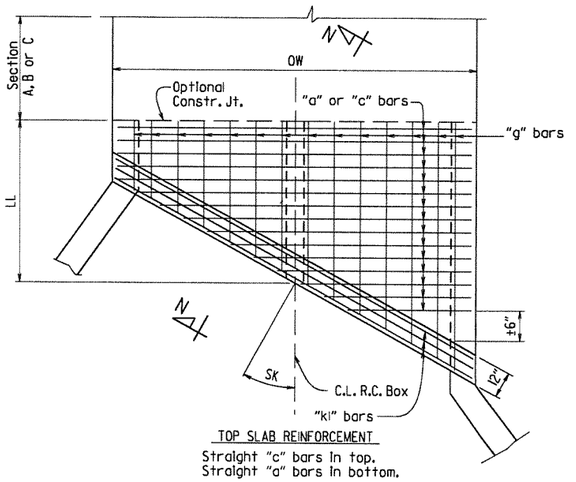
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.



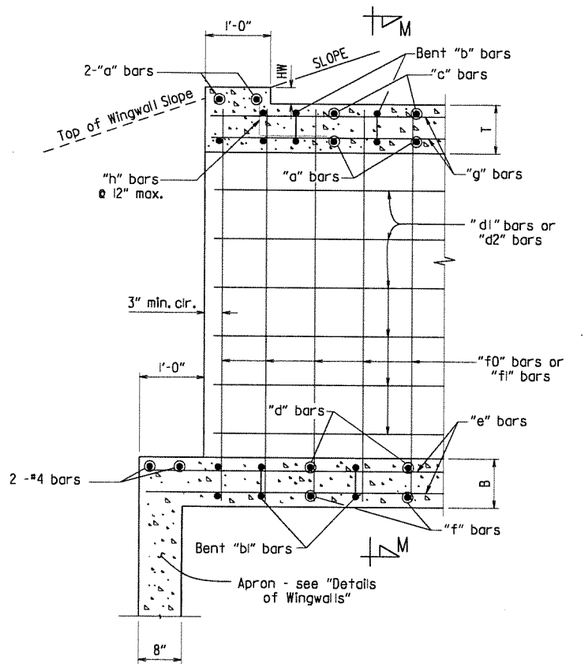
"h" bars sketch



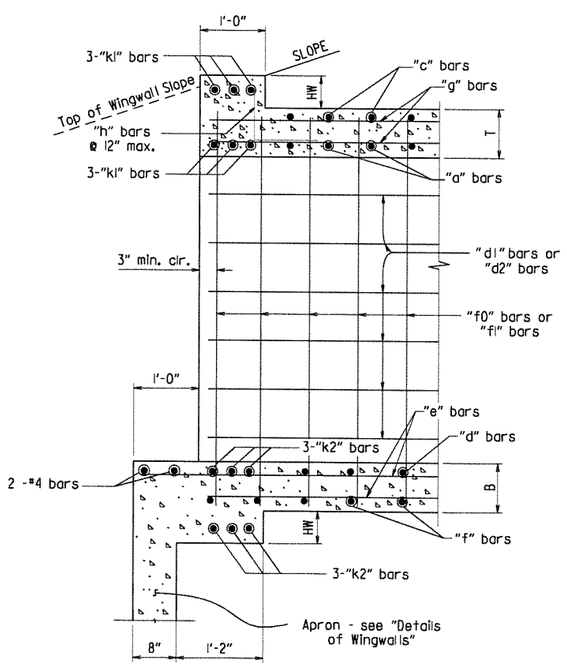
TYPICAL KEYWAY DETAIL
(All Construction Joints)



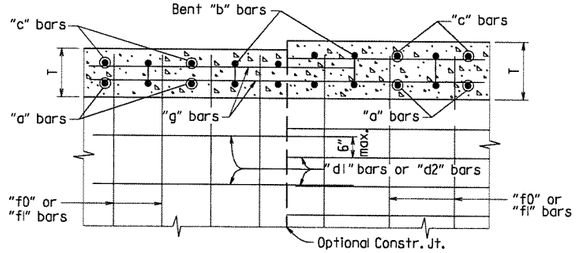
TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



PART LONGITUDINAL SECTION
(Non-Skewed Ends)

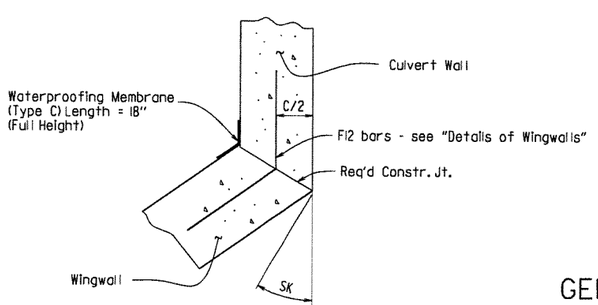


PART LONGITUDINAL SECTION N-N
(Skewed Ends)

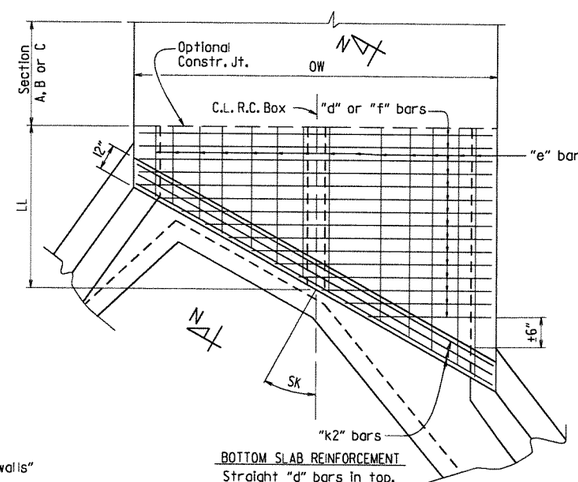


Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

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



WINGWALL ATTACHMENT
See "Details of Wingwalls" for additional information and wingwall details.



BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

SKEWED END SECTION DETAILS

SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

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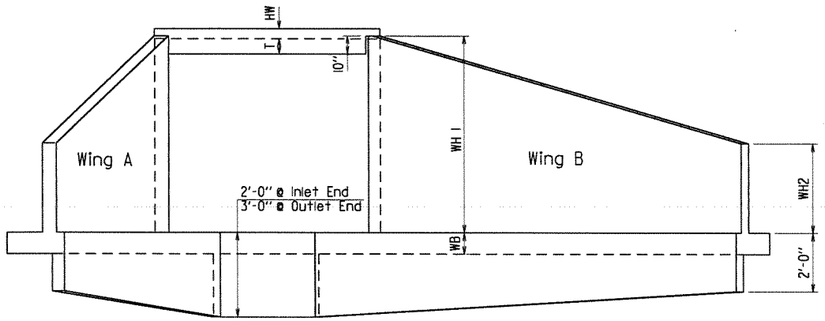
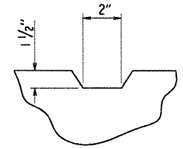
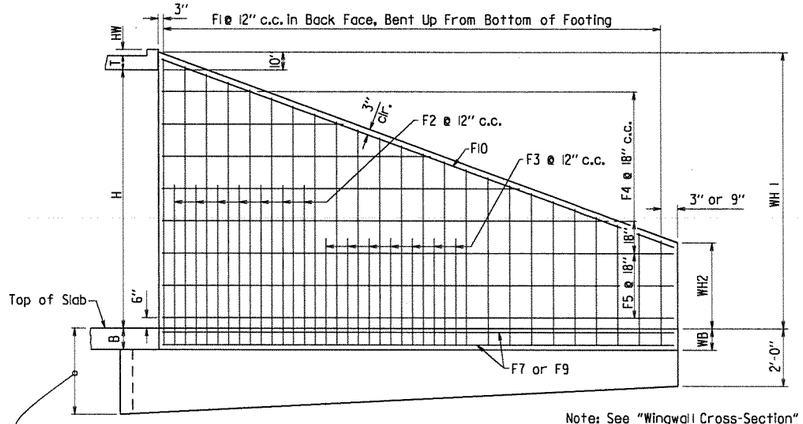


END ELEVATION
Flared Wingwalls Shown

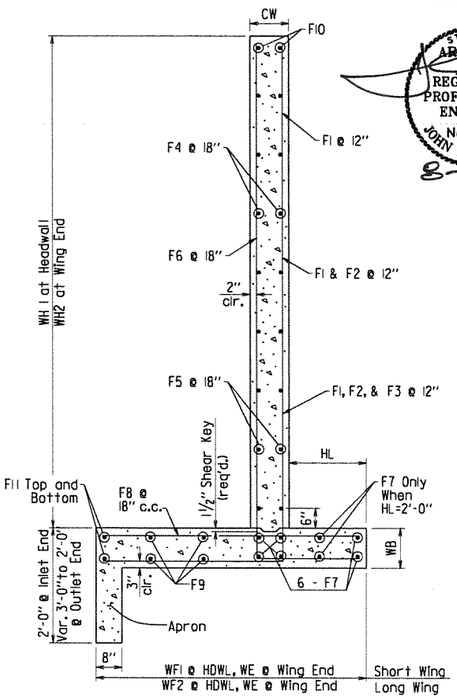


TYPICAL KEYWAY DETAIL
(All Construction Joints)

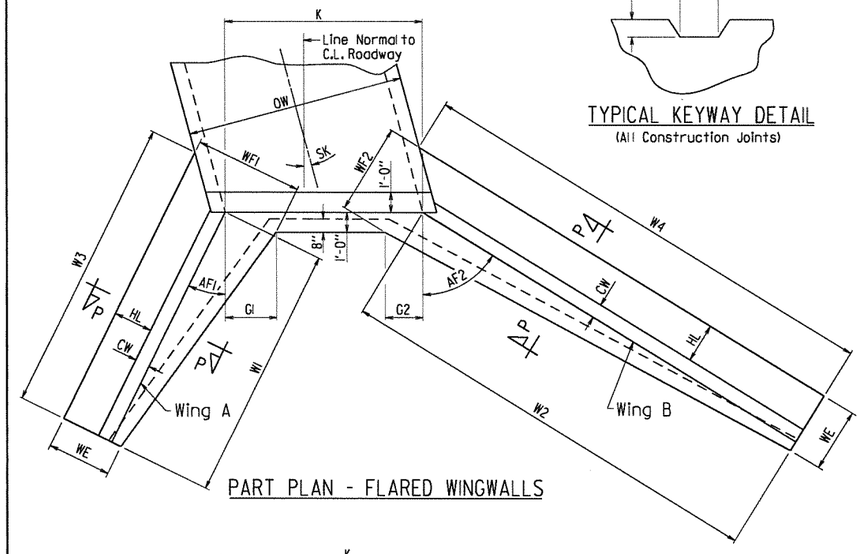


WINGWALL ELEVATION
Showing Back Face Reinforcement

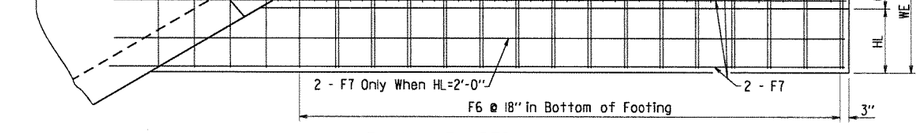
Note: See "Wingwall Cross-Section" for additional details and reinforcing



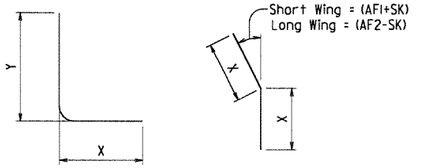
WINGWALL SECTION P-P



PART PLAN - FLARED WINGWALLS



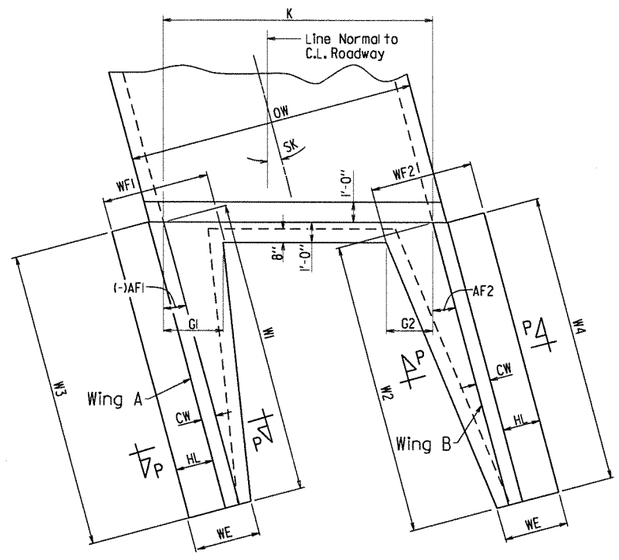
PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



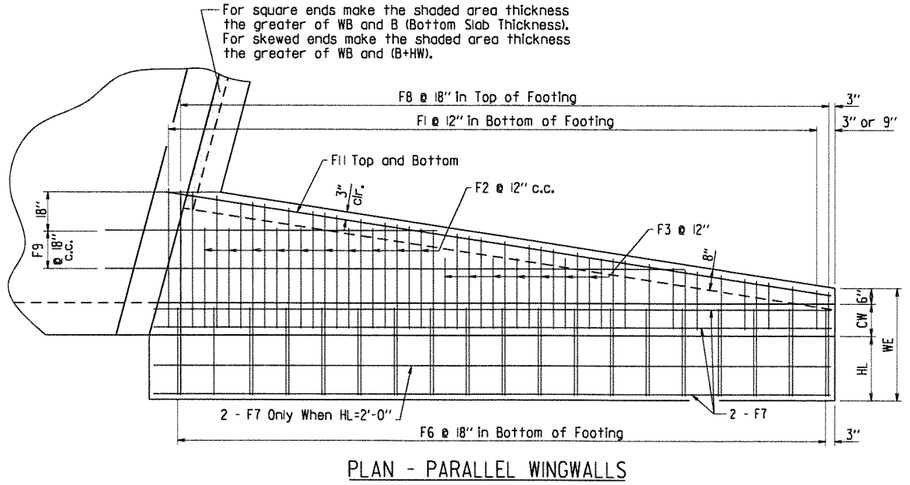
F1, F2, F3, & F6 BARS

*F12 BAR

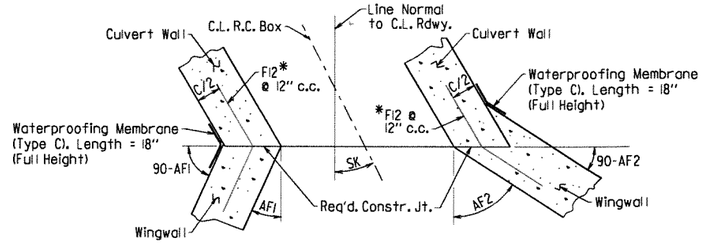
*F12 is a straight bar for parallel wingwalls



PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



CONSTRUCTION JOINTS
Flared Wingwalls Shown

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13

CGGervasini 8/20/2013 8:01:48 AM
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REVISED DATE:

REVISION BOX

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14835
TODD E. MUELLER
8-21-13

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.		080395	30	237

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

(E-II) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

N

RAMP 3

SILT FENCE	(E-II)	LIN. FT.
STA. 7444+40 TO 7450+00	RT.	610
STA. 7445+00 TO 7450+20	LT.	480

MERGED RAMPS 3 & 4

SILT FENCE	(E-II)	LIN. FT.
STA. 7450+00 TO 7452+50	RT.	300
STA. 7450+60 TO 7452+10	LT.	130

RAMP 4

SILT FENCE	(E-II)	LIN. FT.
STA. 7443+80 TO 7446+85	RT.	345
STA. 7445+00 TO 7448+50	LT.	305

C.L. RAMP 3
C.L. MEDIAN I-40
C.L. RAMP 4
C.L. MERGED RAMPS 3 & 4
C.L. RAMP 2

PC 7449+77.89
PI 7448+15.69
PI 7448+39.47
PC 7444+97.30
PT 7449+63.52
PI 7442+22.06
PI 7441+30.81
3.38

TEMPORARY EROSION CONTROL DETAILS CLEARING & GRUBBING STAGE

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				JOB NO.		080395	31	237

(2) TEMPORARY EROSION CONTROL DETAILS

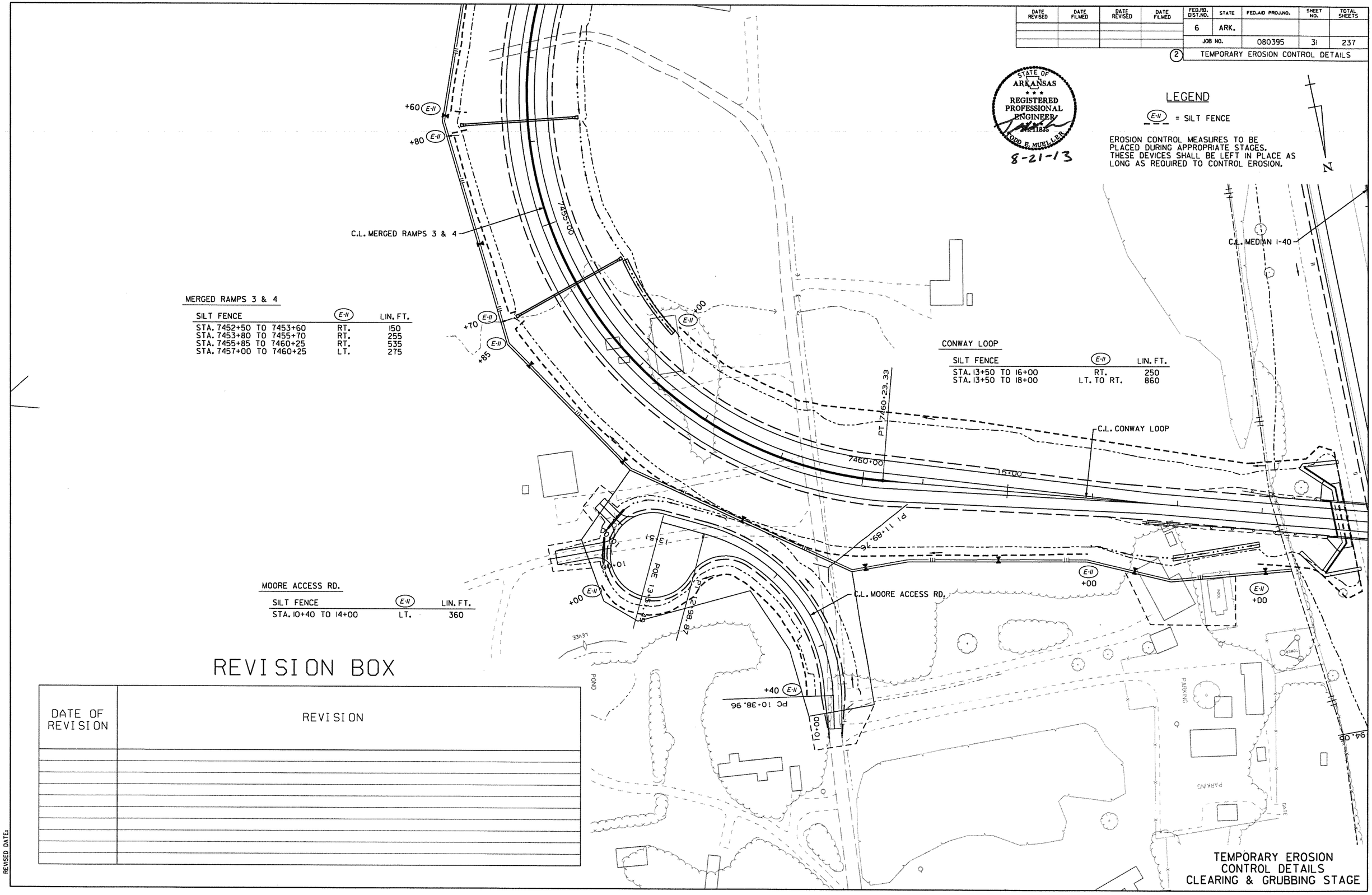
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER
8-21-13

LEGEND

E-II = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

N



MERGED RAMPS 3 & 4

SILT FENCE	E-II	LIN. FT.
STA. 7452+50 TO 7453+60	RT.	150
STA. 7453+80 TO 7455+70	RT.	255
STA. 7455+85 TO 7460+25	RT.	535
STA. 7457+00 TO 7460+25	LT.	275

CONWAY LOOP

SILT FENCE	E-II	LIN. FT.
STA. 13+50 TO 16+00	RT.	250
STA. 13+50 TO 18+00	LT. TO RT.	860

MOORE ACCESS RD.

SILT FENCE	E-II	LIN. FT.
STA. 10+40 TO 14+00	LT.	360

REVISION BOX

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS CLEARING & GRUBBING STAGE

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				6	ARK.			
				JOB NO.		080395	32	237

(2) TEMPORARY EROSION CONTROL DETAILS

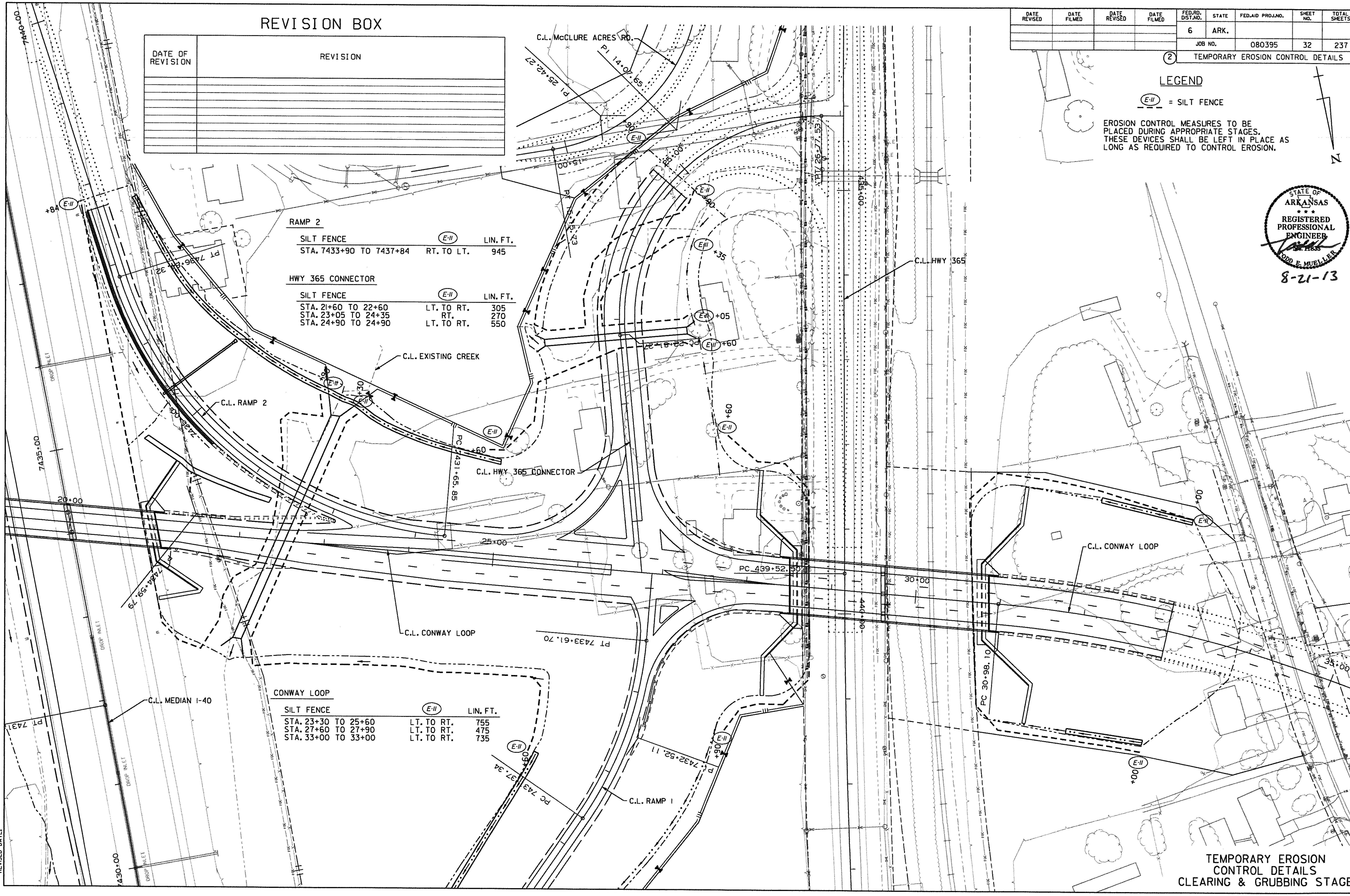
REVISION BOX

DATE OF REVISION	REVISION

LEGEND

(E-II) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11635
TODD E. MUELLER
8-21-13

RAMP 2

SILT FENCE	(E-II)	LIN. FT.
STA. 7433+90 TO 7437+84	RT. TO LT.	945

HWY 365 CONNECTOR

SILT FENCE	(E-II)	LIN. FT.
STA. 21+60 TO 22+60	LT. TO RT.	305
STA. 23+05 TO 24+35	RT.	270
STA. 24+90 TO 24+90	LT. TO RT.	550

CONWAY LOOP

SILT FENCE	(E-II)	LIN. FT.
STA. 23+30 TO 25+60	LT. TO RT.	755
STA. 27+60 TO 27+90	LT. TO RT.	475
STA. 33+00 TO 33+00	LT. TO RT.	735

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TEMPORARY EROSION CONTROL DETAILS CLEARING & GRUBBING STAGE

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				JOB NO.		080395	33	237

(2) TEMPORARY EROSION CONTROL DETAILS.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11835 TODD E. MUELLER
8-21-13

LEGEND

(E-II) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISION BOX

DATE OF REVISION	REVISION

RAMP 1

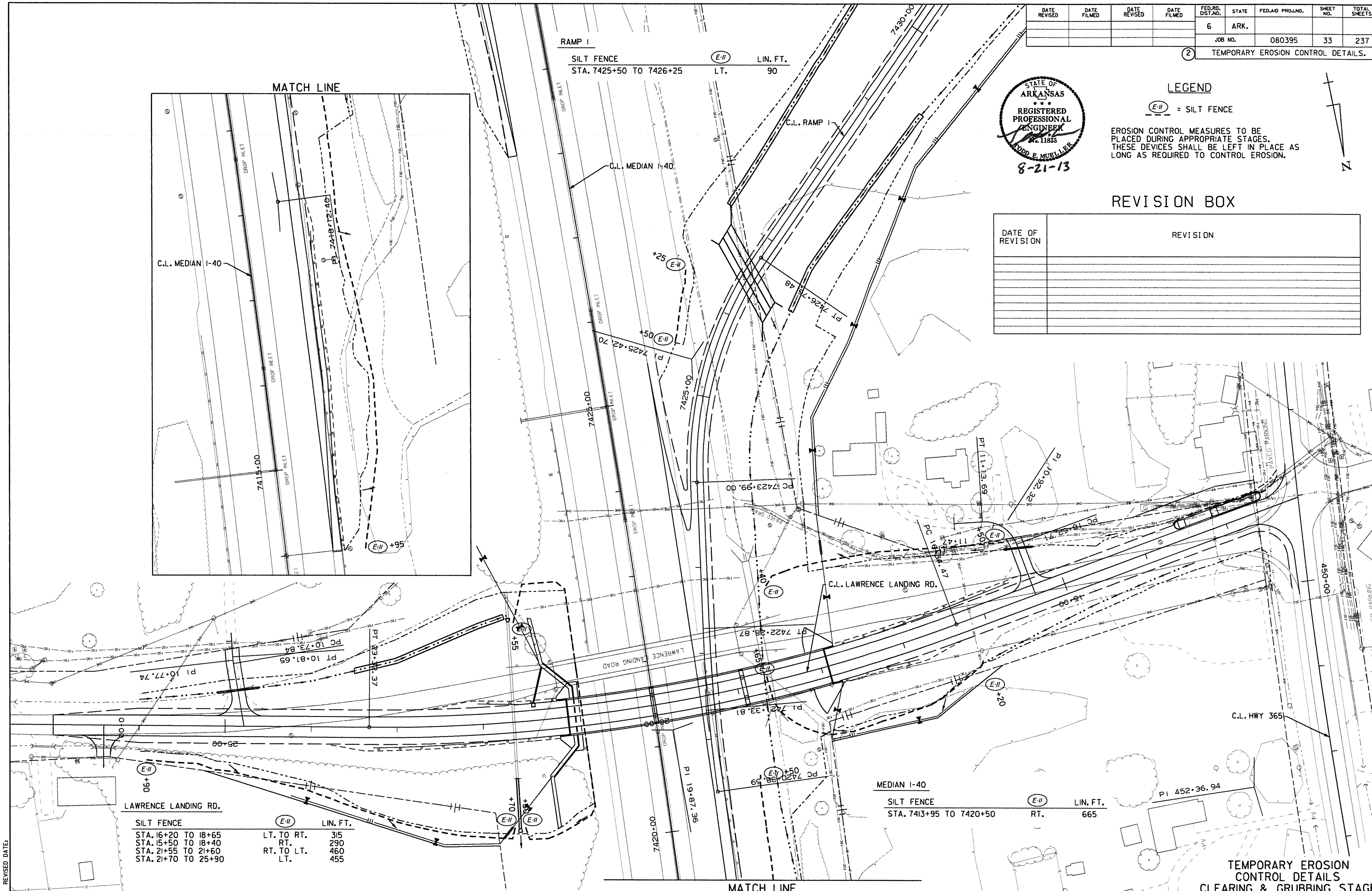
SILT FENCE	(E-II)	LIN. FT.
STA. 7425+50 TO 7426+25	LT.	90

MEDIAN I-40

SILT FENCE	(E-II)	LIN. FT.
STA. 7413+95 TO 7420+50	RT.	665

LAWRENCE LANDING RD.

SILT FENCE	(E-II)	LIN. FT.
STA. 16+20 TO 18+65	LT. TO RT.	315
STA. 15+50 TO 18+40	RT.	290
STA. 21+55 TO 21+60	RT. TO LT.	460
STA. 21+70 TO 25+90	LT.	455



TEMPORARY EROSION CONTROL DETAILS CLEARING & GRUBBING STAGE

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WORKSPACE: AHTD
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REVISED DATE:

REVISION BOX

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.		080395	34	237

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER 11865 TODD E. MUELLER

8-21-13

LEGEND

(E-5) = SAND BAG DITCH CHECK

(E-6) = ROCK DITCH CHECK

(E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

N

RAMP 3

SILT FENCE	(E-11)	LIN. FT.
STA. 7444+40 TO 7450+00	RT.	RETAIN
STA. 7445+00 TO 7450+20	LT.	RETAIN
SAND BAG DITCH CHECK	**(E-5)**	**INSTALLATION**
STA. 7441+50 TO 7445+00	LT.	2
STA. 7444+00 TO 7445+00	RT.	1
ROCK DITCH CHECK	**(E-6)**	**INSTALLATION**
STA. 7441+50 TO 7445+00	LT.	2
STA. 7444+00 TO 7445+00	RT.	1

MERGED RAMPS 3 & 4

SILT FENCE	(E-11)	LIN. FT.
STA. 7450+00 TO 7452+50	RT.	RETAIN
STA. 7450+60 TO 7452+10	LT.	RETAIN
SAND BAG DITCH CHECK	**(E-5)**	**INSTALLATION**
STA. 7449+65 TO 7450+00	RT.	1
STA. 7449+65 TO 7450+60	LT.	1
ROCK DITCH CHECK	**(E-6)**	**INSTALLATION**
STA. 7449+65 TO 7450+00	RT.	1
STA. 7449+65 TO 7450+60	LT.	1

RAMP 4

SILT FENCE	(E-11)	LIN. FT.
STA. 7443+80 TO 7446+85	RT.	RETAIN
STA. 7445+00 TO 7448+50	LT.	RETAIN
SAND BAG DITCH CHECK	**(E-5)**	**INSTALLATION**
STA. 7442+00 TO 7445+00	RT.	1
ROCK DITCH CHECK	**(E-6)**	**INSTALLATION**
STA. 7442+00 TO 7445+00	RT.	1

C.L. RAMP 3

C.L. MERGED RAMPS 3 & 4

C.L. MEDIAN I-40

C.L. RAMP 4

C.L. RAMP 2

PC 7449+79.89

PI 7448+15.69

PI 7448+39.47

PC 7444+97.30

PT 7449+63.52

PC 7449+63.52

PI 7442+22.05

PI 7441+30.81

DROP INLET

CONCRETE

TEMPORARY EROSION CONTROL DETAILS STAGE 1

CGervasini 8/19/2013 3:08:48 PM
WORKSPACE1 AHTD
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REVISED DATE:

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.		080395	35	237
				(2) TEMPORARY EROSION CONTROL DETAILS				

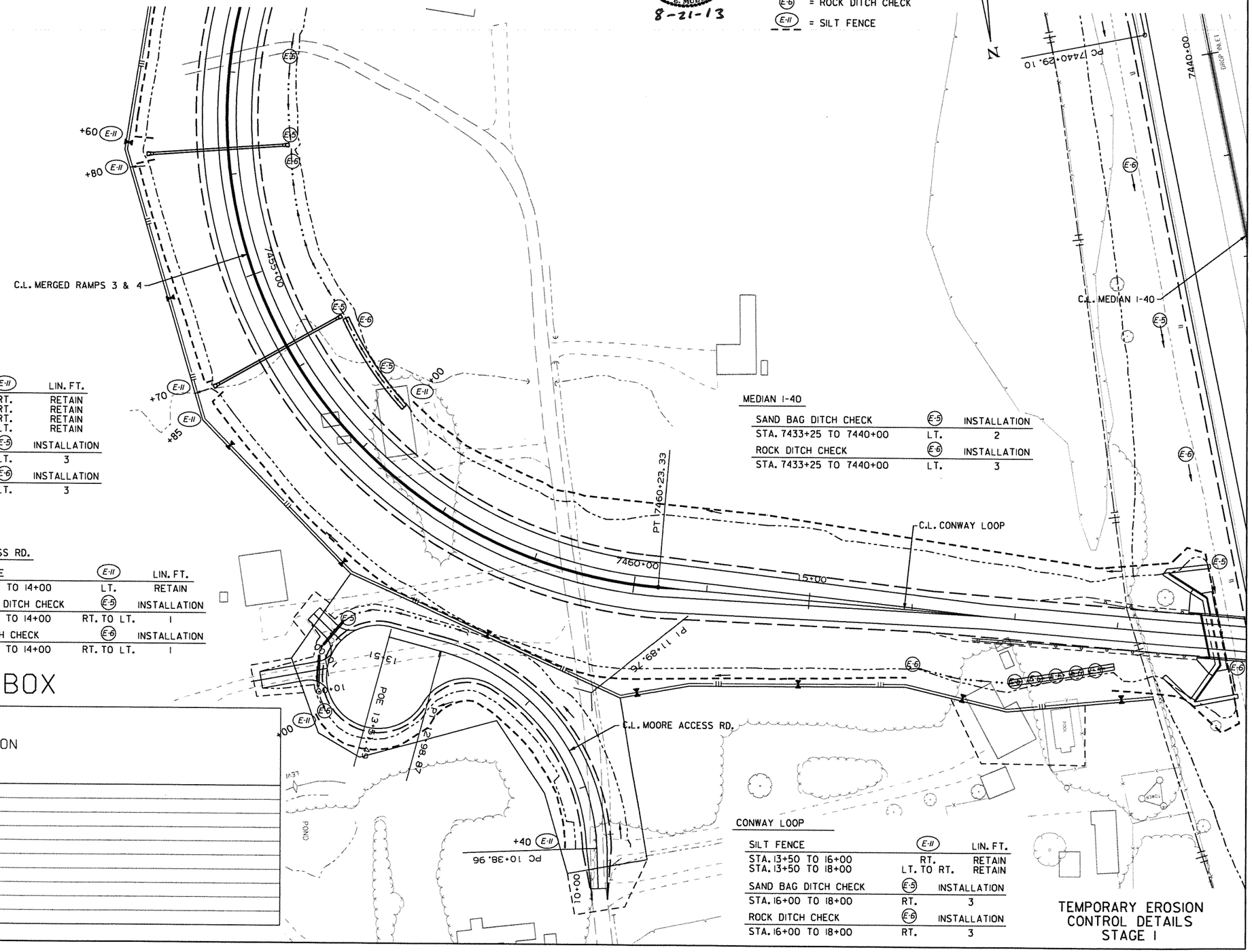
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER
8-21-13

LEGEND

(E-5) = SAND BAG DITCH CHECK
(E-6) = ROCK DITCH CHECK
(E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

N



MERGED RAMPS 3 & 4

SILT FENCE	(E-11)	LIN. FT.
STA. 7452+50 TO 7453+60	RT.	RETAIN
STA. 7453+80 TO 7455+70	RT.	RETAIN
STA. 7455+85 TO 7460+25	RT.	RETAIN
STA. 7457+00 TO 7460+25	LT.	RETAIN
SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 7452+50 TO 7457+00	LT.	3
ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 7452+50 TO 7457+00	LT.	3

MEDIAN I-40

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 7433+25 TO 7440+00	LT.	2
ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 7433+25 TO 7440+00	LT.	3

MOORE ACCESS RD.

SILT FENCE	(E-11)	LIN. FT.
STA. 10+40 TO 14+00	LT.	RETAIN
SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 12+80 TO 14+00	RT. TO LT.	1
ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 12+80 TO 14+00	RT. TO LT.	1

CONWAY LOOP

SILT FENCE	(E-11)	LIN. FT.
STA. 13+50 TO 16+00	RT.	RETAIN
STA. 13+50 TO 18+00	LT. TO RT.	RETAIN
SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 16+00 TO 18+00	RT.	3
ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 16+00 TO 18+00	RT.	3

REVISION BOX

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS STAGE 1

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WORKSPACE: AHTD
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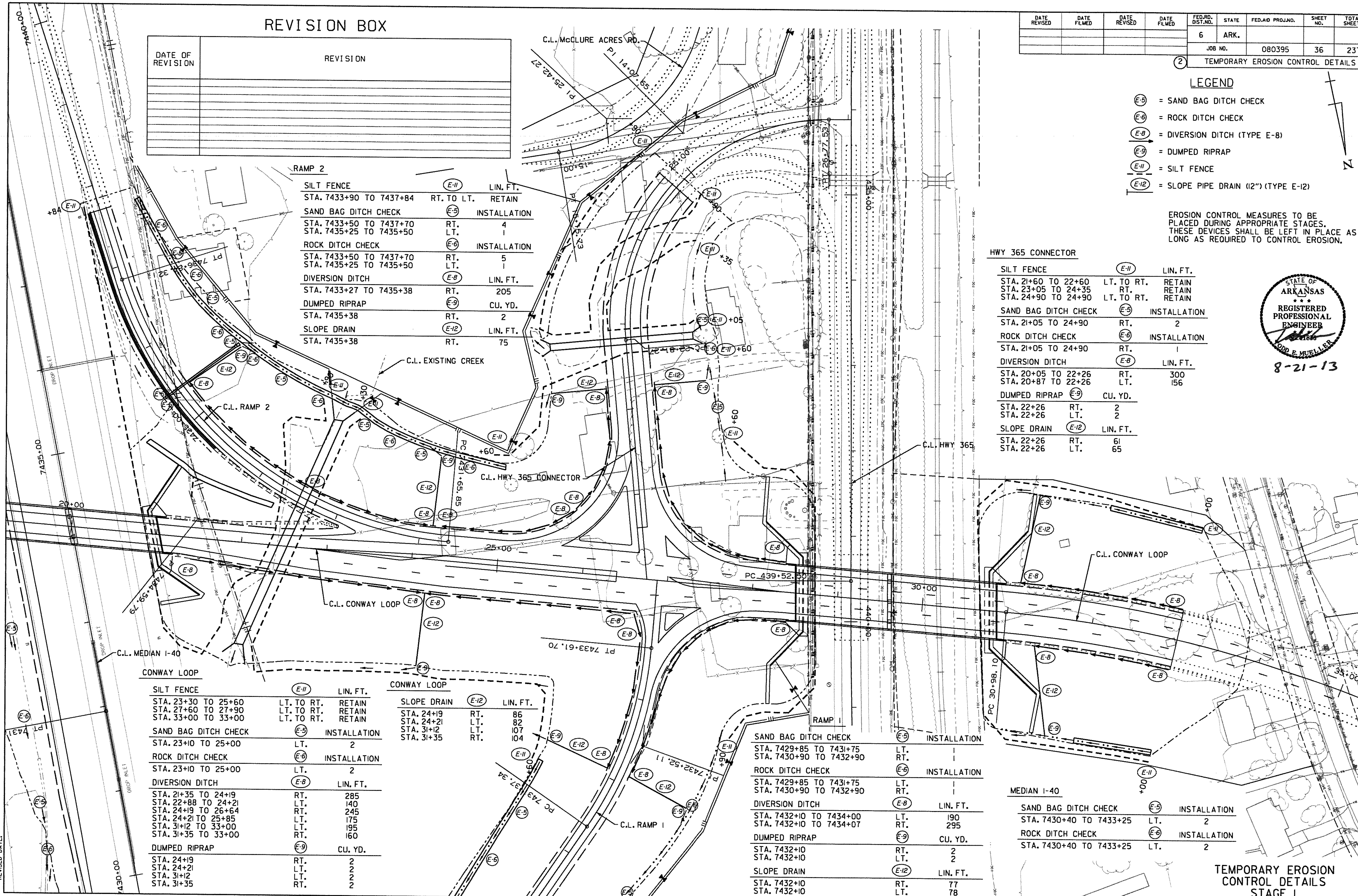
REVISED DATE:

(2) TEMPORARY EROSION CONTROL DETAILS

REVISION BOX

DATE OF REVISION	REVISION



LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER
8-21-13

RAMP 2

SILT FENCE	(E-11)	LIN. FT.
STA. 7433+90 TO 7437+84	RT. TO LT.	RETAIN
SAND BAG DITCH CHECK	**(E-5)**	**INSTALLATION**
STA. 7433+50 TO 7437+70	RT.	4
STA. 7435+25 TO 7435+50	LT.	1
ROCK DITCH CHECK	**(E-6)**	**INSTALLATION**
STA. 7433+50 TO 7437+70	RT.	5
STA. 7435+25 TO 7435+50	LT.	1
DIVERSION DITCH	**(E-8)**	**LIN. FT.**
STA. 7433+27 TO 7435+38	RT.	205
DUMPED RIPRAP	**(E-9)**	**CU. YD.**
STA. 7435+38	RT.	2
SLOPE DRAIN	**(E-12)**	**LIN. FT.**
STA. 7435+38	RT.	75

HWY 365 CONNECTOR

SILT FENCE	(E-11)	LIN. FT.
STA. 21+60 TO 22+60	LT. TO RT.	RETAIN
STA. 23+05 TO 24+35	RT.	RETAIN
STA. 24+90 TO 24+90	LT. TO RT.	RETAIN
SAND BAG DITCH CHECK	**(E-5)**	**INSTALLATION**
STA. 21+05 TO 24+90	RT.	2
ROCK DITCH CHECK	**(E-6)**	**INSTALLATION**
STA. 21+05 TO 24+90	RT.	1
DIVERSION DITCH	**(E-8)**	**LIN. FT.**
STA. 20+05 TO 22+26	RT.	300
STA. 20+87 TO 22+26	LT.	156
DUMPED RIPRAP	**(E-9)**	**CU. YD.**
STA. 22+26	RT.	2
STA. 22+26	LT.	2
SLOPE DRAIN	**(E-12)**	**LIN. FT.**
STA. 22+26	RT.	61
STA. 22+26	LT.	65

CONWAY LOOP

SILT FENCE	(E-11)	LIN. FT.
STA. 23+30 TO 25+60	LT. TO RT.	RETAIN
STA. 27+60 TO 27+90	LT. TO RT.	RETAIN
STA. 33+00 TO 33+00	LT. TO RT.	RETAIN
SAND BAG DITCH CHECK	**(E-5)**	**INSTALLATION**
STA. 23+10 TO 25+00	LT.	2
ROCK DITCH CHECK	**(E-6)**	**INSTALLATION**
STA. 23+10 TO 25+00	LT.	2
DIVERSION DITCH	**(E-8)**	**LIN. FT.**
STA. 21+35 TO 24+19	RT.	285
STA. 22+88 TO 24+21	LT.	140
STA. 24+19 TO 26+64	RT.	245
STA. 24+21 TO 25+85	LT.	175
STA. 31+12 TO 33+00	LT.	195
STA. 31+35 TO 33+00	RT.	160
DUMPED RIPRAP	**(E-9)**	**CU. YD.**
STA. 24+19	RT.	2
STA. 24+21	LT.	2
STA. 31+12	LT.	2
STA. 31+35	RT.	2

CONWAY LOOP

SLOPE DRAIN	(E-12)	LIN. FT.
STA. 24+19	RT.	86
STA. 24+21	LT.	82
STA. 31+12	LT.	107
STA. 31+35	RT.	104

RAMP 1

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 7429+85 TO 7431+75	LT.	1
STA. 7430+90 TO 7432+90	RT.	1
ROCK DITCH CHECK	**(E-6)**	**INSTALLATION**
STA. 7429+85 TO 7431+75	LT.	1
STA. 7430+90 TO 7432+90	RT.	1
DIVERSION DITCH	**(E-8)**	**LIN. FT.**
STA. 7432+10 TO 7434+00	LT.	190
STA. 7432+10 TO 7434+07	RT.	295
DUMPED RIPRAP	**(E-9)**	**CU. YD.**
STA. 7432+10	RT.	2
STA. 7432+10	LT.	2
SLOPE DRAIN	**(E-12)**	**LIN. FT.**
STA. 7432+10	RT.	77
STA. 7432+10	LT.	78

MEDIAN I-40

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 7430+40 TO 7433+25	LT.	2
ROCK DITCH CHECK	**(E-6)**	**INSTALLATION**
STA. 7430+40 TO 7433+25	LT.	2

TEMPORARY EROSION CONTROL DETAILS STAGE 1

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WORKSPACE: AHTD
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REVISED DATE:

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	37	237

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISION BOX

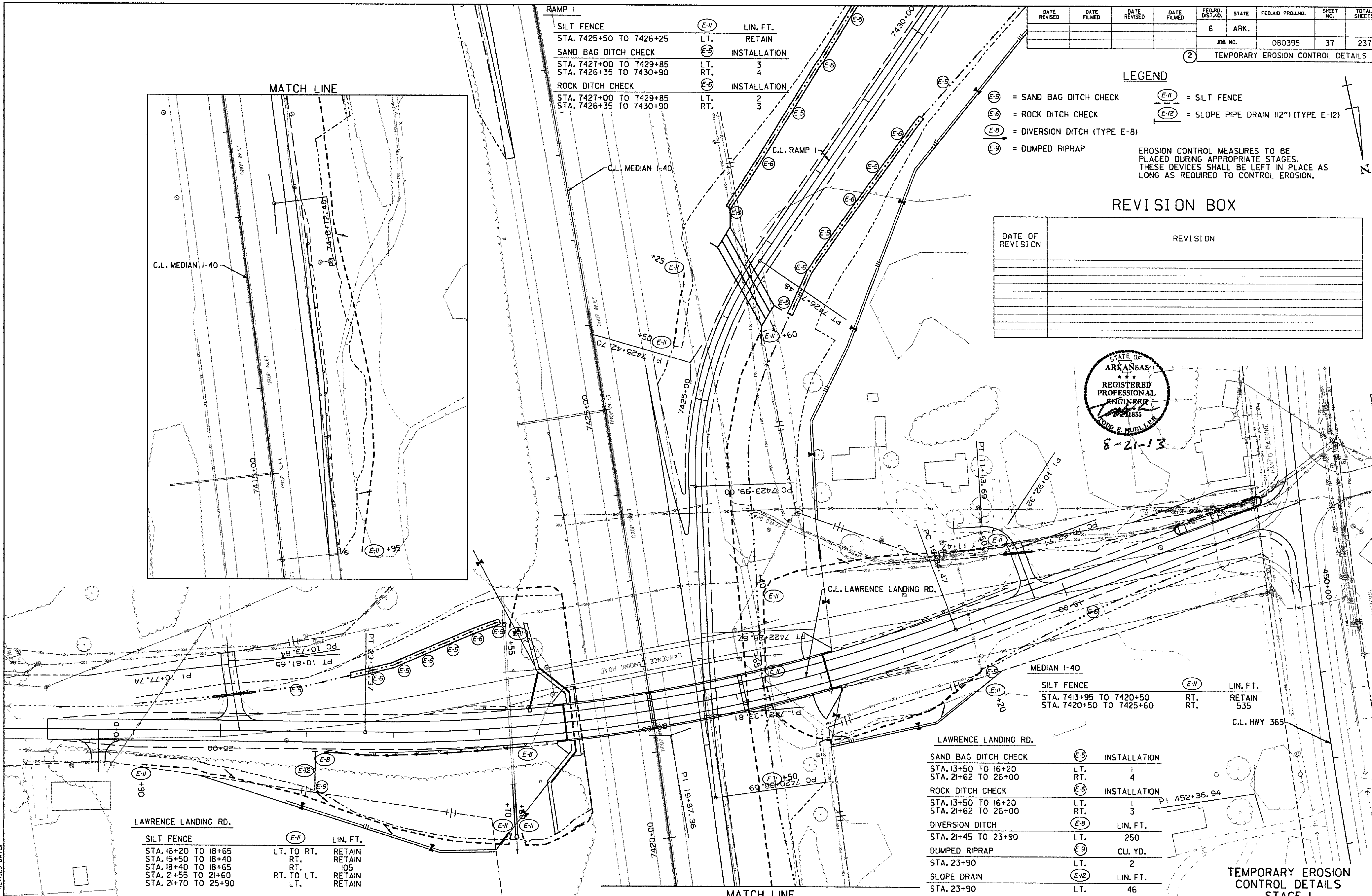
DATE OF REVISION	REVISION

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11835 TODD E. MUELLER

8-21-13

RAMP I

SILT FENCE	(E-11)	LIN. FT.
STA. 7425+50 TO 7426+25	LT.	RETAIN
SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 7427+00 TO 7429+85	LT.	3
STA. 7426+35 TO 7430+90	RT.	4
ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 7427+00 TO 7429+85	LT.	2
STA. 7426+35 TO 7430+90	RT.	3



MEDIAN I-40

SILT FENCE	(E-11)	LIN. FT.
STA. 7413+95 TO 7420+50	RT.	RETAIN
STA. 7420+50 TO 7425+60	RT.	535

LAWRENCE LANDING RD.

SILT FENCE	(E-11)	LIN. FT.
STA. 16+20 TO 18+65	LT. TO RT.	RETAIN
STA. 15+50 TO 18+40	RT.	RETAIN
STA. 18+40 TO 18+65	RT.	105
STA. 21+55 TO 21+60	RT. TO LT.	RETAIN
STA. 21+70 TO 25+90	LT.	RETAIN

LAWRENCE LANDING RD.

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 13+50 TO 16+20	LT.	1
STA. 21+62 TO 26+00	RT.	4
ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 13+50 TO 16+20	LT.	1
STA. 21+62 TO 26+00	RT.	3
DIVERSION DITCH	(E-8)	LIN. FT.
STA. 21+45 TO 23+90	LT.	250
DUMPED RIPRAP	(E-9)	CU. YD.
STA. 23+90	LT.	2
SLOPE DRAIN	(E-12)	LIN. FT.
STA. 23+90	LT.	46

TEMPORARY EROSION CONTROL DETAILS STAGE I

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REVISED DATE:

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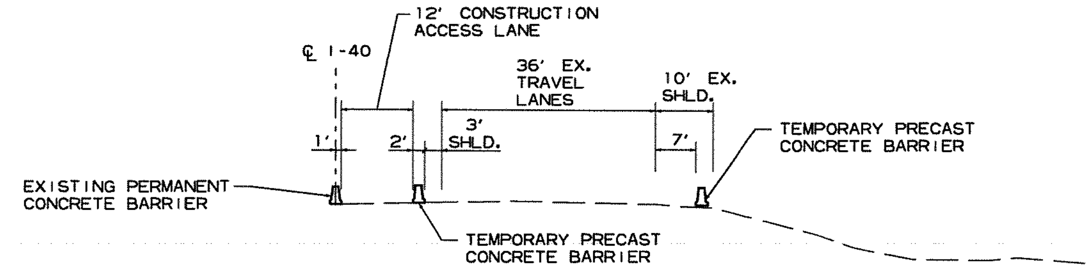
				6	ARK.			
				JOB NO.		080395	38	237
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON I-40, LAWRENCE LANDING RD. AND HWY. 365.
2. CONSTRUCT MOORE ACCESS RD. AS SHOWN.
3. CONSTRUCT LAWRENCE LANDING RD. AND CONWAY LOOP AS SHOWN.
4. A PORTABLE CHANGEABLE MESSAGE SIGN IS TO BE PLACED ON EITHER SIDE OF THE PROJECT LOCATION ALONG I-40 DURING INTERMITTENT LANE CLOSURES AS DIRECTED BY THE ENGINEER.



BARRIER WALL LOCATION AT BRIDGE

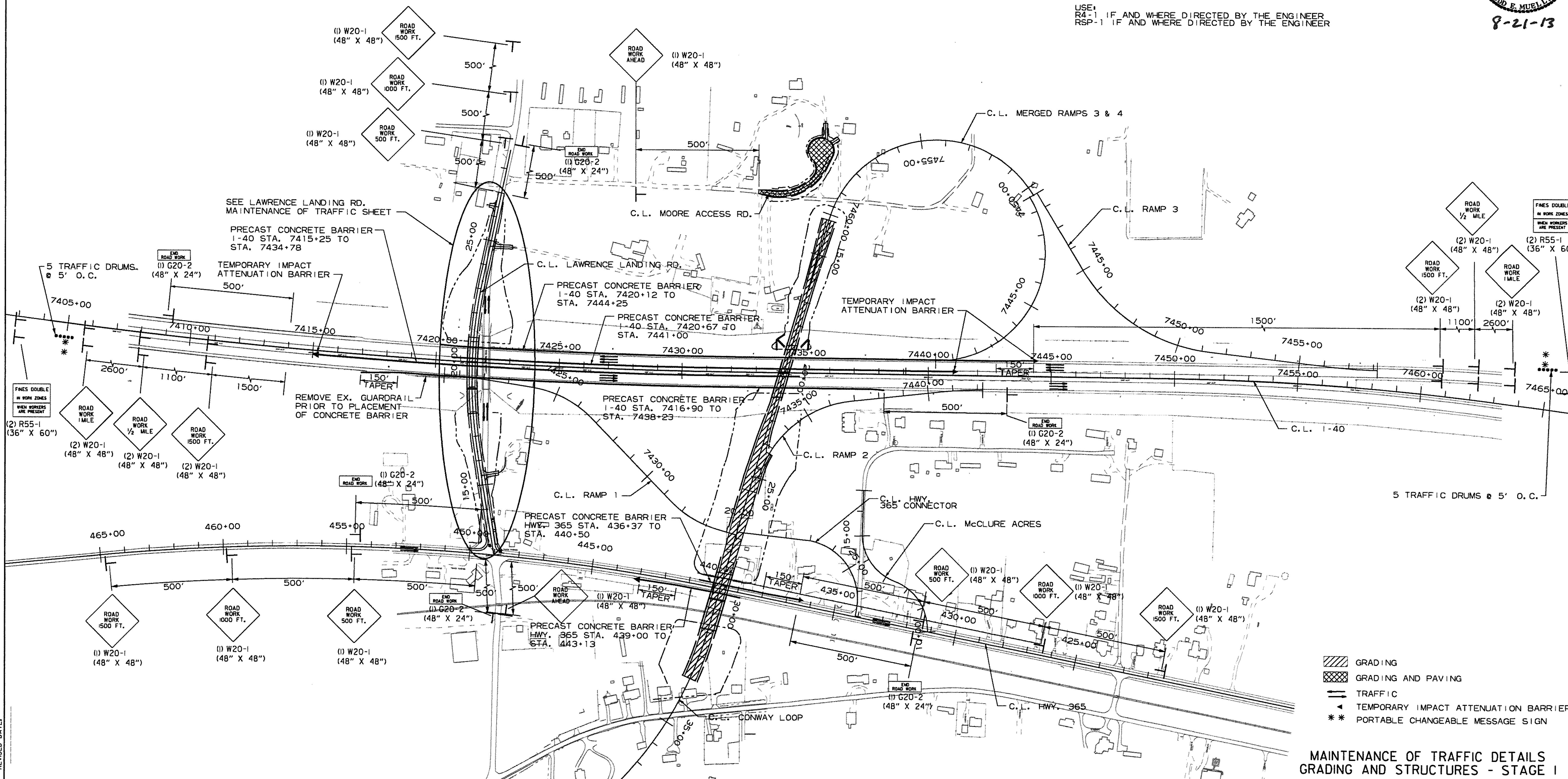
N

1" =400'

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11835 TODD E. MUELLER

8-21-13

USE:
R4-1 IF AND WHERE DIRECTED BY THE ENGINEER
RSP-1 IF AND WHERE DIRECTED BY THE ENGINEER



MAINTENANCE OF TRAFFIC DETAILS
GRADING AND STRUCTURES - STAGE I

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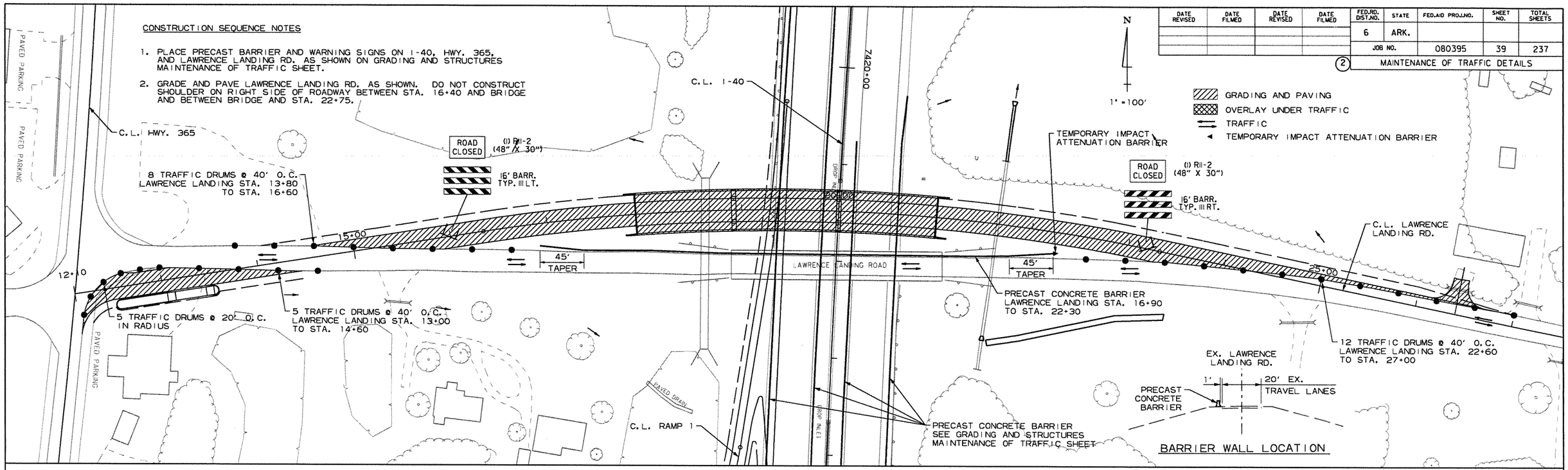
REVISED DATE:

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.		080395	39	237

(2) MAINTENANCE OF TRAFFIC DETAILS

CONSTRUCTION SEQUENCE NOTES

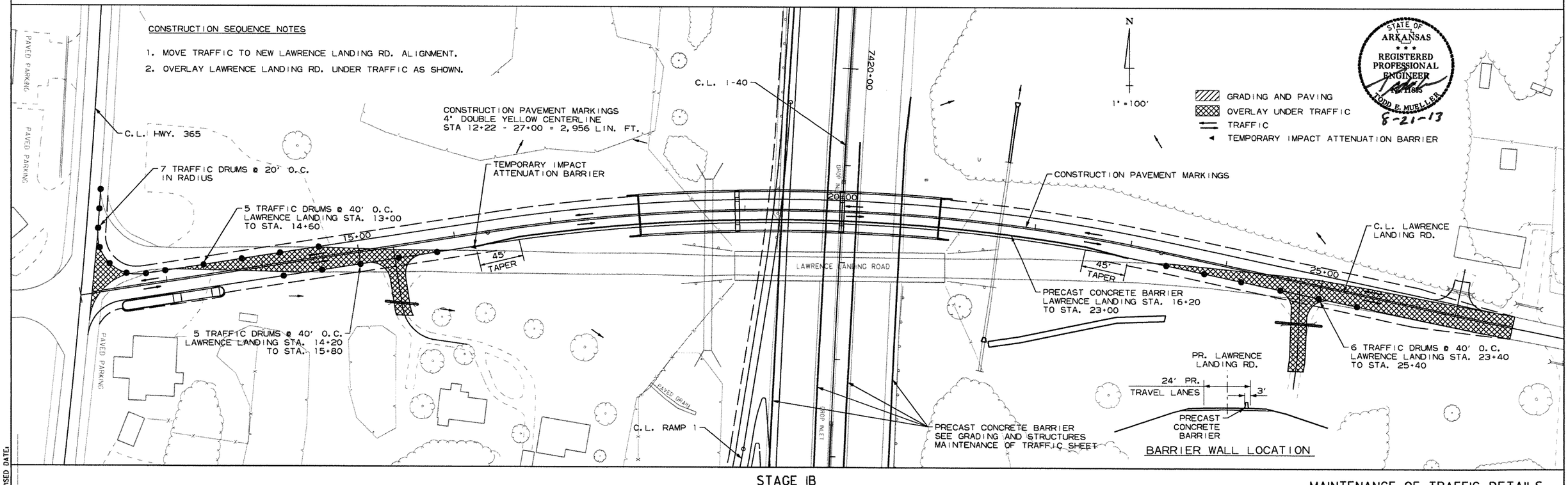
1. PLACE PRECAST BARRIER AND WARNING SIGNS ON I-40, HWY. 365, AND LAWRENCE LANDING RD. AS SHOWN ON GRADING AND STRUCTURES MAINTENANCE OF TRAFFIC SHEET.
2. GRADE AND PAVE LAWRENCE LANDING RD. AS SHOWN. DO NOT CONSTRUCT SHOULDER ON RIGHT SIDE OF ROADWAY BETWEEN STA. 16+40 AND BRIDGE AND BETWEEN BRIDGE AND STA. 22+75.



STAGE IA

CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO NEW LAWRENCE LANDING RD. ALIGNMENT.
2. OVERLAY LAWRENCE LANDING RD. UNDER TRAFFIC AS SHOWN.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11885
TODD E. MUELLER
8-21-13

STAGE IB

MAINTENANCE OF TRAFFIC DETAILS
LAWRENCE LANDING RD. - STAGE I

CGervasini 8/19/2013 3:43:33 PM
WORKSPACE_AHTD
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REVISED DATE:

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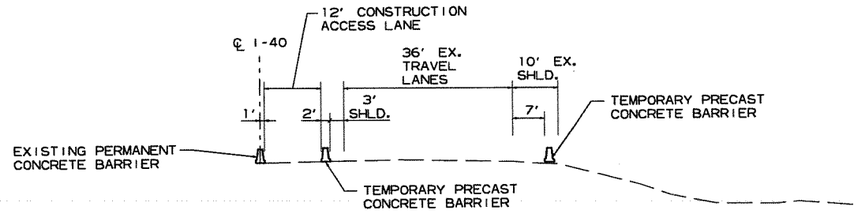
				6	ARK.			
				JOB NO.		080395	40	237
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION SEQUENCE NOTES

1. REMOVE EXISTING LAWRENCE LANDING RD. BRIDGE. GRADE AND PAVE LAWRENCE LANDING RD. RT. SHOULDERS FROM STA. 16+40 TO 23+25.
2. CONSTRUCT RAMP 1, RAMP 2, RAMP 3, RAMP 4, MERGED RAMPS 3 & 4, AND HWY. 365 CONNECTOR AS SHOWN.
3. A PORTABLE CHANGEABLE MESSAGE SIGN IS TO BE PLACED ON EITHER SIDE OF THE PROJECT LOCATION ALONG I-40 DURING INTERMITTENT LANE CLOSURES AS DIRECTED BY THE ENGINEER.



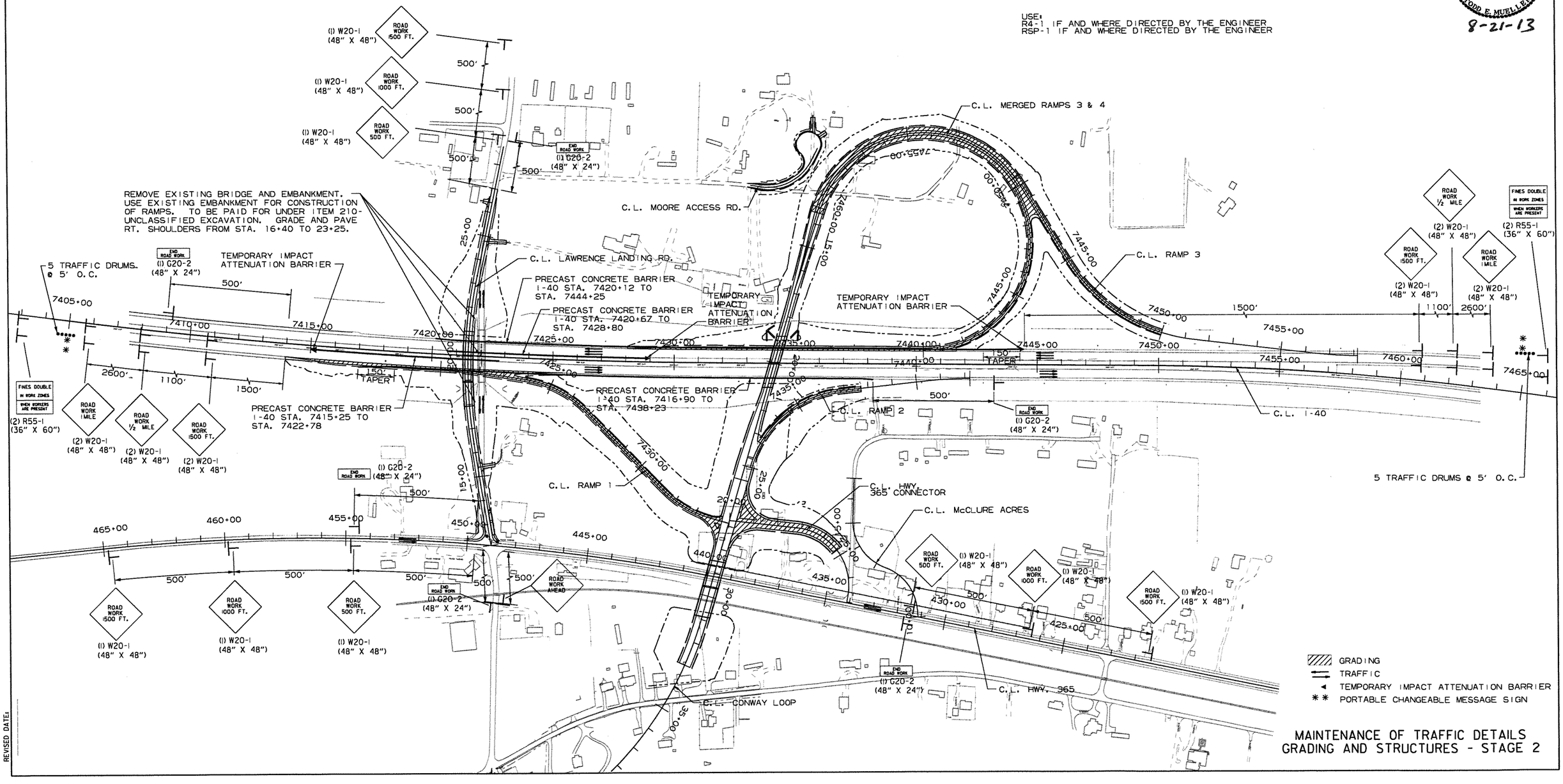
BARRIER WALL LOCATION AT BRIDGE

N

1" =400'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
14711
TODD E. MUELLER
8-21-13

USE:
R4-1 IF AND WHERE DIRECTED BY THE ENGINEER
RSP-1 IF AND WHERE DIRECTED BY THE ENGINEER



MAINTENANCE OF TRAFFIC DETAILS
GRADING AND STRUCTURES - STAGE 2

CGervasini 8/19/2013 3:15:07 PM
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REVISED DATE:

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.		080395	41	237
				(2)	PERMANENT PAVEMENT MARKINGS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11655
TODD E. MUELLER
8-21-13

N

C.L. HWY. 365

P1452+36.94

PC 7420+38.59

BEGIN LAWRENCE LANDING
RD. CONST. STA. 12+22.21

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING

C.L. LAWRENCE LANDING RD.

PC 16+34.47

PAVED PARKING

PAVED DRIVE

PC 7423+99.00

C.L. RAMP 1

PT 7426+76.48

PI 7425+42.70

PT 7422+28.87

PI 7421+33.81

PI 7418+12.40

PI 19+87.36

C.L. MEDIAN I-40

4" DOUBLE YELLOW HIGH PERFORMANCE CONTRAST MARKING TAPE ON BRIDGE

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING

LAWRENCE LANDING ROAD

PT 23+32.37

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING

END LAWRENCE LANDING
RD. CONST. STA. 26+00.00

DROP INLET

450-00

15+00

25+00

26+00

7420+00

7425+00

PERMANENT PAVEMENT MARKINGS

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WORKSPACE: AHTD
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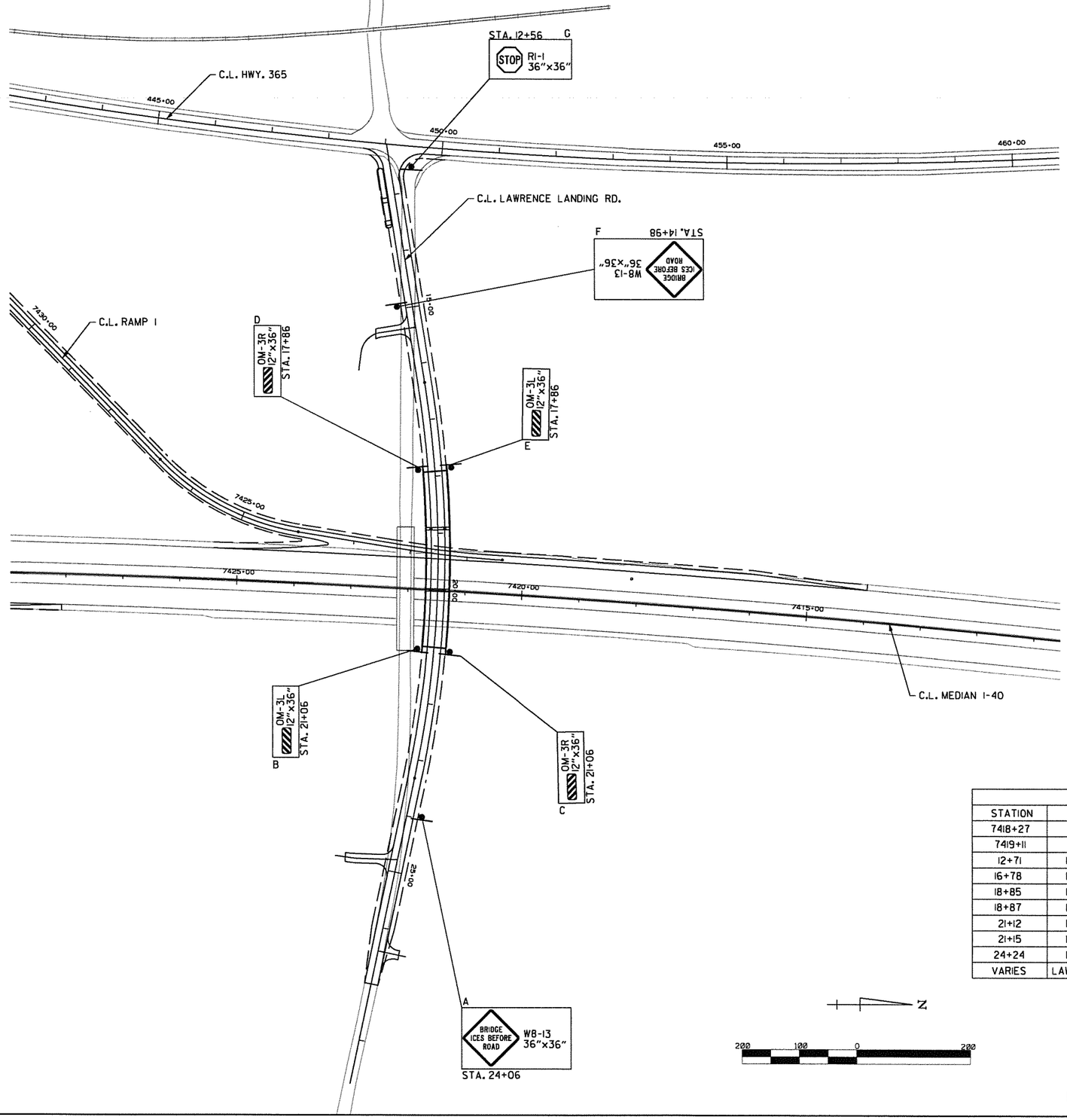
REVISED DATE:

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.		080395	42	237
				(2)	PERMANENT SIGNING - LAWRENCE LANDING			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
8-22-13



REMOVAL AND DISPOSAL OF SIGNS			
STATION	LOCATION	SIGN DESIGNATION	NO.
7418+27	I-40 RT.	D10-3	1
7419+11	I-40 RT.	D14-3	1
12+71	LAWRENCE LANDING RD.- LT.	R1-1	1
16+78	LAWRENCE LANDING RD.- RT.	W8-13	1
18+85	LAWRENCE LANDING RD.- RT.	OM-3R	1
18+87	LAWRENCE LANDING RD.- RT.	OM-3L	1
21+12	LAWRENCE LANDING RD.- RT.	OM-3R	1
21+15	LAWRENCE LANDING RD.- RT.	OM-3L	1
24+24	LAWRENCE LANDING RD.- LT.	W8-13	1
VARIES	LAWRENCE LANDING RD.- LT. & RT.	DELINEATORS	14

PERMANENT SIGNING - LAWRENCE LANDING

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WORKSPACE: JHTD
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REVISED DATE:

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.		080395	43	237
				(2)	SOIL BORING LOG			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14855
TODD E. MUELLER
8-21-13

SOIL BORING LOG

BORING NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
C1	433+25	1.5-2.5	18	26	16	10	85	CL	A-4
C2	434+80	1.5-2.5	22	32	18	14	83	CL	A-6
C3	437+20	1.5-2.5	20	24	17	7	90	CL-ML	A-4
1	7459+25, 20 L	0.5-1.5	18	28	19	9	83	CL	A-4
2	26+65, 20 R	0.5-1.5	13	35	21	14	82	CL	A-6
14	10+00, CL	0.5-1.5	7	25	18	7	77	CL-ML	A-4
14	10+00, CL	2.5-3.5	10	30	18	12	---	Shale	
15	17+50, CL	2.5-3.5	18	28	18	10	58	CL	A-4
15	17+50, CL	6.5-7.5	16	22	16	6	54	CL-ML	A-4
16	7442+00, CL	0.5-1.5	5	17	15	2	26	SM	A-2-4
16	7442+00, CL	2.5-3.5	11	37	22	15	---	Shale	
17	7449+00, CL	0.5-1.5	9	25	18	7	84	CL-ML	A-4
18	7451+00, 15 R	2.5-3.5	18	32	19	13	50	CL	A-6
18	7451+00, 15 R	9-10	24	37	19	18	87	CL	A-6
19	7428+00, CL	0.5-1.5	14	24	17	7	67	CL-ML	A-4
20	7438+00, CL	---	----	----	----	---	---	---	---
22	14+40, CL	0.5-1.5	1	20	19	1	12	GW-GM	A-1-a
22	14+40, CL	2.5-3	6	30	19	11	11	GP-GC	A-2-6
23	26+00, CL	0.5-1.5	3	21	16	5	18	SM-SC	A-1-b
23	26+00, CL	2.5-3.5	17	26	18	8	71	CL	A-4
24	14+50, CL	0.5-1.5	6	22	17	5	43	SM-SC	A-4
25	23+00, 15 L	0.5-1.5	12	28	18	10	46	SC	A-4
25	23+00, 15 L	4-4.5	15	42	26	16	---	Shale	

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT 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.

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WORKSPACE: AHTD
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REVISED DATE:

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAX. NUMBER REQ'D.	TOTAL REQUIRED	PORTABLE CHANGEABLE MESSAGE SIGN	TRAFFIC DRUMS	BARRICADES (TYPE III) RIGHT	BARRICADES (TYPE III) LEFT	TEMP. IMP. ATT. BAR.	TEMP. IMP. ATT. REPAIR	FURNISH AND INSTALL PRECAST CONC. BAR.	RELOCATING PRECAST CONC. BARRIER
		IN.	EACH	EACH		SQ. FT.	DAY	EACH	L.F.		EACH	EACH	L.F.	L.F.
G20-2	END ROAD WORK	48" X 24"	6	6	6	48.00								
R11-2	ROAD CLOSED	48" X 30"	2		2	20.00								
R55-1	FINES DOUBLE IN WORK ZONES	36" X 60"	4	4	4	60.00								
W20-1	ROAD WORK 500 FT	48" X 48"	3	3	3	48.00								
W20-1	ROAD WORK 1000 FT	48" X 48"	3	3	3	48.00								
W20-1	ROAD WORK 1500 FT	48" X 48"	7	7	7	112.00								
W20-1	ROAD WORK AHEAD	48" X 48"	2	1	2	32.00								
W20-1	ROAD WORK 1/2 MILE	48" X 48"	4	4	4	64.00								
W20-1	ROAD WORK 1 MILE	48" X 48"	4	4	4	64.00								
	PORTABLE CHANGEABLE MESSAGE SIGN		2	2	2		609							
	TYPE III BARRICADE-RT. (16')		1		1				16					
	TYPE III BARRICADE-LT. (16')		1		1					16				
	TRAFFIC DRUMS		40	10	40			40						
	TEMPORARY IMPACT ATTENUATION BARRIER		5	5	5						5			
	TEMPORARY IMPACT ATTENUATION BARRIER REPA		5	5	5							5		
	FURN. AND INST. PRECAST CONC. BARRIER		9,498	6,112	9,498								9,498	
	RELOCATING PRECAST CONC. BARRIER		540		540									540
* RSP-1	SHOULDER CLOSED	48" X 30"			2	20.00								
* R4-1	DO NOT PASS	24" X 30"			2	10.00								
	TOTALS					526.00	609	40	16	16	5	5	9,498	540

NOTE: THIS IS A HIGH VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003.
* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

REMOVAL AND DISPOSAL OF STRUCTURES

STATION	STATION	LOCATION	GUARDRAIL *	PIPE CULVERTS	BOX CULVERTS	APPROACH SLAB AND GUTTERS	FENCE	CONCRETE PIER PROTECTION	CONCRETE MEDIAN BARRIER	SIGN POST	CONCRETE DITCH PAVING	SIGNS	POST	SATELLITE DISH	SEPTIC SYSTEM	CONCRETE PAD	DESCRIPTION
			L.F.	EACH	EACH	EACH	L.F.	L.F.	L.F.	EACH	SQ. YD.	EACH	EACH	EACH	EACH	SQ. YD.	
7418+27		I-40 RT.								1		1					MILE MARKER 132
7419+11		I-40 RT.								3		1					ADOPT A HIGHWAY
7419+18	7421+93	I-40 RT.	275														
7420+11	7421+82	I-40 - LT.					197										
7420+31	7422+67	I-40 - MEDIAN							236								
7420+78	7421+91	I-40 - RT.					151										
7421+90	7422+18	I-40 - RT.						28									
7421+92	7422+20	I-40 - LT.						28									
7422+17	7424+00	I-40 - LT.					196										
7422+17	7424+92	I-40 - LT.	275														
7422+27	7438+29	I-40 - RT.					1,643										
7430+50	7431+54	I-40 - LT.									26						
7433+94	7453+58	I-40 - LT.					1,971										
7433+27	7435+00	I-40 - MEDIAN							173								
7460+00		MERGED RAMPS 3 & 4 - RT.								1							
12+71		LAWRENCE LANDING RD.- LT.								1		1					STOP
13+00	26+00	LAWRENCE LANDING RD.- LT. & RT.								14		14					OBJECT MARKERS
15+36		LAWRENCE LANDING RD. - RT.		1													18" X 24' SIDE DRAIN
16+78		LAWRENCE LANDING RD.- RT.								1		1					BRIDGE MAY ICE
17+89	18+39	LAWRENCE LANDING RD.- RT.									21						
18+32	18+87	LAWRENCE LANDING RD.- RT.	55														
18+34	18+89	LAWRENCE LANDING RD.- RT.	55														
18+56		LAWRENCE LANDING RD.- RT.		1													DROP INLET DRAIN PIPE
18+58		LAWRENCE LANDING RD.- RT.		1													DROP INLET DRAIN PIPE
18+63		LAWRENCE LANDING RD.			1												8' X 7' X 177' R.C. BOX CULVERT WHDWLS. LT. & RT.
18+74		LAWRENCE LANDING RD.- RT.				1											
18+85		LAWRENCE LANDING RD.- RT.								1		1					VERTICAL PANEL
18+87		LAWRENCE LANDING RD.- RT.								1		1					VERTICAL PANEL
21+09	21+64	LAWRENCE LANDING RD.- RT.	55														
21+12	21+67	LAWRENCE LANDING RD.- RT.	55														
21+12		LAWRENCE LANDING RD.- RT.								1		1					VERTICAL PANEL
21+15		LAWRENCE LANDING RD.- RT.								1		1					VERTICAL PANEL
21+25		LAWRENCE LANDING RD. - RT.				1											
21+40		LAWRENCE LANDING RD.- RT.		1													DROP INLET DRAIN PIPE
21+43		LAWRENCE LANDING RD.- RT.		1													DROP INLET DRAIN PIPE
21+62		LAWRENCE LANDING RD. - RT.		1													30" X 35' R.C. PIPE CULVERT WHDWLS. LT. & RT.
24+24		LAWRENCE LANDING RD.- LT.								1		1					BRIDGE MAY ICE
24+78		LAWRENCE LANDING RD. - RT.		1													18" X 33' SIDE DRAIN
17+35	17+82	CONWAY LOOP - RT.					132										
23+28	26+16	CONWAY LOOP - LT.					438										
26+16	28+68	CONWAY LOOP - RT.					480										
27+30	28+68	CONWAY LOOP - LT.					403										
28+62		CONWAY LOOP - LT.											6				2" DIA. STEEL POSTS
29+75	29+78	CONWAY LOOP - RT.					64										
30+71	31+23	CONWAY LOOP - RT.					57										
31+23	33+56	CONWAY LOOP - LT.					383										
33+76	34+67	CONWAY LOOP - RT.					220										
22+27	22+36	HWY 365 CONN. - RT.					88										
22+48	22+53	HWY 365 CONN. - RT.					86										
24+57	24+77	HWY 365 CONN. - RT.					30										
24+58	24+77	HWY 365 CONN. - LT.					108										
431+52		HWY 365 - RT.													1		
432+37		HWY 365 - RT.					174									3	(6) 2' X 2' CONCRETE PADS
438+30		HWY 365 - LT.					475										
439+00		HWY 365 - LT.												1			
12+60		McCLURE ACRES RD.					74										
14+30		McCLURE ACRES RD.					70										
		TOTALS	770	7	1	2	7,440	56	409	26	47	23	6	1	1	3	

*THE PRICE BID FOR REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ANY TERMINAL ANCHOR POSTS.

CONSTRUCTION AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	UNIT	LAWRENCE LANDING ROAD	TOTAL
CONSTRUCTION PAVEMENT MARKINGS	L.F.	2,956	2,956
THERMOPLASTIC PAVEMENT MARKING WHITE (4")	L.F.	3,065	3,065
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	L.F.	2,270	2,270
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")	L.F.	625	625

NOTE:
(1) THIS IS A HIGH VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STA.	
7413+99	7425+42	I-40	13	13
7428+06	7441+65	I-40	14	14
7425+42	7434+11	RAMP 1	10	10
7432+74	7437+84	RAMP 2	6	6
7441+35	7450+17	RAMP 3	10	10
7441+65	7449+64	RAMP 4	9	9
7449+64	7460+23	MERGED RAMPS 3 & 4	12	12
13+53	18+84	CONWAY LOOP	6	6
21+04	28+50	CONWAY LOOP	8	8
30+87	33+84	CONWAY LOOP	4	4
12+22	17+91	LAWRENCE LANDING	6	6
21+01	27+00	LAWRENCE LANDING	6	6
20+30	24+89	HWY. 365 CONNECTOR	5	5
9+89	14+10	MOORE ACCESS RD.	6	6
		TOTALS	115	115

FENCING

STATION	STATION	LOCATION	TYPE A	16' GATE
			L.F.	EACH
7422+01	7433+60	RAMP 1 - RT.	1213	1
7431+66	7438+20	RAMP 2 - RT.	515	
7441+35	7453+50	RAMP 3 - LT.	1160	
7449+64	7460+23	MERGED RAMPS 3 & 4 - RT.	1294	
13+53	18+41	CONWAY LOOP - RT.	494	
16+42	18+10	LAWRENCE LANDING - LT.	250	
21+24	24+23	LAWRENCE LANDING - LT.	354	1
21+24	22+13	LAWRENCE LANDING - RT.	195	
21+95	24+10	HWY. 365 CONN. - LT.	379	
		TOTALS	5,854	2

BENCH MARK CAPS

STATION	LOCATION	EACH
7426+50	RAMP 1 - HEADWALL OF R.C. BOX CULVERT ON RT.	1
22+48	CONWAY LOOP - HEADWALL OF R.C. BOX CULVERT ON RT.	1
22+80	HWY. 365 CONN. - HEADWALL OF R.C. BOX CULVERT ON RT.	1
	TOTAL	3

SHOWN FOR INFORMATIONAL PURPOSES ONLY. BENCH MARK CAPS TO BE PLACED AND RECORDED BY STATE FORCES.

MAILBOXES

STATION	LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
		EACH	EACH
15+70	LAWRENCE LANDING - RT.	1	1
25+25	LAWRENCE LANDING - RT.	1	1
26+75	LAWRENCE LANDING - LT.	1	1
10+55	MOORE ACCESS RD. - RT.	1	1
11+90	MOORE ACCESS RD. - RT.	1	1
12+30	MOORE ACCESS RD. - RT.	1	1
	TOTALS	6	6

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	ASPHALT CONCRETE	TACK COAT
	TON	GAL.
ENTIRE PROJECT	7	14

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

BASIS OF ESTIMATE:
ASPHALT CONCRETE = 25 TONS PER MILE
TACK COAT = 50 GAL. PER MILE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER
9-13-13

QUANTITIES

TEMPORARY EROSION CONTROL

STATION	STATION	SAND BAG DITCH CHECK (E-5)	ROCK DITCH CHECK (E-6)	DIVERSION DITCH (E-8)	DUMPED RIPRAP (E-9)	FILTER BLANKET	SILT FENCE (E-11)	PIPE FOR SLOPE DRAIN (E-12)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	SEDIMENT REMOVAL AND DISPOSAL	TEMPORARY SEEDING	MULCH COVER	WATER
		BAG	CU. YD.	L.F.	CU. YD.	SQ. YD.	L.F.	L.F.	CU. YD.	CU. YD.	CU. YD.	ACRE	ACRE	M.G.
CLEARING & GRUBBING														
I-40														
7413+95	7420+50						665							
RAMP 1														
7425+50	7426+25						90							
RAMP 2														
7433+90	7437+84						945							
RAMP 3														
7444+40	7450+20						1,090							
RAMP 4														
7443+80	7448+50						650							
MERGED RAMPS 3 & 4														
7450+00	7452+50						430							
7452+50	7460+25						1,215							
CONWAY LOOP														
13+50	18+00						1,110							
23+30	33+00						1,985							
LAWRENCE LANDING RD														
15+50	25+90						1,520							
MOORE ACCESS RD														
10+40	14+00						360							
HWY 365 CONNECTOR														
21+60	24+90						1,125							
STAGE 1														
I-40														
7420+50	7425+60						535							
7430+40	7433+25	40	30											
7433+25	7440+00	40	45											
RAMP 1														
7426+35	7430+90	140	75											
7429+85	7432+90	40	30											
7432+10	7434+07			485										
7432+10					4	8		155						
RAMP 2														
7433+50	7437+70	100	90											
7433+27	7435+38			205										
7435+38					2	4		75						
RAMP 3														
7441+50	7445+00	60	45											
RAMP 4														
7442+00	7445+00	20	15											
MERGED RAMPS 3 & 4														
7449+65	7450+60	40	30											
7452+50	7457+00	60	45											
CONWAY LOOP														
16+00	18+00	60	45											
23+10	25+00	40	30											
21+35	33+00			1,200										
24+19					2	4		86						
24+21					2	4		82						
31+12					2	4		107						
31+35					2	4		104						
LAWRENCE LANDING RD														
13+50	26+00	100	60											
18+40	18+65						105							
21+45	23+90			250										
23+90					2	4		46						
MOORE ACCESS RD														
12+80	14+00	20	15											
HWY 365 CONNECTOR														
20+05	22+26			456										
21+05	24+90	40	15											
22+26					4	8		126						
*ENTIRE PROJECT AS DIRECTED BY THE ENGINEER									100	100	2,500	34.74	34.74	708.7
TOTALS		800	570	2,596	20	40	11,805	781	100	100	2,500	34.74	34.74	708.7

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

BASIS OF ESTIMATE:
SAND BAG DITCH CHECKS = 20 BAGS / LOCATION
ROCK DITCH CHECKS = 15 CU. YD. / LOCATION
WATER = 20.4 M.G. PER ACRE TEMPORARY SEEDING

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

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.		080395	45	237
				(2)		QUANTITIES		

EROSION CONTROL

LOCATION	LIME	SEEDING	MULCH COVER	SECOND SEEDING APPLICATION	WATER
	TON	ACRE			M.G.
WEST OF I-40	32.12	16.06	16.06	16.06	1,638.1
EAST OF I-40	37.36	18.68	18.68	18.68	1,905.4
	69.48	34.74	34.74	34.74	3,543.5

BASIS OF ESTIMATE:
LIME = 2 TONS PER ACRE SEEDING
WATER = 102.0 M.G. PER ACRE SEEDING

SOIL STABILIZATION

LOCATION	TON
ENTIRE PROJECT	750

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

EARTHWORK

LOCATION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT		
	UNDERCUT	TYPICAL	TOTAL	TYPICAL	SM-1	*TOTAL
	CU. YDS.					
I-40		17,054	17,054	597		597
RAMP 1	12,924	13,660	26,584	43,732	12,924	56,656
RAMP 2	5,848	1,168	7,016	21,264	7,858	29,122
RAMP 3	6,277	54	6,331	15,534	6,277	21,811
RAMP 4	6,675	1,930	8,605	10,892	6,675	17,567
MERGED RAMPS 3 & 4	11,383	437	11,820	30,120	11,383	41,503
CONWAY LOOP	8,704	4,962	13,666	156,319	28,617	184,936
HWY. 365 CONNECTOR		555	555	35,800		35,800
MOORE ACCESS RD.		261	261	529		529
LAWRENCE LANDING	8,541	14,219	22,760	18,096	10,776	28,872
DRIVEWAYS				285		285
TOTALS	60,352	54,300	114,652	333,168	84,510	417,678

*INCLUDES 60,352 CU. YDS. OF SM-1 MATERIAL USED FOR BACKFILL OF UNDERCUT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11655
TODD E. MUELLER
8-21-13

CONCRETE DITCH PAVING

STATION	STATION	DESCRIPTION	LENGTH	CONCRETE DITCH PAVING (TYPE B)		SOLID SODDING	WATER
			FEET	"W"	SQ. YD.	SQ. YD.	M.G.
7426+39	7429+20	RAMP 1 RT.	281	6.00	187.3	124.9	1.6
7427+07	7431+78	RAMP 1 LT.	471	6.00	314.0	209.3	2.6
7432+74	7437+70	RAMP 2 RT.	496	6.00	330.7	220.4	2.8
7433+70	7435+15	RAMP 2 LT.	145	6.00	96.7	64.4	0.8
7441+35	7442+00	RAMP 3 LT.	65	6.00	43.3	28.9	0.4
7455+77	7457+00	MERGED RAMPS 3 & 4 LT.	123	6.00	82.0	54.7	0.7
7449+64	7450+00	MERGED RAMPS 3 & 4 RT.	36	6.00	24.0	16.0	0.2
17+00	18+00	CONWAY LOOP RT.	100	6.00	66.7	44.4	0.6
23+59	25+00	CONWAY LOOP LT.	141	6.00	94.0	62.7	0.8
32+00	33+00	CONWAY LOOP LT.	100	6.00	66.7	44.4	0.6
32+00	33+00	CONWAY LOOP RT.	100	6.00	66.7	44.4	0.6
21+62	23+50	LAWRENCE LANDING RD. RT.	188	6.00	125.3	83.6	1.1
20+92	21+38	BEHIND LAWRENCE LANDING MSE WALL	273	4.00	121.3	121.3	1.5
18+41	19+19	BEHIND CONWAY LOOP MSE WALL	269	4.00	119.6	119.6	1.5
20+87	21+62	BEHIND CONWAY LOOP MSE WALL	241	4.00	107.1	107.1	1.3
28+04	28+63	BEHIND CONWAY LOOP MSE WALL	299	4.00	132.9	132.9	1.7
30+75	31+49	BEHIND CONWAY LOOP MSE WALL	321	4.00	142.7	142.7	1.8
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER					200.0	200.0	2.5
TOTALS					2,321.0	1,821.7	23.1

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

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

TEMPORARY RETAINING WALL

STATION	LOCATION	RETAINING WALL
		S.F.
7421+48.66	LAWRENCE LANDING - LT.	1310
	TOTAL	1310

RETAINING WALL - MSE WALL

STATION	LOCATION	RETAINING WALL	SELECT GRANULAR BACKFILL	*UNDERCUT AND BACKFILL SPECIAL	*RAMMED AGGREGATE PIER
		SQ. FT.	CU. YD.	CU. YD.	EACH
7421+48.66	LAWRENCE LANDING MSE WALL	3499	1302	2616	160
7434+42.33	I-40 EAST MSE WALL	2838	1315		
7433+88.07	I-40 WEST MSE WALL	4494	3163		
439+67.49	HWY. 365 EAST MSE WALL	5590	3438		
439+86.84	HWY. 365 WEST MSE WALL	6512	4160		
7434+60.00	RAMP 2	5969	2490		
TOTALS		28,902	15,868	2,616	160

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

4" PIPE UNDERDRAINS

LOCATION	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
	LIN. FT.	EACH
ENTIRE PROJECT	1000	8

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

QUANTITIES

CGGervasini 8/19/2013 3:22:20 PM
WORKSPACE: AHTD
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REVISED DATE:

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.		080395	46	237
				(2)	QUANTITIES			

STRUCTURES

STATION	LOCATION	DESCRIPTION	ZINC COATED C.S.P. (16 GAUGE)	SIDE DRAINS	REINFORCED CONCRETE PIPE CULVERTS		CORRUGATED METAL PIPE CULVERTS	FLARED END SECTIONS		CONCRETE SPILLWAY (TYPE A)	DROP INLET		R.C. BOX CULVERTS						SOLID SODDING	WATER	STANDARD DRAWINGS
					CLASS III	CLASS IV		RC	CS		(TYPE N2)	ADJUSTED TO GRADE	DIMENSIONS			CLASS S CONCRETE - ROADWAY	REINFORCING STEEL - ROADWAY (GR 60)	UNCL. EX. FOR STRUCTURES - ROADWAY			
			12 IN.	18 IN.	24 IN.	24 IN.	30 IN.	24 IN.	30 IN.				LENGTH	SPAN	HEIGHT						
			L.F.	L.F.	L.F.		L.F.	EACH		EACH	EACH		FEET			CU. YD.	LB.	CU. YD.	SQ. YD.	M.G.	
7421+17	I-40 MEDIAN	ADJUST DROP INLET TO GRADE										1									
7435+40	RAMP 2	CONSTRUCT R.C. PIPE CULVERT & FES				101		1											8	0.1	FES-1, FES-2, PCC-1
7444+40	RAMP 3	CONSTRUCT R.C. PIPE CULVERT & FES			87			2											16	0.2	FES-1, FES-2, PCC-1
7449+75	MERGED RAMPS 3 & 4	CONSTRUCT R.C. PIPE CULVERT & FES			140			2											16	0.2	FES-1, FES-2, PCC-1
7453+75	MERGED RAMPS 3 & 4	CONSTRUCT R.C. PIPE CULVERT & FES			126			2											16	0.2	FES-1, FES-2, PCC-1
7455+77	MERGED RAMPS 3 & 4	CONSTRUCT R.C. PIPE CULVERT & FES			130			2											16	0.2	FES-1, FES-2, PCC-1
22+48	CONWAY LOOP	CONSTRUCT R.C. BOX CULVERT (19° LT. FWD. SKEW)											287	10	7	435.00	60,267	208	24	0.3	RCB-1, RCB-2
15+36	LAWRENCE LANDING RT.	INSTALL PIPE CULVERT		34																	PCC-1,PCM-1
21+40	LAWRENCE LANDING RT.	CONSTRUCT TYPE N-2 DROP INLET RT.	47							1	1										FPC-9N, PCM-1
21+64	LAWRENCE LANDING	EXTEND C.M. PIPE CULVERT & FES					58		2										26	0.3	FES-1, FES-2, PCM-1
24+78	LAWRENCE LANDING RT.	INSTALL PIPE CULVERT		48																	PCC-1,PCM-1
22+80	HWY. 365 CONNECTOR	CONSTRUCT R.C. BOX CULVERT											168	8	4	127.14	17,660	70	16	0.2	RCB-1, RCB-2
13+95	MOORE ACCESS RD. RT.	INSTALL PIPE CULVERT		30																	PCC-1,PCM-1
14+01	MOORE ACCESS RD. LT.	INSTALL PIPE CULVERT		30																	PCC-1,PCM-1
TOTALS FOR STRUCTURES			**47**	**142**	**483**	**101**	**58**	**9**	**2**	**1**	**1**	**1**				**562.14**	**77,927**	**278**	**138**	**1.7**	
STRUCTURES OVER 20'-0" SPAN																					
7426+50	RAMP 1	CONSTRUCT TRIPLE R.C. BOX CULVERT (30° LT. FWD. SKEW)											104	8	4	204.34	30,144	106	29	0.4	RCB-1, RCB-2
TOTALS FOR STRUCTURES OVER 20'-0" SPAN																**204.34**	**30,144**	**106**	**29**	**0.4**	

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

FOR R.C. PIPE CULVERT INSTALLATIONS, USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR C.M. PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

SELECTED PIPE BEDDING

LOCATION	SELECTED BEDDING CU. YD.
ENTIRE PROJECT	100

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	WIDTH FEET	SQ. YD.
12+12.59	14+50.00	LAWRENCE LANDING	VAR.	182.60
24+50.00	26+00.00	LAWRENCE LANDING	VAR.	115.99
26+00.00	27+00.00	LAWRENCE LANDING	22.64	251.56
TOTAL				550.15

FLOWABLE SELECT MATERIAL

STATION	STATION	LOCATION	CU. YD.
17+85.92	17+90.92	LAWRENCE LANDING	22
21+01.08	21+06.08	LAWRENCE LANDING	22
18+78.88	18+83.88	CONWAY LOOP	22
21+04.13	21+09.13	CONWAY LOOP	22
28+45.31	28+50.31	CONWAY LOOP	36
30+87.49	30+92.49	CONWAY LOOP	36
TOTAL			160

CONCRETE ISLAND TYPE "C" CURB FACE

STATION	LOCATION	SIDE	AREA SQ. YDS.
12+80	LAWRENCE LANDING	RT.	66.38
13+50	LAWRENCE LANDING	RT.	12.81
		TOTAL	79.19

APPROACH GUTTERS

STATION	STATION	LOCATION	APPROACH GUTTERS (TYPE C)	REINFORCING STEEL - ROADWAY (GR 60)
			CU. YD.	LB.
17+54.65	17+90.92	LAWRENCE LANDING LT.	9.28	807
17+54.18	17+90.92	LAWRENCE LANDING RT.	9.28	807
21+01.08	21+37.35	LAWRENCE LANDING LT.	9.28	807
21+01.08	21+37.83	LAWRENCE LANDING RT.	9.28	807
TOTALS			37.12	3,228

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL TYPE "A"	TERMINAL ANCHOR POSTS (TYPE 1)	THRIE BEAM GUARDRAIL TERMINAL
			L.F.	EACH	EACH
15+61.64	17+80.39	LAWRENCE LANDING - RT.	200	1	1
16+86.90	17+80.65	LAWRENCE LANDING - LT.	75	1	1
21+11.35	23+30.10	LAWRENCE LANDING - LT.	200	1	1
21+11.62	22+05.37	LAWRENCE LANDING - RT.	75	1	1
TOTALS			550	4	4

CONCRETE BARRIER WALL

STATION	STATION	LOCATION	MEDIAN TYPE A	MEDIAN TYPE SPECIAL
			L.F.	L.F.
7420+31.00	7422+44.33	I-40 - MEDIAN		213.33
7422+44.33	7422+67.00	I-40 - MEDIAN	22.67	
7433+27.07	7435+00.07	I-40 - MEDIAN		173.00
		TOTALS	22.67	386.33

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER
8-21-13

QUANTITIES

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.		080395	47	237

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
11835
TODD E. MUELLER
8-21-13

BASE & SURFACING - LAWRENCE LANDING ROAD

STATION	STATION	LOCATION	LENGTH	ACHM SURFACE COURSE (1/2")				ACHM BINDER COURSE (1")				AGGREGATE BASE COURSE (CLASS 7)		TACK COAT			
			FEET	AVG. WIDTH FEET	SQUARE YARDS	LBS. PER SQ. YD.	TON	AVG. WIDTH FEET	SQUARE YARDS	LBS. PER SQ. YD.	TON	TONS PER STATION	TON	AVG. WIDTH FEET	SQUARE YARDS	0.03 G/SY GAL	0.10 G/SY GAL.
12+22.21	12+76.46	LAWRENCE LANDING	54.25	VAR	599.03	220	66	VAR	233.46	330	39	VAR	190	VAR	466.91	14	
12+76.46	13+10.28	LAWRENCE LANDING	33.82	56.25	211.38	220	23	24.46	91.91	330	15	159.75	54	48.71	183.03	5	
13+10.28	15+91.90	LAWRENCE LANDING	281.62	VAR	1,573.64	220	173	VAR	361.18	330	60	VAR	490	VAR	1,112.64	33	
15+91.90	16+84.47	LAWRENCE LANDING	92.57	64.25	660.85	220	73	24.46	251.57	330	42	VAR	154	48.71	500.99	15	
16+84.47	17+90.92	LAWRENCE LANDING	106.45	64.25	759.93	220	84	24.46	289.29	330	48	268.56	286	48.71	576.11	17	
21+01.08	22+82.37	LAWRENCE LANDING	181.29	64.25	1,294.21	220	142	24.46	492.67	330	81	268.56	487	48.71	981.15	29	
22+82.37	23+27.94	LAWRENCE LANDING	45.57	64.25	325.32	220	36	24.46	123.84	330	20	264	120	48.71	246.63	7	
23+27.94	26+00.00	LAWRENCE LANDING	272.06	VAR	1,512.00	220	166	VAR	303.22	330	50	VAR	491	VAR	1,028.33	31	
26+00.00	27+00.00	TRANSITION	100.00	34.70	385.59	220	42	3.25	36.11	330	6	66.50	67	25.51	283.48	9	
13+10.28	15+91.90	LAWRENCE LANDING LEVELING COURSE	281.62	VAR.	VAR.	VAR.	69							VAR.	300.87		30
23+27.94	26+00.00	LAWRENCE LANDING LEVELING COURSE	272.06	VAR.	VAR.	VAR.	40							VAR.	324.72		32
15+05.10	17+80.52	GUARDRAIL WIDENING - RT.	275.42	VAR	151.26	220	17					VAR	97				
16+33.55	17+80.52	GUARDRAIL WIDENING - LT.	146.97	VAR	73.94	220	8					VAR	47				
21+11.94	22+60.36	GUARDRAIL WIDENING - RT.	148.42	VAR	74.67	220	8					VAR	48				
21+11.94	23+82.63	GUARDRAIL WIDENING - LT.	270.69	VAR	150.38	220	17					VAR	96				
TOTALS							964				361		2,627			160	62

BASIS OF ESTIMATE:

ACHM BINDER COURSE (1"): 4.5% ASPHALT BINDER, 95.5% MINERAL AGGREGATE (PG 64-22), N_{MAX} = 115

ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 64-22), N_{MAX} = 115

BASE & SURFACING - MOORE ACCESS ROAD

STATION	STATION	LOCATION	LENGTH	ACHM SURFACE COURSE (1/2")				AGGREGATE BASE COURSE (CLASS 7)	
			FEET	AVG. WIDTH FEET	SQUARE YARDS	LBS. PER SQ. YD.	TON	TONS PER STATION	TON
9+88.96	10+38.96	BEGINNING TAPER	50.00	VAR	118.89	220	13	151.80	76
10+38.96	12+36.02	MOORE ACCESS ROAD	197.06	28.00	613.08	220	67	207.75	409
12+36.02	13+51.49	CUL-DE-SAC	115.47	VAR	1,340.30	220	147	VAR	840
TOTALS							227		1,325

BASIS OF ESTIMATE:

ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 64-22), N_{MAX} = 115

BASE & SURFACING - DRIVEWAYS

LOCATION	PORTLAND CEMENT CONCRETE DRIVEWAY		AGGREGATE BASE COURSE (CLASS 7)(7" DEPTH)			ACHM SURFACE COURSE (1/2") (220 LBS. PER S.Y.)	
	WIDTH (L.F.)	SQUARE YARDS	AVG. AREA (S.Y.)	TON PER S.Y.	TON	SQUARE YARDS	TON
LAWRENCE LANDING @ STA. 13+28	32	32.00					
LAWRENCE LANDING @ STA. 15+36			94.56	0.408	39	94.56	10
LAWRENCE LANDING @ STA. 24+78			130.52	0.408	53	130.52	14
LAWRENCE LANDING @ STA. 26+41			43.29	0.408	18	43.29	5
MOORE ACCESS RD. DRIVEWAY			61.97	0.408	25	61.97	7
MOORE ACCESS RD. DRIVEWAY 2			112.45	0.408	46	112.45	12
TEMPORARY DRIVEWAYS							
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER					100		
TOTALS		32.00			281	442.79	48

BASIS OF ESTIMATE:

ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 64-22), N_{MAX} = 115

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

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.		080395	48	237
				(2)	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8121
NICCI D. TURNER
8-22-13

CODE LETTER THIS SHEET	STANDARD ROADSIDE SIGNS TO BE MOUNTED	U-CHANNEL POST ASSEMBLIES U1-1 EACH
A	W8-13	1
B	OM-3L	1
C	OM-3R	1
D	OM-3R	1
E	OM-3L	1
F	W8-13	1
G	R1-1	1
TOTALS		7

STANDARD ROADSIDE SIGNS
SHEET ALUMINUM 0.100" THICKNESS (5 SF OR LESS)

SIGN NUMBER	SIZE	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	LEGEND/BACKGROUND
OM-3L	12"x36"	3.00	2	6.00	BLACK/YELLOW
OM-3R	12"x36"	3.00	2	6.00	BLACK/YELLOW
TOTAL 0.100" THICKNESS				12.00	

STANDARD ROADSIDE SIGNS
SHEET ALUMINUM 0.125" THICKNESS (GREATER THAN 5 SF)

SIGN NUMBER	SIZE	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	LEGEND/BACKGROUND
R1-1	36" OCTAGON	9.00	1	9.00	WHITE/RED
W8-13	36"x36"	9.00	2	18.00	BLACK/YELLOW
TOTAL 0.125" THICKNESS				27.00	

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	49	237
① 07257-07259		QUANTITIES		52931

SCHEDULE OF BRIDGE QUANTITIES FOR JOB 080395

BRIDGE NO. / CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	619	710	710	SP & 711	802	802	803	SS & 804	SS & 804	805	806	807	SP & 807	808	812	816
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. _)	7' STEEL CHAIN LINK FENCE	NON-METALLIC CONDUIT (1.5")	NON-METALLIC CONDUIT (2")	CONCRETE PULL BOX (TYPE 2 HD) WITH TAMPER RESISTANT INSERT	CLASS S CONCRETE -BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP12X53) *	METAL BRIDGE RAILING (TYPE H)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50)	PAINTING STRUCTURAL STEEL **	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP
			UNIT	LUMP SUM	LINEAR FOOT	LINEAR FOOT	LINEAR FOOT	EACH	CUBIC YARD	CUBIC YARD	GALLON	POUND	POUND	LINEAR FOOT	LINEAR FOOT	POUND	TON	CUBIC INCH	EACH	CUBIC YARD
07257 X771	I-40 OVERPASS	BENT NO. 1							47.42		0.1	5,866		243		835	0.4	3,262.5		8
		BENT NO. 2							54.04			11,273						3,900.0		
		BENT NO. 3							43.44		0.1	5,811		351		835	0.4	3,262.5		8
		218'-0" CONT. COMP. PLATE GIRDER UNIT				600	30	1		294.10	19.3		75,160		420	273,330	136.7		1	
		TOTALS FOR BRIDGE NO. 07257		-	-	600	30	1	144.90	294.10	19.5	22,950	75,160	594	420	275,000	137.5	10,425	1	16
07258 X571	UPRR & HWY. 365 OVERPASS	BENT NO. 1							69.07		0.1	8,823		570		1,331	0.7	4,698.0		8
		BENT NO. 2							104.16			20,906						6,240.0		
		BENT NO. 3							70.17		0.1	8,681		600		1,331	0.7	4,698.0		8
		235'-0" CONT. COMP. PLATE GIRDER UNIT			201					451.70	33.4		113,940			497,998	249.1		1	
		TOTALS FOR BRIDGE NO. 07258		-	201	-	-	-	243.40	451.70	33.6	38,410	113,940	1,170	-	500,660	250.5	15,636.0	1	16
07259 X771	LAWRENCE LANDING RD.	BENT NO. 1							47.02		0.1	5,904		207		810	0.4	3,442.5		150
		BENT NO. 2							60.44			11,445						3,600.0		
		BENT NO. 3							52.74			9,933						3,600.0		
		BENT NO. 4							45.90		0.1	5,758		306		810	0.4	3,442.5		7
		308'-0" CONT. COMP. PLATE GIRDER UNIT				800	30	1		410.70	27.3		105,910		600	388,210	194.2		1	
		EXISTING BRIDGE NO. 03786 (SITE NO. 1)		1																
		TOTALS FOR BRIDGE NO. 07259		-	-	800	30	1	206.10	410.70	27.5	33,040	105,910	513	600	389,830	195.0	14,085.0	1	157
		TOTALS FOR JOB 080395			201	1,400	60	2	594.40	1,156.50	80.6	94,400	295,010	2,277	1,020	1,165,490	583.0	40,146.0	3	189

* Steel piling are required to be Grade 50 and have special points which will not be paid for directly, but shall be considered subsidiary to item "STEEL PILING (HP12x53)".

** Paint shall conform to Federal Standard 595B, Color Chip No. 27038, Black.

SCHEDULE OF BRIDGE QUANTITIES FOR JOB 080395

BRIDGE NO. / CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	SP JOB 080395	SP JOB 080395	SP JOB 080395	SP JOB 080395	SP JOB 080395	SP JOB 080395	SP JOB 080395	SP JOB 080395
			ITEM	ARCHITECTURAL FINISH	DRILLED SHAFT (78" DIA.)	NEMA 4X STAINLESS STEEL JUNCTION BOX	#4/0 AWG BARE COPPER GROUNDING CONDUCTOR WITH APPURTENANCES	3/4" x 10'-0" COPPERCLAD GROUND ROD WITH APPURTENANCES	SHORING	SILICONE JOINT SEALANT	TEXTURED COATING FINISH
			UNIT	SQUARE FOOT	LINEAR FOOT	EACH	LINEAR FOOT	EACH	LUMP SUM	LINEAR FOOT	SQUARE YARD
07257 X771	I-40 OVERPASS	BENT NO. 1		39.0						45	364.2
		BENT NO. 2		448.0	44						120.7
		BENT NO. 3		46.5						45	461.8
		218'-0" CONT. COMP. PLATE GIRDER UNIT		980.2		6	490	4			475.1
		TOTALS FOR BRIDGE NO. 07257		1,513.7	44	6	490	4	-	90	1,421.8
07258 X571	UPRR & HWY. 365 OVERPASS	BENT NO. 1		39.0						68	573.7
		BENT NO. 2		1,200.0	66						109.5
		BENT NO. 3		54.0						68	666.9
		235'-0" CONT. COMP. PLATE GIRDER UNIT		1,056.8							520.8
		TOTALS FOR BRIDGE NO. 07258		2,349.8	66	-	-	-	-	136	1,870.9
07259 X771	LAWRENCE LANDING RD.	BENT NO. 1		39.0						43	41.7
		BENT NO. 2		562.7	34						131.6
		BENT NO. 3		354.7	52						108.6
		BENT NO. 4		39.0						43	385.7
		308'-0" CONT. COMP. PLATE GIRDER UNIT		1385.2		8	710	4			671.8
		EXISTING BRIDGE NO. 03786									
		TOTALS FOR BRIDGE NO. 07259		2380.6	86	8	710	4	1	86	1,339.4
		TOTALS FOR JOB 080395		6,244.1	196	14	1,200	8	1	312	4,632.1

STATE OF ARKANSAS
ACCEPTED
PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
8/27/13
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: JUNE 2012 FILENAME: B080395_01.DGN
CHECKED BY: SRY DATE: JUNE 2012 SCALE: -
DESIGNED BY: PCC DATE: JUNE 2012

BRIDGE NO. 07257-07259 DRAWING NO. 52931

SRYancey 8/23/2013 9:06:58 AM
WORKSPACE: AHTD Bridge
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REVISED DATE:

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		115	STA.
201	GRUBBING		115	STA.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		7	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS		1	EACH
SP & 202	REMOVAL AND DISPOSAL OF GUARDRAIL		770	L.F.
202	REMOVAL AND DISPOSAL OF FENCE		7,440	L.F.
202	REMOVAL AND DISPOSAL OF APPROACH SLAB AND GUTTERS		2	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE PIER PROTECTION		56	L.F.
202	REMOVAL AND DISPOSAL OF CONCRETE MEDIAN BARRIER		409	L.F.
202	REMOVAL AND DISPOSAL OF SIGN POST		26	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING		47	SQ.YD.
202	REMOVAL AND DISPOSAL OF SIGNS		23	EACH
202	REMOVAL AND DISPOSAL OF POST		6	EACH
202	REMOVAL AND DISPOSAL OF SATELLITE DISH		1	EACH
202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM		1	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE PAD		3	SQ. YD.
206	FLOWABLE SELECT MATERIAL		160	CU.YD.
210	UNCLASSIFIED EXCAVATION		114,652	CU.YD.
SP & 210	COMPACTED EMBANKMENT		417,678	CU.YD.
SP & 210	SOIL STABILIZATION		750	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		4,233	TON
401	TACK COAT		236	GAL.
SP, SS & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		345	TON
SP, SS & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		16	TON
SP, SS & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		1,171	TON
SP, SS & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		68	TON
412	COLD MILLING ASPHALT PAVEMENT		550	SQ.YD.
SP, SS & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		7	TON
504	APPROACH GUTTERS (TYPE C)		37.12	CU.YD.
505	PORTLAND CEMENT CONCRETE DRIVEWAY		32.00	SQ.YD.
601	MOBILIZATION		1.00	L.S.
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SP, SS & 603	MAINTENANCE OF TRAFFIC		1.00	L.S.
SS & 604	SIGNS		526	SQ.FT.
SS & 604	TRAFFIC DRUMS		40	EACH
SS & 604	BARRICADES		32	L.F.
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		9,498	L.F.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER		540	L.F.
SS & 604	PORTABLE CHANGEABLE MESSAGE SIGN		609	DAYS
SS & 604	CONSTRUCTION PAVEMENT MARKINGS		2,956	L.F.
SP	TEMPORARY IMPACT ATTENUATION BARRIER		5	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		5	EACH
605	CONCRETE DITCH PAVING (TYPE B)		2,321	SQ.YD.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		483	L.F.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		101	L.F.
606	12" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)		47	L.F.
* 606	30" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 1)	58	L.F.
* 606	30" ASPHALT COATED CORRUGATED ALUMINUM PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 2)	58	L.F.
* 606	30" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 3)	58	L.F.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		9	EACH
606	30" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS		2	EACH
SP, SS & 606	18" SIDE DRAIN		142	L.F.
606	SELECTED PIPE BEDDING		100	CU.YD.
609	DROP INLETS (TYPE N2)		1	EACH
610	DROP INLETS ADJUSTED TO GRADE		1	EACH
611	4" PIPE UNDERDRAINS		1,000	L.F.
611	UNDERDRAIN OUTLET PROTECTORS		8	EACH
614	CONCRETE SPILLWAY (TYPE A)		1	EACH
SS & 617	GUARDRAIL (TYPE A)		550	L.F.
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		4	EACH
SS & 617	TERMINAL ANCHOR POST (TYPE 1)		4	EACH
619	WIRE FENCE (TYPE A)		5,854	L.F.
* 619	16' STEEL GATES	(ALTERNATE NO. 1)	2	EACH
* 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	2	EACH
620	LIME		69	TON
620	SEEDING		34.74	ACRE
620	MULCH COVER		69.48	ACRE
SS & 620	WATER		4,277.4	M.G.
621	TEMPORARY SEEDING		34.74	ACRE
621	SILT FENCE		11,805	L.F.
621	SAND BAG DITCH CHECKS		800	BAG
621	DIVERSION DITCH		2,596	L.F.
621	ROCK DITCH CHECKS		570	CU.YD.
621	SEDIMENT BASIN		100	CU.YD.

* DENOTES ALTERNATE BID ITEMS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-22-13				6	ARK.			
				JOB NO.		080395	50	237

(2) SUMMARY OF QUANTITIES & REVISIONS

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
621	OBLITERATION OF SEDIMENT BASIN		100	CU.YD.
621	SEDIMENT REMOVAL AND DISPOSAL		2,500	CU.YD.
621	PIPE FOR SLOPE DRAINS		781	L.F.
623	SECOND SEEDING APPLICATION		34.74	ACRE
624	SOLID SODDING		1,989	SQ.YD.
631	CONCRETE BARRIER WALL (MEDIAN TYPE A)		23	L.F.
631	CONCRETE BARRIER WALL (MEDIAN TYPE SPECIAL)		386	L.F.
632	CONCRETE ISLAND		79	SQ.YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	L.S.
637	MAILBOXES		6	EACH
637	MAILBOX SUPPORTS (SINGLE)		6	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		3,065	L.F.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		2,270	L.F.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	625	L.F.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	(ALTERNATE. NO. 2)	625	L.F.
SS & 726	STANDARD SIGN		39.00	SQ.FT.
SP & 729	CHANNEL POST SIGN SUPPORT (TYPE U1-1)		7	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY		278	CU.YD.
802	CLASS S CONCRETE - ROADWAY		562.14	CU.YD.
SS & 804	REINFORCING STEEL - ROADWAY (GRADE 60)		81,155	LB.
816	DUMPED RIPRAP		20	CU.YD.
816	FILTER BLANKET		40	SQ. YD.
SP	RETAINING WALL		28,902	SQ.FT.
SP	SELECT GRANULAR BACKFILL		15,868	CU.YD.
SP	TEMPORARY RETAINING WALL		1,310	SQ.FT.
* SP	UNDERCUT AND BACKFILL SPECIAL	(ALTERNATE NO. 1)	2,616	CU.YD.
* SP	RAMMED AGGREGATE PIER	(ALTERNATE NO. 2)	160	EACH

* DENOTES ALTERNATE BID ITEMS.

STRUCTURES OVER 20' SPAN

ITEM NUMBER	ITEM	QUANTITY	UNIT
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	L.S.
619	7' STEEL CHAIN LINK FENCE	201	L.F.
636	BRIDGE CONSTRUCTION CONTROL	1.00	L.S.
710	NON-METALLIC CONDUIT (1.5")	1,400	L.F.
710	NON-METALLIC CONDUIT (2")	60	L.F.
SP & 711	CONCRETE PULL BOX (TYPE 2 HD) WITH TAMPER RESISTANT INSERT	2	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	106	CU.YD.
802	CLASS S CONCRETE - BRIDGE	594.40	CU.YD.
802	CLASS S CONCRETE - ROADWAY	204.34	CU.YD.
802	CLASS S(AE) CONCRETE - BRIDGE	1,156.50	CU.YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	80.6	GAL.
SS & 804	REINFORCING STEEL - BRIDGE (GRADE 60)	94,400	LB.
SS & 804	REINFORCING STEEL - ROADWAY (GRADE 60)	30,144	LB.
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	295,010	LB.
805	STEEL PILING (HP12X53)	2,277	L.F.
806	METAL BRIDGE RAILING (TYPE H)	1,020	L.F.
807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR 50)	1,165,490	LB.
SP & 807	PAINTING STRUCTURAL STEEL	583.0	TON
808	ELASTOMERIC BEARINGS	40,146.0	CU.IN.
812	BRIDGE NAME PLATE (TYPE D)	3	EACH
816	CONCRETE RIPRAP	189	CU.YD.
SP	#4/0 AWG BARE COPPER GROUNDING CONDUCTOR WITH APPURTENANCES	1,200	L.F.
SP	3/4" X 10'-0" COPPERCLAD GROUND ROD WITH APPURTENANCES	8	EACH
SP	ARCHITECTURAL FINISH	6,244.1	S.F.
SP	DRILLED SHAFT (78" DIAMETER)	196	L.F.
SP	NEMA 4X STAINLESS STEEL JUNCTION BOX	14	EACH
SP	SHORING	1.00	L.S.
SP	SILICONE JOINT SEALANT	312	L.F.
SP	TEXTURED COATING FINISH	4,632.1	S.Y.

REVISIONS

DATE	REVISION	SHEET NUMBER
10-22-13	REMOVED PROSECUTION AND PROGRESS SP	3 & 50

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11865
TODD E. MUELLER
10-22-13

SUMMARY OF QUANTITIES & REVISIONS

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WORKSET: AHTD
L:\2009\090720 - Conway Western Arterial Loop\Drawings\PRJL_QS\PRJL_QTY_SUM.dgn
REVISED DATE:

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.		080395	51	237

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER

8-21-13

SURVEY CONTROL COORDINATES

Project Name: S080395
Date: 12/20/2011
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	253171.2514	1185460.3027	283.66	CTL	5/8" REBAR*
2	252377.2672	1185289.3187	276.96	CTL	5/8" REBAR
3	252252.1476	1185673.1350	271.39	CTL	5/8" REBAR
4	251357.5368	1186594.5081	306.05	CTL	5/8" REBAR
5	250815.2395	1187174.2119	289.96	CTL	5/8" REBAR
6	250293.1565	1187513.6796	291.90	CTL	5/8" REBAR
7	249681.7101	1187886.6548	297.30	CTL	5/8" REBAR
8	249063.7573	1188150.2719	303.11	CTL	5/8" REBAR
20	250309.8267	1188812.8706	275.04	CTL	5/8"REBAR W/2" ALM MON*
21	249515.4918	1188763.6507	286.38	CTL	5/8"REBAR W/2" ALM MON
22	248729.1419	1188648.3083	286.89	CTL	5/8"REBAR W/2" ALM MON
23	247947.7436	1188491.0067	288.44	CTL	5/8"REBAR W/2" ALM MON
24	247164.0934	1188332.8996	292.24	CTL	5/8"REBAR W/2" ALM MON
25	246382.1928	1188176.1933	296.04	CTL	5/8"REBAR W/2" ALM MON
80	250709.5000	1189639.6517	277.28	CTL	5/8"REBAR W/2" CAP*
81	249762.4949	1189602.1942	276.74	CTL	5/8"REBAR W/2" CAP
82	249714.8894	1188949.2681	285.07	CTL	5/8"REBAR W/2" CAP
83	249688.8389	1189997.4522	284.21	CTL	5/8"REBAR W/2" CAP
84	248814.2643	1189536.3863	280.25	CTL	5/8"REBAR W/2" CAP
85	247990.0360	1189524.7909	295.32	CTL	5/8"REBAR W/2" CAP
86	247184.9583	1189514.5176	297.54	CTL	5/8"REBAR W/2" CAP
87	246347.6324	1189539.2146	294.89	CTL	5/8"REBAR W/2" CAP
954	250380.5061	1189630.5089	274.07	TBM	CHL SQ IN DI IN MEDIAN
956	249659.4137	1189473.3265	298.66	TBM	CHL SQ IN SW CORN OF BR=3786
958	249380.2732	1189567.5770	274.07	TBM	CHL SQ IN DI IN MEDIAN
959	248280.4852	1189545.5165	288.03	TBM	CHL SQ IN DI IN MEDIAN
990	285016.9076	1178342.9846	401.140	BM	NGS MARK E 291
991	282193.5202	1179189.7671	351.690	BM	NGS MARK D 291

*Note - 5/8" REBAR - Standard = 5/8" Rebar without Cap
5/8"REBAR W/2"ALM MON - Standard = 5/8" Rebar with 2" Aluminum Cap stamped GARVER CONTROL POINT, PN =
5/8"REBAR W/2"CAP - Standard = 5/8" Rebar with 2" Aluminum Cap stamped AHTD, JOB# 080388, PN =

ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999676209 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.
BASED ON NGS PTS. D 291 & E 291

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
BASED ON GPS PTS.
230026 - 230020
230028 - 230028A
230027 - 230027A
DETERMINED FROM GPS CONTROL POINT: 62
AHTD JOB #080388
NORTHING 264067.0068, EASTING 1187664.3294
CONVERGENCE ANGLE: 0-14-33 LEFT
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

ALIGNMENT NAME: RAMP 1

POINT	STATION	TYPE	NORTHING	EASTING
8000	7420+38.59	PC	249845.8551	1189531.7615
8001	7421+33.81	PI	249750.8202	1189525.8655
8002	7422+28.87	PT	249656.8430	1189510.5462
8003	7423+99.00	PC	249488.9307	1189483.1746
8004	7425+42.70	PI	249347.0944	1189460.0537
8005	7426+76.48	PT	249247.3117	1189356.6345
8006	7431+37.34	PC	248927.3188	1189024.9796
8007	7432+52.11	PI	248847.6303	1188942.3868
8008	7433+61.70	PT	248737.4730	1188910.1808
8009	7434+41.21	POE	248661.1597	1188887.8697

ALIGNMENT NAME: RAMP 2

POINT	STATION	TYPE	NORTHING	EASTING
8010	7431+65.85	PC	248570.1738	1189118.8974
8011	7434+59.79	PI	248487.6895	1189401.0273
8012	7436+84.32	PT	248195.5254	1189433.2931
8013	7440+39.38	PC	247842.6152	1189472.2675
8014	7441+30.81	PI	247751.7377	1189482.3038
8015	7442+22.02	PT	247660.3117	1189481.4308

ALIGNMENT NAME: RAMP 3

POINT	STATION	TYPE	NORTHING	EASTING
8016	7441+34.94	POB	247441.1141	1190284.4135
8017	7444+97.30	PC	247255.0303	1189973.4896
8018	7448+39.47	PI	247079.3109	1189679.8835
8019	7451+33.15	PT	246739.4352	1189640.3073
8020	7456+25.34	PC	246250.5501	1189583.3800
8021	7457+20.56	PI	246155.9715	1189572.3670
8022	7458+15.62	PT	246060.7665	1189570.8158

ALIGNMENT NAME: RAMP 4

POINT	STATION	TYPE	NORTHING	EASTING
8023	7440+29.10	PC	247852.0339	1189600.4158
8024	7448+15.69	PI	247065.4851	1189592.5224
8025	7449+63.52	PT	247469.4302	1190267.4666

ALIGNMENT NAME: MERGED RAMPS 3 & 4

POINT	STATION	TYPE	NORTHING	EASTING
8026	7449+63.52	PC	247455.2722	1190275.9402
8027	7460+10.17	PI	247992.7695	1191174.0342
8028	7460+23.33	PT	248286.4762	1190169.4385

ALIGNMENT NAME: CONWAY LOOP

POINT	STATION	TYPE	NORTHING	EASTING
8028	13+52.70	POB	248286.4762	1190169.4385
8029	30+98.10	PC	248776.2619	1188494.1738
8030	37+32.12	PI	248954.1784	1187885.6276
8031	42+91.88	PT	249524.2666	1187608.1709
8032	56+51.90	PC	250747.1454	1187013.0070
8033	60+48.55	PI	251103.7996	1186839.4266
8034	64+43.94	PT	251433.1327	1186618.3562
8035	80+09.78	PC	252733.2281	1185745.6452
8036	87+99.39	PI	253388.8269	1185305.5634
8037	94+53.07	PT	253366.7284	1184516.2642
8038	123+22.20	POE	253286.4312	1181648.2557

ALIGNMENT NAME: HWY. 365

POINT	STATION	TYPE	NORTHING	EASTING
8039	384+00.00	POB	243262.6640	1187567.8485
8040	439+52.50	PC	248705.5975	1188665.4304
8041	452+36.94	PI	249964.6896	1188919.3297
8042	465+02.50	PT	251242.9983	1188794.0118
8043	500+00.00	POE	254723.8110	1188452.7735

ALIGNMENT NAME: I-40

POINT	STATION	TYPE	NORTHING	EASTING
8044	7389+60.40	POB	252900.1834	1189936.6374
8045	7404+27.38	PC	251445.7447	1189745.1930
8046	7418+12.40	PI	250072.5736	1189564.4457
8047	7431+94.05	PT	248687.6293	1189550.3787
8048	7449+77.89	PC	246903.8871	1189532.2611
8049	7466+49.60	PI	245232.2633	1189515.2824
8050	7482+97.89	PT	243635.1591	1189021.4477
8051	7507+69.65	POE	241273.7099	1188291.2729

ALIGNMENT NAME: HWY. 365 CONNECTOR

POINT	STATION	TYPE	NORTHING	EASTING
8052	20+00.00	POB	248657.7404	1188899.5652
8053	22+81.27	PC	248378.1691	1188868.7152
8054	25+42.27	PI	248118.7380	1188840.0876
8055	26+77.53	PT	248170.3320	1188584.2320
8056	27+03.75	POE	248175.5133	1188558.5376

ALIGNMENT NAME: LAWRENCE LANDING

POINT	STATION	TYPE	NORTHING	EASTING
8057	12+10.18	POB	249644.9038	1188801.3839
8058	16+34.47	PC	249710.7636	1189220.5403
8059	19+87.36	PI	249765.5382	1189569.1466
8060	23+32.37	PT	249692.1256	1189914.3091
8061	28+77.74	POE	249578.6678	1190447.7520

ALIGNMENT NAME: McCLURE ACRES

POINT	STATION	TYPE	NORTHING	EASTING
8062	10+00.00	POB	247881.4330	1188499.2355
8063	10+25.54	PC	247883.0361	1188524.7229
8064	11+57.70	PI	247891.3323	1188656.6227
8065	12+60.23	PRC	248014.9712	1188703.3112
8066	14+07.65	PI	248152.8864	1188755.3907
8067	15+15.73	PT	248147.1552	1188902.7000
8068	16+84.93	POE	248140.5773	1189071.7692

ALIGNMENT NAME: MOORE ACCESS ROAD

POINT	STATION	TYPE	NORTHING	EASTING
8135	10+00.00	POB	248561.3102	1190284.0109
8136	10+38.96	PC	248522.8658	1190277.6975
8137	11+89.76	PI	248374.0607	1190253.2606
8138	12+98.87	PT	248306.6571	1190388.1563
8139	14+15.52	POE	248254.5176	1190492.5036

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WORKSPACE: AHTD
L:\2009\080017230 - Conway Western ArterialLoop\Drawings\PRJ_GS\PRJ_GS_SC_01.dgn
REVISED DATE:

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.		080395	52	237
				(2)	SURVEY CONTROL DETAILS			

N

400 200 0 400

Scale: 1" = 400'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11885
TODD E. MUELLER
8-21-13

BEGIN JOB 080395
STA. 7413+98.59

END JOB 080395
STA. 7458+15.13

C.L. LAWRENCE LANDING RD.
C.L. MOORE ACCESS RD.
C.L. MERGED RAMPS 3 & 4
C.L. RAMP 1
C.L. RAMP 2
C.L. RAMP 3
C.L. RAMP 4
C.L. MEDIAN I-40
C.L. MAIN LANES
C.L. HWY. 365 CONNECTOR
C.L. McCLURE ACRES RD.
C.L. HWY. 365
SURVEY BASELINE

PN: 954 PN: 80 PN: 956 PN: 81 PN: 958 PN: 82 PN: 83 PN: 84 PN: 959 PN: 85 PN: 86 PN: 87 PN: 8 PN: 7 PN: 6 PN: 5 PN: 20 PN: 21 PN: 22 PN: 23 PN: 24 PN: 25

C.L. CONWAY LOOP STA. 26+75.73 = C.L. HWY. 365 CONN. STA. 20+00.00
∢ = 100°

C.L. CONWAY LOOP STA. 26+87.92 = C.L. RAMP 1 STA. 7434+41.21
∢ = 90°

C.L. HWY. 365 STA. 434+11.75 = C.L. HWY. 365 CONN. STA. 27+03.75
∢ = 90°

C.L. LAWRENCE LANDING RD. STA. 12+10.18 = C.L. HWY. 365 STA. 449+02.08
∢ = 76°

CURVE DATA

CURVE	PC	PI	PT	Δ	D	TANGENT FEET	LENGTH FEET	e FT./FT.	Ls FEET	DESIGN SPEED
I-1	7420+38.59	7421+33.81	7422+28.87	5°42'30"	3°00'00"	95.22	190.28	NA	NA	70 MPH
I-2	7423+99.00	7425+42.70	7426+76.48	36°46'01"	13°15'00"	143.71	277.49	0.100	300	40 MPH
I-3	7431+37.34	7432+52.11	7433+61.70	29°43'42"	13°15'00"	114.77	224.36	0.100	300	40 MPH
2-1	7431+65.85	7434+59.79	7436+84.32	67°24'04"	13°00'00"	293.94	518.47	0.100	250	40 MPH
2-2	7440+39.38	7441+30.81	7442+22.02	6°50'57"	3°45'00"	91.43	182.64	0.069	215	50 MPH
3-1	7444+97.30	7448+39.47	7451+33.15	52°27'30"	8°15'00"	342.17	635.86	0.100	290	50 MPH
3-2	7456+25.34	7457+20.56	7458+15.62	5°42'30"	3°00'00"	95.22	190.28	NA	NA	70 MPH
4-1	7440+29.10	7448+15.69	7449+63.52	121°28'30"	13°00'00"	786.59	934.42	0.100	300	40 MPH
3&4	7449+63.52	7460+10.17	7460+23.33	132°48'11"	12°31'51"	1046.65	1059.81	0.100	300	40 MPH
ML-1	30+98.10	37+32.12	42+91.88	47°45'04"	4°00'00"	634.02	1193.78	NA	NA	45 MPH
40-1	7404+27.38	7418+12.40	7431+94.05	6°55'00"	0°15'00"	1385.02	2766.67	NA	NA	70 MPH
40-2	7449+77.89	7466+49.60	7482+97.89	16°36'00"	0°30'00"	1671.71	3320.00	NA	NA	70 MPH
365-1	439+52.50	452+36.94	465+02.50	17°00'00"	0°40'00"	1284.44	2550.00	NA	NA	55 MPH
C-1	22+81.27	25+42.27	26+77.53	95°06'14"	24°00'00"	261.01	396.27	0.060	300	30 MPH
L-1	16+34.47	19+87.36	23+32.37	20°56'13"	3°00'00"	352.88	697.90	0.028	200	40 MPH
M-1	10+25.54	11+57.70	12+60.23	65°42'48"	28°00'00"	132.16	234.69	NA	NA	25 MPH
M-2	12+60.23	14+07.65	15+15.73	71°32'26"	28°00'00"	147.42	255.50	NA	NA	25 MPH
MA-1	10+38.96	11+89.76	12+98.87	72°46'33"	28°00'00"	150.80	259.91	NA	NA	25 MPH

SURVEY CONTROL DETAILS

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WORKSPACE: AHTD
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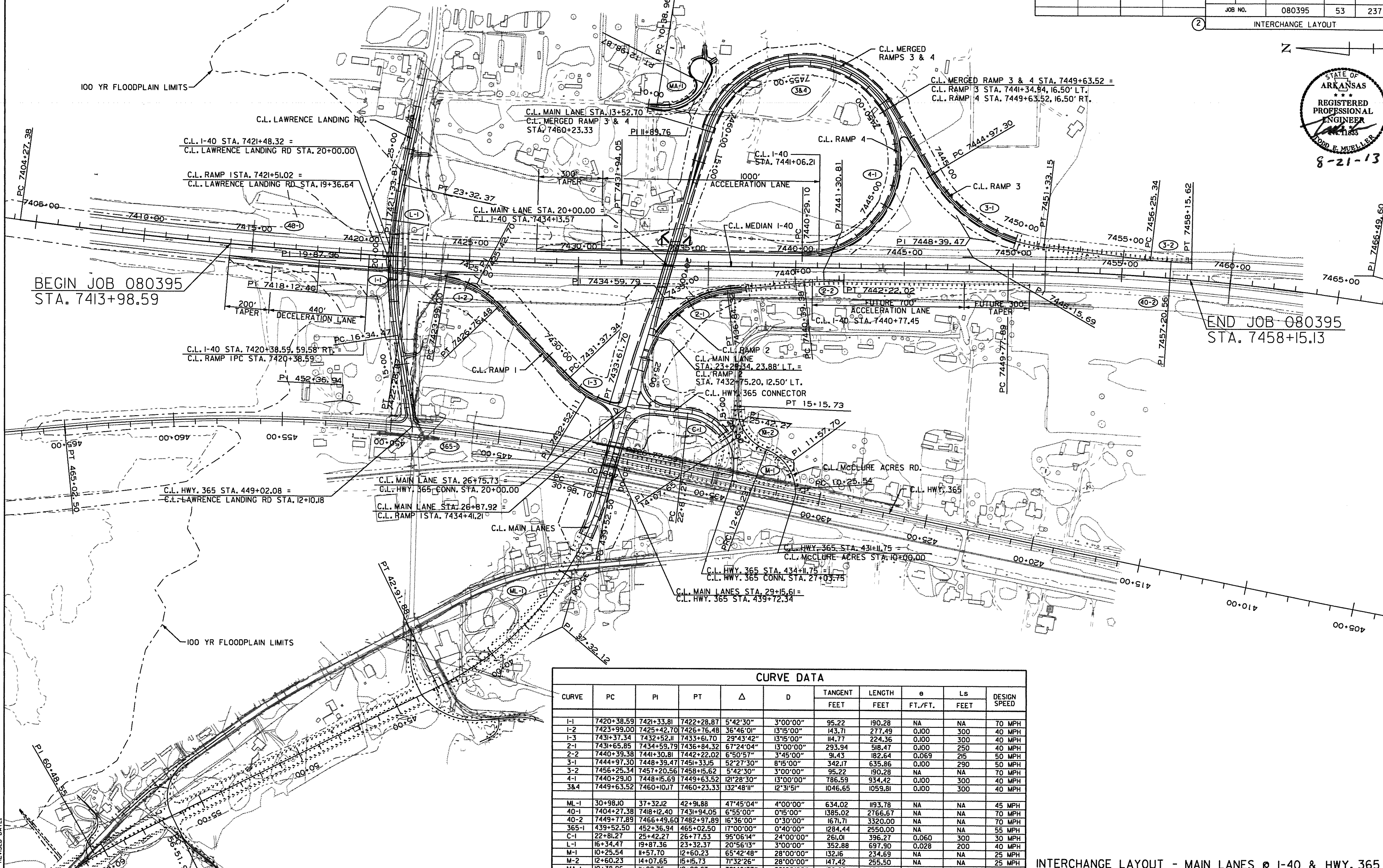
REVISED DATE:

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.		080395	53	237

(2) INTERCHANGE LAYOUT



CURVE DATA

CURVE	PC	PI	PT	Δ	D	TANGENT FEET	LENGTH FEET	e FT./FT.	Ls FEET	DESIGN SPEED
I-1	7420+38.59	7421+33.81	7422+28.87	5°42'30"	3°00'00"	95.22	190.28	NA	NA	70 MPH
I-2	7423+99.00	7425+42.70	7426+76.48	36°46'01"	13°15'00"	143.71	277.49	0.100	300	40 MPH
I-3	7431+37.34	7432+52.11	7433+61.70	29°43'42"	13°15'00"	114.77	224.36	0.100	300	40 MPH
2-1	7431+65.85	7434+59.79	7436+84.32	67°24'04"	13°00'00"	293.94	518.47	0.100	250	40 MPH
2-2	7440+39.38	7441+30.81	7442+22.02	6°50'57"	3°45'00"	91.43	182.64	0.069	215	50 MPH
3-1	7444+97.30	7448+39.47	7451+33.15	52°27'30"	8°15'00"	342.17	635.86	0.100	290	50 MPH
3-2	7456+25.34	7457+20.56	7458+15.62	5°42'30"	3°00'00"	95.22	190.28	NA	NA	70 MPH
4-1	7440+29.10	7448+15.69	7449+63.52	121°28'30"	13°00'00"	786.59	934.42	0.100	300	40 MPH
3&4	7449+63.52	7460+10.17	7460+23.33	132°48'11"	12°31'51"	1046.65	1059.81	0.100	300	40 MPH
ML-1	30+98.10	37+32.12	42+91.88	47°45'04"	4°00'00"	634.02	1193.78	NA	NA	45 MPH
40-1	7404+27.38	7418+12.40	7431+94.05	6°55'00"	0°15'00"	1385.02	2766.67	NA	NA	70 MPH
40-2	7449+77.89	7466+49.60	7482+97.89	16°36'00"	0°30'00"	1671.71	3320.00	NA	NA	70 MPH
365-1	439+52.50	452+36.94	465+02.50	17°00'00"	0°40'00"	1284.44	2550.00	NA	NA	55 MPH
C-1	22+81.27	25+42.27	26+77.53	95°06'14"	24°00'00"	261.01	396.27	0.060	300	30 MPH
L-1	16+34.47	19+87.36	23+32.37	20°56'13"	3°00'00"	352.88	697.90	0.028	200	40 MPH
M-1	10+25.54	11+57.70	12+60.23	65°42'48"	28°00'00"	132.16	234.69	NA	NA	25 MPH
M-2	12+60.23	14+07.65	15+15.73	71°32'26"	28°00'00"	147.42	255.50	NA	NA	25 MPH
MA-1	10+38.96	11+89.76	12+98.87	72°46'33"	28°00'00"	150.80	259.91	NA	NA	25 MPH

INTERCHANGE LAYOUT - MAIN LANES @ I-40 & HWY. 365

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WORKSPACE: AHTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	54	237

(2) PLAN & PROFILE - I-40

STA. 7413+68 IN PLACE
DROP INLET IN MEDIAN
WITH 18" X 252' R.C. PIPE OUTLET
CONNECTED TO D.I. @ STA. 7411+16
RETAIN

STA. 7414+00 IN PLACE
OVERHEAD HIGHWAY SIGN
EASTBOUND LANES
RETAIN

STA. 7415+00 IN PLACE
DROP INLET IN MEDIAN
WITH 18" X 118' C.M. PIPE
OUTLET ON LT.
RETAIN

STA. 7418+66 IN PLACE
DROP INLET IN MEDIAN
WITH 18" X 246' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7416+20
RETAIN

STA. 7416+20 IN PLACE
DROP INLET IN MEDIAN
WITH 18" X 120' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7415+00
RETAIN

STA. 7423+66 IN PLACE
DROP INLET IN MEDIAN
WITH 24" X 134' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7425+00
RETAIN

C.L. I-40
P.I. = 7418+12.40
Δ = 6°55'00.0" LT.
D = 0°15'00"
T = 1385.02
L = 2766.67
P.C. = 7404+27.38
P.T. = 7431+94.05
e = NA
Ls = NA

BEGIN JOB 080395
STA. 7413+98.59
L.M. 131.95

REMOVAL AND DISPOSAL OF GUARDRAIL I-40

STA.	STA.	SIDE	UNIT
7419+18	7421+93	RT.	275 LIN. FT.
7422+17	7424+92	LT.	275 LIN. FT.

C.L. I-40 STA. 7421+48.32 =
C.L. LAWRENCE LANDING RD STA. 20+00.00
Δ = 91°09'36"

STA. 17+90.92 TO STA. 21+01.08
CONSTRUCT 310'-2" X 40' BRIDGE
308'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (100'-108'-100')

BRIDGE NO. 5786 IN PLACE.
218'-3⅜" X 26'-0"
BRIDGE CONSISTING OF
A STEEL SUPERSTRUCTURE SUPPORTED
BY A CONCRETE SUBSTRUCTURE.
REMOVE AS EXISTING BRIDGE STRUCTURE
= 1.00 LUMP SUM

STA. 7425+00 IN PLACE
DROP INLET IN MEDIAN
WITH 24" X 102' R.C. PIPE
OUTLET ON LT.
RETAIN

STA. 7426+14 IN PLACE
DROP INLET IN MEDIAN
WITH 24" X 114' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7425+00
RETAIN

STA. 7428+65 IN PLACE
DROP INLET IN MEDIAN
WITH 24" X 134' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7429+99
RETAIN

OBLITERATE EXISTING GUARDRAIL WIDENING

SAW CUT AT EDGE OF EXISTING SHLDR.

SAW CUT AT EDGE OF EXISTING SHLDR.

C.L. MEDIAN I-40

C.L. RAMP I
P.I. = 7421+33.81
Δ = 5°42'30.0" RT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. = 7420+38.59
P.T. = 7422+28.87
e = NA
Ls = NA

C.L. RAMP I
P.I. = 7425+42.70
Δ = 36°46'00.7" RT.
D = 13°15'00"
T = 143.71
L = 277.49
P.C. = 7423+99.00
P.T. = 7426+76.48
e = 0.100'/'
Ls = 300'

C.L. LAWRENCE LANDING RD.
P.I. = 19+87.36
Δ = 20°56'13" RT.
D = 3°00'00"
T = 352.88
L = 697.90
P.C. = 16+34.47
P.T. = 23+32.37
e = 0.028'/'
Ls = 200'

C.L. MEDIAN I-40 STATIONING	GUARDRAIL (TYPE A) (FUTURE)	GUARDRAIL TERMINAL (TYPE I) (FUTURE)
STA. 7414+00.00 TO STA. 7417+50.00 RT.	= 350 LIN. FT.	1 EACH

STA. 7413+98 TO STA. 7417+20
EXISTING GUARDRAIL RT.
RETAIN

STA. 7421+17 IN PLACE
DROP INLET IN MEDIAN
WITH 18" X 252' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7418+66
RETAIN & ADJUST TO GRADE
AND MODIFY PER SPECIAL DETAILS

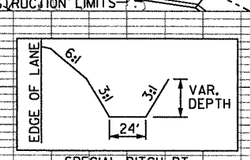
EXISTING R/W
C.L. LAWRENCE LANDING RD.
CONSTRUCTION LIMITS
EXISTING R/W, C/A & FENCE
EXISTING R/W, C/A & FENCE
EXISTING R/W, C/A & FENCE I-40

REMOVAL AND DISPOSAL OF CONCRETE PIER PROTECTION

STA.	STA.	SIDE	UNIT
7421+90	7422+18	RT.	28 LIN. FT.
7421+92	7422+20	LT.	28 LIN. FT.

REMOVAL AND DISPOSAL OF CONCRETE MEDIAN BARRIER

STA.	STA.	SIDE	UNIT
7420+31	7422+67	MEDIAN	236 LIN. FT.



SPECIAL DITCH RT.
STA. 7418+90 TO STA. 7423+37

STREAM ELEVATION	STATION	STREAM TYPE	TOP OF CHANNEL
UNNAMED TRIB. TO LAKE CONWAY	7426+35 - 7426+65	EPHERMAL	770 FT. MSL
UNNAMED TRIB. TO LAKE CONWAY	7433+48 - 7433+60	EPHERMAL	775 FT. MSL

NOTCH AND WIDEN RT. LANES

EXISTING GROUND @ OUTSIDE EDGE OF LANES

NOTCH AND WIDEN LT. LANES

STA. 7425+42.24

STA. 7428+06.21

0.30% RIGHT DITCH GRADE

+90.00 RT. 265.84 @

+37.00 RT. 257.18 @

BEGIN JOB 080395
STA. 7413+98.59

PN: 81
PD: 5/8" REBAR W/2" CAP
S1: 7421+17.77
OF: 15.64' LT
ZC: 276.74

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER
8-21-13

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WORKSPACE: HTD
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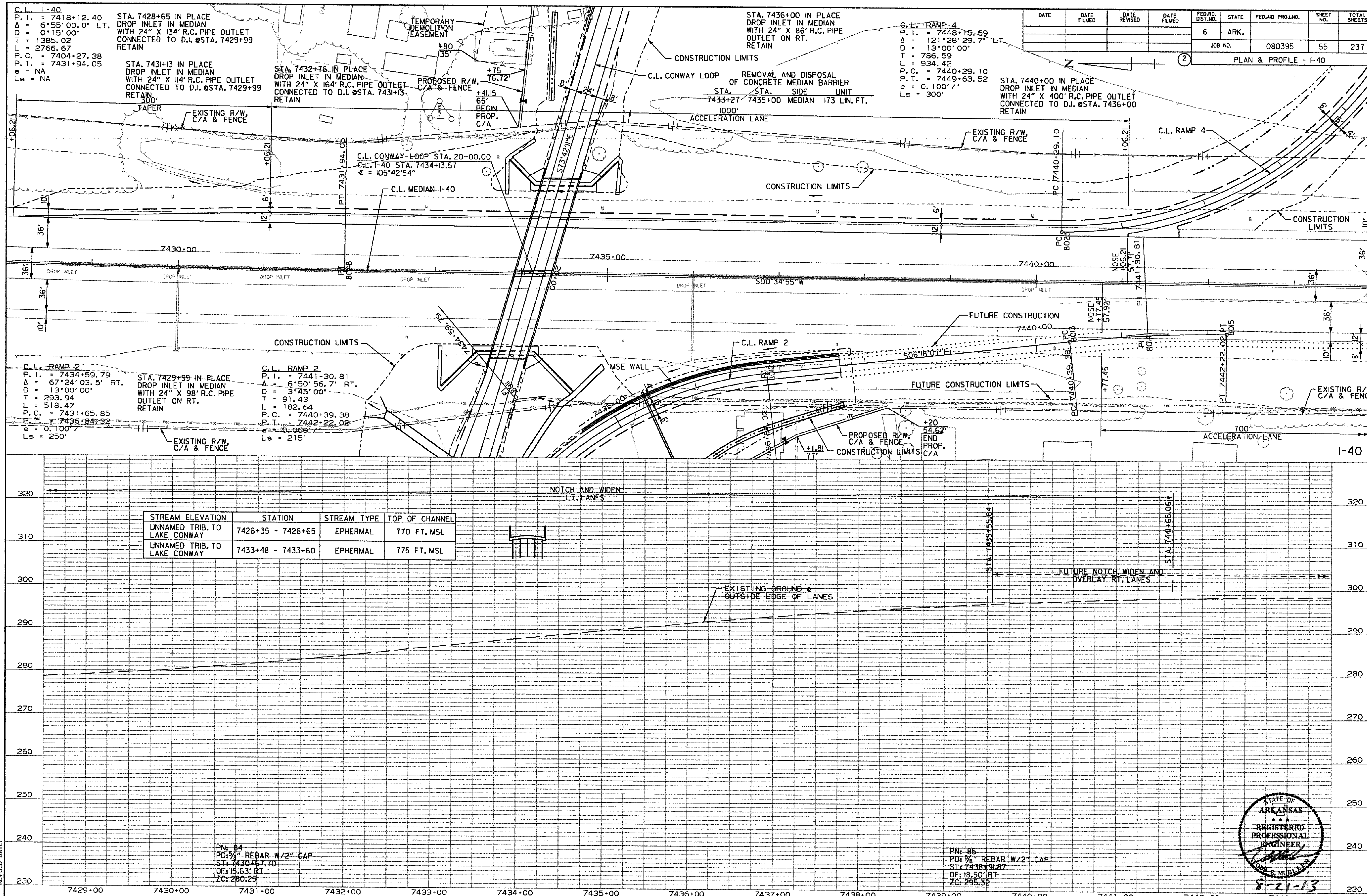
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	55	237

PLAN & PROFILE - I-40



C.L. I-40
P.I. = 7418+12.40
Δ = 6°55'00.0" LT.
D = 0°15'00"
T = 1385.02
L = 2766.67
P.C. = 7404+27.38
P.T. = 7431+94.05
e = NA
Ls = NA
STA. 7428+65 IN PLACE DROP INLET IN MEDIAN WITH 24" X 134' R.C. PIPE OUTLET CONNECTED TO D.I. @STA. 7429+99 RETAIN
STA. 7431+13 IN PLACE DROP INLET IN MEDIAN WITH 24" X 114' R.C. PIPE OUTLET CONNECTED TO D.I. @STA. 7429+99 RETAIN
STA. 7432+76 IN PLACE DROP INLET IN MEDIAN WITH 24" X 164' R.C. PIPE OUTLET CONNECTED TO D.I. @STA. 7431+13 RETAIN
TEMPORARY DEMOLITION EASEMENT
PROPOSED R/W, C/A & FENCE
+41.15 65' BEGIN PROP. C/A
STA. 7436+00 IN PLACE DROP INLET IN MEDIAN WITH 24" X 86' R.C. PIPE OUTLET ON RT. RETAIN
CONSTRUCTION LIMITS
C.L. CONWAY LOOP
REMOVAL AND DISPOSAL OF CONCRETE MEDIAN BARRIER
STA. | STA. | SIDE | UNIT
7433+27 | 7435+00 | MEDIAN | 173 LIN. FT.
1000' ACCELERATION LANE
C.L. RAMP 4
P.I. = 7448+15.69
Δ = 121°28'29.7" LT.
D = 13°00'00"
T = 786.59
L = 934.42
P.C. = 7440+29.10
P.T. = 7449+63.52
e = 0.100'/'
Ls = 300'
STA. 7440+00 IN PLACE DROP INLET IN MEDIAN WITH 24" X 400' R.C. PIPE OUTLET CONNECTED TO D.I. @STA. 7436+00 RETAIN
300' TAPER
EXISTING R/W, C/A & FENCE
C.L. CONWAY LOOP STA. 20+00.00 = C.L. I-40 STA. 7434+13.57 ∢ = 105°42'54"
C.L. MEDIAN I-40
S73°42'11"E
CONSTRUCTION LIMITS
PC 7440+29.10
7430+00
7435+00
7440+00
DROP INLET
S00°34'55"W
NOSE +06.21 57.71'
PT 7441+30.81
FUTURE CONSTRUCTION
CONSTRUCTION LIMITS
C.L. RAMP 2
MSE WALL
S06°18'07"E
FUTURE CONSTRUCTION LIMITS
PT 7442+22.02
PC 7440+39.38
EXISTING R/W, C/A & FENCE
C.L. RAMP 2
P.I. = 7434+59.79
Δ = 67°24'03.5" RT.
D = 13°00'00"
T = 293.94
L = 518.47
P.C. = 7431+65.85
P.T. = 7436+84.32
e = 0.100'/'
Ls = 250'
STA. 7429+99 IN PLACE DROP INLET IN MEDIAN WITH 24" X 98' R.C. PIPE OUTLET ON RT. RETAIN
C.L. RAMP 2
P.I. = 7441+30.81
Δ = 6°50'56.7" RT.
D = 3°45'00"
T = 91.43
L = 182.64
P.C. = 7440+39.38
P.T. = 7442+22.02
e = 0.069'/'
Ls = 215'
EXISTING R/W, C/A & FENCE
PROPOSED R/W, C/A & FENCE
CONSTRUCTION LIMITS
+20 54.62' END PROP. C/A
700' ACCELERATION LANE
I-40
NOTCH AND WIDEN LT. LANES
STA. 7439+55.64
STA. 7441+65.06
FUTURE NOTCH, WIDEN AND OVERLAY RT. LANES
EXISTING GROUND @ OUTSIDE EDGE OF LANES
PN: 84
PD: 5/8" REBAR W/2" CAP
ST: 7430+67.70
OF: 15.63' RT
ZC: 280.25
PN: 85
PD: 5/8" REBAR W/2" CAP
ST: 7438+91.87
OF: 18.50' RT
ZC: 295.32
320
310
300
290
280
270
260
250
240
230
7429+00
7430+00
7431+00
7432+00
7433+00
7434+00
7435+00
7436+00
7437+00
7438+00
7439+00
7440+00
7441+00
7442+00
7443+00

STREAM ELEVATION	STATION	STREAM TYPE	TOP OF CHANNEL
UNNAMED TRIB. TO LAKE CONWAY	7426+35 - 7426+65	EPHERMAL	770 FT. MSL
UNNAMED TRIB. TO LAKE CONWAY	7433+48 - 7433+60	EPHERMAL	775 FT. MSL

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER TODD E. MUELLER

8-21-13

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WORKSPACE: AHTD
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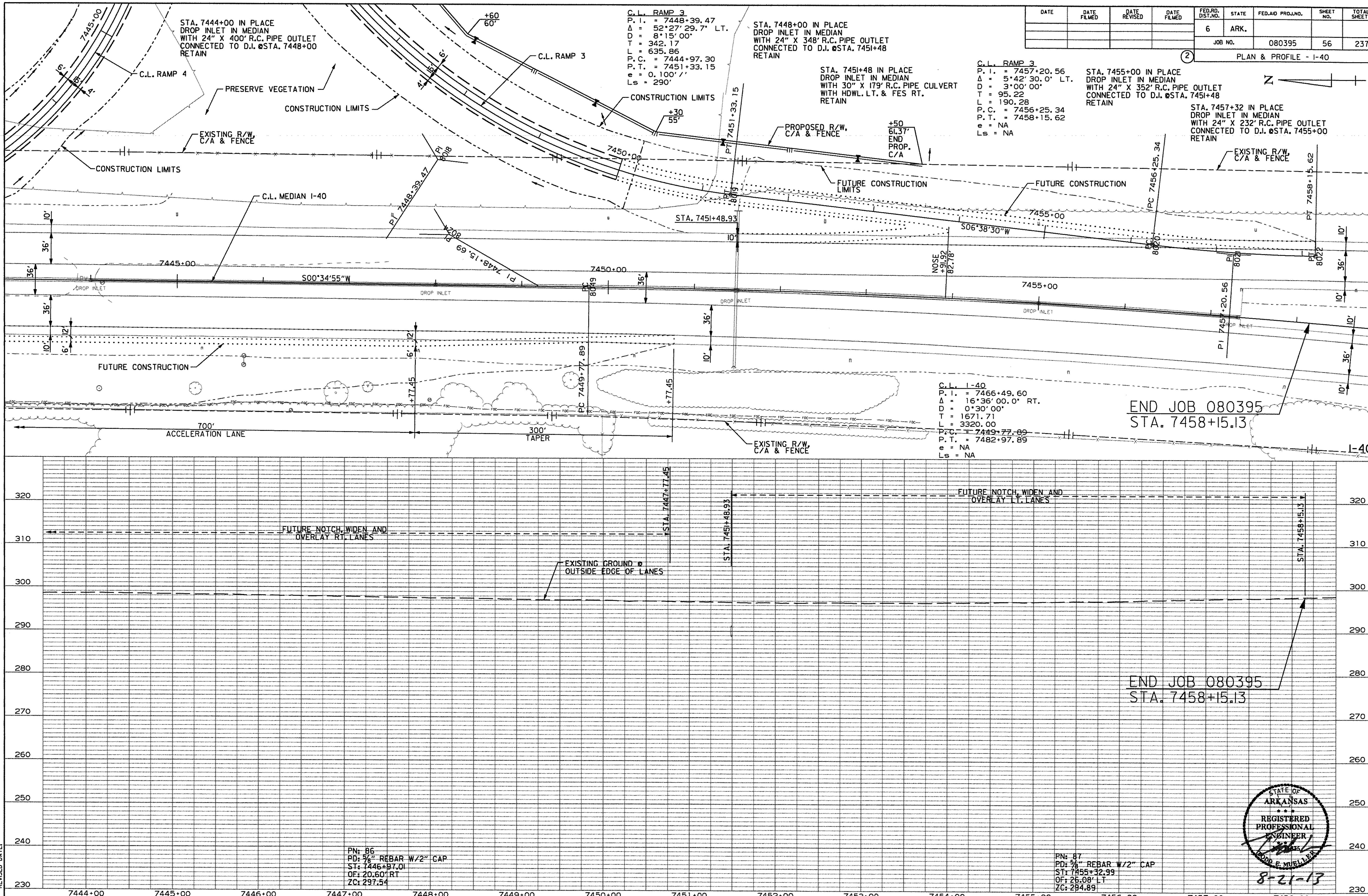
REVISED DATE:


STA. 7444+00 IN PLACE
DROP INLET IN MEDIAN
WITH 24" X 400' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7448+00
RETAIN
C.L. RAMP 4
PRESERVE VEGETATION
CONSTRUCTION LIMITS
EXISTING R/W, C/A & FENCE
CONSTRUCTION LIMITS
C.L. MEDIAN I-40
FUTURE CONSTRUCTION
C.L. RAMP 3
+60
60'
+30
55'
C.L. RAMP 3
P. I. = 7448+39.47
Δ = 52°27' 29.7" LT.
D = 8°15' 00"
T = 342.17
L = 635.86
P.C. = 7444+97.30
P.T. = 7451+33.15
e = 0.100'/'
Ls = 290'
STA. 7448+00 IN PLACE
DROP INLET IN MEDIAN
WITH 24" X 348' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7451+48
RETAIN
STA. 7451+48 IN PLACE
DROP INLET IN MEDIAN
WITH 30" X 179' R.C. PIPE CULVERT
WITH HDWL. LT. & FES RT.
RETAIN
PROPOSED R/W, C/A & FENCE
+50
61.37'
END PROP. C/A
C.L. RAMP 3
P. I. = 7457+20.56
Δ = 5°42' 30.0" LT.
D = 3°00' 00"
T = 95.22
L = 190.28
P.C. = 7456+25.34
P.T. = 7458+15.62
e = NA
Ls = NA
STA. 7455+00 IN PLACE
DROP INLET IN MEDIAN
WITH 24" X 352' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7451+48
RETAIN
STA. 7457+32 IN PLACE
DROP INLET IN MEDIAN
WITH 24" X 232' R.C. PIPE OUTLET
CONNECTED TO D.I. @STA. 7455+00
RETAIN
EXISTING R/W, C/A & FENCE
FUTURE CONSTRUCTION LIMITS
FUTURE CONSTRUCTION
PT 7451+33.15
PI 7448+39.47
PI 7448+15.69
PC 7456+25.34
PT 7458+15.62
PI 7457+20.56
PC 7449+77.89
STA. 7451+48.93
S00°34'55"W
S06°38'30"W
7445+00
7450+00
7455+00
NOSE +91.92 82.78'
DROP INLET
700'
ACCELERATION LANE
300'
TAPER
+77.45
EXISTING R/W, C/A & FENCE
C.L. I-40
P. I. = 7466+49.60
Δ = 16°36' 00.0" RT.
D = 0°30' 00"
T = 1671.71
L = 3320.00
P.C. = 7449+77.89
P.T. = 7482+97.89
e = NA
Ls = NA
END JOB 080395
STA. 7458+15.13
I-40
FUTURE NOTCH, WIDEN AND OVERLAY RT. LANES
STA. 7447+77.45
STA. 7451+48.93
FUTURE NOTCH, WIDEN AND OVERLAY LT. LANES
STA. 7458+15.13
EXISTING GROUND @ OUTSIDE EDGE OF LANES
END JOB 080395
STA. 7458+15.13
320
310
300
290
280
270
260
250
240
230
PN: 86
PD: 5/8" REBAR W/2" CAP
ST: 7446+97.01
OF: 20.60' RT
ZC: 297.54
PN: 87
PD: 5/8" REBAR W/2" CAP
ST: 7455+32.99
OF: 26.08' LT
ZC: 294.89
7444+00
7445+00
7446+00
7447+00
7448+00
7449+00
7450+00
7451+00
7452+00
7453+00
7454+00
7455+00
7456+00
7457+00
7458+00
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
8-21-13

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	56	237
				(2)	PLAN & PROFILE - I-40			

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WORKSPACE: AHTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	57	237

(2) PLAN & PROFILE - RAMP I

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
7426+39	7429+20	RT. = 281 LIN. FT.	6'-0"	187
7427+07	7431+78	LT. = 471 LIN. FT.	6'-0"	314

C.L. LAWRENCE LANDING RD.
C.L. MEDIAN I-40
EXISTING R/W, C/A & FENCE
C.L. CONWAY LOOP STA. 26+87.92 = C.L. RAMP I STA. 7434+41.21 ∢ = 90°
PRESERVE VEGETATION
CONSTRUCTION LIMITS
C.L. CONWAY LOOP
C.L. RAMP I
PROPOSED R/W, C/A & FENCE
LAWRENCE LANDING ROAD
DROP INLET
PAVED DRIVE

C.L. RAMP I
P.I. = 7421+33.81
Δ = 5°42'30.0" RT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. = 7420+38.59
P.T. = 7422+28.87
NO SUPER

C.L. RAMP I
P.I. = 7425+42.70
Δ = 36°46'00.7" RT.
D = 13°15'00"
T = 143.71
L = 277.49
P.C. = 7423+99.00
P.T. = 7426+76.48
e = 0.100'/'
Ls = 300'

STA. 7426+50 CONSTRUCT TRIPLE 8' X 4' X 104' R.C. BOX CULVERT 30° LT. FWD. SKEW WITH 31 WINGS LT. & RT.
Q50 = 701 CFS DA = 406 ACRES
SPAN = 30.79'

C.L. RAMP I
P.I. = 7432+52.11
Δ = 29°43'41.9" LT.
D = 13°15'00"
T = 114.77
L = 224.36
P.C. = 7431+37.34
P.T. = 7433+61.70
e = 0.100'/'
Ls = 300'

RAMP I

STA. 7421+74.00 BEGIN SUPERELEVATION
STA. 7424+74.00 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7426+01.48 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7429+01.48 END SUPERELEVATION

STA. 7429+12.34 BEGIN SUPERELEVATION
STA. 7432+12.34 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7432+46.99 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7434+11.99 SUPERELEVATION (S.E. = .034'/')

SPECIAL DITCH RT.
STA. 7418+90 TO STA. 7423+37

VC=400.00'
K 77.82
VC=200.00'
K 71.43
PROFILE GRADE
EXISTING GROUND
Q50 ELEV. = 273.68
4.80%
-0.34%
2.00%
1.53% RIGHT DITCH GRADE
4.16% RIGHT DITCH GRADE
3.01% LEFT DITCH GRADE
0.50% RIGHT DITCH GRADE
0.00% LEFT DITCH GRADE
0.00% RIGHT DITCH GRADE
CONWAY LOOP

PN: 81
PD: 5/8" REBAR W/2" CAP
ST: 7421+14.39
OF: 77.02' LT
ZC: 276.74

F.L. = 268.39 (RT.)
F.L. = 268.91 (LT.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER
8-21-13

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WORKSPACE: AHTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	58	237

PLAN & PROFILE - RAMP 2

C.L. CONWAY LOOP STA. 20+00.00
C.L. I-40 STA. 7434+13.57
Δ = 105°42'54"

C.L. MEDIAN I-40

C.L. RAMP 4

PT 7431+59.79

PT 8048

PC 8028

NOSE +06.21 57.71' 30.81

PI 7441+30.81

7430+00

7435+00

7440+00

DROP INLET

S00°34'55"W

C.L. CONWAY LOOP

FUTURE CONSTRUCTION

CONSTRUCTION LIMITS

MSE RETAINING WALL NO. 6

S06°18'07"E

PC 8015

PI 8014

PT 7442+22.02

PC 7440+39.38

NOSE +77.45 57.92'

+77.45

FUTURE CONSTRUCTION LIMITS

EXISTING R/W. C/A & FENCE

700' ACCELERATION LANE

CONWAY LOOP STA. 22+48 CONSTRUCT
10' X 7' X 287' R.C. BOX CULVERT
19° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 738 CFS DA = 395 ACRES

STA. 28+50.31 TO STA. 30+87.49
CONSTRUCT 237'-2⅛" X 64' BRIDGE
235'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (110'-125')

EXISTING R/W. C/A & FENCE

C.L. RAMP 2

PT 7436+84.32

+11.81 77'

+20 54.62' END PROP. C/A

+00 107.54'

+38.72 113.66'

+90 128.76'

+02.47 145.47'

TEMPORARY DEMOLITION EASEMENT

PROPOSED R/W. C/A & FENCE

CONSTRUCTION LIMITS

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
7432+74	7437+70	RT. = 496 LIN. FT.	6'-0"	331
7433+70	7435+15	LT. = 145 LIN. FT.	6'-0"	97

OBLITERATE EXISTING PAVEMENT

RAMP 2

C.L. RAMP 2	C.L. RAMP 2
P.I. = 7434+59.79	P.I. = 7441+30.81
Δ = 67°24'03.5" RT.	Δ = 6°50'56.7" RT.
D = 13°00'00"	D = 3°45'00"
T = 293.94	T = 91.43
L = 518.47	L = 182.64
P.C. = 7431+65.85	P.C. = 7440+39.38
P.T. = 7436+84.32	P.T. = 7442+22.02
e = 0.100'/'	e = 0.069'/'
Ls = 250'	Ls = 215'

C.L. CONWAY LOOP STA. 24+88.32 BEGIN SUPERELEVATION
STA. 7433+68.17 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7436+21.82 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7438+71.82 END SUPERELEVATION

STA. 7438+78.13 BEGIN SUPERELEVATION
STA. 7440+93.13 MAXIMUM SUPERELEVATION (S.E. = .069'/')
STA. 7441+68.27 MAXIMUM SUPERELEVATION (S.E. = .069'/')
STA. 7443+83.27 END SUPERELEVATION

STA. 7435+40 CONSTRUCT
24" X 101' R.C. PIPE CULVERT
(CLASS IV) TYPE 3 BEDDING
WITH FES RT.
Q50 = 14 CFS DA = 3 ACRES

CONWAY LOOP

C.L. CONWAY LOOP STA. 23+31.34
28.53' LT. OF C.L. RAMP 2
STA. 7432+74.42, 7.50' LT.
ELEV. 307.29

PVC 7433+00.00
ELEV. 307.42

VC=200.00'
K 54.50

PVI 7434+00.00
ELEV. 307.92
P.G. 307.00

0.50%

-3.17%

PVC 7435+00.00
ELEV. 304.75

PVT 7435+00.00
ELEV. 304.75

PVC 7436+00.00
ELEV. 301.58

PROFILE GRADE

END GRADING STA. 7437+70.00 ELEV. 297.64

VC=400.00'
K 99.50

FUTURE CONSTRUCTION

PVT 7440+00.00
ELEV. 296.94

0.85%

C.L. MEDIAN I-40
STA. 7441+27.45, 57.92' RT. =
C.L. RAMP 2
STA. 7440+77.95, 7.50' LT.
ELEV. 297.60

EXISTING GROUND

5.15% RIGHT DITCH GRADE

4.41% RIGHT DITCH GRADE

2.80% RIGHT DITCH GRADE

0.00% RIGHT DITCH GRADE

+74.42 RT. 275.08

+37.00 RT. 273.32

+75.00 RT. 273.32

+70.00 RT. 289.79

+40.00 RT. 277.94

PVI 7438+00.00
ELEV. 295.24
P.G. 297.25

F.L. = 272.58 (LT.)
F.L. = 273.32 (RT.)

F.L. = 281.63 (LT.)
F.L. = 277.94 (RT.)

PN: 84
PD: 5/8" REBAR W/2" CAP
ST: 7433+40.87
OF: 418.28' LT
ZC: 280.25

PN: 85
PD: ⅝" REBAR W/2" CAP
ST: 7438+98.61
OF: 68.39' LT
ZC: 295.32

330 320 310 300 290 280 270 260 250 240

7431+00 7432+00 7433+00 7434+00 7435+00 7436+00 7437+00 7438+00 7439+00 7440+00 7441+00 7442+00 7443+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER

8-21-13

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WORKSPACE: AHTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	59	237

(2) PLAN & PROFILE - RAMP 3

RAMP 3

C.L. MERGED RAMPS 3 & 4
C.L. MERGED RAMP 3 & 4 PC STA. 7449+63.52 =
C.L. RAMP 3 STA. 7441+34.94, 16.50' RT.
C.L. RAMP 4 PT STA. 7449+63.52, 16.50' RT.

STA. 7444+40 CONSTRUCT
24" X 87' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
050 = 19 CFS DA = 5 ACRES

C.L. RAMP 3
P.I. = 7448+39.47
Δ = 52°27'29.7" LT.
D = 8°15'00"
T = 342.17
L = 635.86
P.C. = 7444+97.30
P.T. = 7451+33.15
e = 0.100'/'
Ls = 290'

C.L. RAMP 3
P.I. = 7457+20.56
Δ = 5°42'30.0" LT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. = 7456+25.34
P.T. = 7458+15.62
e = NA
Ls = NA

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
7441+35	7442+00	LT. = 65 LIN. FT.	6'-0"	43

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
ODD P. MUELLER
8-21-13

CONSTRUCTION LIMITS
PROPOSED R/W, C/A & FENCE
FUTURE MEDIAN BARRIER WALL
PRESERVE VEGETATION
FUTURE CONSTRUCTION
C.L. RAMP 3
C.L. RAMP 4
C.L. MEDIAN I-40
EXISTING R/W, C/A & FENCE
CONSTRUCTION LIMITS
PRESERVE VEGETATION
EXISTING R/W, C/A & FENCE

MERGED RAMP 3 & 4
STA. 7449+75 CONSTRUCT
24" X 140' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
050 = 12 CFS DA = 4 ACRES

C.L. MERGED RAMPS 3 & 4
P.I. = 7460+10.17
Δ = 132°48'11.0" LT.
D = 12°31'51.2
T = 1046.65
L = 1059.81
P.C. = 7449+63.52
P.T. = 7460+23.33
e = 0.100'/'
Ls = 300'

C.L. RAMP 4
P.I. = 7448+15.69
Δ = 121°28'29.7" LT.
D = 13°00'00"
T = 786.59
L = 934.42
P.C. = 7440+29.10
P.T. = 7449+63.52
e = 0.100'/'
Ls = 300'

STA. 7441+34.94 SUPERELEVATION (S.E. = .0525'/')
STA. 7443+16.12 END SUPERELEVATION
STA. 7443+16.12 BEGIN SUPERELEVATION
STA. 7446+06.12 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7450+60.65 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7453+50.65 END SUPERELEVATION

C.L. RAMP 3
STA. 7441+34.94, 7.5' RT. =
STA. MEASURED ALONG C.L. RAMPS 3 & 4
C.L. MERGED RAMPS 3 & 4
STA. 7449+63.52, 9.0' RT.
ELEV. 292.66

PVC 7441+41.00
ELEV. 292.73
+34.94 LT. 278.09

5.68% LEFT DITCH GRADE
1.12% LEFT DITCH GRADE
1.43% LEFT DITCH GRADE

+00.00 LT. 281.79
PVT 7442+91.00
ELEV. 293.87
+40.00 LT. 284.47
+00.00 LT. 285.33

PVI 7442+16.00
ELEV. 295.70
P.G. 293.50
1.30%
VC=150.00'
K 138.89

F.L. = 284.65 (RT.)
F.L. = 284.47 (LT.)

PROFILE GRADE
0.22%
EXISTING GROUND
END GRADING
STA. 7450+00.00
ELEV. 295.42
FUTURE CONSTRUCTION

C.L. MEDIAN I-40
STA. 7455+91.92
82.78' RT.
RAMP 3
STA. 7453+88.97, 7.5' RT.
ELEV. 296.28

PN: 86
PD: 5/8" REBAR W/2" CAP
ST: 7448+15.95
OF: 275.95' RT
ZC: 297.54

PN: 87
PD: 5/8" REBAR W/2" CAP
ST: 7455+34.02
OF: 55.10' RT
ZC: 294.89

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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	60	237

(2) PLAN & PROFILE - RAMP 4

C.L. MERGED RAMPS 3 & 4
P.I. = 7460+10.17
Δ = 132°48'11.0" LT.
D = 12°31'51.2
T = 1046.65
L = 1059.81
P.C. = 7449+63.52
P.T. = 7460+23.33
e = 0.100'/'
Ls = 300'

C.L. RAMP 4
P.I. = 7448+15.69
Δ = 121°28'29.7" LT.
D = 13°00'00"
T = 786.59
L = 934.42
P.C. = 7440+29.10
P.T. = 7449+63.52
e = 0.100'/'
Ls = 300'

MERGED RAMP 3 & 4
STA. 7449+75 CONSTRUCT
24" X 140' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 12 CFS DA = 4 ACRES

C.L. MERGED RAMP 3 & 4 PC STA. 7449+63.52 =
C.L. RAMP 3 STA. 7441+34.94, 16.50' LT.
C.L. RAMP 4 PT STA. 7449+63.52, 16.50' RT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11855
TODD E. MUELLER
8-21-13

RAMP 4

STA. 7439+17.80 BEGIN SUPERELEVATION
STA. 7442+17.80 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7449+63.52 MAXIMUM SUPERELEVATION (S.E. = .100'/')

C.L. MEDIAN I-40
STA. 7441+06.21, 57.71' LT.
C.L. RAMP 4
STA. 7441+05.30, 7.5' RT.
ELEV. 297.72

PVI 7444+00.00
ELEV. 298.60
P.G. 298.20

PROFILE GRADE

0.30%

VC=200.00'
K 125.00

-0.69% LEFT DITCH GRADE

-1.30%

-0.67% LEFT DITCH GRADE

EXISTING GROUND

+00.00 LT. 291.39

PVC 7443+00.00
ELEV. 298.30

+00.00 LT. 289.32

PVT 7445+00.00
ELEV. 297.30

+50.00 LT. 281.61

+63.52 LT. 280.85

C.L. RAMP 4
STA. 7449+63.52, 7.5' RT.
C.L. MERGED RAMPS 3 & 4
STA. 7449+63.52, 9.0' RT.
ELEV. 291.27

PN: 85
PD: 5/8" REBAR W/2" CAP
ST: 7438+91.87
OF: 77.01' RT
ZC: 295.32

PN: 86
PD: 5/8" REBAR W/2" CAP
ST: 7444+29.87
OF: 405.69' RT
ZC: 297.54

330 320 310 300 290 280 270 260 250 240

7440+00 7441+00 7442+00 7443+00 7444+00 7445+00 7446+00 7447+00 7448+00 7449+00 7450+00

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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	61	237

(2) PLAN & PROFILE - MERGED RAMPS 3 & 4

C.L. MERGED RAMPS 3 & 4
P. I. = 7460+10.17
Δ = 132°48'11.0" LT.
D = 12°31'51.2
T = 1046.65
L = 1059.81
P.C. = 7449+63.52
P.T. = 7460+23.33
e = 0.100'/'
Ls = 300'

C.L. RAMP 4
P. I. = 7448+15.69
Δ = 121°28'29.7" LT.
D = 13°00'00"
T = 786.59
L = 934.42
P.C. = 7440+29.10
P.T. = 7449+63.52
e = 0.100'/'
Ls = 300'

C.L. MERGED RAMP 3 & 4 PC STA. 7449+63.52 =
C.L. RAMP 3 STA. 7441+34.94, 16.50' LT.
C.L. RAMP 4 PT STA. 7449+63.52, 16.50' RT.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
7455+77	7457+00	LT. = 123 LIN. FT.	6'-0"	82
7449+64	7450+00	RT. = 36 LIN. FT.	6'-0"	24

C.L. MOORE ACCESS RD.
P. I. = 11+89.76
Δ = 72°46'33.2" LT.
D = 28°00'00"
T = 150.80
L = 259.91
P.C. = 10+38.96
P.T. = 12+98.87
e = NA
Ls = NA

STA. 7449+75 CONSTRUCT
24" X 140' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 12 CFS DA = 4 ACRES

STA. 7453+75 CONSTRUCT
24" X 126' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 17 CFS DA = 8 ACRES

STA. 7455+77 CONSTRUCT
24" X 130' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 14 CFS DA = 5 ACRES

STA. 7449+63.52 LT. LANES SUPERELEVATION (S.E. = .100'/')
STA. 7449+63.52 RT. LANES SUPERELEVATION (S.E. = .0525'/')
STA. 7450+82.34 RT. LANES MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7459+48.93 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7460+23.33 SUPERELEVATION (S.E. = .070'/')

PN: 85
PD: 5/8" REBAR W/2" CAP
ST: 7453+12.09
OF: 992.86' LT
ZC: 295.32

MERGED RAMPS 3 & 4

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REVISED DATE:

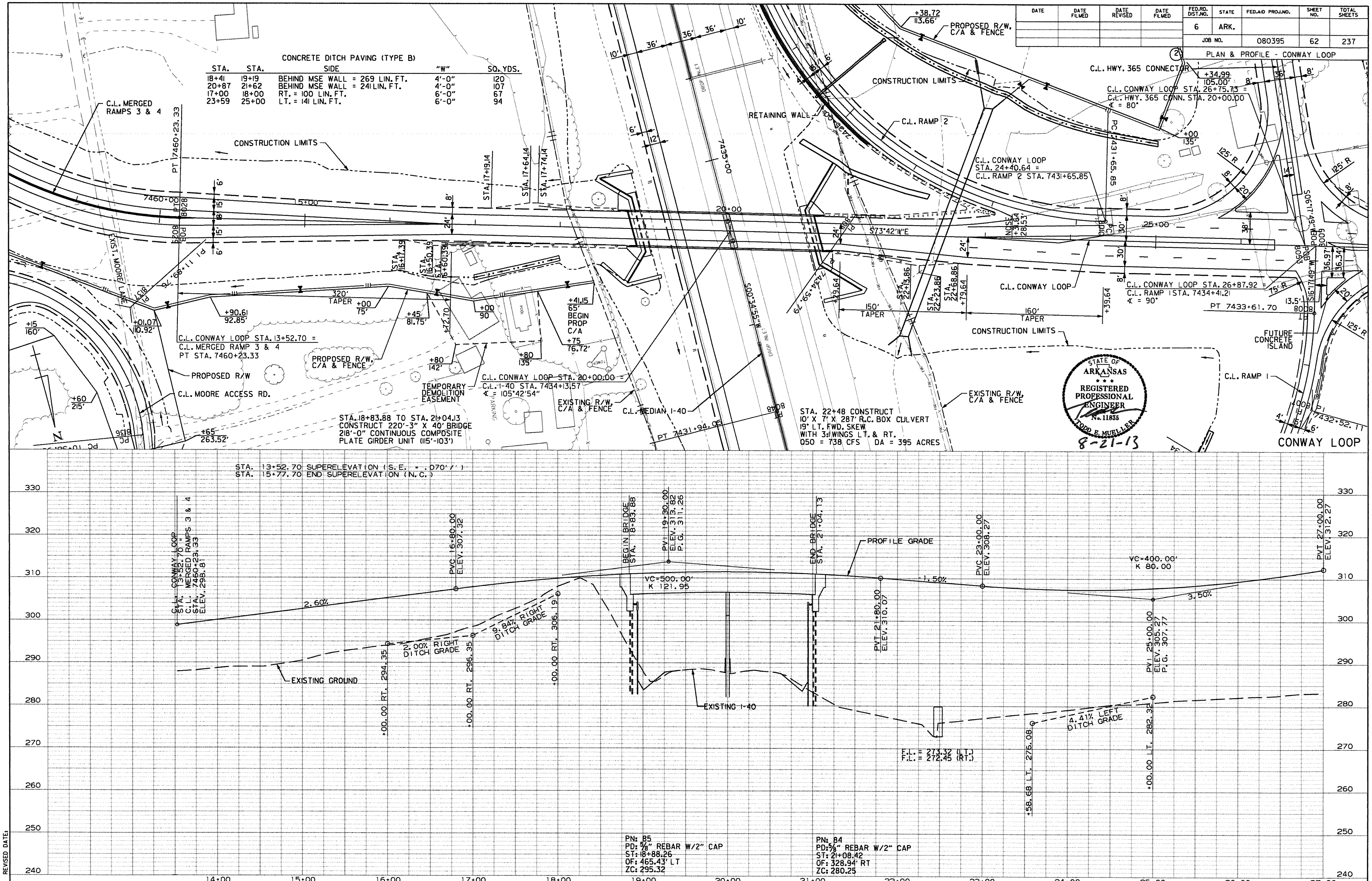
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD F. MUELLER
8-21-13

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	62	237

PLAN & PROFILE - CONWAY LOOP

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
18+41	19+19	BEHIND MSE WALL = 269 LIN. FT.	4'-0"	120
20+87	21+62	BEHIND MSE WALL = 241 LIN. FT.	4'-0"	107
17+00	18+00	RT. = 100 LIN. FT.	6'-0"	67
23+59	25+00	LT. = 141 LIN. FT.	6'-0"	94



C.L. MERGED RAMPS 3 & 4
CONSTRUCTION LIMITS
RETAINING WALL
C.L. RAMP 2
C.L. HWY. 365 CONNECTOR
PROPOSED R/W, C/A & FENCE
C.L. CONWAY LOOP STA. 26+75.73 = C.L. HWY. 365 CONN. STA. 20+00.00 ∆ = 80°
C.L. CONWAY LOOP STA. 24+40.64 = C.L. RAMP 2 STA. 7431+65.85
C.L. CONWAY LOOP
C.L. CONWAY LOOP STA. 26+87.92 = C.L. RAMP 1 STA. 7434+41.21 ∆ = 90°
PT 7433+61.70
FUTURE CONCRETE ISLAND
C.L. RAMP 1
S73°42'11"E
320' TAPER
150' TAPER
160' TAPER
C.L. CONWAY LOOP STA. 13+52.70 = C.L. MERGED RAMP 3 & 4 PT STA. 7460+23.33
PROPOSED R/W
C.L. MOORE ACCESS RD.
EXIST. MOORE LANE
PROPOSED R/W, C/A & FENCE
TEMPORARY DEMOLITION EASEMENT
C.L. CONWAY LOOP STA. 20+00.00 = C.L. I-40 STA. 7434+13.57 ∆ = 105°42'54"
EXISTING R/W, C/A & FENCE
C.L. MEDIAN I-40
PT 7431+94.05
STA. 18+83.88 TO STA. 21+04.13 CONSTRUCT 220'-3" X 40' BRIDGE 218'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (115'-103')
STA. 22+48 CONSTRUCT 10' X 7' X 287' R.C. BOX CULVERT 19° LT. FWD. SKEW WITH 3:1 WINGS LT. & RT. Q50 = 738 CFS DA = 395 ACRES
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11835 TODD E. MUELLER
8-21-13
CONWAY LOOP
STA. 13+52.70 SUPERELEVATION (S.E. = .070'/')
STA. 15+77.70 END SUPERELEVATION (N.C.)
C.L. CONWAY LOOP STA. 13+52.70 = C.L. MERGED RAMPS 3 & 4 STA. 7460+23.33 ELEV. 298.81
PVC 16+80.00 ELEV. 307.32
BEGIN BRIDGE STA. 18+83.88
PVI 19+30.00 ELEV. 313.82 P.G. 311.26
VC=500.00' K 121.95
END BRIDGE STA. 21+04.13
PROFILE GRADE
PVT 21+80.00 ELEV. 310.07
PVC 23+00.00 ELEV. 308.27
VC=400.00' K 80.00
PVI 25+00.00 ELEV. 305.27 P.G. 307.77
PVT 27+00.00 ELEV. 312.27
2.60%
-1.50%
3.50%
2.00% RIGHT DITCH GRADE
9.84% RIGHT DITCH GRADE
4.41% LEFT DITCH GRADE
EXISTING GROUND
EXISTING I-40
+00.00 RT. 294.35
+00.00 RT. 296.35
+00.00 RT. 306.19
+58.68 LT. 276.08
+00.00 LT. 282.32
F.L. = 273.32 (LT.)
F.L. = 272.45 (RT.)
PN: 85 PD: 5/8" REBAR W/2" CAP ST: 18+88.26 OF: 465.43' LT ZC: 295.32
PN: 84 PD: 5/8" REBAR W/2" CAP ST: 21+08.42 OF: 328.94' RT ZC: 280.25

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WORKSPACE: AHTD
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REVISED DATE:

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				6	ARK.			
				JOB NO.		080395	63	237

(2) PLAN & PROFILE - CONWAY LOOP

STA. 28+50.31 TO STA. 30+87.49
CONSTRUCT 237'-2⅛" X 64' BRIDGE
235'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (110'-125')

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
28+04	28+63	BEHIND MSE WALL = 299 LIN. FT.	4'-0"	133
30+75	31+49	BEHIND MSE WALL = 321 LIN. FT.	4'-0"	143
32+00	33+00	LT. = 100 LIN. FT.	6'-0"	67
32+00	33+00	RT. = 100 LIN. FT.	6'-0"	67

C.L. CONWAY LOOP
P.I. = 37+32.12
Δ = 47°45'04.5" RT.
D = 4°00'00"
T = 634.02
L = 1193.78
P.C. = 30+98.10
P.T. = 42+91.88
e = NA
Ls = NA

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11830
TODD E. MUELLER
8-21-13

STA. 33+00.00 END GRADING
JOB 080395

C.L. HWY. 365
C.L. HWY. 365 CONNECTOR
EXIST. UPRR
EXIST. STURGIS RD.
PERMANENT CONSTRUCTION EASEMENT
PROPOSED R/W
CONSTRUCTION LIMITS
C.L. CONWAY LOOP STA. 29+15.61 = C.L. HWY. 365 STA. 439+72.34
Δ = 95°00'42"
C.L. CONWAY LOOP
FUTURE CONCRETE BARRIER WALL
PC 439+52.50
S73°42'11"E
PC 804L
N11°24'03"E
PC 30+98.10
PI 37+32.12
PROPOSED R/W JOB 080430
FUTURE CONSTRUCTION
JOB NO. 080395
JOB NO. 080430
S16°17'49"W
160' TAPER
CONSTRUCTION LIMITS
C.L. RAMP 1
PROPOSED R/W, C/A & FENCE
C.L. HWY. 365
PROPOSED R/W
CONWAY LOOP

PROFILE GRADE
EXISTING GROUND
PVI 27+00.00 ELEV. 312.27
PVC 28+40.00 ELEV. 317.17
BEGIN BRIDGE STA. 28+50.31
END BRIDGE STA. 30+87.49
PVI 32+40.00 ELEV. 331.17 P.G. 326.15
END GRADING STA. 33+00.00 ELEV. 325.77
VC=800.00' K 159.36
PVT 36+40.00 ELEV. 325.09
3.50%
1.52%
3H
2.20% LEFT DITCH GRADE
1.10% RIGHT DITCH GRADE
3.63% LEFT DITCH GRADE
3.50% RIGHT DITCH GRADE
+00.00 LT. 288.37
+00.00 RT. 288.71
+00.00 LT. 290.58
+00.00 RT. 289.81
+00.00 LT. 294.20
+00.00 RT. 293.31

PN: 8
PD: 5/8" REBAR W/2" CAP
ST: 35+51.87
OF: 113.83' RT
ZC: 303.11

27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00
340 330 320 310 300 290 280 270 260 250

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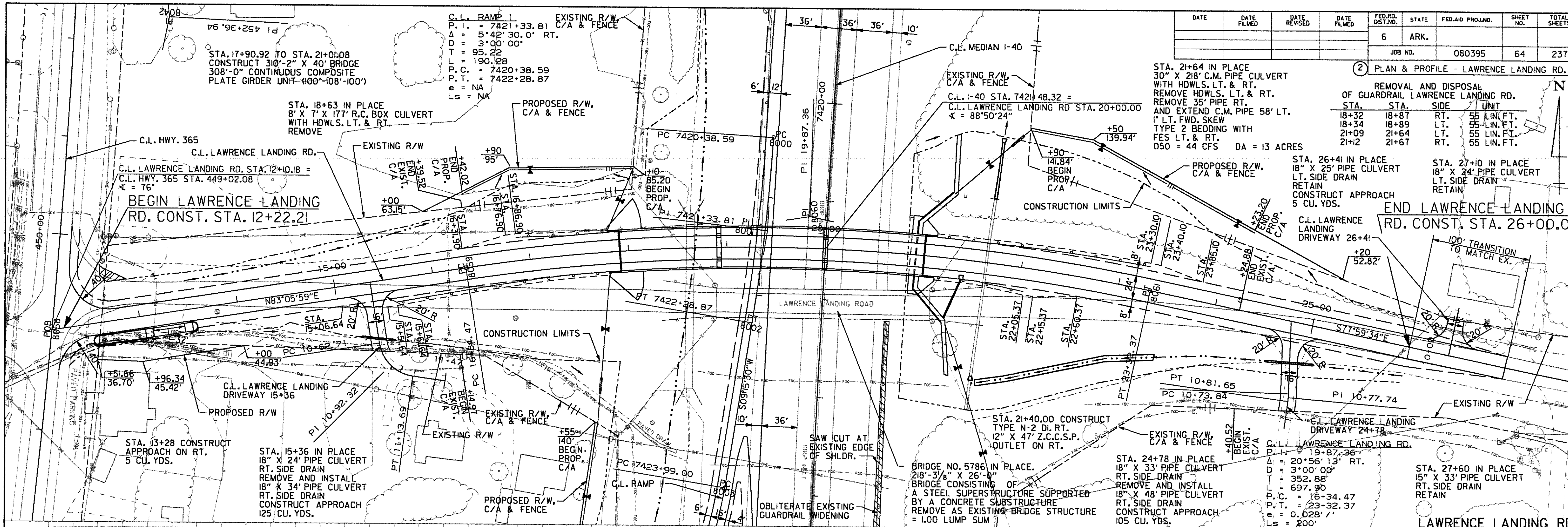
				6	ARK.			
				JOB NO.		080395	64	237

(2) PLAN & PROFILE - LAWRENCE LANDING RD.



C.L. RAMP 1
P.I. = 7421+33.81
Δ = 5°42'30.0" RT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. = 7420+38.59
P.T. = 7422+28.87
e = NA
Ls = NA
EXISTING R/W C/A & FENCE
STA. 17+90.92 TO STA. 21+01.08 CONSTRUCT 310'-2" X 40' BRIDGE 308'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (100'-108'-100')
STA. 18+63 IN PLACE 8' X 7' X 177' R.C. BOX CULVERT WITH HDWLS. LT. & RT. REMOVE
PROPOSED R/W, C/A & FENCE
C.L. HWY. 365
C.L. LAWRENCE LANDING RD.
EXISTING R/W
C.L. LAWRENCE LANDING RD. STA. 12+10.18 = C.L. HWY. 365 STA. 449+02.08 ∡ = 76°
BEGIN LAWRENCE LANDING RD. CONST. STA. 12+22.21
C.L. MEDIAN I-40
EXISTING R/W, C/A & FENCE
C.L. I-40 STA. 7421+48.32 = C.L. LAWRENCE LANDING RD STA. 20+00.00 ∡ = 88°50'24"
STA. 21+64 IN PLACE 30" X 218' C.M. PIPE CULVERT WITH HDWLS. LT. & RT. REMOVE HDWLS. LT. & RT. REMOVE 35' PIPE RT. AND EXTEND C.M. PIPE 58' LT. 1° LT. FWD. SKEW TYPE 2 BEDDING WITH FES LT. & RT. Q50 = 44 CFS DA = 13 ACRES
REMOVAL AND DISPOSAL OF GUARDRAIL LAWRENCE LANDING RD.
STA. | STA. | SIDE | UNIT
18+32 | 18+87 | RT. | 55 LIN. FT.
18+34 | 18+89 | LT. | 55 LIN. FT.
21+09 | 21+64 | LT. | 55 LIN. FT.
21+12 | 21+67 | RT. | 55 LIN. FT.
N
STA. 26+41 IN PLACE 18" X 25' PIPE CULVERT LT. SIDE DRAIN RETAIN CONSTRUCT APPROACH 5 CU. YDS.
STA. 27+10 IN PLACE 18" X 24' PIPE CULVERT LT. SIDE DRAIN RETAIN
END LAWRENCE LANDING RD. CONST. STA. 26+00.00
C.L. LAWRENCE LANDING DRIVEWAY 26+41
100' TRANSITION TO MATCH EX.
CONSTRUCTION LIMITS
N83°05'59"E
S77°59'34"E
LAWRENCE LANDING ROAD
PT 7422+28.87
PC 7420+38.59
C.L. LAWRENCE LANDING DRIVEWAY 15+36
PROPOSED R/W
PAVED PARKING
STA. 13+28 CONSTRUCT APPROACH ON RT. 5 CU. YDS.
STA. 15+36 IN PLACE 18" X 24' PIPE CULVERT RT. SIDE DRAIN REMOVE AND INSTALL 18" X 34' PIPE CULVERT RT. SIDE DRAIN CONSTRUCT APPROACH 125 CU. YDS.
EXISTING R/W, C/A & FENCE
EXISTING R/W
PROPOSED R/W, C/A & FENCE
C.L. RAMP
PC 7423+99.00
SAW CUT AT EXISTING EDGE OF SHLDR.
OBLITERATE EXISTING GUARDRAIL WIDENING
BRIDGE NO. 5786 IN PLACE. 218'-3 1/8" X 26'-0" BRIDGE CONSISTING OF A STEEL SUPERSTRUCTURE SUPPORTED BY A CONCRETE SUBSTRUCTURE REMOVE AS EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM
STA. 21+40.00 CONSTRUCT TYPE N-2 DI. RT. 12" X 47' Z.C.C.S.P. OUTLET ON RT.
STA. 24+78 IN PLACE 18" X 33' PIPE CULVERT RT. SIDE DRAIN REMOVE AND INSTALL 18" X 48' PIPE CULVERT RT. SIDE DRAIN CONSTRUCT APPROACH 105 CU. YDS.
C.L. LAWRENCE LANDING DRIVEWAY 24+78
C.L. LAWRENCE LANDING RD.
P.I. = 19+87.36
Δ = 20°56'13" RT.
D = 3°00'00"
T = 352.88
L = 697.90
P.C. = 16+34.47
P.T. = 23+32.37
e = 0.028'/'
Ls = 200'
STA. 27+60 IN PLACE 15" X 33' PIPE CULVERT RT. SIDE DRAIN RETAIN
EXISTING R/W
LAWRENCE LANDING RD.

C.L. LAWRENCE LANDING STATIONING	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	TERMINAL ANCHOR POST (TYPE 1)
STA. 15+61.64 TO STA. 17+80.39 RT.	= 200 LIN. FT.	1 EACH	1 EACH
STA. 16+86.90 TO STA. 17+80.65 LT.	= 75 LIN. FT.	1 EACH	1 EACH
STA. 21+11.35 TO STA. 23+30.10 LT.	= 200 LIN. FT.	1 EACH	1 EACH
STA. 21+11.62 TO STA. 22+05.37 RT.	= 75 LIN. FT.	1 EACH	1 EACH

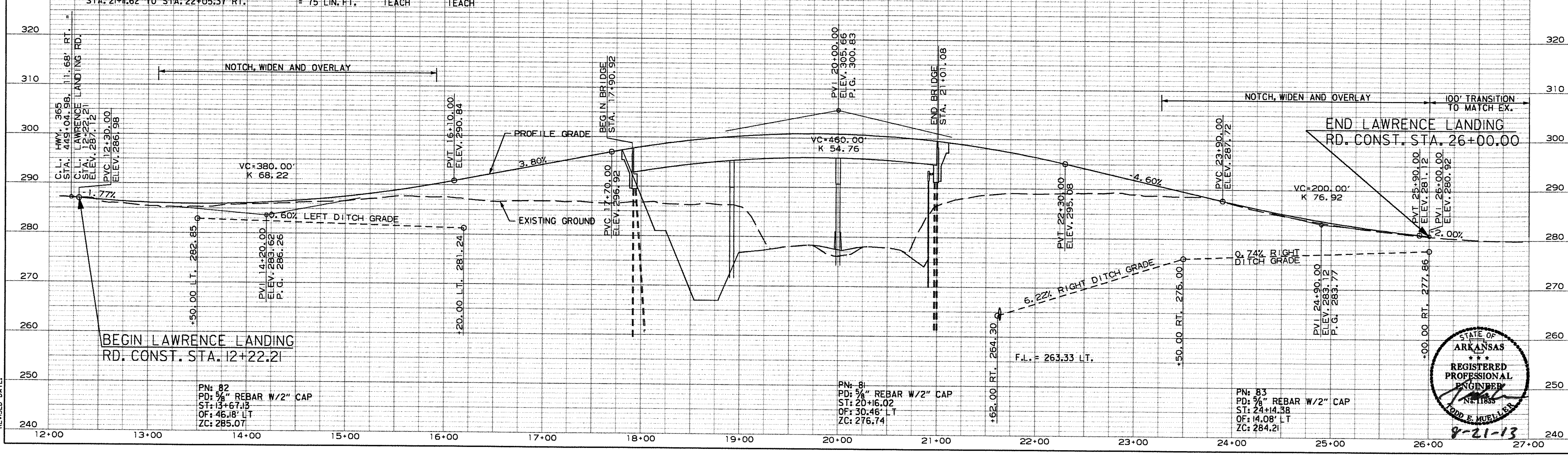
REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING

STA.	STA.	SIDE	UNIT
17+89	18+39	RT.	21 SQ. YDS.

STA. 14+84.47 BEGIN SUPERELEVATION
STA. 16+84.47 MAXIMUM SUPERELEVATION (S.E. = .028'/')
STA. 22+82.37 MAXIMUM SUPERELEVATION (S.E. = .028'/')
STA. 24+82.37 END SUPERELEVATION

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
20+92	21+38	BEHIND MSE WALL = 273 LIN. FT.	4'-0"	121
21+62	23+50	RT. = 188 LIN. FT.	6'-0"	125



C.L. HWY. 365 STA. 449+04.98, 111.68' RT. = C.L. LAWRENCE LANDING RD. STA. 12+22.21 ELEV. 287.12
PVC 12+30.00 ELEV. 286.98
NOTCH, WIDEN AND OVERLAY
VC=380.00' K 68.22
-1.77%
3.80%
PROFILE GRADE
PVT 16+10.00 ELEV. 290.84
0.60% LEFT DITCH GRADE
EXISTING GROUND
+50.00 LT. 282.85
PVI 14+20.00 ELEV. 283.62 P.G. 286.26
120.00 LT. 281.24
PVC 17+70.00 ELEV. 296.92
BEGIN BRIDGE STA. 17+90.92
PVI 20+00.00 ELEV. 305.66 P.G. 300.83
VC=460.00' K 54.76
END BRIDGE STA. 21+01.08
PVT 22+30.00 ELEV. 295.08
-4.60%
PVC 23+90.00 ELEV. 287.72
VC=200.00' K 76.92
NOTCH, WIDEN AND OVERLAY
100' TRANSITION TO MATCH EX.
END LAWRENCE LANDING RD. CONST. STA. 26+00.00
PVT 25+90.00 ELEV. 281.12
PVI 26+00.00 ELEV. 280.92
2.00%
0.74% RIGHT DITCH GRADE
6.22% RIGHT DITCH GRADE
+62.00 RT. 264.30
+50.00 RT. 276.00
PVI 24+90.00 ELEV. 283.12 P.G. 283.77
+00.00 RT. 277.86
F.L. = 263.33 LT.
BEGIN LAWRENCE LANDING RD. CONST. STA. 12+22.21
PN: 82 PD: 5/8" REBAR W/2" CAP ST: 13+67.13 OF: 46.18' LT ZC: 285.07
PN: 81 PD: 5/8" REBAR W/2" CAP ST: 20+16.02 OF: 30.46' LT ZC: 276.74
PN: 83 PD: 5/8" REBAR W/2" CAP ST: 24+14.38 OF: 14.08' LT ZC: 284.21
12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00
240 250 260 270 280 290 300 310 320 330

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11835 TODD E. MUELLER
8-21-13

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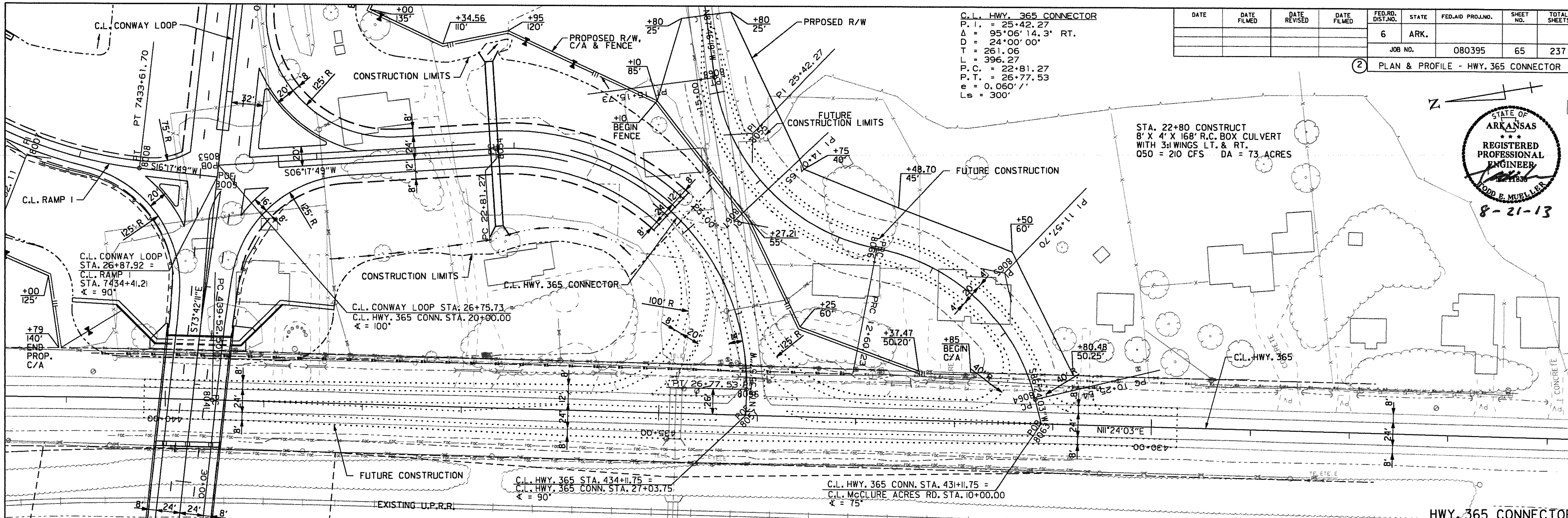
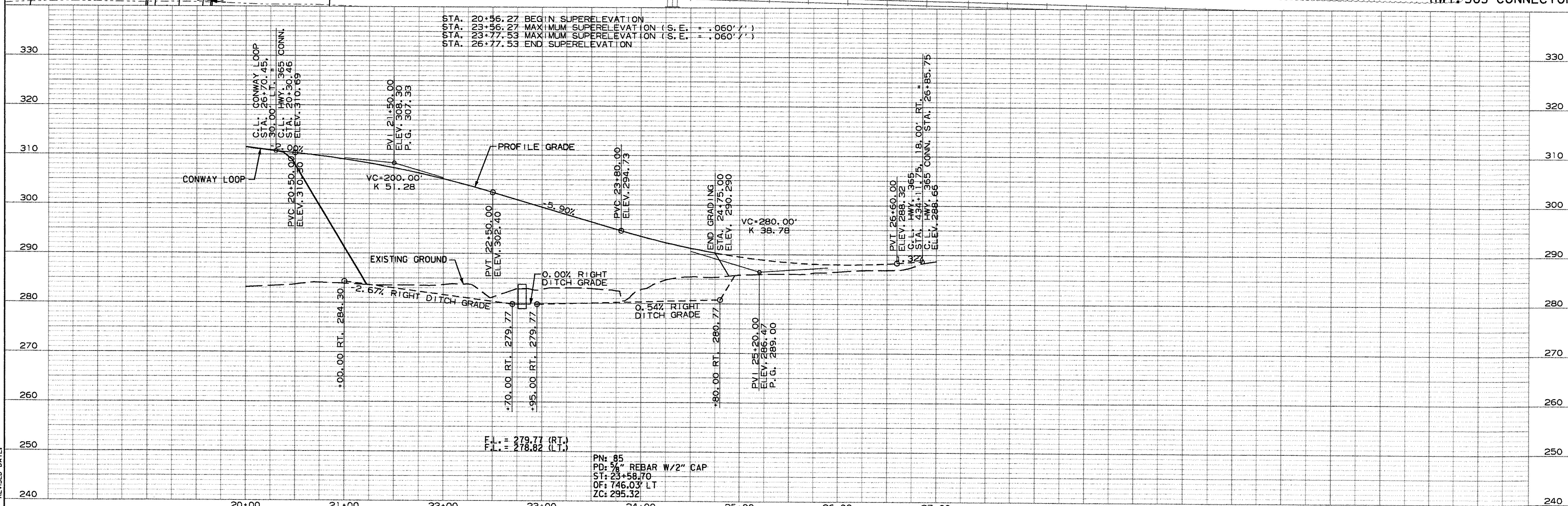
				6	ARK.			
				JOB NO.		080395	65	237

(2) PLAN & PROFILE - HWY. 365 CONNECTOR



C.L. HWY. 365 CONNECTOR
P.I. = 25+42.27
Δ = 95°06′14.3″ RT.
D = 24°00′00″
T = 261.06
L = 396.27
P.C. = 22+81.27
P.T. = 26+77.53
e = 0.060′/′
Ls = 300′
STA. 22+80 CONSTRUCT
8′ X 4′ X 168′ R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50 = 210 CFS DA = 73 ACRES
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER
8-21-13
C.L. CONWAY LOOP
PROPOSED R/W, C/A & FENCE
PRPOSED R/W
CONSTRUCTION LIMITS
FUTURE CONSTRUCTION LIMITS
FUTURE CONSTRUCTION
+10 BEGIN FENCE
C.L. RAMP 1
C.L. CONWAY LOOP STA. 26+87.92 = C.L. RAMP 1 STA. 7434+41.21 ∡ = 90°
C.L. CONWAY LOOP STA. 26+75.73 = C.L. HWY. 365 CONN. STA. 20+00.00 ∡ = 100°
C.L. HWY. 365 CONNECTOR
+79 140′ END PROP. C/A
+85 BEGIN C/A
C.L. HWY. 365
N11°24′03″E
S06°17′49″W
S73°42′11″E
PT 26+77.53
C.L. HWY. 365 STA. 434+11.75 = C.L. HWY. 365 CONN. STA. 27+03.75 ∡ = 90°
C.L. HWY. 365 CONN. STA. 431+11.75 = C.L. McCLURE ACRES RD. STA. 10+00.00 ∡ = 75°
EXISTING U.P.R.R.
HWY. 365 CONNECTOR



STA. 20+56.27 BEGIN SUPERELEVATION
STA. 23+56.27 MAXIMUM SUPERELEVATION (S.E. = .060′/′)
STA. 23+77.53 MAXIMUM SUPERELEVATION (S.E. = .060′/′)
STA. 26+77.53 END SUPERELEVATION
C.L. CONWAY LOOP STA. 26+70.45, 30.00′ LT. = C.L. HWY. 365 CONN. STA. 20+30.46 ELEV. 310.69
PVI 21+50.00 ELEV. 308.30 P.G. 307.33
PROFILE GRADE
CONWAY LOOP
PVC 20+50.00 ELEV. 310.30
VC=200.00′ K 51.28
-5.90%
PVT 22+50.00 ELEV. 302.40
PVC 23+80.00 ELEV. 294.73
END GRADING STA. 24+75.00 ELEV. 290.290
VC=280.00′ K 38.78
PVT 26+60.00 ELEV. 288.32
C.L. HWY. 365 STA. 434+11.75, 18.00′ RT. = C.L. HWY. 365 CONN. STA. 26+85.75 ELEV. 288.66
EXISTING GROUND
2.67% RIGHT DITCH GRADE
0.00% RIGHT DITCH GRADE
0.54% RIGHT DITCH GRADE
+00.00 RT. 284.30
+70.00 RT. 279.77
+95.00 RT. 279.77
+80.00 RT. 280.77
PVI 25+20.00 ELEV. 286.47 P.G. 289.00
F.L. = 279.77 (RT.)
F.L. = 278.82 (LT.)
PN: 85
PD: 5/8″ REBAR W/2″ CAP
ST: 23+58.70
OF: 746.03′ LT
ZC: 295.32

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REVISED DATE:

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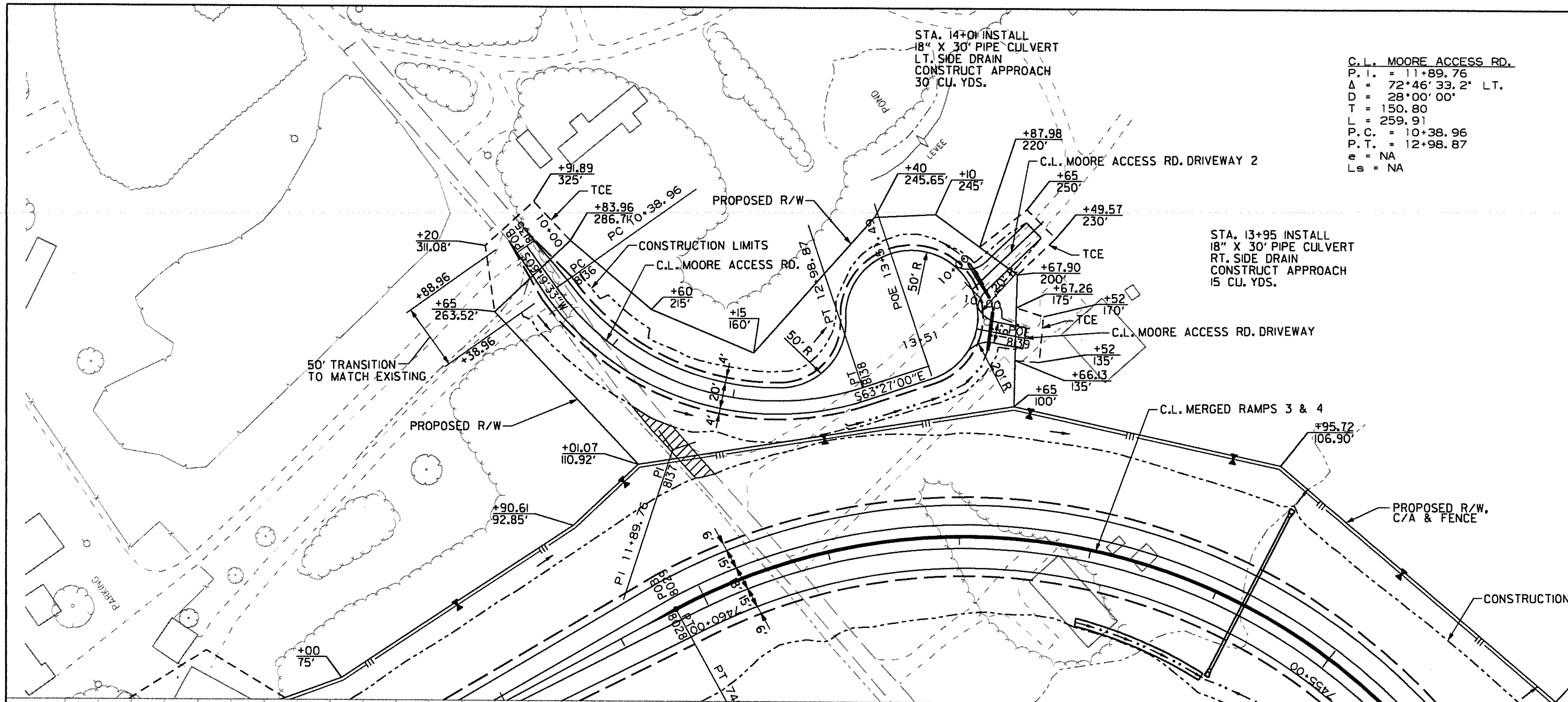
				6	ARK.			
				JOB NO.		080395	66	237

(2) PLAN & PROFILE - MOORE ACCESS RD.

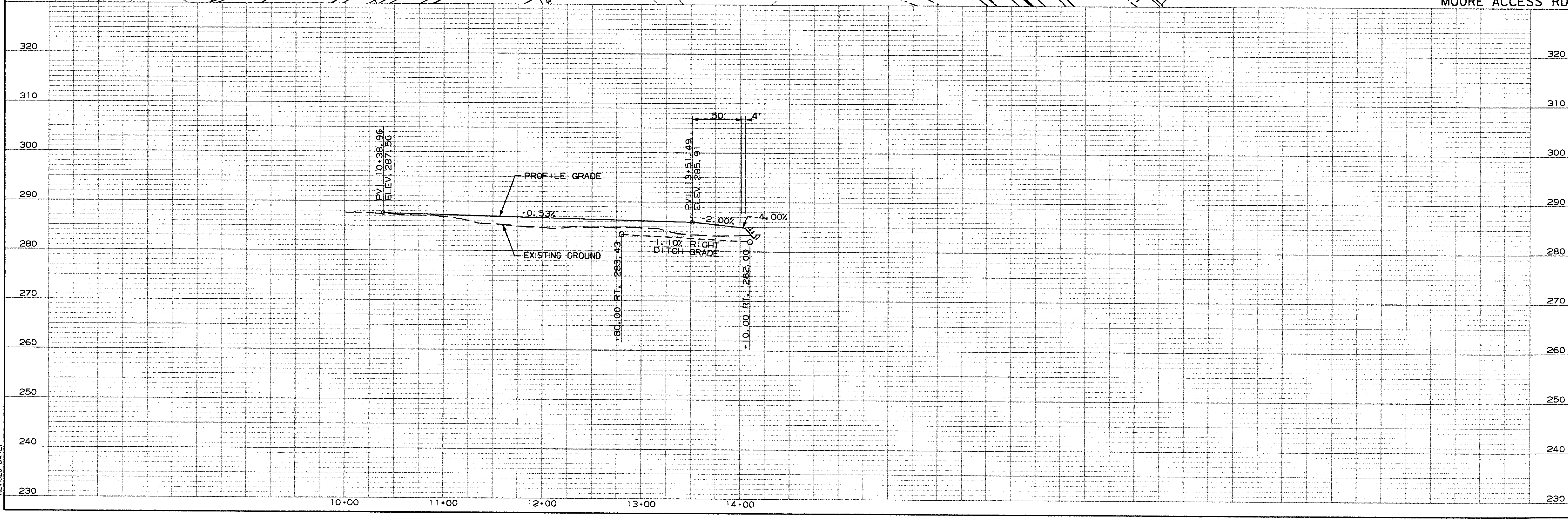
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11835 TODD E. MUELLER

8-21-13

C.L. MOORE ACCESS RD.
P.I. = 11+89.76
Δ = 72°46'33.2" LT.
D = 28°00'00"
T = 150.80
L = 259.91
P.C. = 10+38.96
P.T. = 12+98.87
e = NA
Ls = NA



MOORE ACCESS RD.



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REVISED DATE:

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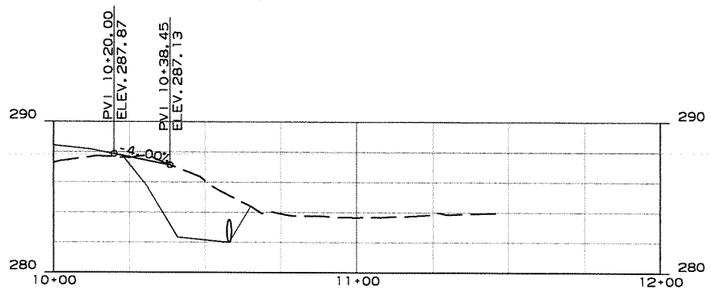
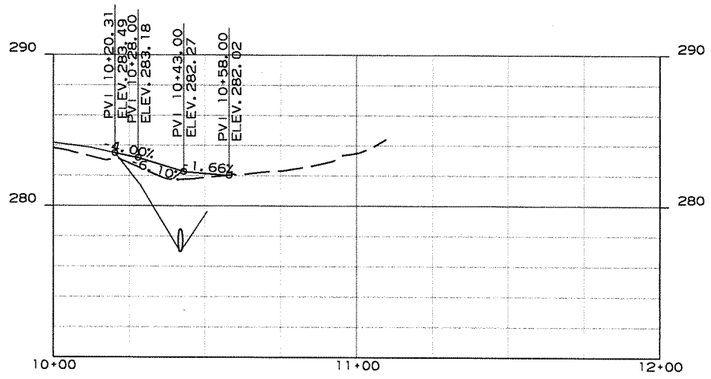
				6	ARK.			
				JOB NO.		080395	67	237
				(2) DRIVEWAY PROFILES				

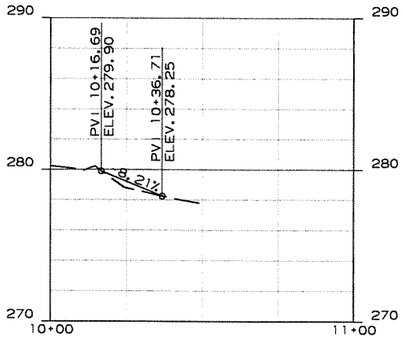
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TODD E. MUELLER
8-21-13



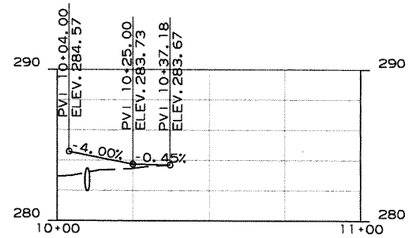
LAWRENCE LANDING DRIVEWAY 15+36



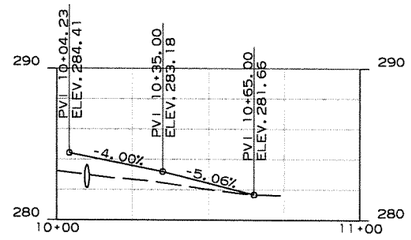
LAWRENCE LANDING DRIVEWAY 24+78



LAWRENCE LANDING DRIVEWAY 26+41



MOORE ACCESS RD. DRIVEWAY



MOORE ACCESS RD. DRIVEWAY 2

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WORKSPACE: AHTD
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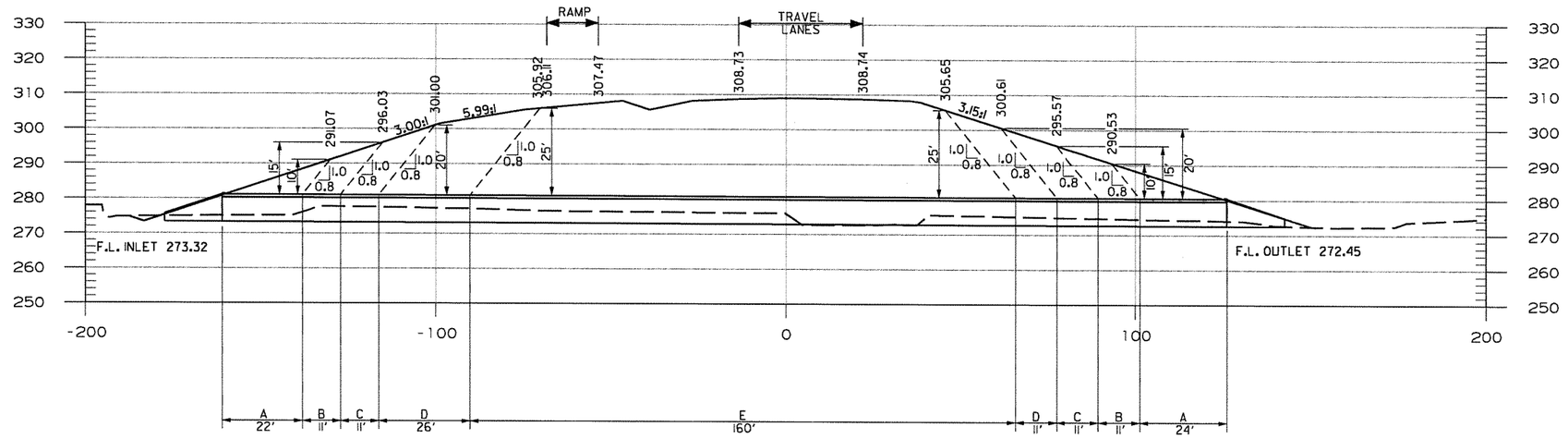
				6	ARK.			
				JOB NO.		080395	68	237

(2) CULVERT DIAGRAM

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11885
TODD E. MUELLER

8-21-13



CONWAY LOOP STATION 22+48 - CULVERT SECTION

10' X 7' X 287' R.C. BOX CULVERT
19° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.

CULVERT DIAGRAM

CGCarvestnl 8/9/2013 3:50:48 PM
WORKSPACE: AHTD
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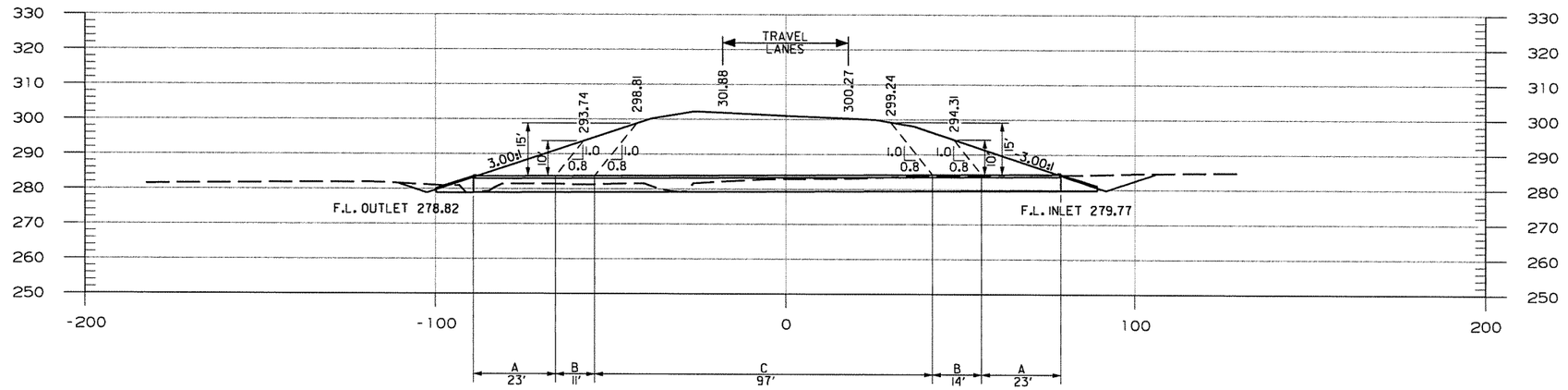
				6	ARK.			
				JOB NO.		080395	69	237

(2) CULVERT DIAGRAM

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11835
TODD E. MUELLER

8-21-13



HWY. 365 CONNECTOR STATION 22+80 - CULVERT SECTION

8' X 4' X 168' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.

CULVERT DIAGRAM

CGCervosInl 8/9/2013 3:51:26 PM
WORKSPACE: AHTD
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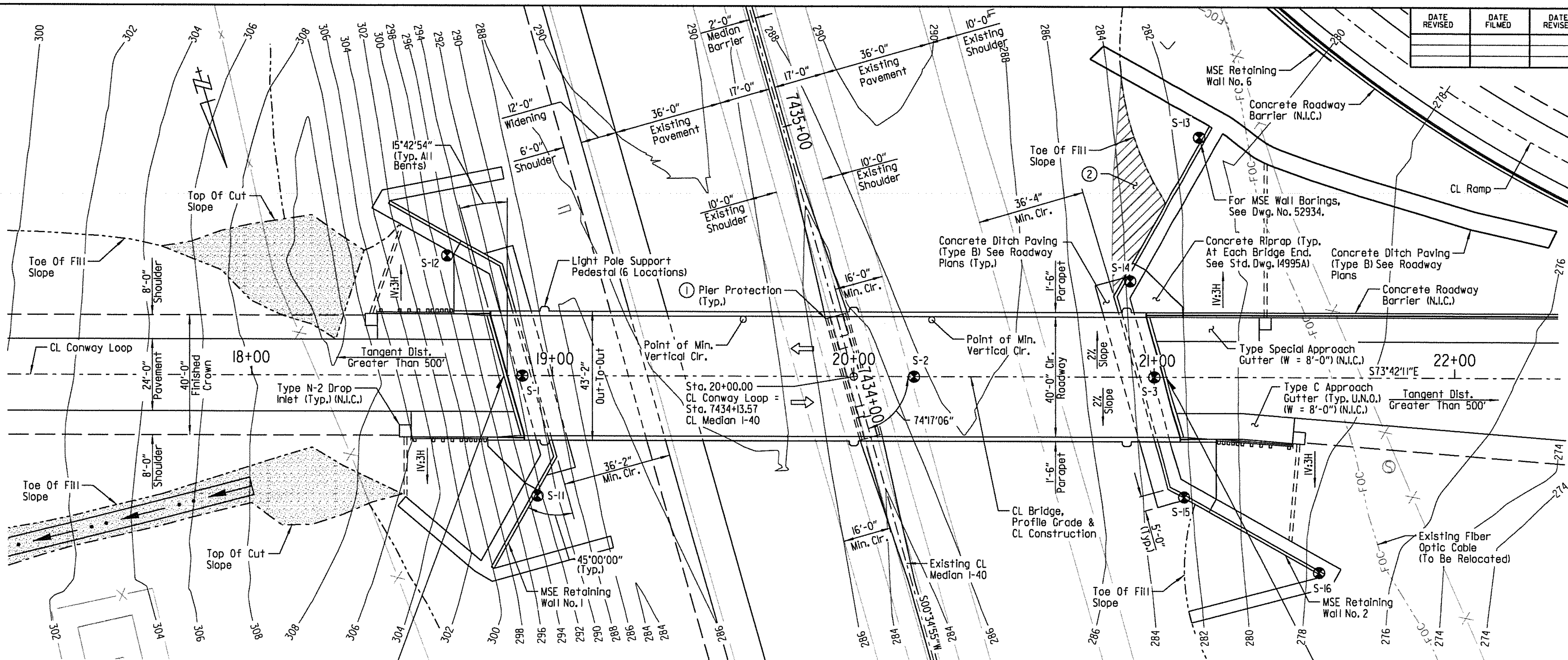
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	70	237
				(1) 07257		LAYOUT		52932



FOR R/W DATA, SEE ROADWAY PLANS

Note:
Use Type C Approach Gutters (W = 8'-0") at each end of Bridge (U.N.O.). Use Type Special Approach Gutter (W = 8'-0") as shown in plans (N.I.C.).

Use Type N-2 Drop Inlets at each end of bridge (N.I.C.).

For "GENERAL NOTES", "BORING LEGEND" & "N VALUES", see Dwg. No. 52933.

PVI Sta. 19+30.00
Elev. 313.82
V.C. = 500'
+2.60% -1.50%

VERTICAL CURVE DATA

Conway Loop
(Profile Grade Along CL Bridge)

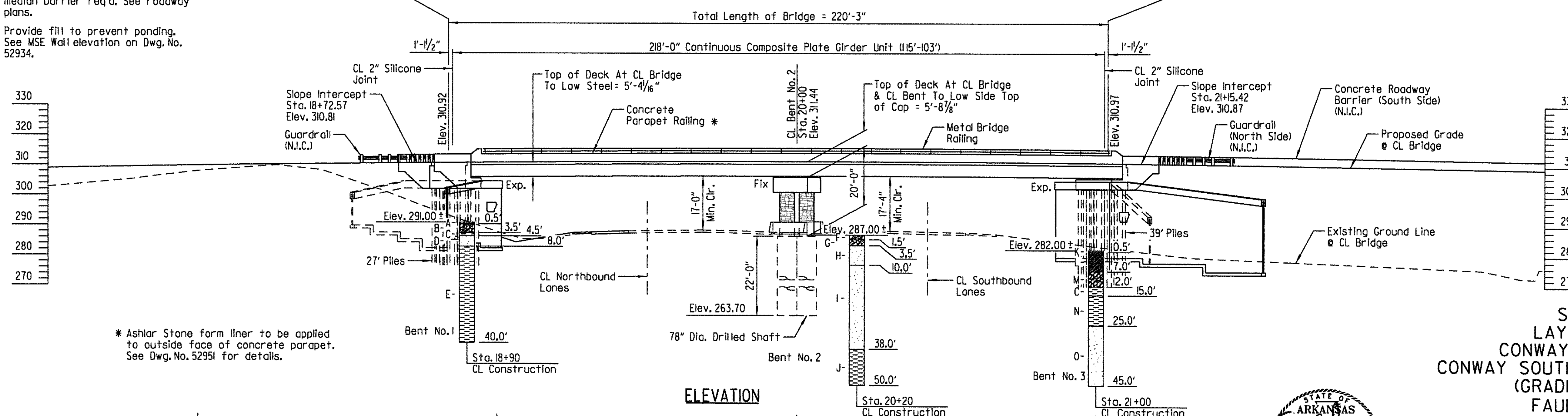
NOTE:
Stations and elevations shown are along CL Bridge. Elevations shown are at Working Point.

LEGEND

U.N.O. = Unless Noted Otherwise
N.I.C. = Not In Contract
FOC = Fiber Optic Cable

(1) Pier protection transition to median barrier req'd. See roadway plans.

(2) Provide fill to prevent ponding. See MSE Wall elevation on Dwg. No. 52934.



* Ashlar Stone form liner to be applied to outside face of concrete parapet. See Dwg. No. 52951 for details.

SHEET 1 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058
BRIDGE ENGINEER

DRAWN BY: HEW DATE: MAY 2011 FILENAME: B080395xl_L1.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: 1"=20'
DESIGNED BY: SRY DATE: MAY 2011
BRIDGE NO. 07257 DRAWING NO. 52932

saroberson 8/19/2013 3:03:26 PM
WORKSPACE: AHTD
L:\2009\090I7230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over I-40\90% Plans\CWAL over I-40 L0 1 of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	71	237
				(1) 07257		LAYOUT		52933

GENERAL NOTES

BENCH MARK: PN: 84, PD: 5/8" Rebar With 2" Cap, ST: 21+08.42
OF: 328.94' RT.
ZC: 280.25

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications For Highway Construction (2003 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010) with Current Interim Revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: I S_{DI} = 0.092 SITE CLASS: B

OPERATIONAL IMPORTANCE CATEGORY: TYPICAL

MATERIALS AND STRENGTHS:

Class S(AE) - Bridge Concrete (Superstructure)	f'c = 4,000 psi
Class S - Bridge Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 Or M5322, Type A, GR. 60)	fy = 60,000 psi
Structural Steel (AASHTO M270, GR. 50)	Fy = 50,000 psi
Structural Steel (AASHTO M270, GR. 36)	Fy = 36,000 psi

BORING LOGS: Boring logs may be obtained from Programs And Contracts Division.

FORM INSERT: State of Arkansas form insert to be used on MSE walls (4 locations). See Dwg. No. 52936.

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 97 tons and into the material designated as dark gray shale in the boring legend. Drive all piles to a minimum penetration of 5' below undercut. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

The Contractor may drive the piling in Bents 1 and 3 in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete, after any required preboring, and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction extending from bottom of the leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven through the open casings after embankment to bottom of cap is in place. Any required preboring will be measured from bottom of leveling pad. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill will not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12x53)".

PREBORING: Preboring may be required to obtain the minimum pile penetration requirements. If required, preboring at Bent 1 and 3 shall take place after excavation to the top of leveling pad is complete and shall be to a minimum depth of 3' into material designated as dark gray shale on the boring legend. The size and depth of preboring, will be determined in the field by the Engineer. The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored holes shall be backfilled with an approved non-shrink grout or other approved material to completely fill voids. The cost of preboring, temporary casings and backfill will not be paid for directly but will be considered subsidiary to the item "STEEL PILING (HP12x53)".

DRILLED SHAFTS: All drilled shafts shall be founded a minimum of 13'-0" into medium hard to hard gray and dark gray fine-grained sandstone as shown in the boring legend. No adjustment in plan tip elevation shall be made without prior approval from the Engineer. Methods of construction of the drilled shafts shall be in accordance with SP JOB 080395 "DRILLED SHAFT FOUNDATIONS".

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

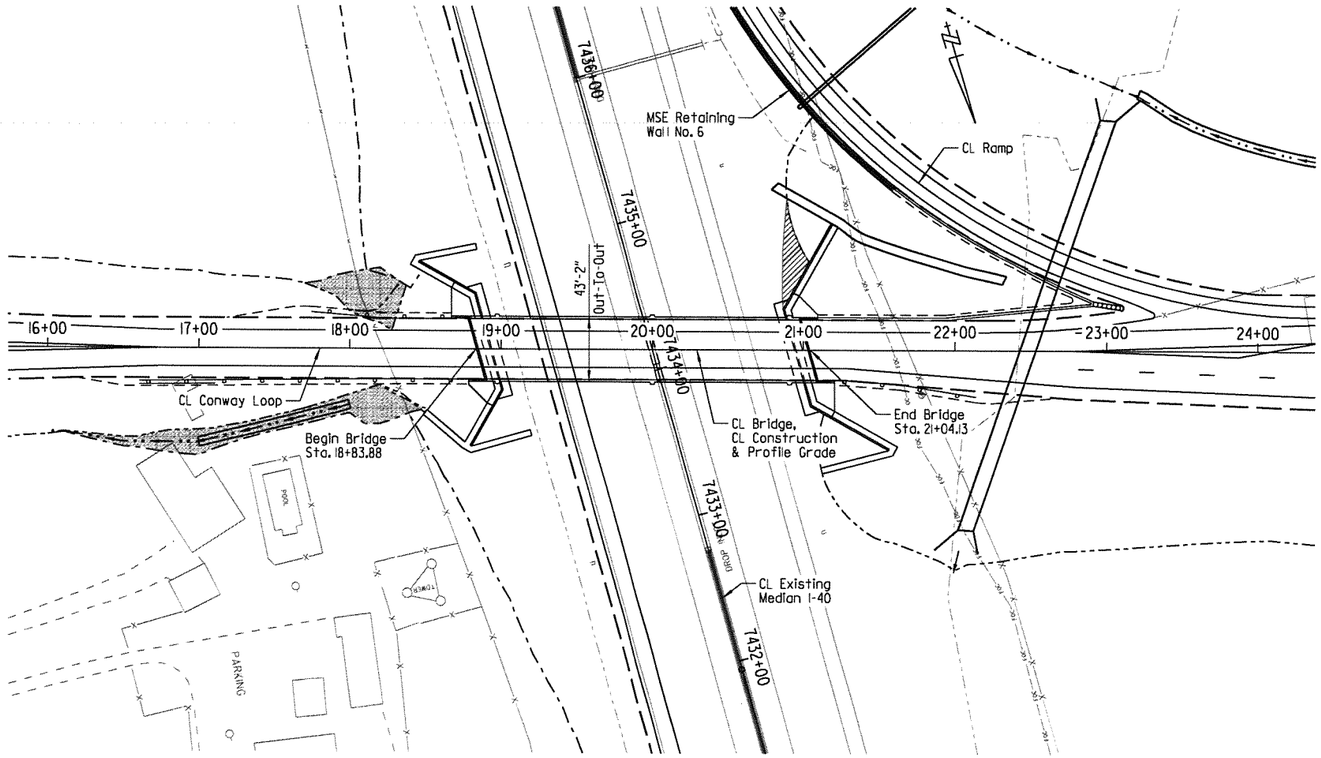
CLASS 1 PROTECTIVE SURFACE TREATMENT: Class 1 Protective Surface Treatment shall be applied to the roadway surface.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to all areas as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19(b)(3). Texture Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Black and shall match Federal Standard 595B, Color Chip No. 27038.

ELECTRICAL INFRASTRUCTURE: All work associated with the electrical lighting details shall be performed in accordance with JOB SP 080395 "ELECTRICAL SYSTEM INFRASTRUCTURE."

DETAIL DRAWINGS:	DRAWING NO:
End Bents	52937-52940
Intermediate Bent	52941-52942
218' Cont. Comp. Plate Girder Unit	52943-52953
Elastomeric Bearings	52954
Electrical Lighting Details	52955-52957
Concrete Riprap	14995A
Steel Piling	14995A



BORING LEGEND

A - Loose dark brown fine sandy silt
B - Very stiff to hard tan and gray silty clay
C - Soft gray tan and dark gray weathered shale
D - Medium hard gray weathered fine-grained sandstone
E - Medium soft dark gray shale
F - Stiff brown silty clay, sandy
G - Stiff to very stiff tan fine sandy clay
H - Medium soft reddish tan and tan weathered fine-grained sandstone
I - Medium hard to hard gray and dark gray fine-grained sandstone
J - Medium soft to medium hard dark gray shale
K - Loose brown fine sandy silt
L - Stiff tan fine sandy clay
M - Very stiff gray, tan and reddish tan silty clay
N - Soft to medium soft dark gray shale
O - Medium hard gray fine-grained sandstone
P - Soft reddish tan silty clay
Q - Medium hard reddish tan and tan weathered fine-grained sandstone
R - Soft reddish tan, tan and gray weathered shale
S - Stiff tan silty clay
T - Very stiff gray, tan and reddish tan fine sandy clay
U - Very stiff gray and tan silty clay
V - Soft gray, dark gray and maroon weathered shale
W - Dense tan silty fine sand
X - Stiff gray and tan fine sandy clay, silty
Y - Soft tan and gray weathered shale
Z - Stiff tan clayey silt, sandy
AA - Stiff gray, reddish tan and tan silty clay
AB - Firm tan silty clay
AC - Very stiff tan and gray silty clay
AD - Very soft gray and tan weathered shale

LOCATION SKETCH

N VALUES

Sta. 18+90 at CL Construction	Sta. 20+20 at CL Construction	Sta. 21+00 at CL Construction	Sta. 20+92, 32' Lt. Of CL Construction	Sta. 21+10, 40' Rt. Of CL Construction
0.5-1.5, N=50/9"	0.5-1.5, N=26	0.5-1.5, N=13	0.5-1.5, N=38	0.5-1.5, N=22
1.5-2.0, N=30/0"	2.5-3.0, N=30/0"	2.5-3.5, N=14	2.5-3.5, N=17	2.5-3.5, N=24
4.0-4.5, N=50/2"	3.5-4.0, N=50/0"	4.5-5.5, N=10	4.5-5.5, N=11	4.5-5.5, N=30
5.5-6.0, N=30/0"	8.5-9.0, N=50/0"	6.5-7.5, N=33	6.5-7.5, N=49	6.5-7.5, N=20
8.0-8.5, N=30/0"	13.5-14.0, N=50/0"	9.0-10.0, N=40	8.5-9.0, N=50/6"	9.0-10.0, N=33
13.0-13.5, N=30/0"	18.5-19.0, N=50/0"	14.0-14.5, N=50/3"	13.5-14.0, N=50/2"	13.5-14.0, N=50/6"
33.5-34.0, N=30/0"	23.5-24.0, N=50/0"	33.5-34.0, N=30/0"	18.0-18.5, N=30/0"	18.0-18.5, N=30/0"
	28.5-29.0, N=50/0"	38.5-39.0, N=30/0"		
	33.5-34.0, N=50/0"	43.5-44.0, N=30/0"		
	38.5-39.0, N=50/0"			
	43.5-44.0, N=50/0"			
	48.5-49.0, N=50/0"			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH B. YANCEY
8-22-13
BRIDGE ENGINEER

SHEET 2 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: JUNE 2011 FILENAME: B080395x1_L2.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: 1" = 50'
DESIGNED BY: SRY DATE: JUNE 2011
BRIDGE NO. 07257 DRAWING NO. 52933

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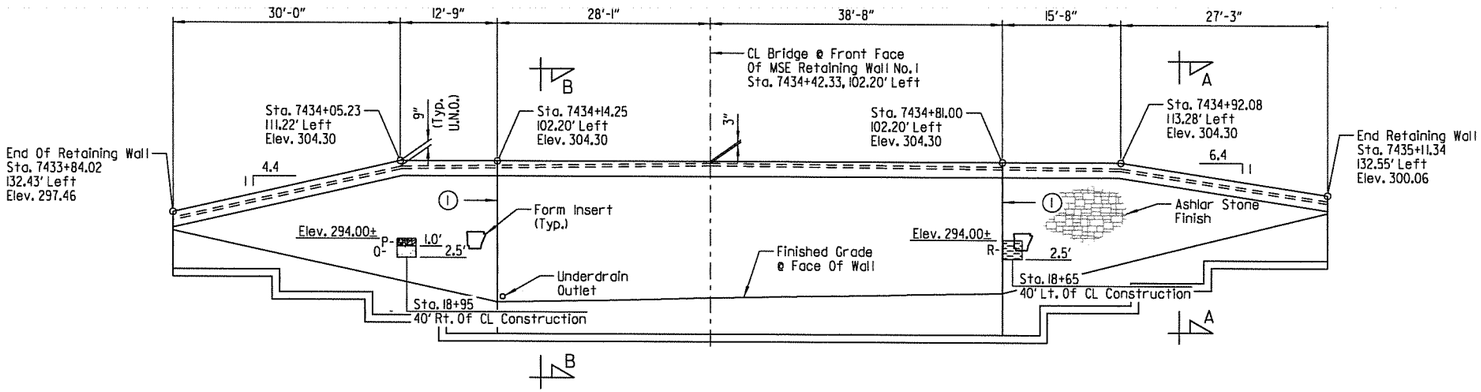
WORKSPACE: ANHD Bridge
DESIGN: 080230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over I-40\90% Plans\CWAL over I-40 LO 2 of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	72	237
				① 07257		LAYOUT		52934



ELEVATION - MSE RETAINING WALL NO.1
(Looking At Front Face of Wall)
Scale: NTS

NOTES:
For "GENERAL NOTES", "SECTION A-A" & "SECTION B-B", see Dwg. No. 52935.

Stationing shown is along existing CL Median I-40.

Offset dimensions are measured from existing CL Median I-40 to outside vertical face of MSE Retaining Wall.

For "FORM INSERT DETAILS", see Dwg. No. 52936.

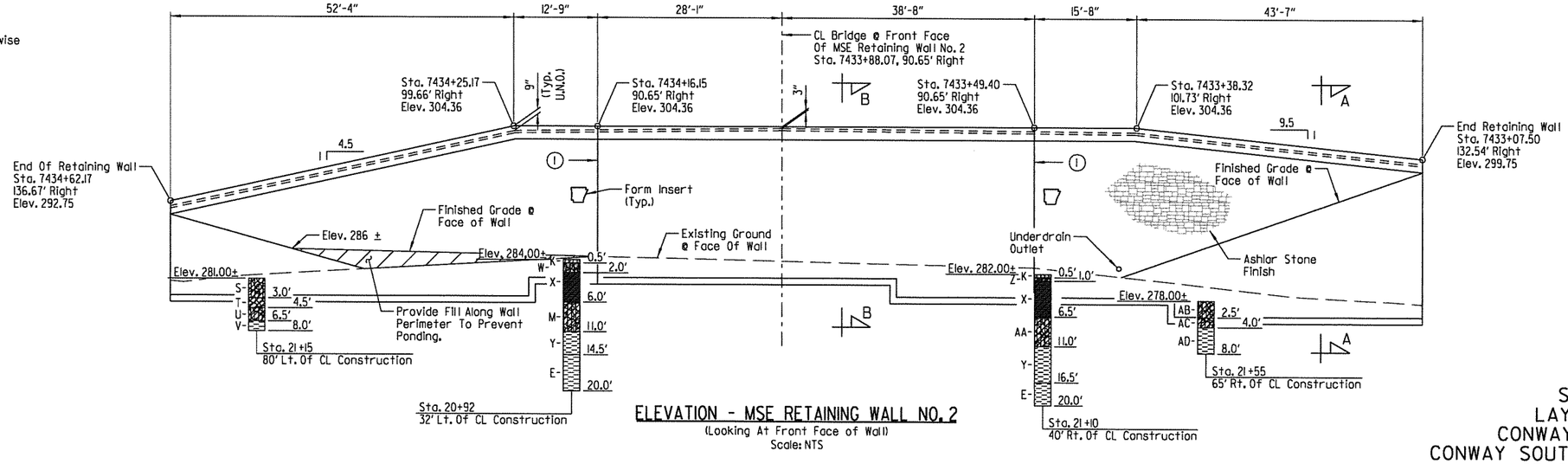
Underdrain outlet shall penetrate front face of MSE Retaining Wall.

For "BORING LEGEND" & "N" VALES", see Dwg. No. 52933.

① 45° break in horizontal alignment of MSE Retaining Wall

LEGEND

U.N.O. = Unless Noted Otherwise



ELEVATION - MSE RETAINING WALL NO. 2
(Looking At Front Face of Wall)
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 3 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011 FILENAME: B080395x1_L3.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: SEPT. 2011
BRIDGE NO. 07257 DRAWING NO. 52934

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WORKSPACE AUTO
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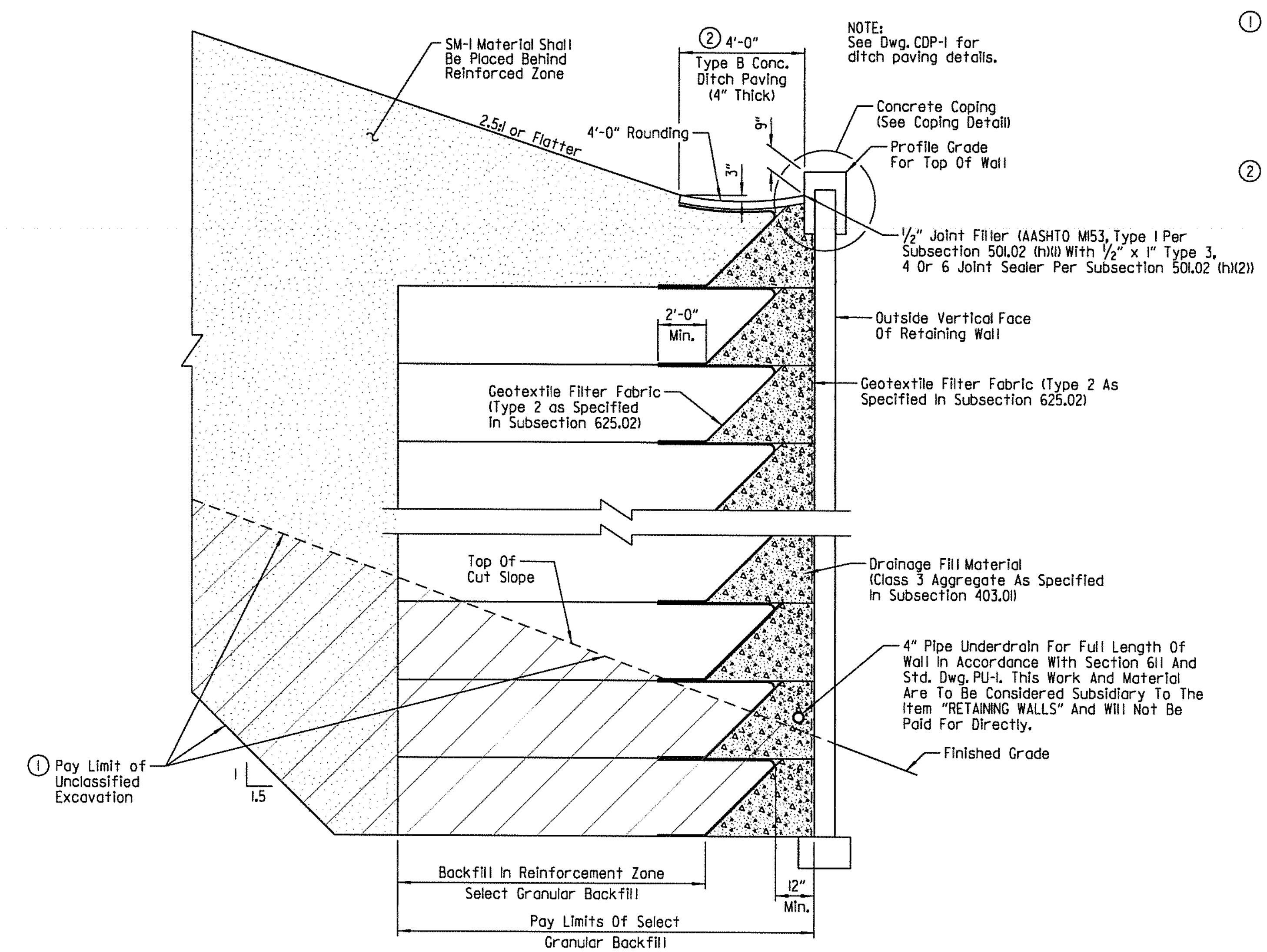
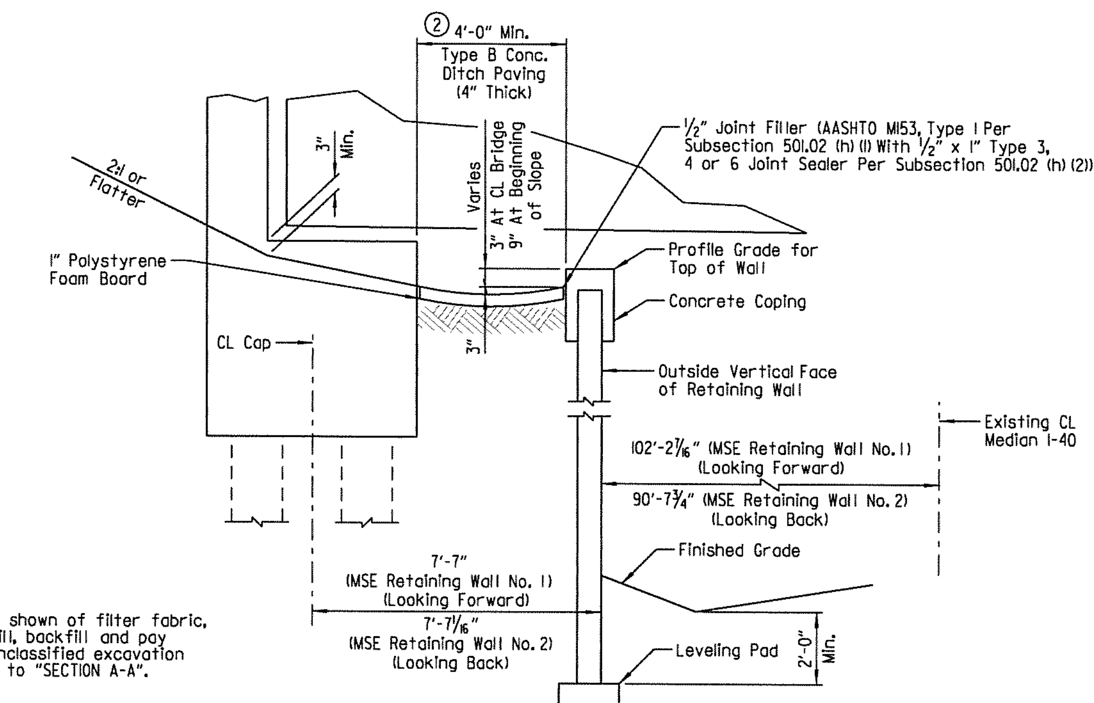
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	73	237
				(1) 07257		LAYOUT		52935



SECTION A-A
Scale: NTS



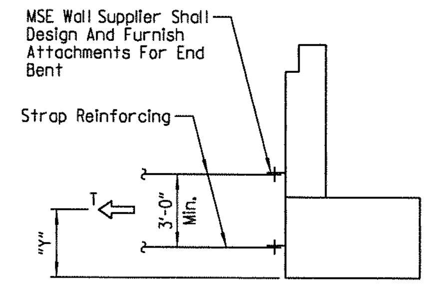
NOTE:
Details not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to "SECTION A-A".

SECTION B-B
Scale: NTS

(1) Excavation required for reinforcing zone, leveling pad and placement of SM-1 material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP JOB 080395 "RETAINING WALLS".

NOTE:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR MATERIAL".
Select material required behind reinforced zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)". See SP JOB 080395 "RETAINING WALLS".

(2) The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Drawing CDP-1.

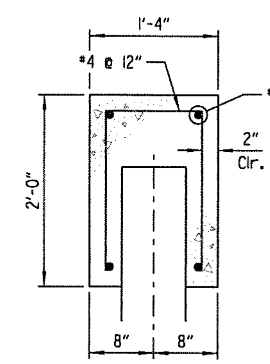


END BENT STRAP DETAIL

T = Resultant Force Required To Be Resisted By Strap Reinforcing.

Y = Centroid Of Strap reinforcing.

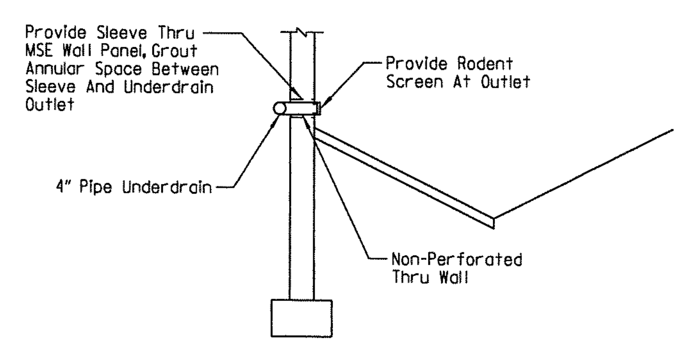
LIMIT STATE	T	Y
	Kips/Ft.	Ft.
Service	3.3	3.0
Strength	5.0	



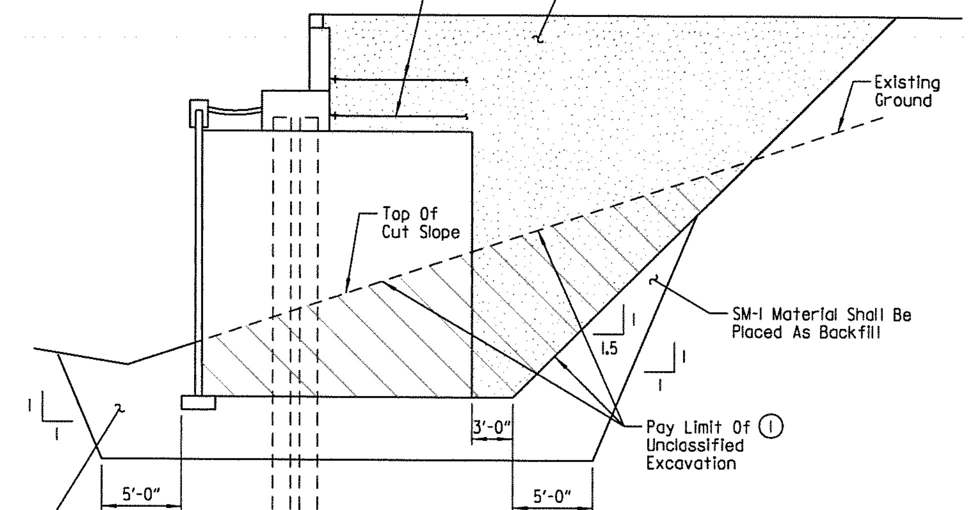
NOTE:
Precast concrete coping may be substituted for cast-in-place coping shown.

NOTE:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALLS".

COPING DETAIL
Scale: NTS



OUTLET DETAIL
Scale: NTS



NOTE:
Undercut at Retaining Wall No. 1 is not anticipated provided that reinforcement zone bears on material designated as weathered shale or weathered sandstone in the "BORING LEGEND". Undercut at Retaining Wall No. 2 reinforcement zone to material designated as stiff clay or soft weathered shale in the "BORING LEGEND".

EMBANKMENT DETAIL
Scale: NTS

GENERAL NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010) with Current Interim Revisions

SEISMIC PERFORMANCE ZONE: 1 S_{D1} = 0.092 SITE CLASS: B

4" pipe underdrain shall maintain a minimum slope of 1/8" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See Dwg. Nos. 52937-52940 for pile locations and wingwall details.

For ditch paving, see Standard Dwg. No. CDP-1.

See SP JOB 080395 "RETAINING WALLS" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP JOB 080395 "RETAINING WALLS".

See Dwg. No. 52936 for form insert location and details.

A Class 3 Textured Coating Finish shall be applied to surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

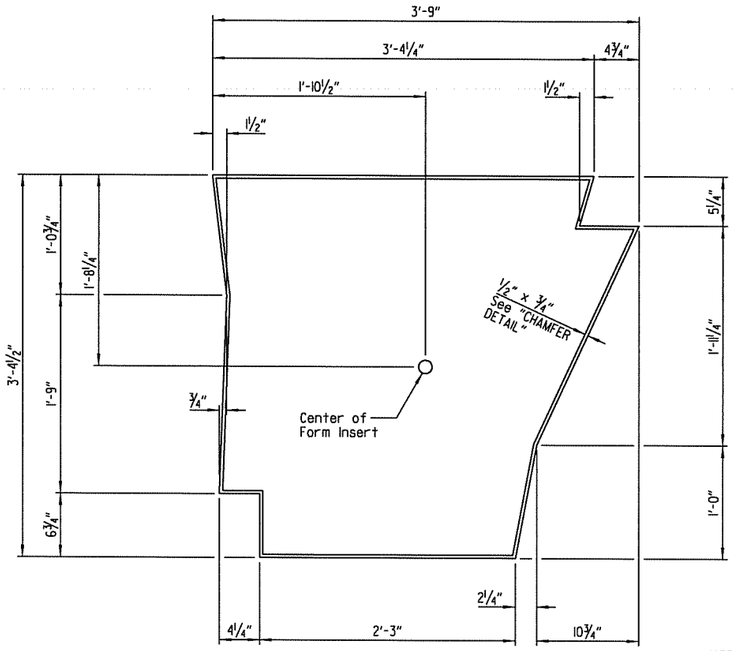
SHEET 4 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 — BRIDGE ENGINEER

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395xl_L4.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52935

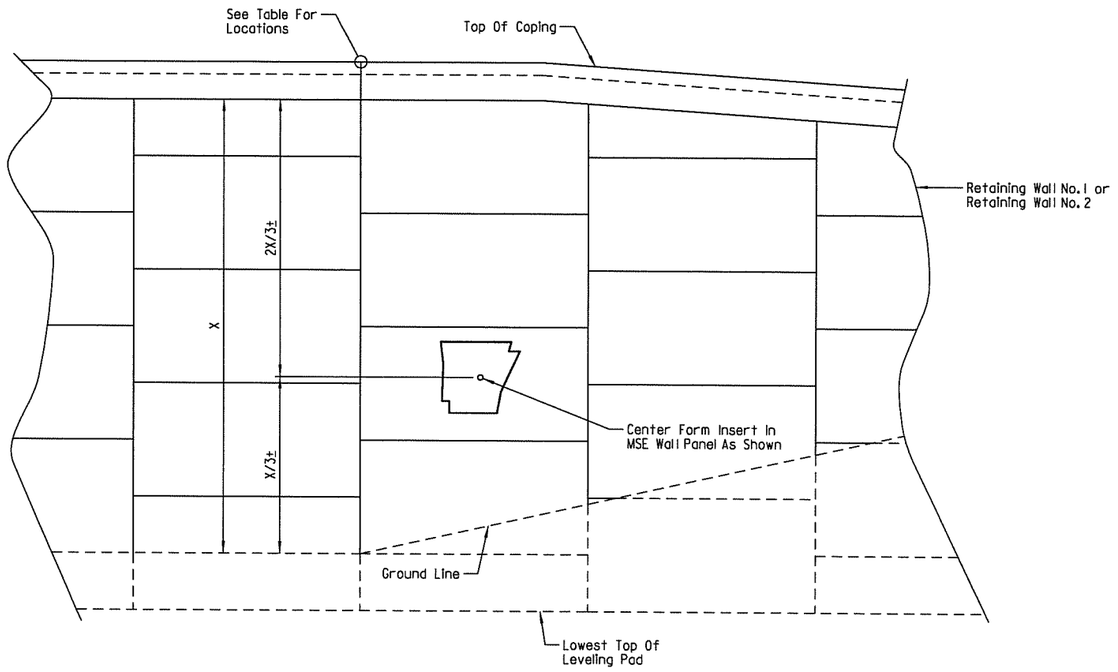
saroberson 8/19/2013 3:06:55 PM
WORKSPACE: AHTD
L:\2009\0901230 - Conway Western ArterialLoop\Bridge\Drawings\Phase I\CWAL over I-40\90% Plans\CWAL over I-40 L0 4 of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	74	237
				① 07257		LAYOUT		52936

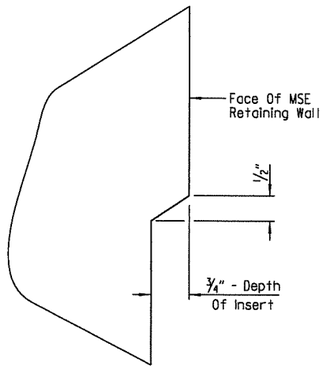


NOTE:
Use form insert on designated walls as noted on details of MSE Walls Dwg. No. 52934.

FORM INSERT DETAILS AT MSE WALL
Scale: NTS



DEVELOPED ELEVATION AT MSE WALL
Scale: NTS



CHAMFER DETAIL
Scale: NTS

NOTES:
Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for inserts shall be included in the unit price bid for the item "RETAINING WALLS".

Damaged or worn form inserts shall be replaced at the Contractor's expense.

The form shall be approved by the Engineer before its use.

LOCATION OF FORM INSERT	
Location	Station
Retaining Wall No. 1	7434+14.25 And 7434+81.00
Retaining Wall No. 2	7433+49.40 And 7434+16.15

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. MCCOY
8/27/13
BRIDGE ENGINEER

SHEET 5 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_L5.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52936

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WORKSPACE: MHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		080395	75	237
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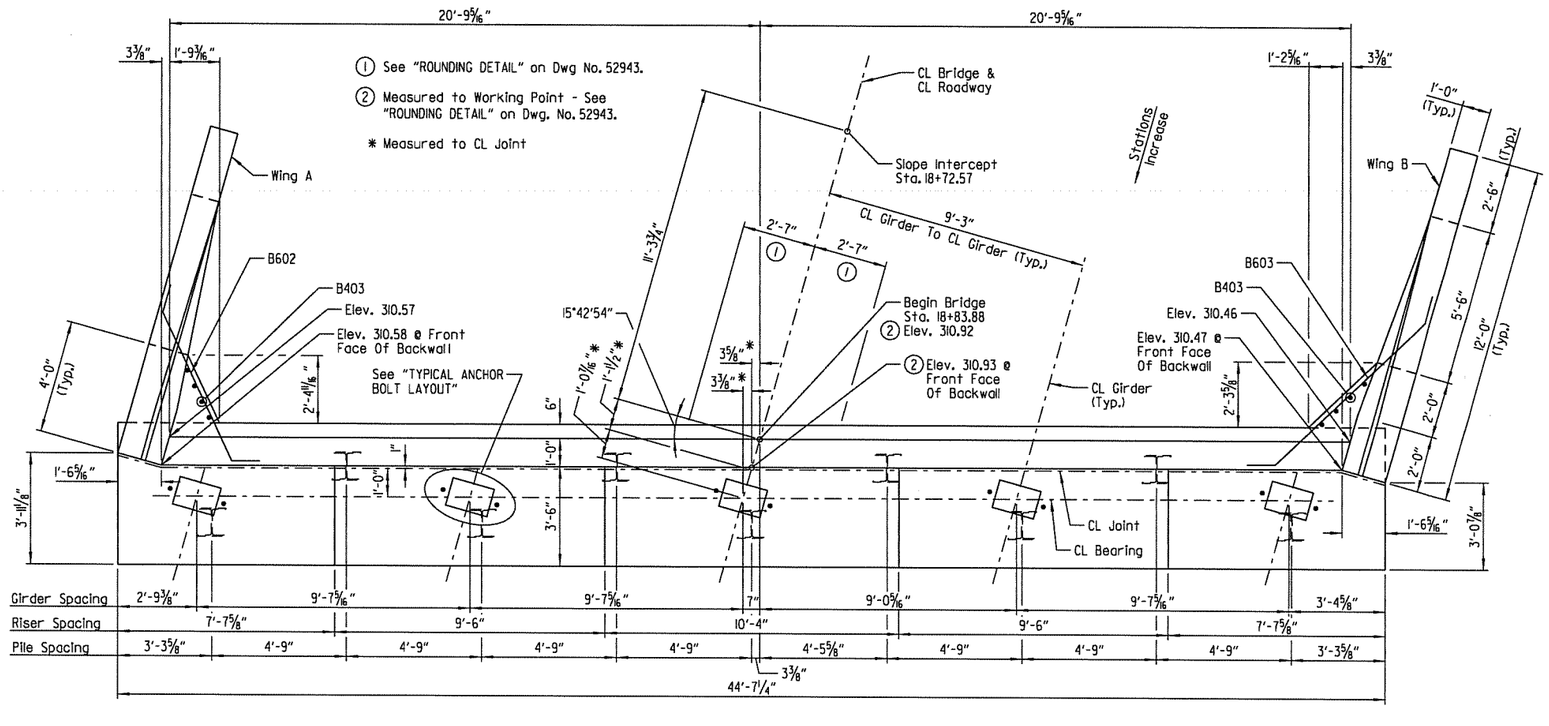
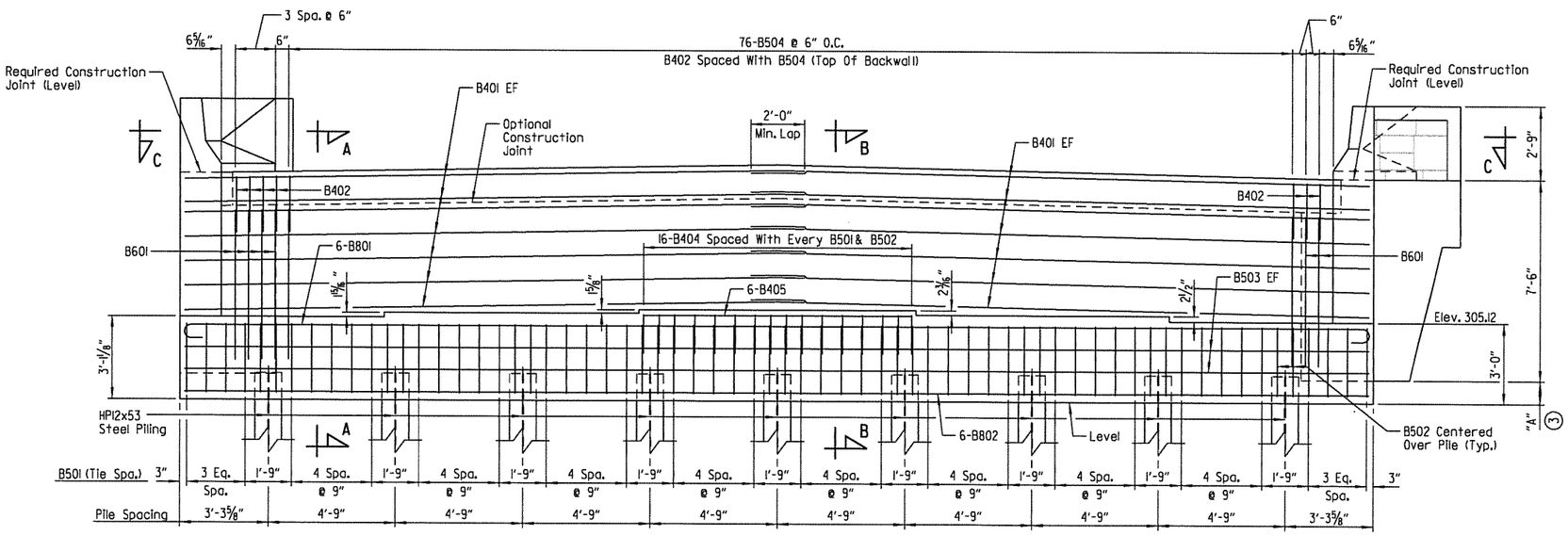


PLAN - END BENT NO. 1

Scale: ⅜" = 1'-0"



ELEVATION - END BENT NO. 1

(Looking Back)
Scale: ⅜" = 1'-0"

(3) See "TABLE OF VARIABLES" on Dwg No. 52940.

GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Gr. 60.

All piles shall be HP12x53 (AASHTO M270, Gr. 50).

No portion of the backwall shall be poured until the girders are in place.

Finish top of backwall to match the bridge deck.

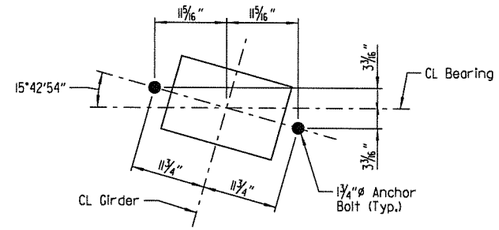
Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see "LAYOUT OF BRIDGE".

Class 1 Protective Surface Treatment shall be applied to the top of backwall. Class 3 Textured Coating Finish shall be applied in accordance with SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52939.



TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

LEGEND

EF = Each Face

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 52954.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
6-24-13
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENTS
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_B1.DGN
CHECKED BY: SRY DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52937

saroberson 8/19/2013 3:09:43 PM
WORKSPACE: AHTD
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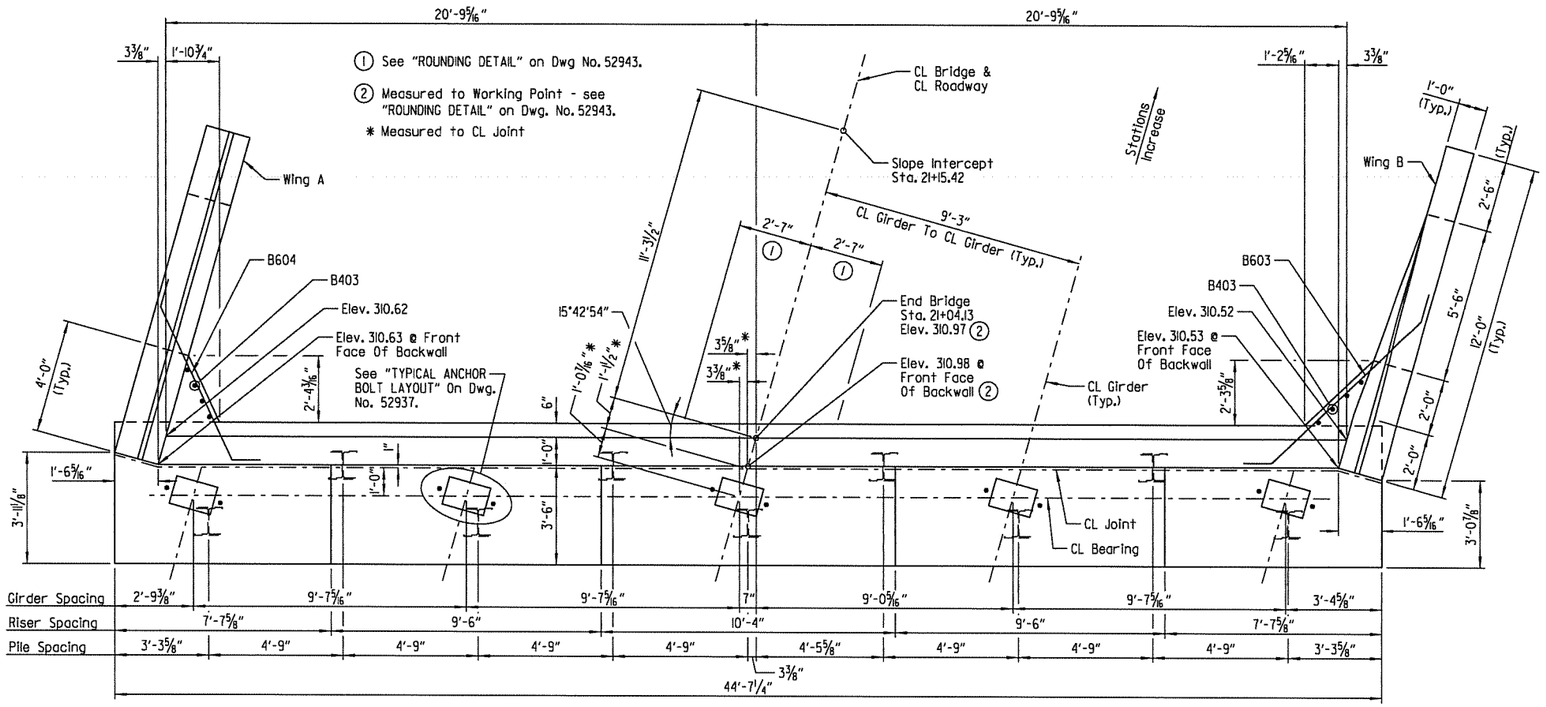
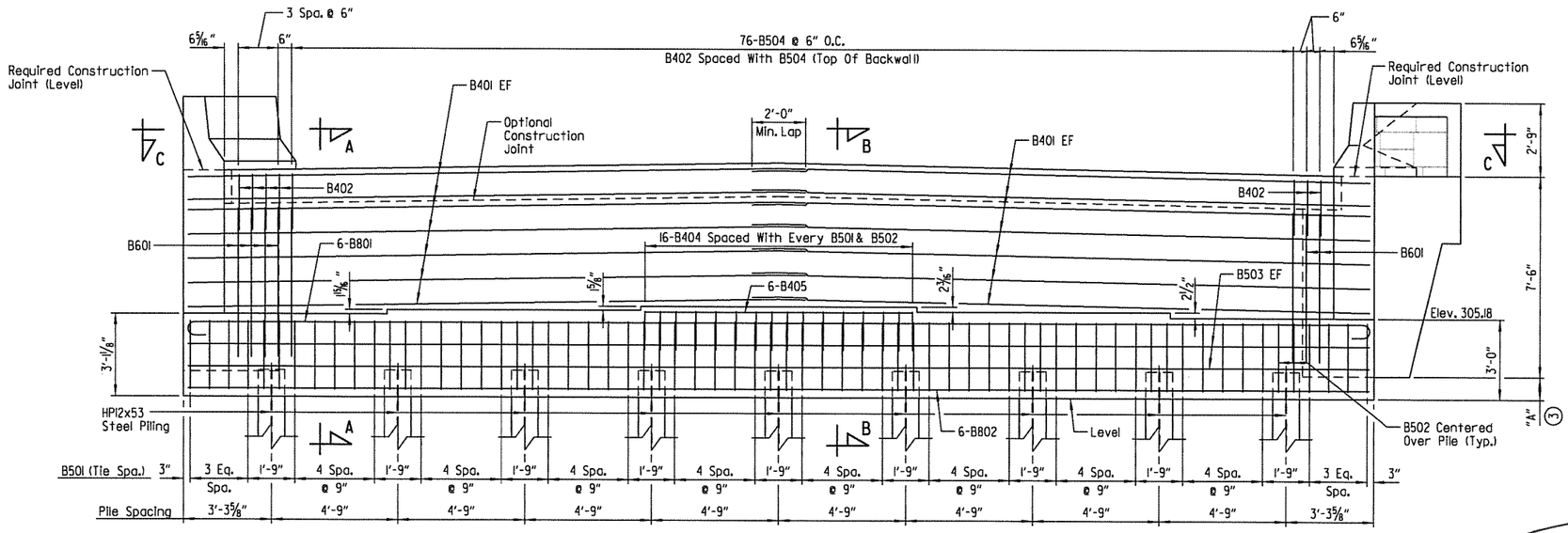
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	76	237
				(1) 07257		END BENT DETAILS		52938



PLAN - END BENT NO. 3

Scale: 3/8" = 1'-0"



ELEVATION - END BENT NO. 3

(Looking Forward)
Scale: 3/8" = 1'-0"

LEGEND

EF = Each Face

(3) See "TABLE OF VARIABLES" on Dwg No. 52940.

NOTES:
For "GENERAL NOTES", see Dwg. No. 52937.

For "SECTION A-A", "SECTION B-B", "SECTION C-C", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52939.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. REDDELL
BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF END BENTS
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x1_B2.DGN
CHECKED BY: SRY DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52938

saroberson 8/19/2013 3:10:28 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	77	237
				(1) 07257		END BENT DETAILS		52939

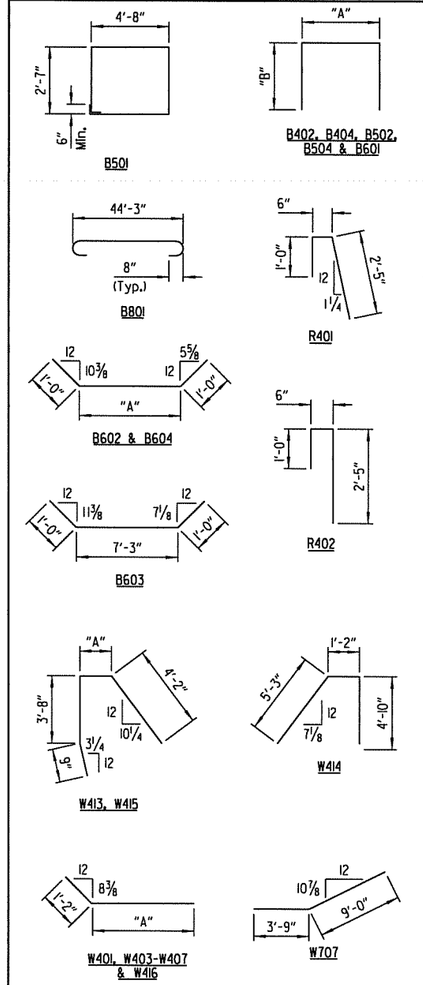
BARS COMMON TO END BENTS

BAR LIST

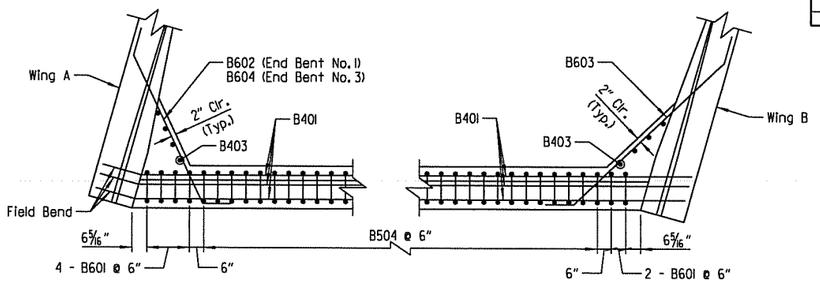
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	14	23'-4"			Str.
B402	82	5'-8"	8"	2'-7"	2"
B403	8	5'-11"			Str.
B404	16	7'-6"	4'-8"	1'-6"	2"
B405	6	10'-0"			Str.
B501	48	15'-0"			2½"
B502	18	9'-7"	4'-8"	2'-7"	2½"
B503	4	44'-3"			Str.
B504	76	13'-0"	1'-2"	6'-0"	2½"
B601	6	12'-0"	1'-2"	5'-7"	4½"
B603	5	9'-1"			4½"
B801	6	46'-1"			6"
B802	6	44'-3"			Str.
R403	12	11'-8"			Str.
W401	10	8'-9"	7'-7"		2"
W402	10	9'-11"			Str.
W403 To W407	2 Ea.	8'-1" To 4'-5"	6'-11" To 3'-3"		2"
W408 To W412	2 Ea.	9'-3" To 5'-7"			Str.
W414	3	11'-1"			2"
W701	16	11'-8"			Str.
W702	4	8'-5"			Str.
W703	4	7'-6"			Str.
W704	4	6'-7"			Str.
W705	4	5'-8"			Str.
W706	4	4'-9"			Str.
W707	4	12'-7"			5¼"
END BENT NO. 1					
B602	5	7'-7"	5'-9"		4½"
R401	10	3'-9"			2"
R402	10	3'-9"			2"
R601	20	4'-11"			Str.
R602	6	5'-0"			Str.
W413	3	9'-7"	1'-2"		2"
END BENT NO. 3					
B604	5	7'-9"	5'-11"		4½"
R401	18	3'-9"			2"
R402	5	11'-8"			2"
R601	10	4'-11"			Str.
R602	3	5'-0"			Str.
W415	3	9'-9"	1'-4"		2"
W416	3	3'-9"	2'-7"		2"
W417	3	4'-11"			Str.

NOTE:
Common Bars Are For One End Bent.

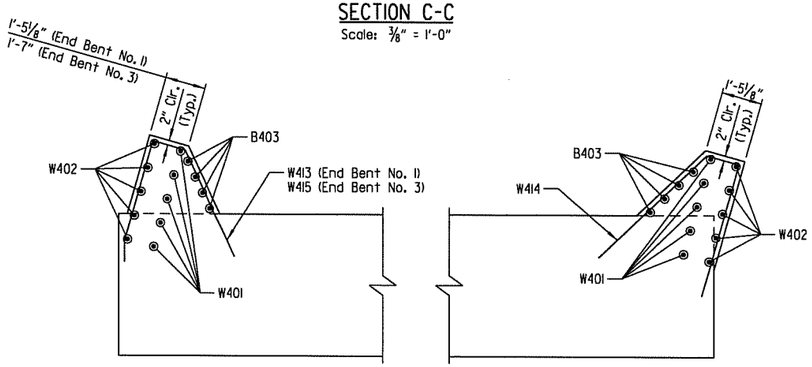
BAR BENDING DIAGRAM



NOTE:
Dimensions Of Bars Are Out-To-Out.



SECTION C-C
Scale: ⅜" = 1'-0"



SECTION G-G (WING A)
Scale: ⅜" = 1'-0"

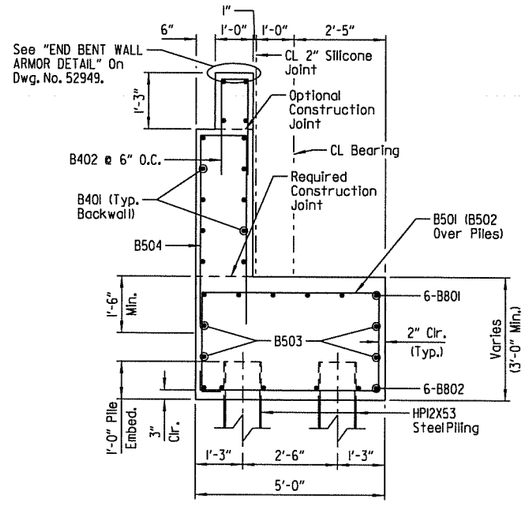
SECTION G-G (WING B)
Scale: ⅜" = 1'-0"

NOTES:

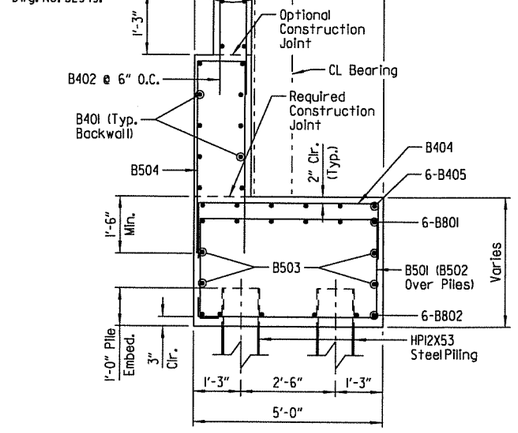
For "GENERAL NOTES", see Dwg. No. 52937.

For "VIEW D-D", "VIEW E-E" & "VIEW F-F", see Dwg. No. 52940.

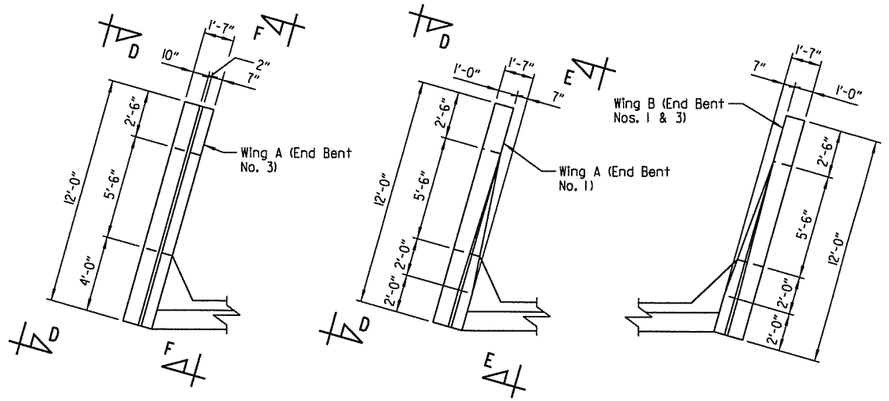
NOTE:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 52949 for additional information.



SECTION A-A
Scale: ½" = 1'-0"



SECTION B-B
Scale: ½" = 1'-0"



PLAN OF RAIL
Scale: ¼" = 1'-0"

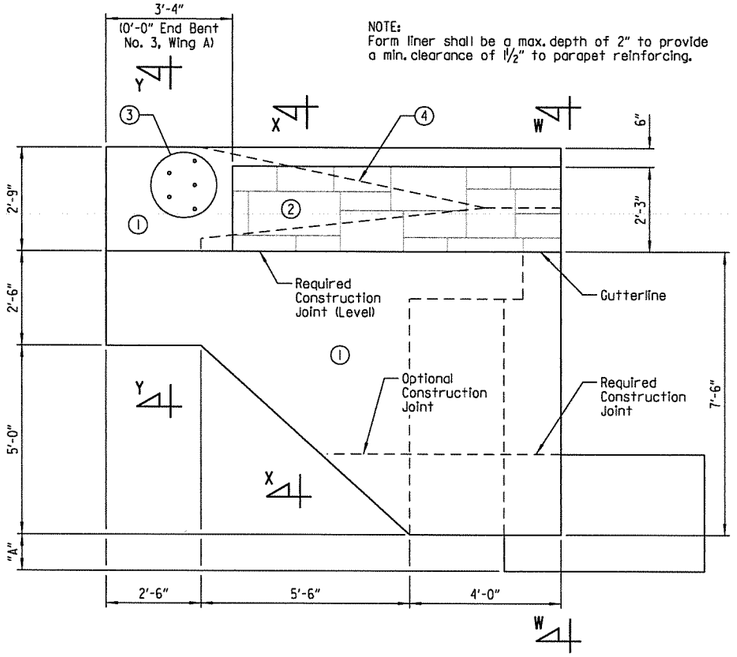
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENTS
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395xl_B3.DGN
CHECKED BY: SRY DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52939

saroberson 8/19/2013 3:16:14 PM
WORKSPACE: AHTD
L:\CDOS\050I230 - Conway Western Arterial\Loop\Bridge\Drawings\Phase I\CWAL over I-40\90% Plans\CWAL over I-40 End Bent 3 of 4.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	78	237
				① 07257		END BENT DETAILS		52940



① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

② "Ashlar Stone" Form Liner & Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

③ Omit Guardrail Connection At End Bent No. 3, Wing A. Extend "Ashlar Stone" Form Liner To End Of Wing.

④ Omit Parapet Transition At End Bent No. 3, Wing A.

VIEW D-D

Scale: ½" = 1'-0"

NOTE:
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

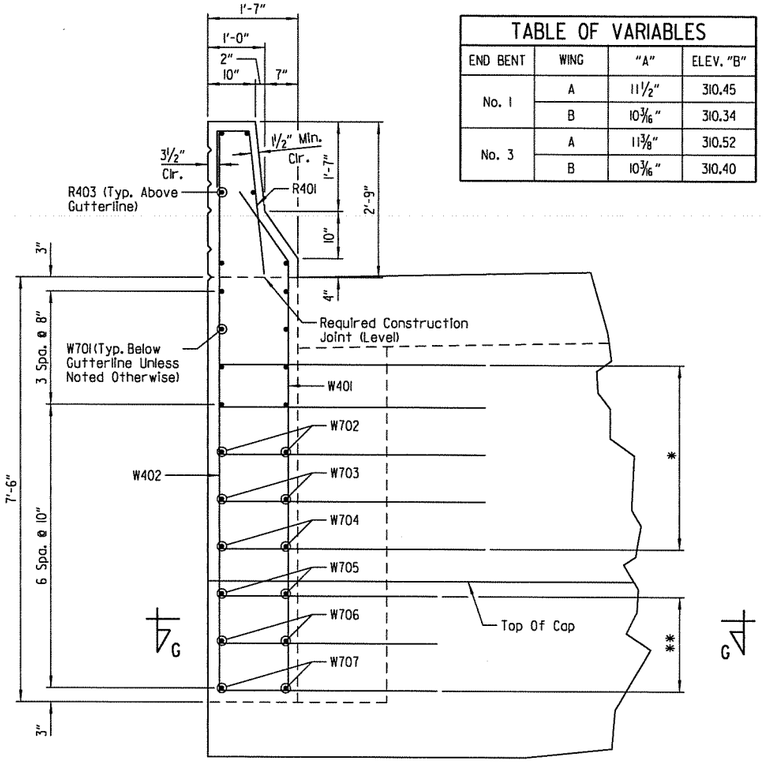


TABLE OF VARIABLES			
END BENT	WING	"A"	ELEV. "B"
No. 1	A	11½"	310.45
	B	10⅜"	310.34
No. 3	A	11⅜"	310.52
	B	10⅜"	310.40

NOTES:
For "GENERAL NOTES", see Dwg. No. 52937.

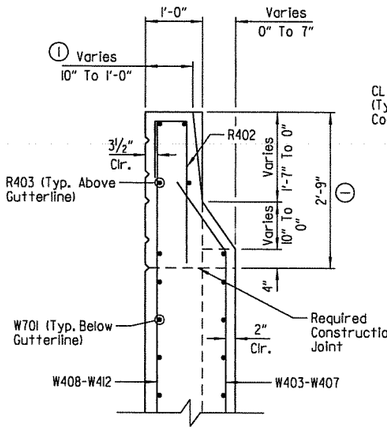
For "SECTION G-G", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52939.

SECTION W-W

Scale: ¾" = 1'-0"

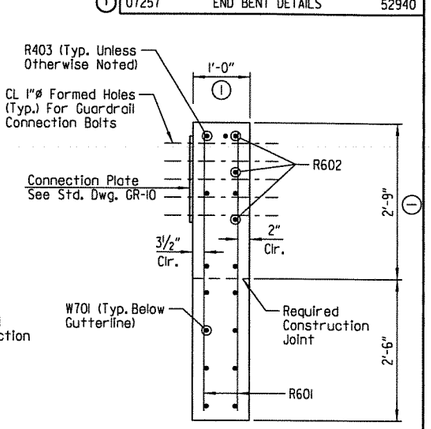
* See "SECTION C-C" For Correct Bar Mark, see Dwg. No. 52939.

** See "SECTION G-G" For Correct Bar Mark, see Dwg. No. 52939.



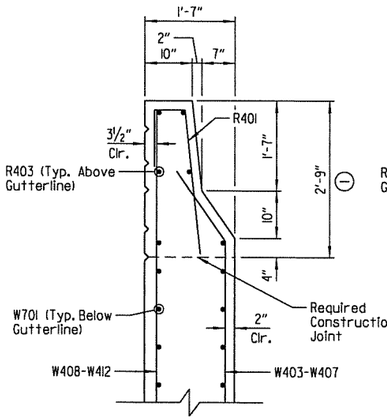
SECTION X-X

(End Bent No. 1 Wings A & B & End Bent No. 3, Wing B)
Scale: ¾" = 1'-0"



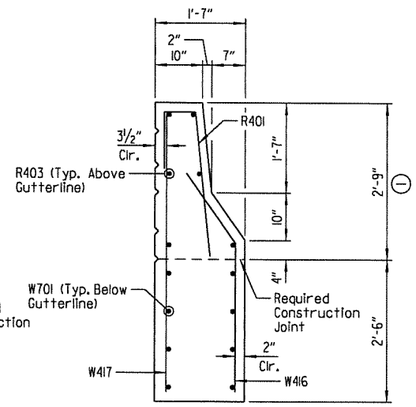
SECTION Y-Y

(End Bent No. 1 Wings A & B & End Bent No. 3, Wing B)
Scale: ¾" = 1'-0"



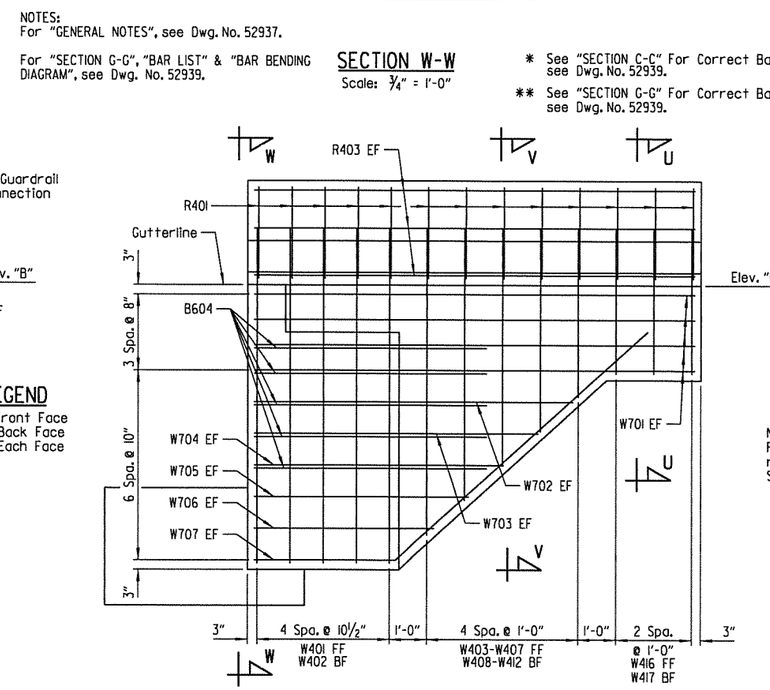
SECTION V-V

(End Bent No. 3, Wing A)
Scale: ¾" = 1'-0"



SECTION U-U

(End Bent No. 3, Wing A)
Scale: ¾" = 1'-0"



VIEW E-E

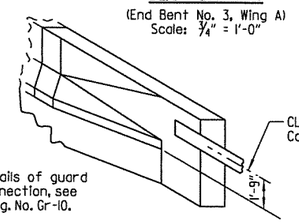
(End Bent No. 1 And End Bent No. 3, Wing B)
Scale: ½" = 1'-0"

LEGEND

FF = Front Face
BF = Back Face
EF = Each Face

VIEW F-F

(End Bent No. 3, Wing A)
Scale: ½" = 1'-0"



NOTE:
For details of guard rail connection, see Std. Dwg. No. Gr-10.

3-D VIEW OF RAIL TRANSITION

(End Bent No. 1 Wings A & B & End Bent No. 3, Wing B Only)
Scale: N.T.S.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENTS
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

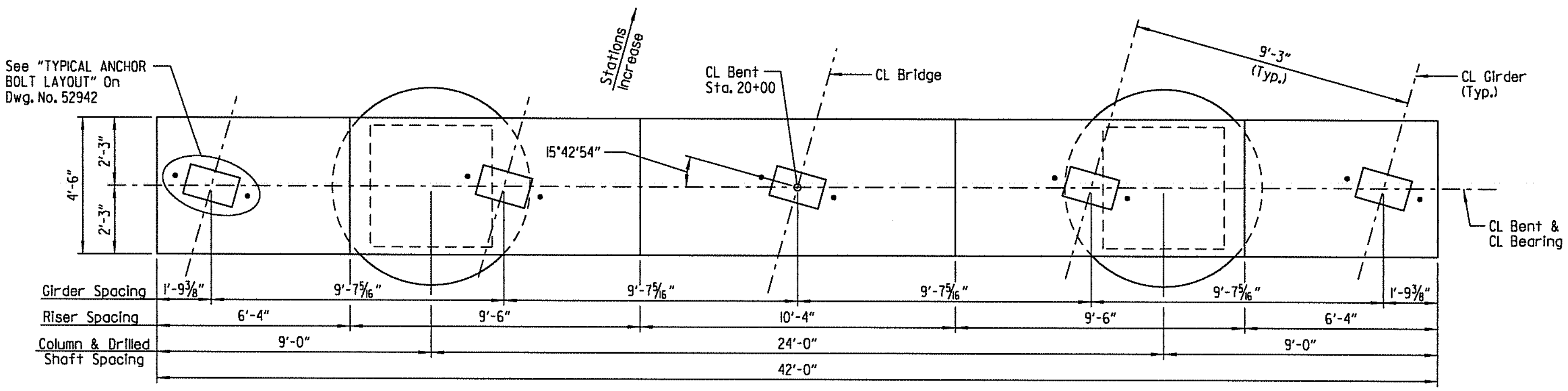
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x1_B4.DGN
CHECKED BY: SRY DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012

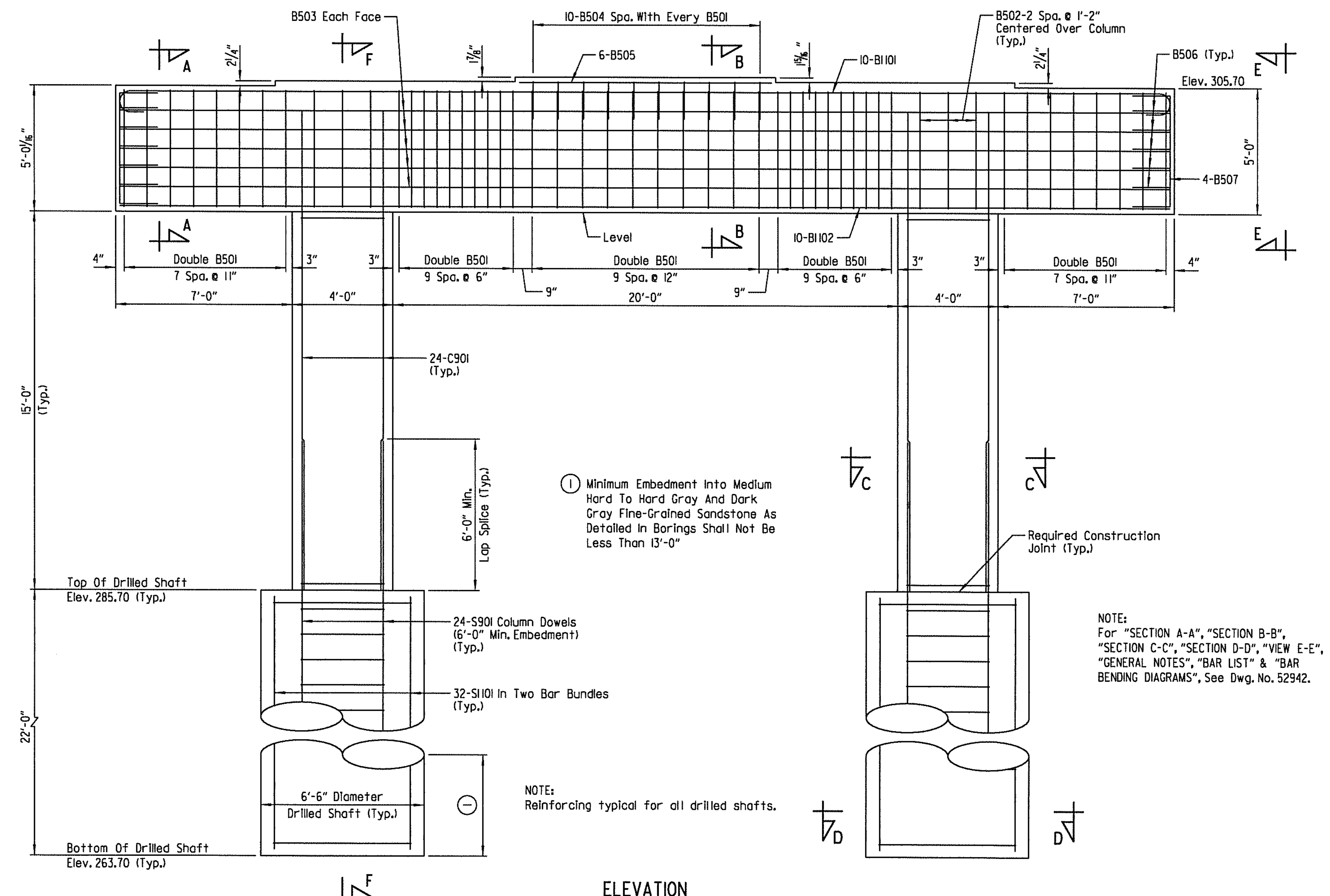
BRIDGE NO. 07257 DRAWING NO. 52940

sgroberson 8/19/2013 3:11:50 PM
WORKSPACE: AHTD
L:\2009\080TF230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over I-40\80X Plans\CWAL over I-40 End Bent 4 of 4.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	79	237
				(1) 07257		INT. BENT DETAILS		52941



PLAN
Scale: ⅜" = 1'-0"

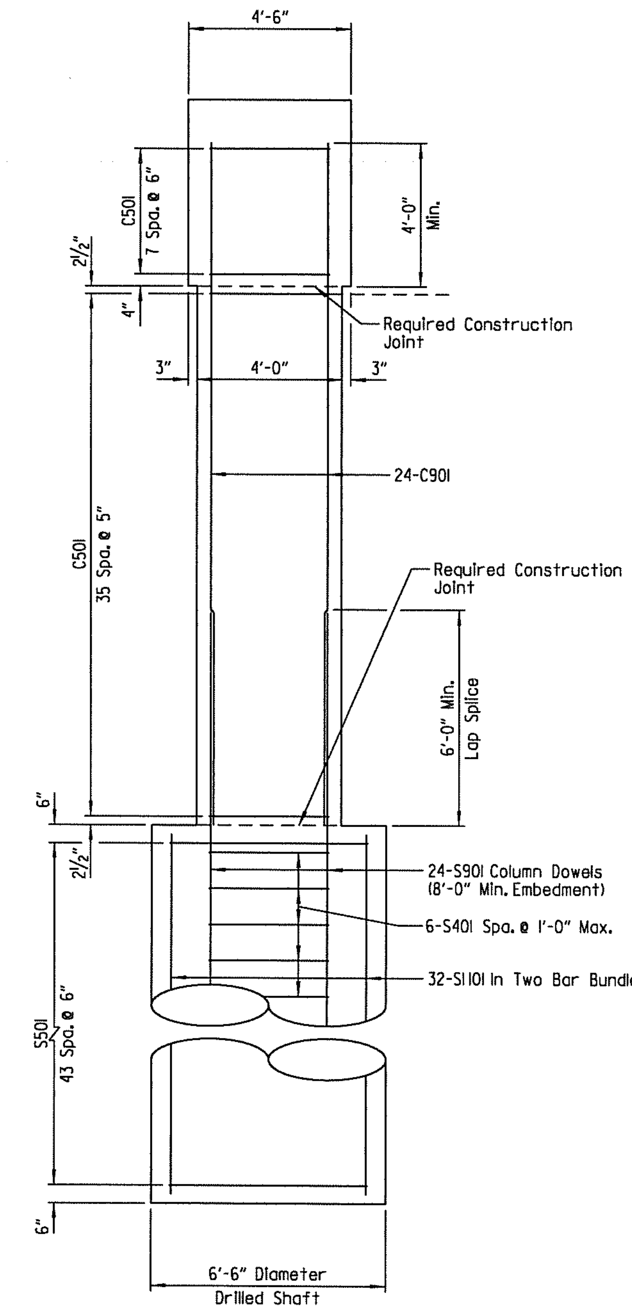


(1) Minimum Embedment Into Medium Hard To Hard Gray And Dark Gray Fine-Grained Sandstone As Detailed In Borings Shall Not Be Less Than 13'-0"

NOTE:
Reinforcing typical for all drilled shafts.

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C", "SECTION D-D", "VIEW E-E", "GENERAL NOTES", "BAR LIST" & "BAR BENDING DIAGRAMS", See Dwg. No. 52942.

ELEVATION
(Looking Forward)
Scale: ⅜" = 1'-0"



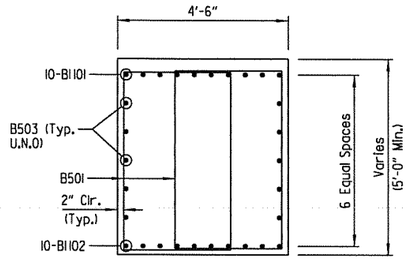
SECTION F-F
Scale: ⅜" = 1'-0"

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

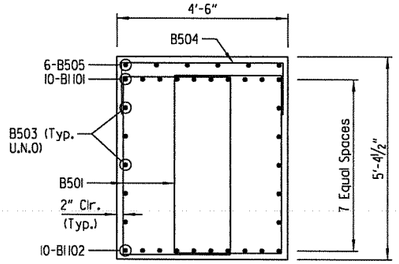
STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL
8-21-13
BRIDGE ENGINEER

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_B5.DGN
CHECKED BY: JHR DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52941

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	80	237
				① 07257		INT. BENT DETAILS		52942

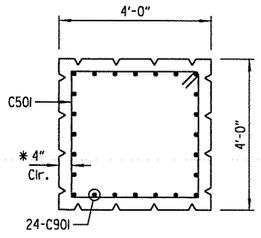


SECTION A-A
Scale: 1/2" = 1'-0"

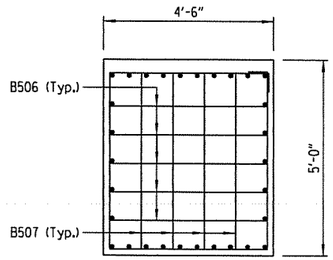


SECTION B-B
Scale: 1/2" = 1'-0"

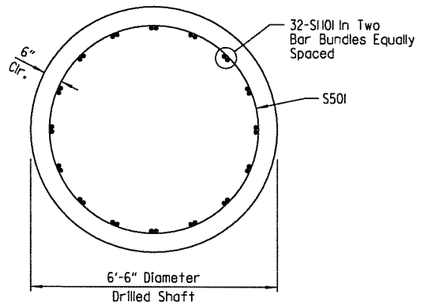
* Form Liner Shall Be A Maximum Depth Of 2" To Provide A Minimum Clearance Of 2".



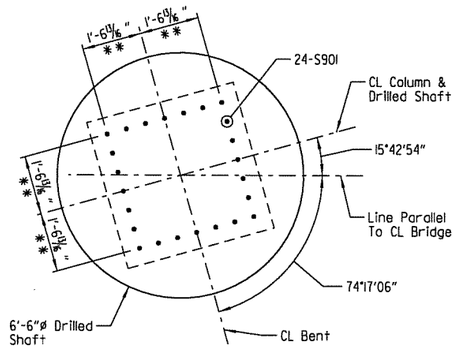
SECTION C-C
Scale: 1/2" = 1'-0"



VIEW E-E
Scale: 1/2" = 1'-0"



SECTION D-D
Scale: 1/2" = 1'-0"



DOWEL BAR LAYOUT
Scale: 1/2" = 1'-0"

** Measured To Center Of Bars.

GENERAL NOTES

All Concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 1/4" unless otherwise noted.

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

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see "LAYOUT OF BRIDGE".

Concrete and reinforcing steel in drilled shafts, including column dowels, will not be paid for directly but will be included in the unit prices of the drilled shaft.

For construction methods, materials, measurement and payment of drilled shafts, see SP JOB 080395 "DRILLED SHAFT FOUNDATIONS".

S901 column dowels and S401ties may be secured in place before concrete placement or inserted after concrete placement of the shaft is complete. Vibration of concrete for the embedment depth of the column dowels will be required to ensure consolidation of the concrete around the column dowels and to facilitate insertion. The Contractor shall be responsible for satisfactory results.

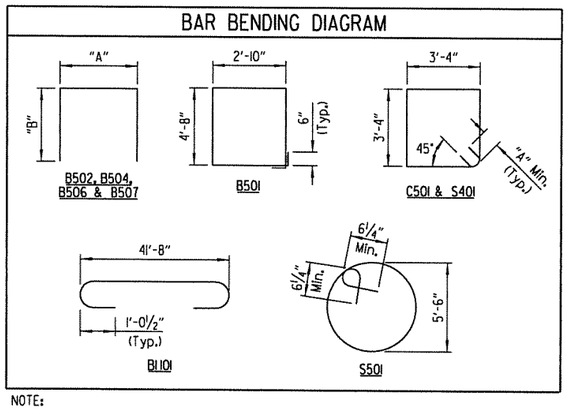
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

BAR LIST

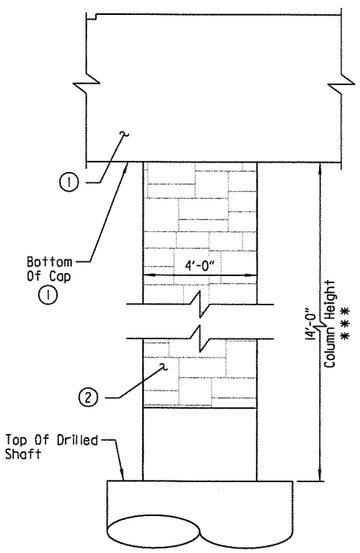
	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	B501	92	15'-6"			2 1/2"
	B502	8	13'-3 1/2"	4'-2"	4'-8"	2 1/2"
	B503	10	41'-8"			Str.
	B504	10	6'-11 1/2"	4'-2"	1'-6"	2 1/2"
	B505	6	10'-0"			Str.
	B506	10	6'-10"	4'-0 1/2"	1'-6"	2 1/2"
	B507	8	7'-4"	4'-6 1/2"	1'-6"	2 1/2"
	B1101	10	44'-8"			11 1/4"
	B1102	10	41'-8"			Str.
	C501	88	14'-0"	6 1/4"		3 3/4"
	C901	48	19'-0"			Str.
③	S401	12	13'-10"	5"		3"
③	S501	86	18'-8"			3 3/4"
③	S901	48	12'-0"			Str.
③	S1101	64	21'-6"			Str.

③ Non-Pay Item - Subsidiary to SP JOB 080395 "DRILLED SHAFT FOUNDATIONS"

BAR BENDING DIAGRAM

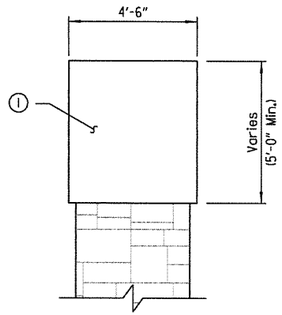


NOTE:
Dimensions of bars are out-to-out.



COLUMN
(Typ. All Columns)

*** Form liner and texture coating to be stopped at the top of roadway barrier.

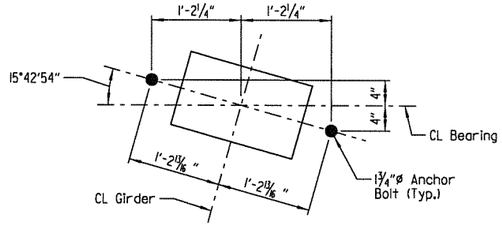


CAP - END VIEW

① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

② "Ashlar Stone" Pattern & Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

ASHLAR STONE PATTERN
Scale: 3/8" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 52954.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-22-13
BRIDGE ENGINEER

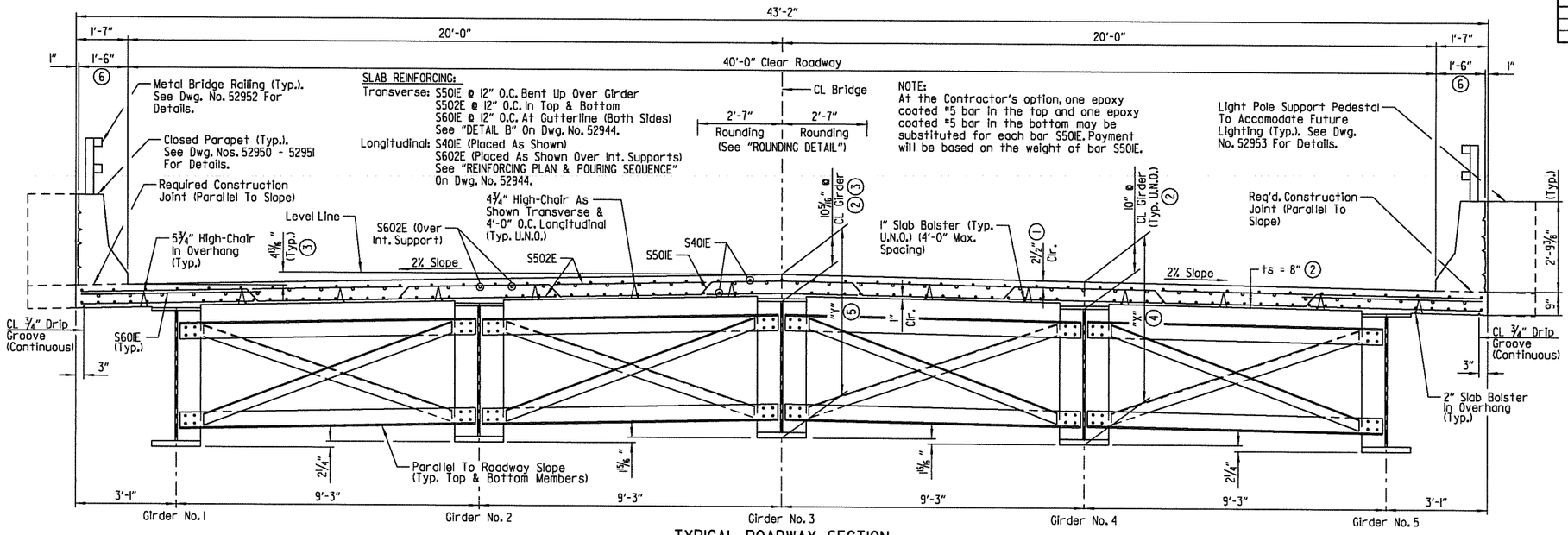
SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_B6.DGN
CHECKED BY: JHR DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52942

saroberson 8/19/2013 3:12:58 PM
WORKSPACE: AHTD
L:\2009\A090720 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over I-40\902 Plans\CWAL over I-40 Int Bent 2 of 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	81	237
				(1) 07257		SPAN DETAILS		52943



TYPICAL ROADWAY SECTION

(Looking Forward)
Scale: ½" = 1'-0"

(1) TOLERANCE:
Minus = ¼"
Plus = Amount of slab thickening used to meet slab thickness tolerance - See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(3) Measured to Working Point, see "ROUNDING DETAIL".

(4) "X" = 4'-10" + Bottom Flange Thickness, (Typ. U.N.O.) measured at CL Bearing & CL Girder.

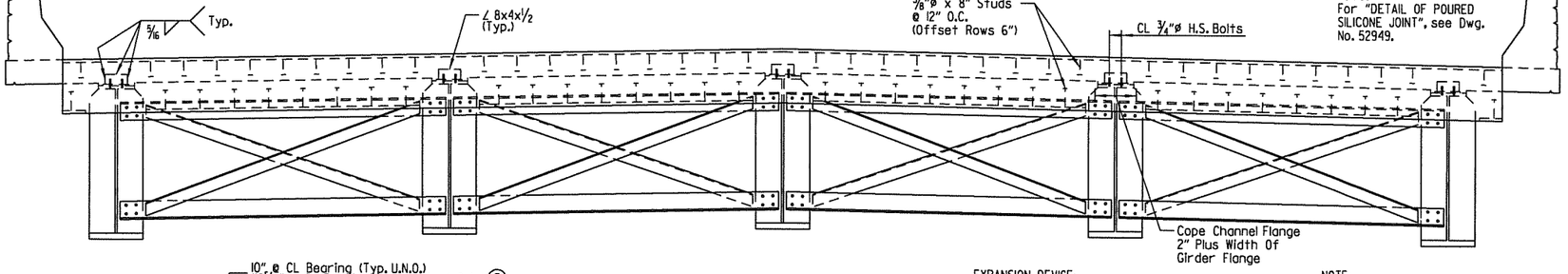
(5) "Y" = 4'-10⅝" + Bottom Flange Thickness measured at CL Bearing & CL Girder (measured to Working Point - See "ROUNDING DETAIL").

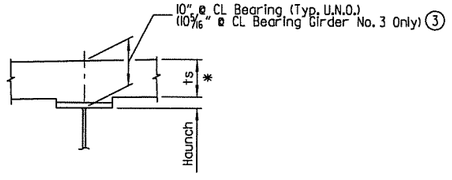
(6) Widened Parapet to accomodate form liner and metal bridge railing. See Dwg. Nos. 52950 - 52951 for parapet details.

(7) See Dwg. Nos. 52950 - 52951 For Locations.

(8) See Dwg. No. 52953 For Locations.

(9) Non-Typical Pin Diameter.





NOTE: ts = Slab thickness as shown on "TYPICAL ROADWAY SECTION".
* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

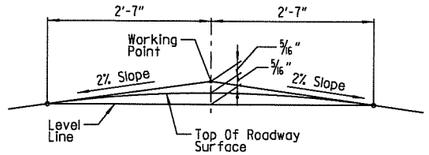
Scale: NTS

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the top flange contacts the bottom reinforcing steel; Maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 14991 for tolerances when permanent steel bridge deck forms are used. Payment for "CLASS S(AE) CONCRETE-BRIDGE" shall be based on removable deck forming.

TYPICAL SECTION THRU JOINT

Looking Forward - Bent No. 1
Looking Back - Bent No. 3
Scale: NTS

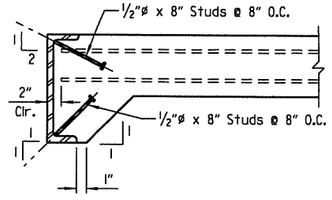


NOTE:
Working Point matches Theoretical Profile Grade.

ROUNDING DETAIL

Scale: NTS

EXPANSION DEVICE:
Rdwy. Channel MC18x42.7
Conn. Angles ∠ 8x4x½
Detail Device ⅛" High And Provide ¼" Shims Using 2 - 1/16" And 1 - ⅛" Plates



DETAIL OF ALTERNATE ANCHORS

Scale: NTS

NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

NOTE:
Class 1 Protective Surface Treatment shall be applied to the roadway surface. Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

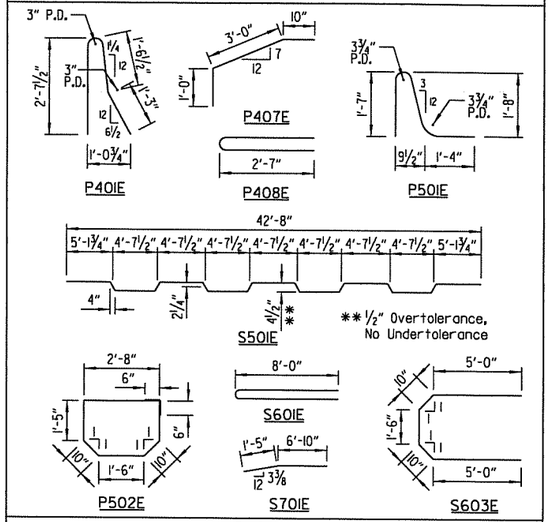
LEGEND

U.N.O. = Unless Noted Otherwise

NOTE:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

BAR BENDING DIAGRAM



BAR LIST

	Mark	No. Req'd.	Length	Pin Dia.
	S401E	714	38'-6"	STR.
	S501E	206	43'-6"	3"
	S502E	414	42'-10"	STR.
	S503E TO S520E	4 Each	9'-10" TO 40'-0"	STR.
	S601E	430	16'-3"	(9) 5¼"
	S602E	88	41'-6"	STR.
(8)	S603E	12	13'-2"	4½"
(8)	S604E	36	5'-6"	STR.
	S701E	28	8'-3"	5¼"
(7)	P401E	872	5'-6"	3"
(7)	P402E	24	33'-4"	STR.
(7)	P403E	24	29'-4"	STR.
(7)	P404E	12	12'-7"	STR.
(7)	P405E	66	11'-8"	STR.
(7)	P406E	68	9'-8"	STR.
(7)	P407E	4	4'-10"	3"
(7)	P408E	12	5'-4"	3"
(7)	P501E	872	4'-8"	3¾"
(8)	P502E	36	9'-2"	2½"
(8)	P503E	36	3'-2"	STR.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 1 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER I-40 FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x1_SI.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012

BRIDGE NO. 07257 DRAWING NO. 52943

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WORKSPACE: MAIN
L:\2009\0907230 - Conway Western Arterial Loop\Bridge\Drawings\Phase 1\CWAL over I-40\902 Plans\CWAL over I-40 PG Unit 1 of 1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	82	237
				(I) 07257		SPAN DETAILS		52944

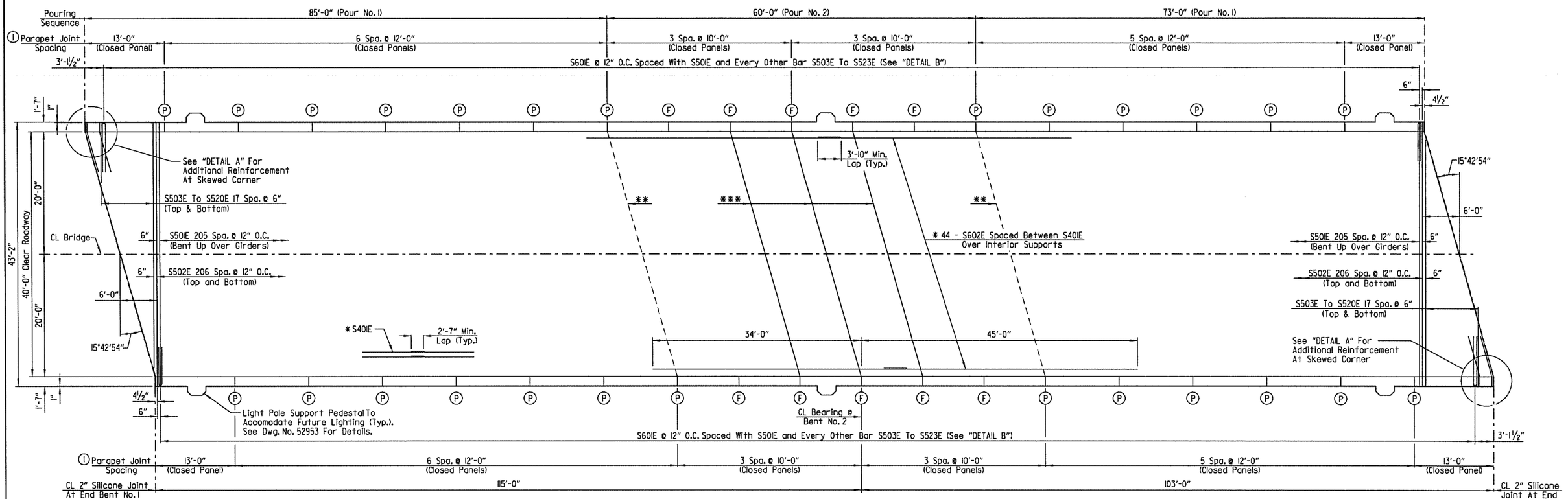
(I) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to "TYPICAL ROADWAY SECTION" on Dwg. No. 52943 for placement

** Pouring Sequence Construction Joint

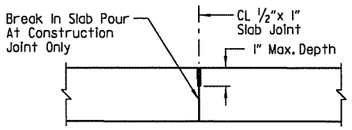
*** Required Slab Joint

NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.



REINFORCING PLAN & POURING SEQUENCE

Scale: ⅛" = 1'-0"



The ½" x 1" Poured Joint Sealer (Type 3, 4 or 6) in slab shall conform to Subsection 501.02 (H) and 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL

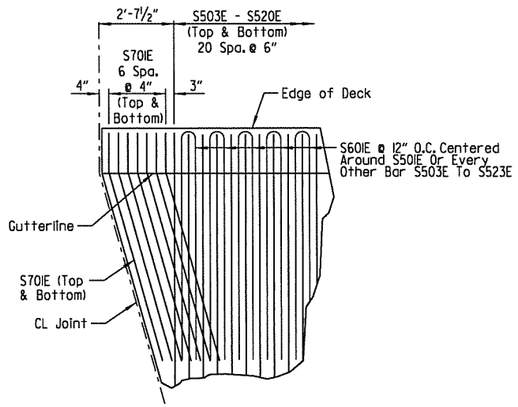
Scale: NTS

NOTE:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

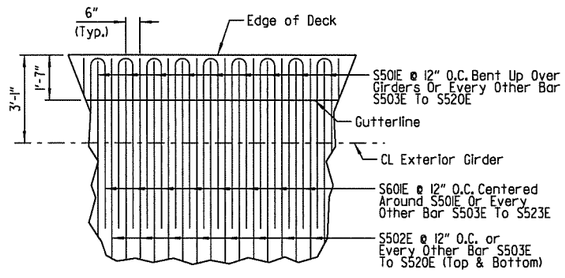
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

NOTE:
See Dwg. Nos. 52950-52951 for parapet reinforcing details.



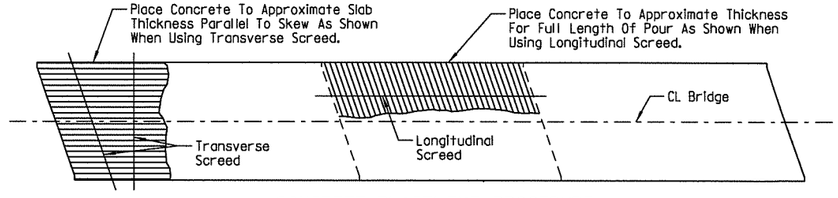
DETAIL A

Scale: NTS



DETAIL B

Scale: NTS



CONCRETE PLACEMENT PROCEDURE

Scale: NTS

NOTE:
At the Contractor's option, the Transverse Screed may be placed parallel to the skew or perpendicular to CL Bridge.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
8-21-13
BRIDGE ENGINEER

SHEET 2 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SJL DATE: MAR. 2012 FILENAME: B080395x1_S2.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52944

sarabarson 8/9/2013 3:14:06 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		080395	83	237
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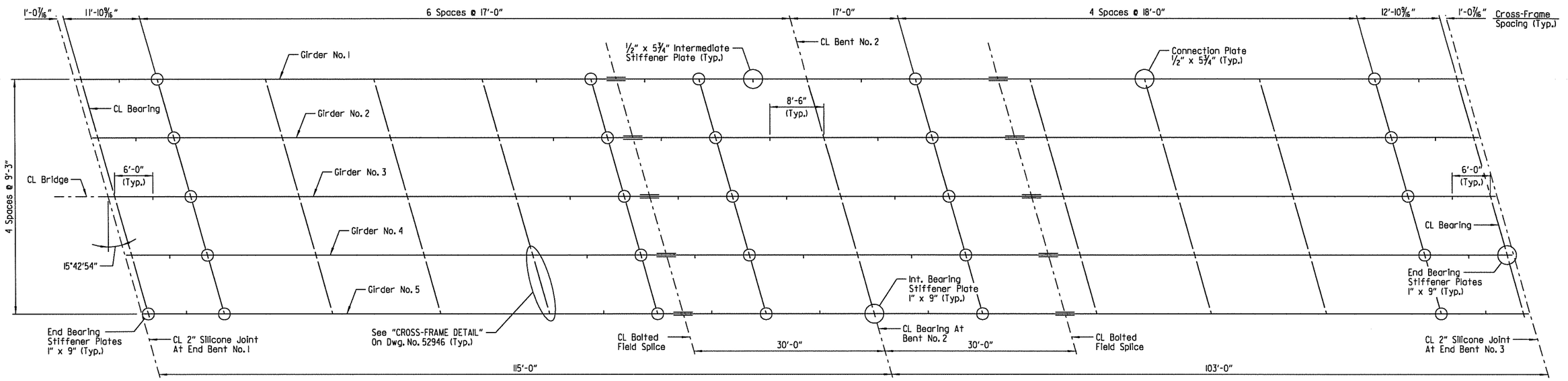
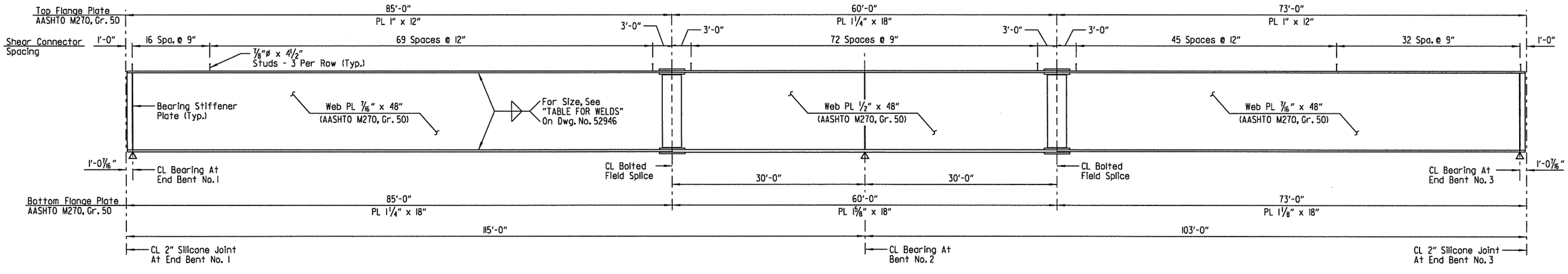


FRAMING PLAN

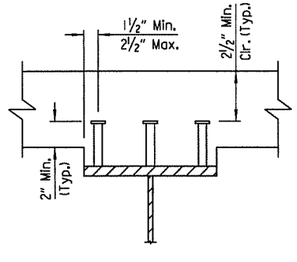
Scale: 1/8" = 1'-0"

Note:
Cross-frame connections shown in circles are serving as intermediate stiffeners.



TYPICAL GIRDER ELEVATION

Scale: NTS



SHEAR CONNECTOR DETAIL

Scale: NTS

Stud shear connectors shown shall be 7/8"ø x 4 1/2" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361- 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
BRIDGE ENGINEER

SHEET 3 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER I-40 FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_S3.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52945

saroberson 8/19/2003 3:44:35 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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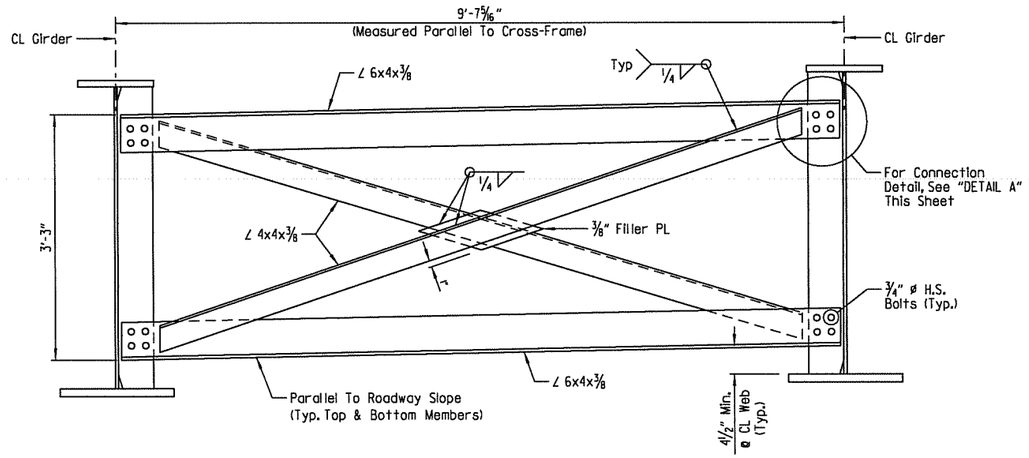
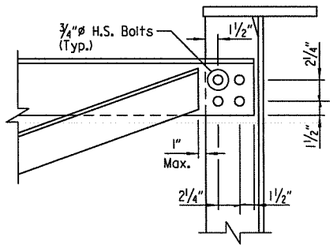
				JOB NO.		080395	84	237
				(1) 07257		SPAN DETAILS		52946



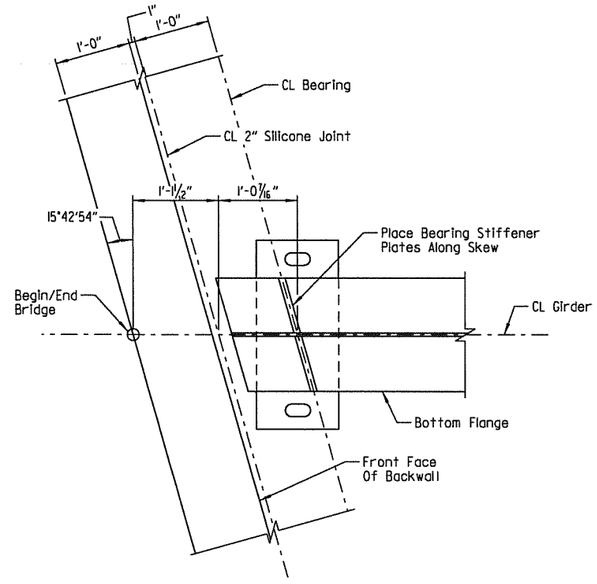
CROSS-FRAME DETAIL

Scale: 1" = 1'-0"



DETAIL A

Scale: 1 1/2" = 1'-0"



BEARING @ END BENT

Scale: 1" = 1'-0"

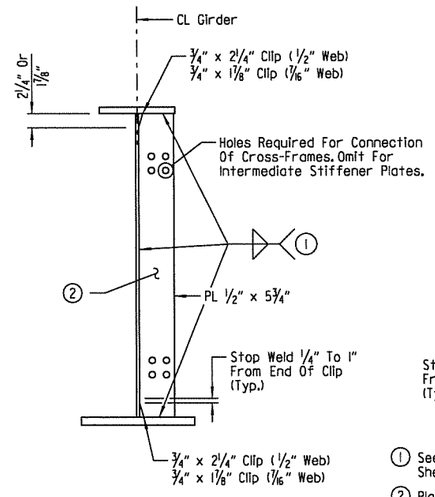
TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

NOTES:
For "GENERAL NOTES", see Dwg. No. 52948.

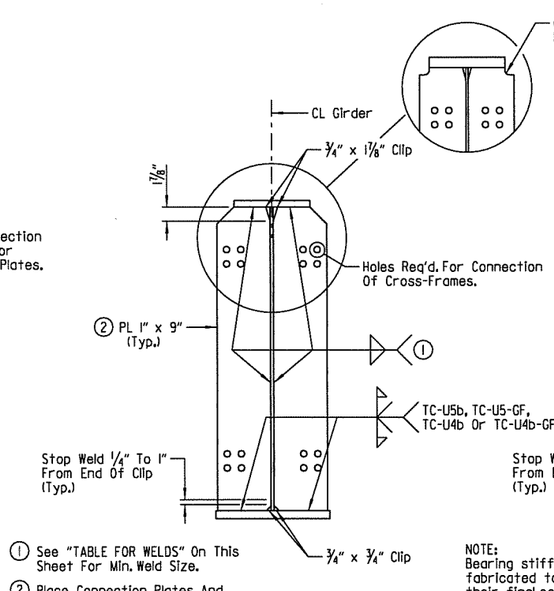
All structural steel, including girders, cross-frames, bearing stiffener plates, intermediate stiffeners and connection plates, shall be AASHTO M270 Gr. 50.

For details of field splice and "TABLE OF DEAD LOAD DEFECTIONS", see Dwg. No. 52947.



CROSS-FRAME CONNECTION & INTERMEDIATE STIFFENER PLATE DETAIL

Scale: 1" = 1'-0"

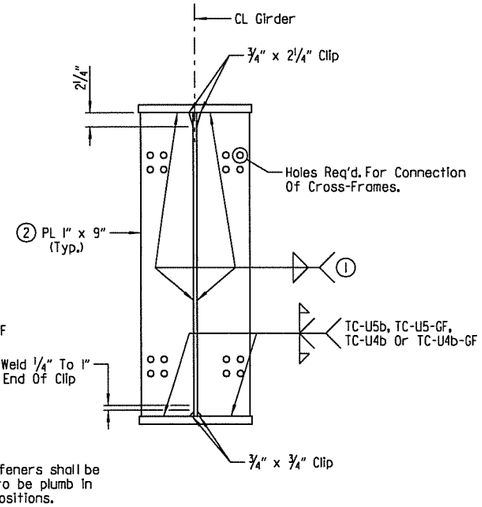


1 See "TABLE FOR WELDS" On This Sheet For Min. Weld Size.

2 Place Connection Plates And Bearing Stiffeners Parallel To Skew.

BEARING STIFFENER @ END BENTS

Scale: 1" = 1'-0"



* If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accommodate the deck form support.

NOTE:
Bearing stiffeners shall be fabricated to be plumb in their final positions.

BEARING STIFFENER @ INTERMEDIATE BENT

Scale: 1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
BRADLEY A. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 4 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_S4.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52946

sarobertson 8/19/2013 3:22:12 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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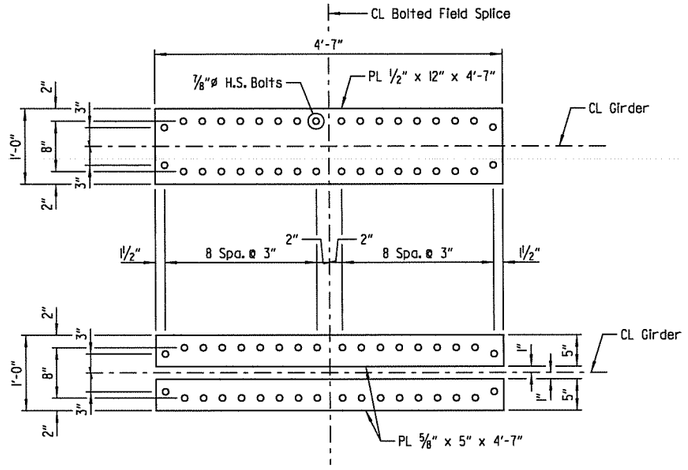
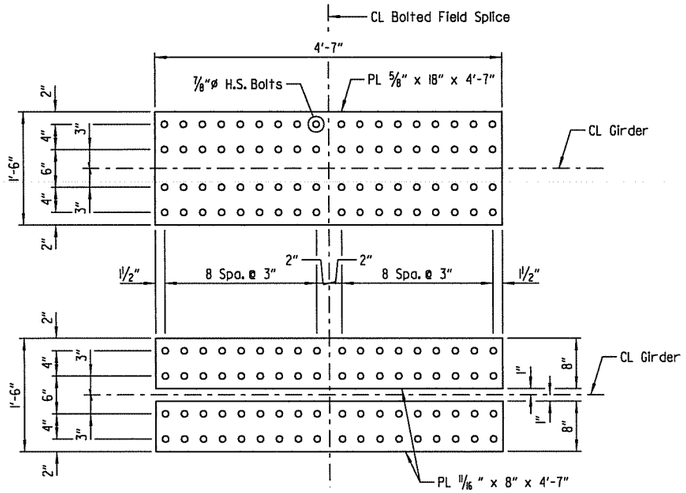
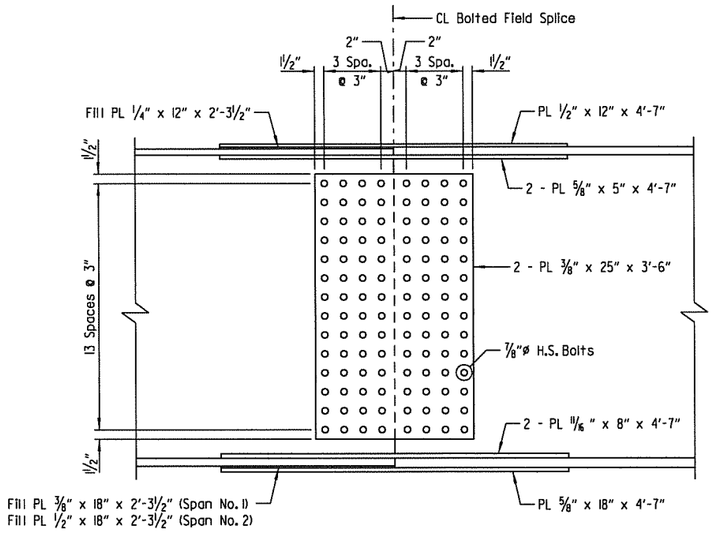


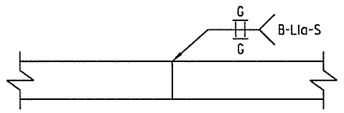
TOP FLANGE SPLICE
Scale: 1" = 1'-0"



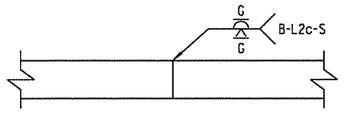
BOTTOM FLANGE SPLICE
Scale: 1" = 1'-0"



ELEVATION OF BOLTED FIELD SPLICE
Scale: 1" = 1'-0"



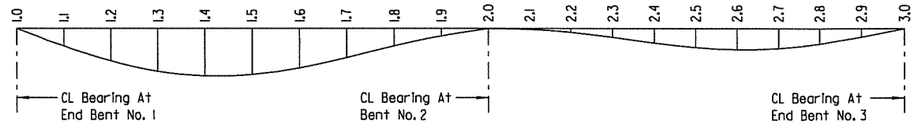
Equal Thickness (Web)



Equal Thickness (Flange)

DETAILS OF WELDED SPLICES
Scale: NTS

TABLE OF DEAD LOAD DEFLECTIONS (Inch)			
Point Of Deflection	Wt. Of Girder And Cross-Frames	Wt. Of Girder, Cross-Frames And Slab	Wt. Of Girder, Cross-Frames, Slab And Parapet
1.0	0.00	0.00	0.00
1.1	0.19	0.93	1.01
1.2	0.36	1.72	1.86
1.3	0.47	2.26	2.45
1.4	0.52	2.49	2.70
1.5	0.50	2.41	2.62
1.6	0.43	2.05	2.23
1.7	0.32	1.50	1.63
1.8	0.19	0.88	0.96
1.9	0.07	0.33	0.36
2.0	0.00	0.00	0.00
2.1	0.00	-0.01	0.00
2.2	0.03	0.19	0.21
2.3	0.09	0.48	0.53
2.4	0.15	0.79	0.86
2.5	0.20	1.03	1.12
2.6	0.22	1.13	1.24
2.7	0.21	1.07	1.17
2.8	0.16	0.84	0.92
2.9	0.09	0.46	0.51
3.0	0.00	0.00	0.00



DEAD LOAD DEFLECTION
Scale: NTS

NOTE:
Camber is for dead load deflection plus vertical curve +/- 1/4" tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing. Vertical curve corrections are not included. Negative sign (-) indicates point above chord.

NOTES:
All field splice bolts shall be 7/8"ø H.S. bolts.

All holes for field splice bolts shall be 15/16 "ø.

All field splice plates shall be AASHTO M270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
STEVEN R. YANCEY
01/21/13
BRIDGE ENGINEER

SHEET 5 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_S5.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52947

sgrobarson 8/19/2013 3:22:38 PM
WORKSPACE: AHTD
L:\2009\080395\07257\50 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over I-40\S90x Plans\CWAL over I-40 PG Unit 5 of 11.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	86	237
				①	07257	SPAN DETAILS		52948

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsubsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". All structural steel shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless otherwise noted. See Drawing No. 52954 for cleaning requirements of external load plates on elastomeric bearings.

All structural steel except galvanized members or steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall conform to Federal Standard 595B, Color Chip No. 27038, Black.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girder webs and flanges of plate girders and splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method. All Quality Control (Q. C.) testing is at the Contractor's expense.

All connection plates and intermediate stiffeners shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plan. No intermediate stiffeners are to be placed on the outside of the exterior girders except as noted. All bearing stiffeners shall be fabricated to be plumb in their final positions.

Cross-frames shall be installed as girders are erected. All bolts in cross-frames and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

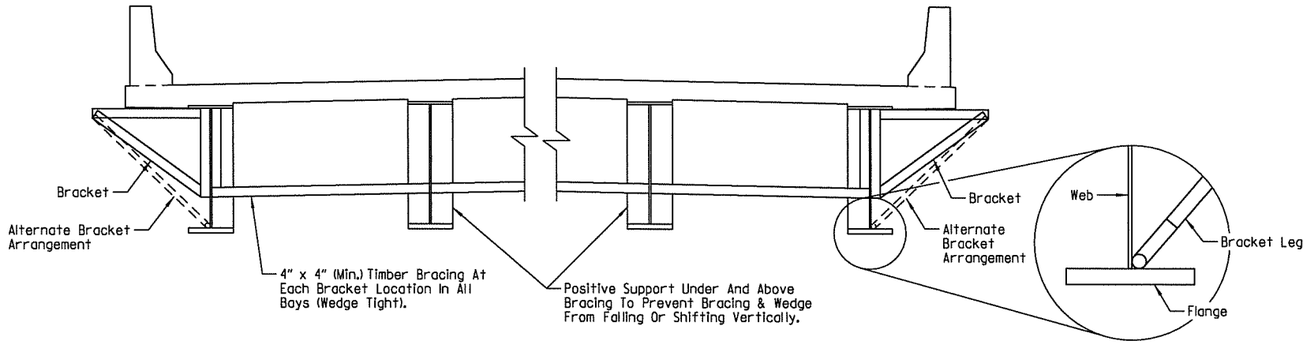
Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Open holes shall be 11/16 "ø unless otherwise noted. Holes for ¾"ø high-strength bolts may be 15/16 "ø if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M298 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".



SCREED RAIL SUPPORT DETAIL

Scale: NTS

NOTE: The bracket shall be installed in a manner that avoids any nicks or gouges in the flange, web and weld.

NOTE:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if ½" x 5¼" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket shown above is used. The alternate bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffeners shall conform to the details for cross-frame connection plates shown on Drawing No. 52946. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)."

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 6 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_S6.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52948

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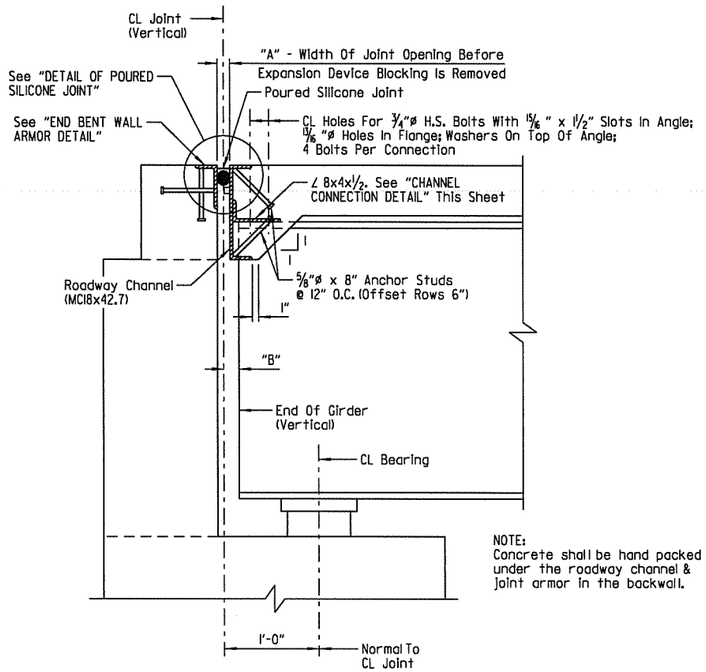
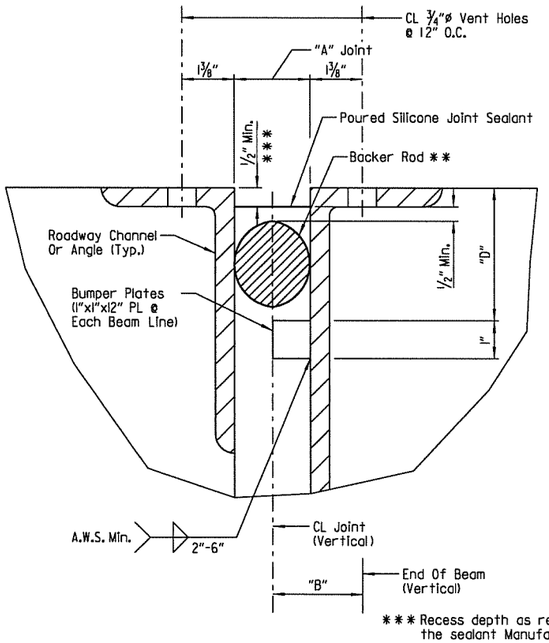
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	87	237
				①	07257	SPAN DETAILS		52949



SECTION THRU SILICONE JOINT

Note: Section Taken Normal To CL Joint
Scale: NTS



*** Recess depth as recommended by the sealant Manufacturer.

DETAIL OF POURED SILICONE JOINT

Scale: NTS

SILICONE JOINT DATA					
"A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
2 3/16"	2"	1 13/16"	2 1/4" ±	4 1/2"	1" x 1" x 12"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

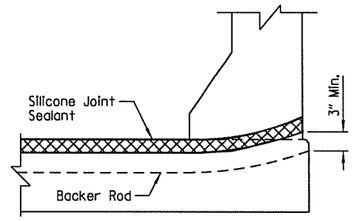
NOTES:
The temperature limitations recommended by the sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

** BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod that can be sealed in the same day.

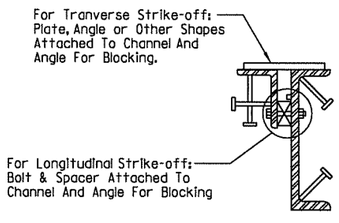
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



JOINT SEAL PLACEMENT AT CURB

Scale: NTS

One of two different blocking systems is required depending on the type of span finishing machine that is used.



NOTE:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension "A" shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENTS:

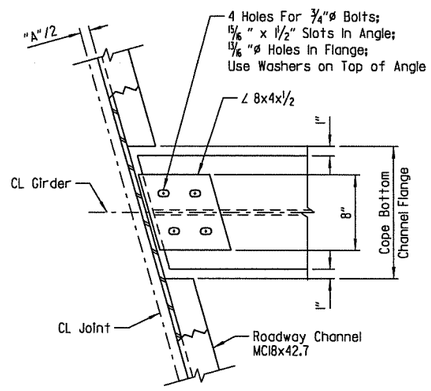
The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

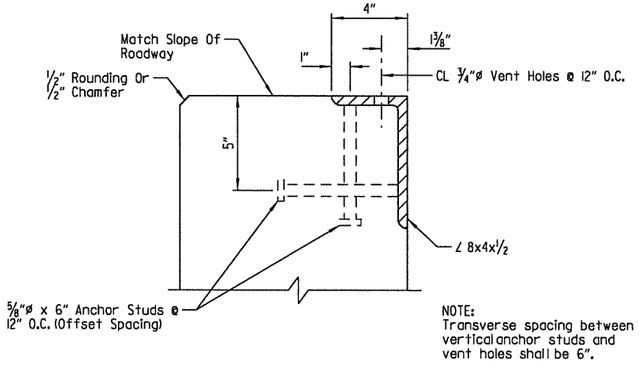
DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Scale: NTS



CHANNEL CONNECTION DETAIL

Scale: NTS



END BENT WALL ARMOR DETAIL

Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. HANCEY
8/27/13
BRIDGE ENGINEER

SHEET 7 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER I-40 FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x1_S7.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012

BRIDGE NO. 07257 DRAWING NO. 52949

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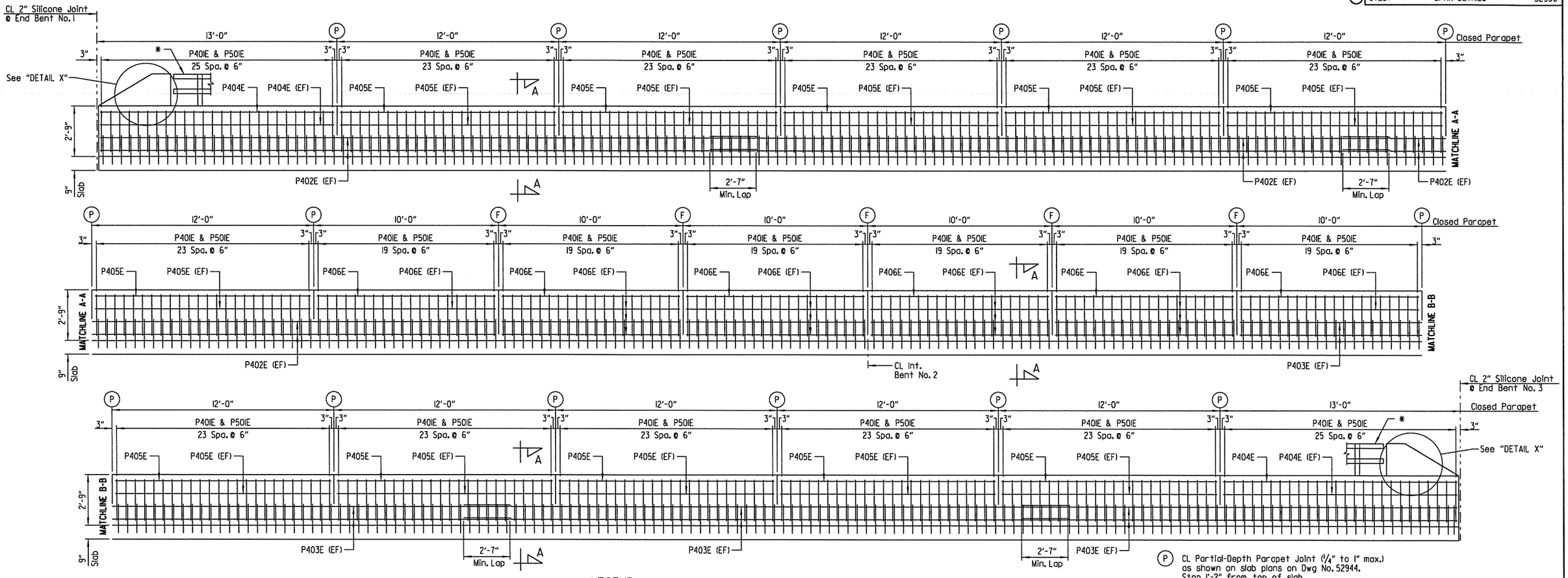
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	88	237
				(1) 07257		SPAN DETAILS		52950

* For metal railing details, see Dwg. No. 52952.



LEGEND

EF = Each Face

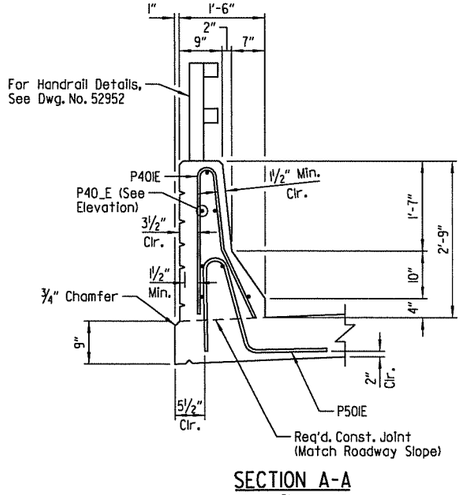
LEFT PARAPET - ELEVATION

(Looking At Inside Face Of Parapet)
Scale: 3/8" = 1'-0"

NOTE:
For "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52943.

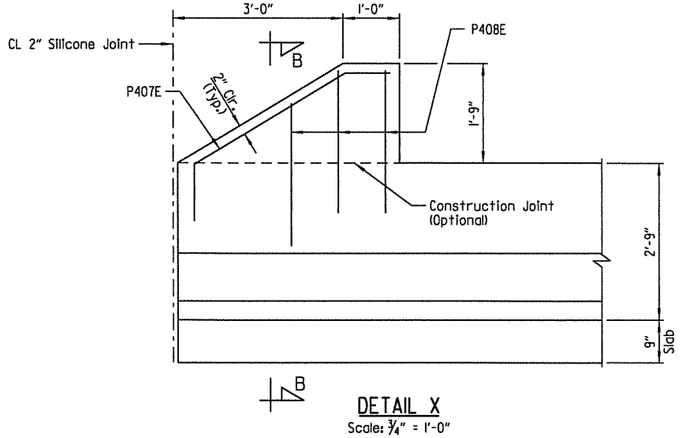
(P) CL Partial-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg No. 52944. Stop 1'-2" from top of slab.

(F) CL Full-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg No. 52944. Stop 4" from top of slab.



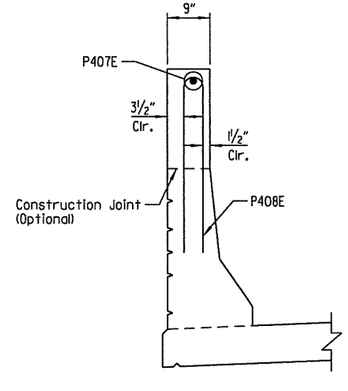
SECTION A-A

Scale: 3/4" = 1'-0"



DETAIL X

Scale: 3/4" = 1'-0"



SECTION B-B

Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 8 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER I-40 FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

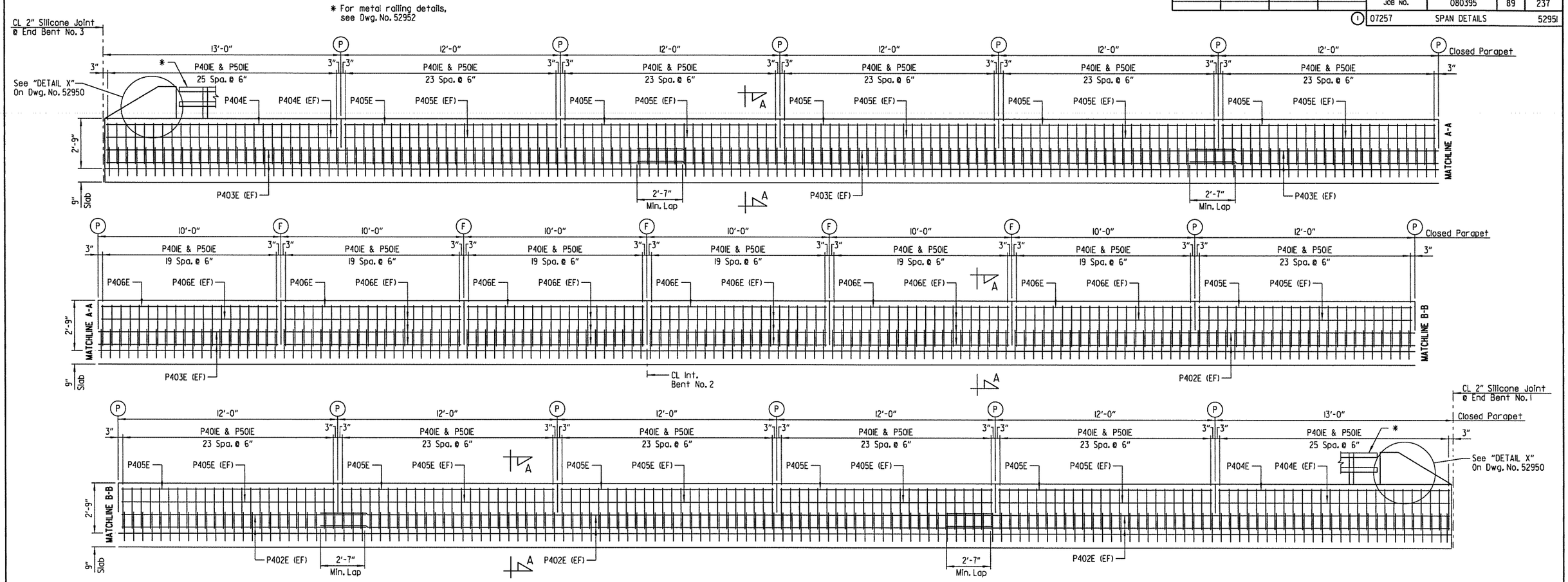
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x1_S8.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012

BRIDGE NO. 07257 DRAWING NO. 52950

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	89	237
(1) 07257		SPAN DETAILS		52951



LEGEND

EF = Each Face

RIGHT PARAPET - ELEVATION

(Looking At Inside Face Of Parapet)
Scale: 3/8" = 1'-0"

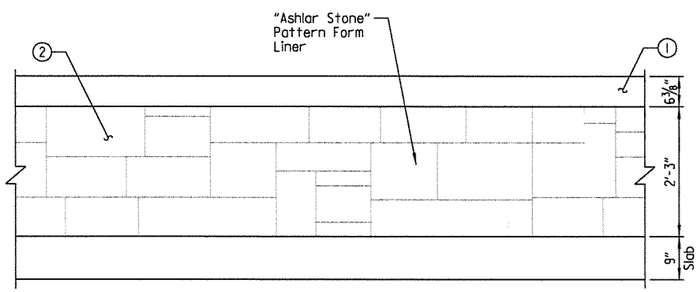
NOTES:
For "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52943.

For "SECTION A-A", see Dwg. No. 52950.

(P) CL Partial-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg No. 52944. Stop 1'-2" from top of slab.

(F) CL Full-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg No. 52944. Stop 4" from top of slab.

NOTE:
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.



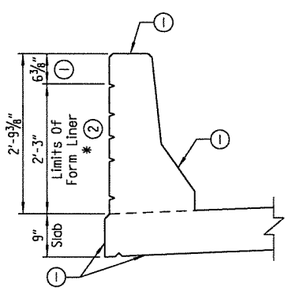
PANEL ELEVATION

(Showing Outside Face Of Parapet)
Scale: 3/4" = 1'-0"

NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1 1/2" to parapet reinforcing.

(1) Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

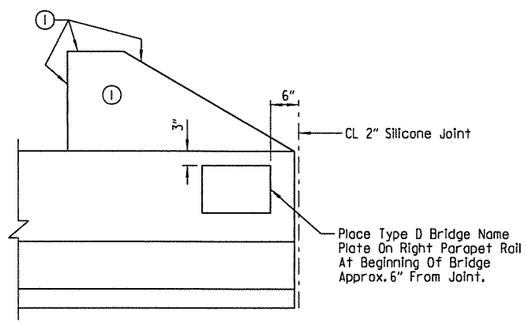
(2) Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)



CLOSED PANEL PARAPET

Scale: 3/4" = 1'-0"

* "Ashlar Stone" Pattern



VIEW SHOWING LOCATION OF NAME PLATE

(Showing Inside Face Of Parapet)
Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SEWELL YANCEY
8/27/13
BRIDGE ENGINEER

SHEET 9 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x1_S9.DGN
CHECKED BY: ABH DATE: MAR. 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2012

BRIDGE NO. 07257 DRAWING NO. 52951

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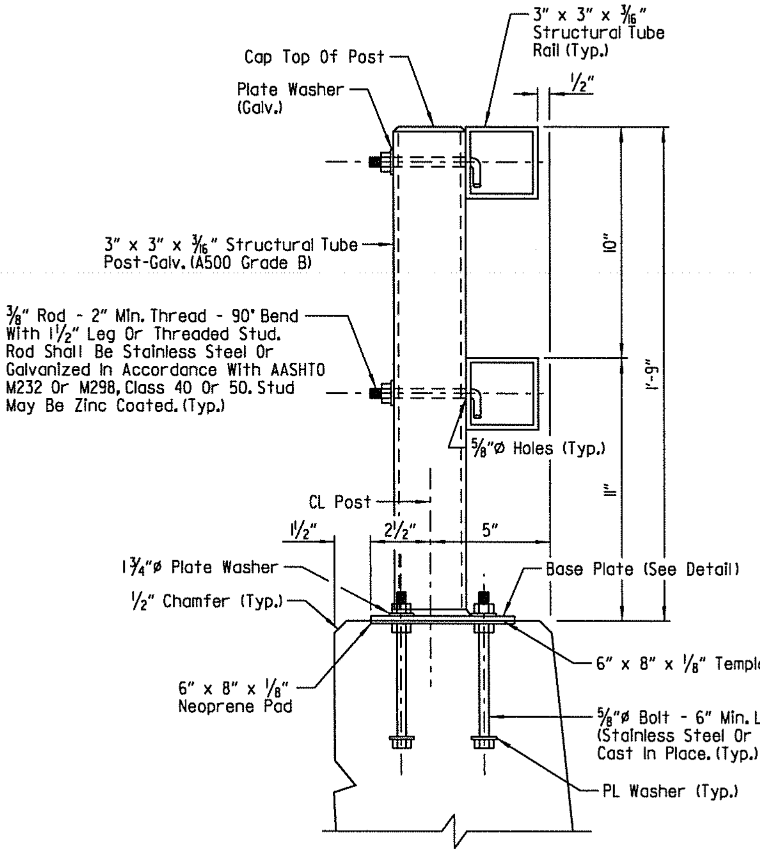
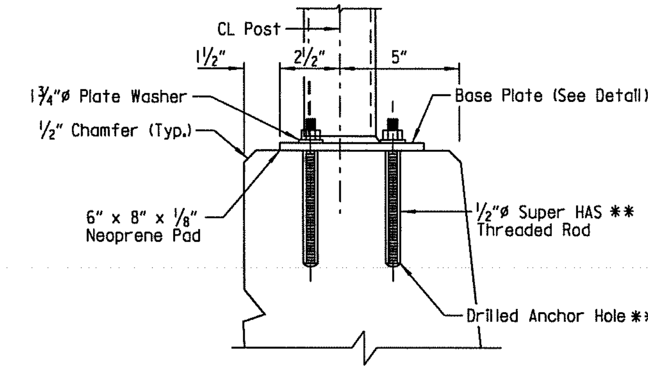
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	90	237
				① 07257		SPAN DETAILS		52952



TYPE H RAIL

Scale: 3" = 1'-0"

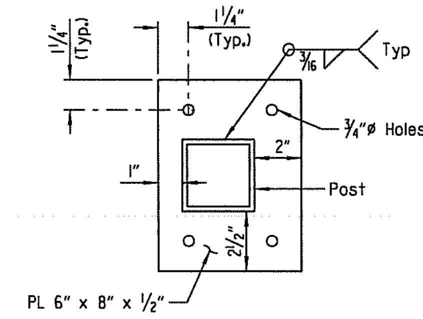


** HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4 1/2" embedment or an approved equal.

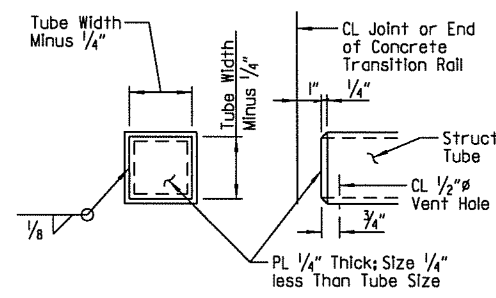
The HILTI Epoxy Adhesive Anchor System shall be installed in accordance with Manufacturer's recommendations.

DETAILS OF ALTERNATE POST ANCHOR SYSTEM

(Epoxy Adhesive Anchors)
Scale: 3" = 1'-0"

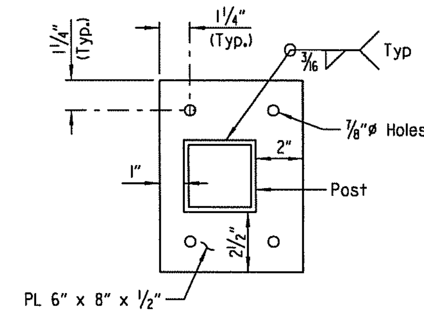


BASE PLATE



DETAILS OF END CAPS

Scale: 3" = 1'-0"



BASE PLATE

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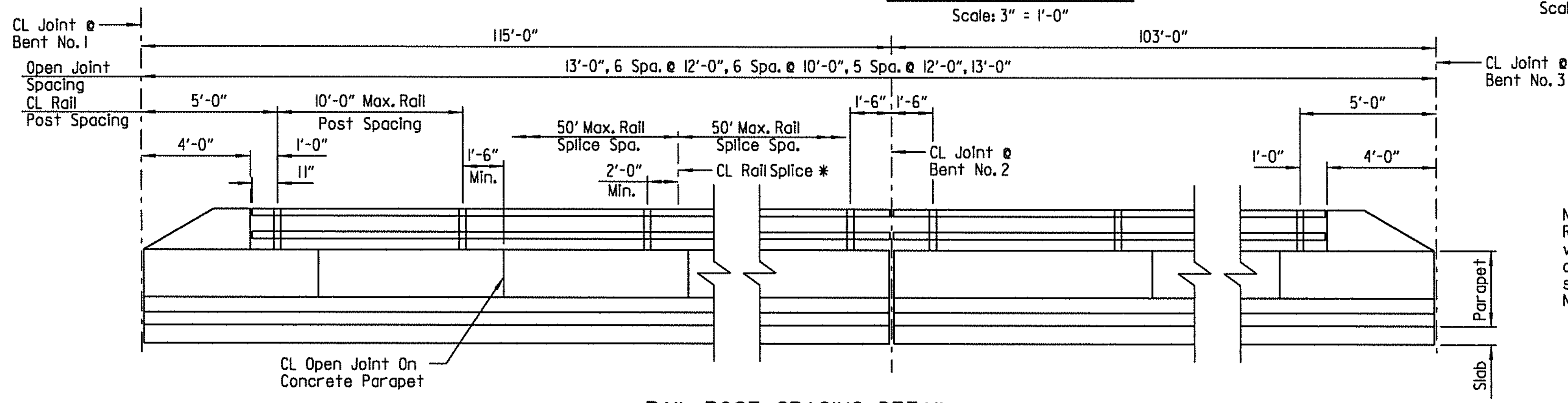


NOTE:
Rail layout shall conform to the vertical and horizontal alignment of the bridge. For additional post spacing requirements, See Dwg. No. 52953.

* NOTE:
Splices shall be at 50' max. spacing. Rail sections must be fabricated to attach to at least three posts. CL splices shall be located at a minimum of 2'-0" from CL Post.

RAIL POST SPACING DETAIL

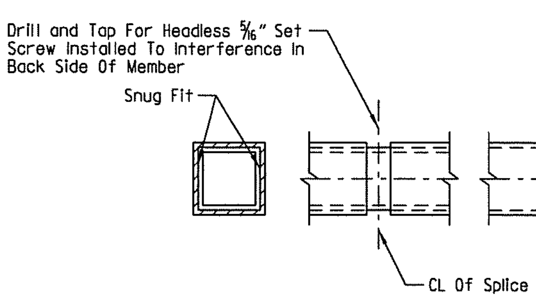
Scale: NTS

(Horizontal dimensions are along face of rail and do not included a vertical curve correction.)

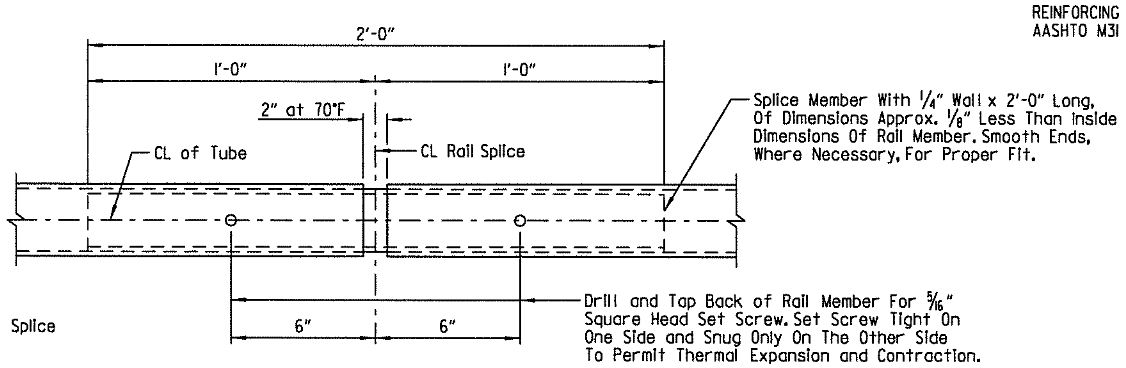
GENERAL NOTES

CONCRETE: All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4000 psi.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Grade 60.



ALTERNATE INSTALLATION



SPLICE DETAIL

Scale: 3" = 1'-0"

NOTES FOR BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of Bridge. All posts shall be vertical.

Maximum post spacing = 10'-0"
Minimum distance from centerline post to centerline open or contraction joints in parapet = 1'-6".

Rail splices shall be at 50' maximum spacing. Centerline splices shall be located at a minimum of 2 feet from centerline of post. Rail sections shall be fabricated to attach to at least three posts.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Shop drawings showing details of railing shall be submitted and approval secured before fabrication is begun.

MATERIALS:

Tubing, Posts, and Accessories: AASHTO M270, Gr. 36 or ASTM A500-Grade B.

Railing End Caps shall conform to AASHTO M270, Grade 36 galvanized.

Steel rail members shall be galvanized in accordance with AASHTO M111 after fabrication and shall receive a powder coating process after galvanizing. Galvanizing shall not interfere with the powder coating process. Galvanized surfaces shall be prepared in accordance with subsection 807.87 and the powder coating manufacturer's recommendations before application of the powder coating process. The powder coating process shall be a two coat system applied using electrostatic spray. The base coat shall be a thermosetting epoxy powder with a minimum thickness of 2-4 mils. The top coat shall be a tough polyester powder coat with a minimum thickness of 2-4 mils. Color shall be Black equal to or close to Federal Std. 595B, color chip 27038. Coated galvanized framework shall have a salt spray resistance of 3,000 hours using ASTM B117 without loss of adhesion. The powder coating process shall be in accordance with Manufacturer's recommendations.

The Contractor shall submit a paint color sample prior to fabrication for Owner's approval.

Cast in place anchor bolts shall be of stainless steel or high strength steel. Stainless steel anchor bolts shall conform to ASTM A139 or A320-Grade B8 with a minimum yield strength of 80,000 psi. High strength steel anchor bolts shall conform to AASHTO M164 or A354-Grade BC galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

Splice Set Screws shall conform to the requirments of ASTM A193 or A320-Gr.B8 (Stainless steel) or AASHTO M270, Gr.36 (Galvanized).

Nuts shall conform to AASHTO M292, Gr.8A (Stainless steel) or galvanized in accordance with AASHTO M232 or M298 Class 40 or 50.

Threads on bolts, screws and nuts shall conform to American Standard Coarse Series, Class 2 FIT, ASA Specification B1.1.

Washers shall be stainless steel and conform to the requirements of ASTM A276 or A167-Type 302 with dimensions meeting ASTM F436, or high strength steel conforming to AASHTO M293 and galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

Plate Washers shall be stainless steel and conform to the requirements of ASTM A167-Type 302 or AASHTO M270, Gr.36, galvanized in accordance with AASHTO M232 or M298, Class 40 or 50. Plate washers shall have dimensions meeting the requirments of ANSI/ASME B18.22.1, Type A plain washer (Wide Series).

Mixing of stainless steel and galvanized fasteners will not be permitted.

Metal Bridge Railing, including posts, fasteners, base plates, template plates, balusters, anchor bolts, neoprene pad, galvanizing and powder coatings; fabrication and erection; and all incidentals necessary to complete the work shall be paid for in accordance with Section 806 at the contract unit price per linear foot bid for "Metal Bridge Railing (Type H)".

SHEET 10 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x1_SA.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: JTR DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52952

saraberson 8/19/2013 3:25:59 PM
WORKSPACE: AHTD
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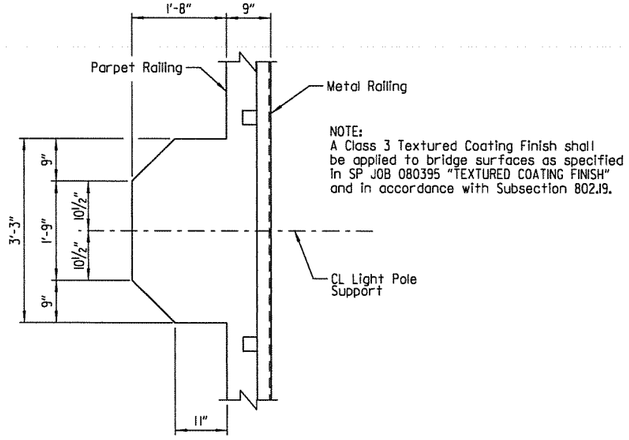
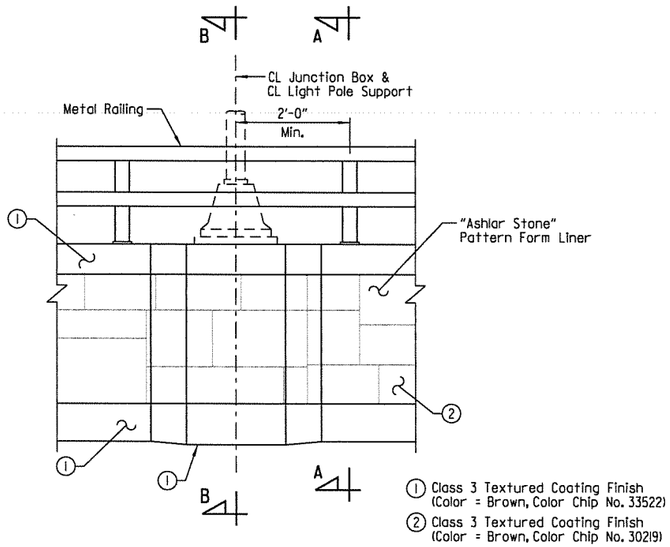
REVISED DATE:

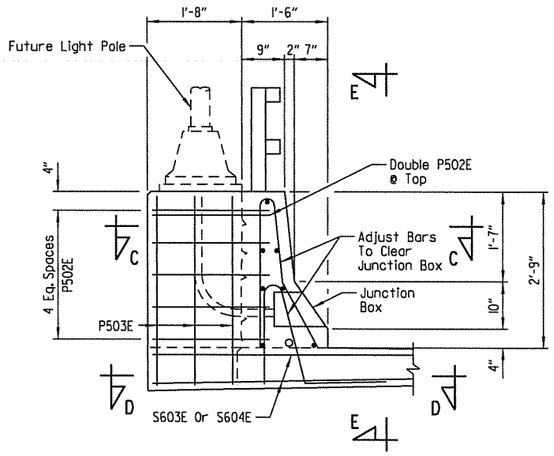
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	91	237
				(1) 07257		SPAN DETAILS		52953



PLAN - LIGHT POLE SUPPORT PEDESTAL
Scale: NTS



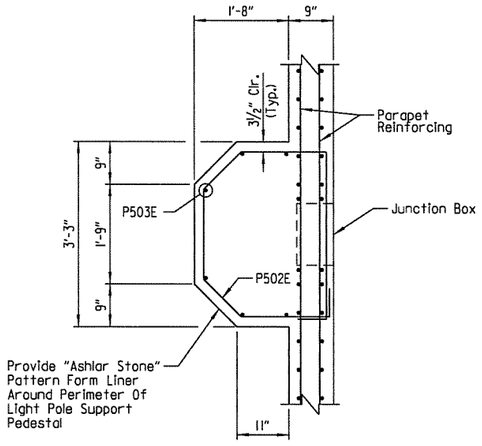
ELEVATION - LIGHT POLE SUPPORT PEDESTAL
Scale: NTS



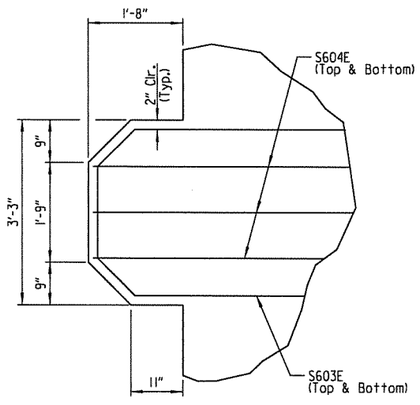
SECTION A-A
Scale: NTS

LIGHT POLE SUPPORT LOCATION	
Station	Location
18+97.41	LT. & RT
20+00.00	LT. & RT
20+90.88	LT. & RT

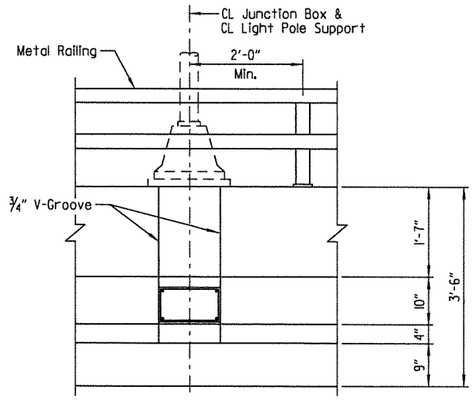
NOTE:
Stations shown are to CL light pole support.



SECTION C-C
Scale: NTS



SECTION D-D
Scale: NTS



VIEW E-E
Scale: NTS

NOTES:
Light pole to be provided by Owner in the future.

Anchor bolts will not be provided but will be installed in the future.

For Electrical Details, see Dwg. Nos. 52955-52957.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 11 OF 11
DETAILS OF 218'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x1_SB.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52953

saroberson 8/19/2013 3:26:31PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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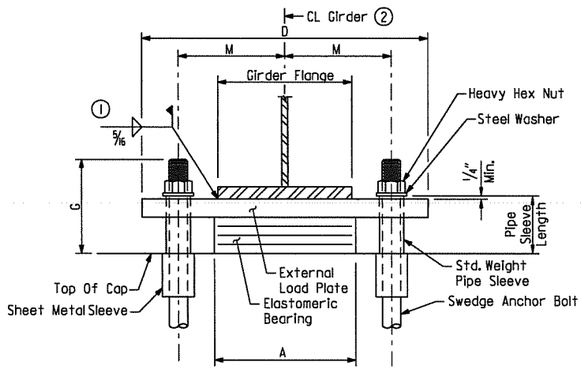
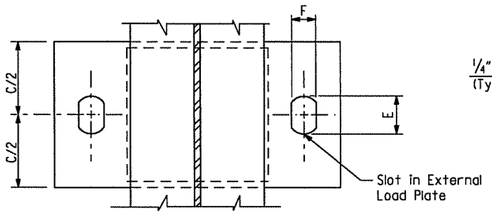
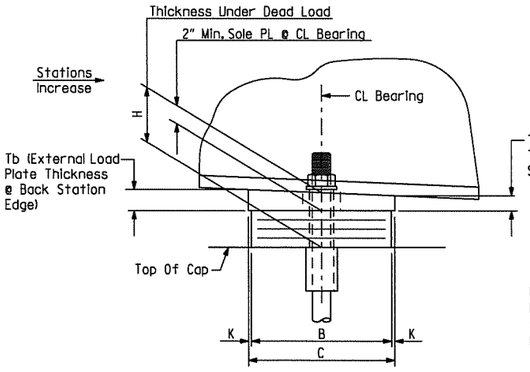
				JOB NO.		080395	92	237
				1 07257		ELASTOMERIC BEARINGS		52954



FRONT VIEW - AT BENT NOS. 1 & 3



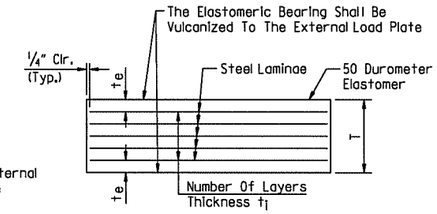
PLAN VIEW - AT BENT NOS. 1 & 3



SIDE VIEW - AT BENT NOS. 1 & 3

1. Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

2. Centerline elastomeric pad shall be aligned with centerline girder.

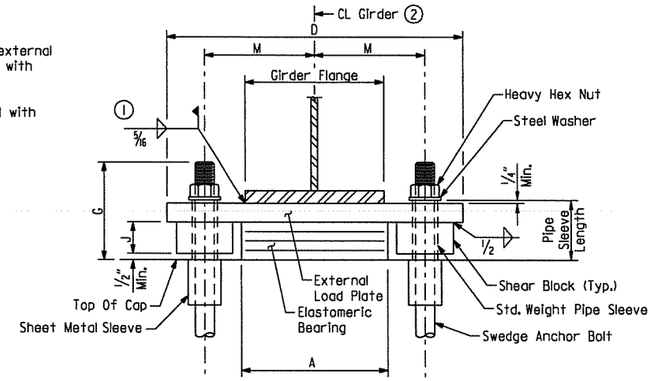


t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
t_i = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness t_i

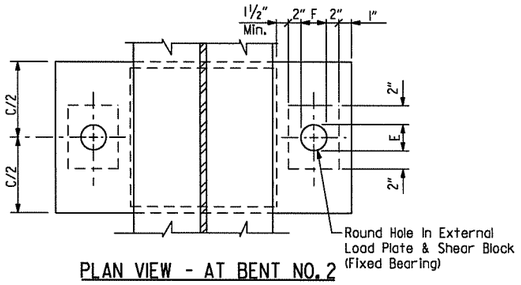
ELASTOMERIC BEARING

NOTE:
The direction of the bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in "TABLE OF FABRICATOR VARIABLES".

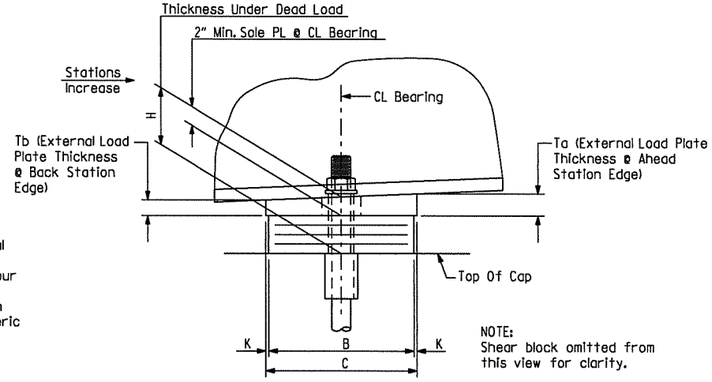
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



FRONT VIEW - AT BENT NO. 2

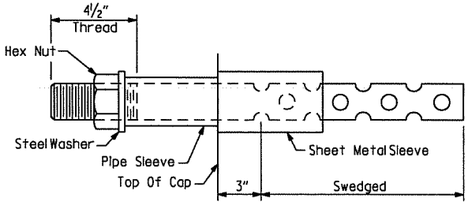


PLAN VIEW - AT BENT NO. 2



NOTE:
Shear block omitted from this view for clarity.

SIDE VIEW - AT BENT NO. 2



ANCHOR BOLT DETAIL

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)"

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M298, Class 50.

External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(B) for painted steel and painted in accordance with Section 807.75. Mask areas of field welding. The color of paint shall be Black and shall match Fed. Std. 595B, Color Chip No. 27038. Painting will not be paid for directly but will be considered subsidiary to "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08.

TABLE OF FABRICATOR VARIABLES

Bridge No.	Location		Bearing Type	No. Of Bearings Each Bent	* Maximum Design Load (Kips)	Elastomeric Pad								External Load Plate									Anchor Bolt				
	Bent No.	Girder No.				G	H	A	B	N	t_i	t_e	No. & Thickness Of Steel Laminate	T	C	D	E	F	J	K	M	T_a	T_b	Anchor Bolt (Dia. x L)	Anchor Bolt Grade	Pipe Sleeve Size (Dia. x L)	Sheet Metal Sleeve Size (Dia. x L)	Steel Washer Size (O.D.)
07257	1	All	Exp.	5	165	8 9/16"	5 5/16"	18"	10"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	11"	29 1/2"	4 1/2"	2 5/8"	-	1/2"	11 3/4"	2.05"	1.95"	1 3/4" x 29"	55	2" x 5 11/16"	4" x 8"	3 3/8"
	2	All	Fix	5	404	7 15/16"	4 5/16"	20"	13"	4	1/2"	1/4"	5 @ 12 Ga.	3"	14"	38 1/4"	2 5/8"	2 5/8"	2 3/8"	1/2"	14 11/16"	2.00"	2.00"	1 3/4" x 28"	55	2" x 5 3/16"	4" x 8"	3 3/8"
	3	All	Exp.	5	143	8 9/16"	5 5/16"	18"	10"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	11"	29 1/2"	4 1/2"	2 5/8"	-	1/2"	11 3/4"	1.95"	2.05"	1 3/4" x 29"	55	2" x 5 11/16"	4" x 8"	3 3/8"

* Maximum Design Load = Service I Limit State

DETAILS OF ELASTOMERIC BEARINGS
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395xl_EI.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07257 DRAWING NO. 52954

sarobertson 8/9/2013 3:37:41PM
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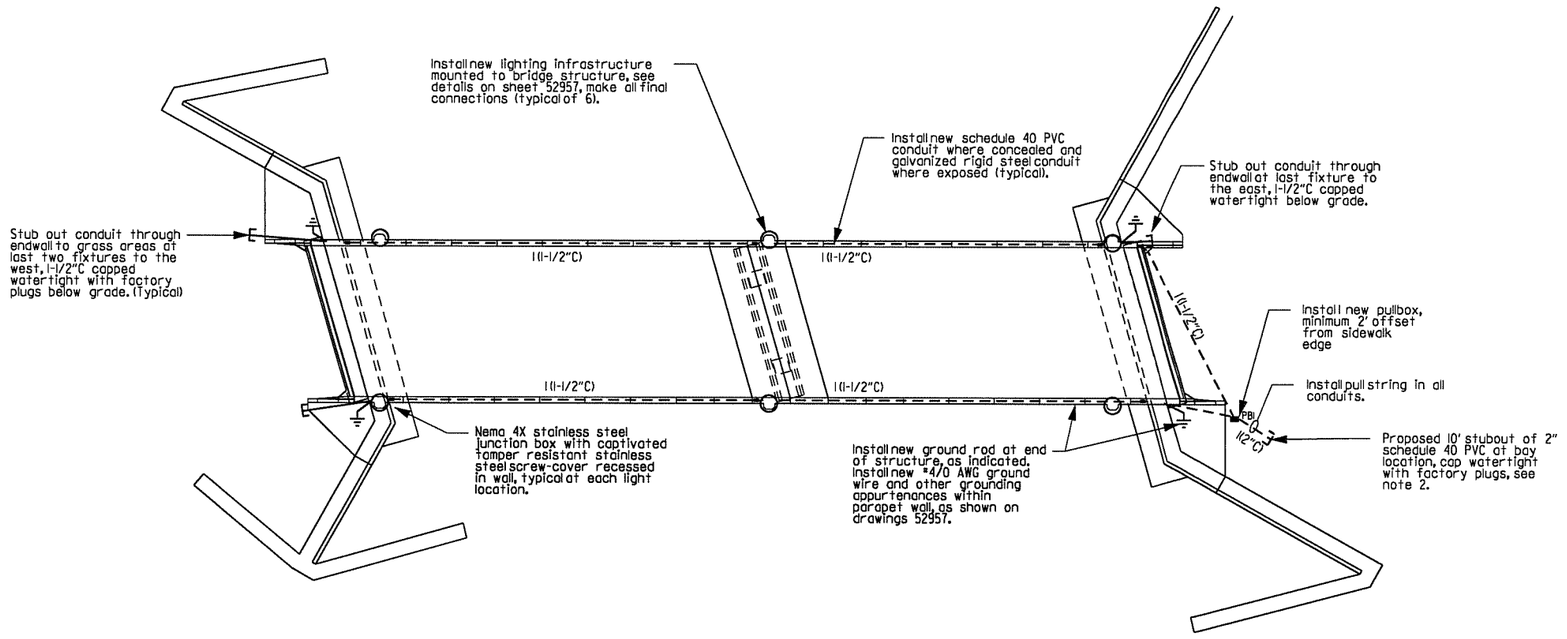
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	93	237
				(1) 07257		ELEC. DETAILS		52955



LEGEND:

- 1-1/2" conduit, with pullstring.
- Pull box.
- Future light pole and fixture assembly by others; new junction boxes, raceway systems and ground systems by contractor.
- 3/4" x 10' copperclad ground rod.

NOTES:

1. See bridge plans for exact pole locations.
2. Contractor shall coordinate with City prior to construction to determine final location of future electrical service location and which side of bridge to install new pullbox for future feeders.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
8/21/13
BRIDGE ENGINEER

SHEET 1 OF 3
ELECTRICAL LIGHTING DETAILS
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJW DATE: AUG 2013 FILENAME: B080395x1_ELI.DGN
CHECKED BY: ECF DATE: AUG 2013 SCALE: 1"=20'
DESIGNED BY: ECF DATE: AUG 2013
BRIDGE NO. 07257 DRAWING NO. 52955

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REVISED DATE:

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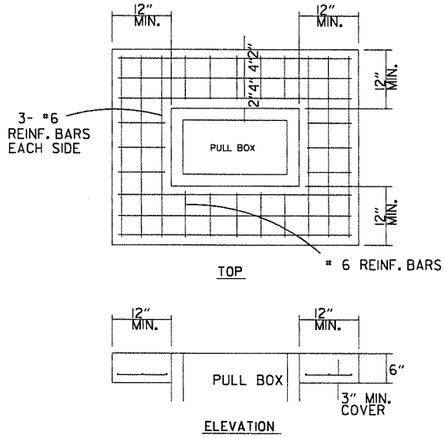
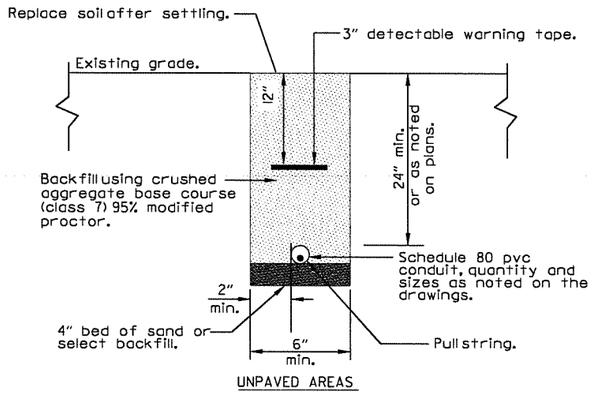


NOTES:

1. All Type I and Type 2 HD pull boxes are installed with an apron of concrete 12" (305 mm) wide and 6" (152 mm) in depth. All payment shall be included in the price of the Type HD pull box. Pull box shall be installed flush to surrounding grade unless otherwise instructed by the engineer. The concrete shall be Class "S." Three #6 reinforcing bars in the apron on all sides of the pull box is required in concrete.
2. All reinforcing bars to be grade 60.
3. Secure cover with stainless steel penta-head bolts.
4. Provide McCain Vandal Resistant, hot dipped, galvanized steel pullbox insert or approved equal, minimum 3/16" thick lid.

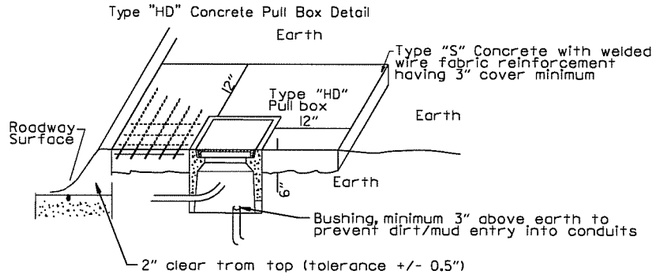


NON-ENCASED ELECTRICAL DUCT DETAILS

Scale: NONE

ELECTRICAL DUCT NOTES:

1. Contractor shall stake the duct installation in plan and elevation for new electrical ducts to avoid existing utilities, staking plan shall be approved by owner and engineer prior to work.
2. Contractor shall adjust the depth of the electrical ducts as required to maintain the minimum cover requirement indicated and avoid existing utilities.
3. Similar construction for other duct sizes.
4. Install duct conduit supports at 5'-0" O.C. maximum spacing (typical all ducts).
5. Utilize schedule 80 PVC conduit for non-encased conduit.
6. No PVC shall emerge from the ground or concrete slab or encasement, PVC shall convert to galvanized rigid steel conduit prior to its emergence.
7. Spare galvanized rigid steel conduits shall stub up 3" above finished grade or concrete pad surface and be capped watertight.
8. Install conductors and cables as noted on drawing. Install pullwire in all spare ducts.
9. Minimum cover requirement for duct banks under roads, driveways and parking lots shall be 24".
10. Minimum cover requirements for electrical secondary service duct banks shall be 30".
11. Minimum cover requirements for electrical primary service duct banks shall be 36".
12. Vertical and horizontal distances between conduits shall be 3" minimum for ducts containing circuits over 600 volts.
13. Marker tape shall be a 3" wide, detectable type construction with red background and black lettering, "CAUTION-BURIED ELECTRICAL LINE BELOW".

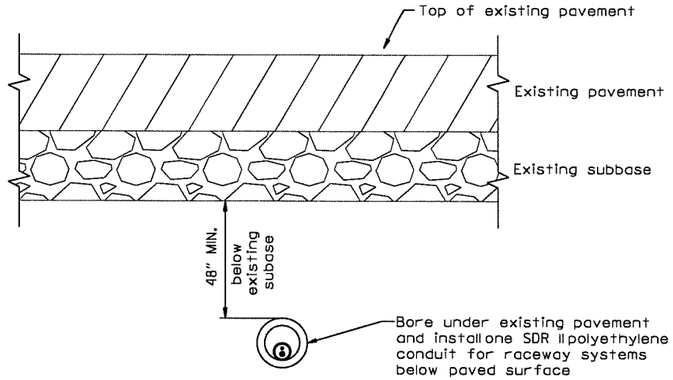


PULLBOX DETAILS

Scale: NONE

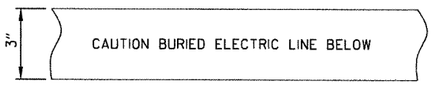
GENERAL LIGHTING NOTES:

1. The contractor may find it necessary to construct temporary ramps or roadways for construction. These may be done at the approval of the engineer (not a separate pay item). When no longer required, the ramps or roadways are to be removed and the affected area(s) grassed and growth established (not a separate pay item). All traffic control devices required for compliance shall be provided by the contractor at no cost to the owner.
2. It shall be the responsibility of the contractor to protect existing structures such as pipes, inlets, aprons, bridges, etc., from damage which might occur during construction. The contractor shall replace or repair, as directed by the engineer, any structures damaged during the life of the contract. No payment shall be made for replacement or repair of damaged items.
3. Where the contractor encounters paved ditches in routing of branch circuits he must jack under ditch. This is not a separate pay item. Damage to paved ditches (and/or other structures) caused by the contractor during this project shall be repaired (as directed by the engineer) at no cost to the owner.
4. Any areas disturbed during construction shall be restored by the contractor (to include grassing and site grading) as directed by the engineer.
5. Existing underground utility lines are shown on the drawings based upon the best information available to the engineer. The engineer cannot and does not warrant that this information is complete or accurate. The contractor must coordinate directly with the involved utility owners to have underground utility lines field located in advance of construction.



DIRECTIONAL BORING

Scale: NONE



GENERAL NOTES:

1. Power marking tapes shall be detectable type construction with red background and black lettering.
2. Tape shall be detectable, durable, highly visible, resistant to elements, meeting and/or exceeding all industry standards.

UNDERGROUND DETECTABLE WARNING TAPE

Scale: NONE

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.9236 ERIC C. FARMER 8/21/13

BRIDGE ENGINEER

SHEET 2 OF 3
ELECTRICAL LIGHTING DETAILS
CONWAY LOOP OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

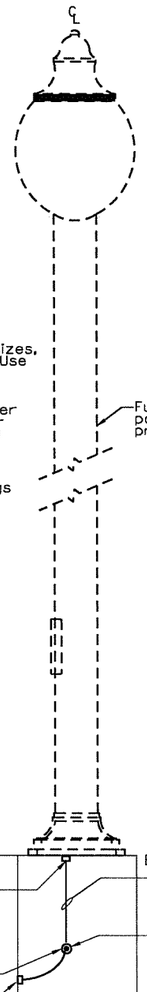
DRAWN BY: KJW DATE: AUG 2013 FILENAME: B080395x1_EL2.DGN
CHECKED BY: ECF DATE: AUG 2013 SCALE: AS SHOWN
DESIGNED BY: ECF DATE: AUG 2013
BRIDGE NO. 07257 DRAWING NO. 52956

KJWhite 8/21/2013 1:56:29 PM
WORKSPACE: AHTD Bridge
L:\2009\080730 - Conway Western Arterial Loop\Bridge\Drawings\Phase 1\CWAL over I-40\80% Plans\CWAL over I-40 Elec 2 of 3.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	95	237
				(1) 07257		ELEC. DETAILS		52957

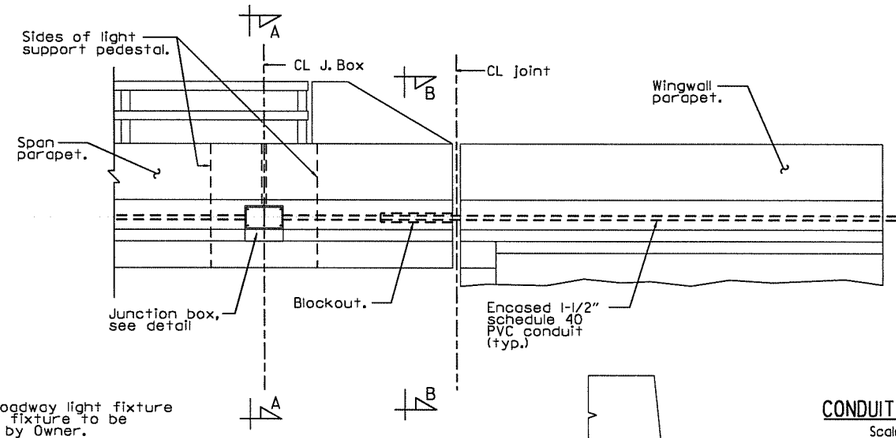
NOTES:

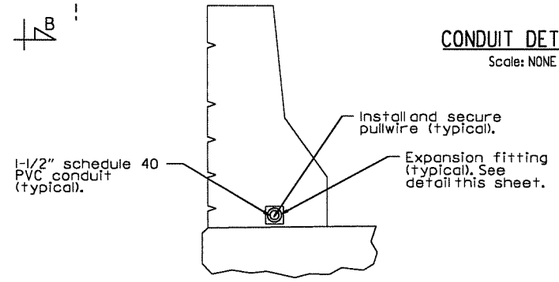
1. All hardware shall be corrosion resistant, galvanized rigid steel.
2. Refer to plan for conduit and conductor sizes. 1-1/2" minimum schedule 40 PVC conduit size. Use long sweep 90° elbows on all conduit bends.
3. Tie all conduits, equipment ground and all other metal equipment and grounding lugs together using minimum #6 awg solid bare copper and approved exothermic welds and connect to ground rod system.
4. Provide grounding and bonding type bushings For conduits, 3" above wall into pole base.



TYPICAL ROADWAY LIGHTING FIXTURE DETAIL

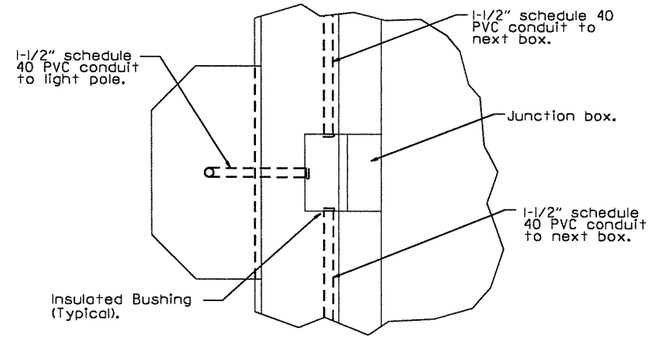
Scale: NONE





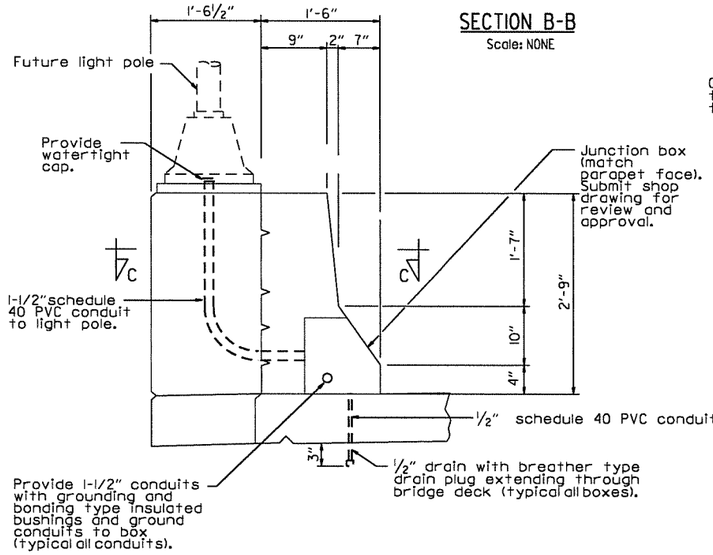
CONDUIT DETAILS

Scale: NONE



SECTION C-C

Scale: NONE

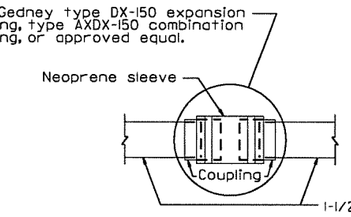


SECTION B-B

Scale: NONE

SECTION A-A

Scale: NONE

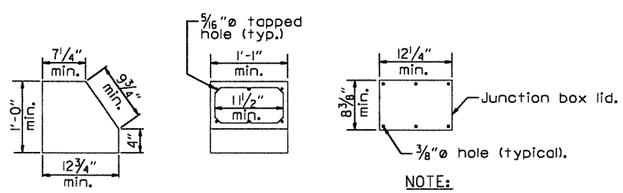


EXPANSION FITTING DETAILS

Scale: NONE

NOTES:

1. The movement range of the expansion fitting shall meet or exceed the movement range of the bridge expansion joints. Bonding jumber not shown for clarity. Minimum four required.
2. Provide standard PVC adapters for connections at each end of expansion fitting.



JUNCTION BOX DETAILS

Scale: NONE

NOTE:

Junction box and lid material shall be Nema 4X stainless steel. Fasteners shall be ⅝" diameter x ¾" S.S. FH socket screws. The junction boxes shall be adequately anchored to the parapet by means of an approved mechanical device. Junction boxes shall not interfere with slider plates or expansion joints. Provide at least one ½" min. diameter drainage hole near the bottom of the junction box.

BOX NOTES:

1. NEMA 4X stainless steel construction with gasket, recessed in parapet wall.
2. Internal copper ground bar with 6 lugs, secured to box interior.
3. External ground lug, bonded to #4/0 ground wire system using #6 AWG copper minimum.
4. Install pullwire in each conduit, secured to prevent slipping into conduit end.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.9236 ERIC C. FARMER 8/21/13

BRIDGE ENGINEER

SHEET 3 OF 3
ELECTRICAL LIGHTING DETAILS
CONWAY LOOP OVER I-40
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

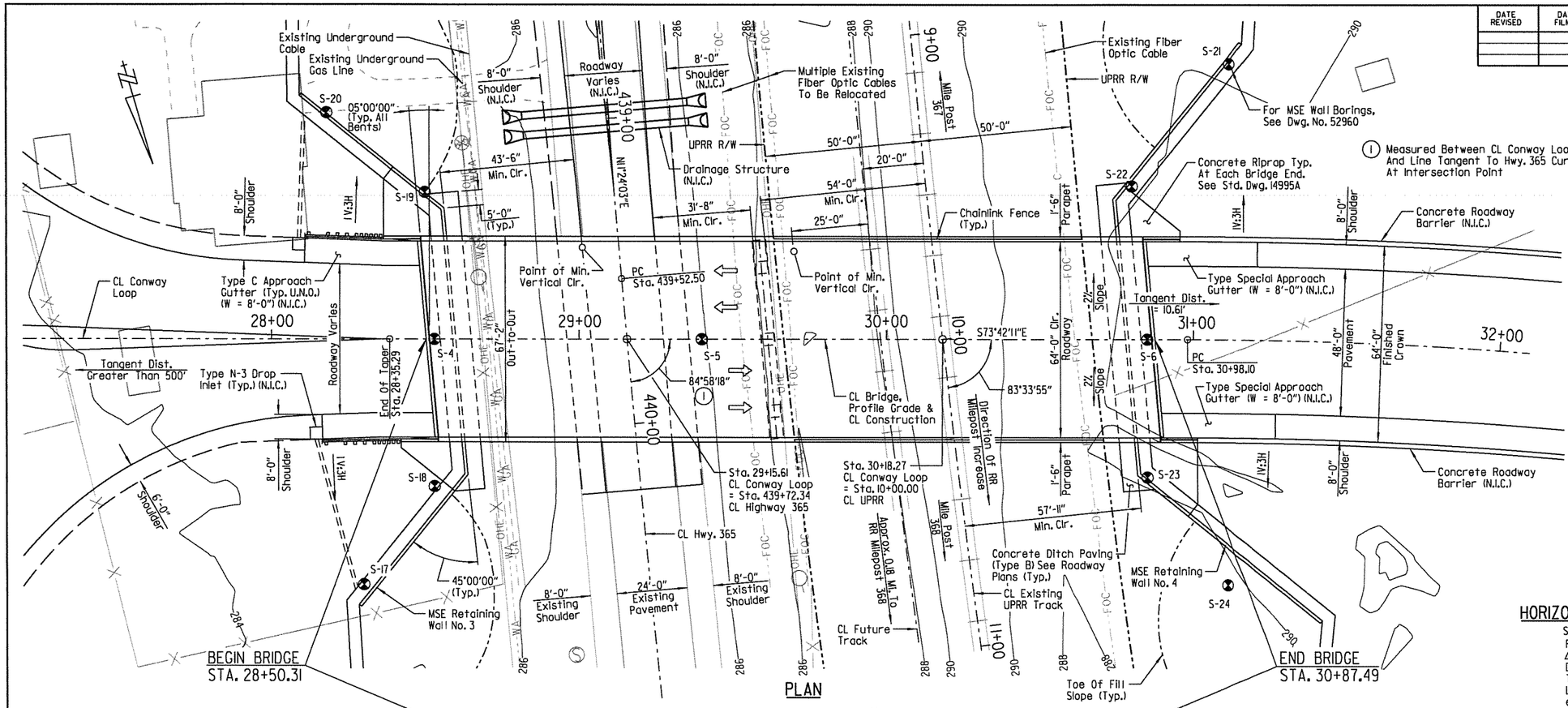
DRAWN BY: KJW DATE: AUG 2013 FILENAME: B080395x1_EL3.DGN
CHECKED BY: ECF DATE: AUG 2013 SCALE: AS SHOWN
DESIGNED BY: ECF DATE: JUNE 2012

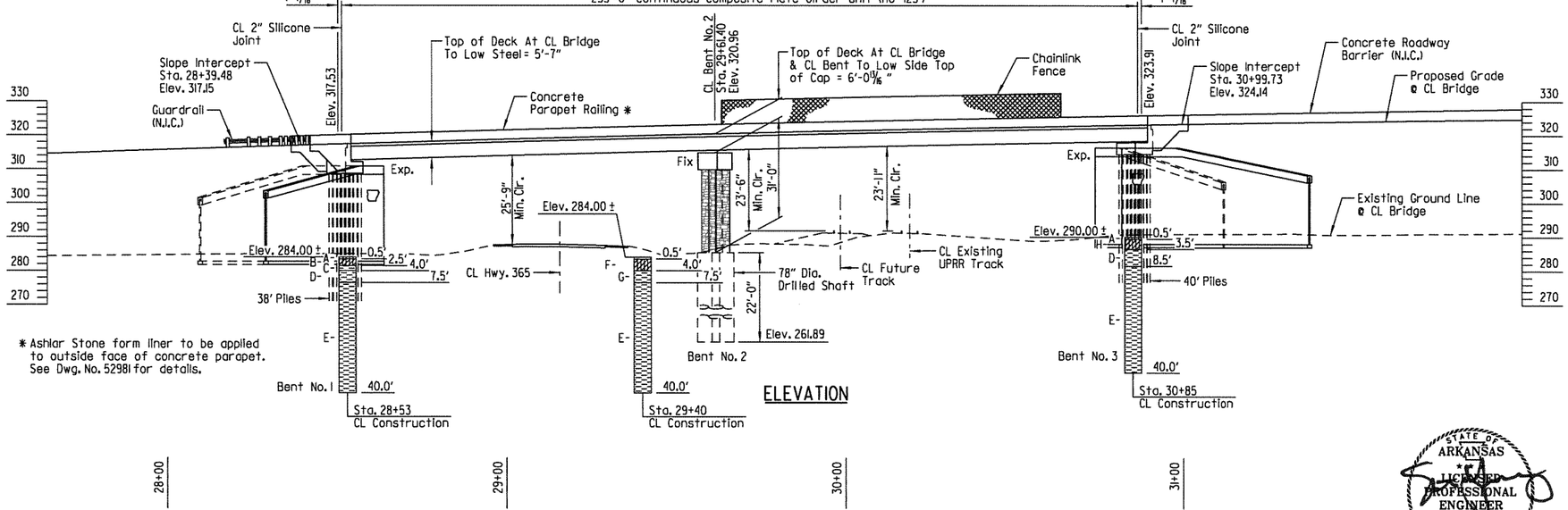
BRIDGE NO. 07257 DRAWING NO. 52957

K.White 8/21/2013 2:06:09 PM
WORKSPACE: AHTD Bridge
L:\2009\V08I230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over I-40\90% Plans\CWAL over I-40 Elec 3 of 3.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	96	237
① 07258		LAYOUT		52958



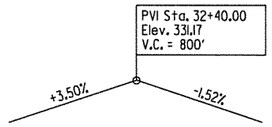


FOR R/W DATA, SEE ROADWAY PLANS

NOTE:
Use Type C & Type Special Approach Gutters (W = 8'-0") as shown (N.I.C.).

Use Type N-3 drop inlets at east end of bridge. (N.I.C.)

For "GENERAL NOTES", "BORING LEGEND" & "N VALUES", See Dwg. No. 52959.



VERTICAL CURVE DATA

Conway Loop
(Profile Grade Along CL Bridge)

NOTE:
Stations and elevations shown are along CL Bridge. Elevations shown are at Working Point.

HORIZONTAL CURVE DATA

State Highway 365
PI = 452+36.94
Δ = 17°00'00.0" Lt.
D = 0°40'00"
T = 1284.44'
L = 2550.00'
e = NA
R = 8594.37'

HORIZONTAL CURVE DATA

Conway Loop
PI = 37+32.12
Δ = 47°45'04.5" Rt.
D = 4°00'00"
T = 634.02'
L = 1193.78'
e = NA
R = 1432.39'

LEGEND

N.I.C. = Not In Contract
U.N.O. = Unless Noted Otherwise
FOC = Fiber Optic Cable
GA = Underground Gas Line
OHE = Overhead Electric
WA = Water Line

STATE OF ARKANSAS * LICENSED PROFESSIONAL ENGINEER * No. 14058 * REGISTERED
8/21/13
BRIDGE ENGINEER

SHEET 1 OF 5
LAYOUT OF BRIDGE CONWAY LOOP OVER HIGHWAY 365 AND UPRR CONWAY SOUTH INTERCHANGE-HWY. 365 (GRADING & STRS.) (F) FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2011 FILENAME: B080395x2_L1.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: 1"=20'
DESIGNED BY: SRY DATE: MAY 2011
BRIDGE NO. 07258 DRAWING NO. 52958

sroberson 8/19/2013 3:41:21 PM
WORKSPACE: AHTD
L:\2013\080730 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over 365 & RR\90% Plans\CWAL over 365 & RR L0 1of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	97	237
1 07258		LAYOUT		52959

GENERAL NOTES

BENCH MARK: PN: 84, PD: 5/8" Rebar With 2" Cap, ST: 21+08.42
OF: 328.94' RT.
ZC: 280.25

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications For Highway Construction (2003 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010) with Current Interim Revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 S_{D1} = 0.092 SITE CLASS: B

OPERATIONAL IMPORTANCE CATEGORY: TYPICAL

MATERIALS AND STRENGTHS:

Class S(AE) - Bridge Concrete (Superstructure)	f'c = 4,000 psi
Class S - Bridge Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 Or M322, Type A GR. 60)	fy = 60,000 psi
Structural Steel (AASHTO M270, GR. 50)	Fy = 50,000 psi
Structural Steel (AASHTO M270, GR. 36)	Fy = 36,000 psi

FORM INSERT: State of Arkansas form insert shall be used on MSE walls (4 Locations). See Dwg. No. 52962.

BORING LOGS: Boring logs may be obtained from Programs And Contracts Division.

STEEL PILING: All Piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 97 tons and into the material designated as medium soft to medium hard dark gray shale in the boring legend. Drive all piles to a minimum penetration of 5' below leveling pad or 5' below necessary undercut. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

The Contractor may drive the piling in Bents 1 and 3 in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete, after any required preboring and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction extending from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven through the open casings after embankment to bottom of cap is in place. Any required preboring will be measured from bottom of leveling pad. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill will not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12x53)".

PREBORING: Preboring may be required to obtain the minimum pile penetration requirements. If required, preboring at Bent 1 and 3 shall take place after excavation to the top of leveling pad is complete and shall be to a minimum depth of 3' into material designated as dark gray shale on the boring legend. The size and depth of preboring, will be determined in the field by the Engineer. The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored holes shall be backfilled with an approved non-shrink grout or other approved material to completely fill voids. The cost of preboring, temporary casings and backfill will not be paid for directly but will be considered subsidiary to the item "STEEL PILING (HP12x53)".

DRILLED SHAFTS: All drilled shafts shall be founded a minimum of 13'-0" into medium soft to medium hard dark gray shale as in the boring legend. No adjustment in plan tip elevation shall be made without prior approval from the Engineer. Methods of construction of the drilled shafts shall be in accordance with SP JOB 080395 "DRILLED SHAFT FOUNDATIONS".

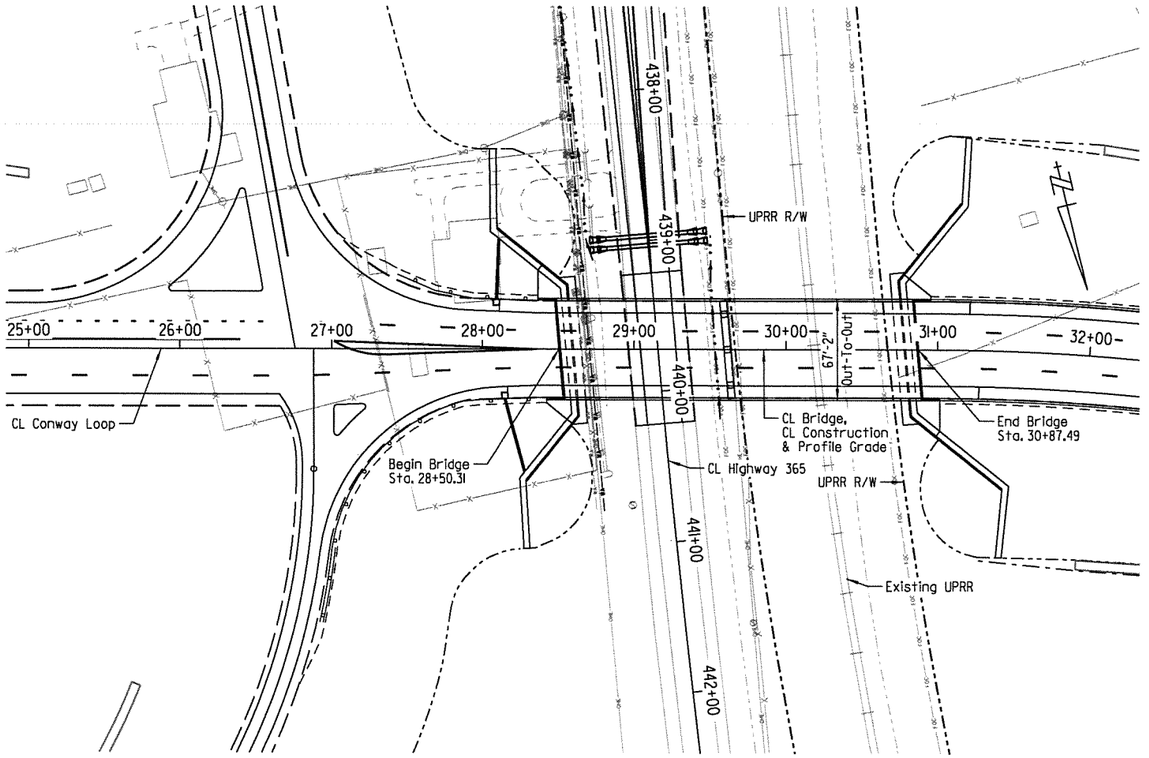
BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class S Tined Bridge Roadway Surface Finish.

CLASS I PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to all areas as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19(b)(3). Texture Coating Finish shall not be applied on surfaces where Class I Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Black and shall match Federal Standard 595B, Color Chip No. 27038.

DETAIL DRAWINGS:	DRAWING NO:
End Bents	52966-52970
Intermediate Bent	52971-52972
235' Cont. Comp. Plate Girder Unit	52973-52982
Elastomeric Bearings	52983
Concrete Riprap	14995A
Steel Piling	14995A



LOCATION SKETCH

BORING LEGEND

A - Very Loose Brown Silt
B - Very Soft Tan Silty Clay
C - Very Soft Tan and Dark Gray Highly Weathered Shale
D - Soft Tan and Dark Gray Weathered Shale
E - Medium Soft to Medium Hard Dark Gray Shale
F - Stiff Tan Silty Clay
G - Very Soft Tan and Dark Gray Weathered Shale
H - Firm Reddish Tan Silty Clay
I - Loose Brown Silt
J - Firm Tan Silty Clay
K - Medium Soft Dark Gray Shale
L - Soft Tan and Gray Silty Clay
M - Soft Tan Silty Clay
N - Firm Red and Gray Silty Clay
O - Very Soft Tan and Gray Weathered Shale
P - Stiff Red and Gray Clay
Q - Very Soft Tan and Reddish Tan Silty Clay
R - Very Soft Gray, Tan and Dark Gray Weathered Shale
S - Stiff Reddish Tan and Tan Silty Clay
T - Soft Gray and Tan Weathered Shale
U - Very Soft Brown Clayey Silt
V - Soft Tan, Gray and Dark Gray Weathered Shale
W - Loose Brown Clayey Silt
X - Very Soft Brown and Tan Highly Weathered Shale

N VALUES

Sta. 28+53 at CL Construction	Sta. 29+40 at CL Construction	Sta. 30+85 at CL Construction	Sta. 28+30, 80' Rt, Of CL Construction	Sta. 28+53, 48' Rt, Of CL Construction	Sta. 28+50, 48' Lt, Of CL Construction
0.5-1.5, N=3	1.0-2.0, N=17	0.5-1.5, N=8	0.5-1.5, N=8	0.5-1.5, N=4	0.5-1.5, N=4
2.5-3.5, N=33	2.5-3.5, N=6	2.5-3.5, N=17	2.5-3.5, N=43	2.5-3.5, N=40	2.5-3.5, N=7
4.0-4.5, N=50/5"	4.5-5.5, N=20	4.5-5.0, N=50/6"	3.5-4.0, N=50/5"	4.0-4.5, N=50/5"	4.0-5.0, N=32
6.0-6.5, N=50/3"	6.5-7.5, N=23	6.0-6.5, N=50/1"	5.5-6.0, N=30/0"	5.5-6.0, N=30/0"	6.0-6.5, N=50/3"
8.0-8.5, N=30/0"	8.5-9.0, N=30/0"	8.5-9.0, N=30/0"	8.0-8.5, N=30/0"	8.0-8.5, N=30/0"	8.0-8.5, N=30/0"
13.5-14.0, N=30/0"	13.5-14.0, N=30/0"	13.5-14.5, N=30/0"	13.0-13.5, N=30/0"	13.0-13.5, N=30/0"	13.0-13.5, N=30/0"
18.5-19.0, N=30/0"	29.0-29.5, N=30/0"	18.5-19.0, N=30/0"			
23.5-24.0, N=30/0"	33.5-34.0, N=30/0"	23.5-24.0, N=30/0"			
28.5-29.0, N=30/0"	38.5-39.0, N=30/0"	28.5-29.0, N=30/0"			
33.5-34.0, N=30/0"		33.5-34.0, N=30/0"			
38.5-39.0, N=30/0"		38.5-39.0, N=30/0"			

Sta. 28+18, 74' Lt, Of CL Construction	Sta. 31+11, 90' Lt, Of CL Construction	Sta. 30+80, 50' Lt, Of CL Construction
0.5-1.5, N=4	0.5-1.5, N=3	0.5-1.5, N=15
2.5-3.5, N=13	2.5-3.5, N=10	2.5-3.5, N=32
4.0-5.0, N=30	4.5-5.5, N=24	4.0-4.5, N=50/4"
6.5-7.0, N=50/3"	6.0-6.5, N=50/4"	6.0-6.5, N=50/3"
8.0-8.5, N=30/0"	8.5-9.0, N=50/3"	8.5-9.0, N=50/2"
13.0-13.5, N=30/0"	13.0-13.5, N=50/1"	13.5-14.0, N=30/0"
	18.0-18.5, N=30/0"	18.5-19.0, N=30/0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
STEVE B. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 2 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

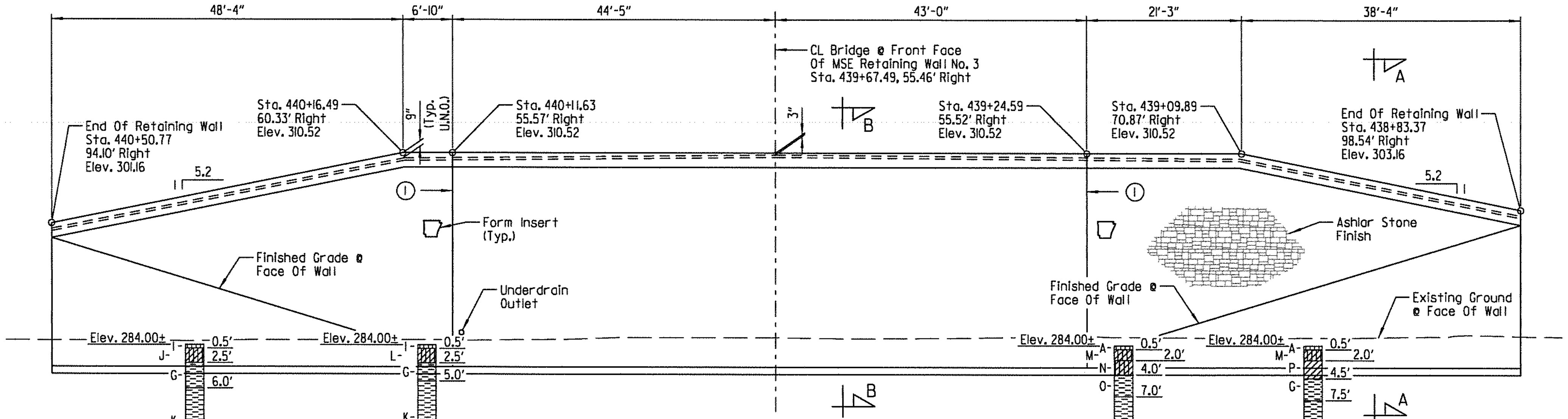
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: JUNE 2011 FILENAME: B080395x2_L2.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: 1" = 50'
DESIGNED BY: SRY DATE: JUNE 2011
BRIDGE NO. 07258 DRAWING NO. 52959

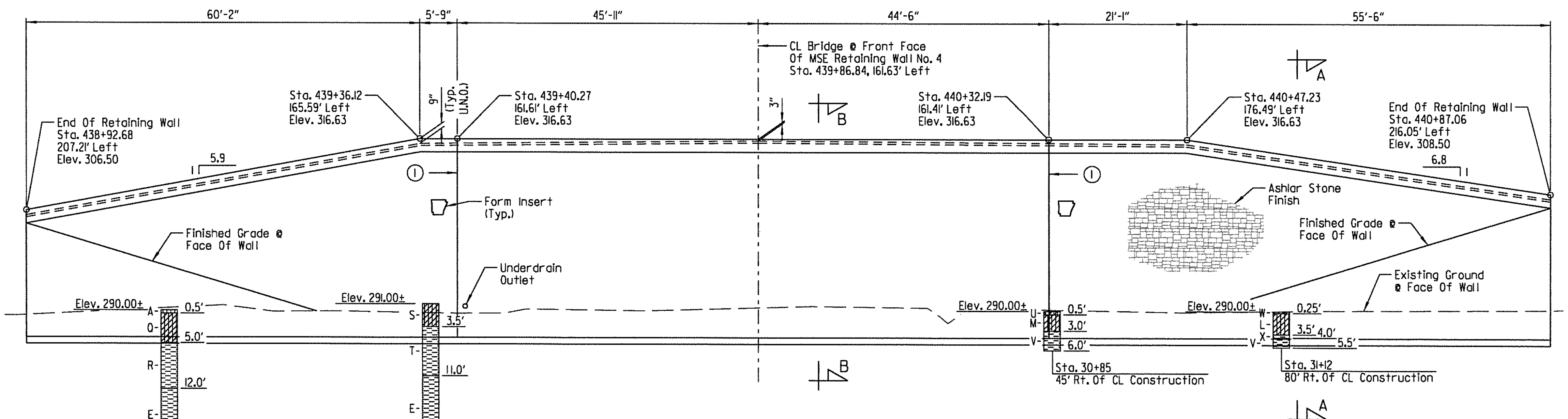
sgroberson 8/19/2013 3:41:47 PM
WORKSPACE: I:\ANTD
L:\2009\090T230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over 365 & RR\902 Plans\CWAL over 365 & RR LO 2 of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	98	237
				07258		LAYOUT		52960

(1) 45° break in horizontal alignment of MSE Retaining Wall



ELEVATION - MSE RETAINING WALL NO. 3
(Looking At Front Face of Wall)
Scale: NTS



ELEVATION - MSE RETAINING WALL NO. 4
(Looking At Front Face of Wall)
Scale: NTS

NOTES:
For "GENERAL NOTES", "SECTION A-A" & "SECTION B-B", see Dwg. No. 52961.

Stationing shown is along CL Hwy. 365.

Offset dimensions are measured from CL Hwy. 365 to outside vertical face of MSE Retaining Wall.

For "FORM INSERT DETAILS", see Dwg. No. 52962.

Underdrain outlet shall penetrate front face of MSE Retaining Wall.

For "BORING LEGEND" & "N VALUES", see Dwg. No. 52959.

LEGEND
U.N.O. = Unless Noted Otherwise

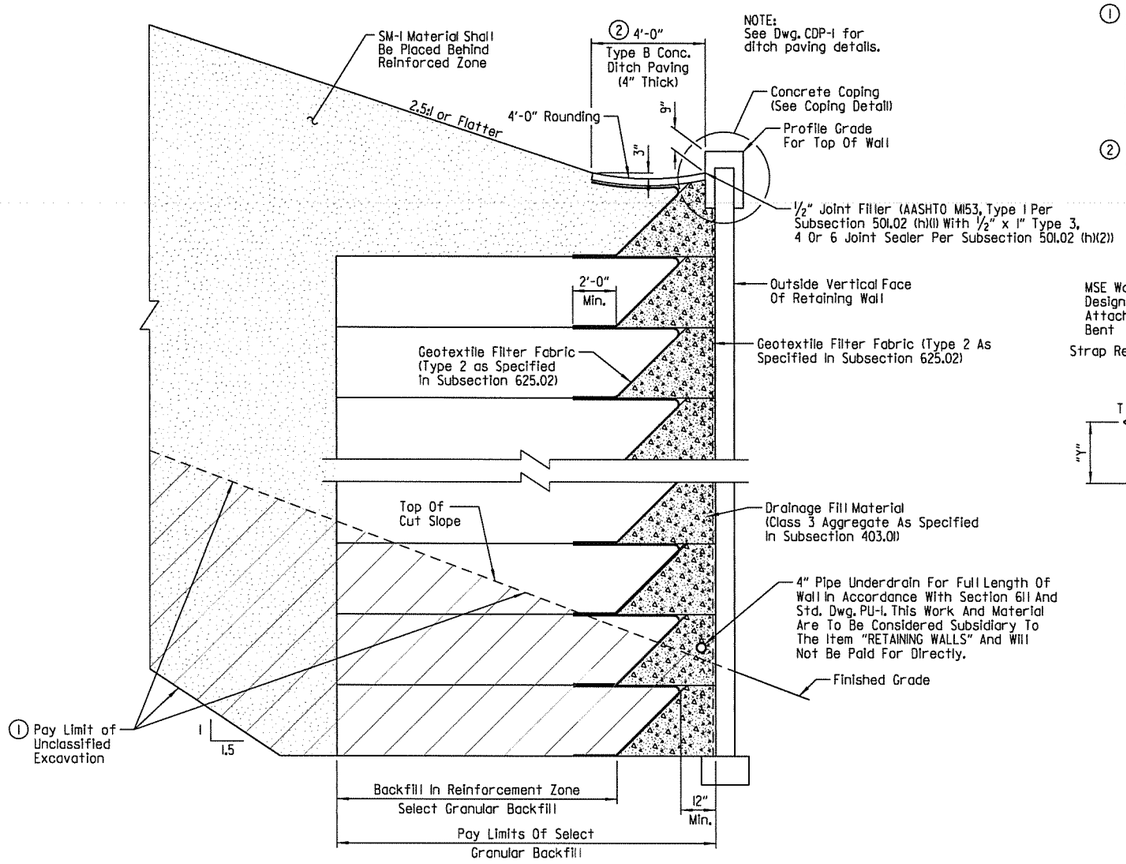
STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 SETH B. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 3 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: SEPT. 2011 FILENAME: B080395x2_L3.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: SEPT. 2011
BRIDGE NO. 07258 DRAWING NO. 52960

saroberson 8/19/2013 3:42:08 PM
WORKSPACE: AHTD
L:\2009\0901230 - Conway Western ArterialLoop\Bridge\Drawings\Phase I\CWAL over 365 & RR\90% Plans\CWAL over 365 & RR LO 3 of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	99	237
				① 07258		LAYOUT		52961



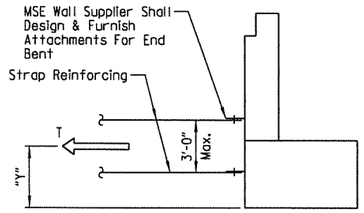
SECTION A-A

Scale: NTS

① Excavation required for reinforcing zone, leveling pad and placement of SM-1 Material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP JOB 080395 "RETAINING WALLS".

NOTE:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR MATERIAL".
Select material required behind reinforced zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)". See SP JOB 080395 "RETAINING WALLS".

② The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Drawing CDP-1.

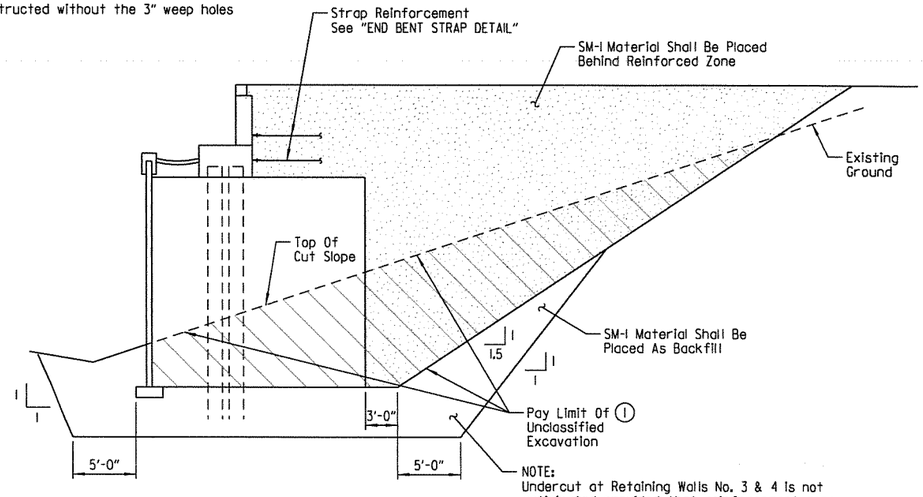


END BENT STRAP DETAIL

T = Resultant Force Required To Be Resisted By Strap Reinforcing

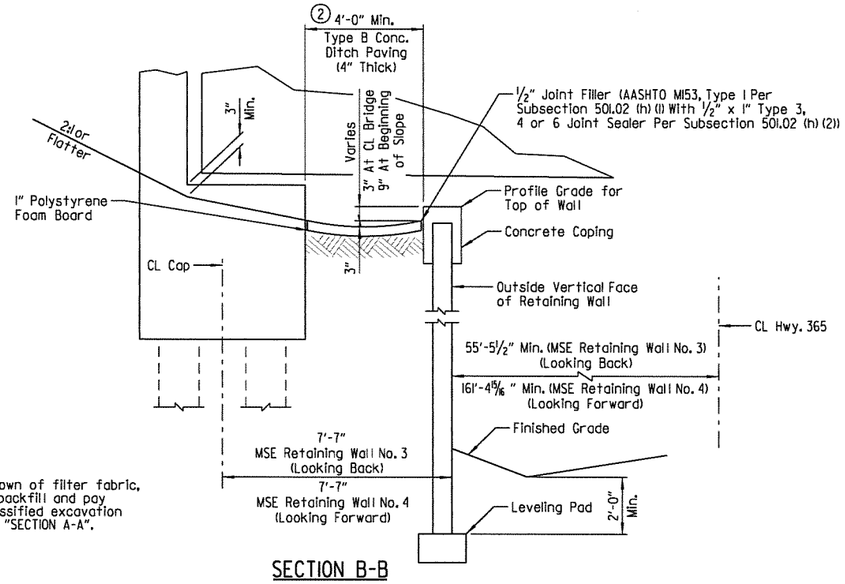
Y = Centroid Of Strap Reinforcing

LIMIT STATE	T Kips/Ft.	Y Ft.
Service	3.6	3.0
Strength	5.7	



EMBANKMENT DETAIL

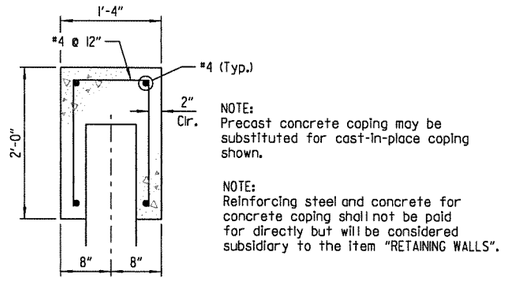
Scale: NTS



NOTE:
Details not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to "SECTION A-A".

SECTION B-B

Scale: NTS

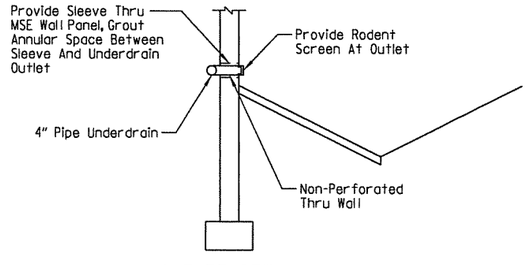


NOTE:
Precast concrete coping may be substituted for cast-in-place coping shown.

NOTE:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALLS".

COPING DETAIL

Scale: NTS



OUTLET DETAIL

Scale: NTS

GENERAL NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010) with Current Interim Revisions

SEISMIC PERFORMANCE ZONE: I S_{D1} = 0.092 SITE CLASS: B

4" pipe underdrain shall maintain a minimum slope of ⅛" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See Dwg. Nos. 52966-52970 for pile locations and wingwall details.

For ditch paving, see Standard Dwg. No. CDP-1.

See SP JOB 080395 "RETAINING WALLS" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP JOB 080395 "RETAINING WALLS".

See Dwg. No. 52962 for form insert location and details.

A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

STATE OF ARKANSAS
SCOTT R. YANCEY
LICENSED PROFESSIONAL ENGINEER
No. 14058
8/21/13
BRIDGE ENGINEER

SHEET 4 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER HIGHWAY 365 AND UPRR
CONWAY SOUTH INTERCHANGE-HWY. 365 (GRADING & STRS.) (F)
FAULKNER COUNTY

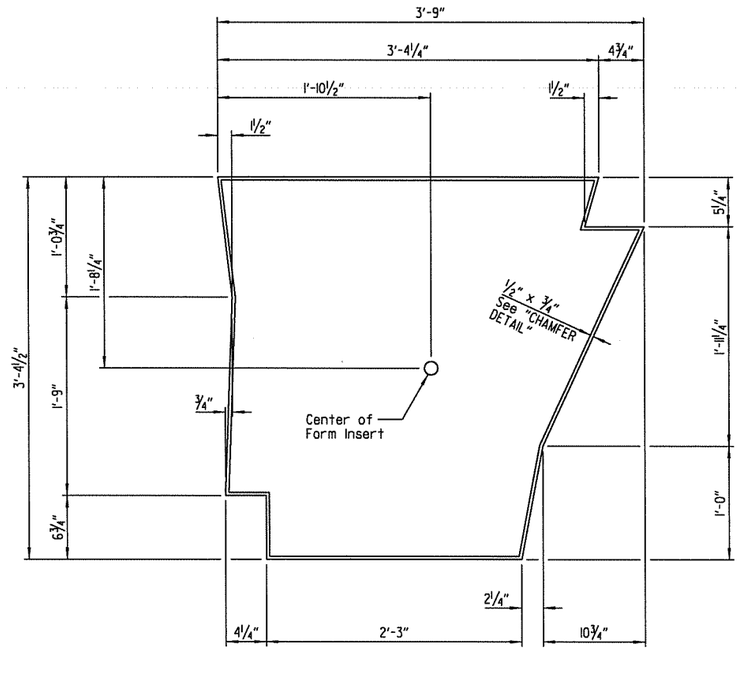
ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x2_L4.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52961

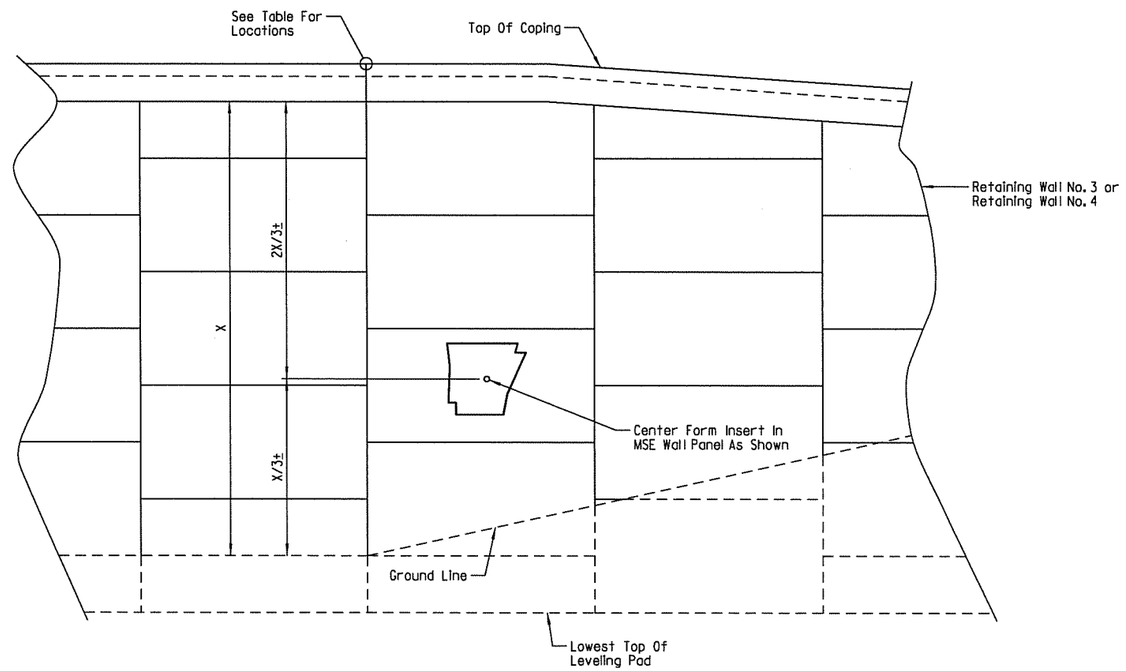
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	100	237
				(1) 07258		LAYOUT		52962



Note:
Use form insert on designated walls as noted on details of MSE Walls, see Dwg. No. 52960.

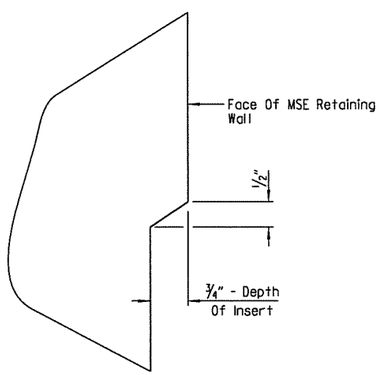
FORM INSERT DETAILS AT MSE WALL

Scale: NTS



DEVELOPED ELEVATION AT MSE WALL

Scale: NTS



CHAMFER DETAIL

Scale: NTS

NOTES:
Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for inserts shall be included in the unit price bid for the item "RETAINING WALLS".

Damaged or worn form inserts shall be replaced at the Contractor's expense.

The form shall be approved by the Engineer before its use.

LOCATION OF FORM INSERT	
Location	Station
Retaining Wall No. 3	439+24.59 And 440+11.63
Retaining Wall No. 4	439+40.27 And 440+32.19

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 5 OF 5
LAYOUT OF BRIDGE
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x2_L5.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52962

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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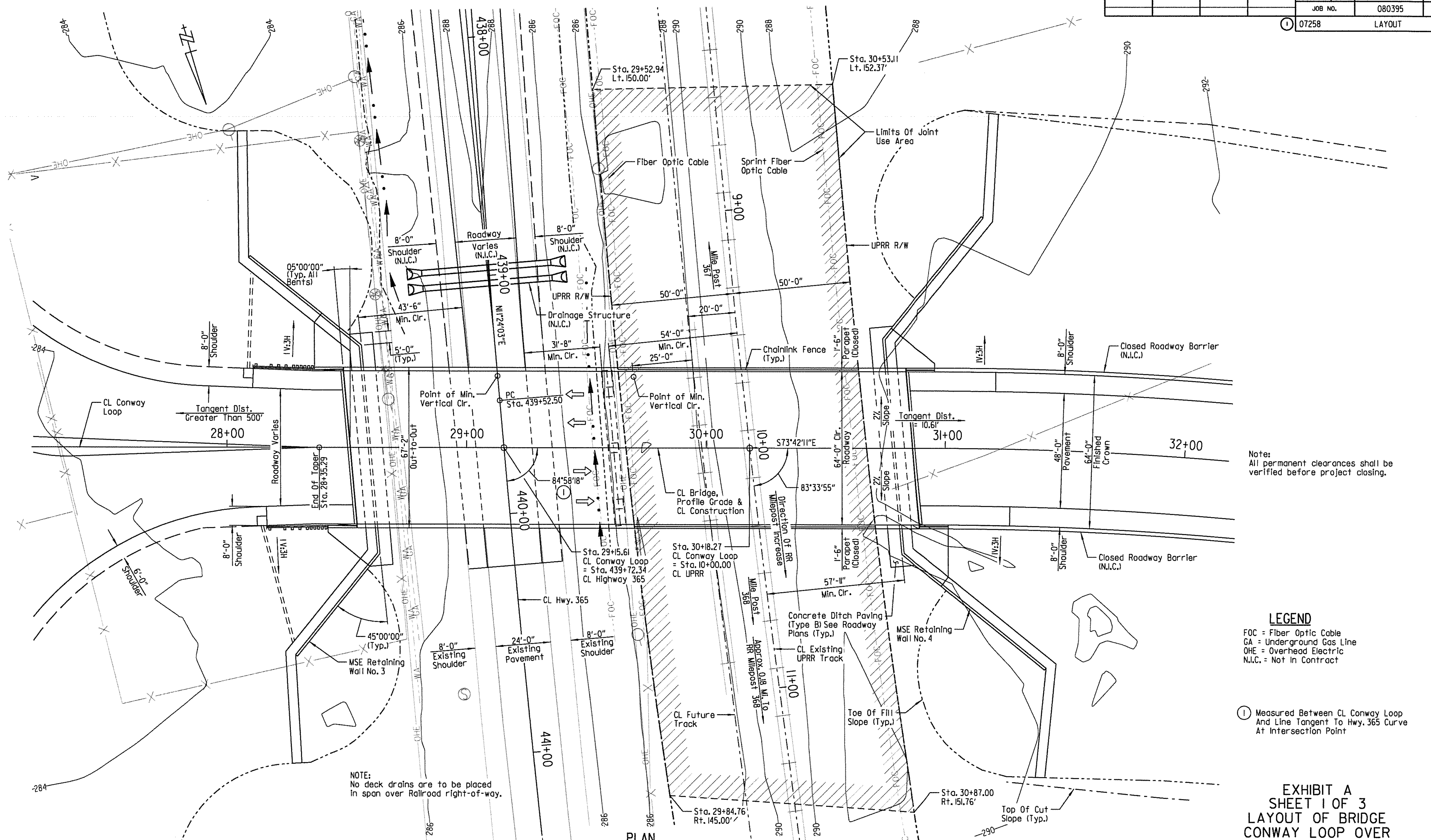
				JOB NO.		080395	101	237
				07258		LAYOUT		52963



NOTE:
No deck drains are to be placed in span over Railroad right-of-way.

PLAN

Note:
All permanent clearances shall be verified before project closing.

LEGEND

FOC = Fiber Optic Cable
GA = Underground Gas Line
OHE = Overhead Electric
N.I.C. = Not In Contract

(1) Measured Between CL Conway Loop And Line Tangent To Hwy. 365 Curve At Intersection Point

EXHIBIT A
SHEET 1 OF 3
LAYOUT OF BRIDGE
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

DRAWN BY: HEW DATE: MAY 2011 FILENAME: B080395x2_L6.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: 1"=20'
DESIGNED BY: SRY DATE: MAY 2011
BRIDGE NO. 07258 DRAWING NO. 52963

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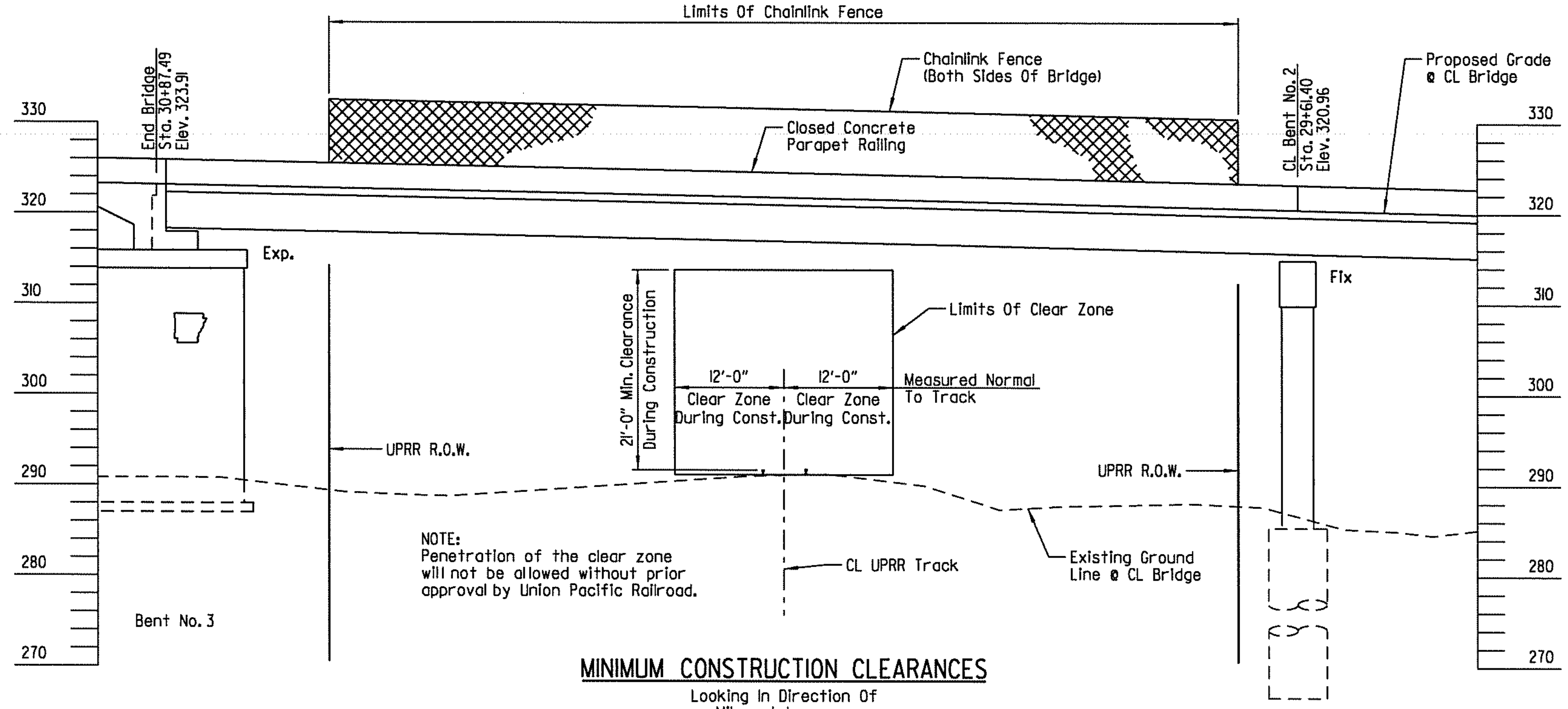
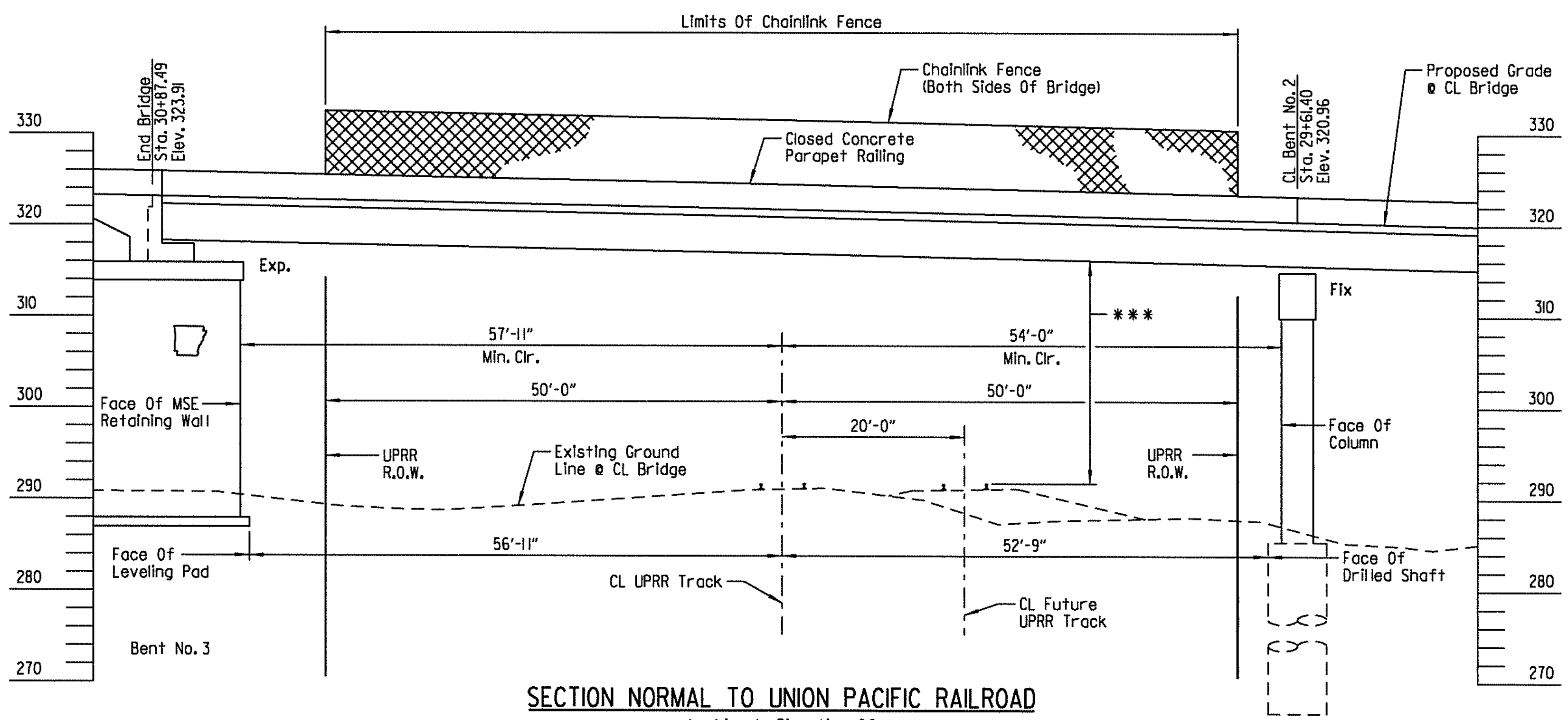
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	102	237
				(1) 07258		LAYOUT		52964



MINIMUM CONSTRUCTION CLEARANCES

Looking In Direction Of Milepost Increase
Scale: 1" = 10'-0"



SECTION NORMAL TO UNION PACIFIC RAILROAD

Looking In Direction Of Milepost Increase
Scale: 1" = 10'-0"

RAILROAD GENERAL NOTES

Railroad review and approval of erection and falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.

The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the Railroad's ditches and/or drainage structures.

The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Railroad prior to construction.

The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad prior to beginning any grading on the project site.

Erection over the Railroad's right-of-way shall be designed to cause no interruption to the Railroad's operation. Erection over the Railroad's track shall be developed such that it enables the track to remain open to traffic per the Railroad's requirements.

All construction that may impact the Railroad operations shall be designed to cause no interruption to the Railroad's operation, enabling the track to remain open to traffic per the Railroad's requirements.

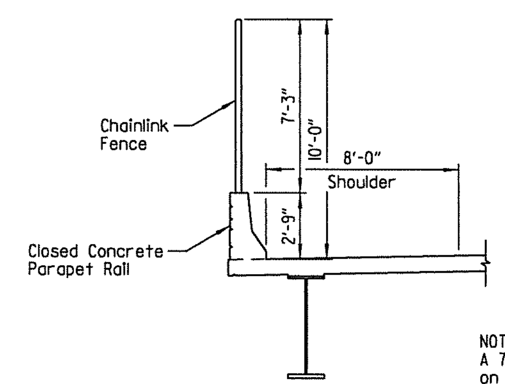
Closed parapet railing (no deck drains) shall be provided over Railroad right-of-way on both sides of bridge.

"The State shall not plow ice, snow or sleet over the sides of the structure. In consideration of this practice, the Carrier waives its request for the State to attach splash boards to sides of the structure". This statement is in the State Railroad Agreement.

False-work clearances shall comply with minimum construction clearances.

All permanent clearances shall be verified before project closing.

For Railroad coordination please refer to the Railroad coordination requirements as part of SP JOB 080395 "INSURANCE, CONSTRUCTION AND FLAGGING REQUIREMENTS ON RAILROAD PROPERTY (UNION PACIFIC RAILROAD)".



TYPICAL SECTION

Scale: NTS

NOTE:
A 7'-3" chain link fence is required as shown on both sides. The fence is to be mounted on top of the concrete parapet rail. See Dwg. No. 52982 for details.

*** NOTE:
Low steel to top of future UPRR rail at point of minimum vertical clearance.

Minimum vertical clearance req'd. = 23'-4"
Minimum vertical clearance provided = 23'-6",
Track Elev. 292.04

Track elevation listed is at 30.5' lt. of CL Const. minimum vertical shown is calculated at 25'.0 left of future track.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

EXHIBIT A
SHEET 2 OF 3
LAYOUT OF BRIDGE
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: OCT. 2011 FILENAME: B080395x2_L7.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: OCT. 2011
BRIDGE NO. 07258 DRAWING NO. 52964

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WORKSPACE: AHTD
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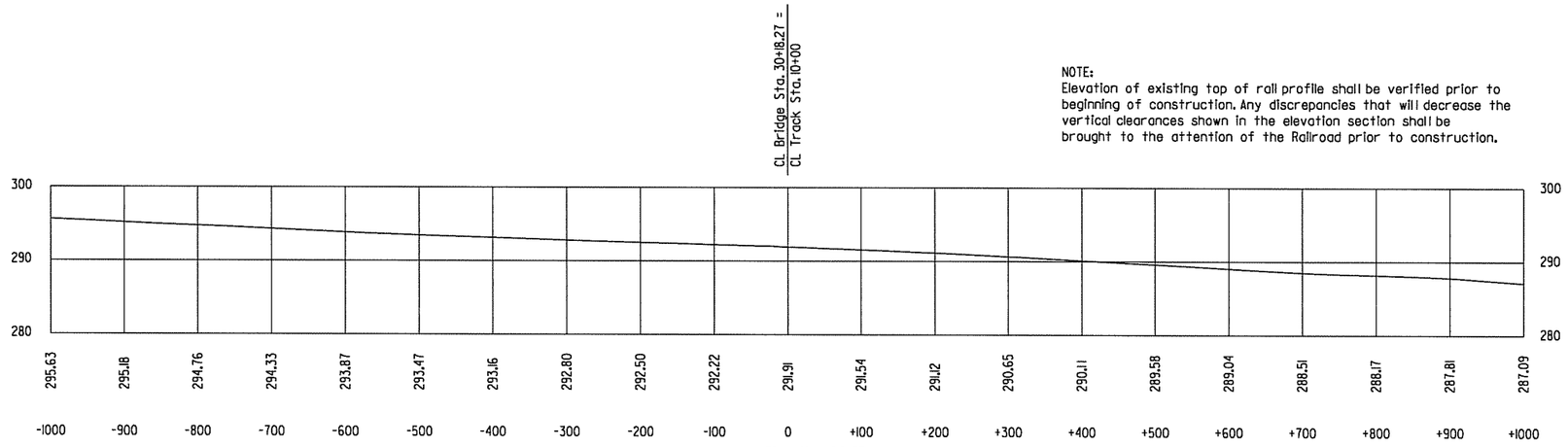
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	103	237
				① 07258		LAYOUT		52965



PROFILE ALONG TRACK
(From South To North)

NOTE:
Elevation of existing top of rail profile shall be verified prior to beginning of construction. Any discrepancies that will decrease the vertical clearances shown in the elevation section shall be brought to the attention of the Railroad prior to construction.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH B. YANCEY
8/21/13
BRIDGE ENGINEER

EXHIBIT A
SHEET 3 OF 3
LAYOUT OF BRIDGE
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: OCT. 2011 FILENAME: B080395x2_L8.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: OCT. 2011
BRIDGE NO. 07258 DRAWING NO. 52965

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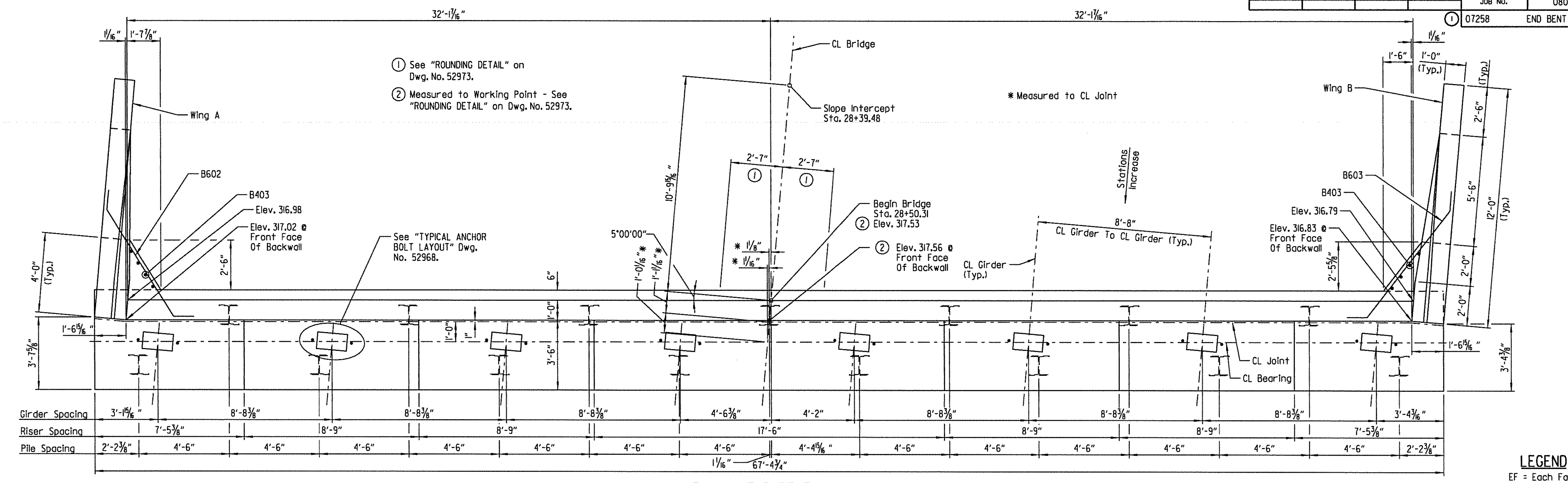
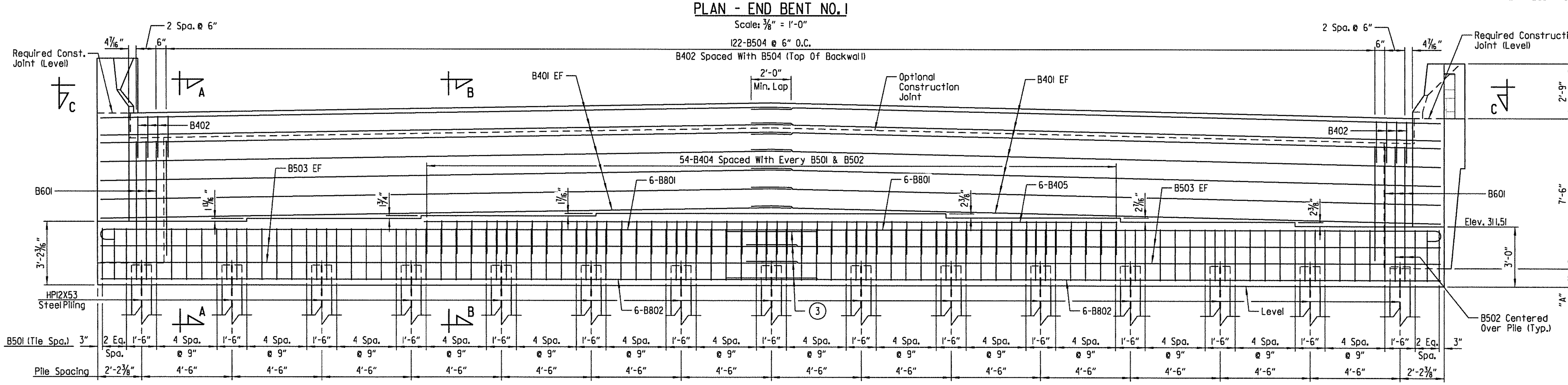
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	104	237
				(1) 07258		END BENT DETAILS		52966



PLAN - END BENT NO. 1

Scale: ⅜" = 1'-0"



ELEVATION - END BENT NO. 1

(Looking Back)
Scale: ⅜" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Gr. 60.

All piles shall be HP12x53 (AASHTO M270, Gr. 50).

No portion of the backwall shall be poured until the girders are in place.

Finish top of backwall to match the bridge deck.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see "LAYOUT OF BRIDGE".

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 638.

Class 1 Protective Surface Treatment shall be applied to the top of backwall. Class 3 Textured Coating shall be applied in accordance with SP JOB 080359 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Texture Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

(3) #5 Bars: 2'-6" Min. Lap
#8 Bars: 6'-0" Min. Lap

(4) See "TABLE OF VARIABLES-END BENT NO. 1" On Dwg. No. 52969.

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52968.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL
8-21-13
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF END BENTS
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x2_BI.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52966

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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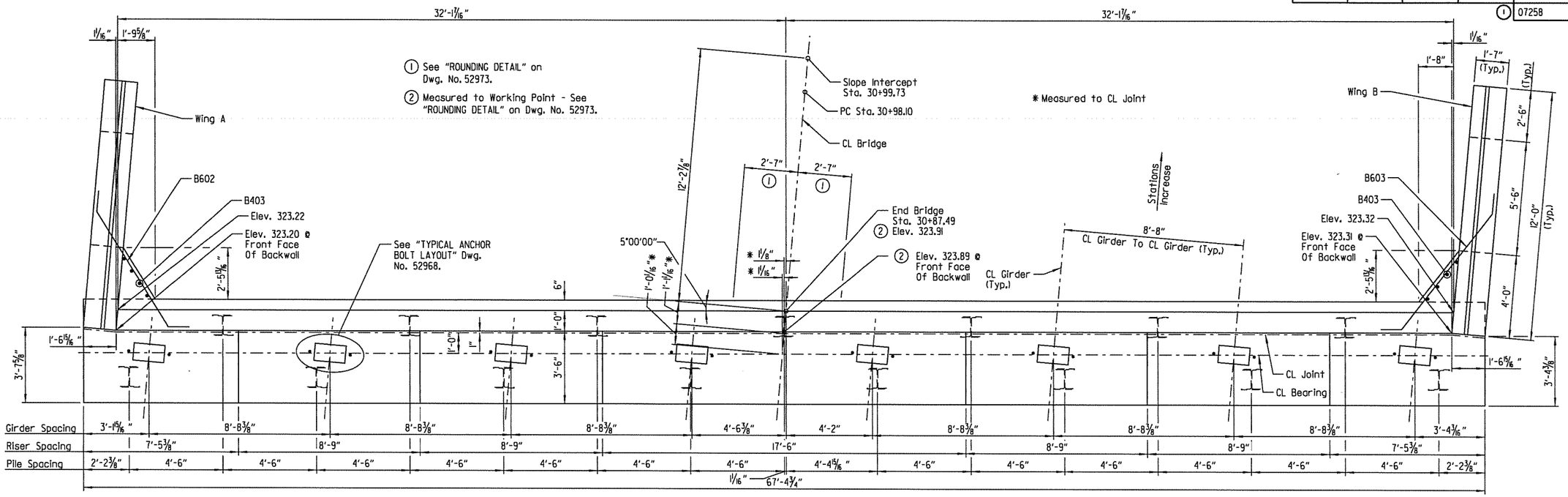
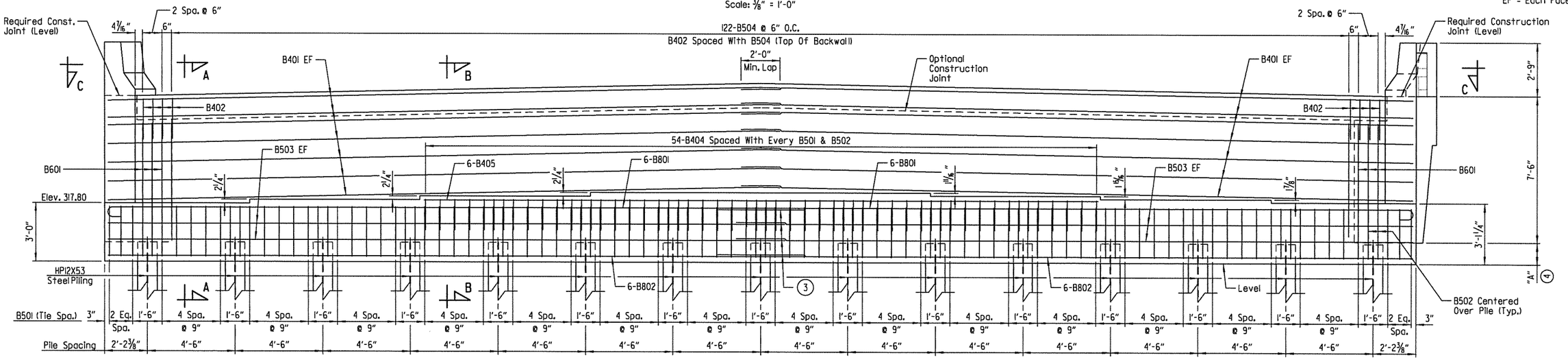
				JOB NO.		080395	105	237
				(1) 07258		END BENT DETAILS		52967



PLAN - END BENT NO. 3

Scale: 3/8" = 1'-0"



ELEVATION - END BENT NO. 3

(Looking Forward)
Scale: 3/8" = 1'-0"

LEGEND

EF = Each Face

NOTES:
For "GENERAL NOTES", see Dwg. No. 52966.

For "SECTION A-A", "SECTION B-B", "SECTION C-C", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52968.

3 #5 Bars: 2'-6" Min. Lap
#8 Bars: 6'-0" Min. Lap

4 See "TABLE OF VARIABLES-END BENT NO. 3" On Dwg. No. 52970.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8/22/13
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF END BENTS
CONWAY LOOP OVER HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x2_B2.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012

BRIDGE NO. 07258 DRAWING NO. 52967

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		080395	106	237
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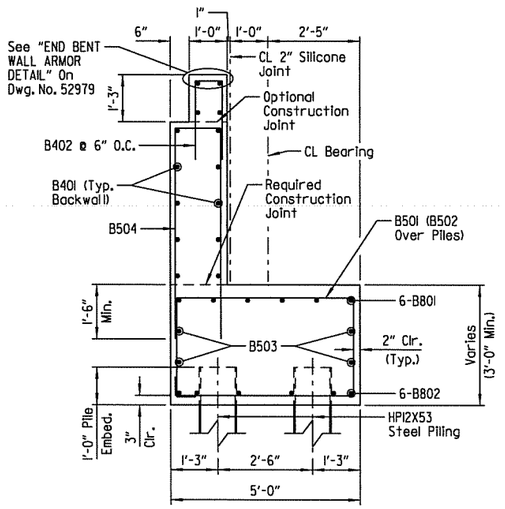
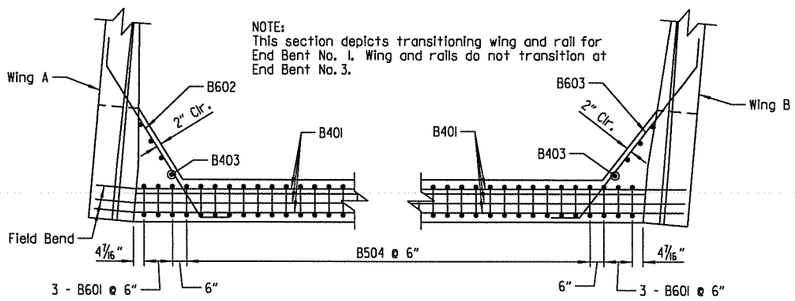
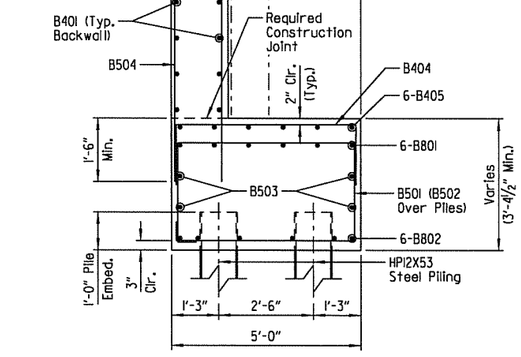


SECTION A-A
Scale: 1/2" = 1'-0"

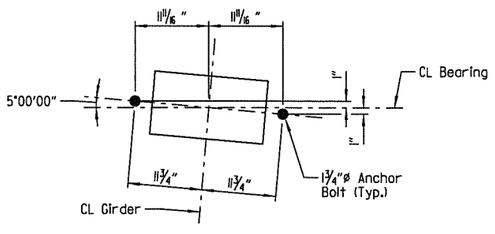


SECTION C-C
Scale: 3/8" = 1'-0"

NOTE:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 52979 for additional information.



SECTION B-B
Scale: 1/2" = 1'-0"

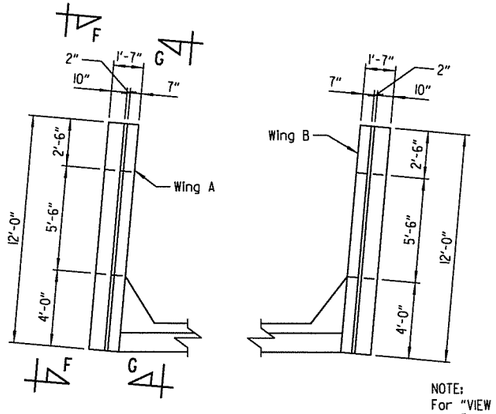


TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 52983.

PLAN OF RAIL - END BENT NO. 1
Scale: 1/4" = 1'-0"

NOTE:
For "VIEW D-D" & "SECTION E-E", see Dwg. No. 52969.



PLAN OF RAIL - END BENT NO. 3
Scale: 1/4" = 1'-0"

NOTE:
For "VIEW F-F" & "SECTION G-G", see Dwg. No. 52970.

BAR LIST

BARS COMMON TO END BENTS

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	28	34'-9"			Str.
B402	128	4'-8"	8"	2'-1"	2"
B403	8	5'-11"			Str.
B404	54	7'-10"	4'-8"	1'-8"	2"
B405	6	34'-8"			Str.
B501	76	15'-0"			2 1/2"
B502	30	9'-7 1/2"	4'-8"	2'-7"	2 1/2"
B503	8	34'-10"			Str.
B504	122	12'-5 1/2"	1'-2"	5'-9"	2 1/2"
B601	6	12'-4"	1'-2"	5'-9"	4 1/2"
B602	5	8'-3"			4 1/2"
B603	5	8'-9"			4 1/2"
B801	12	37'-6"			6"
B802	12	36'-7"			Str.
R403	12	11'-8"			Str.
W401	10	8'-9"	7'-7"		3"
W402	10	9'-11"			Str.
W403 To W407	2 Ea.	4'-4" To 8'-1"	3'-2" To 6'-11"		3"
W408 To W412	2 Ea.	5'-6" To 9'-2"			Str.
W701	16	11'-8"			Str.
W702	4	8'-5"			Str.
W703	4	7'-5"			Str.
W704	4	6'-5"			Str.
W705	4	5'-6"			Str.
W706	4	4'-8"			Str.
W707	4	12'-9"			5 1/4"

END BENT NO. 1

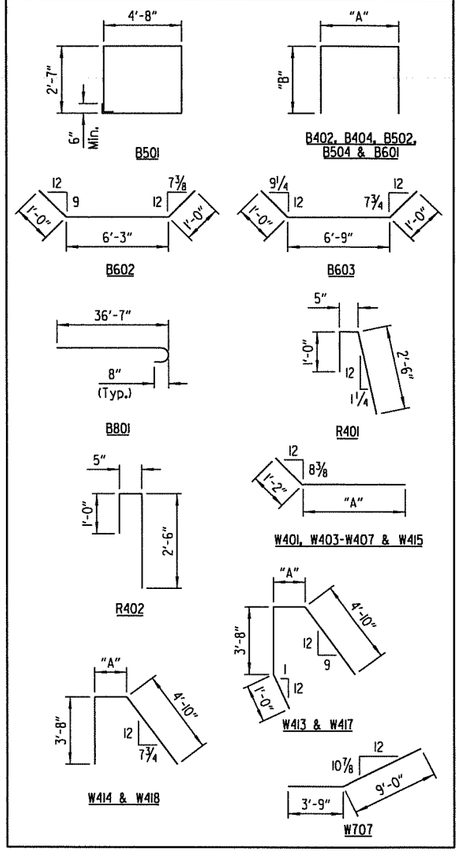
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
R401	10	3'-9"			2"
R402	10	3'-9"			2"
R601	20	4'-11"			Str.
R602	6	5'-0"			Str.
W413	3	10'-6"	1'-2"		2"
W414	3	9'-6"	1'-2"		2"

END BENT NO. 3

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
R401	26	3'-9"			2"
W415	6	3'-10"	2'-8"		3"
W416	6	4'-11"			Str.
W417	3	10'-8"	1'-4"		2"
W418	3	9'-8"	1'-4"		2"

NOTE:
Number of common bars shown are for one end bent only.

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13
BRIDGE ENGINEER

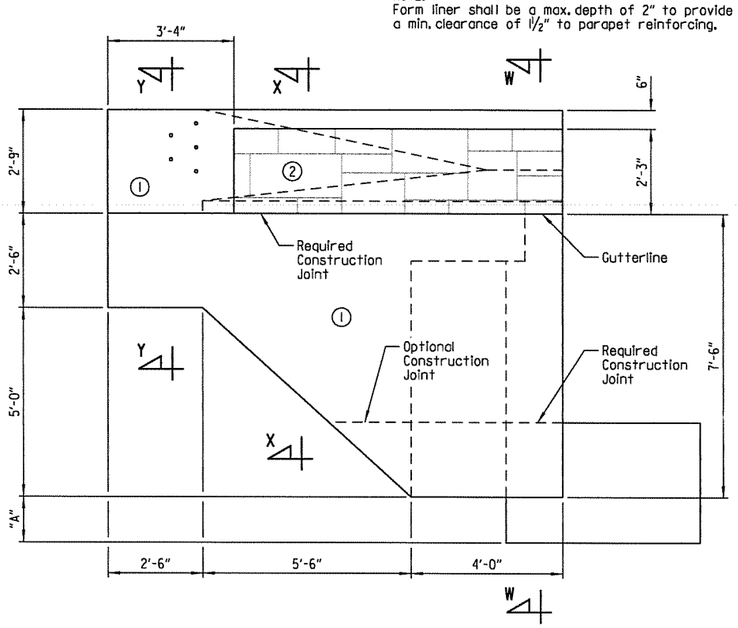
SHEET 3 OF 5
DETAILS OF END BENTS
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x2_B3.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52968

aarobertson 8/19/2013 3:45:58 PM
WORKSPACE: AHTD
L:\2009\09017230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over 365 & RR\90% Plans\CWAL over 365 & RR End Bent 3 of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	107	237
				①	07258	END BENT DETAILS		52969

NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.

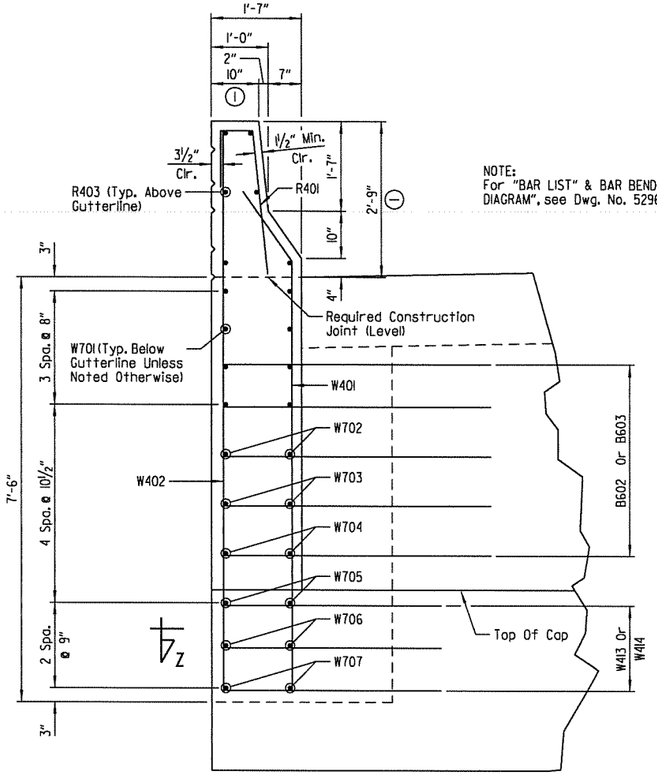


① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

② "Ashlar Stone" Form Liner & Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

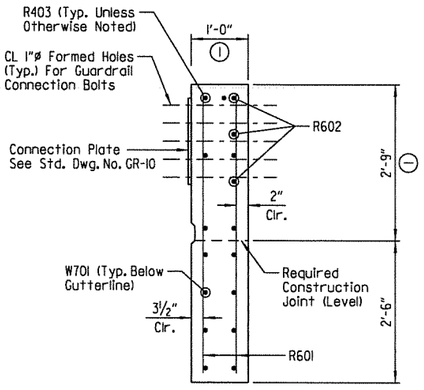
VIEW D-D
Scale: ½" = 1'-0"

NOTE:
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

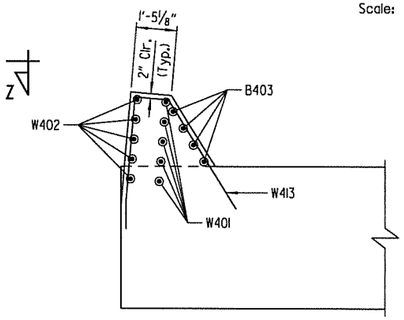


NOTE:
For "BAR LIST" & BAR BENDING DIAGRAM", see Dwg. No. 52968.

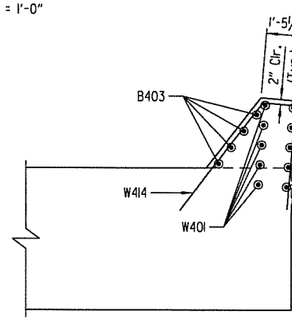
SECTION W-W
Scale: ¾" = 1'-0"



SECTION Y-Y
Scale: ¾" = 1'-0"

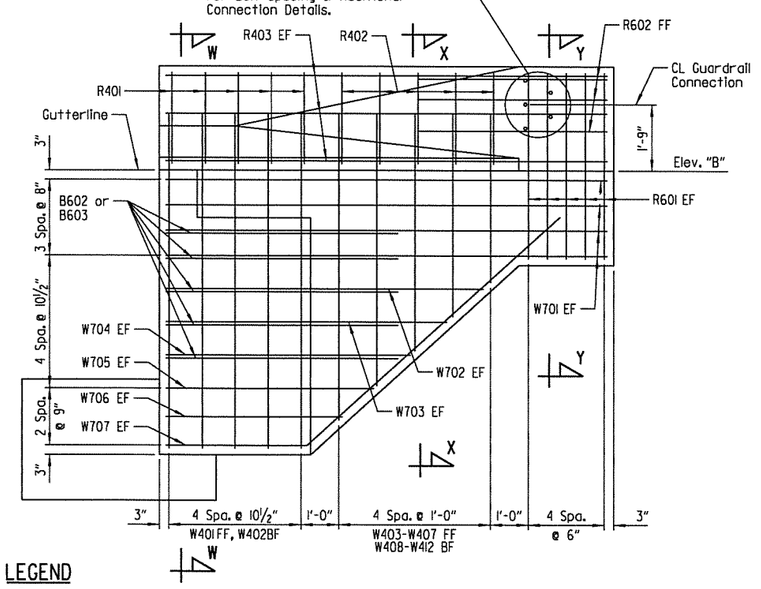


SECTION Z-Z (WING A)
Scale: ⅜" = 1'-0"



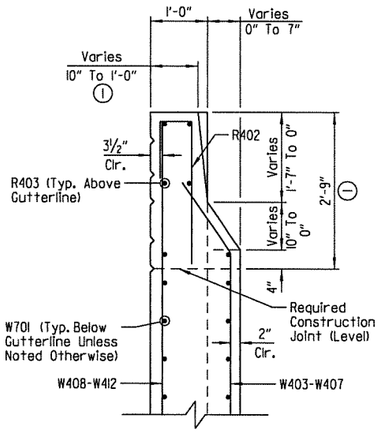
SECTION Z-Z (WING B)
Scale: ⅜" = 1'-0"

5 - 1"ø Formed Holes For Guard Rail Connection. See Std. Dwg. No. GR-10 For Bolt Spacing & Additional Connection Details.



LEGEND
FF = Front Face
BF = Back Face
EF = Each Face

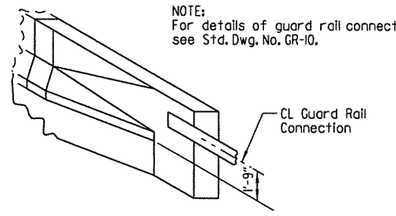
SECTION E-E
Scale: ½" = 1'-0"



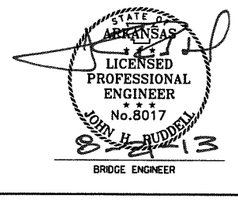
SECTION X-X
Scale: ¾" = 1'-0"

TABLE OF VARIABLES - END BENT NO. 1		
WING	"A"	Elev. "B"
A	1'-0⅛"	316.59
B	9⅝"	316.40

NOTE:
For details of guard rail connection, see Std. Dwg. No. GR-10.



3-D VIEW OF RAIL TRANSITION
Scale: N.T.S.



SHEET 4 OF 5
DETAILS OF END BENTS
CONWAY LOOP OVER HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

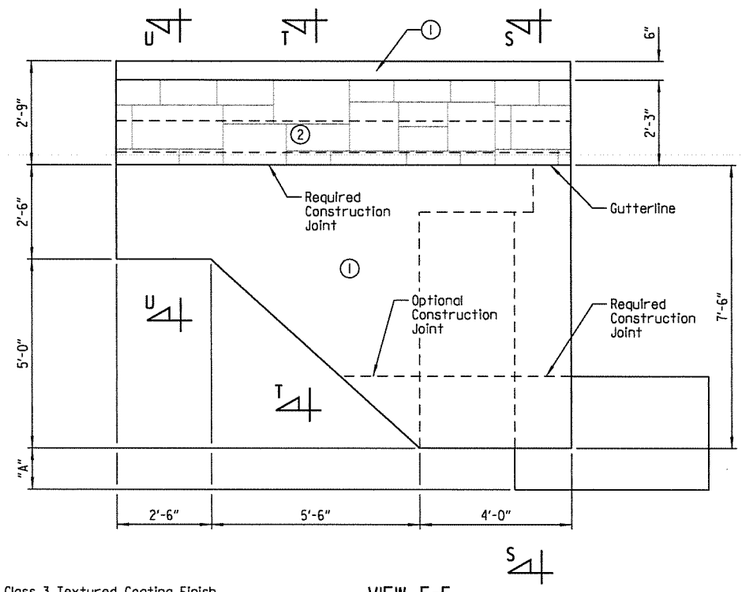
DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x2_B4.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012

BRIDGE NO. 07258 DRAWING NO. 52969

sorcherson 8/8/2013 3:46:17 PM
WORKSPACE: AHTD
L:\2009\09071230 - Conway Western ArterialLoop\Bridge\Drawings\Phase I\CWAL over 365 & RR\90% Plans\CWAL over 365 & RR End Bent 4 of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	108	237
				① 07258		END BENT DETAILS		52970

NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.

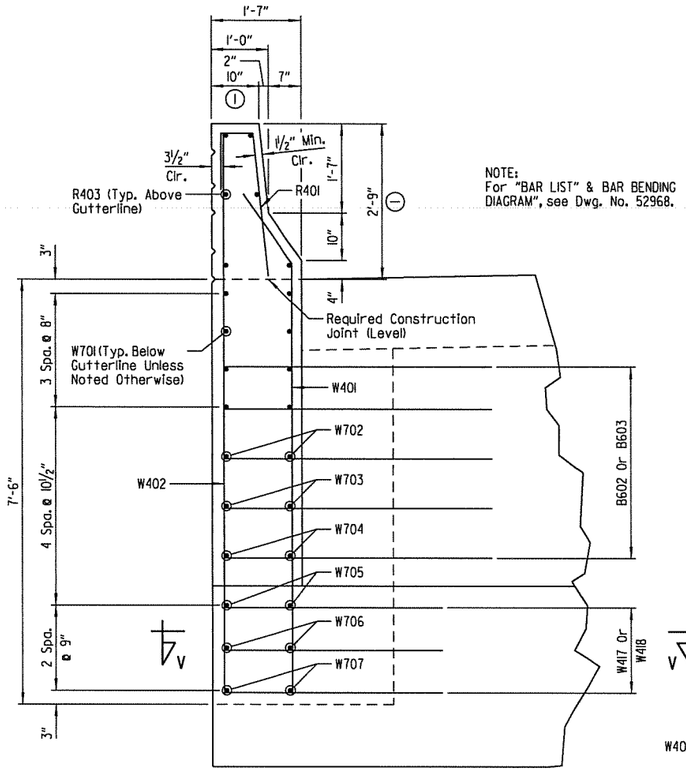


① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

② "Ashlar Stone" Pattern & Clas 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

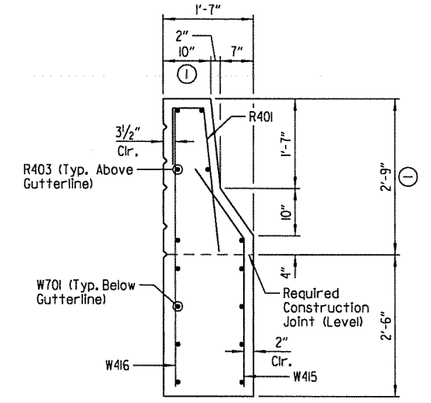
VIEW F-F
Scale: ½" = 1'-0"

NOTE:
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

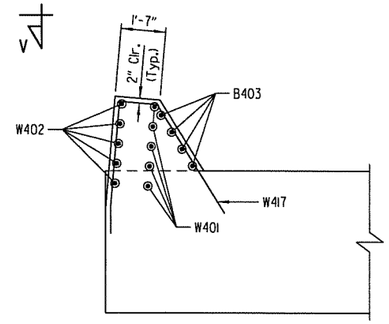


NOTE:
For "BAR LIST" & BAR BENDING DIAGRAM", see Dwg. No. 52968.

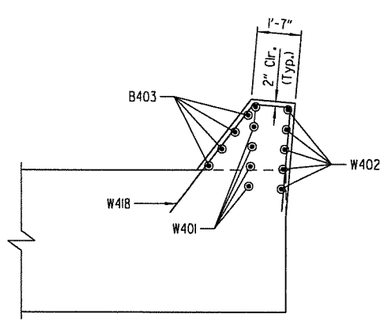
SECTION S-S
Scale: ¾" = 1'-0"



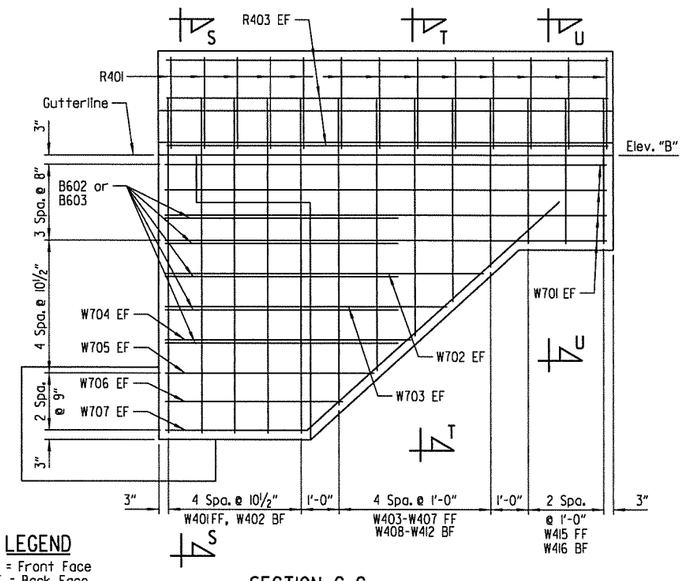
SECTION U-U
Scale: ¾" = 1'-0"



SECTION V-V (WING A)
Scale: ⅜" = 1'-0"

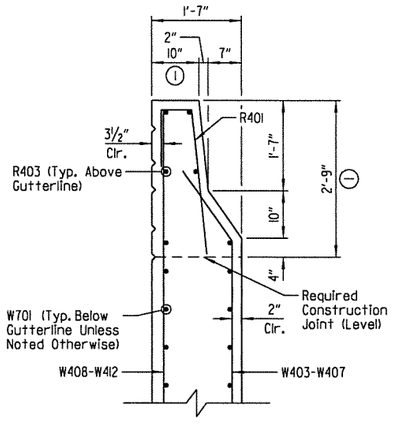


SECTION V-V (WING B)
Scale: ⅜" = 1'-0"



LEGEND
FF = Front Face
BF = Back Face
EF = Each Face

SECTION G-G
Scale: ½" = 1'-0"



SECTION T-T
Scale: ¾" = 1'-0"

TABLE OF VARIABLES - END BENT NO. 3		
WING	"A"	Elev. "B"
A	10 5/16"	323.43
B	1'-0 1/8"	323.53

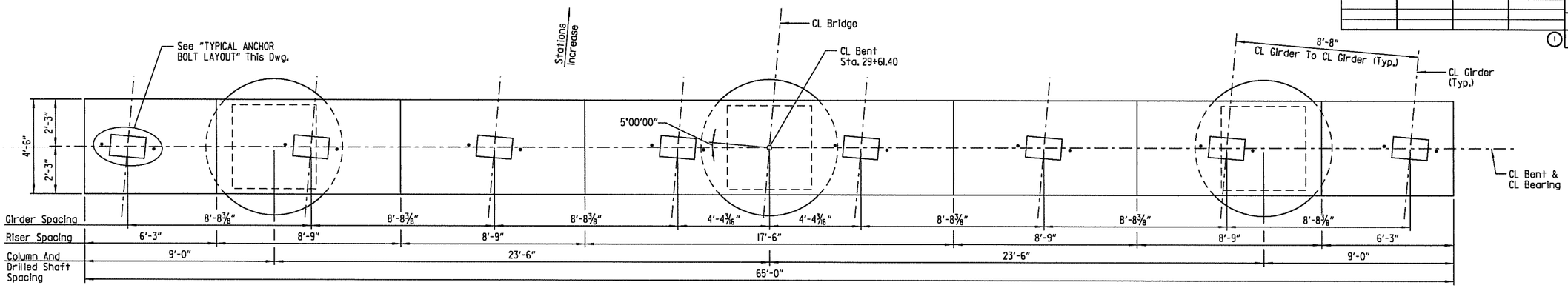
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF END BENTS
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x2_B5.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52970

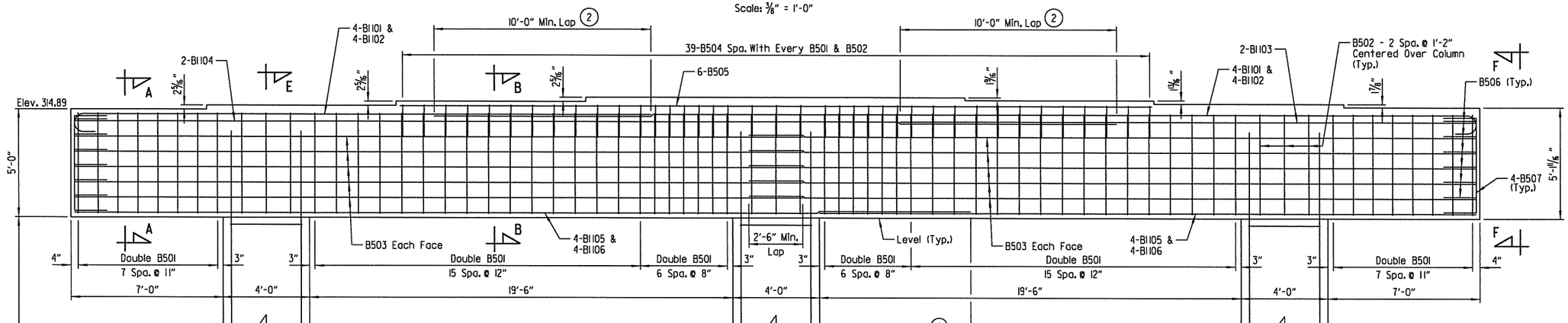
sarobertson 8/19/2013 3:46:41PM
WORKSPACE: AHTD
L:\2009\0907230 - Conway Western Arterial Loop\Bridge\Drawings\Phase 1\CWAL over 365 & RR\90% Plans\CWAL over 365 & RR End Bent 5 of 5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	109	237
				(1) 07258		INT. BENT DETAILS		52971



PLAN

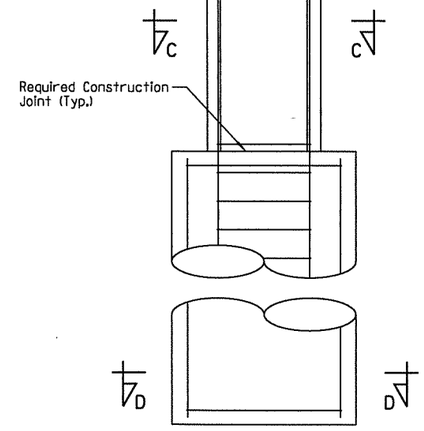
Scale: ⅜" = 1'-0"



NOTE:
Reinforcing typical for all drilled shafts.

ELEVATION

(Looking Forward)
Scale: ⅜" = 1'-0"



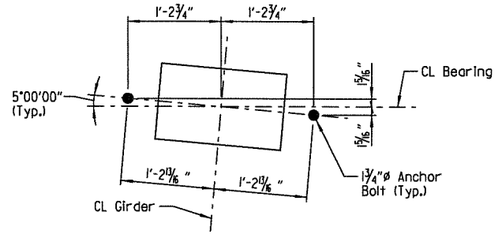
(1) Lap Splice Bars Immediately Adjacent To The Face Of Center Column And Extend Into Bay. Splices Shall Also Alternate On Either Side Of Column Such That No Two Adjacent Bars Are Spliced At The Same Location.

(2) Lap Splice Bars At Center Of Bay. Splices Shall Also Alternate Between Bays Such That No Two Adjacent Bars Are Spliced At The Same Location.

(3) Minimum Embedment Into Medium Soft To Medium Hard Dark Gray Shale As Detailed In Borings Shall Not Be Less Than 13'-0"

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C", "SECTION D-D", "SECTION E-E", "VIEW F-F", "BAR LIST" & BAR BENDING DIAGRAM", see Dwg. No. 52972.

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 52983.



TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

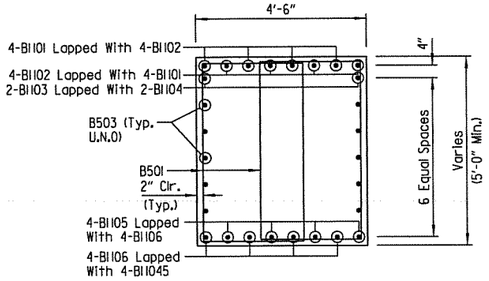
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
8-22-13
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENT
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

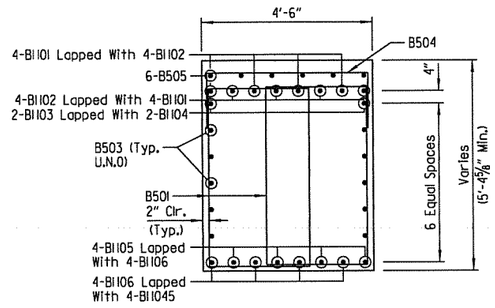
DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x2_B6.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52971

sorobertson 8/9/2013 3:47:15 PM
WORKSPACE: AHTD
L:\2005\05017230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over 365 & RR\905 Plans\CWAL over 365 & RR Int Bent 1of 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	110	237
				① 07258		INT. BENT DETAILS		52972

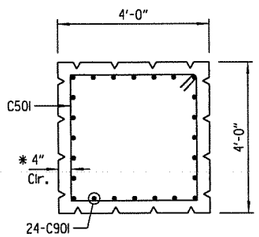


SECTION A-A
Scale: ½" = 1'-0"

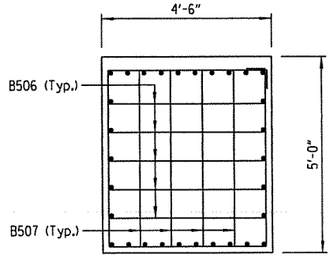


SECTION B-B
Scale: ½" = 1'-0"

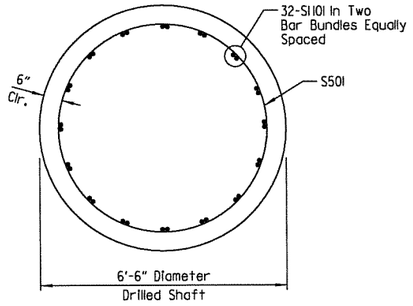
* Form Liner Shall Be A Maximum Depth Of 2" To Provide A Minimum Clearance Of 2".



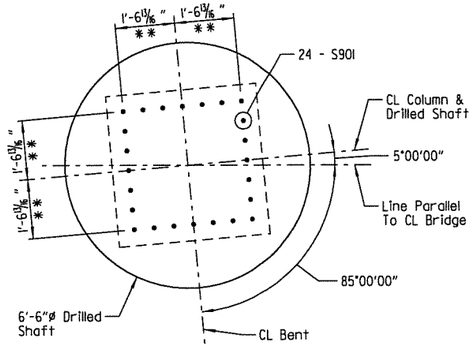
SECTION C-C
Scale: ½" = 1'-0"



VIEW F-F
Scale: ½" = 1'-0"



SECTION D-D
Scale: ½" = 1'-0"

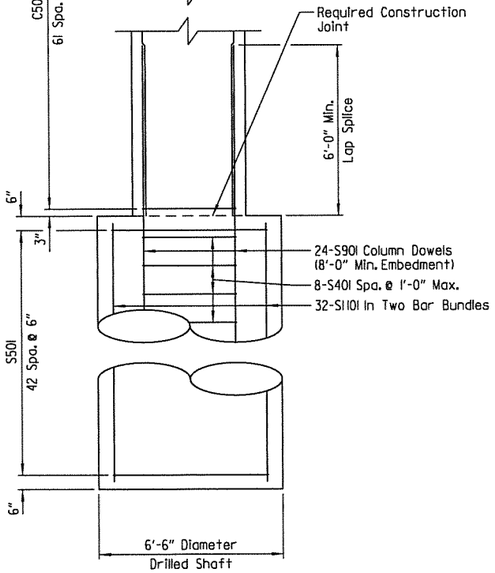


DOWEL BAR LAYOUT
Scale: ½" = 1'-0"

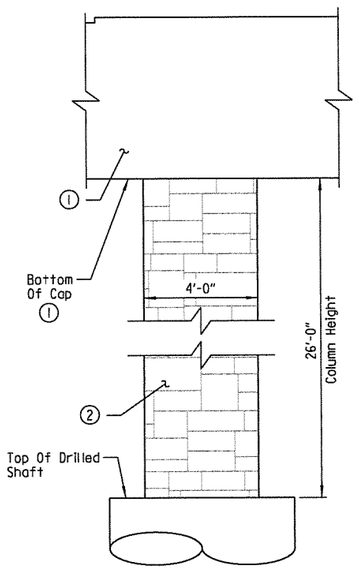
** Measured To Center Of Bars.

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	B501	120	15'-2"			2½"
	B502	9	13'-3½"	4'-2"	4'-8"	2½"
	B503	20	33'-7"			Str.
	B504	39	6'-11½"	4'-2"	1'-6"	2½"
	B505	6	34'-6"			Str.
	B506	10	6'-10"	4'-0½"	1'-6"	2½"
	B507	8	7'-4"	4'-6½"	1'-6"	2½"
	B1101	8	27'-1"	25'-7"		11¼"
	B1102	8	50'-7"	49'-1"		11¼"
	B1103	2	25'-7"			Str.
	B1104	2	49'-1"			Str.
	B1105	8	30'-4"			Str.
	B1106	8	41'-4"			Str.
	C501	210	14'-0"	6¼"		3¾"
	C901	72	30'-0"			Str.
③	S401	24	13'-10"	5"		3"
③	S501	129	18'-9"			3¾"
③	S901	72	12'-0"			Str.
③	S1101	96	21'-6"			Str.

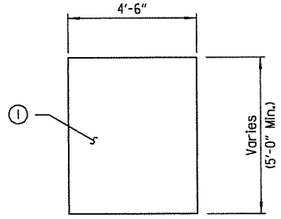
③ Non-Pay Item - Subsidiary to SP JOB 080395 "DRILLED SHAFT FOUNDATIONS".



SECTION E-E
Scale: ⅜" = 1'-0"



COLUMN
(Typ. All Columns)



CAP - END VIEW

① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

② "Ashlar Stone" Pattern & Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

ASHLAR STONE PATTERN
Scale: ⅜" = 1'-0"

GENERAL NOTES

All Concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M3222, Type A, Grade 60 (Yield Strength = 60,000 psi).

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see "LAYOUT OF BRIDGE".

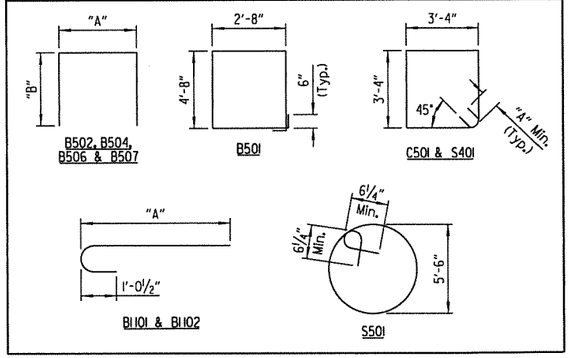
Concrete and reinforcing steel in drilled shafts, including column dowels, will not be paid for directly but will be included in the unit prices of the drilled shaft items.

For construction methods, materials, measurement and payment of drilled shafts, see SP JOB 080395 "DRILLED SHAFT FOUNDATIONS".

S901 column dowels and S401 ties may be secured in place before concrete placement or inserted after concrete placement of the shaft is complete. Vibration of concrete for the embedment depth of the column dowels will be required to ensure consolidation of the concrete around the column dowels and to facilitate insertion. The Contractor shall be responsible for satisfactory results.

A Class 3 Texture Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.9.

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
8/29/13
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENT
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x2_B7.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52972

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WORKSPACE: AHTD
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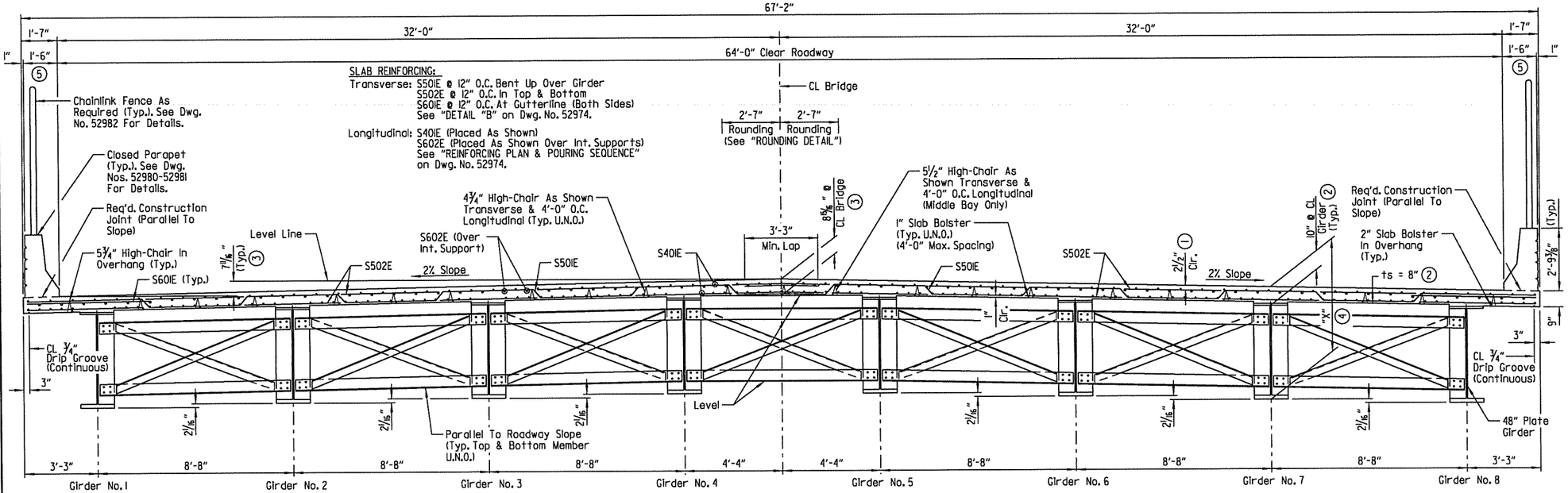
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	III	237
(1) 07258		SPAN DETAILS		52973

NOTE:
At the Contractor's option, one epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.



TYPICAL ROADWAY SECTION

(Looking Forward)
Scale: ⅜" = 1'-0"

(1) TOLERANCE:
Minus = ¼"
Plus = Amount of slab thickening used to meet slab thickness tolerance - See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

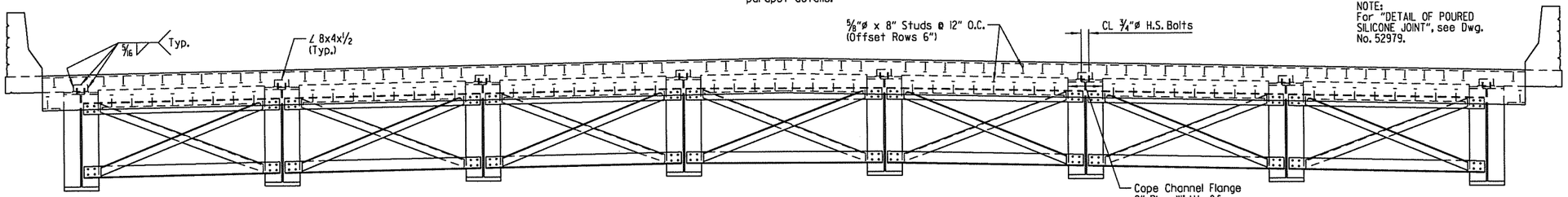
(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(3) Measured to Working Point, see "ROUNDING DETAIL".

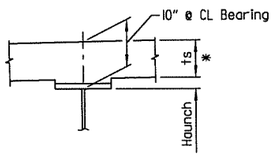
(4) "X" = 4'-10" + Bottom Flange Thickness, measured at CL Bearing & CL Girder.

(5) Widened Parapet to accomodate form liner and chainlink fence. See Dwg. Nos. 52980-52982 for parapet details.

NOTE:
Class 1 Protective Surface Treatment shall be applied to the roadway surface. Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.



NOTE:
For "DETAIL OF POURED SILICONE JOINT", see Dwg. No. 52979.



NOTE: t_S = Slab thickness as shown on "TYPICAL ROADWAY SECTION".

* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

Scale: NTS

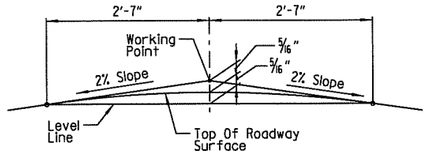
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the top flange contacts the bottom reinforcing steel; Maximum - top flange thickness plus ¼". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 14991 for tolerances when permanent steel bridge deck forms are used. Payment for "CLASS S(AE) CONCRETE-BRIDGE" shall be based on removable deck forming.

TYPICAL SECTION THRU JOINT

Looking Forward - Bent No. 1
Looking Back - Bent No. 3
Scale: NTS

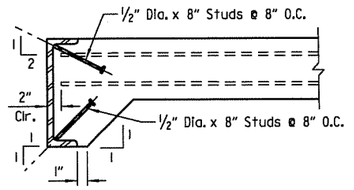
EXPANSION DEVICE:
Rdwy. Channel MC18x42.7
Conn. Angles ∠ 8x4x½
Detail Device ⅛" High And Provide ¼" Shims Using 2 - 1/16" And 1 - ⅛" Plates



NOTE:
Working Point matches Theoretical Profile Grade.

ROUNDING DETAIL

Scale: NTS



DETAIL OF ALTERNATE ANCHORS

Scale: NTS

NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

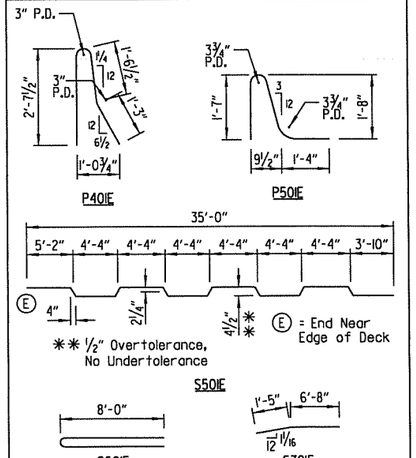
LEGEND

U.N.O. = Unless Noted Otherwise

(6) See Dwg. Nos. 52980-52981 for locations.

(7) Non-Typical Pin Diameter

BAR BENDING DIAGRAM



BAR LIST

	Mark	No. Req'd.	Length	Pin. Dia.
	S401E	1288	35'-10"	STR.
	S501E	458	35'-9"	3"
	S502E	920	35'-1"	STR.
	S503E TO S512E	4 Each	7'-8" TO 59'-1"	STR.
	S601E	468	16'-3"	(7) 5¼"
	S602E	136	44'-11"	STR.
	S701E	8	8'-1"	5¼"
(6)	P401E	940	5'-6"	3"
(6)	P402E	24	30'-4"	STR.
(6)	P403E	24	36'-8"	STR.
(6)	P404E	6	13'-7"	STR.
(6)	P405E	106	11'-8"	STR.
(6)	P406E	34	9'-8"	STR.
(6)	P407E	6	10'-7"	STR.
(6)	P501E	940	4'-8"	3¾"

NOTE:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

STATE OF ARKANSAS * LICENSED PROFESSIONAL ENGINEER * No. 14058 * STEVE R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 1 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER HIGHWAY 365 AND UPRR FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x2_SI.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52973

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	112	237
				(1) 07258		SPAN DETAILS		52974

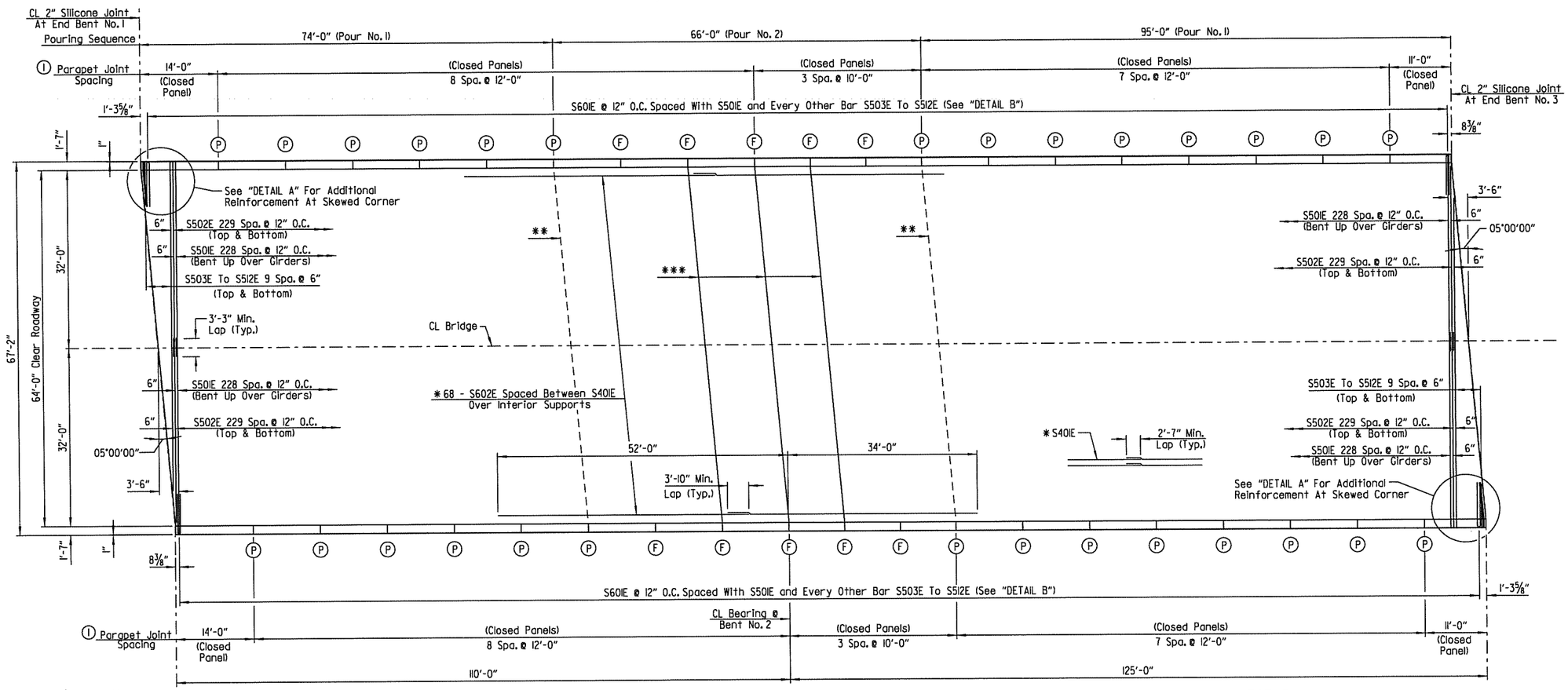
(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to "TYPICAL ROADWAY SECTION" on Dwg. No. 52973 for placement.

** Pouring Sequence Construction Joint

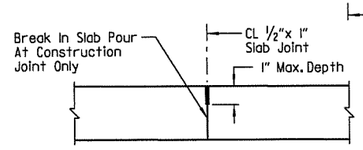
*** Required Slab Joint

NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.



REINFORCING PLAN & POURING SEQUENCE

Scale: ½" = 1'-0"



The ½" x 1" Poured Joint Sealer (Type 3, 4 or 6) in slab shall conform to Subsection 501.02 (H) and 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL

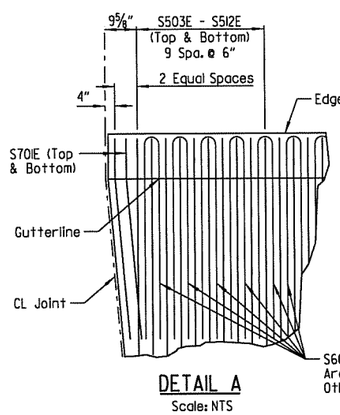
Scale: NTS

NOTE:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

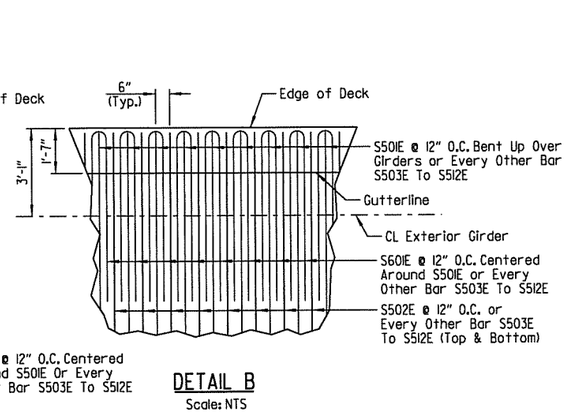
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

NOTE:
For parapet reinforcing details, see Dwg. Nos. 52980-52981.



DETAIL A

Scale: NTS

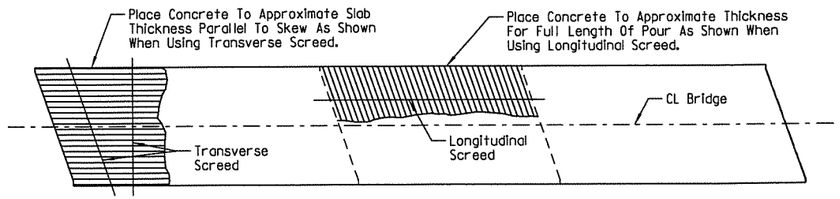


DETAIL B

Scale: NTS

LEGEND

U.N.O. = Unless Noted Otherwise



NOTE:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Bridge.

CONCRETE PLACEMENT PROCEDURE

Scale: NTS

SHEET 2 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER HIGHWAY 365 AND UPRR FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 14058 — BETH B. YARNELL — 8/21/13

BRIDGE ENGINEER

DRAWN BY: SJL DATE: MAR. 2012 FILENAME: B080395x2_S2.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JUNE 2011
BRIDGE NO. 07258 DRAWING NO. 52974

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REVISED DATE:

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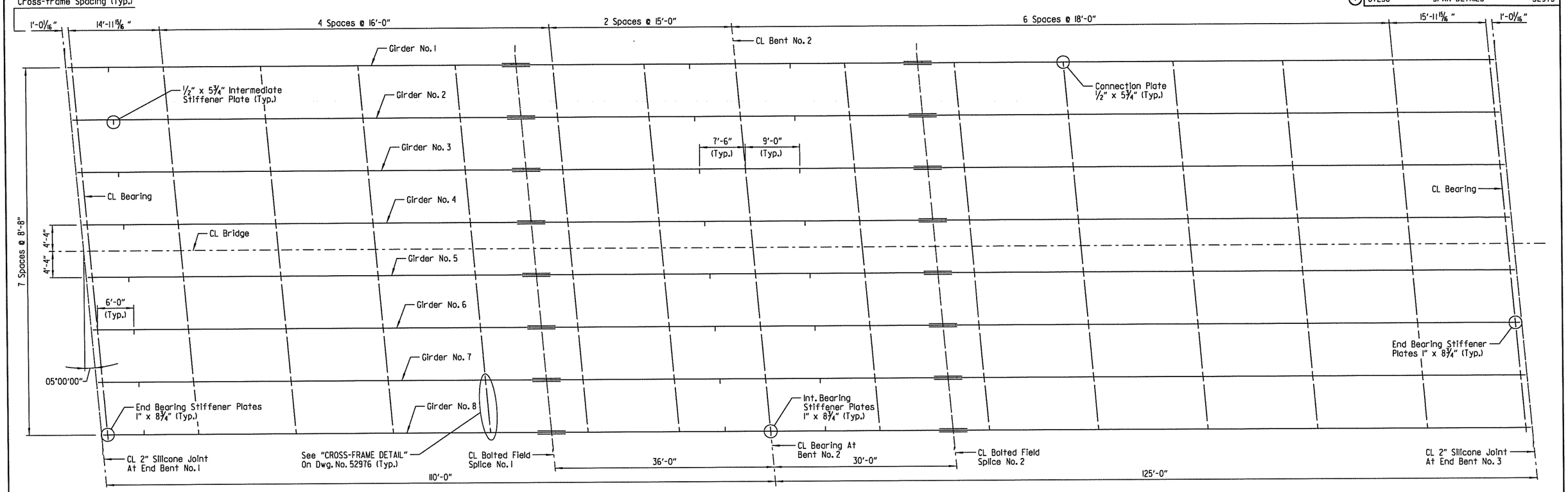
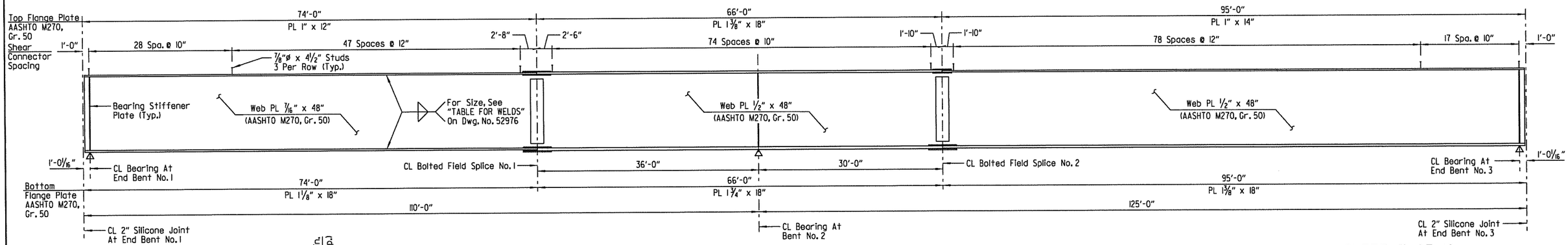
				JOB NO.		080395	113	237
				(1) 07258		SPAN DETAILS		52975



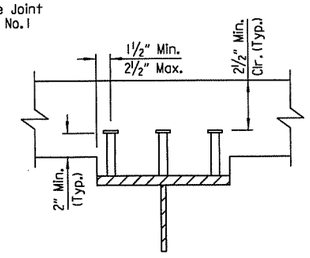
FRAMING PLAN

Scale: 1/8" = 1'-0"



TYPICAL GIRDER ELEVATION

Scale: NTS



SHEAR CONNECTOR DETAIL

Scale: NTS

Stud shear connectors shown shall be 7/8"ø x 4 1/2" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361 - 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

STATE OF ARKANSAS 14058 REGISTERED PROFESSIONAL ENGINEER No.14058 SETH B. YANCEY 8/21/13
BRIDGE ENGINEER

SHEET 3 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER HIGHWAY 365 AND UPRR FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAR. 2012 FILENAME: B080395x2_S3.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52975

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REVISED DATE:

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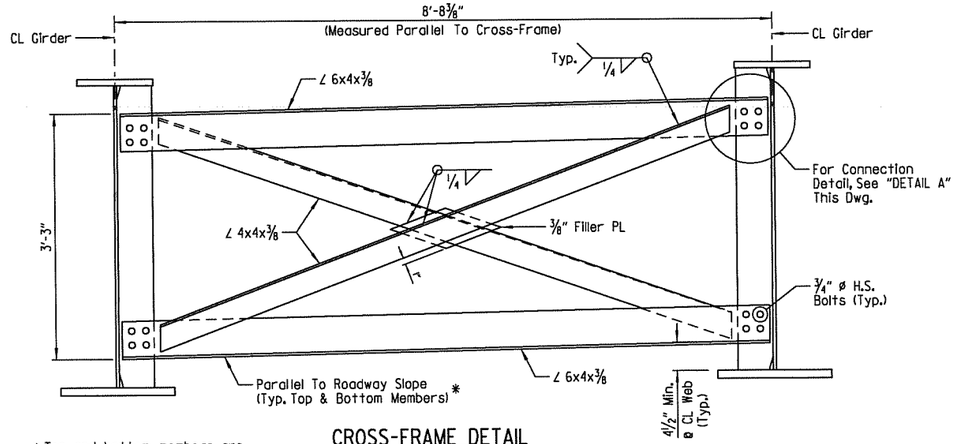
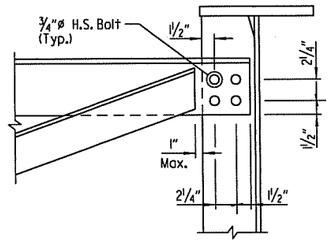
				JOB NO.		080395	114	237
				(1) 07258		SPAN DETAILS		52976

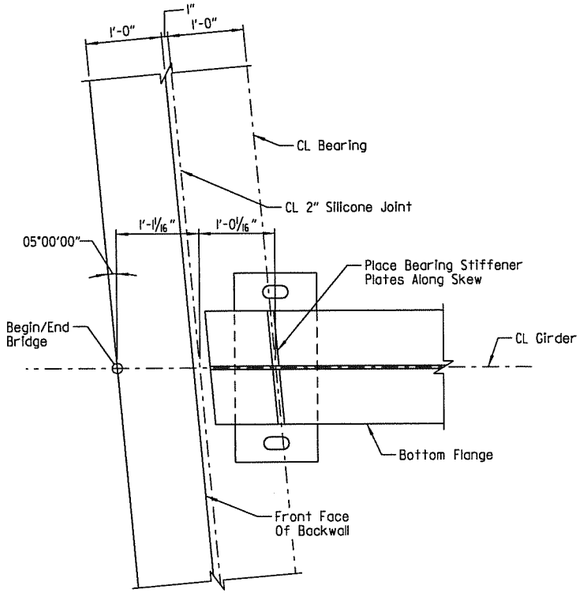


*Top and bottom members are level in the middle bay only. See "TYPICAL ROADWAY SECTION" on Dwg. No. 52973.

CROSS-FRAME DETAIL
Scale: 1" = 1'-0"



DETAIL A
Scale: 1½" = 1'-0"



BEARING @ END BENT
Scale: 1" = 1'-0"

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

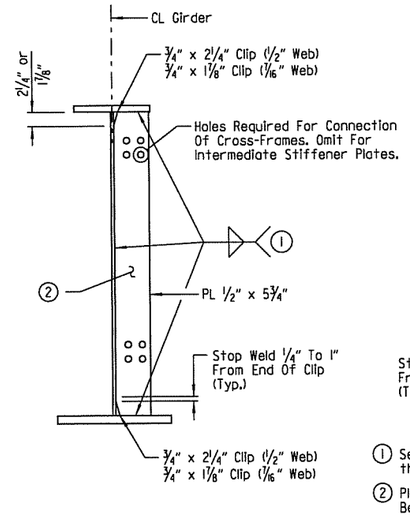
NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

NOTES:
For "GENERAL NOTES" & "TABLE OF DEAD LOAD DEFLECTIONS", see Dwg. No. 52978.

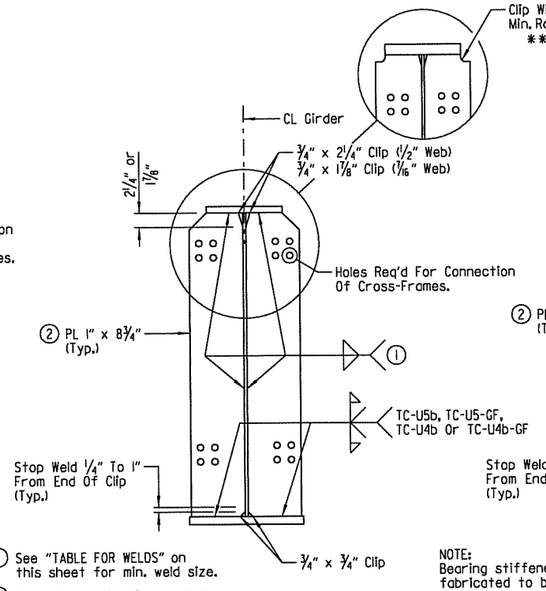
All structural steel, including girders, cross-frames, bearing stiffener plates, intermediate stiffeners and connection plates, shall be AASHTO M270 Gr. 50.

For details of field splices, see Dwg. No. 52977.

**If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accommodate the deck form support.



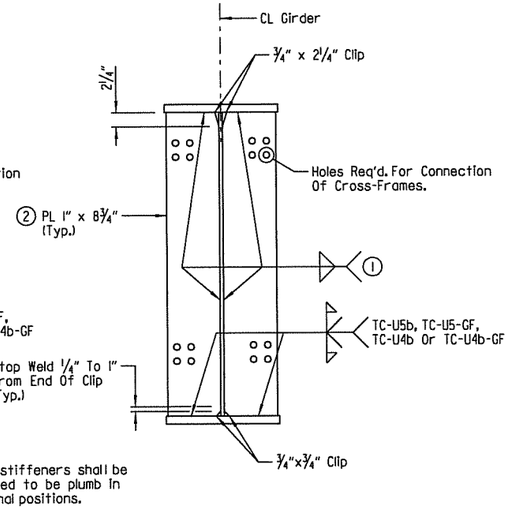
CROSS-FRAME CONNECTION & INTERMEDIATE STIFFENER PLATE DETAIL
Scale: 1" = 1'-0"



① See "TABLE FOR WELDS" on this sheet for min. weld size.

② Place Connection Plates And Bearing Stiffeners Parallel To Skew.

BEARING STIFFENER @ END BENTS
Scale: 1" = 1'-0"



NOTE:
Bearing stiffeners shall be fabricated to be plumb in their final positions.

BEARING STIFFENER @ INTERMEDIATE BENT
Scale: 1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 4 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAR. 2012 FILENAME: B080395x2_S4.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52976

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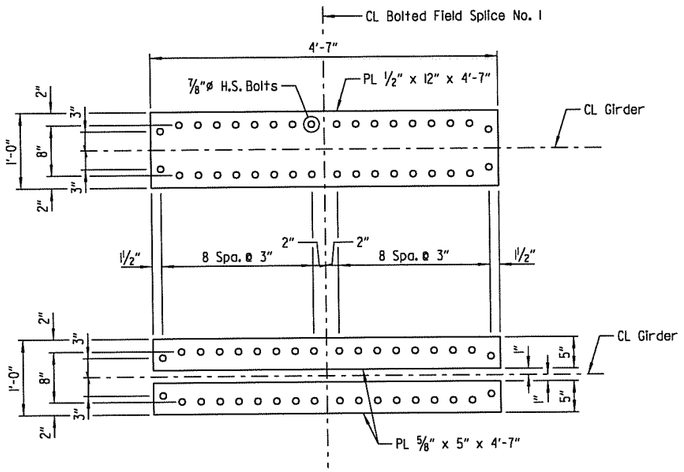
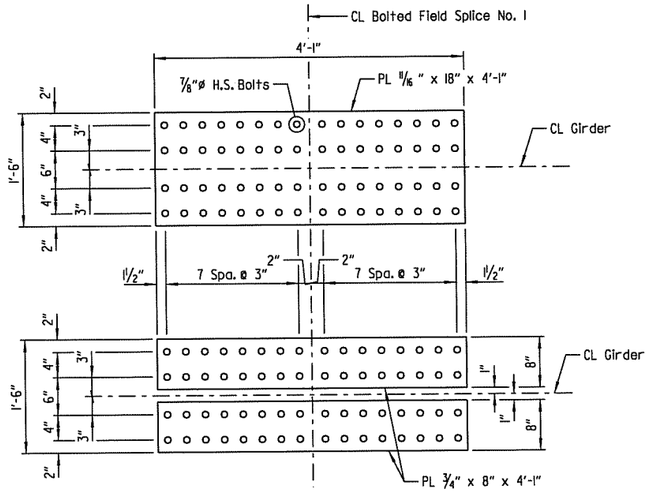
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	115	237
				(1) 07258		SPAN DETAILS		52977



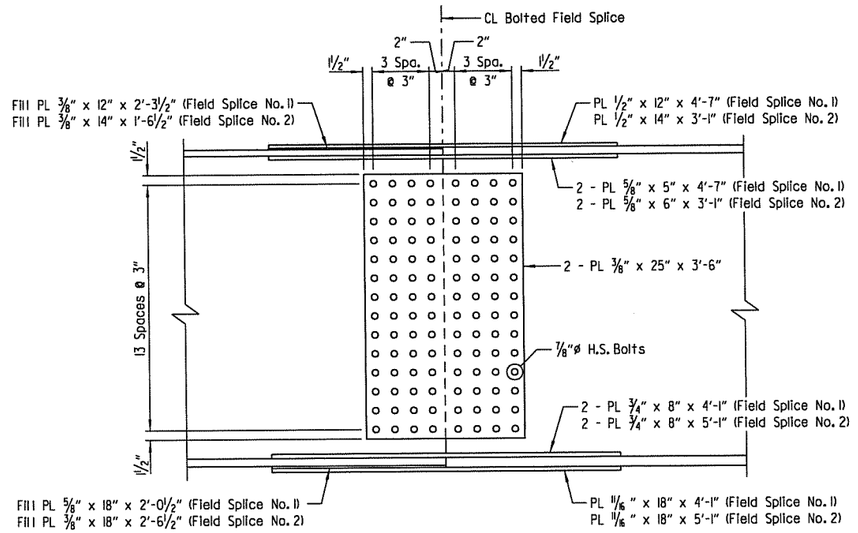
TOP FLANGE SPLICE - FIELD SPLICE NO. 1

Scale: 1" = 1'-0"



BOTTOM FLANGE SPLICE - FIELD SPLICE NO. 1

Scale: 1" = 1'-0"



ELEVATION OF BOLTED FIELD SPLICE

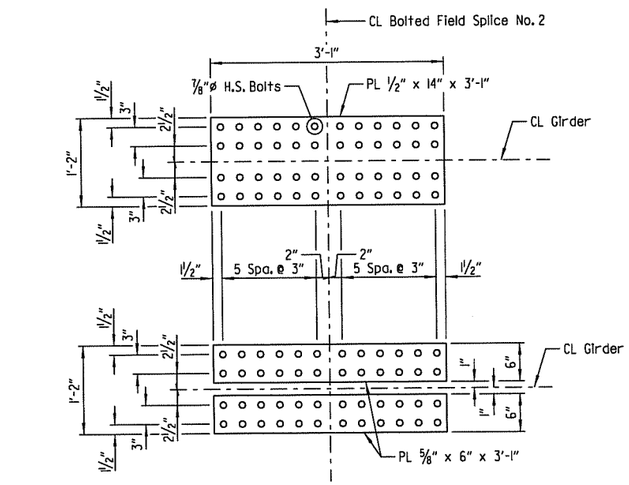
Scale: 1" = 1'-0"

NOTES:
All field splice bolts shall be 7/8"ø H.S. bolts.

All holes for field splice bolts shall be 15/16 "ø.

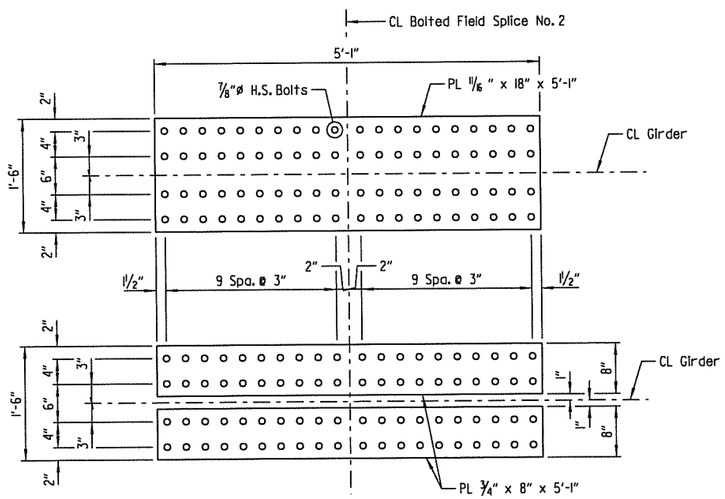
All field splice plates shall be AASHTO M270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.



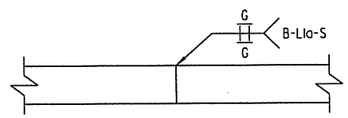
TOP FLANGE SPLICE - FIELD SPLICE NO. 2

Scale: 1" = 1'-0"

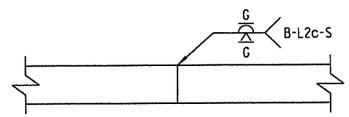


BOTTOM FLANGE SPLICE - FIELD SPLICE NO. 2

Scale: 1" = 1'-0"



Equal Thickness (Web)



Equal Thickness (Flange)

DETAILS OF WELDED SPLICES

Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SEAN R. YANCEY
8-21-13
BRIDGE ENGINEER

SHEET 5 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER
HIGHWAY 365 AND UPRR
FAULKNER COUNTY
ROUTE 365 SEC. 10
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAR. 2012 FILENAME: B080395x2_S5.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52977

saroberson 8/19/2013 3:49:41PM
WORKSPACE: AHTD - Conway Western ArterialLoop\Bridge\Drawings\Phase I\CWAL over 365 & RR\90% Plans\CWAL over 365 & RR PG Unit 5 of 10.dgn
L:\2009\09017230
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	116	237
				(1) 07258		SPAN DETAILS		52978

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 149911 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the pay item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". All structural steel shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless otherwise noted. See Dwg. No. 52983 for cleaning requirements of external load plates on elastomeric bearings.

All structural steel except galvanized members or steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall conform to Federal Standard 595B, Color Chip No. 27038, Black.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girder webs and flanges of plate girders and splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method. All Quality Control (Q. C.) testing is at the Contractor's expense.

All connection plates and intermediate stiffeners shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plan. No intermediate stiffeners are to be placed on the outside of the exterior girders except as noted. All bearing stiffeners shall be fabricated to be plumb in their final positions.

Cross-frames shall be installed as girders are erected. All bolts in cross-frames and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring of the concrete deck.

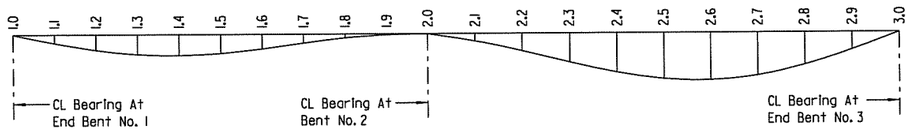
Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Open holes shall be 15/16 "ø unless otherwise noted. Holes for ¾"ø high-strength bolts may be 15/16 "ø if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M298 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50)".

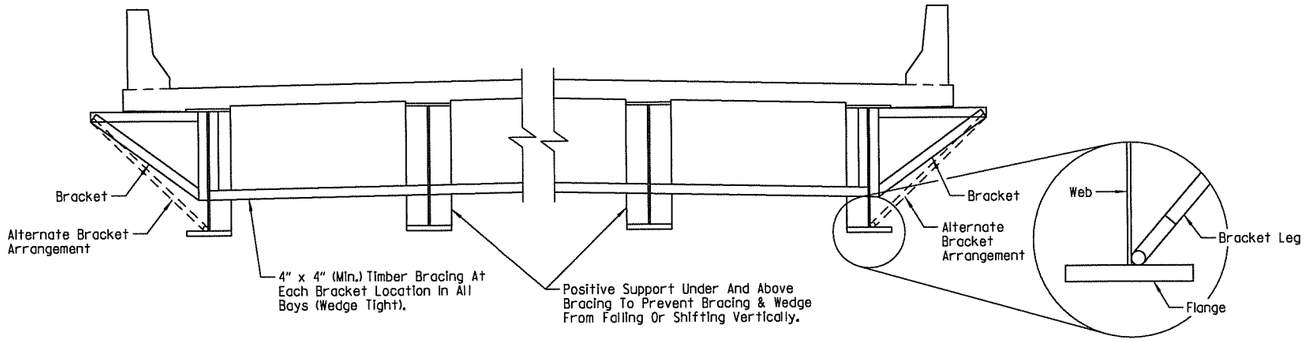


DEAD LOAD DEFLECTION

Scale: NTS

NOTE:
Camber for dead load deflection plus vertical curve +/- ¼" tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing. Vertical curve corrections are not included. Negative sign (-) indicates point above chord.

TABLE OF DEAD LOAD DEFLECTIONS (Inch)			
Point Of Deflection	Wt. Of Girder And Cross-Frames	Wt. Of Girder, Cross-Frames And Slab	Wt. Of Girder, Cross-Frames, Slab And Parapet
1.0	0.00	0.00	0.00
1.1	0.11	0.57	0.60
1.2	0.21	1.03	1.09
1.3	0.26	1.32	1.39
1.4	0.27	1.39	1.47
1.5	0.24	1.25	1.32
1.6	0.18	0.95	1.01
1.7	0.10	0.57	0.61
1.8	0.03	0.22	0.23
1.9	-0.01	-0.01	-0.01
2.0	0.00	0.00	0.00
2.1	0.11	0.42	0.44
2.2	0.27	1.11	1.17
2.3	0.46	1.88	1.99
2.4	0.62	2.57	2.72
2.5	0.72	3.01	3.18
2.6	0.73	3.10	3.28
2.7	0.66	2.80	2.96
2.8	0.50	2.13	2.25
2.9	0.27	1.16	1.22
3.0	0.00	0.00	0.00



SCREED RAIL SUPPORT DETAIL

Scale: N.T.S.

NOTE: The bracket shall be installed in a manner that avoids any nicks or gouges in the flange, web and weld.

NOTE:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if ½" x 5¾" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket shown above is used. The alternate bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffeners shall conform to the details for cross-frame connection plates shown on Dwg. No. 52976. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)."

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 6 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER HIGHWAY 365 AND UPRR FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAR. 2012 FILENAME: B080395x2_S6.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52978

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WORKSPACE: AHTD
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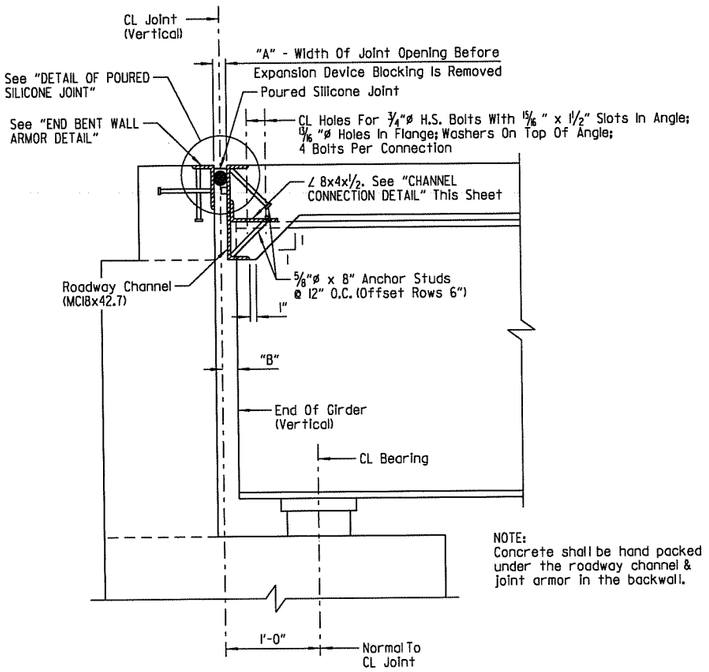
REVISED DATE:

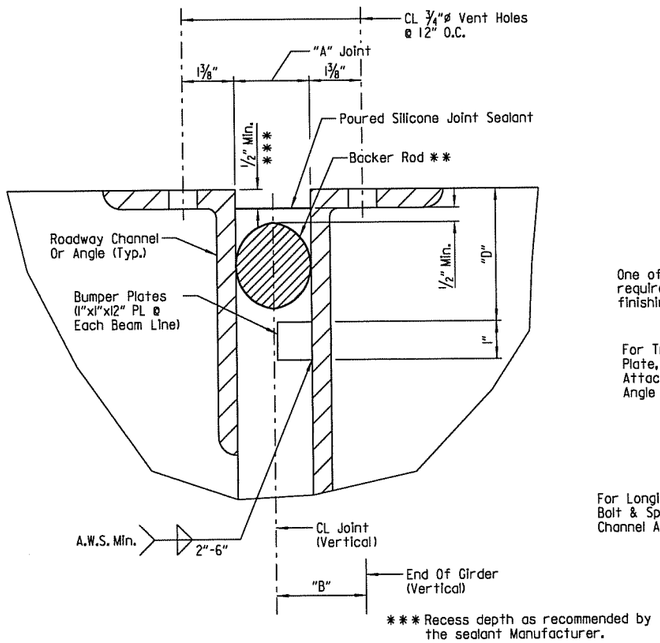
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	117	237
				(1) 07258		SPAN DETAILS		52979



NOTE:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.

SECTION THRU SILICONE JOINT

Note: Section Taken Normal To CL Joint
Scale: NTS



** Recess depth as recommended by the sealant Manufacturer.

DETAIL OF POURED SILICONE JOINT

Scale: NTS

SILICONE JOINT DATA

"A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
2 3/16"	2"	1 13/16"	2 1/4" ±	4 1/2"	1" x 1" x 12"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

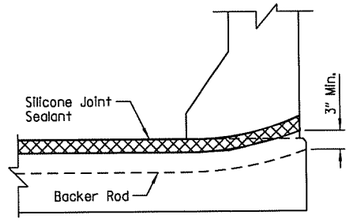
NOTES:
The temperature limitations recommended by the sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

** BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod that can be sealed in the same day.

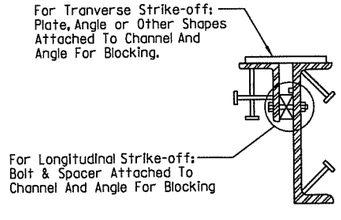
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



JOINT SEAL PLACEMENT AT CURB

Scale: NTS

One of two different blocking systems is required depending on the type of span finishing machine that is used.



NOTE:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension "A" shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENTS:

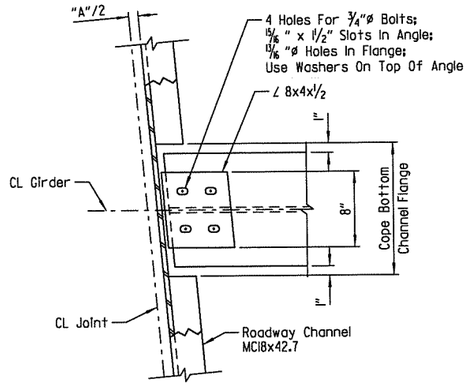
The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

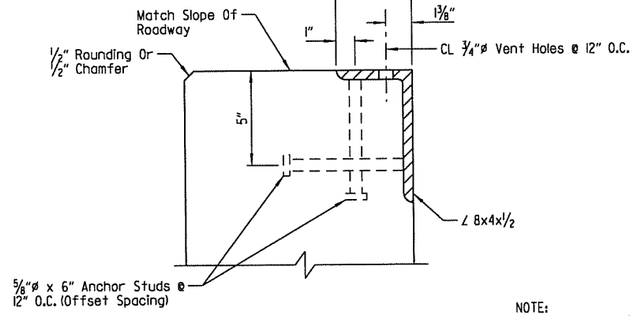
DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Scale: NTS



CHANNEL CONNECTION DETAIL

Scale: NTS



NOTE:
Transverse spacing between vertical anchor studs and vent holes shall be 6".

END BENT WALL ARMOR DETAIL

Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 7 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER HIGHWAY 365 AND UPRR FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: AUG. 2011 FILENAME: B080395x2_S7.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS NOTED
DESIGNED BY: SRY DATE: AUG. 2011
BRIDGE NO. 07258 DRAWING NO. 52979

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WORKSPACE: AHTD
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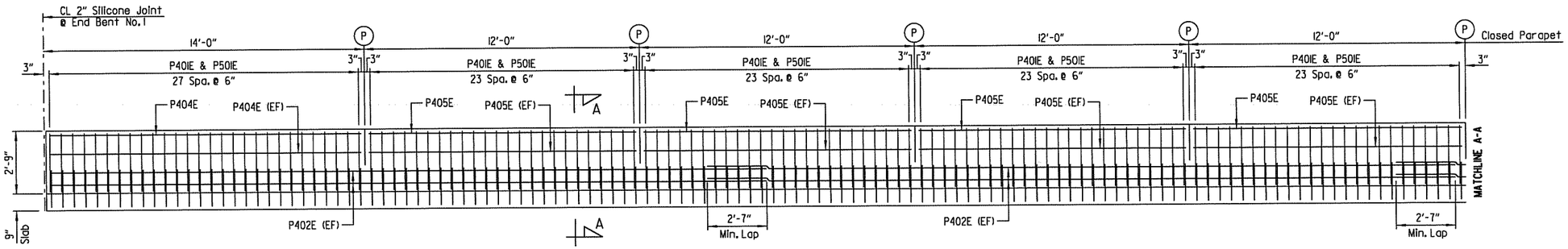
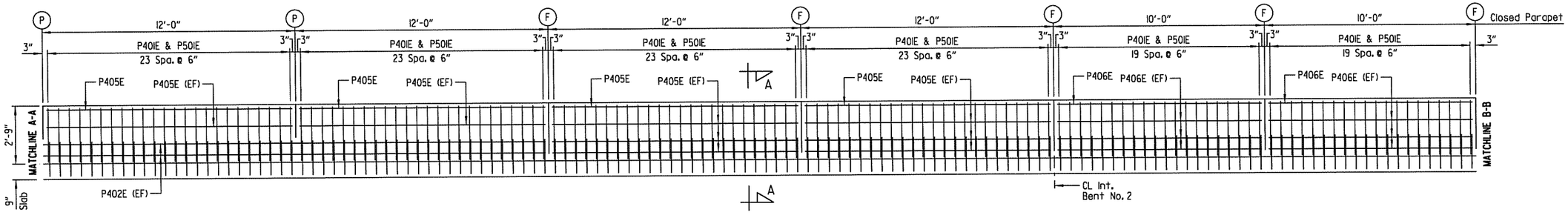
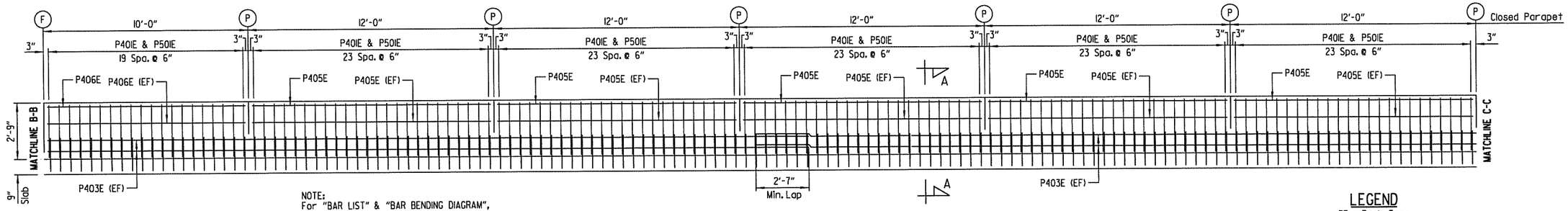
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	118	237
				(1) 07258		SPAN DETAILS		52980



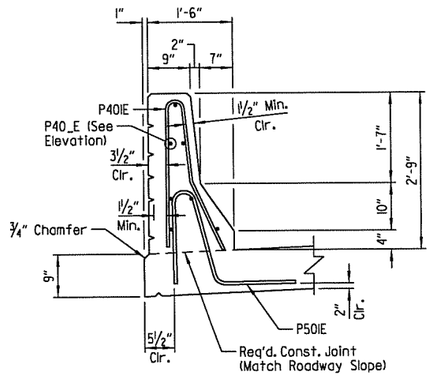




NOTE:
For "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52973.

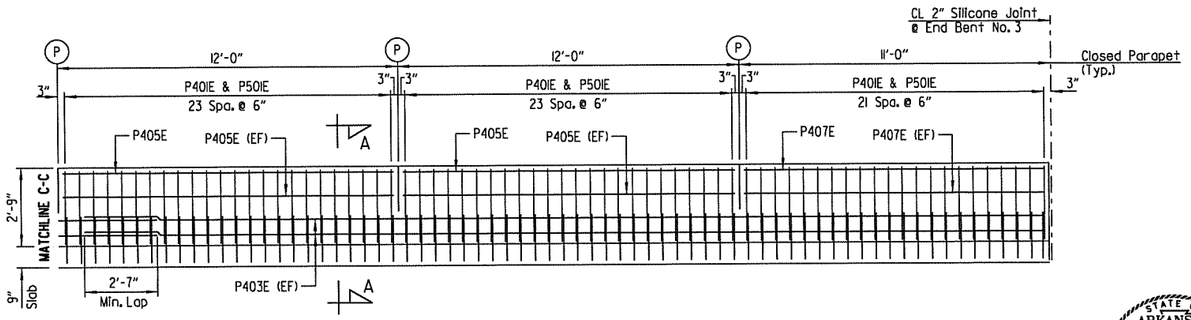
LEGEND

EF = Each Face



SECTION A-A

Scale: ¾" = 1'-0"



LEFT PARAPET - ELEVATION

(Looking At Inside Face of Parapet)
Scale: ⅜" = 1'-0"

(P) CL Partial-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg. No. 52974. Stop 1'-2" from top of slab.

(F) CL Full-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg. No. 52974. Stop 4" from top of slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/22/13
BRIDGE ENGINEER

SHEET 8 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT
CONWAY LOOP OVER HIGHWAY 365 AND UPRR
FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: SJL DATE: MAR. 2012 FILENAME: B080395x2_S8.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JUNE 2011

BRIDGE NO. 07258 DRAWING NO. 52980

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	119	237
				(1) 07258		SPAN DETAILS		52981

LEGEND

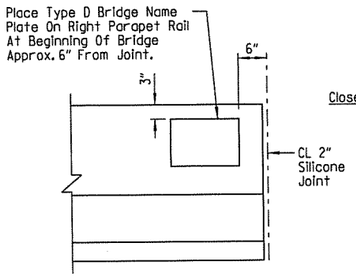
EF = Each Face

(P) CL Partial-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg. No. 52974. Stop 1'-2" from top of slab.

(F) CL Full-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg. No. 52974. Stop 4" from top of slab.

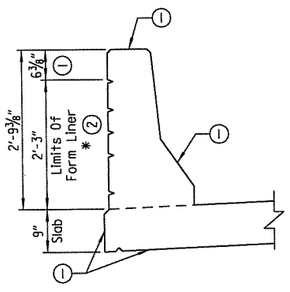
NOTES:
For "BAR LIST" & "BAR BENDING DIAGRAMS", see Dwg. No. 52973.

For "SECTION A-A" & "SECTION B-B", see Dwg. No. 52980.



VIEW SHOWING LOCATION OF NAME PLATE

(Showing Inside Face of Parapet)
Scale: 3/4" = 1'-0"



CLOSED PANEL PARAPET

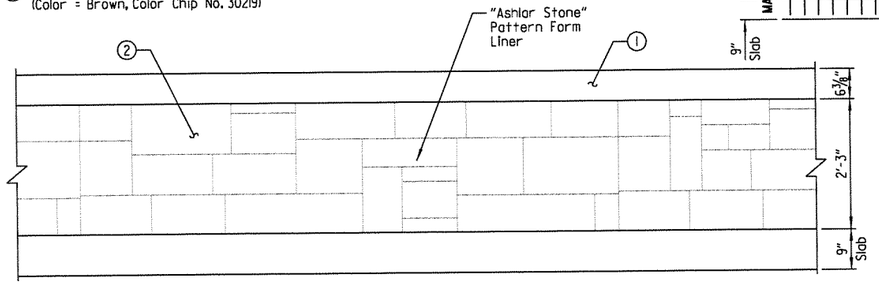
Scale: 3/4" = 1'-0"

* "Ashlar Stone" Pattern

(1) Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

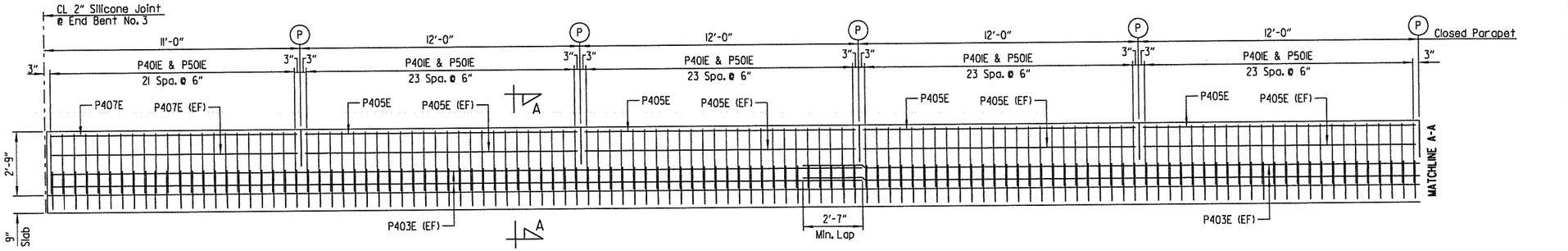
(2) Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

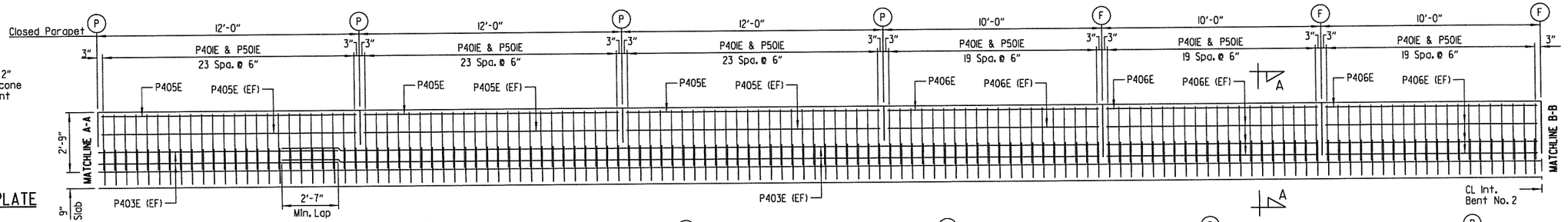
NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1 1/2" to parapet reinforcing.

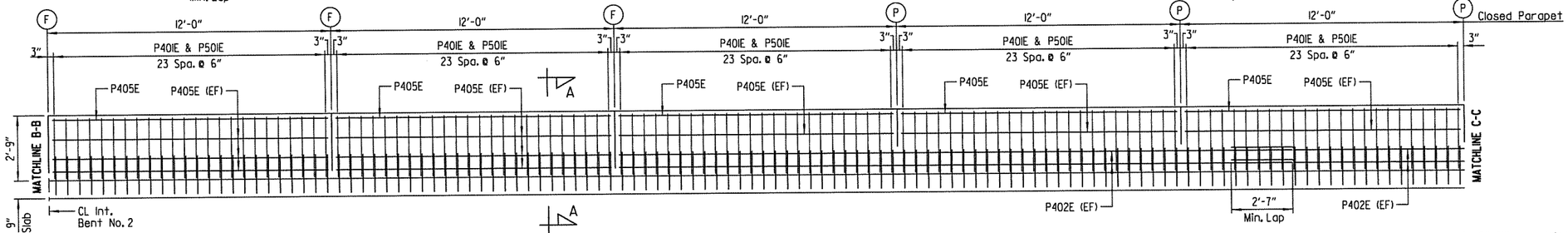


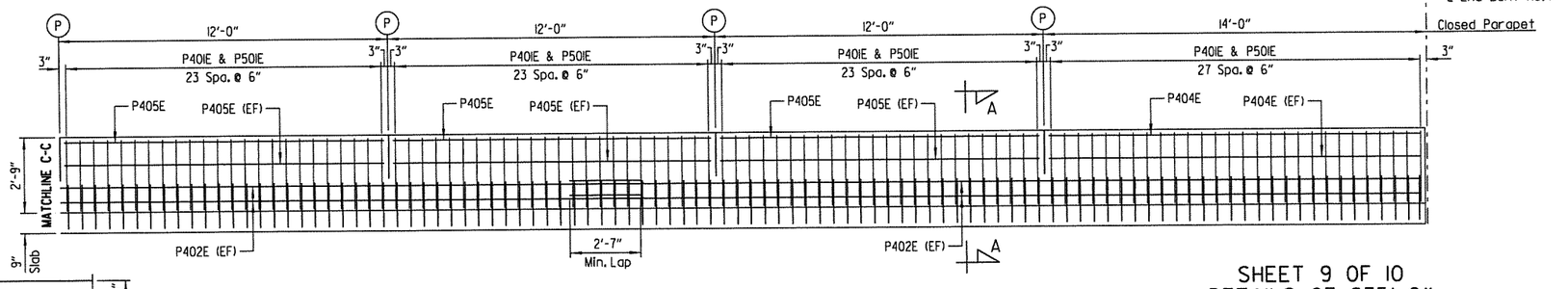
PANEL ELEVATION

(Showing Outside Face of Parapet)
Scale: 3/4" = 1'-0"









RIGHT PARAPET - ELEVATION

(Looking At Inside Face of Parapet)
Scale: 3/8" = 1'-0"

NOTE:
A Class 3 Texture Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURE COATING FINISH" and in accordance with Subsection 802.19.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 9 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER HIGHWAY 365 AND UPRR FAULKNER COUNTY

ROUTE 365 SEC. 10

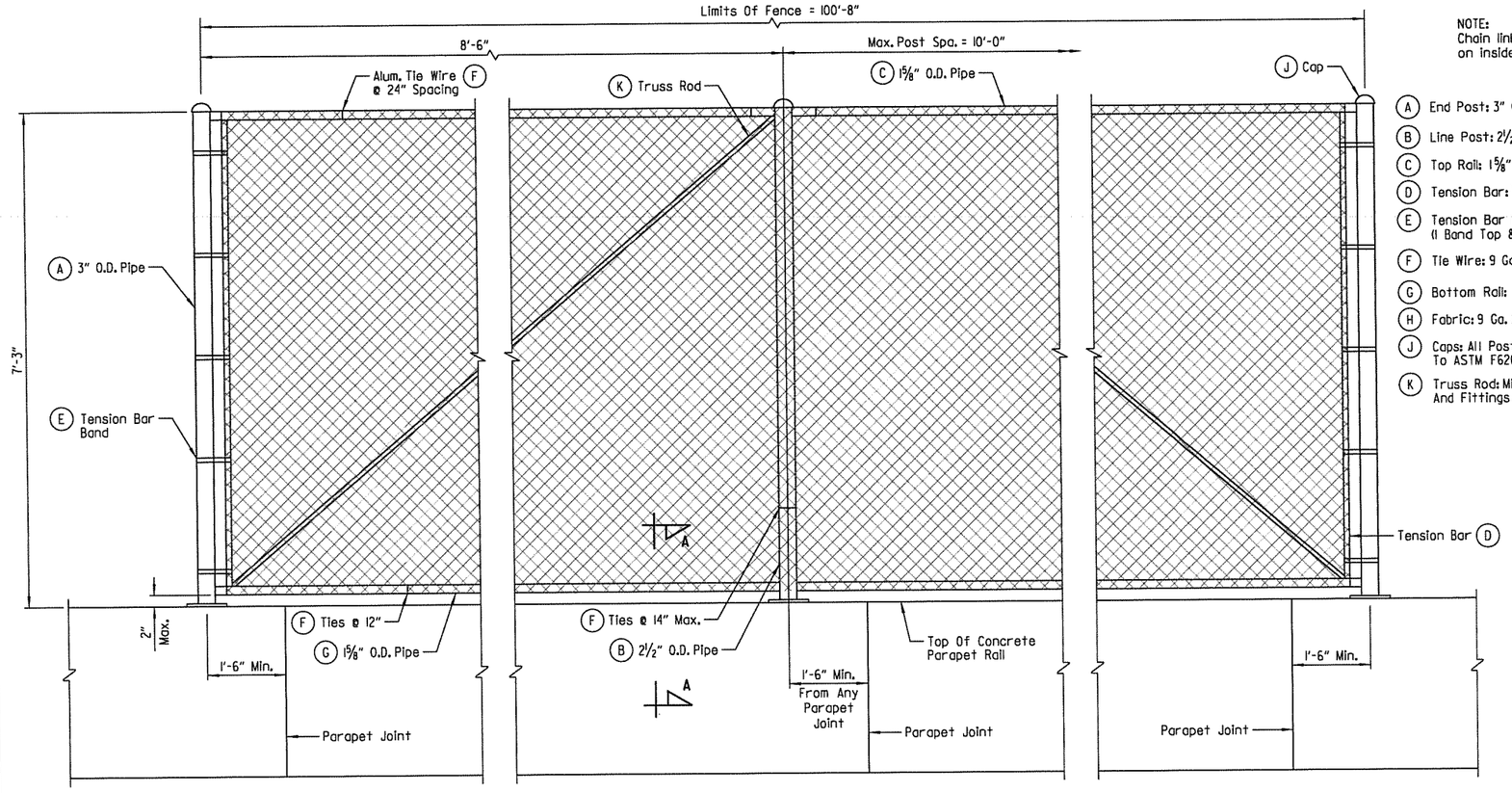
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: SJL DATE: MAR. 2012 FILENAME: B080395x2_S9.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JUNE 2011
BRIDGE NO. 07258 DRAWING NO. 52981

saroberson 8/9/2013 3:59:9 PM
WORKSPACE: AHTD - Conway Western ArterialLoop\Bridge\Drawings\Phase I\CWAL over 365 & RR\902 Plans\CWAL over 365 & RR PG Unit 9 of 10.dgn
L:\2009\09017230
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	120	237
				(1) 07258		SPAN DETAILS		52982



NOTE:
Chain link fabric to be placed on inside face of posts.

(A) End Post: 3" O.D.
(B) Line Post: 2½" O.D.
(C) Top Rail: 1⅝" O.D.
(D) Tension Bar: 3/16" x ¾" Bar
(E) Tension Bar Band: ¾" x .074 w/⅝"ø x 1¼" Bolt (1 Band Top & Bottom w/15" Max. Spaces)
(F) Tie Wire: 9 Ga. Aluminum
(G) Bottom Rail: 1⅝" O.D.
(H) Fabric: 9 Ga. 2" Mesh w/Knuckle or Twisting Selvage
(J) Caps: All Posts Shall Be Capped & Shall Conform To ASTM F626-84
(K) Truss Rod: Min. Of ⅝" Round With Tighteners And Fittings

FENCE LOCATION		
Parapet Location	Begin Sta.	End Sta.
Left	29+63.32	30+63.99
Right	29+70.04	30+70.71

MATERIALS FOR CHAIN LINK FENCE

Posts and Rails: ASTM A53 (Grade B)

Tubing: ASTM A500 (Grade B)

Base Plate and Fence Accessories: AASHTO Specification M270, Gr. 36.

Fence members shall be galvanized in accordance with AASHTO Specifications. Mill after fabrication.

Anchor bolts shall be of stainless steel or high strength steel. Stainless steel anchor bolts shall conform to ASTM A193 or A320 - Grade B8 with a minimum yield strength of 80,000 psi. High strength steel anchor bolts shall conform to AASHTO M164 or ASTM A354 - Grade BC galvanized in accordance with AASHTO M232.

Bolts: Stainless steel, ASTM specifications A193 or A320 - Grade B8, or AASHTO M270, Gr. 36, galvanized.

Nuts: Nuts shall conform to ASTM A194 - Grade 8 (stainless steel) or AASHTO M164 galvanized in accordance with AASHTO M232.

Threads: Threads on bolts, screws and nuts shall conform to American Standard Course Series, Class 2 fit, ASA Specification B1.1.

Washers shall be of high strength steel conforming to AASHTO M270, Gr. 36, galvanized in accordance with AASHTO M232 or of stainless steel conforming to ASTM A276 or A167 - Type 302.

GENERAL NOTES

Fence layout shall conform to vertical and horizontal alignments of the bridge. Fence posts shall be set plumb (true vertical position). 7 days shall elapse after pouring parapet before stretching and securing fabric to posts.

Post anchorage shall be cast in the parapet. No portion of the fence shall be erected until the entire parapet has been poured and cured.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Neoprene pads and template plates shall not be paid for directly, but shall be considered incidental to the unit price bid item "7' STEEL CHAIN LINK FENCE".

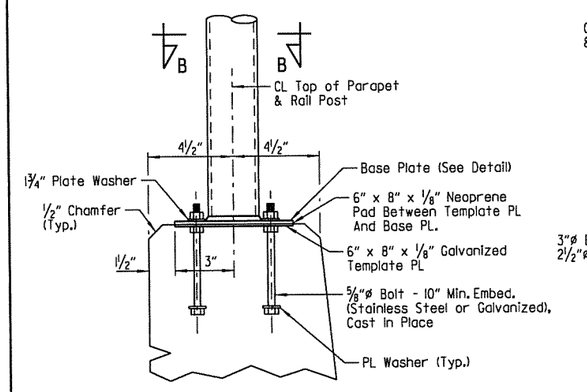
All galvanizing which has been damaged in handling or transportation shall be repaired.

All exposed edges shall be smooth.

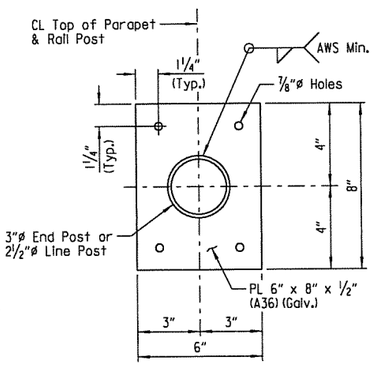
All bolt heads shall be to the sidewalk side of the parapet.

Chain link fence attached to Bridge shall be paid for as "7' STEEL CHAIN LINK FENCE". For additional details of chain link fence, see Std. Dwg. WF-3.

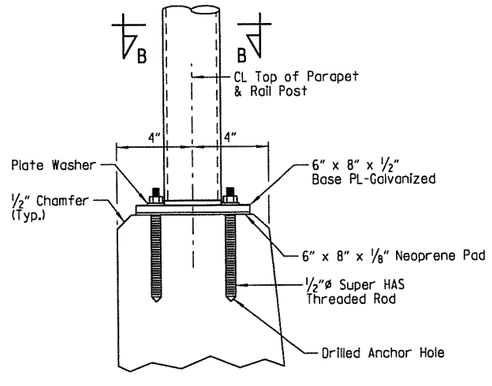
DETAIL OF CHAIN LINK FENCE
Scale: NTS



SECTION A-A
Scale: 3" = 1'-0"



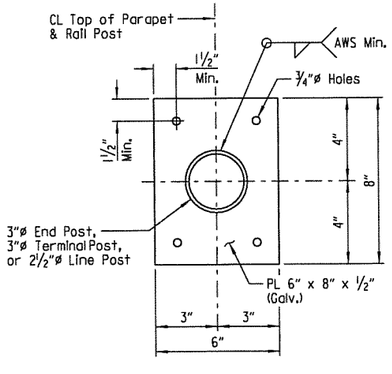
SECTION B-B
Scale: NTS



SECTION A-A
Scale: 3" = 1'-0"

HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4½" embedment or approved equal.

The HILTI Adhesive Anchor System shall be installed in accordance with Manufacturer's recommendations.



SECTION B-B
Scale: NTS

DETAILS OF POST ANCHOR SYSTEM

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(Epoxy Adhesive Anchors)

STATE OF ARKANSAS
SETHUR YANCEY
REGISTERED PROFESSIONAL ENGINEER
No. 14058
8/21/13
BRIDGE ENGINEER

SHEET 10 OF 10
DETAILS OF 235'-0" COMPOSITE PLATE GIRDER UNIT CONWAY LOOP OVER HIGHWAY 365 AND UPRR FAULKNER COUNTY

ROUTE 365 SEC. 10

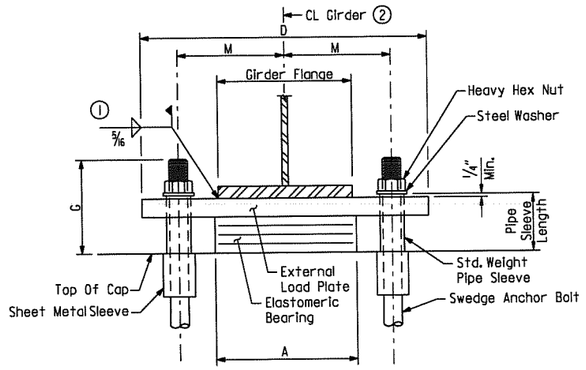
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

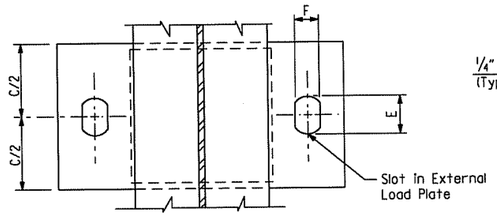
DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x2_SA.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07258 DRAWING NO. 52982

saroberson 8/9/2013 3:51:45 PM
WORKSPACE: AHTD
L:\2009\09017230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\CWAL over 365 & RR\90% Plans\CWAL over 365 & RR PG Unit 10 of 10.dgn
REVISED DATE:

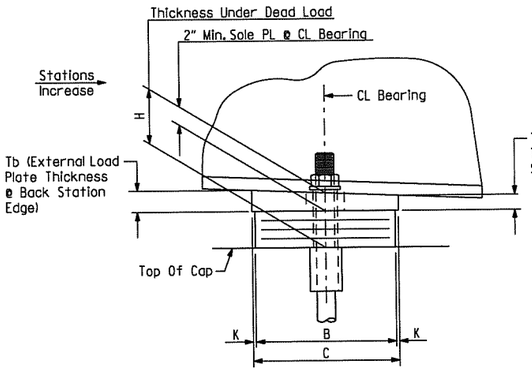
DATE REVISED	DATE FIL.MED	DATE REVISED	DATE FIL.MED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	121	237
				① 07258		ELASTOMERIC BEARINGS		52983



FRONT VIEW - AT BENT NOS. 1 & 3



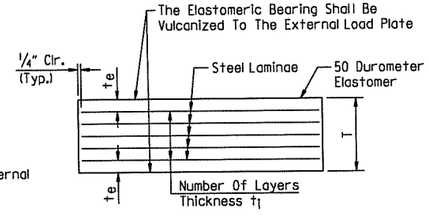
PLAN VIEW - AT BENT NOS. 1 & 3



SIDE VIEW - AT BENT NOS. 1 & 3

① Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

② Centerline elastomeric pad shall be aligned with centerline girder.

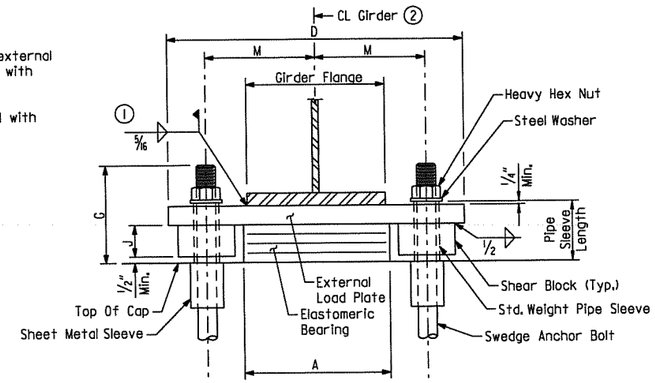


t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
t_1 = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness t_1

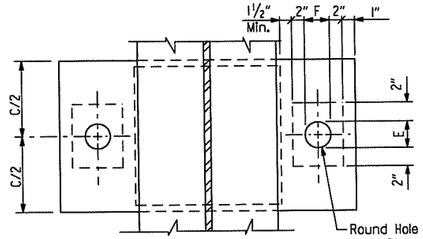
ELASTOMERIC BEARING

NOTE:
The direction of the bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in "TABLE OF FABRICATOR VARIABLES".

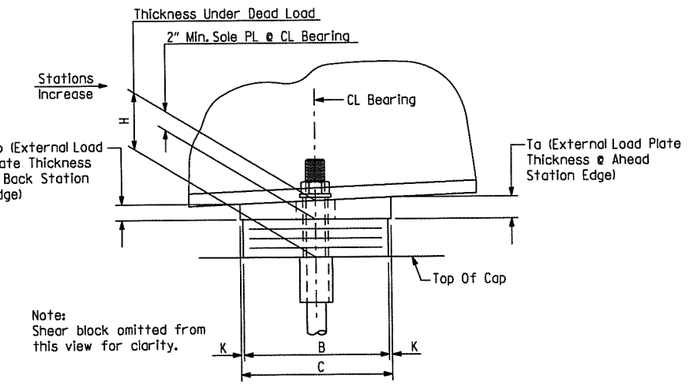
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



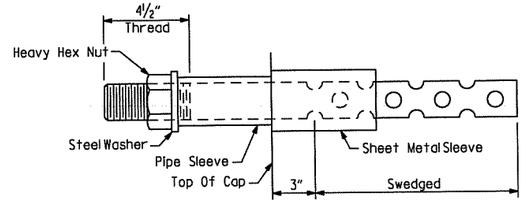
FRONT VIEW - AT BENT NO. 2



PLAN VIEW - AT BENT NO. 2



SIDE VIEW - AT BENT NO. 2



ANCHOR BOLT DETAIL

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)"

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS".

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M298, Class 50.

External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Section 808. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(B) for painted steel and painted in accordance with Subsection 807.75. Mask areas of field welding. The color of paint shall be Black and shall match Fed. Std. 595B, Color Chip No. 27038. Painting will not be paid for directly but will be considered subsidiary to "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08.

TABLE OF FABRICATOR VARIABLES

Bridge No.	Location		Bearing Type	No. Of Bearings Each Bent	*Maximum Design Load (Kips)	Elastomeric Pad								External Load Plate								Anchor Bolt				
	Bent No(s).	Girder No.				G	H	A	B	N	t_1	t_e	No. & Thickness Of Steel Laminate	T	C	D	E	F	J	K	M	T_a	T_b	Anchor Bolt (Dia. x L)	Anchor Bolt Grade	Pipe Sleeve Size (Dia. x L)	Sheet Metal Sleeve Size (Dia. x L)	Steel Washer Size (O.D.)
07258	1	1-4, 6-8	Exp.	7	141	8 9/16"	5 9/16"	18"	9"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	10"	29 1/2"	4 1/2"	2 5/8"	-	1/2"	11 3/4"	2.17"	1.83"	1 3/4" x 30"	55	2" x 5 9/16"	4" x 11"	3 3/8"
	1	5	Exp.	1	141	8 7/8"	5 7/8"	18"	9"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	10"	29 1/2"	4 1/2"	2 5/8"	-	1/2"	11 3/4"	2.48"	2.14"	1 3/4" x 30"	55	2" x 6 1/8"	4" x 11"	3 3/8"
	2	1-4, 6-8	Fix.	7	406	7 15/16"	4 15/16"	20"	13"	4	1/2"	1/4"	5 @ 12 Ga.	3"	14"	38 1/4"	2 5/8"	2 5/8"	2 3/8"	1/2"	14 13/16"	2.19"	1.81"	1 3/4" x 29"	55	2" x 5 3/16"	4" x 11"	3 3/8"
	2	5	Fix.	1	406	8 3/16"	5 3/16"	20"	13"	4	1/2"	1/4"	5 @ 12 Ga.	3"	14"	38 1/4"	2 5/8"	2 5/8"	2 3/8"	1/2"	14 13/16"	2.44"	2.06"	1 3/4" x 29"	55	2" x 5 7/16"	4" x 11"	3 3/8"
	3	1-4, 6-8	Exp.	7	161	8 9/16"	5 9/16"	18"	9"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	10"	29 1/2"	4 3/4"	2 5/8"	-	1/2"	11 3/4"	2.10"	1.90"	1 3/4" x 30"	55	2" x 5 9/16"	4" x 11"	3 3/8"
	3	5	Exp.	1	161	8 3/4"	5 3/4"	18"	9"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	10"	29 1/2"	4 3/4"	2 5/8"	-	1/2"	11 3/4"	2.29"	2.09"	1 3/4" x 30"	55	2" x 6"	4" x 11"	3 3/8"

* Maximum Design Load = Service I Limit State

DETAILS OF ELASTOMERIC BEARINGS CONWAY LOOP OVER HIGHWAY 365 AND UPRR FAULKNER COUNTY

ROUTE 365 SEC. 10

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x2_EI.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012

BRIDGE NO. 07258 DRAWING NO. 52983

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WORKSPACE: AHTD
L:\2009\09017230 - Conway Western Arterial Loop\Bridge\Drawings\Phase 1\CWAL over 365 & RR\90% Plans\CWAL over 365 & RR Elastomeric Bearings.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	122	237
① 07259		LAYOUT		52984

FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS

NOTE:
Use Type C Approach Gutters (W = 8'-0") at each end of bridge. See Std. Dwg. No. 2016C.

Use Type N-2 drop inlet at east end of bridge (right side only).

For "GENERAL NOTES", "BORING LEGEND" & "N VALUES", see Dwg. No. 52985.

See Dwg. No. 52986 for construction sequence.

NOTE:
Stations and elevations shown are along CL Bridge. Elevations shown are at finished grade. CL Bridge is on a 3° curve Rt. Longitudinal lines shall be constructed on curves concentric with CL Bridge.

PVI Sta. 20+00
Elev. 305.66
V.C. = 460'
+3.80%
-4.60%

VERTICAL CURVE DATA

Lowrence Landing Rd.
(Theoretical Profile Grade Along CL Bridge)

HORIZONTAL CURVE DATA

Lowrence Landing Rd.
PI = 19+87.36
Δ = 20°56'13" Rt.
D = 3°00'00"
T = 352.88'
L = 697.90'
e = 0.028 Ft./Ft.
R = 1909.86'

HORIZONTAL CURVE DATA

I-40
PI = 7418+12.40
Δ = 6°55'00.0" Lt.
D = 0°15'00"
T = 1385.02'
L = 2766.67'
e = NA
R = 22918.31'

LEGEND

FOC = Fiber Optic Cable
OHE = Overhead Electric

PLAN

① Measured To Line Tangent To Curve At CL Joint For Bents 1 & 4 And At CL Bearing For Bents 2 & 3.

② Measured Between Line Radial To Lawrence Landing Curve And Line Tangent To I-40 Curve At Intersection Point.

③ Pier Protection Transition To Median Barrier Required

④ Existing Box To Be Removed After Demolition Of Existing Bridge **

⑤ Shoring, As Needed, Will Be Required To Excavate Existing Embankment And Construct MSE Retaining Wall No. 5 While Maintaining Traffic On Lawrence Landing Road. See SP JOB 080395 "SHORING". **

⑥ Temporary MSE Wall Will Be Required To Remove Existing Bridge No. 03786 And Existing Embankment. See SP JOB 080395 "TEMPORARY RETAINING WALL". **

⑦ Light Pole Support To Accomodate Future Lighting. See Dwg. No. 53007 For Details

** - See Dwg. No. 52986 for details.

NOTE:
Excavate approx. 4,208 cu. yds.

* Transition backslope as follows:
3:1 To 2:1 Sta. 7420+89 To 7421+36
2:1 To 3:1 Sta. 7421+75 To 7422+50

ELEVATION

*** Ashlar Stone form liner to be applied to outside face of concrete parapet. See Dwg. No. 53005 for details.

FINISHED GRADE SKETCH

(Looking Forward)
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
BRIDGE ENGINEER
8/9/13

SHEET 1 OF 6
LAYOUT OF BRIDGE
LAWRENCE LANDING RD. OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: JUNE 2011 FILENAME: B080395x3_LI.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: 1" = 20'
DESIGNED BY: SRY DATE: JUNE 2011
BRIDGE NO. 07259 DRAWING NO. 52984

saroberson 8/9/2013 3:53:13 PM
WORKSPACE: AHTD - Conway Western Arterial Loop\Bridge\Drawings\Phase 1\Lawrence Landing\90% Plans\Lawrence Landing LO 1of 6.dgn
L:\2009\09017230
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	123	237
				(1) 07259		LAYOUT		52985

GENERAL NOTES

BENCH MARK: PN: 81, PD: 5/8" Rebar with 2" Cap, ST: 20+16.02
OF: 30.46' LT.
ZC: 276.74

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010) with Current Interim Revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: I S_{DI} = 0.092 SITE CLASS: B

OPERATIONAL IMPORTANCE CATEGORY: TYPICAL

MATERIALS AND STRENGTHS:

Class S(AE) - Bridge Concrete (Superstructure)	f'c = 4,000 psi
Class S - Bridge Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 Or M53, GR. 60)	fy = 60,000 psi
Structural Steel (AASHTO M270, GR. 50)	Fy = 50,000 psi
Structural Steel (AASHTO M270, GR. 36)	Fy = 36,000 psi

FORM INSERT: State of Arkansas form insert shall be used on MSE walls (2 locations). See Dwg. No. 52989.

BORING LOGS: Boring logs may be obtained from Programs And Contracts Division.

STEEL PILING: Piling at Bents 1 and 4 shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 97 tons and into the material designated as medium soft to medium hard dark gray shale on the boring legend. Drive all piles in Bent 4 to a minimum depth of 5' below leveling pad or 5' below necessary undercut. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

Piles in Bent 1 shall be driven after embankment to bottom of cap is in place.

The Contractor may drive the piling in Bent 4 in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction extending from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven through the open casings after embankment to bottom of cap is in place. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill will not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12x53)".

DRILLED SHAFTS: All drilled shafts shall be founded a minimum of 13'-0" into medium soft to medium hard dark gray shale as shown in the boring legend. No adjustment in plan tip elevation shall be made without prior approval from the Engineer. Methods of construction of the drilled shafts shall be in accordance with SP JOB 080395 "DRILLED SHAFT FOUNDATIONS".

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 1 PROTECTIVE SURFACE TREATMENT: Class 1 Protective Surface Treatment shall be applied to the roadway surface.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to all areas as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19(b)(3). Texture Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Black and shall match Federal Standard 595B, Color Chip No. 27038.

ELECTRICAL INFRASTRUCTURE: All work associated with the electrical lighting details shall be performed in accordance with JOB SP 080395 "ELECTRICAL SYSTEM INFRASTRUCTURE."

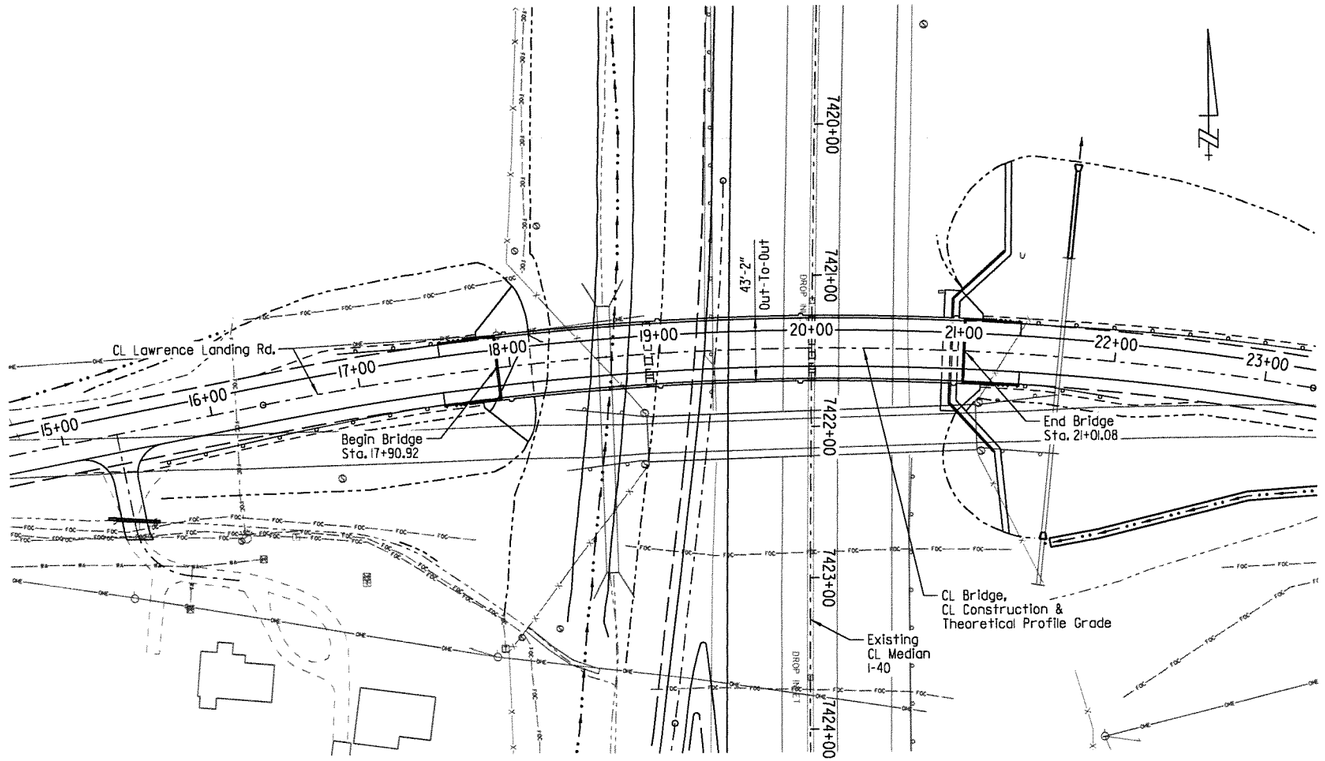
DETAIL DRAWINGS:	DRAWING NO:
End Bents	52990-52993
Intermediate Bents	52994-52995
308' Cont. Comp. Plate Girder Unit	52996-53007
Elastomeric Bearings	53008
Electrical Lighting Details	53009-53011
Type C Approach Gutters	2016C
Concrete Riprap	14995A
Steel Piling	14995A

SHORING: Shoring will be required to excavate existing embankment and construct MSE Retaining Wall No. 5 while maintaining traffic on Lawrence Landing Rd. Location of shoring to be determined by the Contractor. Shoring shall be constructed in accordance with SP JOB 080395 "SHORING". Payment shall be as specified in SP JOB 080395 "SHORING".

EXISTING BRIDGE: Existing Bridge No. 03786 is 26.0' wide and 218.26' long and consists of simple spans with steel beams and a concrete deck supported by a concrete substructure. The existing bridge is located approximately 57' south of the proposed bridge.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing bridge No. 03786 shall be removed in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See ROADWAY PLANS.



LOCATION SKETCH

BORING LEGEND

A - Soft Brown Silty Clay
B - Stiff Tan Silty Clay, Sandy
C - Very Stiff Reddish Tan and Tan Silty Clay
D - Soft Tan, Gray and Dark Gray Weathered Shale
E - Medium Soft to Medium Hard Dark Gray Shale
F - Medium Dense Brown and Dark Gray Silt
G - Stiff Gray, Tan, and Reddish Tan Silty Clay
H - Very Stiff Gray, Reddish Tan and Tan Silty Clay
I - Soft Gray and Dark Gray Weathered Shale
J - Loose Brown Silt
K - Stiff Tan and Gray Silty Clay
L - Very Soft Tan and Gray Highly Weathered Shale
M - Soft Dark Gray Weathered Shale
N - Stiff Brown Silty Clay
O - Stiff Reddish Tan, Gray and Tan Clay
P - Soft Tan and Dark Gray Weathered Shale
Q - Medium Soft Dark Gray Shale
R - Very Stiff Dark Brown Clayey Silt
S - Soft Tan and Gray Silty Clay
T - Dark Gray Crushed Stone Base and Brown Silt
U - Medium Dense Dark Gray Silt
V - Soft Gray and Tan Weathered Shale
W - Loose Dark Gray and Gray Clayey Fine Sand
X - Soft Tan Fine Sandy Clay
Y - Very Soft Gray Silty Clay, Sandy
Z - Firm to Stiff Dark Gray Clayey Silt
AA - Stiff Tan and Reddish Tan Silty Clay
AB - Firm Olive Gray Silty Clay
AC - Firm Dark Brown Clayey Silt
AD - Very Soft Reddish Tan and Brown Weathered Shale

N VALUES

Sta. 18+00, 22' Lt, Of CL Construction	Sta. 17+70, 45' Rt, Of CL Construction	Sta. 18+95, 25' Lt, Of CL Construction	Sta. 20+00 At CL Construction	Sta. 20+70, At CL Construction
0.5-1.5, N=14	0.5-1.5, N=13	0.5-1.5, N=13	0.5-1.5, N=19	0.5-1.5, N=28
2.5-3.5, N=8	2.5-3.5, N=17	2.5-3.5, N=50/10"	2.5-3.5, N=24	2.5-3.5, N=26
4.5-5.5, N=34	4.5-5.5, N=16	4.0-5.0, N=50/9"	4.5-5.5, N=30	4.5-5.5, N=17
6.5-7.5, N=50	6.5-7.5, N=16	6.5-7.5, N=50/11"	6.5-7.5, N=19	6.5-7.5, N=16
9.0-10.0, N=18	9.0-10.0, N=22	9.0-9.5, N=50/5"	8.5-9.5, N=50/9"	9.0-10.0, N=14
13.0-13.5, N=50/6"	14.0-15.0, N=22	13.5-14.0, N=50/1"	13.5-14.0, N=25/0"	14.0-15.0, N=5
18.5-19.0, N=25/0"	18.0-18.5, N=50/6"	18.5-19.0, N=30/0"	18.5-19.0, N=25/0"	18.5-19.0, N=25/0"
23.5-24.0, N=25/0"	24.0-24.5, N=50/4"	23.5-24.0, N=30/0"	23.5-24.0, N=25/0"	23.5-24.0, N=25/0"
	29.0-29.5, N=50/4"	28.5-29.0, N=30/0"	33.5-34.0, N=25/0"	28.5-29.0, N=25/0"
	33.5-34.0, N=30/0"	33.5-34.0, N=30/0"	38.5-39.0, N=25/0"	33.5-34.0, N=25/0"
		38.5-39.0, N=30/0"		38.5-39.0, N=25/0"
		43.5-44.0, N=30/0"		43.5-44.0, N=25/0"

Sta. 21+82, 20' Rt, Of CL Construction	Sta. 21+05, 40' Lt, Of CL Construction	Sta. 20+70, 35' Rt, Of CL Construction	Sta. 20+70, 70' Rt, Of CL Construction
0.5-1.5, N=22	0.5-1.5, N=26	0.5-1.5, N=10	0.5-1.5, N=9
2.5-3.5, N=32	2.5-3.5, N=27	2.5-3.5, N=18	2.5-3.5, N=22
4.0-4.5, N=50/5"	4.0-5.0, N=19	4.5-5.5, N=8	4.5-5.5, N=16
6.0-6.5, N=50/3"	6.0-6.5, N=50/3"	6.5-7.5, N=11	6.5-7.5, N=7
9.0-10.0, N=50/10"	9.0-10.0, N=3	9.0-10.0, N=6	9.0-10.0, N=8
14.0-15.0, N=29	14.0-14.5, N=50/5"	13.5-14.5, N=50/9"	14.0-15.0, N=7
19.0-20.0, N=20	18.5-18.7, N=50/1"	18.5-19.0, N=25/0"	19.0-19.5, N=38
24.0-25.0, N=31		23.0-23.5, N=25/0"	23.0-23.5, N=25/0"
29.0-30.0, N=44			
33.5-34.0, N=50/3"			
38.5-38.8, N=50/2"			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 2 OF 6
LAYOUT OF BRIDGE
LAWRENCE LANDING RD. OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: JUNE 2011 FILENAME: B080395x3_L2.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: 1" = 50'
DESIGNED BY: SRY DATE: JUNE 2011
BRIDGE NO. 07259 DRAWING NO. 52985

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WORKSPACE: AHTD Bridge
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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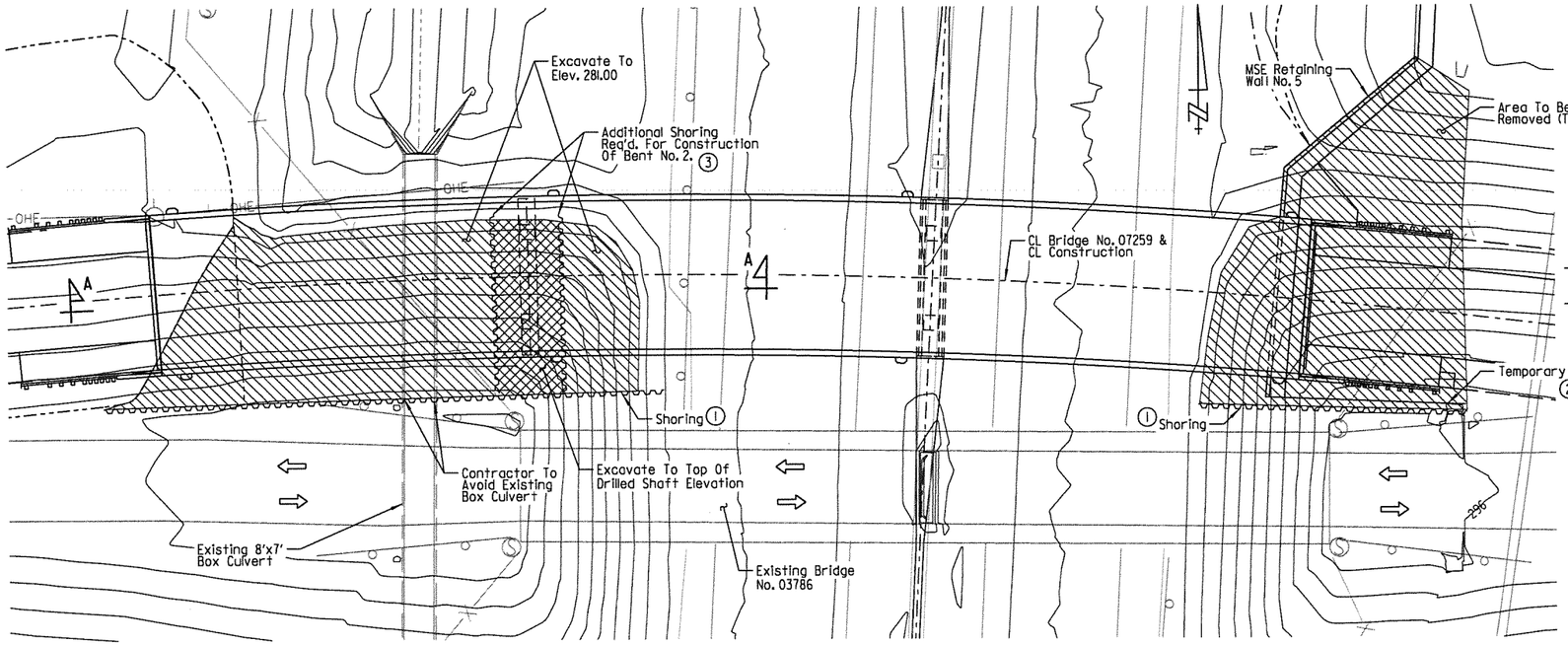
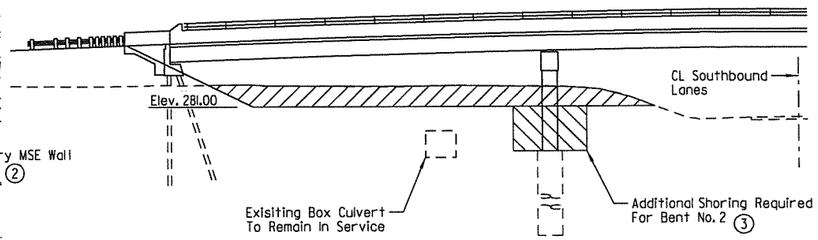
				JOB NO.		080395	124	237
				① 07259		LAYOUT		52986



NOTE:
Traffic to remain on existing Bridge No. 03786 during construction of new Bridge No. 07259.

STAGE IA & IB - CONSTRUCTION OF BRIDGE

Scale: 1" = 20'-0"



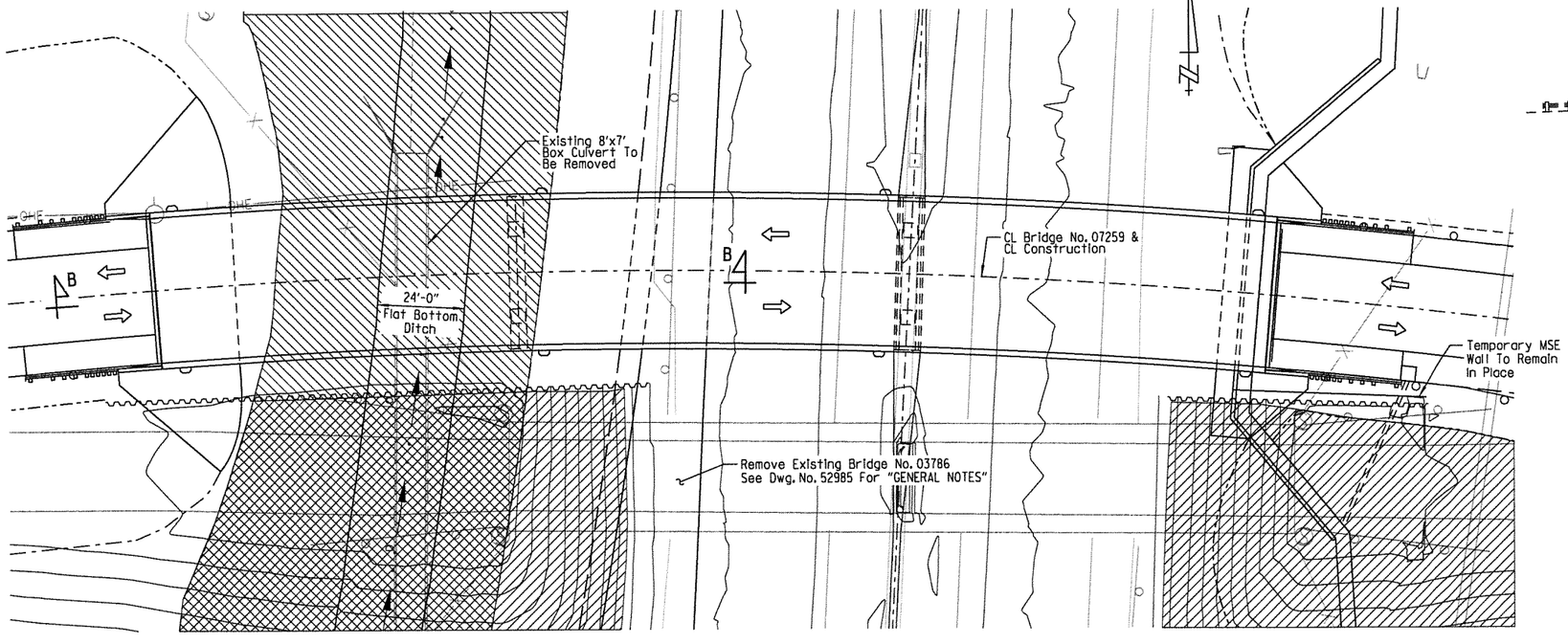
SECTION A-A

① Shoring, as needed, will be required to excavate existing embankment and construct MSE Retaining Wall No. 5 while maintaining traffic on Lawrence Landing Road. See SP JOB 080395 "SHORING".

② Temporary MSE wall will be required to remove existing Bridge No. 03786 and existing embankment. Temporary MSE wall shall be subsidiary to SP JOB 080395 "RETAINING WALLS".

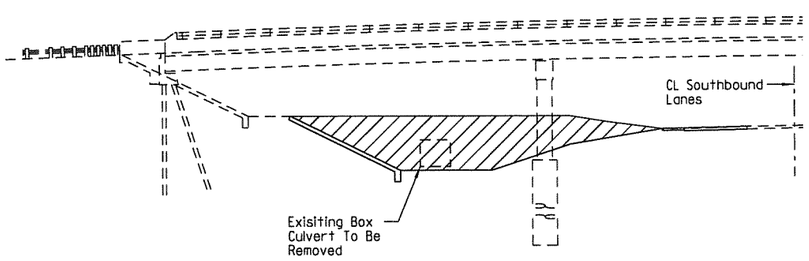
③ Shoring, as needed, will be required to construct Bent No. 2. See SP JOB 080395 "SHORING".

NOTE:
See "MAINTENANCE OF TRAFFIC DETAILS" in Roadway Plans for additional information.



STAGE 2 - CONSTRUCTION OF DITCH

Scale: 1" = 20'-0"



SECTION B-B

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH B. YANCEY
8/27/13
BRIDGE ENGINEER

SHEET 3 OF 6
LAYOUT OF BRIDGE
LAWRENCE LANDING RD. OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: SRY DATE: JUNE 2011
BRIDGE NO. 07259 DRAWING NO. 52986

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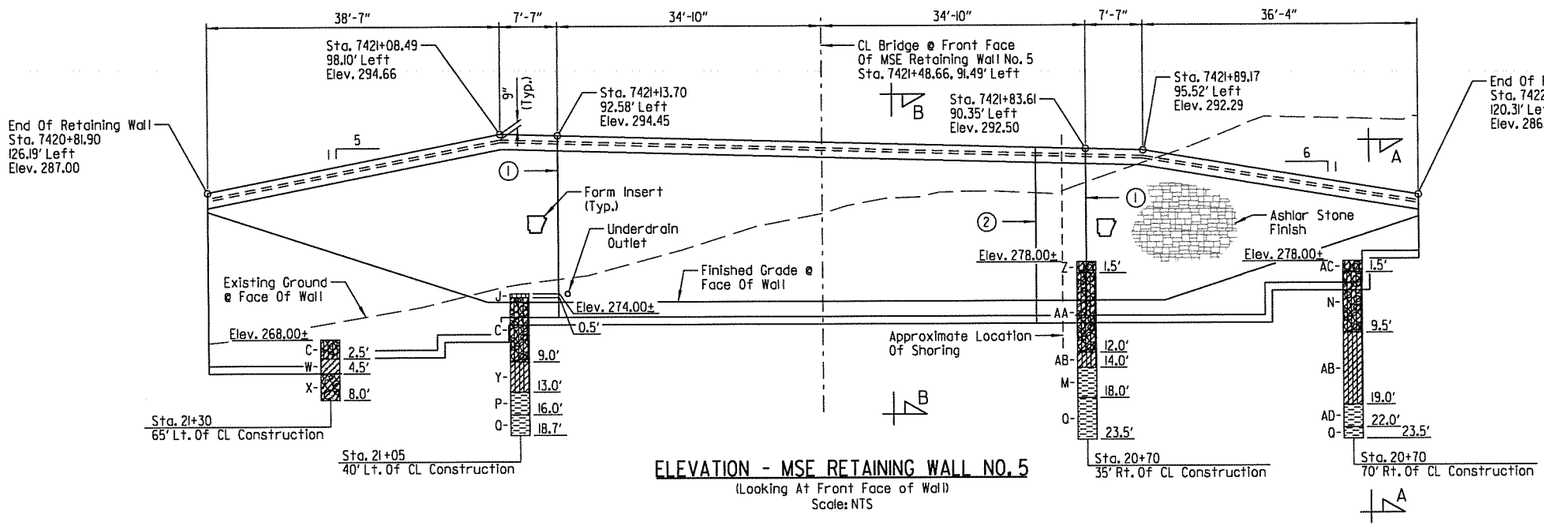
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	125	237
① 07259		LAYOUT		52987

① 45° break in horizontal alignment of MSE Retaining Wall

② Construction joint located at temporary MSE Wall (location to be determined by Wall Manufacturer prior to fabrication of panels)



ELEVATION - MSE RETAINING WALL NO. 5

(Looking At Front Face of Wall)
Scale: NTS

NOTES:
For "GENERAL NOTES", "SECTION A-A" & "SECTION B-B", see Dwg. No. 52988.

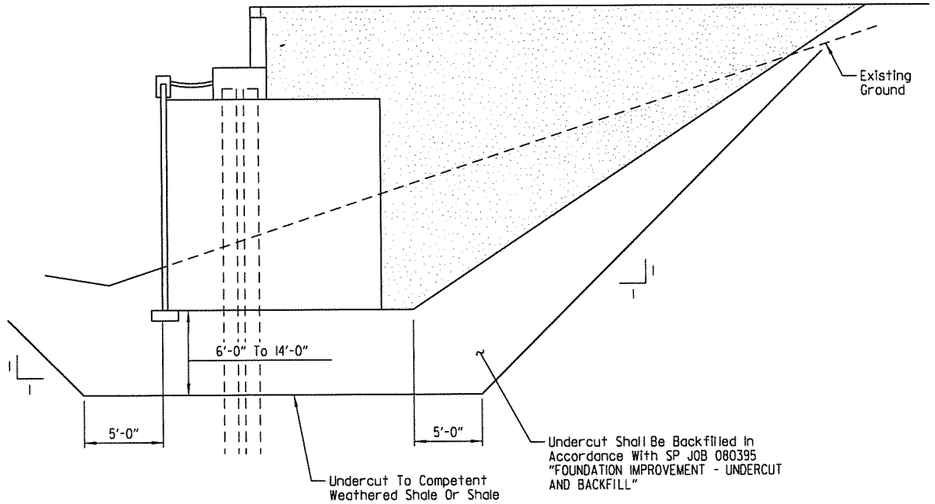
Stationing shown is along Existing CL Median I-40.

Offset dimensions are measured from Existing CL Median I-40 to outside vertical face of MSE retaining wall.

For "FORM INSERT DETAILS", see Dwg. No. 52989.

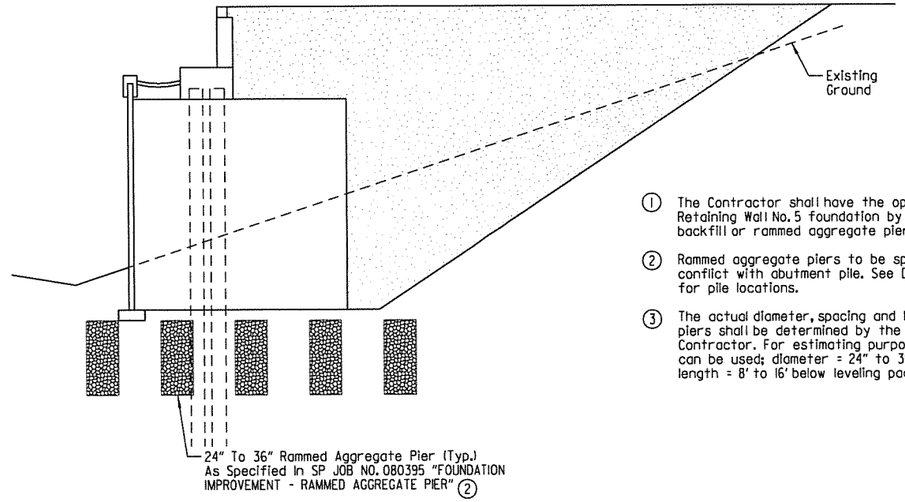
Underdrain outlet shall penetrate front face of MSE retaining wall.

For "BORING LEGEND" & "N VALUES", see Dwg. No. 52985.



ALT. NO. 1 - UNDERCUT & BACKFILL

Scale: NTS



ALT. NO. 2 - RAMMED AGGREGATE PIER ③

Scale: NTS

① The Contractor shall have the option to improve MSE Retaining Wall No. 5 foundation by way of undercut & backfill or rammed aggregate piers.

② Rammed aggregate piers to be spaced in order to avoid conflict with abutment pile. See Dwg. Nos. 52990-52992 for pile locations.

③ The actual diameter, spacing and length of rammed aggregate piers shall be determined by the rammed aggregate pier Contractor. For estimating purposes only, the following can be used; diameter = 24" to 30", spacing = 5' to 6', length = 8' to 16' below leveling pad.

FOUNDATION IMPROVEMENT ①

Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 4 OF 6
LAYOUT OF BRIDGE
LAWRENCE LANDING RD. OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: SEPT. 2011 FILENAME: B080395x3_L4.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: SEPT. 2011
BRIDGE NO. 07259 DRAWING NO. 52987

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WORKSPACE: AHTD
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REVISED DATE:

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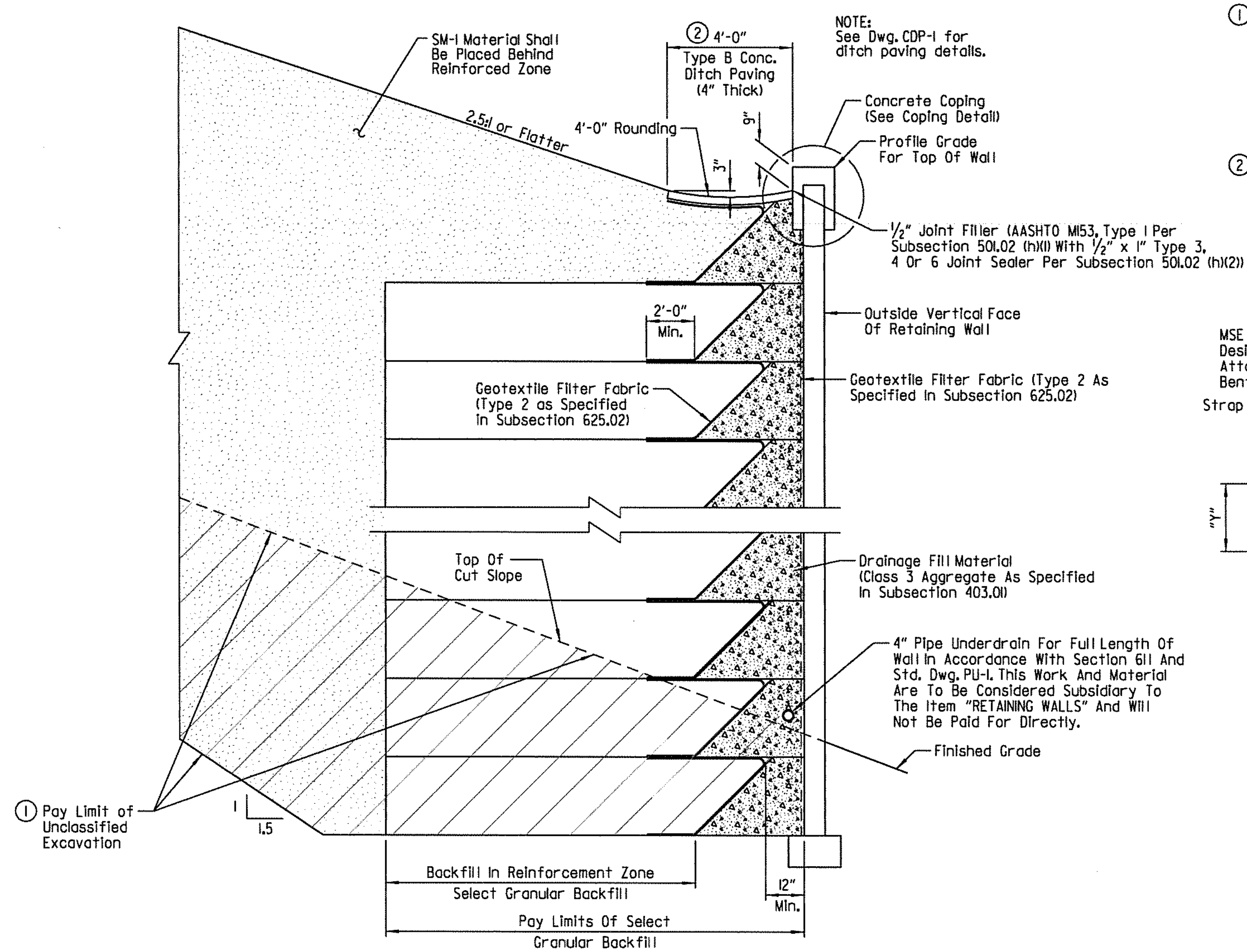
				6	ARK.			
				JOB NO.		080395	126	237
				① 07259		LAYOUT		52988

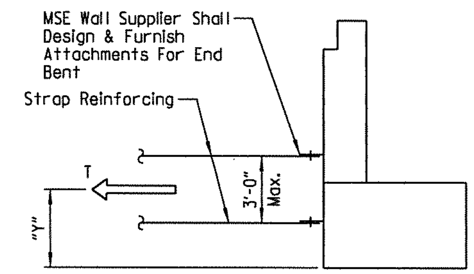


SECTION A-A
Scale: NTS

① Excavation required for reinforcing zone, leveling pad and placement of SM-1 Material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP JOB 080395 "RETAINING WALLS".

NOTE:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR MATERIAL".
Select material required behind reinforced zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)". See SP JOB 080395 "RETAINING WALLS".

② The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Drawing CDP-1.

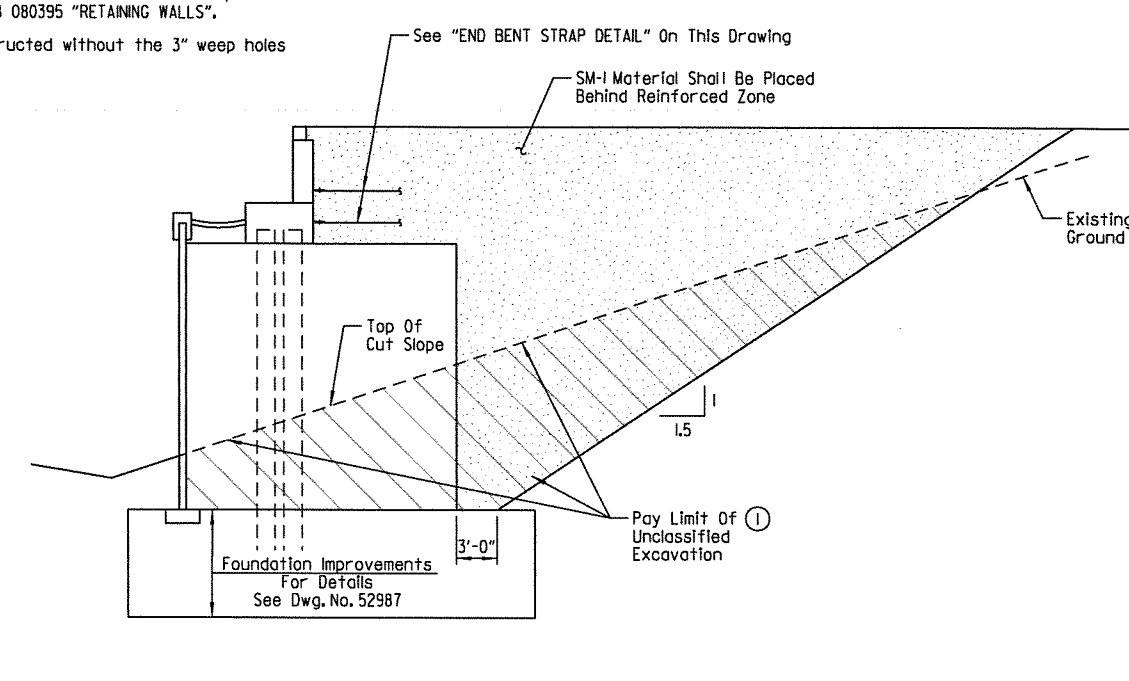


END BENT STRAP DETAIL

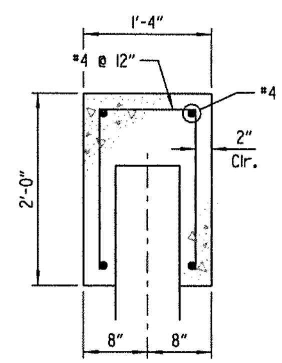
T = Resultant Force Required To Be Resisted By Strap Reinforcing

Y = Centroid Of Strap Reinforcing

LIMIT STATE	T Kips/Ft.	Y Ft.
Service	3.0	3.0
Strength	4.7	



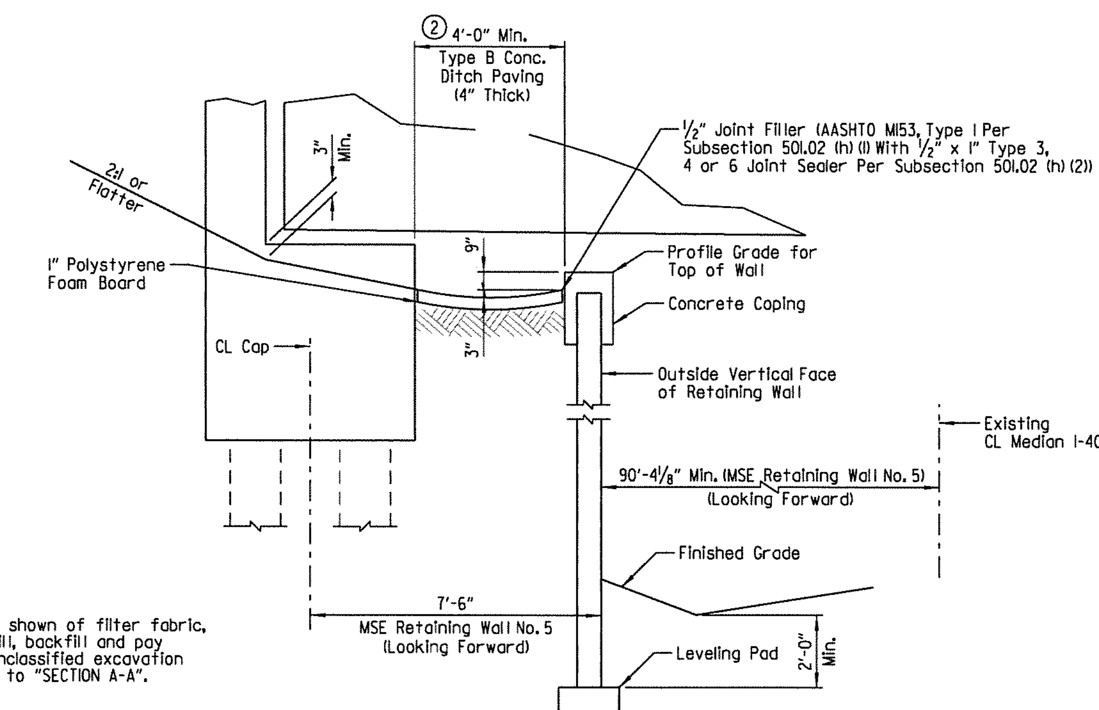
EMBANKMENT DETAIL
Scale: NTS



NOTE:
Precast concrete coping may be substituted for cast-in-place coping shown.

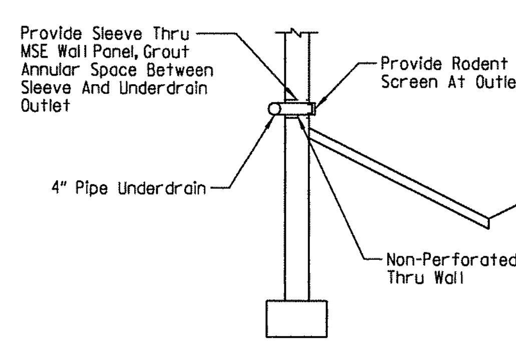
NOTE:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALLS".

COPING DETAIL
Scale: NTS



NOTE:
Details not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to "SECTION A-A".

SECTION B-B
Scale: NTS



OUTLET DETAIL
Scale: NTS

GENERAL NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010) with Current Interim Revisions

SEISMIC PERFORMANCE ZONE: I S_{D1} = 0.092   SITE CLASS: B

4" pipe underdrain shall maintain a minimum slope of 1/8" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See Dwg. Nos. 52990-52993 for pile locations and wingwall details.

For ditch paving, see Standard Dwg. No. CDP-1.

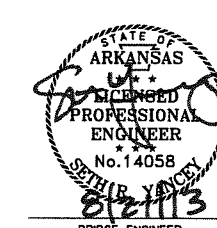
See SP JOB 080395 "RETAINING WALLS" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP JOB 080395 "RETAINING WALLS".

See Dwg. No. 52989 for form insert location and details.

A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19



SHEET 5 OF 6
LAYOUT OF BRIDGE
LAWRENCE LANDING RD. OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 52988

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WORKSPACE: AHTD
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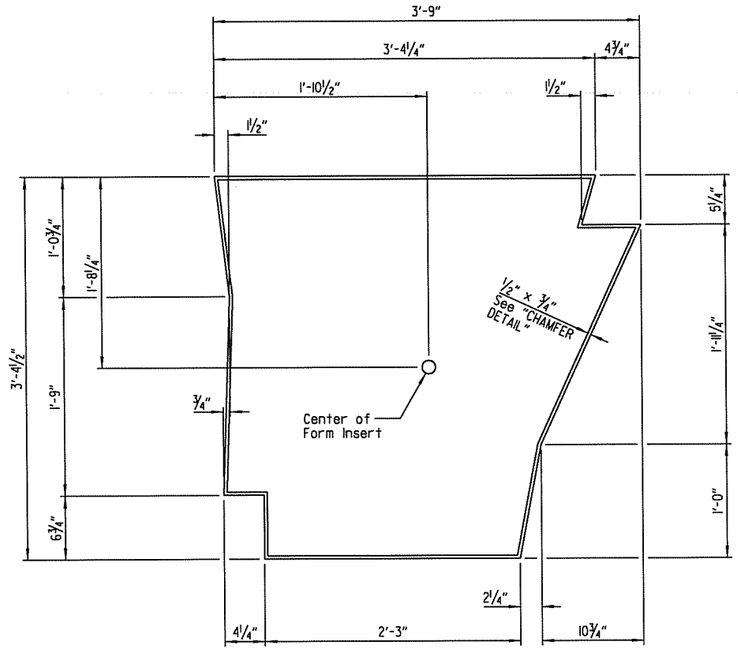
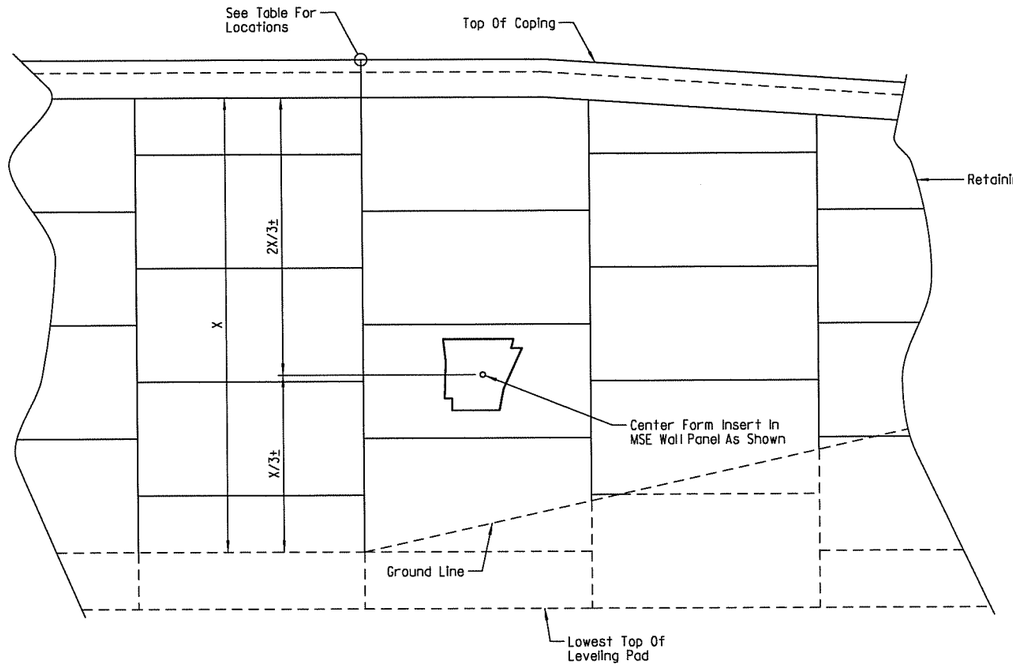
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	127	237
				(1) 07259		LAYOUT		52989

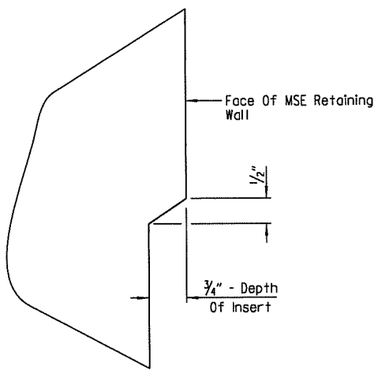


NOTE:
Use form insert on designated wall as noted on details of MSE Wall, Dwg. No. 52987.

FORM INSERT DETAILS AT MSE WALL
Scale: NTS



DEVELOPED ELEVATION AT MSE WALL
Scale: NTS



CHAMFER DETAIL
Scale: NTS

NOTES:
Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for inserts shall be included in the unit price bid for the item "RETAINING WALLS".

Damaged or worn form inserts shall be replaced at the Contractor's expense.

The form shall be approved by the Engineer before its use.

LOCATION OF FORM INSERT	
Location	Station
Retaining Wall No. 5	7421+13.70 and 7421+83.61

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SEAN R. YANCEY
8/27/13
BRIDGE ENGINEER

SHEET 6 OF 6
LAYOUT OF BRIDGE
LAWRENCE LANDING RD. OVER I-40
CONWAY SOUTH INTERCHANGE-HWY. 365
(GRADING & STRS.) (F)
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x3_L6.DGN
CHECKED BY: ABH DATE: JULY 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 52989

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WORKSPACE: AHTD
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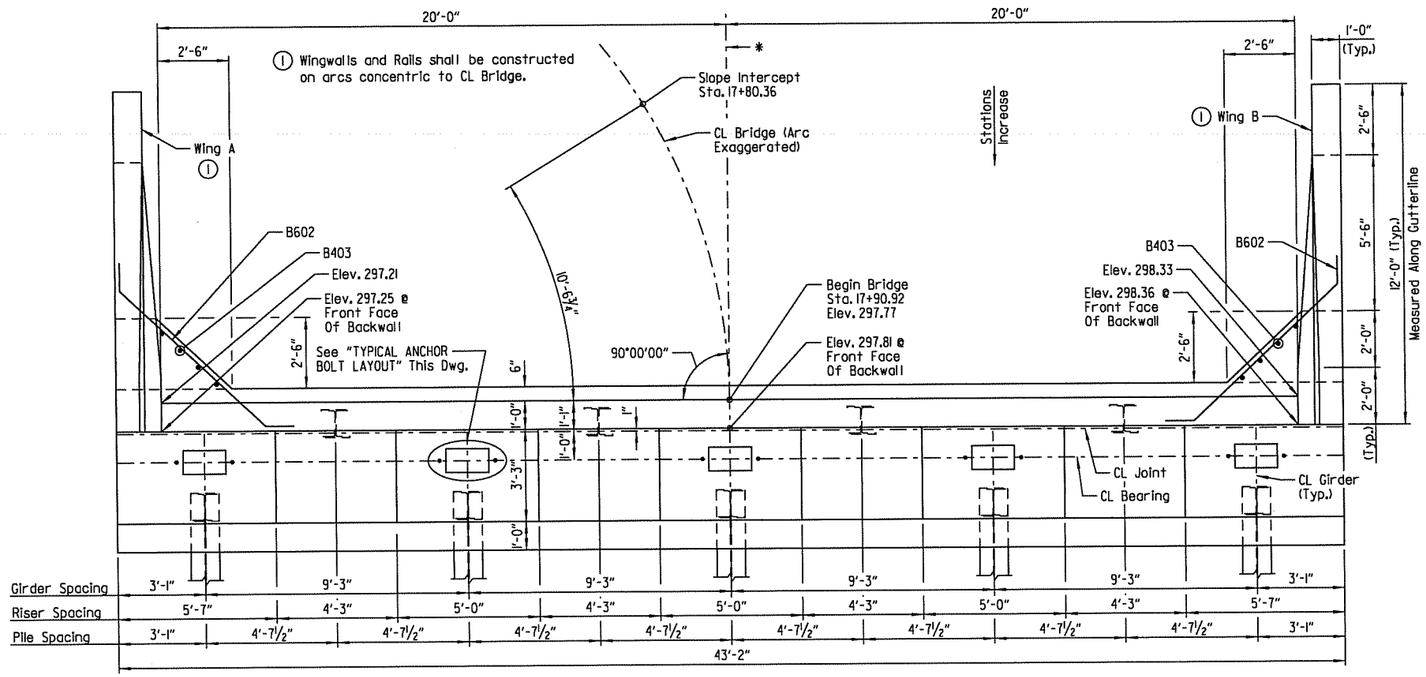
REVISED DATE:

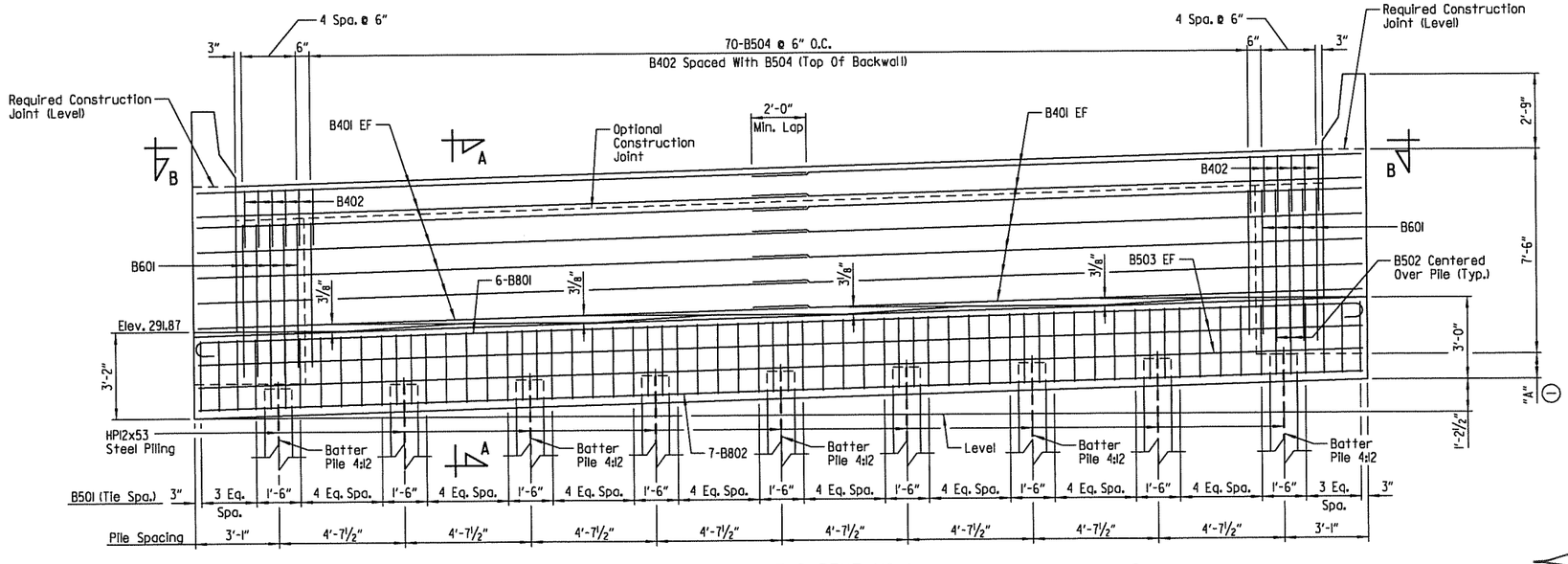
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	128	237
				(1) 07259		END BENT DETAILS		52990

* Line tangent to CL Bridge at Begin Bridge.



PLAN - END BENT NO. 1

Scale: 3/8" = 1'-0"



ELEVATION - END BENT NO. 1

(Looking Back)
Scale: 3/8" = 1'-0"

(1) See "TABLE OF VARIABLES" on Dwg No. 52993.

GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Gr. 60.

All piles shall be HP12x53 (AASHTO M270, Gr. 50).

No portion of the backwall shall be poured until the girders are in place.

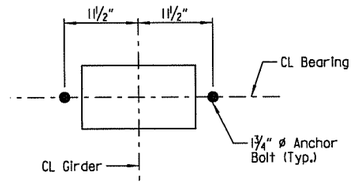
Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see "LAYOUT OF BRIDGES".

Class 1 Protective Surface Treatment shall be applied to the top of backwall. Class 3 Textured Coating Finish shall be applied in accordance with SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

NOTE:
For "SECTION A-A", "SECTION B-B", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52992.



TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

LEGEND

EF = Each Face

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 53008.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-22-13
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENTS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x3_BI.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 52990

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WORKSPACE: AHTD - Conway Western ArterialLoop\Bridge\Drawings\Phase 1\Lawrence Landing\302 Plans\Lawrence Landing End Bents 1of 4.dgn
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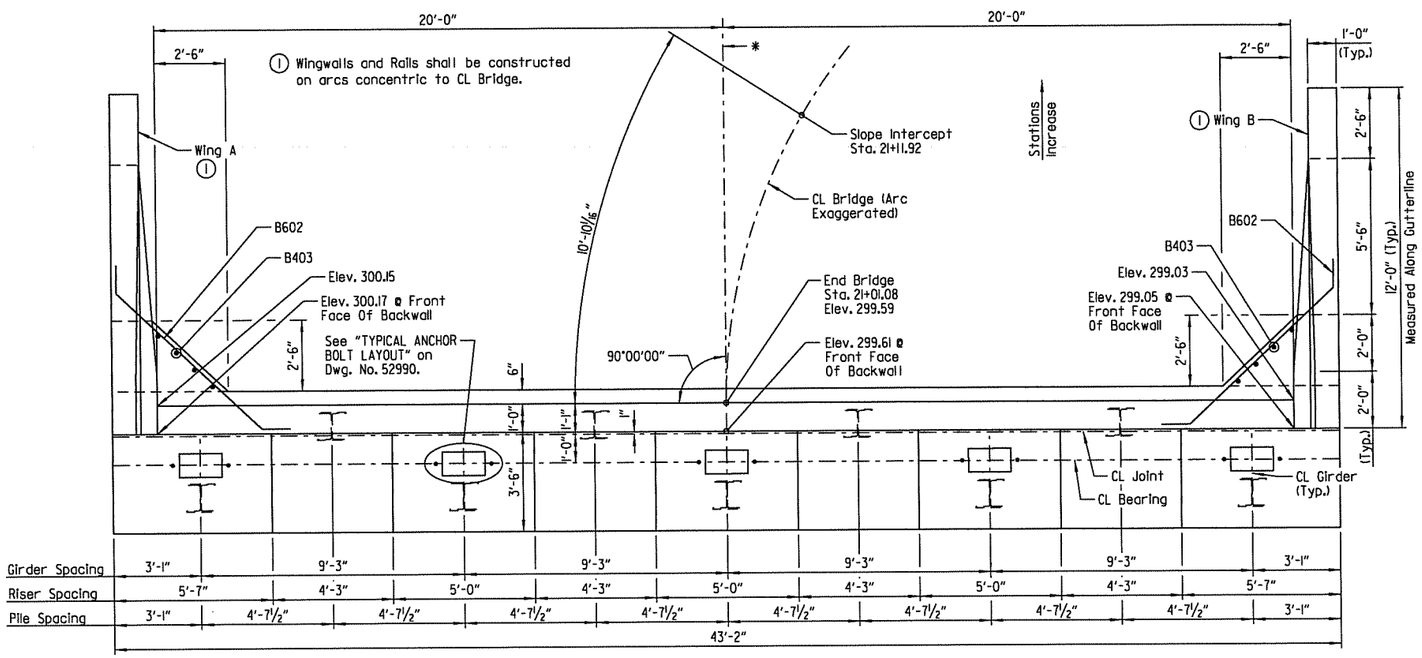
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	129	237
				① 07259		END BENT DETAILS		52991

* Line tangent to CL Bridge at Begin Bridge.



PLAN - END BENT NO. 4

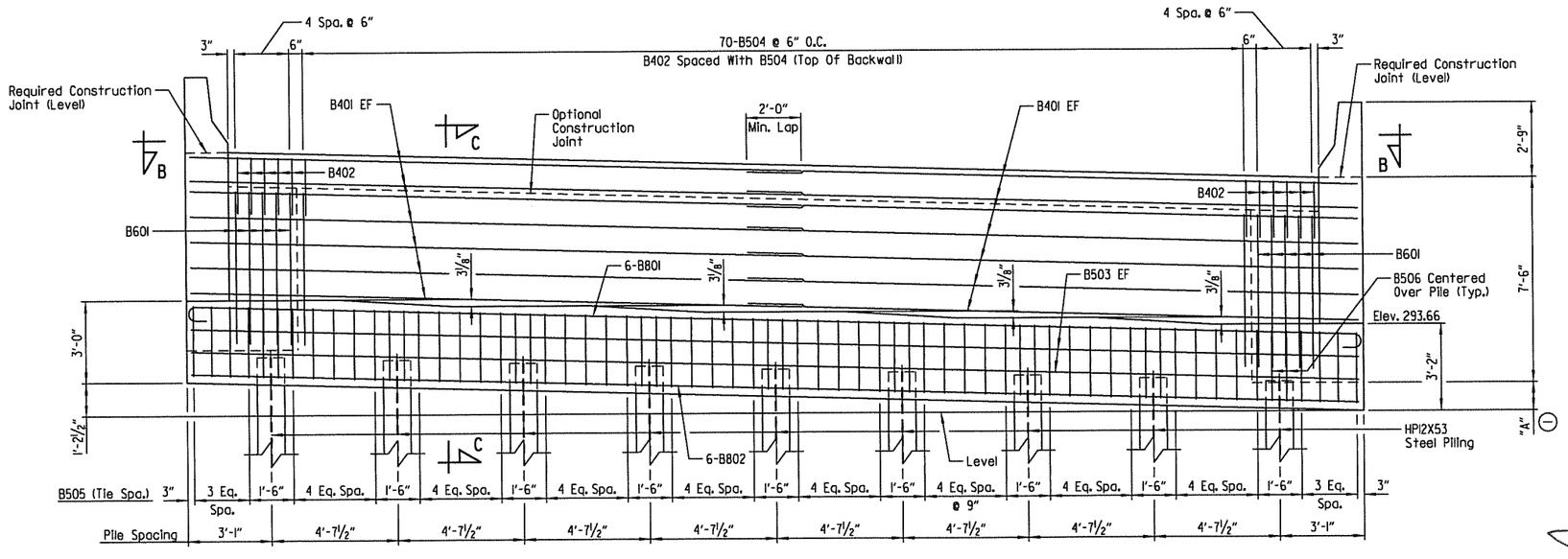
Scale: 3/8" = 1'-0"

NOTES:
For "GENERAL NOTES", see Dwg. No. 52990.

For "SECTION B-B", "SECTION C-C", "BAR LIST" & "BAR BENDING DIAGRAM" see Dwg. No. 52992.

LEGEND

EF = Each Face



ELEVATION - END BENT NO. 4

(Looking Forward)
Scale: 3/8" = 1'-0"

① See "TABLE OF VARIABLES" on Dwg No. 52993.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-24-13
BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF END BENTS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x3_B2.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 52991

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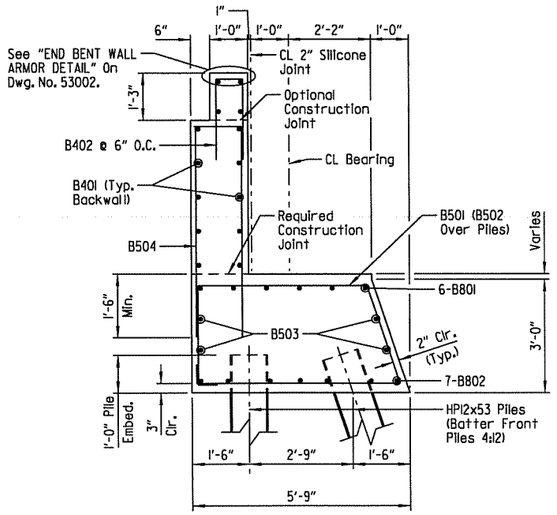
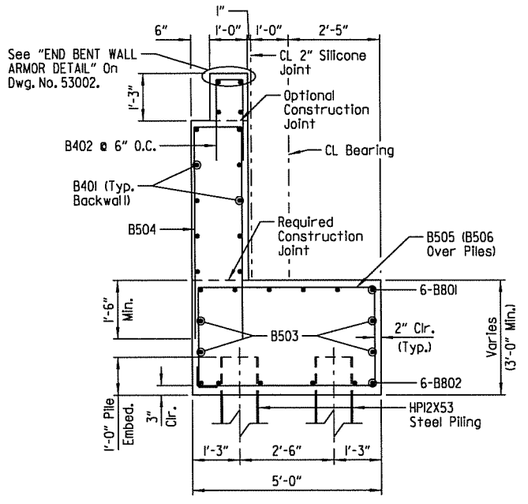
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	130	237
(1) 07259		END BENT DETAILS		52992

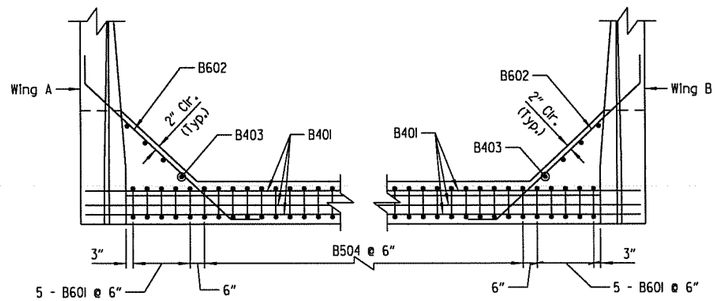


SECTION A-A
Scale: ½" = 1'-0"

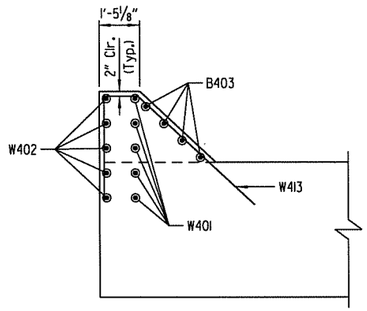


SECTION C-C
Scale: ½" = 1'-0"

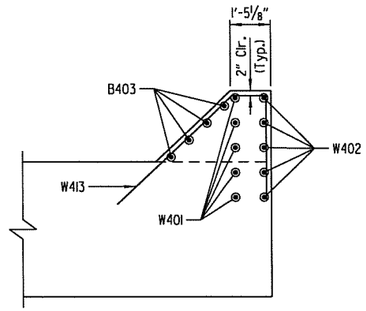
Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 53002 for additional information.



SECTION B-B
Scale: ⅜" = 1'-0"

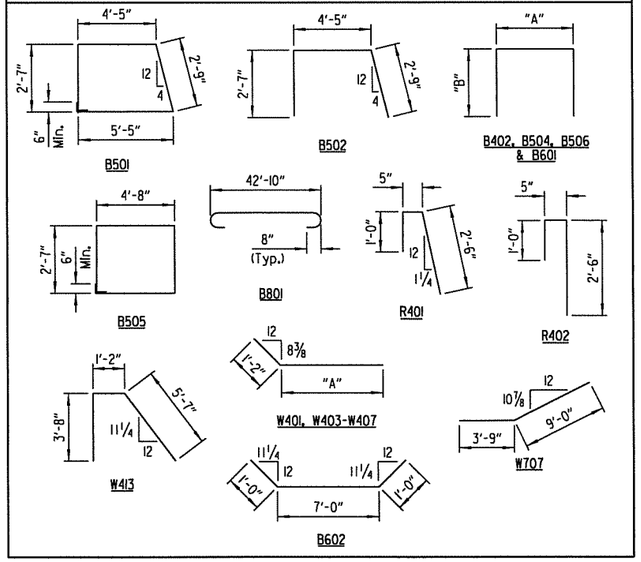


SECTION F-F (WING A)
Scale: ⅜" = 1'-0"



SECTION F-F (WING B)
Scale: ⅜" = 1'-0"

BAR BENDING DIAGRAM



NOTE:
Dimensions Of Bars Are Out-To-Out.

BAR LIST

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
BARS COMMON TO END BENTS	B401	28	22'-5"			Str.
	B402	80	4'-8"	8"	2'-1"	2"
	B403	8	5'-11"			Str.
	B503	4	42'-10"			Str.
	B504	70	12'-1½"	1'-2"	5'-7"	2½"
	B601	10	12'-0"	1'-2"	5'-7"	4½"
	B602	10	9'-0"			4½"
	B801	6	44'-8"			6"
	R401	10	3'-9"			2"
	R402	10	3'-9"			2"
	R403	12	11'-8"			Str.
	R601	20	4'-11"			Str.
	R602	6	5'-0"			Str.
	W401	10	8'-9"	7'-7"		3"
	W402	10	9'-11"			Str.
	W403 To W407	2 Ea.	4'-4" To 7'-9"	3'-2" To 6'-7"		3"
	W408 To W412	2 Ea.	5'-6" To 8'-10"			Str.
	W413	6	10'-4"			2"
	W701	16	11'-8"			Str.
	W702	4	8'-5"			Str.
	W703	4	7'-6"			Str.
	W704	4	6'-7"			Str.
	W705	4	5'-8"			Str.
	W706	4	4'-9"			Str.
	W707	4	12'-9"			5¼"
END BENT NO. 1	B501	48	15'-8"			2½"
	B502	18	9'-6½"			2½"
	B802	7	42'-10"			Str.
END BENT NO. 4	B505	48	15'-0"			2½"
	B506	18	9'-7½"	4'-8"	2'-7"	2½"
	B802	6	42'-10"			Str.

Note:
Number of common bars shown are for one end bent only.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
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BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENTS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x3_B3.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 52992

REVISED DATE:
saroberson 8/9/2013 3:58:55 PM
WORKSPACE1, AHTD
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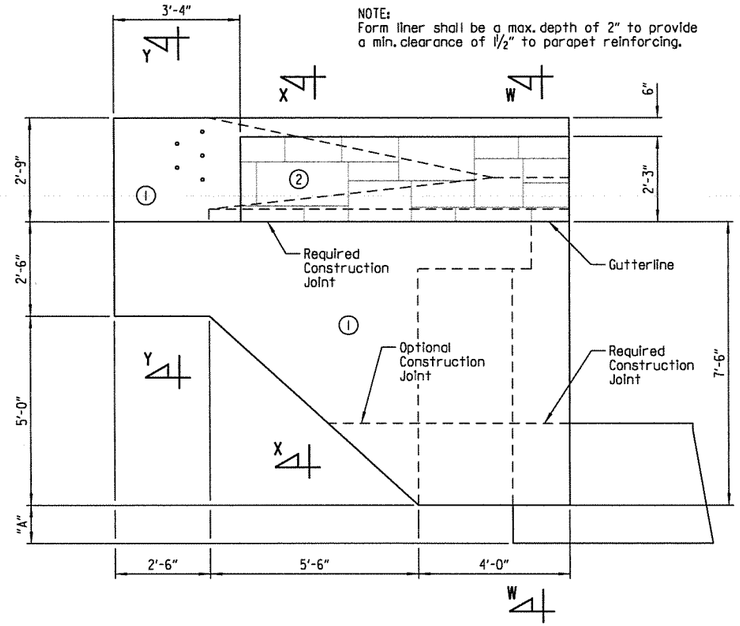
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	131	237
				① 07259		END BENT DETAILS		52993



NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.

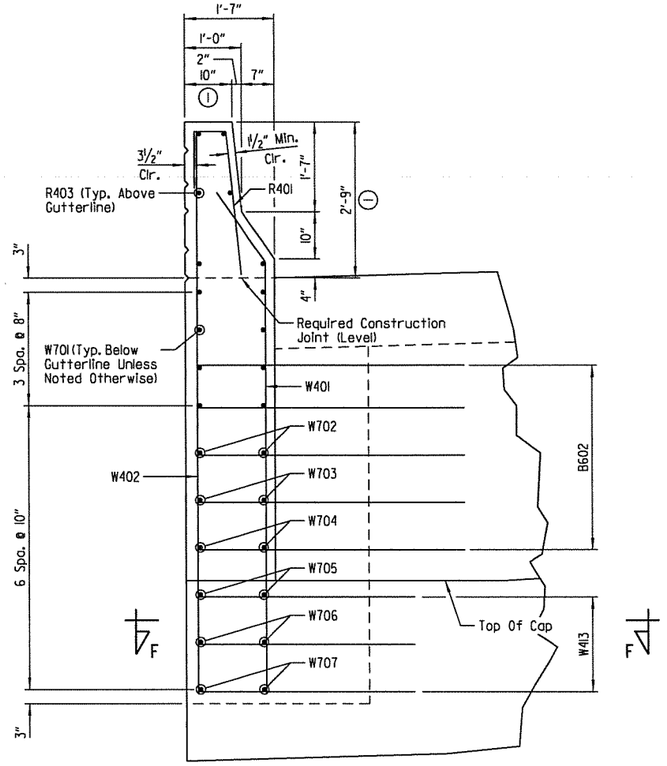
VIEW D-D

(End Bent No. 1 Shown)
(End Bent No. 4 Similiar)
Scale: ½" = 1'-0"

① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

② "Ashlar Stone" Form Liner & Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

NOTE:
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

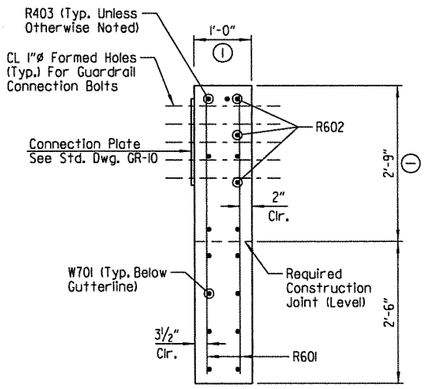


NOTES:
For "GENERAL NOTES", see Dwg. No. 52990.

For "SECTION F-F", BAR LIST & BAR BENDING DIAGRAM, see Dwg. No. 52992.

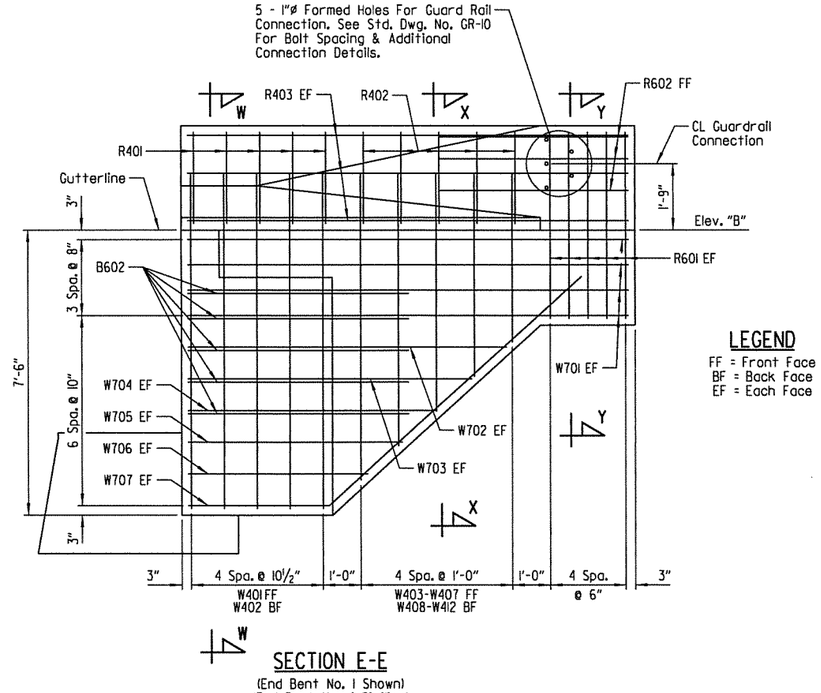
SECTION W-W

Scale: ¾" = 1'-0"



SECTION Y-Y

Scale: ¾" = 1'-0"

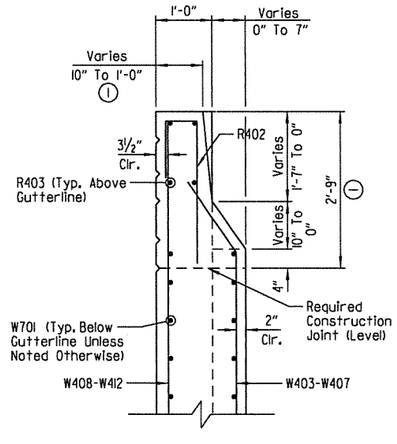


SECTION E-E

(End Bent No. 1 Shown)
(End Bent No. 4 Similiar)
Scale: ½" = 1'-0"

LEGEND

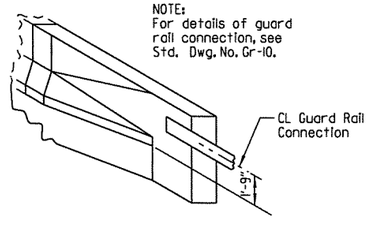
FF = Front Face
BF = Back Face
EF = Each Face



SECTION X-X

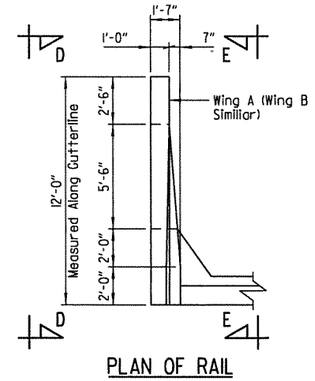
Scale: ¾" = 1'-0"

TABLE OF VARIABLES			
LOCATION	WING	"A"	Elev. "B"
End Bent No. 1	A	1'-0⅝"	296.80
	B	11⅜"	297.97
End Bent No. 4	A	11⅝"	299.91
	B	1'-0¾"	298.75



3-D VIEW OF RAIL TRANSITION

Scale: NTS



PLAN OF RAIL

Scale: ¼" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
8-24-13
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENTS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x3_B4.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012

BRIDGE NO. 07259 DRAWING NO. 52993

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WORKSPACE: AHTD
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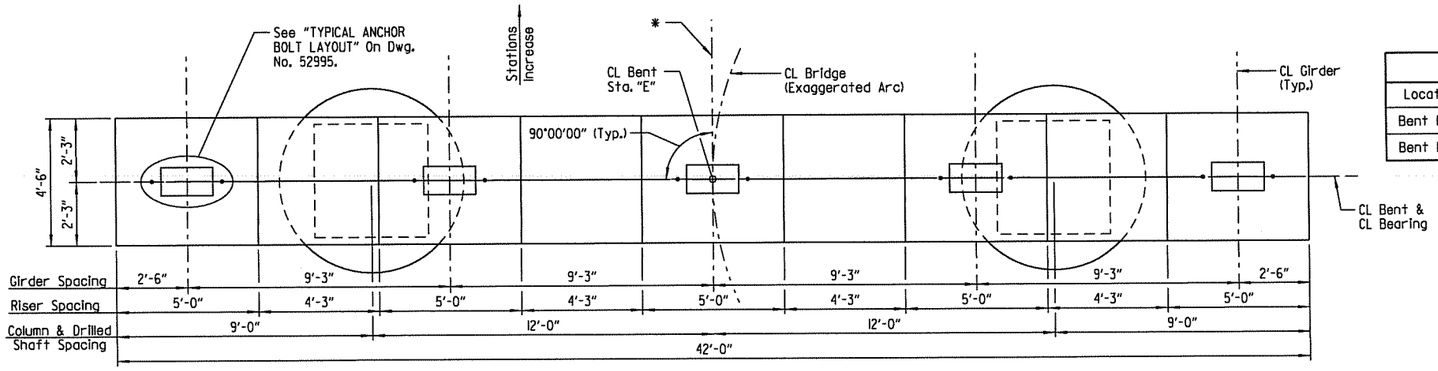
REVISED DATE:

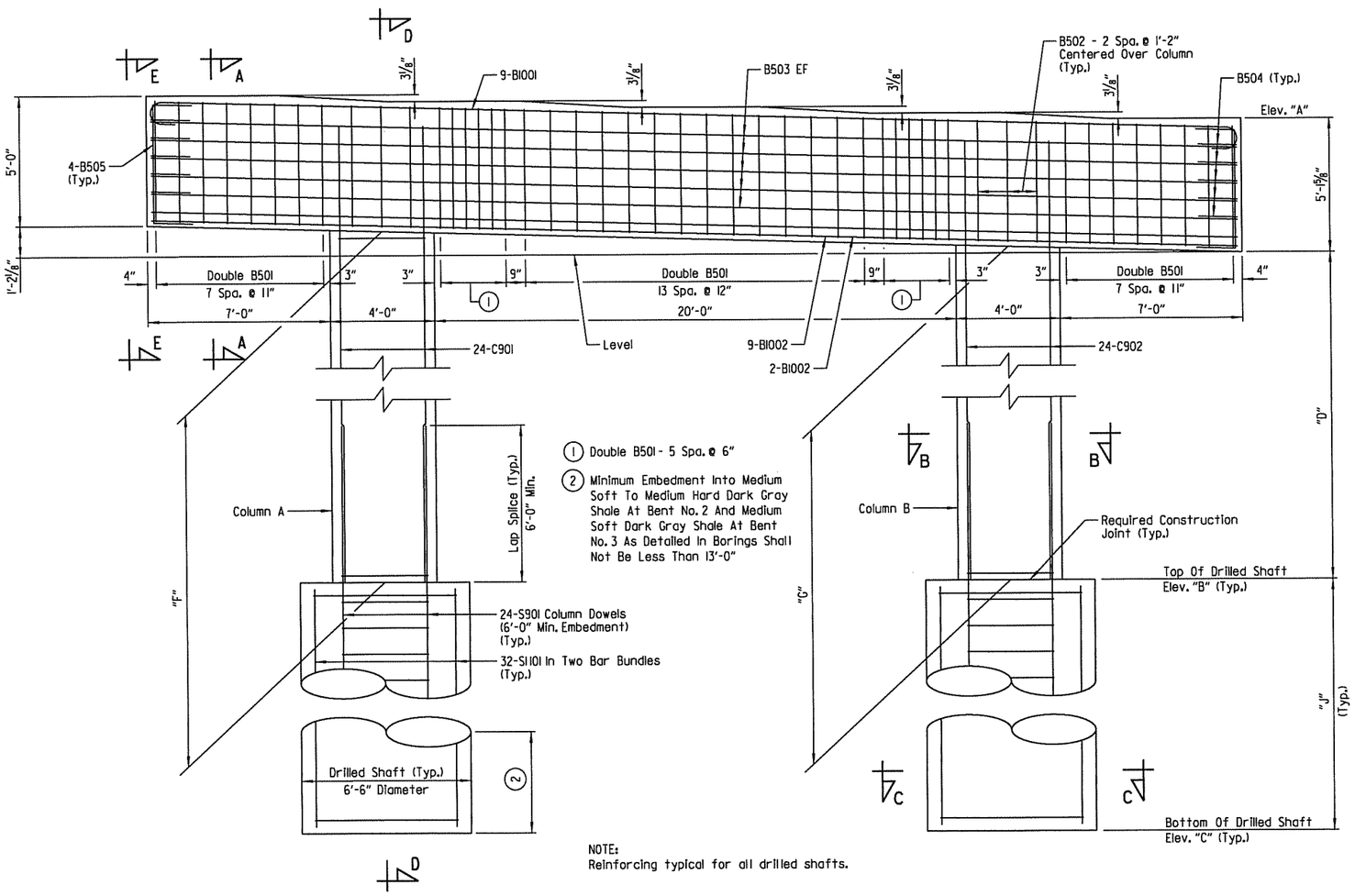
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	132	237
				(1) 07259		INT. BENT DETAILS		52994

* Line tangent to CL Bridge at Working Point of Bent



PLAN
Scale: 3/8" = 1'-0"

TABLE OF VARIABLES											
Location	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"
Bent No. 2	294.41	268.77	251.77	20'-6"	18+92.00	21'-5"	20'-9"	50	49	17'-0"	32
Bent No. 3	295.04	275.90	249.90	14'-0"	20+00.00	14'-11"	14'-3"	35	33	26'-0"	50

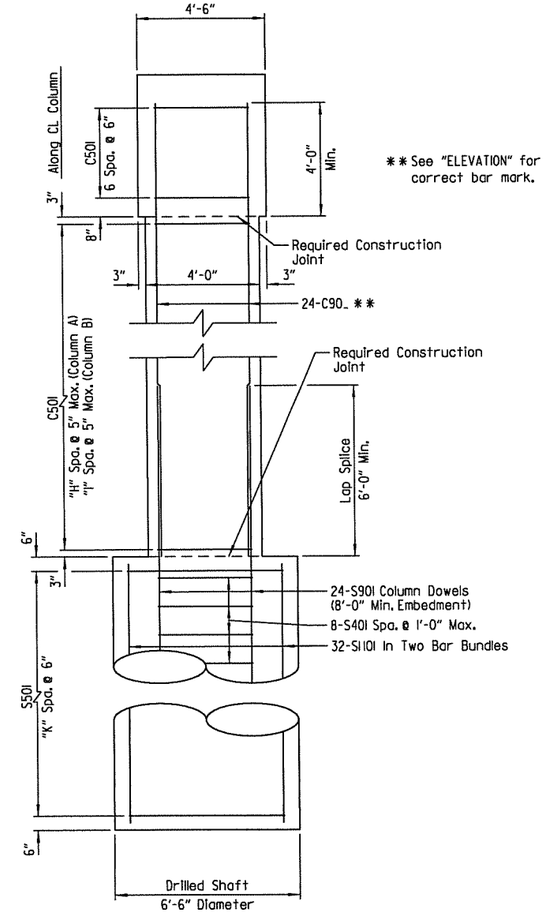


(1) Double B501 - 5 Spa. @ 6"

(2) Minimum Embedment Into Medium Soft To Medium Hard Dark Gray Shale At Bent No. 2 And Medium Soft Dark Gray Shale At Bent No. 3 As Detailed In Borings Shall Not Be Less Than 13'-0"

NOTE:
Reinforcing typical for all drilled shafts.

ELEVATION
(Looking Forward)
Scale: 3/8" = 1'-0"



** See "ELEVATION" for correct bar mark.

SECTION D-D
Scale: 3/8" = 1'-0"

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C", "VIEW E-E", "GENERAL NOTES", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 52995.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-24-13
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x3_B5.DGN
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BRIDGE NO. 07259 DRAWING NO. 52994

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WORKSPACE: AHTD
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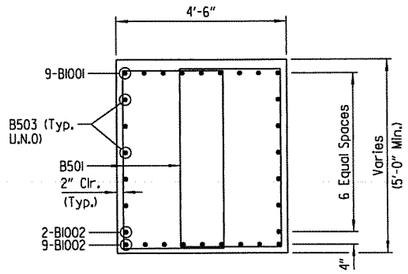
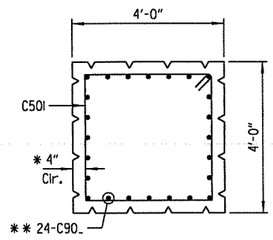
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	133	237
				(1) 07259		INT. BENT DETAILS		52995



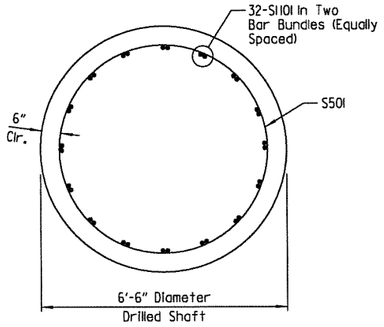
SECTION A-A
Scale: ½" = 1'-0"

* Form liner shall be a maximum depth of 2" to provide a minimum clearance of 2".

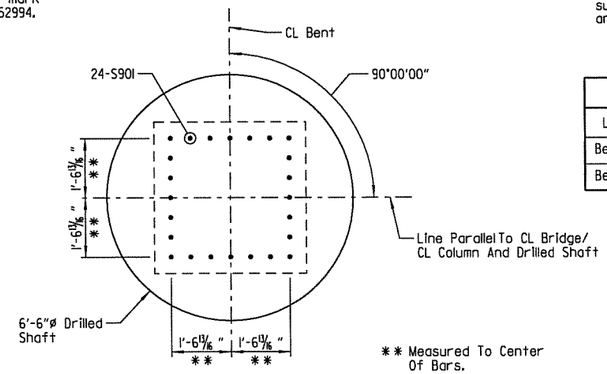


SECTION B-B
Scale: ½" = 1'-0"

** See "ELEVATION" for correct bar mark on Dwg. No. 52994.



SECTION C-C
Scale: ½" = 1'-0"



DOWEL BAR LAYOUT
Scale: ½" = 1'-0"

** Measured To Center Of Bars.

GENERAL NOTES

All Concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

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

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see "LAYOUT OF BRIDGE".

Concrete and reinforcing steel in drilled shafts, including column dowels, will not be paid for directly but will be included in the unit prices of the drilled shaft.

For construction methods, materials, measurement and payment of drilled shafts, see SP JOB 080395 "DRILLED SHAFT FOUNDATIONS".

S901 column dowels and S401 ties may be secured in place before concrete placement or inserted after concrete placement of the shaft is complete. Vibration of concrete for the embedment depth of the column dowels will be required to ensure consolidation of the concrete around the column dowels and to facilitate insertion. The Contractor shall be responsible for satisfactory results.

A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

TABLE OF VARIABLES

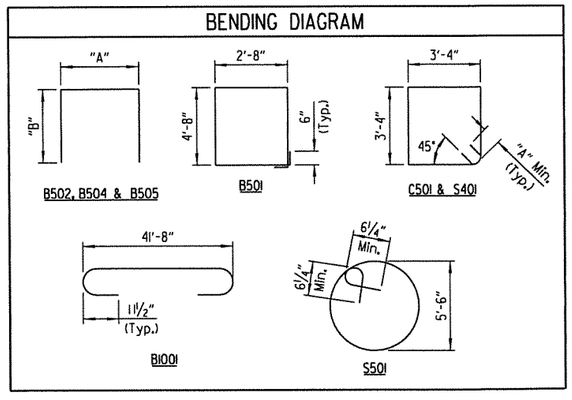
LOCATION	"A"	"B"	"C"	"D"	"E"
Bent No. 2	115	25'-5"	24'-9"	66	16'-6"
Bent No. 3	84	18'-11"	18'-3"	102	25'-6"

BAR LIST

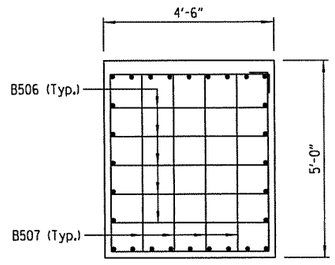
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B501	84	15'-2"			2½"
B502	6	13'-3½"	4'-2"	4'-8"	2½"
B503	10	41'-8"			Str.
B504	10	6'-10"	4'-0½"	1'-6"	2½"
B505	8	7'-4"	4'-6½"	1'-6"	2½"
B1001	9	44'-6"			10"
B1002	11	41'-8"			Str.
C501	"A"	14'-0"	6¼"		3¾"
C901	24	"B"			Str.
C902	24	"C"			Str.
(3) S401	16	13'-10"	5"		3"
(3) S501	"D"	18'-8"			3¾"
(3) S901	48	12'-0"			Str.
(3) S1101	64	"E"			Str.

(3) Non-Pay Item - Subsidiary to SP JOB 080395 "DRILLED SHAFT FOUNDATIONS".

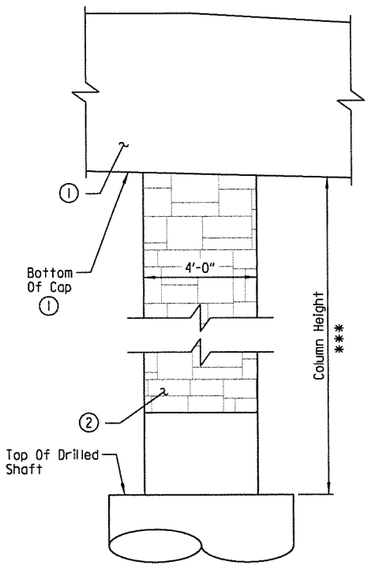
NOTE:
Number of bars shown is for one bent only.



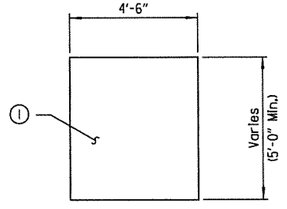
NOTE:
Dimensions of bars are out-to-out.



VIEW E-E
Scale: ½" = 1'-0"



COLUMN
(Typ. All Columns)



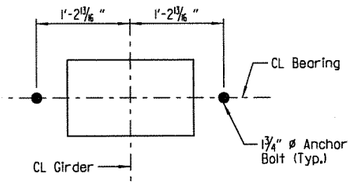
CAP - END VIEW

(1) Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

(2) "Ashlar Stone" Pattern & Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

*** Form liner and texture coating to be stopped at the top of roadway barrier.

ASHLAR STONE PATTERN
Scale: ⅜" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", See Dwg. No. 53008.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
8-21-13
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x3_B6.DGN
CHECKED BY: BWS DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012

BRIDGE NO. 07259 DRAWING NO. 52995

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WORKSPACE: AHTD
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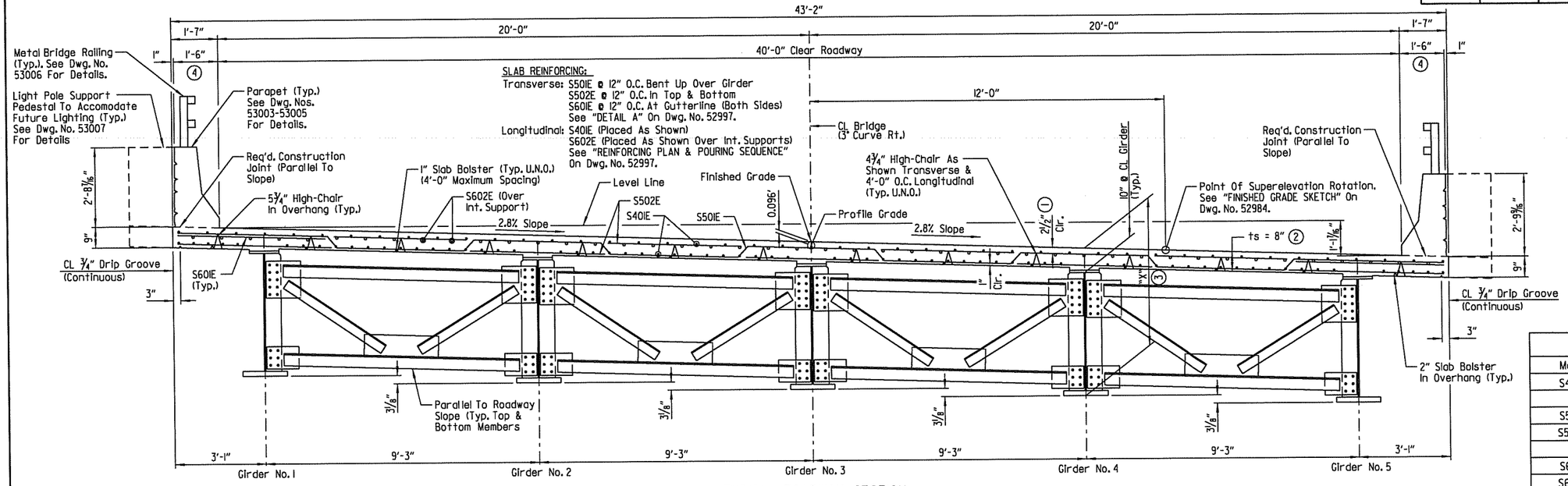
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	134	237
				(1) 07259		SPAN DETAILS		52996



SLAB REINFORCING:
Transverse: S501E @ 12" O.C. Bent Up Over Girder
S502E @ 12" O.C. In Top & Bottom
S601E @ 12" O.C. At Gutterline (Both Sides)
See "DETAIL A" On Dwg. No. 52997.
Longitudinal: S401E (Placed As Shown)
S602E (Placed As Shown Over Int. Supports)
See "REINFORCING PLAN & POURING SEQUENCE" On Dwg. No. 52997.

NOTE:
At the Contractor's option, one epoxy coated #5 Bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each Bar S501E. Payment will be based on the weight of Bar S501E.

NOTE:
Class 1 Protective Surface Treatment shall be applied to the roadway surface. Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

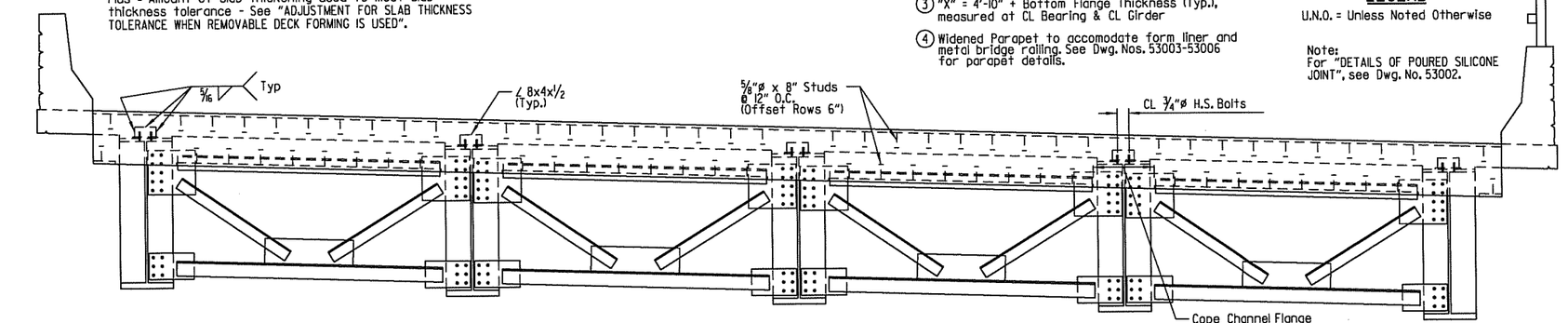
(1) TOLERANCE:
Minus = ¼"
Plus = Amount of slab thickening used to meet slab thickness tolerance - See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

TYPICAL ROADWAY SECTION
(Looking Forward)
Scale: ½" = 1'-0"

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(3) "X" = 4'-10" + Bottom Flange Thickness (Typ.), measured at CL Bearing & CL Girder

(4) Widened Parapet to accomodate form liner and metal bridge railing. See Dwg. Nos. 53003-53006 for parapet details.



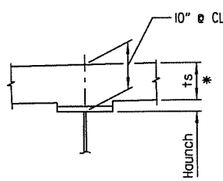
LEGEND
U.N.O. = Unless Noted Otherwise

Note:
For "DETAILS OF POURED SILICONE JOINT", see Dwg. No. 53002.

BAR LIST			
Mark	No. Req'd.	Length	Pin. Dia.
S401E	1035	36'-11"	STR.
S501E	304	43'-6"	3"
S502E	610	42'-10"	STR.
S601E	608	16'-3"	(7) 5¼"
S602E	264	24'-7"	STR.
(6) S603E	16	13'-2"	4½"
(6) S604E	48	5'-6"	STR.
(5) P401E	1198	5'-6"	3"
(5) P402E	32	4'-10"	3"
(5) P403E	24	31'-5"	STR.
(5) P404E	12	28'-1"	STR.
(5) P405E	30	15'-0"	STR.
(5) P406E	32	11'-8"	STR.
(5) P407E	20	14'-8"	STR.
(5) P408E	12	11'-11"	STR.
(5) P409E	24	30'-10"	STR.
(5) P410E	12	27'-8"	STR.
(5) P411E	30	14'-9"	STR.
(5) P412E	20	11'-5"	STR.
(5) P413E	20	14'-4"	STR.
(5) P414E	4	4'-10"	3"
(5) P415E	12	5'-4"	3"
(5) P501E	1198	4'-8"	3¾"
(6) P502E	48	9'-2"	2½"
(6) P503E	48	3'-2"	STR.

NOTE:
Dimension of bars are out-to-out.
Bar designations ending with "E" indicates epoxy coated bars.

(5) See Dwg. Nos. 53003-53005 For Locations.
(6) See Dwg. No. 53007 For Locations.
(7) Non-Typical Pin Diameter



Note: t_S = Slab thickness as shown on "TYPICAL ROADWAY SECTION".

* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

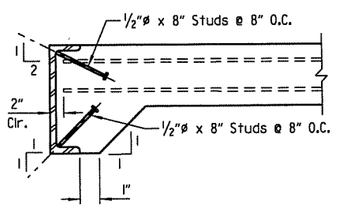
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED
Scale: N.T.S.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the top flange contacts the bottom reinforcing steel; Maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. see Std. Dwg. No. 14991 for tolerances when permanent steel deck forms are used. Payment for "CLASS S(AE) CONCRETE-BRIDGE" shall be based on removable deck forming.

EXPANSION DEVICE:
Rdwy. MC18x42.7
Conn. Angles ∠ 8x4x½
Detail Device ⅛" High And Provide ¼" Shims Using 2 - 1/16" And 1 - ⅛" Plates

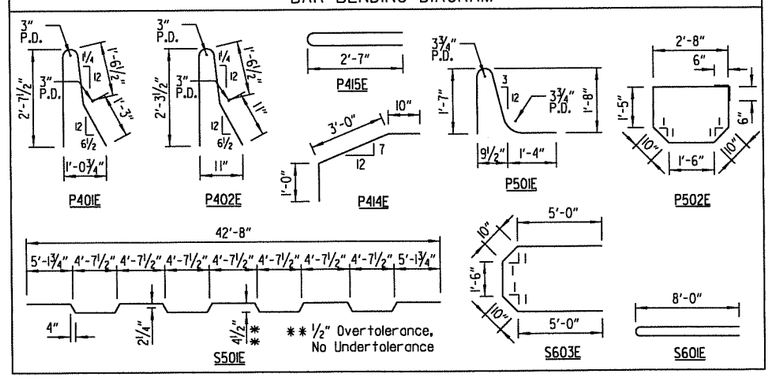
TYPICAL SECTION THRU JOINT
Looking Forward - Bent No. 1
Looking Back - Bent No. 4
Scale: N.T.S.



DETAIL OF ALTERNATE ANCHORS
Scale: N.T.S

Note:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

BAR BENDING DIAGRAM



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 1 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT LAWRENCE LANDING RD. OVER I-40 FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x3_SI.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 52996

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	135	237
				(1) 07259		SPAN DETAILS		52997

NOTES:
All transverse slab reinforcing steel shall be is placed on radial lines. Spacing shown is measured along right edge of slab.

All longitudinal lines and longitudinal slab reinforcing steel shall be placed on curves concentric with CL Bridge (3°00'00" curve).

All transverse lines are radial to CL Bridge.

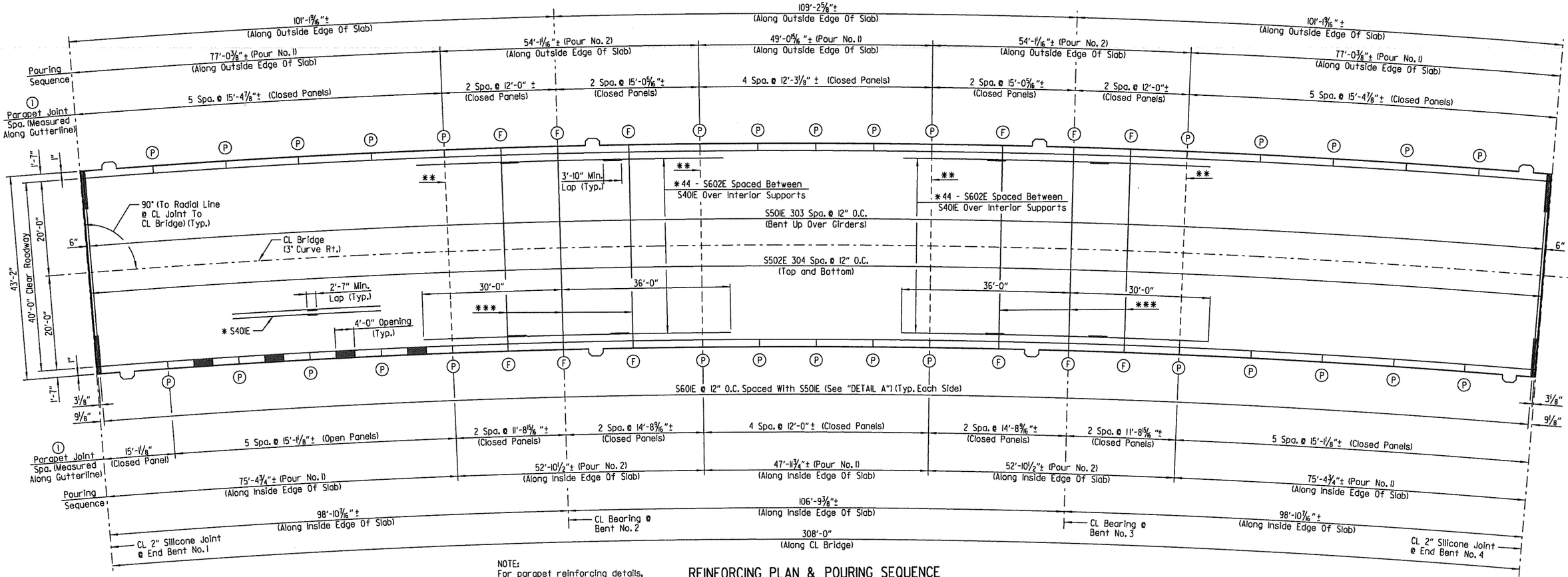
(1) Parapet Joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

Note:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.

* Refer to "TYPICAL ROADWAY SECTION" on Dwg. No. 52996 for placement

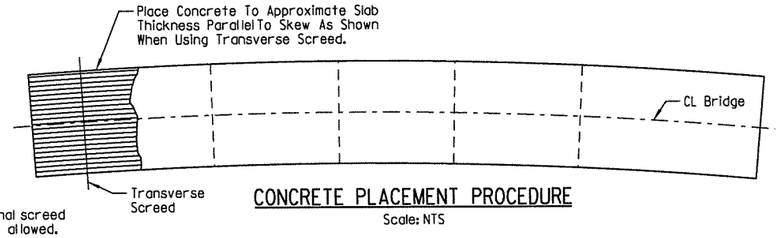
** Pouring Sequence Construction Joint

*** Required Slab Joint



NOTE:
For parapet reinforcing details, see Dwg. Nos. 53003-53005.

REINFORCING PLAN & POURING SEQUENCE
Scale: 3/32" = 1'-0"



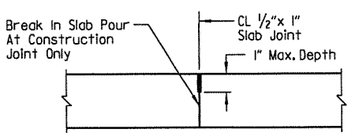
NOTE:
A longitudinal screed will not be allowed.

CONCRETE PLACEMENT PROCEDURE
Scale: NTS

NOTE:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

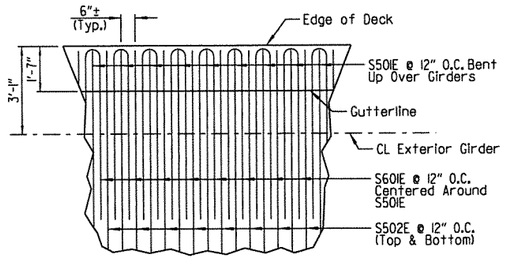
The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.



The 1/2" x 1" Poured Joint Sealer (Type 3, 4 or 6) in slab shall conform to Subsection 501.02 (H) and 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL
Scale: NTS



DETAIL A
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/29/13
BRIDGE ENGINEER

SHEET 2 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: JAN. 2012 FILENAME: B080395x3_S2.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2012
BRIDGE NO. 07259 DRAWING NO. 52997

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REVISED DATE:

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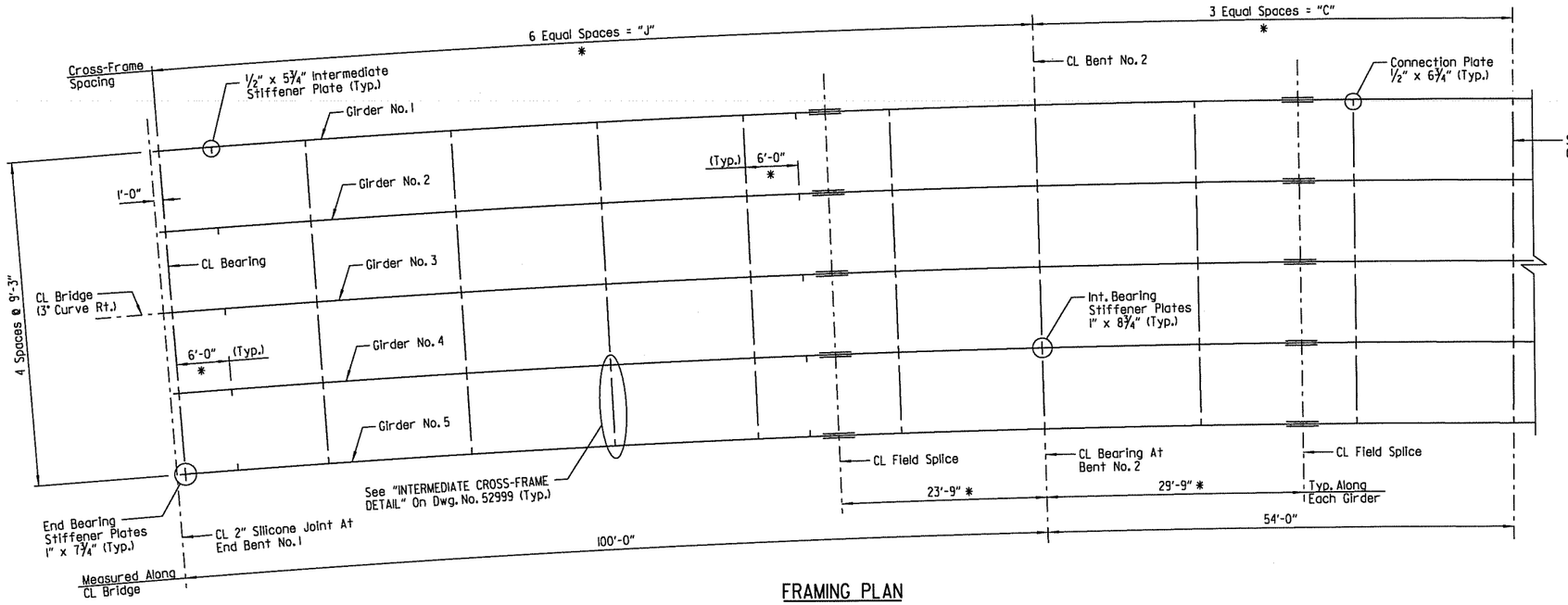
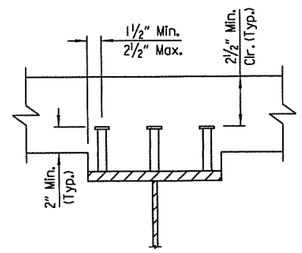
				6	ARK.			
				JOB NO.		080395	136	237
				(1) 07259		308' PL GIRDER UNIT		52998



FRAMING PLAN
Scale: 1/8" = 1'-0"

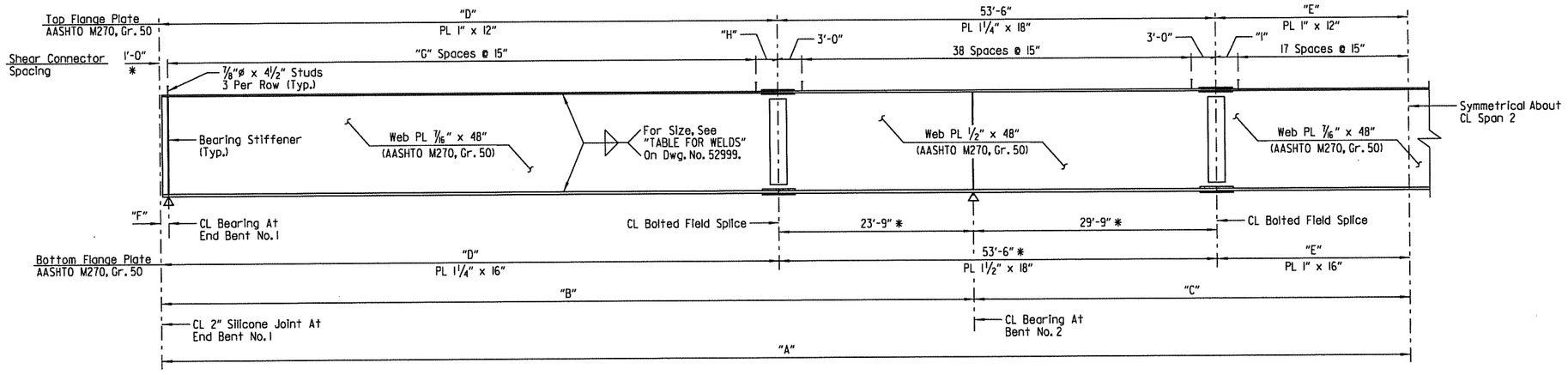


Stud shear connectors shown shall be 7/8"ø x 4 1/2" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361- 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL
Scale: NTS

NOTE:
All girders are curved and concentric with CL Bridge (3°00'00" curve).
Cross-frames are on radial lines.

* Measured Along Girder Centerline



TYPICAL GIRDER ELEVATION
Scale: NTS

TABLE OF VARIABLES

Girder No.	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"
1	155'-5 7/8"	100'-11 5/8"	54'-6 1/4"	77'-2 5/8"	24'-9 1/4"	1'-0 1/8"	59	2'-5 5/8"	3'-6 1/4"	99'-11 1/2"
2	154'-8 5/16"	100'-5 1/16"	54'-3 1/8"	76'-8 13/16"	24'-6 1/8"	1'-0 1/16"	58	3'-2 13/16"	3'-3 1/8"	99'-5 3/4"
3	154'-0"	100'-0"	54'-0"	76'-3"	24'-3"	1'-0"	58	2'-9"	3'-0"	99'-0"
4	153'-3 1/16"	99'-6 3/16"	53'-8 7/8"	75'-9 3/16"	23'-11 7/8"	11 15/16"	57	3'-6 3/16"	2'-8 7/8"	98'-6 1/4"
5	152'-6 1/8"	99'-0 3/8"	53'-5 3/4"	75'-3 3/8"	23'-8 3/4"	11 7/8"	57	3'-0 3/8"	2'-5 3/4"	98'-0 1/2"

NOTE:
Dimensions shown in table are measured along girder centerline.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
STEVEN R. YANCEY
8-21-13
BRIDGE ENGINEER

SHEET 3 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAR. 2012 FILENAME: B080395x3_S3.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 52998

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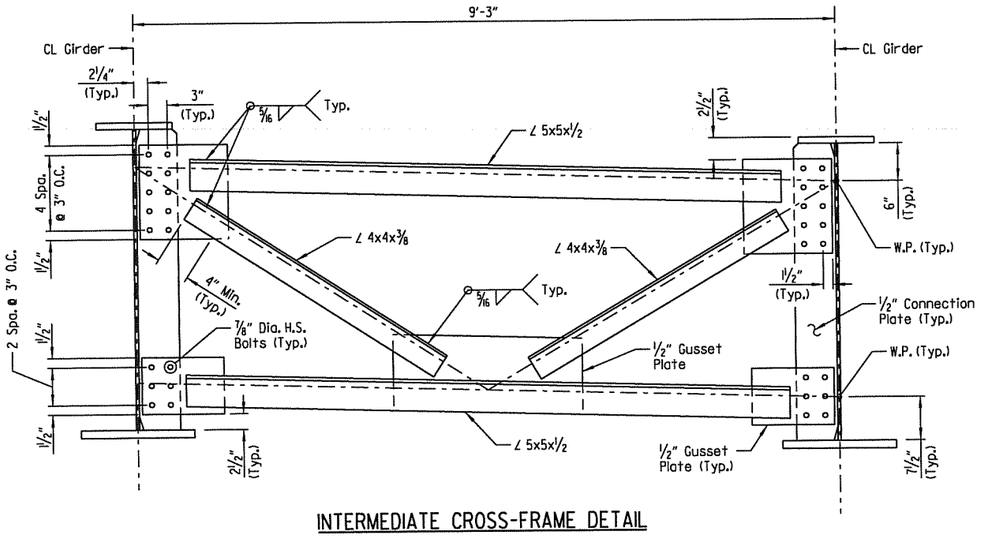
REVISED DATE:

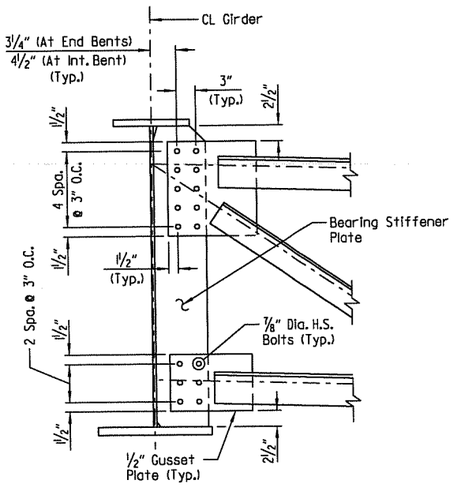
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	137	237
① 07259		SPAN DETAILS		52999



INTERMEDIATE CROSS-FRAME DETAIL

Scale: 1" = 1'-0"



CROSS-FRAME CONNECTION DETAIL @ BEARING

Scale: 1" = 1'-0"

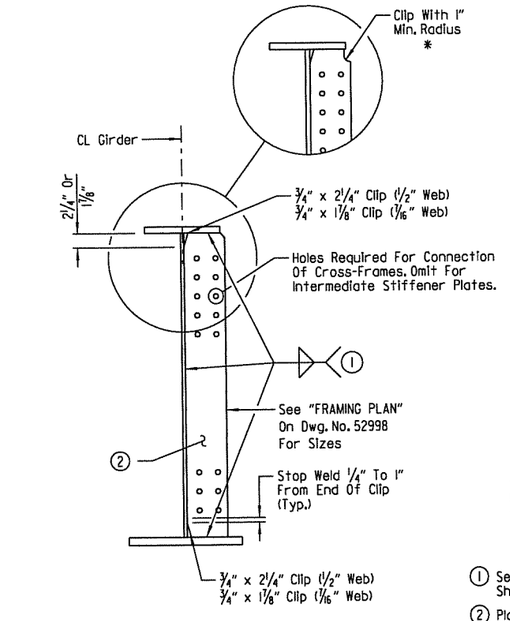
TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

NOTES:
For "GENERAL NOTES", see Dwg. No. 53001.

All structural steel, including girders, cross-frames, bearing stiffener plates, intermediate stiffeners and connection plates, shall be AASHTO M270 Gr. 50.

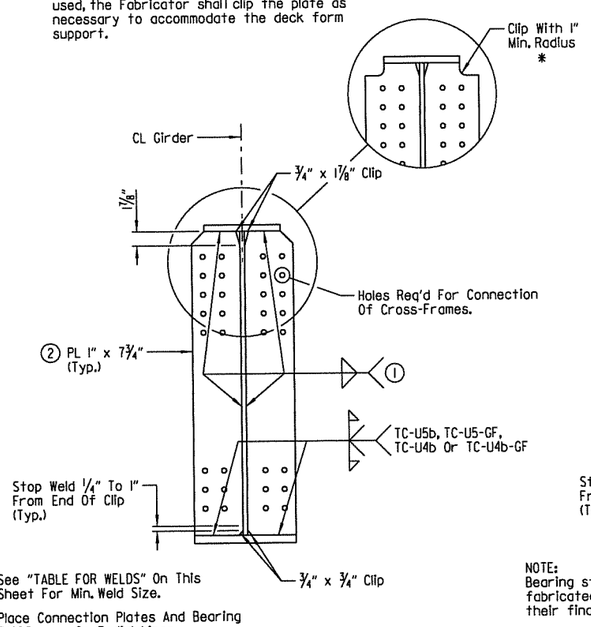
For details of field splice and "TABLE OF DEAD LOAD DEFLECTIONS", see Dwg. No. 53000.



CROSS-FRAME CONNECTION & INTERMEDIATE STIFFENER PLATE DETAIL

Scale: 1" = 1'-0"

*If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accommodate the deck form support.

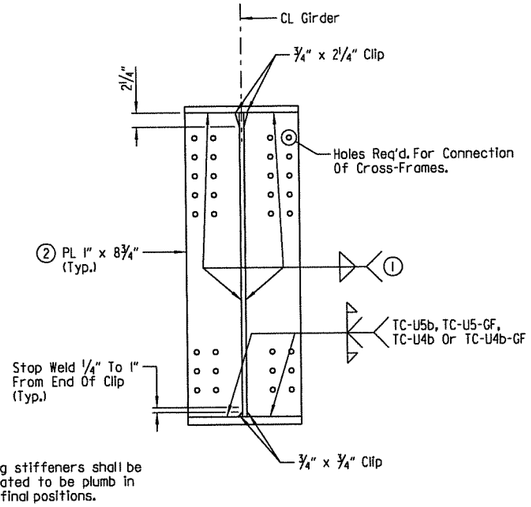


1 See "TABLE FOR WELDS" On This Sheet For Min. Weld Size.

2 Place Connection Plates And Bearing Stiffeners On Radial Lines.

BEARING STIFFENER @ END BENTS

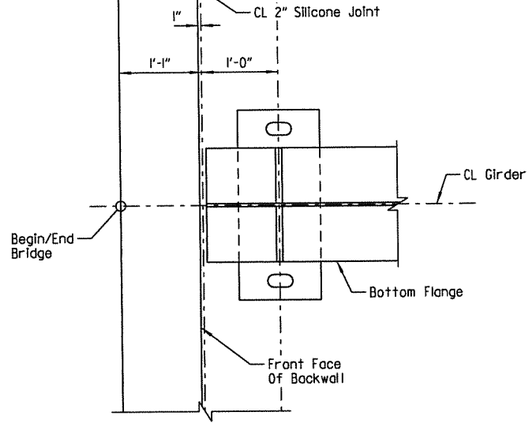
Scale: 1" = 1'-0"



NOTE:
Bearing stiffeners shall be fabricated to be plumb in their final positions.

BEARING STIFFENER @ INTERMEDIATE BENTS

Scale: 1" = 1'-0"



BEARING @ END BENT

Scale: 1" = 1'-0"

STATE OF ARKANSAS
SETH R. YANCEY
No. 14058
REGISTERED PROFESSIONAL ENGINEER
8/27/13
BRIDGE ENGINEER

SHEET 4 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395x3_S4.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 52999

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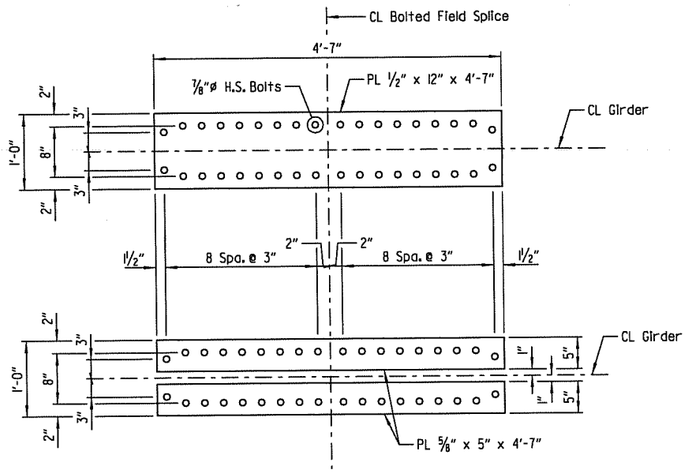
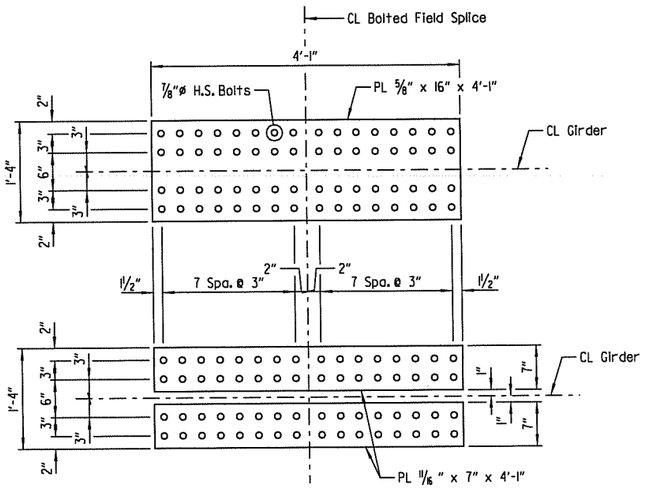
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

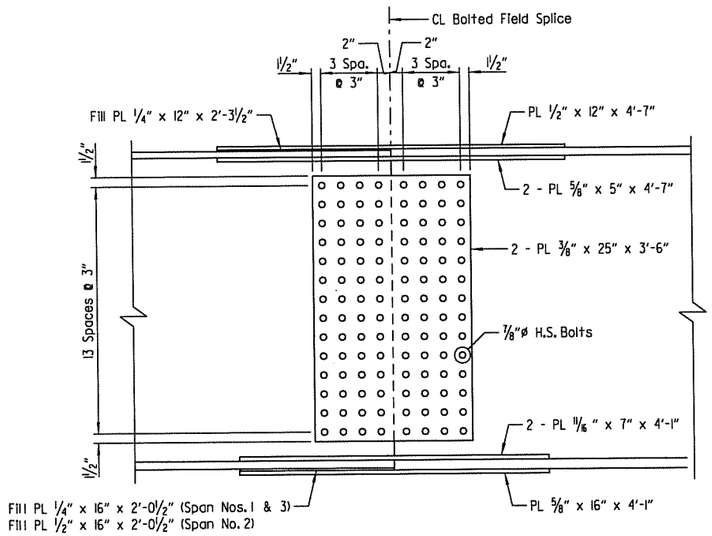
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	138	237
① 07259		308' PL GIRDER UNIT		53000



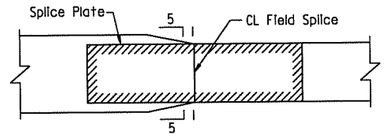
TOP FLANGE SPLICE
Scale: 1" = 1'-0"



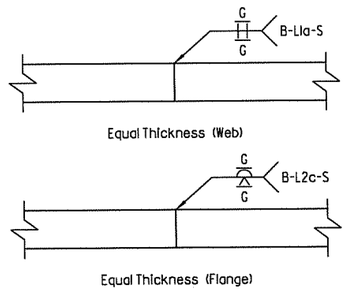
BOTTOM FLANGE SPLICE
Scale: 1" = 1'-0"



DETAILS OF FIELD SPLICE
Scale: 1" = 1'-0"



DETAILS OF BOTTOM FLANGE TRANSITION
Scale: NTS



DETAILS OF WELDED SPLICES
Scale: NTS

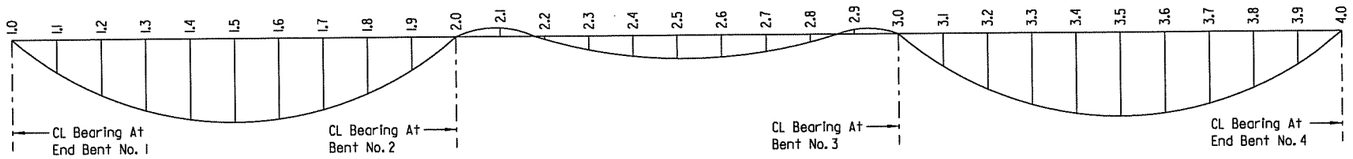
NOTES:
All field splice bolts shall be 7/8"ø H.S. bolts.

All holes for splice bolts shall be 15/16 "ø.

All field splice plates shall be AASHTO M270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

TABLE OF DEAD LOAD DEFLECTIONS (Inch)			
Point Of Deflection	Wt. Of Girder And Cross-Frames	Wt. Of Girder, Cross-Frames And Slab	Wt. Of Girder, Cross-Frames, Slab And Parapet
1.0	0.00	0.00	0.00
1.1	0.12	0.61	0.66
1.2	0.22	1.10	1.17
1.3	0.29	1.45	1.55
1.4	0.33	1.62	1.73
1.5	0.32	1.59	1.70
1.6	0.28	1.38	1.48
1.7	0.21	1.03	1.10
1.8	0.13	0.64	0.68
1.9	0.06	0.27	0.29
2.0	0.00	0.00	0.00
2.1	-0.02	-0.08	-0.07
2.2	0.00	0.01	0.03
2.3	0.02	0.15	0.20
2.4	0.05	0.28	0.35
2.5	0.06	0.35	0.42
2.6	0.05	0.30	0.37
2.7	0.03	0.18	0.23
2.8	0.00	0.04	0.07
2.9	-0.01	-0.04	-0.03
3.0	0.00	0.00	0.00
3.1	0.05	0.24	0.25
3.2	0.13	0.61	0.64
3.3	0.20	1.00	1.07
3.4	0.27	1.35	1.44
3.5	0.32	1.59	1.69
3.6	0.33	1.61	1.73
3.7	0.29	1.46	1.56
3.8	0.22	1.11	1.19
3.9	0.12	0.61	0.66
4.0	0.00	0.00	0.00



DEAD LOAD DEFLECTION
Scale: NTS

NOTE:
Camber is for dead load deflection plus vertical curve +/- 1/4" tolerance. Deflections shown are along the CL Girder from the plane perpendicular to the web extending from CL Bearing to CL Bearing. Vertical curve corrections are not included. Negative sign (-) indicates point above plane.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/27/13
BRIDGE ENGINEER

SHEET 5 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAR. 2012 FILENAME: B080395x3_S5.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	139	237
				(1) 07259		SPAN DETAILS		53001

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". All structural steel shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless otherwise noted. See Dwg. No. 53008 for cleaning requirements of external load plates on elastomeric bearings.

All structural steel except galvanized members or steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall conform to Federal Standard 595B, Color Chip No. 27038, Black.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girder webs, flanges of plate girders, splice plates, cross-frames and connection plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method. All Quality Control (Q. C.) testing is at the Contractor's expense.

All connection plates and intermediate stiffeners shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plan. No intermediate stiffeners are to be placed on the outside of the exterior girders except as noted. All bearing stiffeners shall be fabricated to be plumb in their final positions.

Cross-frames shall be installed as girders are erected. All bolts in cross-frames and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Open holes shall be 15/16 "ø unless otherwise noted. Holes for ⅞"ø high-strength bolts may be 1 1/16 "ø if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

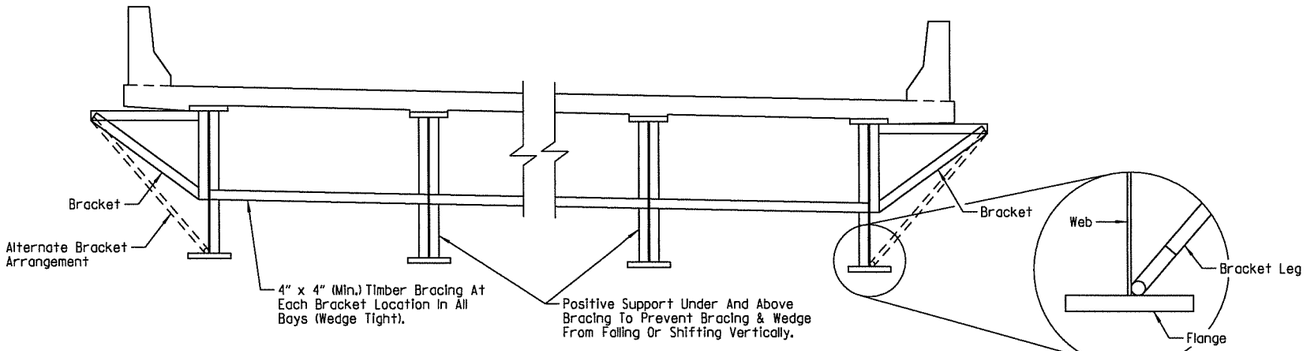
Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M298 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

ERECTION OF STRUCTURAL STEEL:

The erection of the structural steel shall be performed according to a plan permitting the steel to be erected plumb with bolts tightened while the steel is as close as possible to the no-load condition, so that the bolt holes can be aligned. This requirement may necessitate the use of large capacity cranes, temporary shoring or jacking frames.

The Contractor shall submit to the Engineer for informational and record purposes details of falsework construction in accordance with Subsection 807.64.

The Contractor shall ensure that girders are stable throughout the erection process. The Contractor will be responsible for providing temporary bracing or stiffening devices to accomodate handling stresses in individual members or segments of the structure during erection.



SCREED RAIL SUPPORT DETAIL

NOTE:
The bracket shall be installed in a manner that avoids any nicks or gouges in the flange, web and web.

NOTE:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if ½" x 6¾" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket shown above is used. The alternate bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffeners shall conform to the details for intermediate connection plates shown on Dwg. No. 52999. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)."

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/27/13
BRIDGE ENGINEER

SHEET 6 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAR. 2012 FILENAME: B080395x3_S6.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
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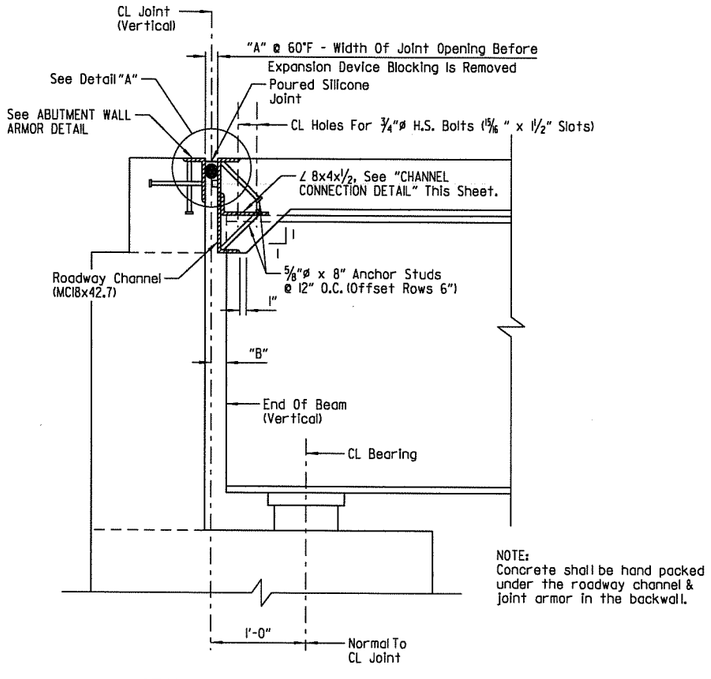
				①	07259	SPAN DETAILS		53002



SECTION THRU SILICONE JOINT

NOTE: Section Taken Normal To CL Joint
Scale: N.T.S.

SILICONE JOINT DATA					
"A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
2¼"	2"	1¾"	2¼"±	4½"	1" x 1" x 12"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

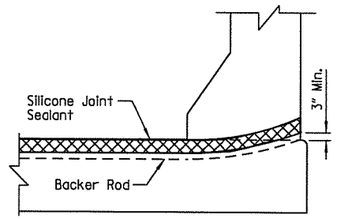
NOTES:
The temperature limitations recommended by the sealant manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

** BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.

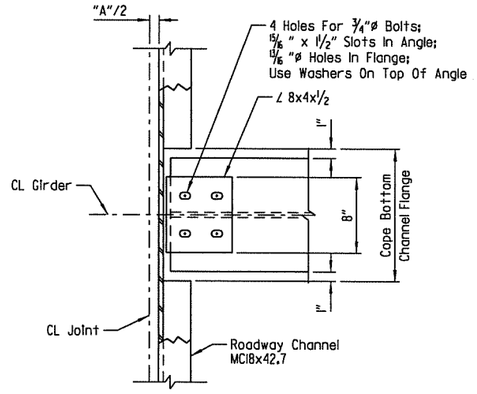
Except as noted, do not install more backer rod that can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



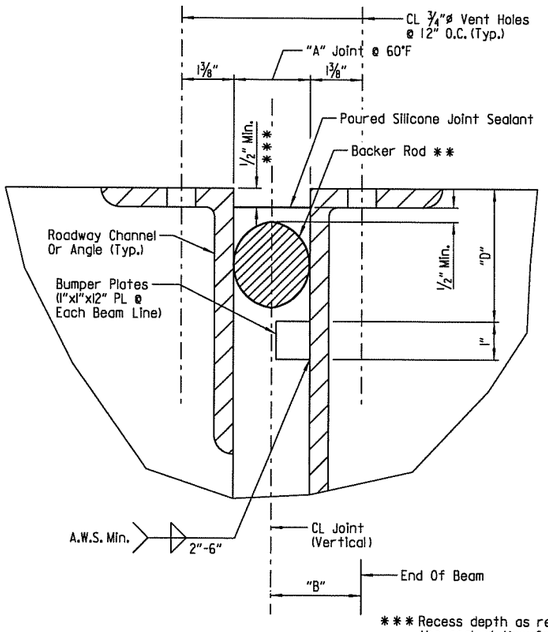
JOINT SEAL PLACEMENT AT CURB

Scale: N.T.S.



CHANNEL CONNECTION DETAIL

Scale: NTS

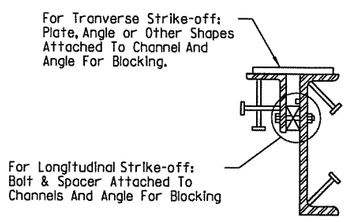


*** Recess depth as recommended by the sealant Manufacturer.

DETAIL OF POURED SILICONE JOINT

Scale: N.T.S.

One of two different blocking systems is required depending on the type of span finishing machine that is used.



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Scale: N.T.S.

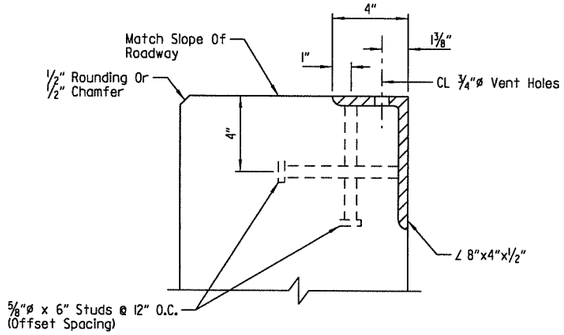
NOTE:
Each expansion joint device shall be blocked in the shop by the fabricator to the dimension shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.



END BENT WALL ARMOR DETAIL

Scale: N.T.S.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8-29-13
BRIDGE ENGINEER

SHEET 7 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: AUG. 2011 FILENAME: B080395x3_S7.DGN
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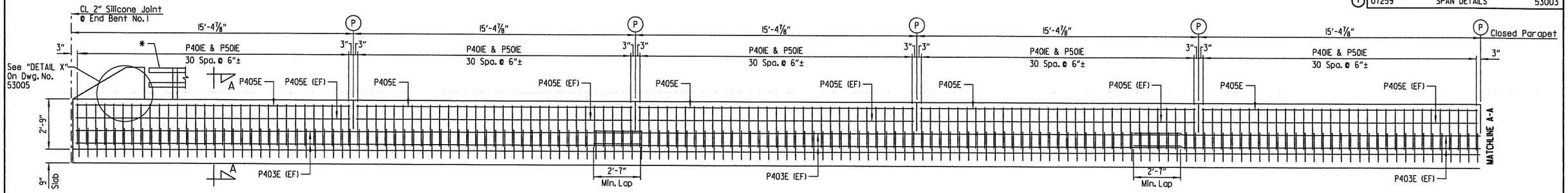
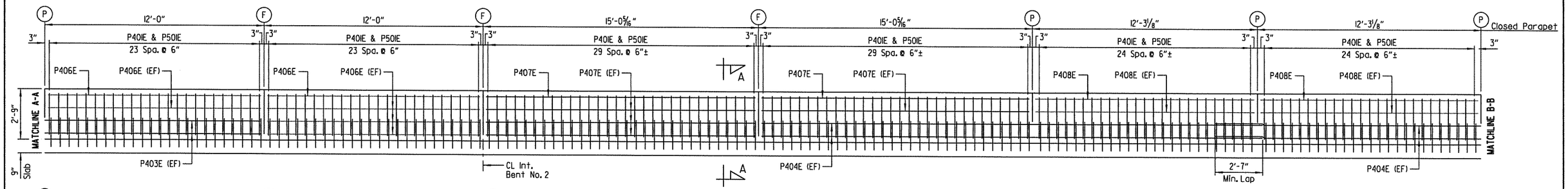
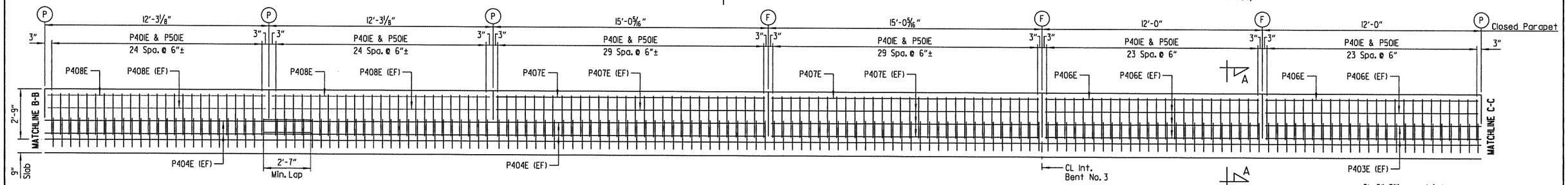
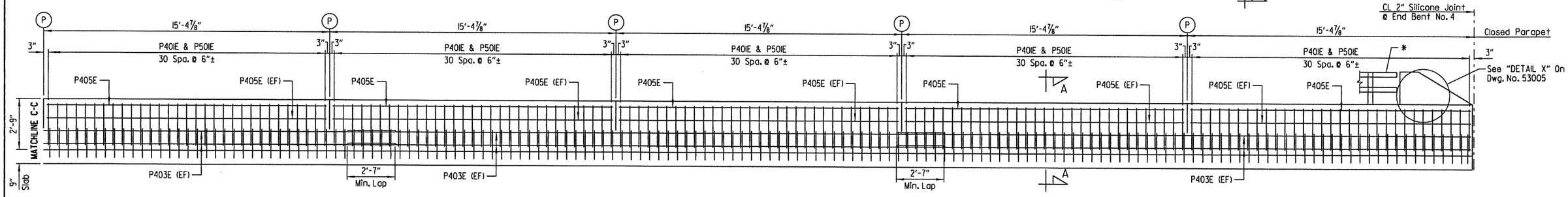
				(1) 07259		SPAN DETAILS		53003

* For metal railing details, see Dwg. No. 53006.









LEFT PARAPET - ELEVATION

(Looking At Inside Face Of Parapet)
Scale: ⅜" = 1'-0"

NOTES:
All dimensions shown are measured along gutterline of bridge.

For "BAR LIST" and "BENDING DIAGRAM", See Dwg. No. 52996.

For "SECTION A-A", See Dwg. No. 53005.

LEGEND

EF = Each Face

(P) CL Partial-Depth Parapet Joint (¼" to 1" max.) as shown on slab plans on Dwg No. 52997. Stop 1'-2" from top of slab.

(F) CL Full-Depth Parapet Joint (¼" to 1" max.) as shown on slab plans on Dwg No. 52997. Stop 4" from top of slab.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 STEVEN R. YANCEY 07-24-13
BRIDGE ENGINEER

SHEET 8 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x3_S8.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2012
BRIDGE NO. 07259 DRAWING NO. 53003

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REVISED DATE:

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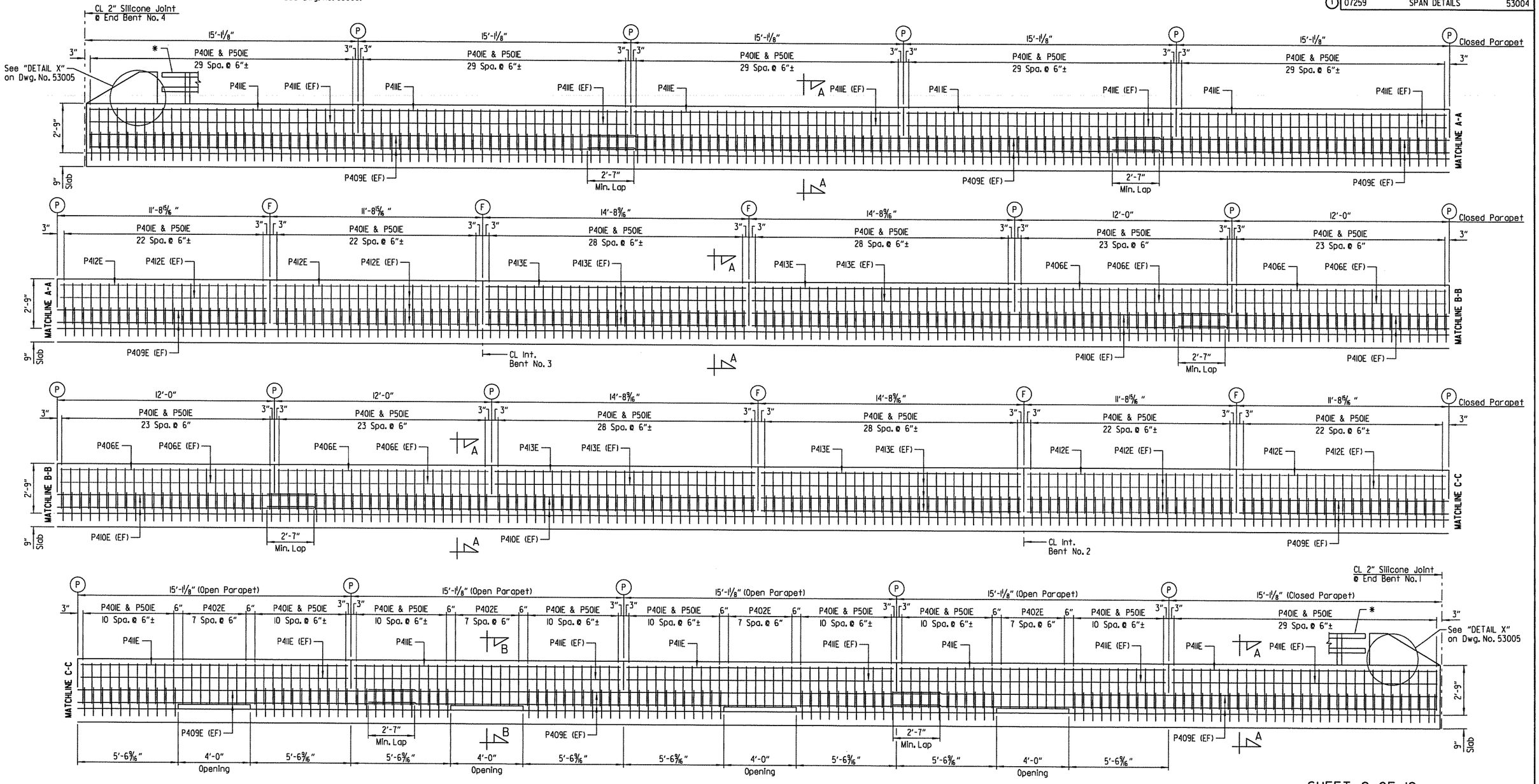
				6	ARK.			
				JOB NO.		080395	142	237
				(1) 07259		SPAN DETAILS		53004

* For metal railing details, see Dwg. No. 53006.



RIGHT PARAPET - ELEVATION

(Looking At Inside Face Of Parapet)
Scale: 1/8" = 1'-0"

(P) CL Partial-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg No. 52997. Stop 1'-2" from top of slab.

(F) CL Full-Depth Parapet Joint (1/4" to 1" max.) as shown on slab plans on Dwg No. 52997. Stop 4" from top of slab.

LEGEND

EF = Each Face

NOTES:
All dimensions shown are measured along gutterline of bridge.

For "BAR LIST" and "BENDING DIAGRAM", See Dwg. No. 52996.

For "SECTION A-A" and "SECTION B-B", See Dwg. No. 53005.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH A. YANCEY
8/24/13
BRIDGE ENGINEER

SHEET 9 OF 12
DETAILS OF 308'-0" COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x3_S9.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2012
BRIDGE NO. 07259 DRAWING NO. 53004

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WORKSPACE: AHTD
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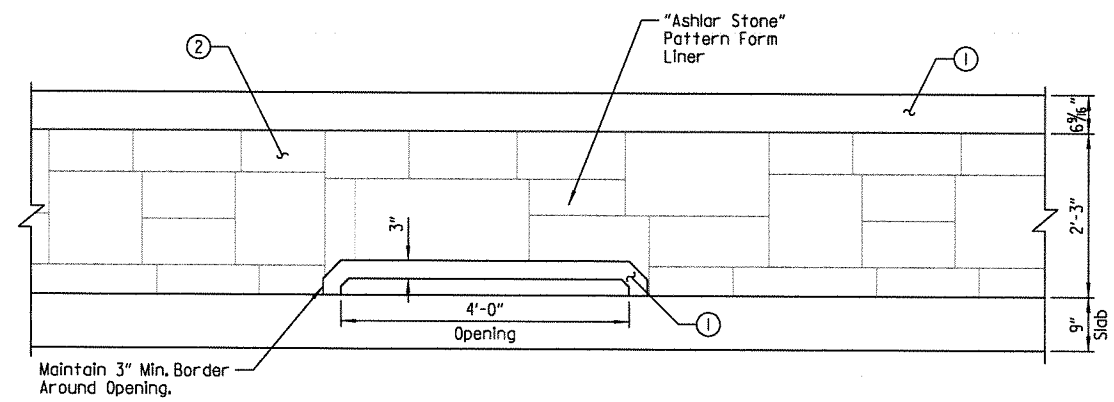
REVISED DATE:

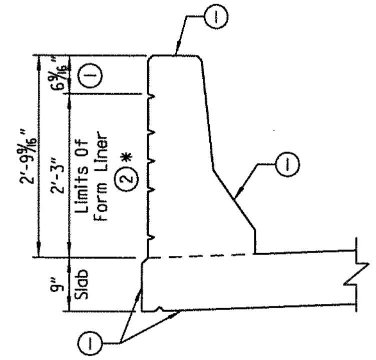


PANEL ELEVATION
(Showing Outside Face Of Parapet)
Scale: ¾" = 1'-0"

NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.

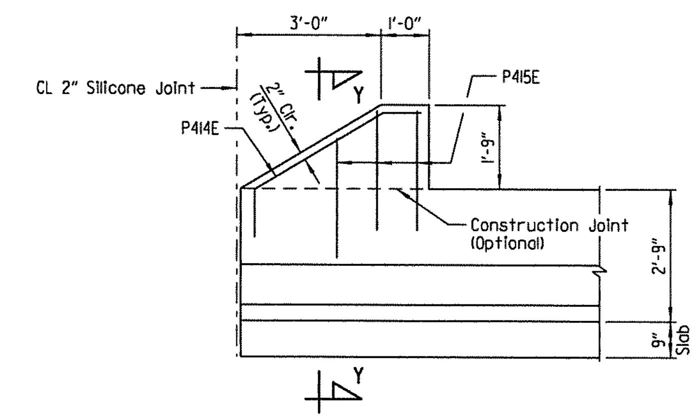
(1) Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

(2) Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

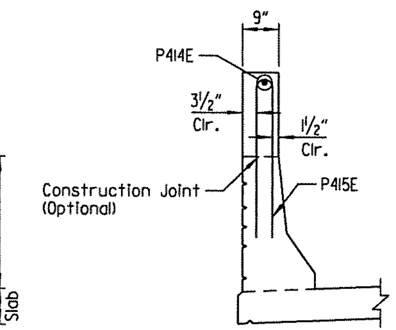


CLOSED PANEL PARAPET
Scale: ¾" = 1'-0"

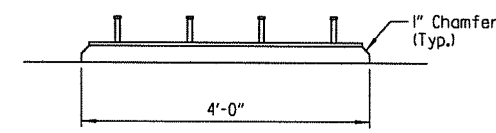
* "Ashlar Stone" Pattern



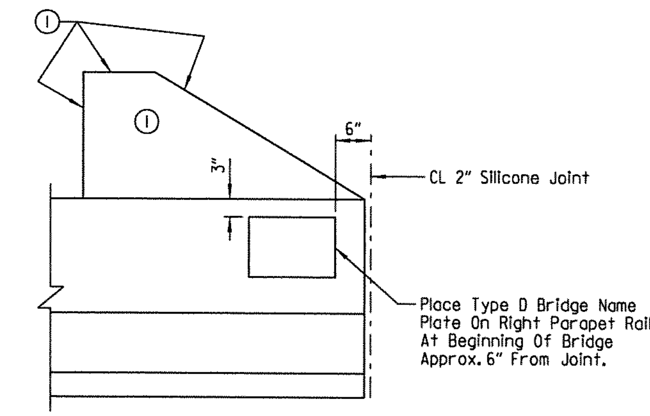
DETAIL X
Scale: ½" = 1'-0"



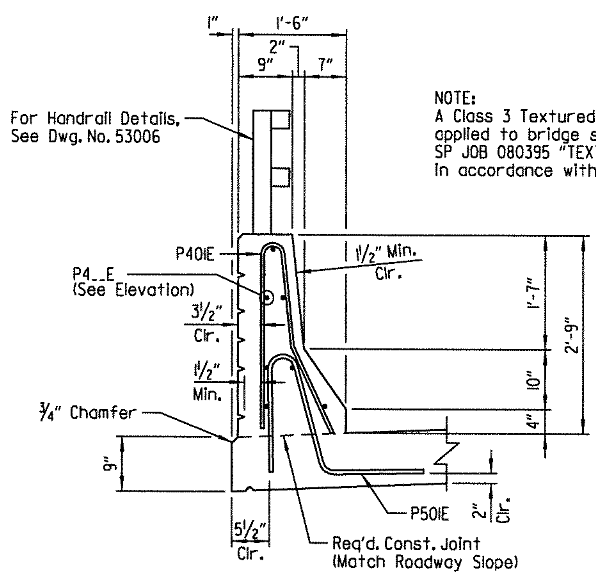
SECTION Y-Y
Scale: ½" = 1'-0"



DRAIN DETAIL
Scale: ¾" = 1'-0"

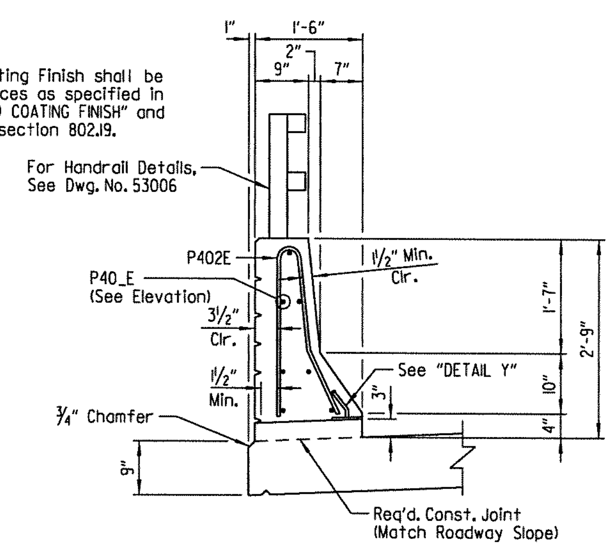


VIEW SHOWING LOCATION OF NAME PLATE
(Showing Inside Face Of Parapet)
Scale: ¾" = 1'-0"

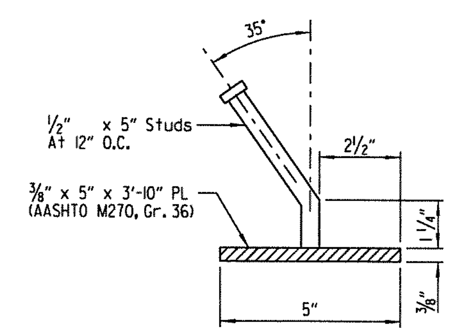


SECTION A-A
Scale: ¾" = 1'-0"

NOTE:
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.



SECTION B-B
Scale: ¾" = 1'-0"



DETAIL Y
Scale: NTS

NOTE:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "STRUCTURAL STEEL (M270, GR. 50)".

The surfaces of the ⅜" Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "STRUCTURAL STEEL (M270, GR. 50)".

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 SETH R. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 10 OF 12
DETAILS OF 308'-0"
COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x3_SA.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2012
BRIDGE NO. 07259 DRAWING NO. 53005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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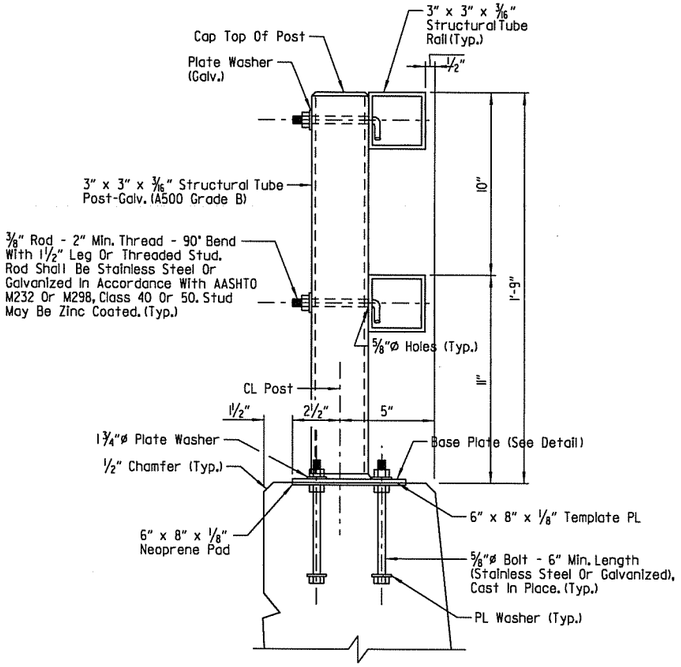
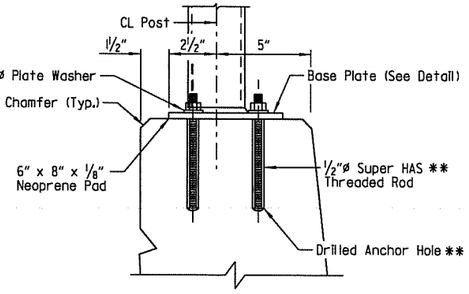
				JOB NO.		080395	144	237
				(1) 07259		SPAN DETAILS		53006



TYPE H RAIL

Scale: 3" = 1'-0"



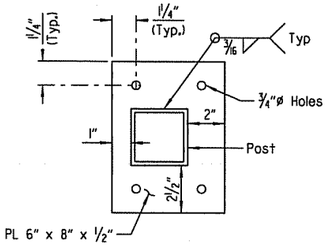
** HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4 1/2" embedment or an approved equal.

The HILTI Epoxy Adhesive Anchor System shall be installed in accordance with Manufacturer's recommendations.

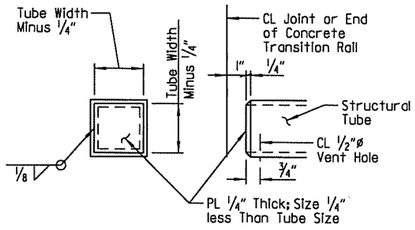
DETAILS OF ALTERNATE POST ANCHOR SYSTEM

(Epoxy Adhesive Anchors)

Scale: 3" = 1'-0"



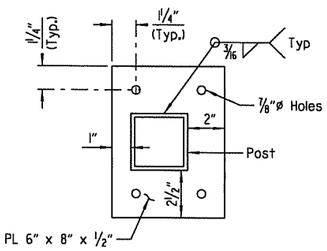
BASE PLATE



END ELEV. SIDE ELEV.

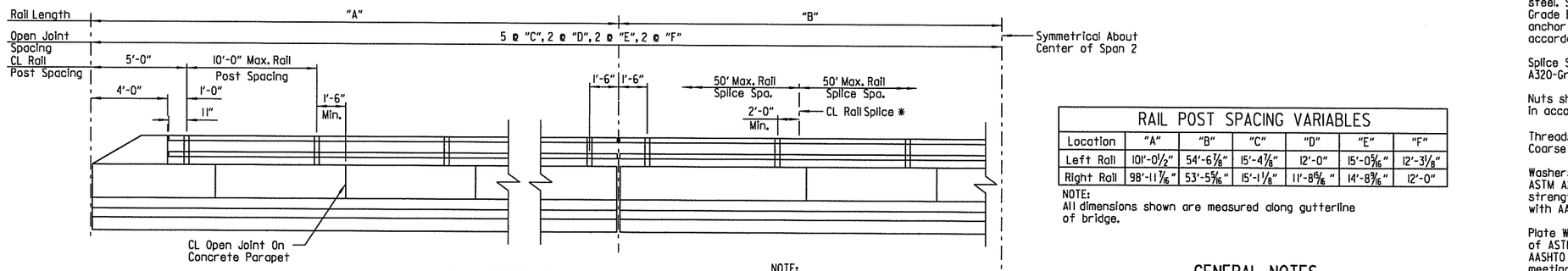
DETAILS OF END CAPS

Scale: 3" = 1'-0"



BASE PLATE

Scale: 3" = 1'-0"



* NOTE:
Splices shall be at 50' max. spacing. Rail sections must be fabricated to attach to at least three posts. CL splices shall be located at a minimum of 2'-0" from CL Post.

RAIL POST SPACING DETAIL

Scale: NTS

(Horizontal dimensions are along face of rail and do not included a vertical curve correction.)

NOTE:
Rail layout shall conform to the vertical and horizontal alignment of the bridge. For additional post spacing requirements, See Dwg. No. 53007.

RAIL POST SPACING VARIABLES

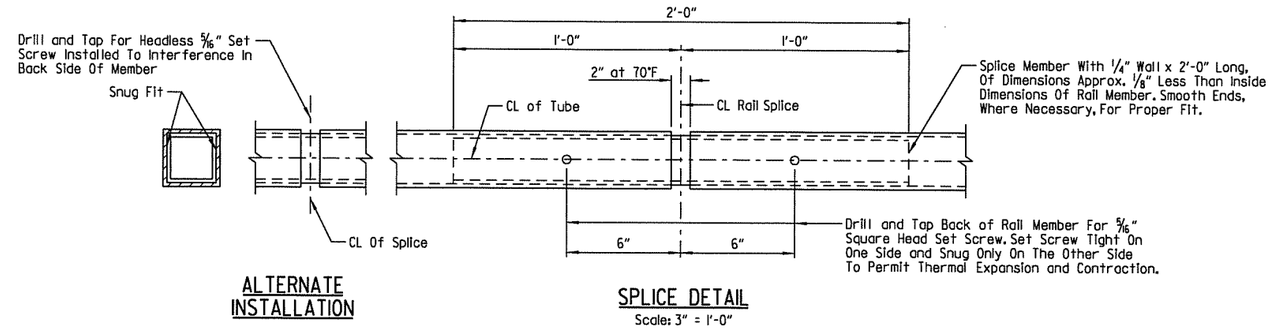
Location	"A"	"B"	"C"	"D"	"E"	"F"
Left Rail	101'-0 1/2"	54'-6 1/8"	15'-4 7/8"	12'-0"	15'-0 5/16"	12'-3 1/8"
Right Rail	98'-11 7/16"	53'-5 5/16"	15'-1 1/8"	11'-8 5/16"	14'-8 5/16"	12'-0"

NOTE:
All dimensions shown are measured along gutterline of bridge.

GENERAL NOTES

CONCRETE: All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4000 psi.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.



ALTERNATE INSTALLATION

SPLICE DETAIL

Scale: 3" = 1'-0"

NOTES FOR BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of Bridge. All posts shall be vertical.

Maximum post spacing = 10'-0"
Minimum distance from centerline post to centerline open or contraction joints in parapet = 1'-6".

Rail splices shall be at 50' maximum spacing. Centerline splices shall be located at a minimum of 2 feet from centerline of post. Rail sections shall be fabricated to attach to at least three posts.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Shop drawings showing details of railing shall be submitted and approval secured before fabrication is begun.

MATERIALS:

Tubing, Posts, and Accessories: AASHTO M270, Gr. 36 or ASTM A500-Grade B.

Railing End Caps shall conform to AASHTO M270, Grade 36 galvanized.

Steel rail members shall be galvanized in accordance with AASHTO M111 after fabrication and shall receive a powder coating process after galvanizing. Galvanizing shall not interfere with the powder coating process. Galvanized surfaces shall be prepared in accordance with subsection 807.87 and the powder coating manufacturer's recommendations before application of the powder coating process. The powder coating process shall be a two coat system applied using electrostatic spray. The base coat shall be a thermosetting epoxy powder with a minimum thickness of 2-4 mils. The top coat shall be a tough polyester powder coat with a minimum thickness of 2-4 mils. Color shall be Black equal to or close to Federal Std. 595B, color chip 27038. Coated galvanized framework shall have a salt spray resistance of 3,000 hours using ASTM B117 without loss of adhesion. The powder coating process shall be in accordance with Manufacturer's recommendations.

The Contractor shall submit a paint color sample prior to fabrication for Owner's approval.

Cast in place anchor bolts shall be of stainless steel or high strength steel. Stainless steel anchor bolts shall conform to ASTM A139 or A320-Grade B8 with a minimum yield strength of 80,000 psi. High strength steel anchor bolts shall conform to AASHTO M164 or A354-Grade BC galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

Splice Set Screws shall conform to the requirments of ASTM A193 or A320-Gr.B8 (Stainless steel) or AASHTO M270, Gr.36 (Galvanized).

Nuts shall conform to AASHTO M292, Gr.8A (Stainless steel) or galvanized in accordance with AASHTO M232 or M298 Class 40 or 50.

Threads on bolts, screws and nuts shall conform to American Standard Coarse Series, Class 2 FIT, ASA Specification B1.1.

Washers shall be stainless steel and conform to the requirements of ASTM A276 or A167-Type 302 with dimensions meeting ASTM F436, or high strength steel conforming to AASHTO M293 and galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

Plate Washers shall be stainless steel and conform to the requirements of ASTM A167-Type 302 or AASHTO M270, Gr.36, galvanized in accordance with AASHTO M232 or M298, Class 40 or 50. Plate washers shall have dimensions meeting the requirments of ANSI/ASME B18.22.1, Type A plain washer (Wide Series).

Mixing of stainless steel and galvanized fasteners will not be permitted.

Metal Bridge Railing, including posts, fasteners, base plates, template plates, balusters, anchor bolts, neoprene pad, galvanizing and powder coatings; fabrication and erection; and all incidentals necessary to complete the work shall be paid for in accordance with Section 806 at the contract unit price per linear foot bid for "Metal Bridge Railing (Type H)".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
8/22/13
BRIDGE ENGINEER

SHEET 11 OF 12
DETAILS OF 308'-0"
COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x3_SB.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: JTR DATE: MAR. 2012

BRIDGE NO. 07259 DRAWING NO. 53006

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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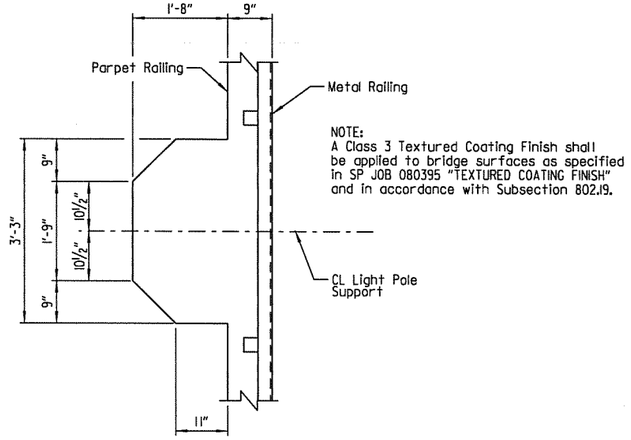
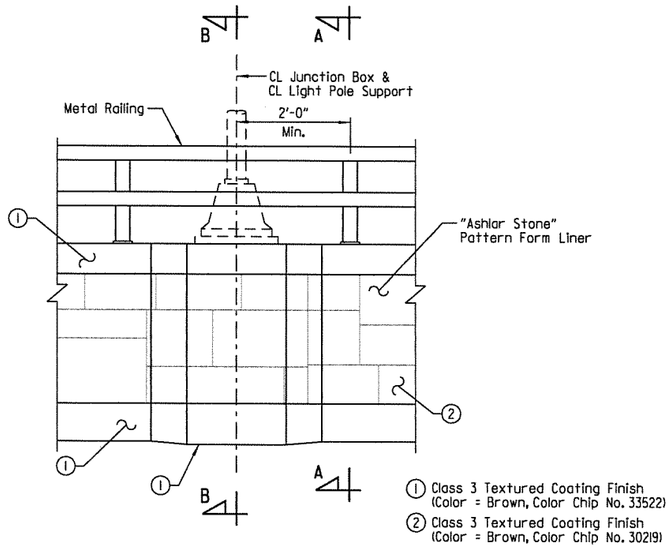
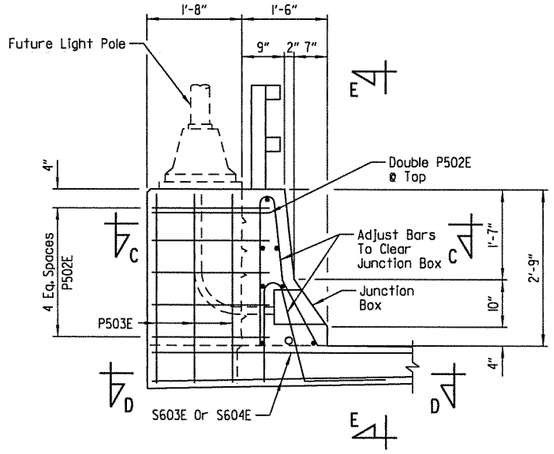


PLAN - LIGHT POLE SUPPORT PEDESTAL
Scale: NTS



① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)
② Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

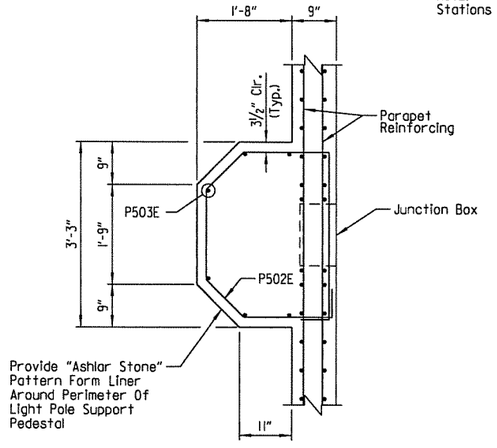
ELEVATION - LIGHT POLE SUPPORT PEDESTAL
Scale: NTS



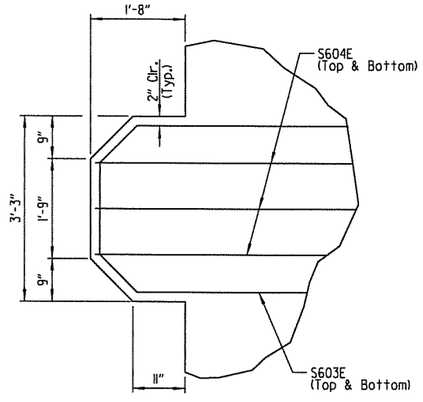
SECTION A-A
Scale: NTS

LIGHT POLE SUPPORT LOCATION	
Station	Location
17+98.15	LT. & RT.
18+99.27	LT. & RT.
19+92.83	LT. & RT.
20+94.65	LT. & RT.

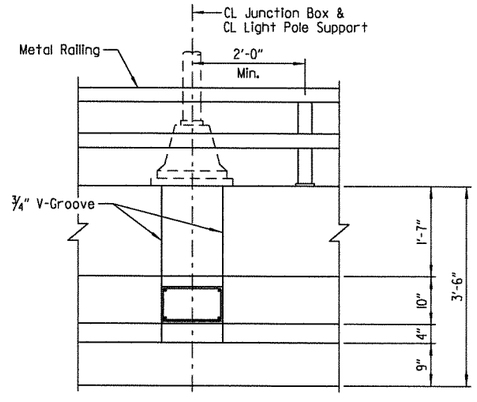
NOTE:
Stations shown are to CL light pole support.



SECTION C-C
Scale: NTS



SECTION D-D
Scale: NTS



VIEW E-E
Scale: NTS

NOTES:
Light pole to be provided by Owner in the future.

Anchor bolts will not be provided but will be installed in the future.

For Electrical Details, see Dwg. Nos. 53009-53011.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH B. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 12 OF 12
DETAILS OF 308'-0"
COMPOSITE PLATE GIRDER UNIT
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JTR DATE: MAR. 2012 FILENAME: B080395x3_SC.DGN
CHECKED BY: ABH DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: JTR DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 53007

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WORKSPACE: AHTD
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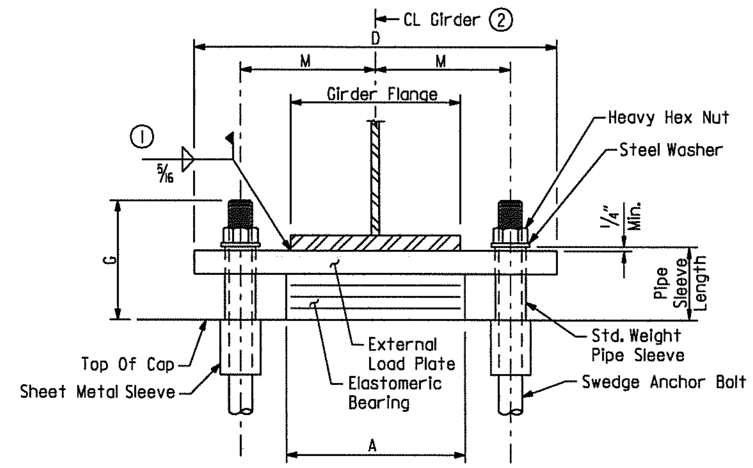
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	146	237

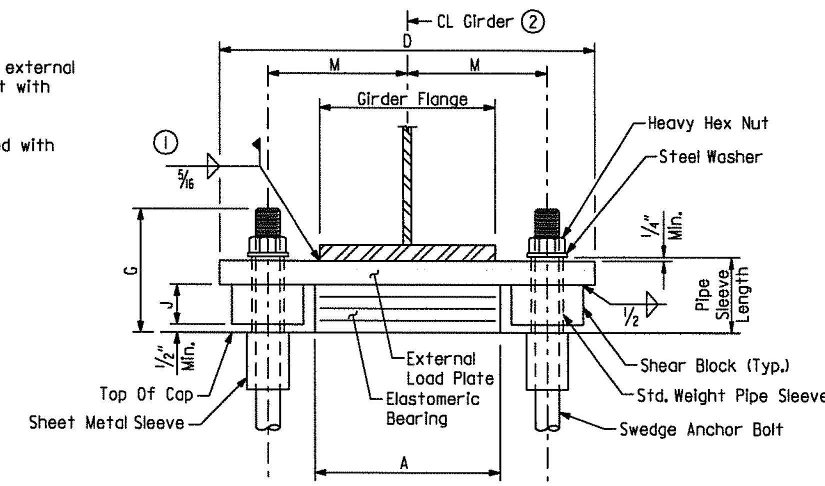
(1) 07259 ELASTOMERIC BEARINGS 53008



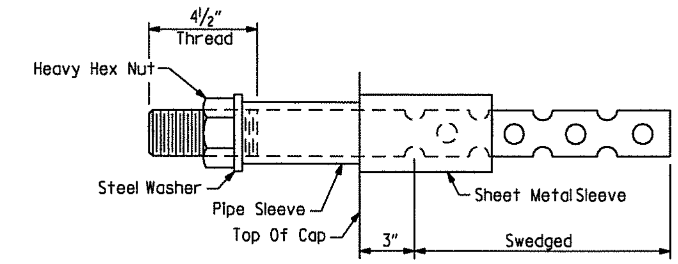
FRONT VIEW - AT BENT NOS. 1 & 4

(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

(2) Centerline elastomeric pad shall be aligned with centerline girder.



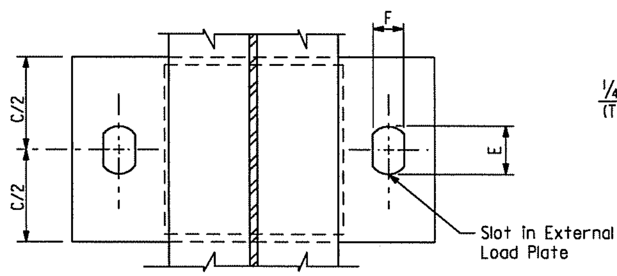
FRONT VIEW - AT BENT NOS. 2 & 3



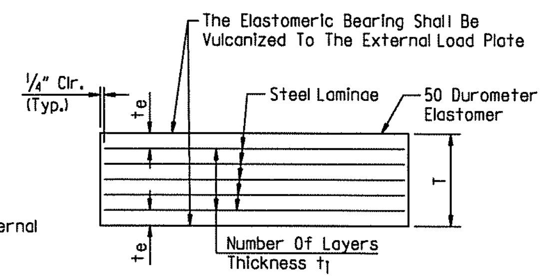
ANCHOR BOLT DETAIL

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

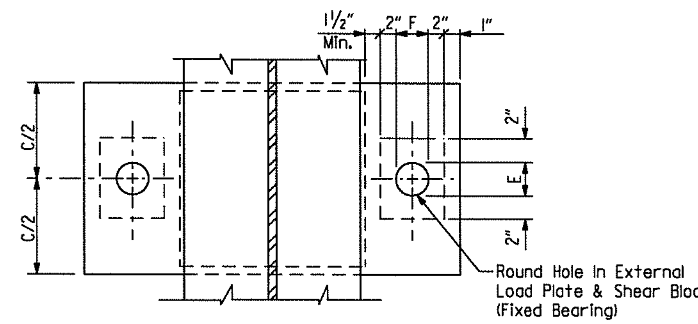


PLAN VIEW - AT BENT NOS. 1 & 4



t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
t_i = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness t_i

ELASTOMERIC BEARING



PLAN VIEW - AT BENT NOS. 2 & 3

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

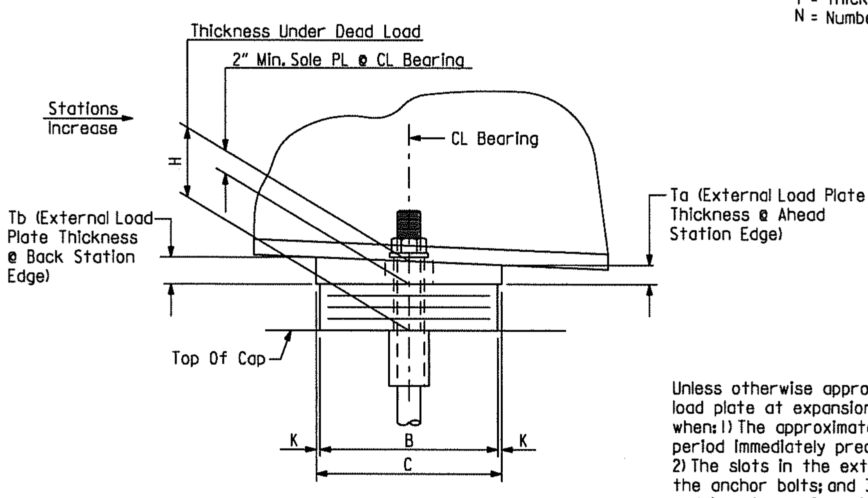
External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M298, Class 50.

External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(B) for painted steel and painted in accordance with Section 807.75. Mask areas of field welding. The color of paint shall be Black and shall match Fed. Std. 595B, Color Chip No. 27038. Painting will not be paid for directly but will be considered subsidiary to "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

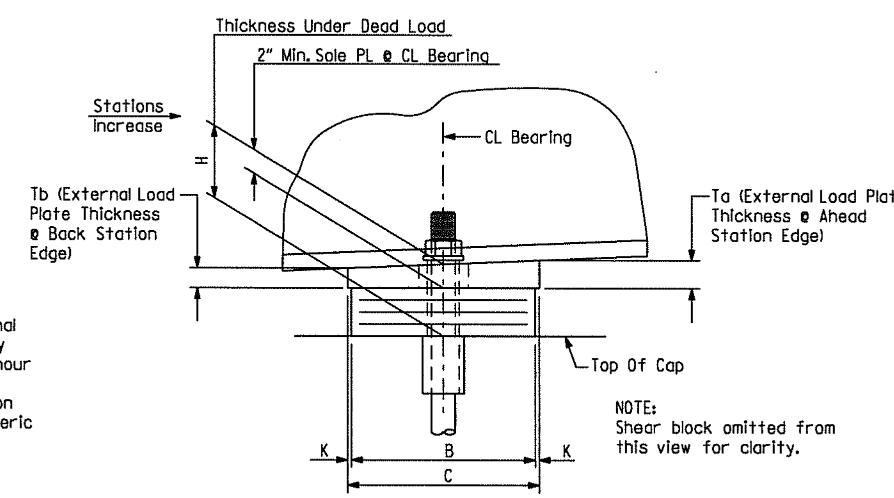
Bearings shall be seated in accordance with Subsection 808.08.



SIDE VIEW - AT BENT NOS. 1 & 4

NOTE:
The direction of the bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in "TABLE OF FABRICATOR VARIABLES".

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



NOTE:
Shear block omitted from this view for clarity.

SIDE VIEW - AT BENT NOS. 2 & 3

TABLE OF FABRICATOR VARIABLES

Bridge No.	Location: Bent No(s).	Location: Girder No.	Bearing Type	No. Of Bearings Each Bent	* Maximum Design Load (Kips)	G	H	Elastomeric Pad: A	B	N	t_i	t_e	No. & Thickness Of Steel Laminate	T	External Load Plate: C	D	E	F	J	K	M	T_a	T_b	Anchor Bolt: Anchor Bolt (Dia. x L)	Anchor Bolt Grade	Pipe Sleeve Size (Dia. x L)	Sheet Metal Sleeve Size (Dia. x L)	Steel Washer Size (O.D.)
07259	1	All	Exp.	5	148	9 3/16"	6 3/16"	18"	9"	6	1/2"	1/4"	7 @ 12 Ga.	4 1/4"	10"	29"	5 1/4"	2 5/8"	-	1/2"	11 1/2"	2.17"	1.83"	1 3/4" x 29"	55	2" x 6 7/16"	4" x 7"	3 3/8"
	2	All	Fix	5	353	7 15/16"	4 15/16"	20"	12"	4	1/2"	1/4"	5 @ 12 Ga.	3"	13"	38 1/4"	2 5/8"	2 5/8"	2 3/8"	1/2"	14 13/16"	2.10"	1.90"	1 3/4" x 28"	55	2" x 5 3/16"	4" x 7"	3 3/8"
	3	All	Fix	5	353	7 15/16"	4 15/16"	20"	12"	4	1/2"	1/4"	5 @ 12 Ga.	3"	13"	38 1/4"	2 5/8"	2 5/8"	2 3/8"	1/2"	14 13/16"	1.97"	2.03"	1 3/4" x 28"	55	2" x 5 3/16"	4" x 7"	3 3/8"
	4	All	Exp.	5	148	9 3/16"	6 3/16"	18"	9"	6	1/2"	1/4"	7 @ 12 Ga.	4 1/4"	10"	29"	5 1/4"	2 5/8"	-	1/2"	11 1/2"	1.89"	2.11"	1 3/4" x 29"	55	2" x 6 7/16"	4" x 7"	3 3/8"

* Maximum Design Load = Service I Limit State

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 SETH R. YANCEY

8-21-13

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

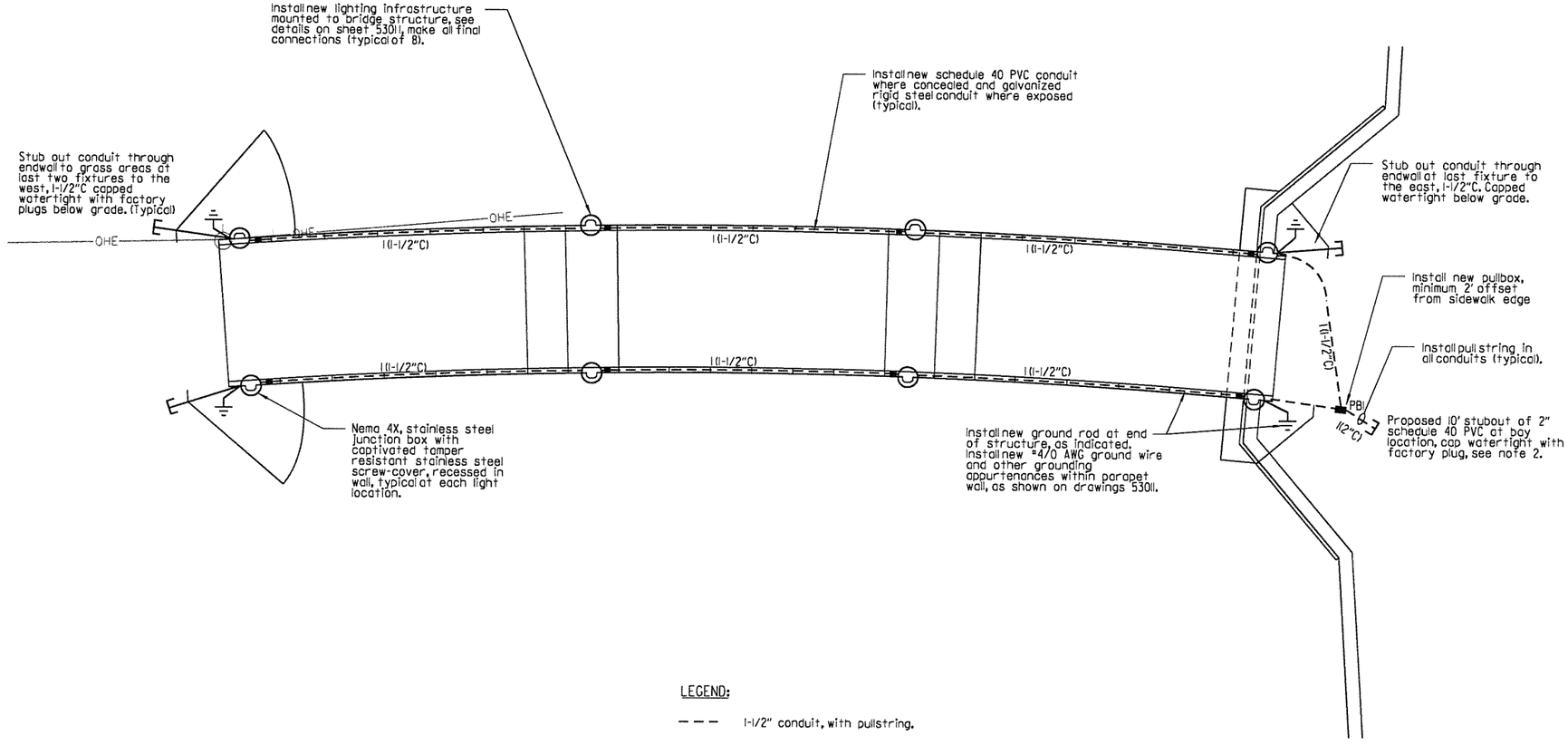
LITTLE ROCK, ARK.

DRAWN BY: PCC DATE: MAR. 2012 FILENAME: B080395x3_El.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2012
BRIDGE NO. 07259 DRAWING NO. 53008

saroberson 8/19/2013 4:06:47 PM
WORKSPACE: AHTD
L:\2009\0901230 - Conway Western Arterial Loop\Bridge\Drawings\Phase I\Lawrence Landing\90% Plans\Lawrence Landing Elastomeric Bearings.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	147	237
(1) 07259		ELEC. DETAILS		53009



LEGEND:

- – – – 1-1/2" conduit, with pullstring.
- ▪ Pull box.
- ◯ Future light pole and fixture assembly by others; new junction boxes, raceway systems and grounding systems by contractor.
- ⏚ 3/4" x 10' copperclad ground rod.

NOTES:

1. See bridge plans for exact pole locations.
2. Contractor shall coordinate with City prior to construction to determine final location of future electrical service connections and which side of bridge to install new pull box for future feeders.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
8/21/13
BRIDGE ENGINEER

SHEET 1 OF 3
ELECTRICAL LIGHTING DETAILS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJW DATE: AUG 2013 FILENAME: B080395x3_ELI.DGN
CHECKED BY: ECF DATE: AUG 2013 SCALE: 1"=20'
DESIGNED BY: ECF DATE: AUG 2013
BRIDGE NO. 07259 DRAWING NO. 53009

K.White 8/21/2013 2:03:31 PM
WORKSPACE: AHTD Bridge
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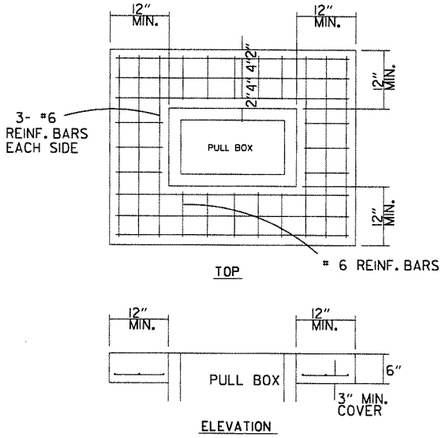
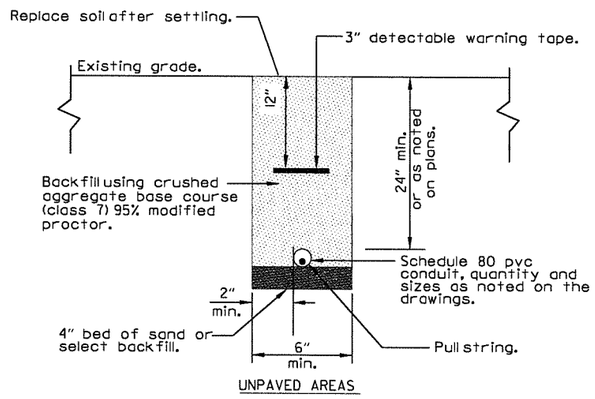
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	148	237
				①	07259	ELEC. DETAILS		53010



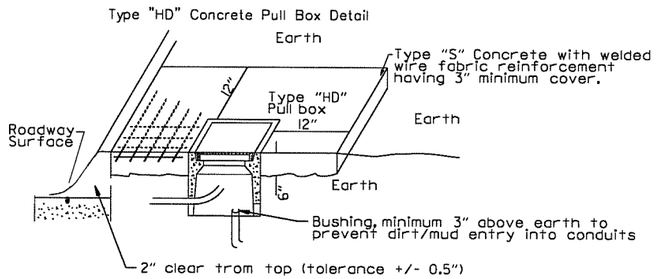
NOTES:

1. All Type 1 and Type 2 HD pull boxes are installed with an apron of concrete 12" (305 mm) wide and 6" (152 mm) in depth. All payment shall be included in the price of the Type HD pull box. Pull box shall be installed flush to surrounding grade unless otherwise instructed by the engineer. The concrete shall be Class "S." Three #6 reinforcing bars in the apron on all sides of the pull box is required in concrete.
2. All reinforcing bars to be grade 60.
3. Secure cover with stainless steel penta-head bolts.
4. Provide McCain Vandal Resistant, hot dipped, galvanized steel pullbox insert or approved equal, minimum 3/16" thick lid.



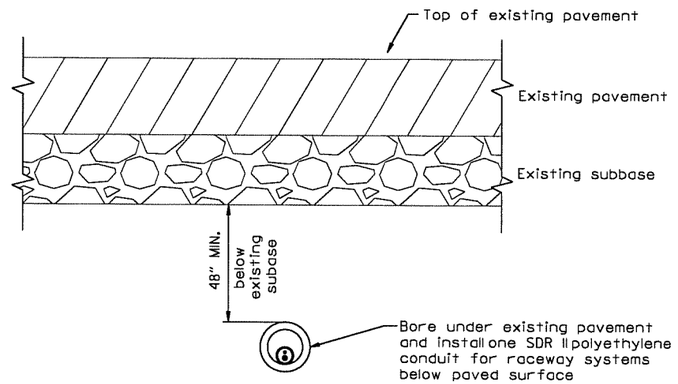
ELECTRICAL DUCT NOTES:

1. Contractor shall stake the duct installation in plan and elevation for new electrical ducts to avoid existing utilities, staking plan shall be approved by owner and engineer prior to work.
2. Contractor shall adjust the depth of the electrical ducts as required to maintain the minimum cover requirement indicated and avoid existing utilities.
3. Similar construction for other duct sizes.
4. Install duct conduit supports at 5'-0" O.C. maximum spacing (typical all ducts).
5. Utilize schedule 80 PVC conduit for non-encased conduit.
6. No PVC shall emerge from the ground or concrete slab or encasement, PVC shall convert to galvanized rigid steel conduit prior to its emergence.
7. Spare galvanized rigid steel conduits shall stub up 3" above finished grade or concrete pad surface and be capped watertight.
8. Install conductors and cables as noted on drawing. Install pullwire in all spare ducts.
9. Minimum cover requirement for duct banks under roads, driveways and parking lots shall be 24".
10. Minimum cover requirements for electrical secondary service duct banks shall be 30".
11. Minimum cover requirements for electrical primary service duct banks shall be 36".
12. Vertical and horizontal distances between conduits shall be 3" minimum for ducts containing circuits over 600 volts.
13. Marker tape shall be a 3" wide, detectable type construction with red background and black lettering, "CAUTION-BURIED ELECTRICAL LINE BELOW".



PULLBOX DETAILS
Scale: NONE

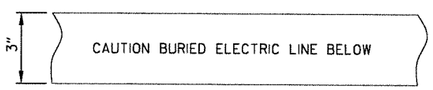
NON-ENCASED ELECTRICAL DUCT DETAILS
Scale: NONE



DIRECTIONAL BORING
Scale: NONE

GENERAL LIGHTING NOTES:

1. The contractor may find it necessary to construct temporary ramps or roadways for construction. These may be done at the approval of the engineer (not a separate pay item). When no longer required, the ramps or roadways are to be removed and the affected area(s) grassed and growth established (not a separate pay item). All traffic control devices required for compliance shall be provided by the contractor at no cost to the owner.
2. It shall be the responsibility of the contractor to protect existing structures such as pipes, inlets, aprons, bridges, etc., from damage which might occur during construction. The contractor shall replace or repair, as directed by the engineer, any structures damaged during the life of the contract. No payment shall be made for replacement or repair of damaged items.
3. Where the contractor encounters paved ditches in routing of branch circuits he must jack under ditch. This is not a separate pay item. Damage to paved ditches (and/or other structures) caused by the contractor during this project shall be repaired (as directed by the engineer) at no cost to the owner.
4. Any areas disturbed during construction shall be restored by the contractor (to include grassing and site grading) as directed by the engineer.
5. Existing underground utility lines are shown on the drawings based upon the best information available to the engineer. The engineer cannot and does not warrant that this information is complete or accurate. The contractor must coordinate directly with the involved utility owners to have underground utility lines field located in advance of construction.



GENERAL NOTES:

1. Power marking tapes shall be detectable type construction with red background and black lettering.
2. Tape shall be detectable, durable, highly visible, resistant to elements, meeting and/or exceeding all industry standards.

UNDERGROUND DETECTABLE WARNING TAPE
Scale: NONE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
8/21/13
BRIDGE ENGINEER

SHEET 2 OF 3
ELECTRICAL LIGHTING DETAILS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJW DATE: AUG 2013 FILENAME: B080395x3_EL2.DGN
CHECKED BY: ECF DATE: AUG 2013 SCALE: AS SHOWN
DESIGNED BY: ECF DATE: AUG 2013
BRIDGE NO. 07259 DRAWING NO. 53010

KJWhite
WORKSPACE: AHTD Bridge
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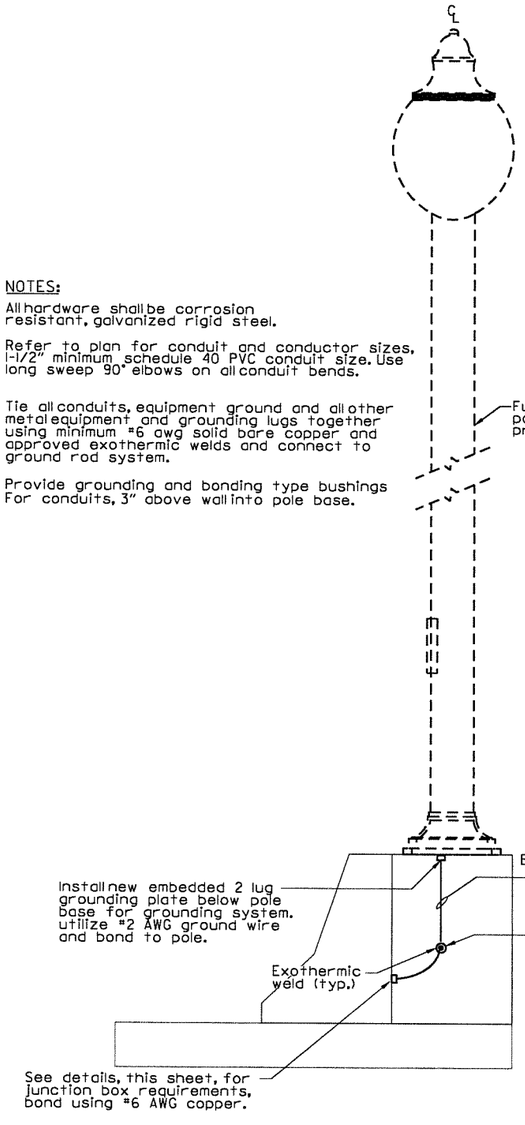
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	149	237
				(1) 07259		ELEC. DETAILS		53011

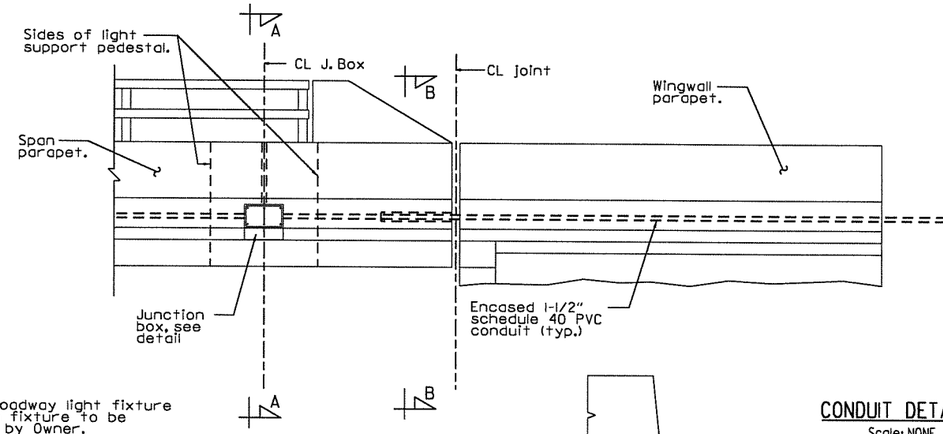
NOTES:

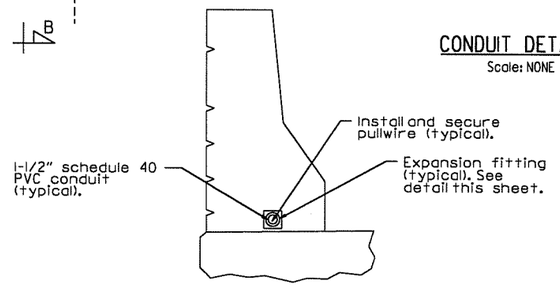
1. All hardware shall be corrosion resistant, galvanized rigid steel.
2. Refer to plan for conduit and conductor sizes, 1-1/2" minimum schedule 40 PVC conduit size. Use long sweep 90° elbows on all conduit bends.
3. Tie all conduits, equipment ground and all other metal equipment and grounding lugs together using minimum #6 awg solid bare copper and approved exothermic welds and connect to ground rod system.
4. Provide grounding and bonding type bushings For conduits, 3" above wall into pole base.



TYPICAL ROADWAY LIGHTING FIXTURE DETAIL

Scale: NONE



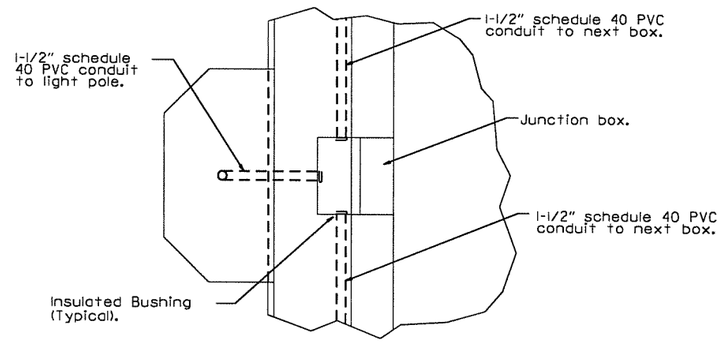


CONDUIT DETAILS

Scale: NONE

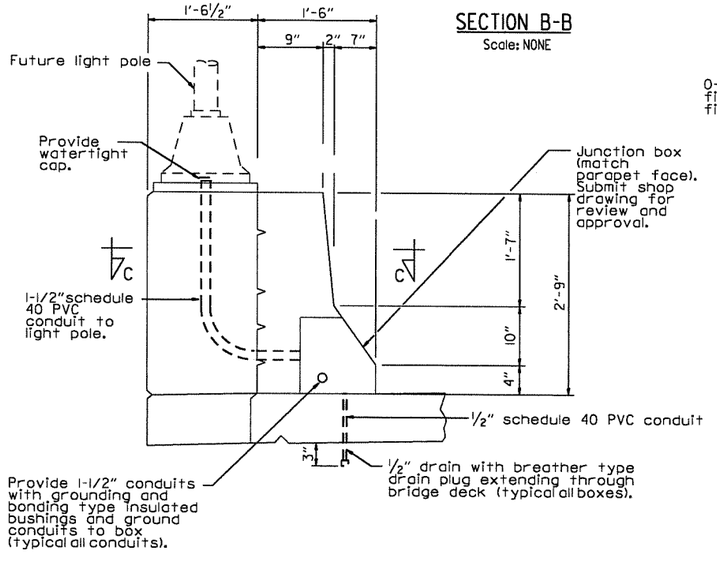
SECTION B-B

Scale: NONE



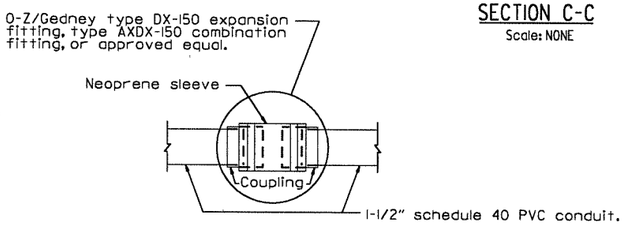
SECTION C-C

Scale: NONE



SECTION A-A

Scale: NONE

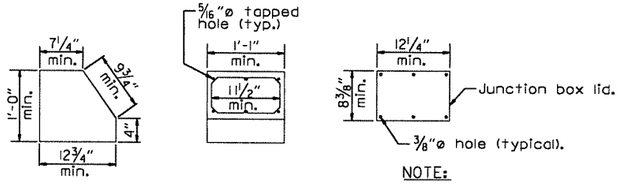


EXPANSION FITTING DETAILS

Scale: NONE

NOTES:

1. The movement range of the expansion fitting shall meet or exceed the movement range of the bridge expansion joints. Bonding jumber not shown for clarity. Minimum four required.
2. Provide standard PVC adapters for connections at each end of expansiong fitting.



JUNCTION BOX DETAILS

Scale: NONE

NOTE:

Junction box and lid material shall be Nema 4X stainless steel. Fasteners shall be ⅝" diameter x ¾" S.S. FH socket screws. The junction boxes shall be adequately anchored to the parapet by means of an approved mechanical device. Junction boxes shall not interfere with slider plates or expansion joints. Provide at least one ½" min. diameter drainage hole near the bottom of the junction box.

BOX NOTES:

1. NEMA 4X stainless steel construction with gasket, recessed in parapet wall.
2. Internal copper ground bar with 6 lugs, secured to box interior.
3. External ground lug, bonded to #4/0 ground wire system using #6 AWG copper minimum.
4. Install pullwire in each conduit, secured to prevent slipping into conduit end.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
8/21/13
BRIDGE ENGINEER

SHEET 3 OF 3
ELECTRICAL LIGHTING DETAILS
LAWRENCE LANDING RD. OVER I-40
FAULKNER COUNTY
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJW DATE: AUG 2013 FILENAME: B080395x3_EL3.DGN
CHECKED BY: ECF DATE: AUG 2013 SCALE: AS SHOWN
DESIGNED BY: ECF DATE: AUG 2013
BRIDGE NO. 07259 DRAWING NO. 53011

K.White 8/21/2013 2:10:18 PM
WORKSPACE: AHTD Bridge
L:\2009\V0907230 - Conway Western Arterial Loop\Bridge\Drawings\Phase 1\Lawrence Landing\90% Plans\Lawrence Landing Elec 3 of 3.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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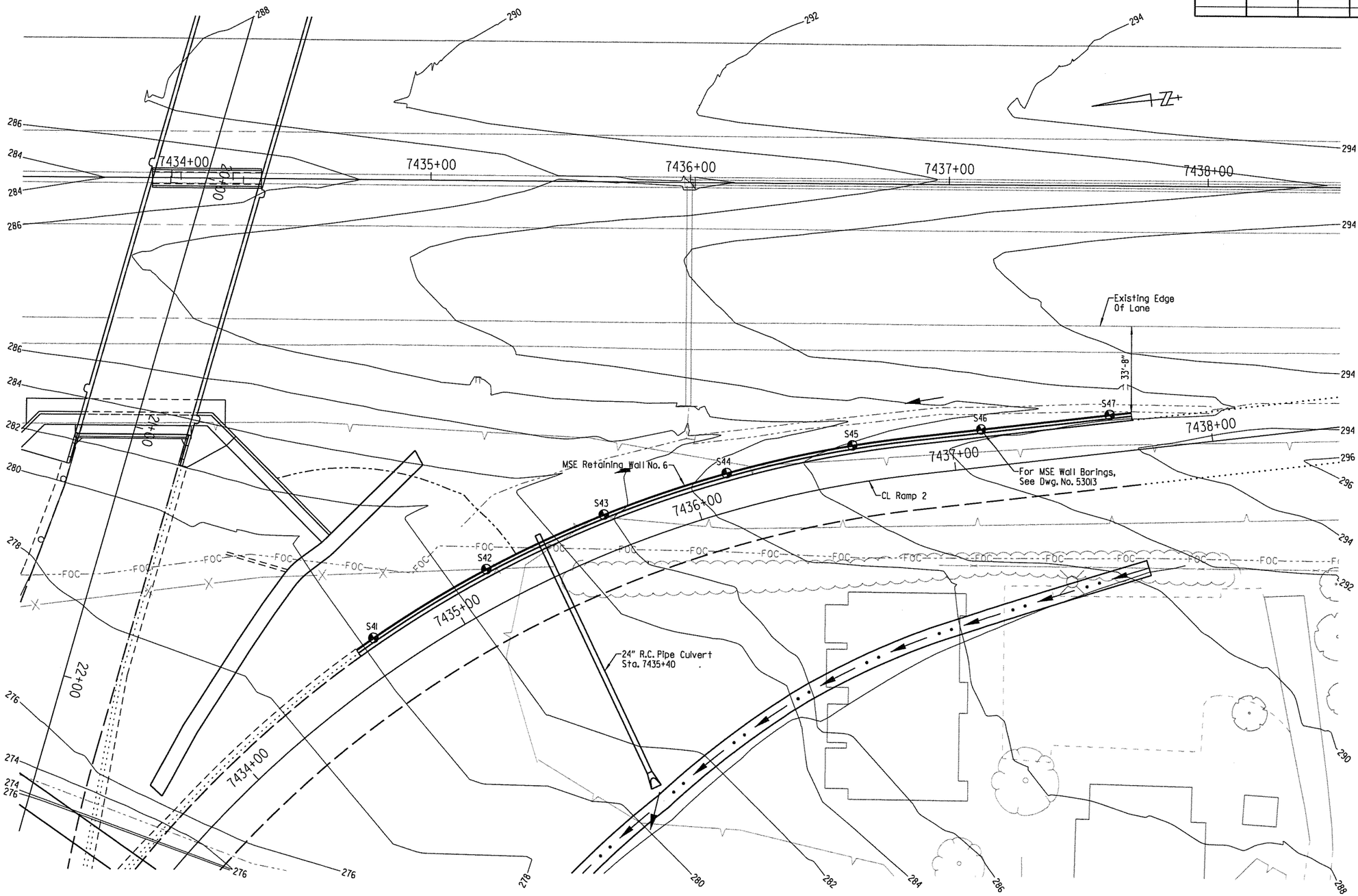

NOTE:
For "ELEVATION - MSE RETAINING WALL NO. 6", see Dwg. No. 53013.

For "GENERAL NOTES", see Dwg. No. 53014.

LEGEND
FOC = Fiber Optic Cable

PLAN - MSE RETAINING WALL NO. 6

STATE OF ARKANSAS
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STEPHEN P. YANCEY
8/21/13
BRIDGE ENGINEER

SHEET 1 OF 3
MSE RETAINING WALL NO. 6
FAULKNER COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011 FILENAME: B080395_RW1.dgn
CHECKED BY: PCC DATE: JUNE 2012 SCALE: 1"=20'
DESIGNED BY: SRY DATE: SEPT. 2011
BRIDGE NO. DRAWING NO. 53012

sarobarson 8/9/2013 4:09:36 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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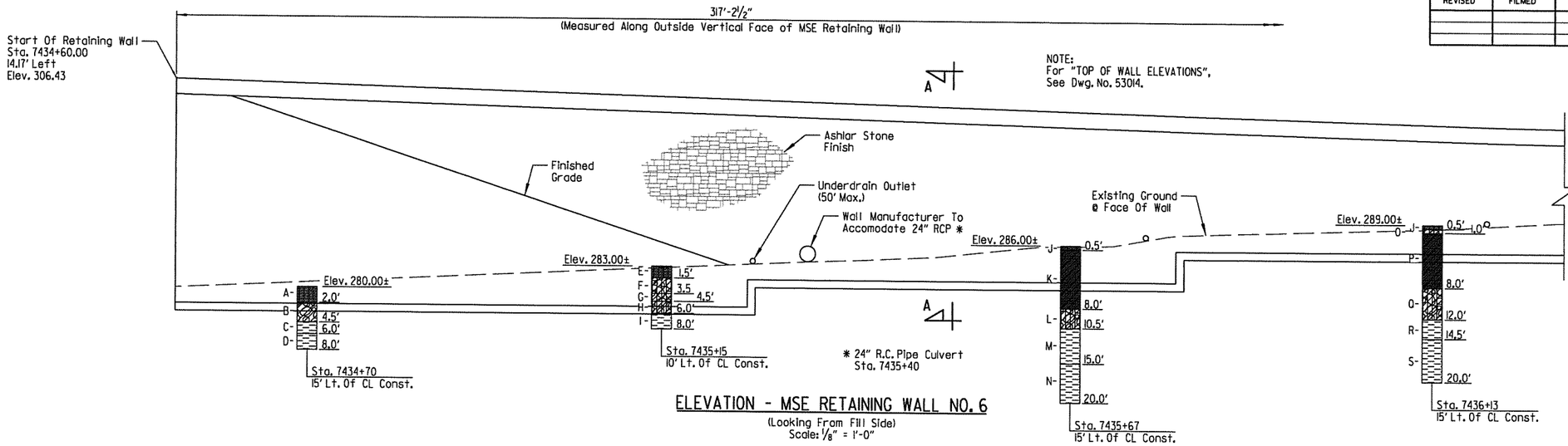


ELEVATION - MSE RETAINING WALL NO. 6

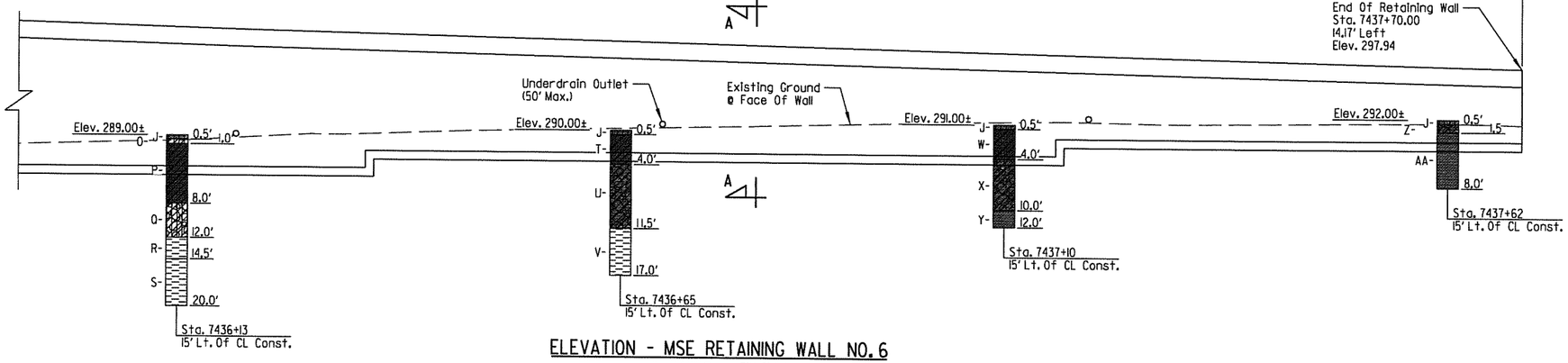
(Looking From Fill Side)
Scale: ⅛" = 1'-0"

NOTES:
For "GENERAL NOTES" & "SECTION A-A", see Dwg. No. 53014.

Station shown is along CL Ramp 2.

Offset dimensions are measured from CL Ramp 2 to outside vertical face of MSE retaining wall.

Underdrain outlet to penetrate front face of MSE retaining wall.



ELEVATION - MSE RETAINING WALL NO. 6

(Looking From Fill Side)
Scale: ⅛" = 1'-0"

BORING LEGEND

A - Loose tan fine sandy silt w/organics and occasional sandstone fragments, damp

B - Very stiff gray, reddish tan and tan clay w/some sandstone fragments, occasional cobbles and ferrous stains - with shale fragments below 3 ft

C - Very soft gray, reddish tan and tan highly weathered shale w/silty clay seams and ferrous concretions and stains

D - Soft gray, tan and maroon weathered shale w/silty clay seams and ferrous stains, apparent dip - 25°N

E - Loose tan fine sandy silt, slightly clayey w/organics and occasional sandstone fragments

F - Firm tan silty clay, sandy w/some sandstone fragments and occasional sandstone cobbles

G - Very stiff reddish tan, gray and tan silty clay w/sandstone fragments, ferrous nodules and stains and occasional cobbles

H - Very stiff red and gray silty clay w/shale fragments and ferrous nodules and stains - with more shale fragments below 5 ft

I - Soft gray, tan and maroon weathered shale w/silty clay seams, occasional slickensides and ferrous stains, apparent dip - 25°N

J - Loose brown fine sandy silt w/organics

K - Soft tan fine sandy clay - firm, gray and tan with clayey fine sand pockets below 2 ft - stiff, tan and gray below 4.5 ft - very stiff to hard with sandstone fragments below 6 ft.

L - Hard gray, tan and reddish tan silty clay, mottled w/shale fragments and occasional sandstone fragments

M - Soft to medium soft tan and dark gray weathered shale w/ferrous stains

N - Medium soft dark gray shale

O - Soft tan clayey silt

P - Soft tan fine sandy clay, silty - very stiff, gray and tan with occasional sandstone fragments below 2 ft. - very stiff to hard below 6 ft.

Q - Stiff gray and tan silty clay w/shale fragments, occasional sandstone fragments and ferrous stains

R - Soft tan and dark gray weathered shale w/ferrous stains

S - Soft to medium soft dark gray shale w/medium bedded sandstone partings and seams - water at 15 ft

T - Stiff tan fine sandy clay w/occasional sandstone fragments - reddish tan and tan below 2 ft.

U - Very stiff gray, reddish tan and tan fine sandy clay w/sandstone fragments and ferrous stains - very stiff to hard below 4.5 ft - with more sandstone fragments below 6 ft

V - Medium soft dark gray shale w/medium bedded sandstone partings and seams - auger refusal at 17 ft

W - Firm tan fine sandy clay - stiff, reddish tan and tan with sandstone fragments below 2 ft.

X - Very stiff reddish tan and tan fine sandy clay w/sandstone fragments and ferrous nodules and stains - very stiff to hard with more sandstone fragments below 6 ft

Y - Medium hard tan weathered fine-grained sandstone, moderately fractured w/thinly bedded fine sandy clay seams

Z - Stiff mottled tan, gray and reddish tan fine sandy clay w/sandstone and shale fragments

AA - Medium hard to hard tan and reddish tan weathered fine-grained sandstone - with occasional soft seams below 3.5 ft - auger refusal at 8 ft

"N" VALUES

Sta. 7435+67, 15' Lt, Of CL Construction	Sta. 7436+13, 15' Lt, Of CL Construction	Sta. 7436+65, 15' Lt, Of CL Construction	Sta. 7437+10, 15' Lt, Of CL Construction	Sta. 7437+62, 15' Lt, Of CL Construction
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2.5-3.5, N=9	2.5-3.5, N=24	2.5-3.5, N=11	2.5-3.5, N=17	1.5-2.0, N=30/0"
4.5-5.5, N=22	4.5-5.5, N=36	4.5-5.5, N=32	4.5-5.5, N=24	3.5-4.0, N=30/0"
6.0-6.5, N=50/6"	6.5-7.0, N=50/5"	6.0-6.5, N=50/4"	6.5-7.5, N=50/10"	5.5-6.0, N=30/0"
9.0-9.5, N=50/5"	9.0-10.0, N=23	9.0-9.5, N=50/5"	9.0-10.0, N=50/9"	7.5-8.0, N=30/0"
13.5-14.0, N=50/2"	13.5-14.0, N=50/3"	13.0-13.5, N=30/0"		
18.0-18.5, N=30/0"	18.5-19.0, N=50/1"	16.5-17.0, N=30/0"		

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14058
SETH B. MANCEL
8/26/13
BRIDGE ENGINEER

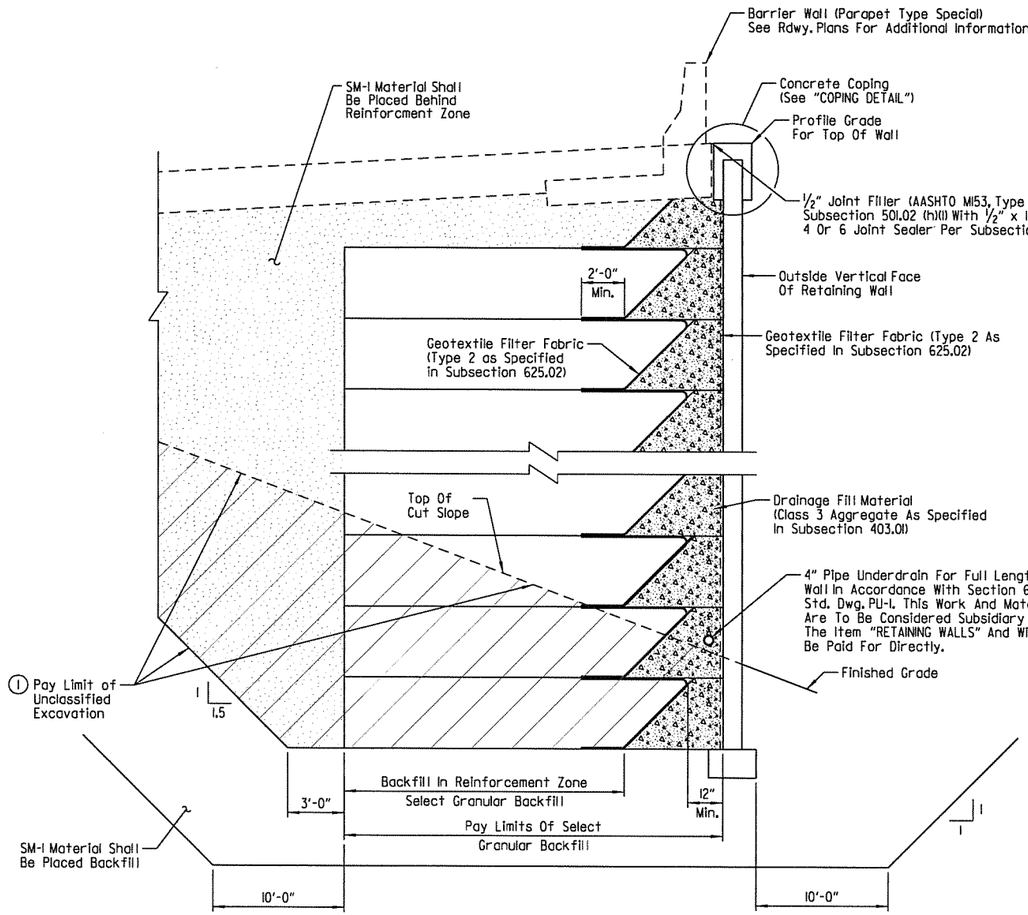
SHEET 2 OF 3
MSE RETAINING WALL NO. 6
FAULKNER COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011 FILENAME: B080395_RW2.dgn.
CHECKED BY: PCC DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: SEPT. 2011
BRIDGE NO. DRAWING NO. 53013

saroberson 8/9/2013 4:09:58 PM
WORKSPACE, AHTD
L:\2009\090723O - Conway Western Arterial Loop\Bridge\Drawings\Phase 1\Ramp 2\90% Plans\Ramp 2 MSE Wall Sheet 2 of 3.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	152	237
①	RET. WALL NO. 6			53014



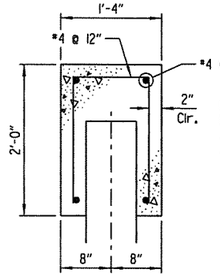
SECTION A-A

Scale: NTS

NOTE:
Undercut at Retaining Wall No. 6 is not anticipated as long as reinforcement zone bears on material designated as weathered shale or weathered sandstone in the "BORING LEGEND".

① Excavation required for the Reinforcment Zone, Leveling Pad and Placement of SM-1 Material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP JOB 080395 "RETAINING WALLS".

NOTE:
All backfill and drainage fill material within the Reinforcement Zone shall be included in the price bid for "SELECT GRANULAR MATERIAL".
Select material required behind the Reinforcment Zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)". See SP JOB 080395 "RETAINING WALLS".

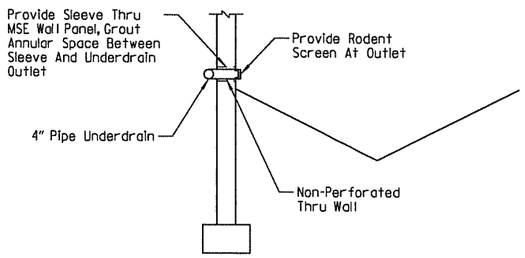


COPING DETAIL

Scale: NTS

NOTE:
Precast concrete coping may be substituted for cast-in-place coping shown.

NOTE:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALLS".



OUTLET DETAIL

Scale: NTS

GENERAL NOTES

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010) with Current Interim Revisions

SEISMIC PERFORMANCE ZONE: 1 S_{DI} = 0.092 SITE CLASS: B

4" pipe underdrain shall maintain a minimum slope of ⅛" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

See SP JOB 080395 "RETAINING WALLS" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP JOB 080395 "RETAINING WALLS".

A Class 3 Textured Coating Finish shall be applied to surfaces as specified in SP JOB 080395 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

TOP OF WALL ELEVATIONS

Station	Top Of Wall Elevation
7434+60	306.43
7434+70	306.18
7434+80	305.91
7434+90	305.62
7435+00	305.31
7435+10	304.99
7435+20	304.67
7435+30	304.36
7435+40	304.04
7435+50	303.72
7435+60	303.41
7435+70	303.09
7435+80	302.77
7435+90	302.46
7436+00	302.14
7436+10	301.83
7436+20	301.52
7436+30	301.22
7436+40	300.92
7436+50	300.63
7436+60	300.35
7436+70	300.08
7436+80	299.82
7436+90	299.57
7437+00	299.33
7437+10	299.10
7437+20	298.88
7437+30	298.67
7437+40	298.47
7437+50	298.28
7437+60	298.11
7437+70	297.94

NOTE:
Stations shown are along CL Ramp 2.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YARNELL
8/27/13
BRIDGE ENGINEER

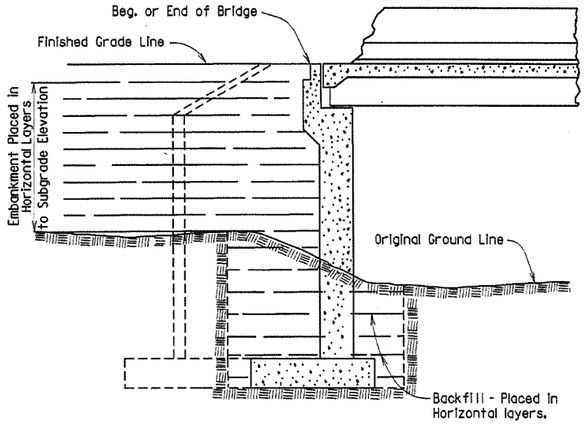
SHEET 3 OF 3
MSE RETAINING WALL NO. 6
FAULKNER COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2012 FILENAME: B080395_RW3.dgn
CHECKED BY: PCC DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2012
BRIDGE NO. DRAWING NO. 53014

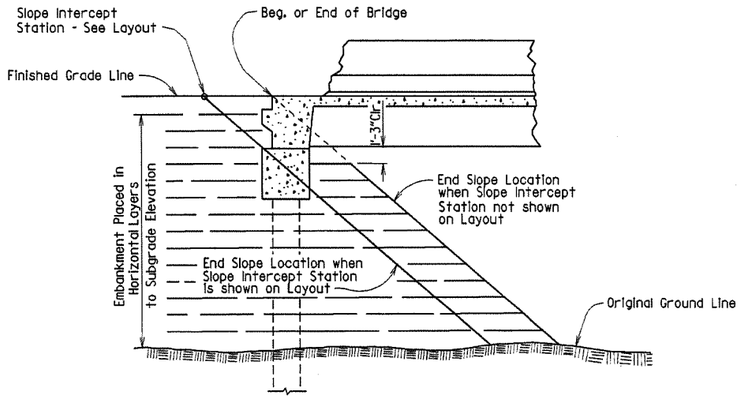
saroberson 8/19/2013 4:10:34 PM
WORKSPACE: AHTD
L:\2009\080730 - Conway Western ArterialLoop\Bridge\Drawings\Phase 1\Ramp 2\90% Plans\Ramp 2 MSE Wall Sheet 3 of 3.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		153	
				JOB NO.				

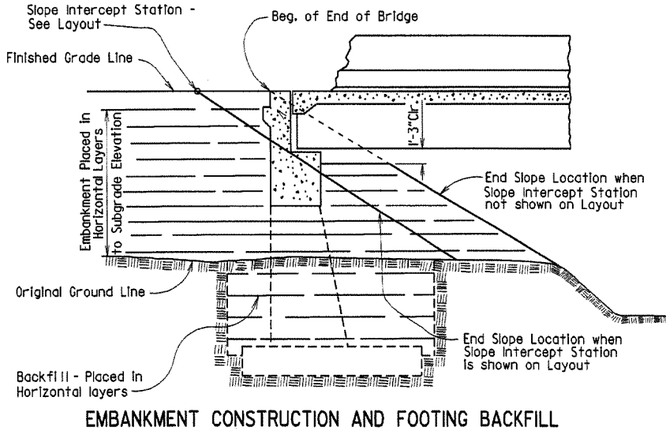
1 EMBANKMENT & BACKFILL 1888A



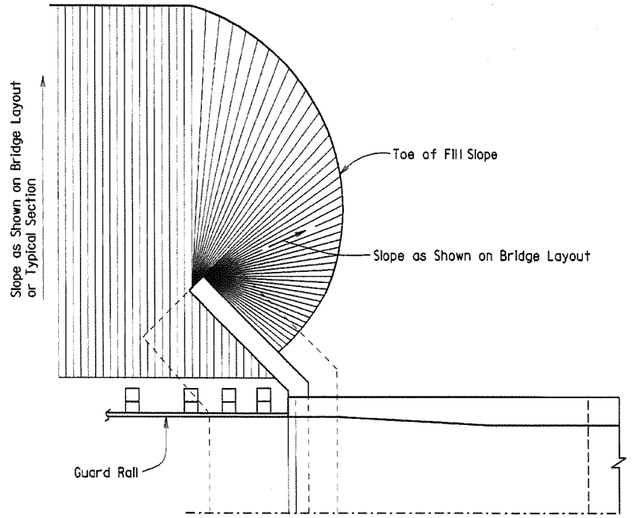
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



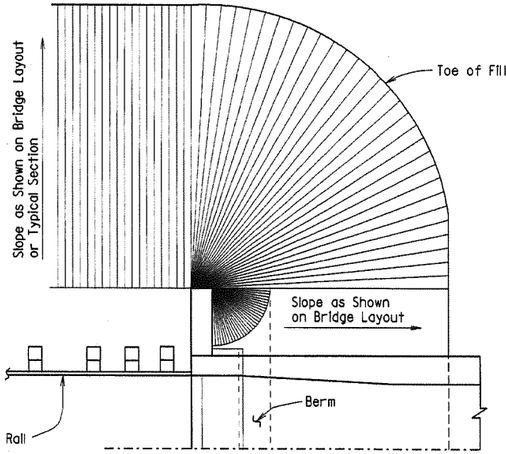
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



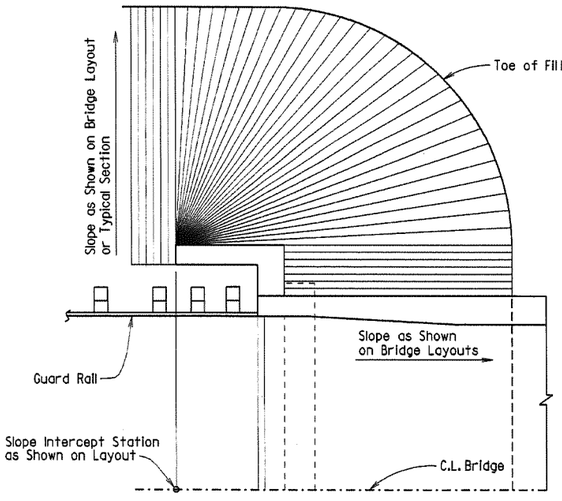
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING

SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 4 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to subsections 210.09, 210.10 and 801.08 of the Specifications for construction requirements.

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4537
CHARLES P. BRAND

BRIDGE ENGINEER

EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

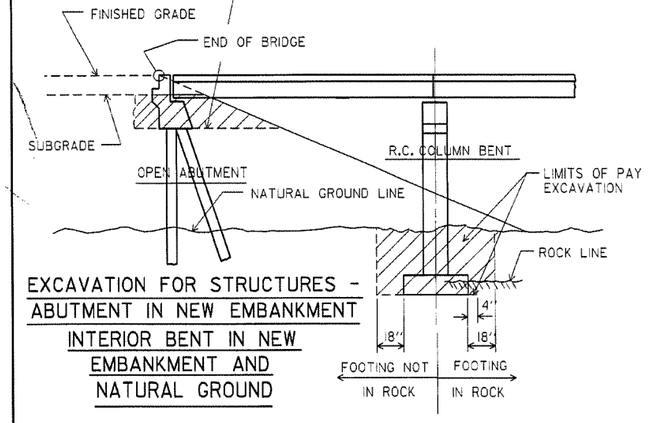
DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI888A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: ——

BRIDGE NO. DRAWING NO. 1888A

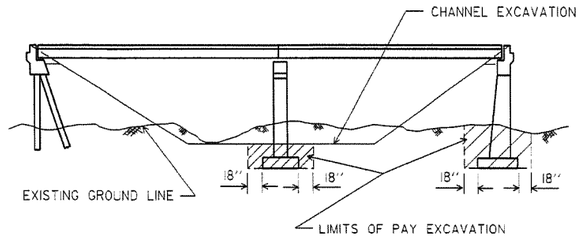
BI888A.STD

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		154	
				JOB NO.				

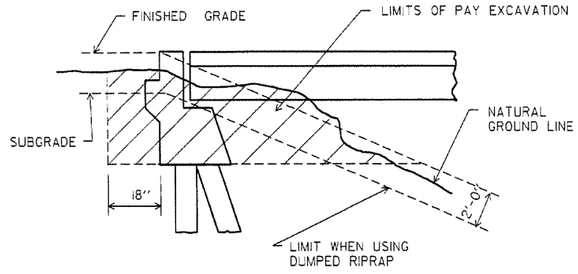
① RIP. & EXCAV. 1891F



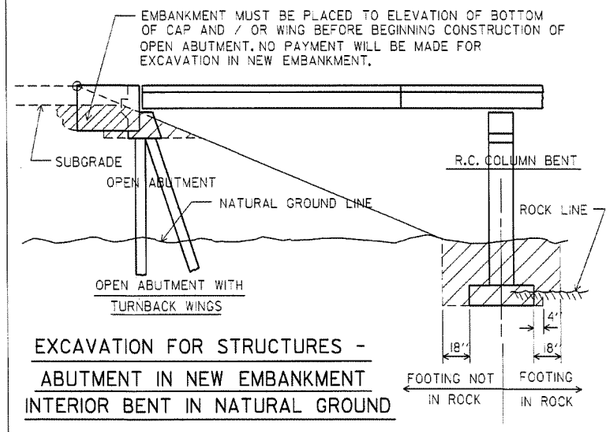
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



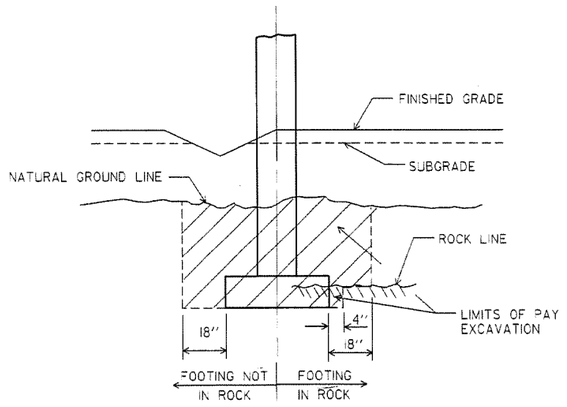
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



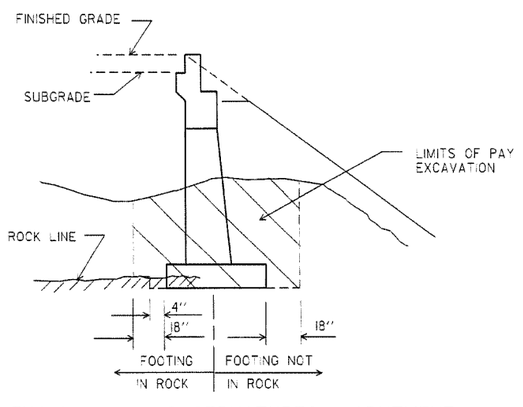
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



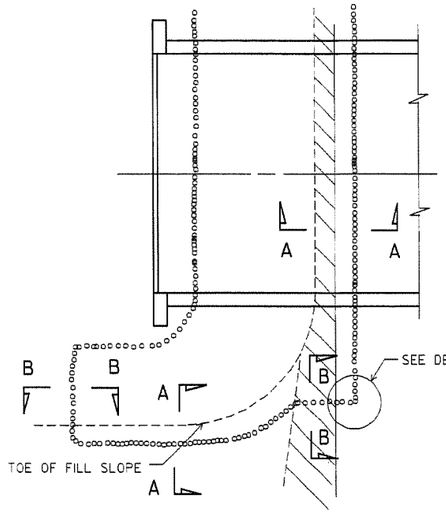
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



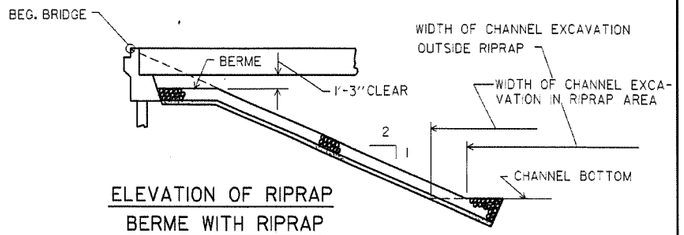
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



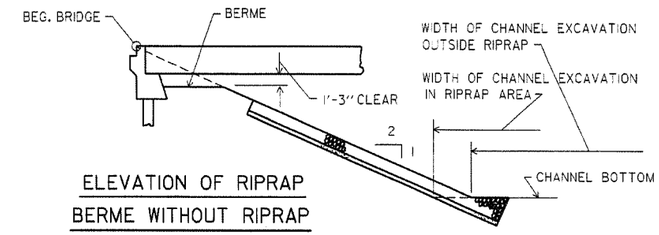
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



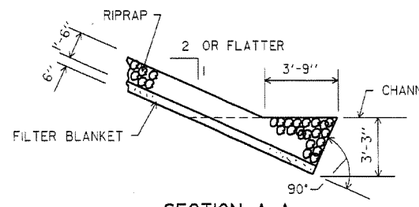
PLAN OF DUMPED RIPRAP



ELEVATION OF RIPRAP BERME WITH RIPRAP



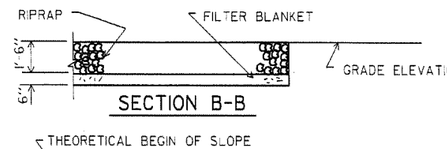
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



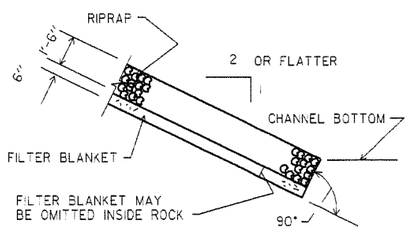
SECTION A-A

(TOE EXCAVATION IN SOIL)

EXCAVATION FOR TOES IS NOT A PAY ITEM



SECTION B-B



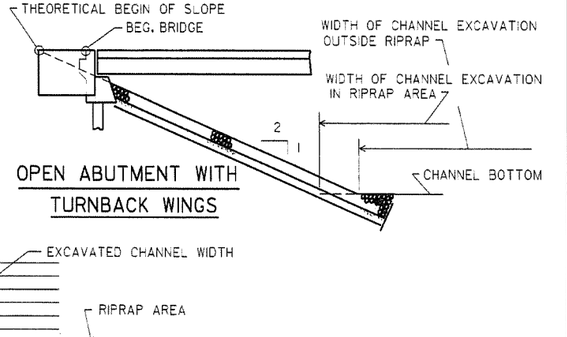
SECTION A-A

(TOE EXCAVATION IN ROCK)

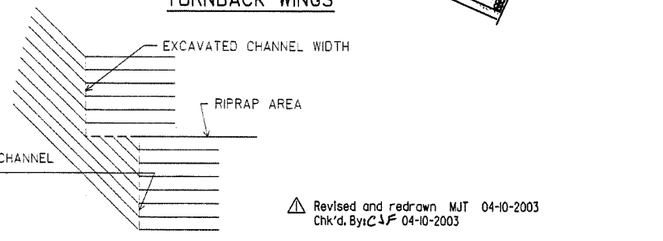
NOTE : USE THIS TYPE OF TOE WHEN ROCK IS ENCOUNTERED WHICH IS IN A STABLE CONDITION.

NOTE : IN LIEU OF AN AGGREGATE FILTER BLANKET, A SYNTHETIC FIBER GEOTEXTILE FABRIC COMPLYING WITH THE REQUIREMENTS OF SUBSECTION 816.02(e) MAY BE USED.

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



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4537
CHARLES P. BRAND

BRIDGE ENGINEER

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

DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

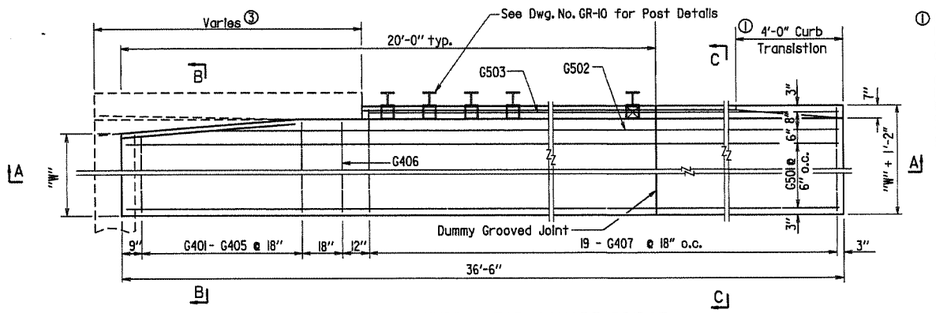
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI891F.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: ——
BRIDGE NO. DRAWING NO. 1891F

BI891F.STD

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-10-2003				6	ARK.		155	
07-14-2010				JOB NO.				

① TYPE C GUTTERS - 2016C

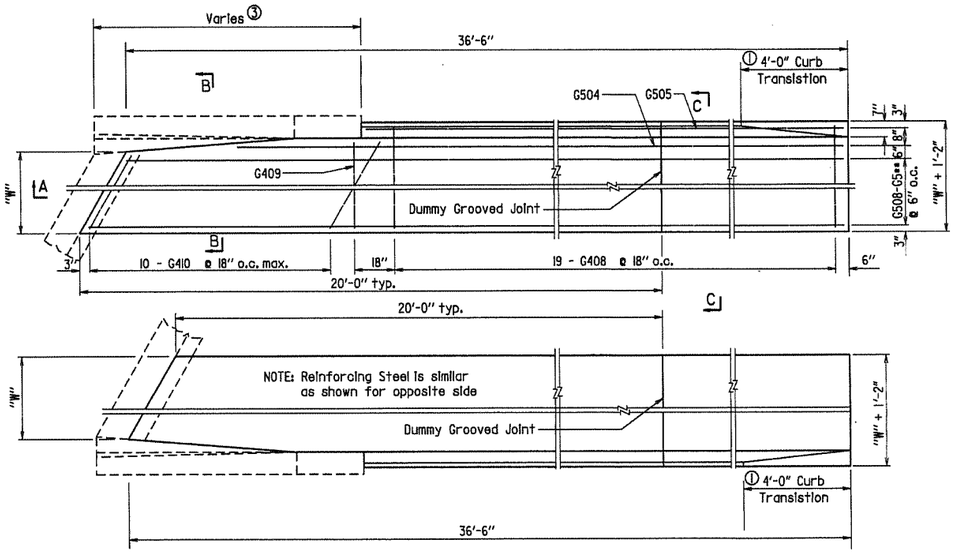


HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

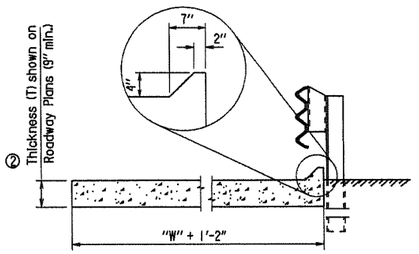
Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.

③ Length Varies See End Bt. Details for Actual Length. Quantities Shown are for 10'-0" Transition Rail.

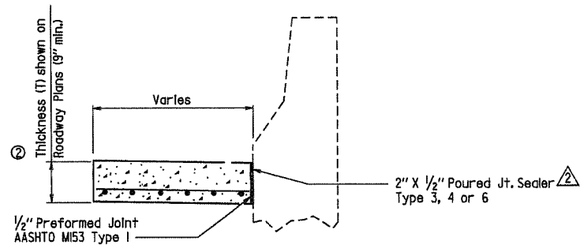


PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

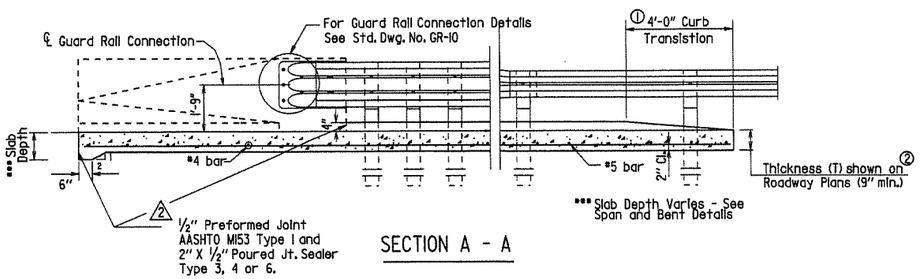
② Thickness shall match Approach Slab Thickness. Thickness shall be 9" if Approach Slab is not used.



SECTION C - C
N.T.S.



SECTION B - B
N.T.S.



SECTION A - A

***BAR LIST FOR ONE TYPE C GUTTER

Mark	No. Req'd. for Width "W" 4'-0"	6'-0"	8'-0"	10'=0"	Length	Square or Skewed
G401-G405	1 each	1 each	1 each	1 each	"W"-3" to "W"+3"	Square
G406	1	1	1	1	"W"+3"	Square
G407	19	19	19	19	"W"+ 10"	Square
G408	19	19	19	19	"W"+ 10"	Skewed
G409	1	1	1	1	"W"+3"	Skewed
G410	10	10	10	10	*	Skewed
G501	8	12	16	20	36'-2"	Square
G502	1	1	1	1	31'-8"	Square
G503	1	1	1	1	27'-2"	Square
G504	1	1	1	1	*	Skewed
G505	1	1	1	1	*	Skewed
G508 - G5__ **	1 each	1 each	1 each	1 each	*	Skewed

*** Special bar list required when skew angle exceeds 35° for W = 10'; 40° for W = 8'; 50° for W = 6'; or 60° for W = 4'.

* Bar Lengths vary with Skew.

** G515 for W = 4'
G519 for W = 6'
G523 for W = 8'
G527 for W = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER ③

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards) T=9"	T=10"	T=11"	T=12"	T=14½"
4	439	5.19	5.75	6.31	6.88	8.25
6	623	7.24	8.02	8.80	9.59	11.52
8	807	9.28	10.29	11.30	12.32	14.79
10	991	11.33	12.56	13.79	15.03	18.06

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

1 Revised and redrawn 4-10-2003. By KDH Ck. By: CJF 4-10-2003

2 Added joint sealer type
07-14-2010 by MJT Checked by: CJF 7-14-2010

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4537
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF STANDARD TYPE C APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

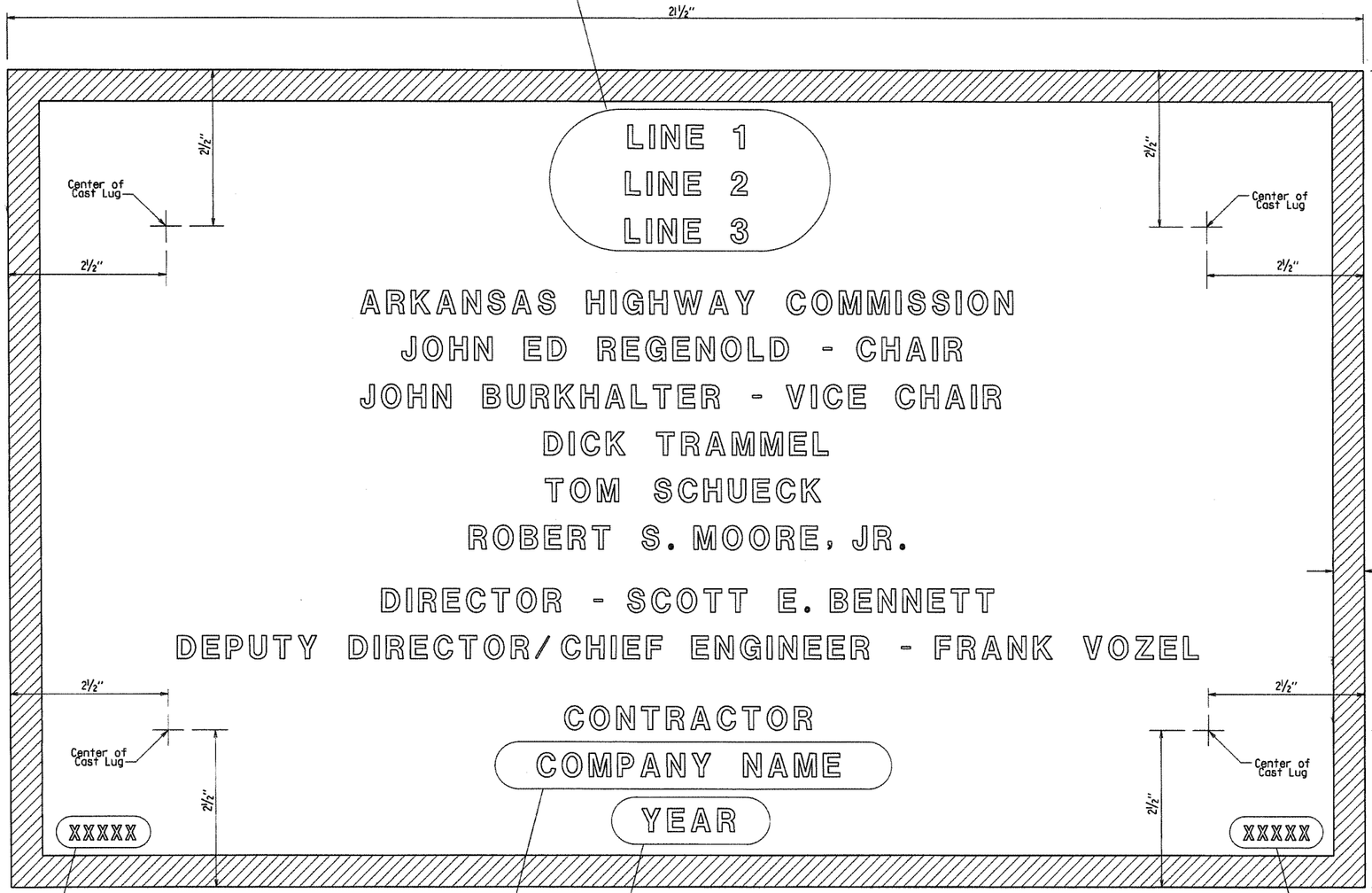
DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016C.STD
CHECKED BY: CJF DATE: 4-10-2003 SCALE: 3/8" = 1'-0"
DESIGNED BY: STD. DATE:

BRIDGE NO. DRAWING NO. 2016C

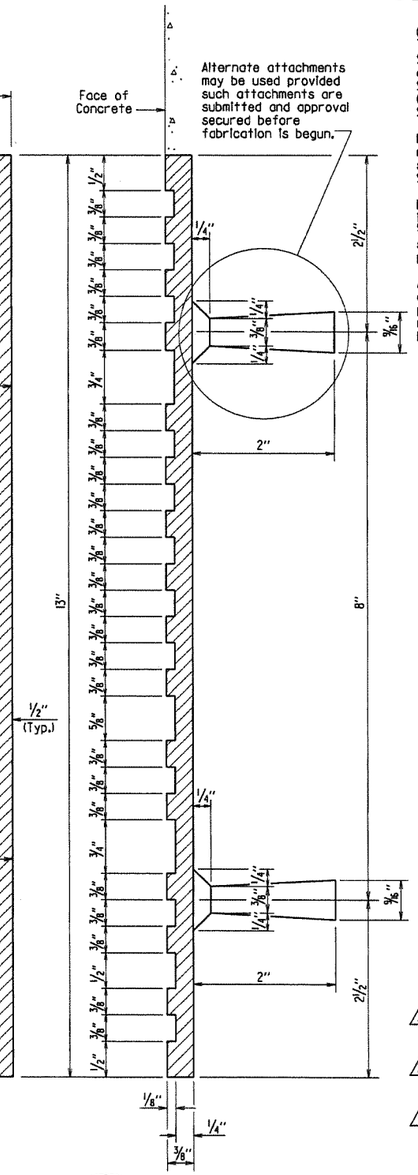
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-8-11				6	ARK.		156	
1-3-13				JOB NO.				
1-10-13						NAME PLATE		2387

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812 of the Standard Specifications.

Body of plate shall be ¼" thick and shall include four tapering cone lugs ⅜" to ⅝"x 2" long. The border and all lettering shall be raised ⅛" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered. The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

3 Revised Commission Names 1-10-13 KDH Checked By: CJF

2 Revised Commission Names 1-3-13 KDH Checked By: CJF

1 Revised and Redrawn 9-8-11 KDH Checked By: CRE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. PUSELLER

BRIDGE ENGINEER

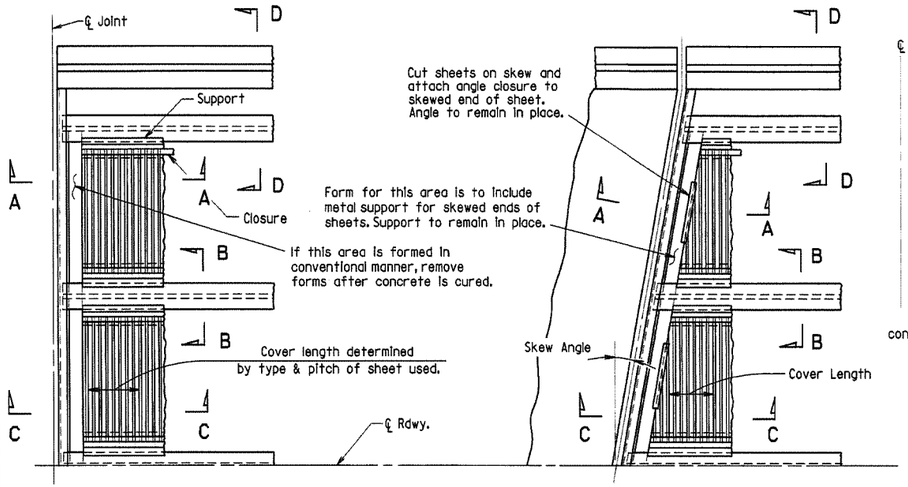
DETAILS OF STANDARD TYPE D
BRIDGE NAME PLATE
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-8-11
CHECKED BY: CRE DATE: 9-8-11
DESIGNED BY: STD. DATE: —
FILENAME: b2387_std.dgn
SCALE: 1'-0" = 1'-0" OR AS NOTED
BRIDGE NO.
DRAWING NO. 2387

PRINT DATE: 1/18/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		157	
04-10-2003						JOB NO.				

1 BR. DECK FORMS 14991

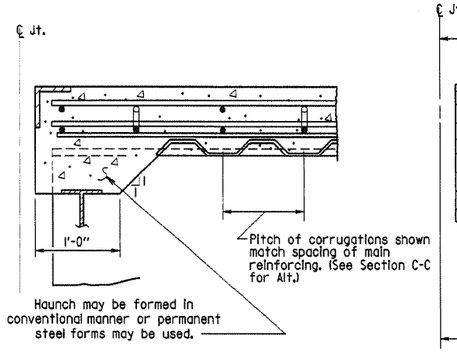


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

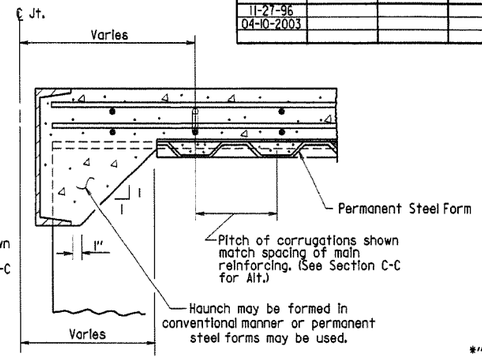
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



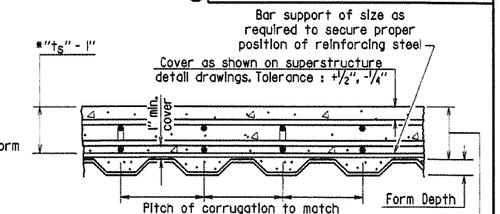
SECTION A-A

N.T.S.
(Angle at end of span)



SECTION A-A

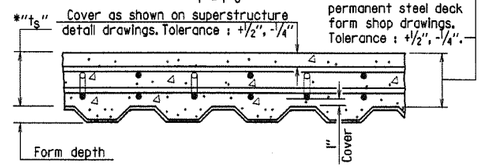
N.T.S.
(Channel at end of span)



SECTION C-C

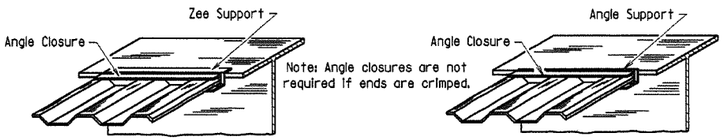
1" = 1'-0"

Top of slab to top of permanent steel deck form - obtain from permanent steel deck form shop drawings. Tolerance : +1/2", -1/4".



SECTION C-C - ALTERNATE

1" = 1'-0"
(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*t_s = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to subsection 802.14(b) of the Standard Specifications. Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Bridge Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Bridge Engineer.

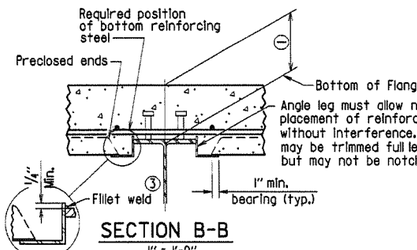
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Bridge Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

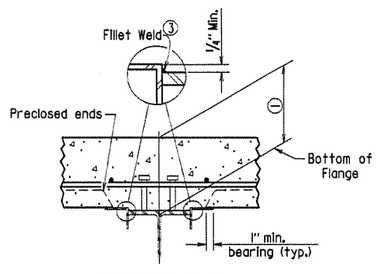
2 Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition), with applicable supplemental specifications and special provisions.



SECTION B-B

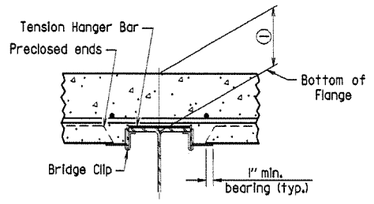
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

3 Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



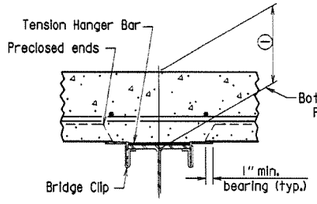
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



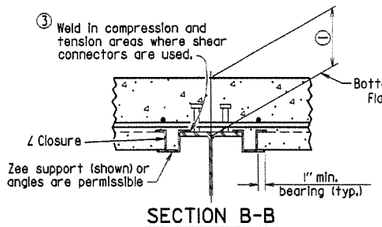
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



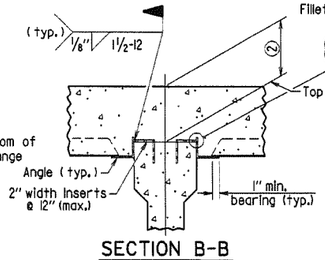
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



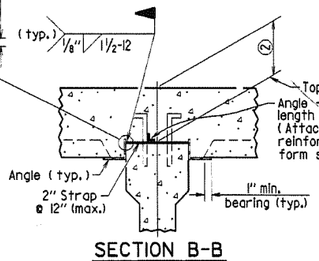
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



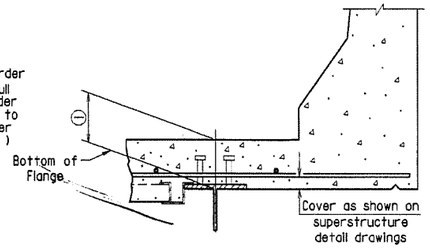
SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Insert cast in girder)



SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Strap)



SECTION D-D

1" = 1'-0"
Note: Only Bottom Reinforcing is shown.

1 Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = $t_s + 1\frac{1}{4}$" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

2 Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

1 Redrawn and revised 11/27/96; MJT

2 Revised for 2003 AHTD Construction Specifications and CPB Seal. MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10-17-96
CHECKED BY: CPB DATE: 10-17-96
DESIGNED BY: STD. DATE: —
SCALE: as noted

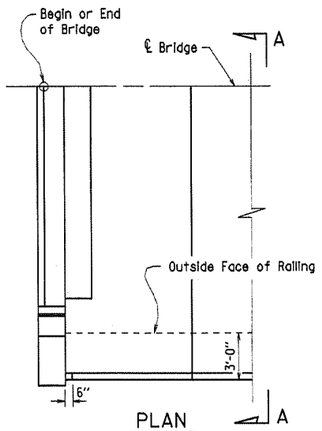
BRIDGE NO. DRAWING NO. 14991

B14991.STD

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
04-10-2003			

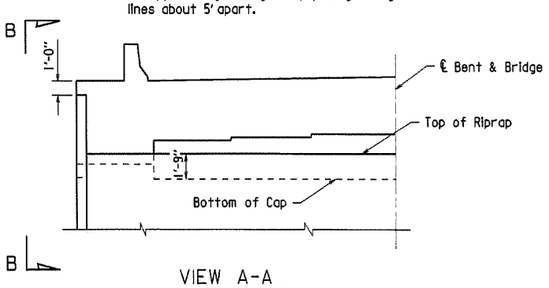
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		158	
JOB NO.				

RIPRAP & PILE - 14995A

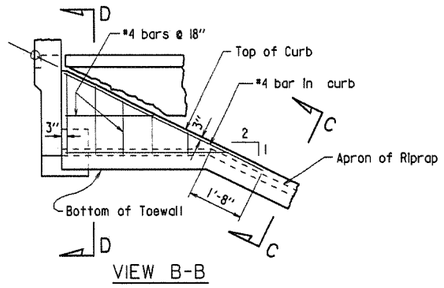


PLAN

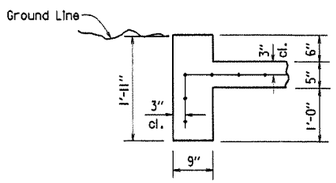
Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



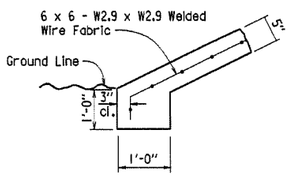
VIEW A-A



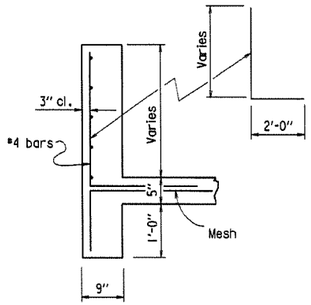
VIEW B-B



SECTION C-C

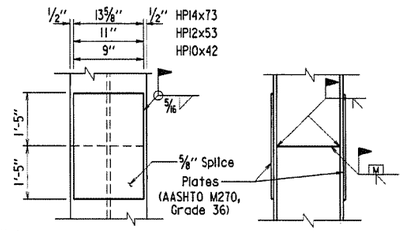


TOE WALL



SECTION D-D

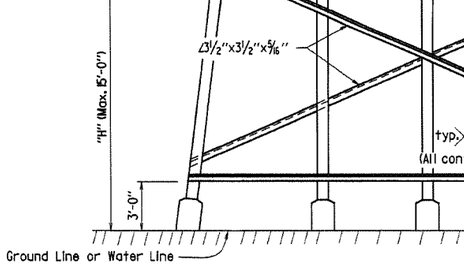
DETAILS OF CONCRETE RIPRAP



Note:
The contractor may for his own convenience and at this own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft.

PILE SPLICE DETAIL

Scale : 1" = 1'-0"



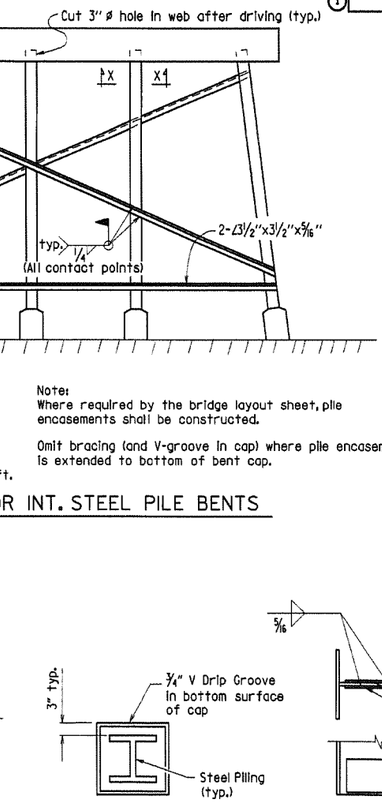
*Extend encasement to bottom of cap when noted on bridge layout.

**Unless noted otherwise on bridge layout.

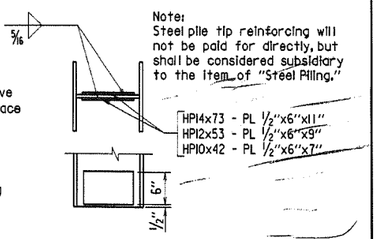
Minimum 28 day compressive strength of concrete, f'c = 3,500 psi.

Note:
If concrete cannot be placed in the dry, seal concrete may be deposited under water. Concrete & welded wire fabric or reinforcing in encasements shall be paid for at the contract unit price per linear foot bid for "Pile Encasement."

PILE ENCASEMENT DETAIL



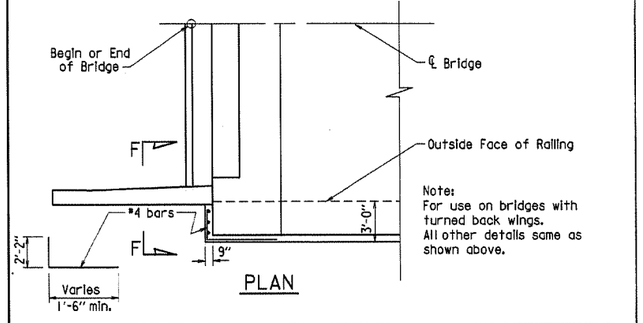
VIEW X-X



Note:
Steel pile tip reinforcing will not be paid for directly, but shall be considered subsidiary to the item of "Steel Piling."

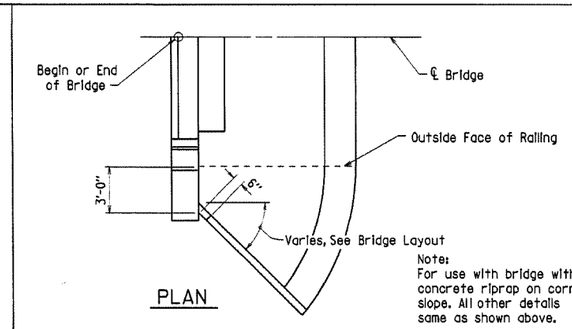
REINFORCING DETAIL FOR STEEL PILE TIP

Scale : 1" = 1'-0"



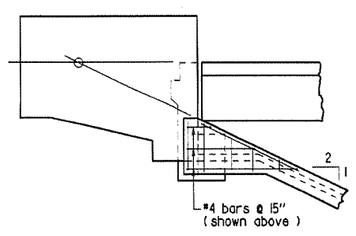
Note:
For use on bridges with turned back wings. All other details same as shown above.

PLAN

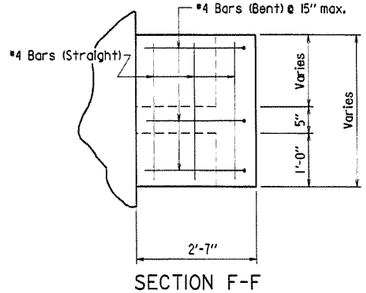


Note:
For use with bridge with concrete riprap on corner slope. All other details same as shown above.

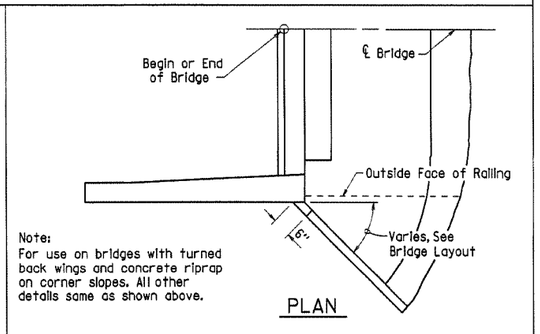
PLAN



ELEVATION

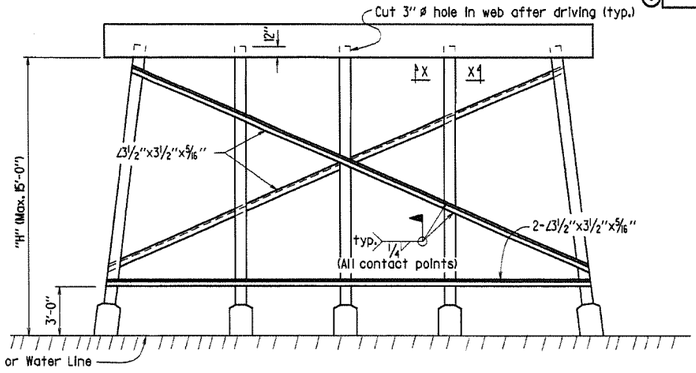


SECTION F-F



Note:
For use on bridges with turned back wings and concrete riprap on corner slopes. All other details same as shown above.

PLAN



Note:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

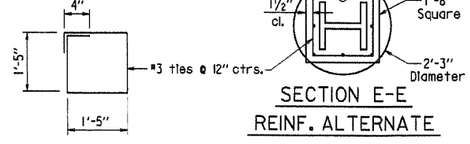
Omit bottom bracing where "H" is less than 10 ft. Omit all bracing where "H" is less than 5 ft.

Note:
Where required by the bridge layout sheet, pile encasements shall be constructed.

Omit bracing (and V-groove in cap) where pile encasement is extended to bottom of bent cap.

TYPICAL BRACING FOR INT. STEEL PILE BENTS

Reinforcing Alternate
#3 Vertical - 8 per encasement
#3 ties @ 12" ctrs.
Yield Strength , fy = 60,000 psi.



SECTION E-E
REINF. ALTERNATE

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING

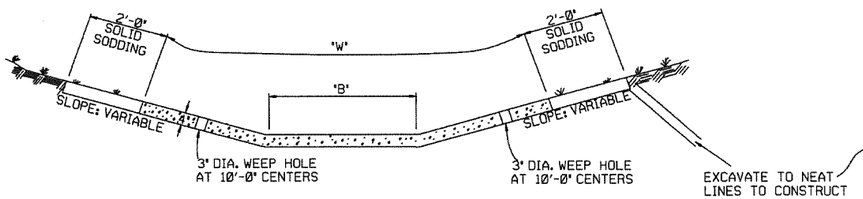
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

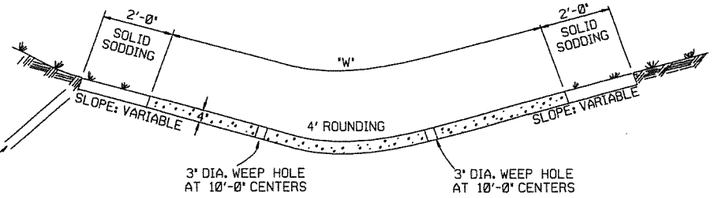
DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI4995A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: No Scale or As Noted
DESIGNED BY: STD. DATE: —
BRIDGE NO. DRAWING NO. 14995A

REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



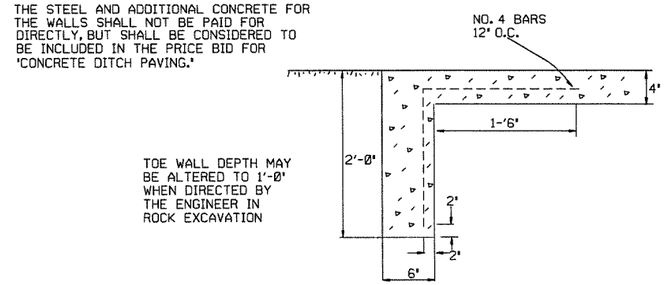
TYPE A

REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



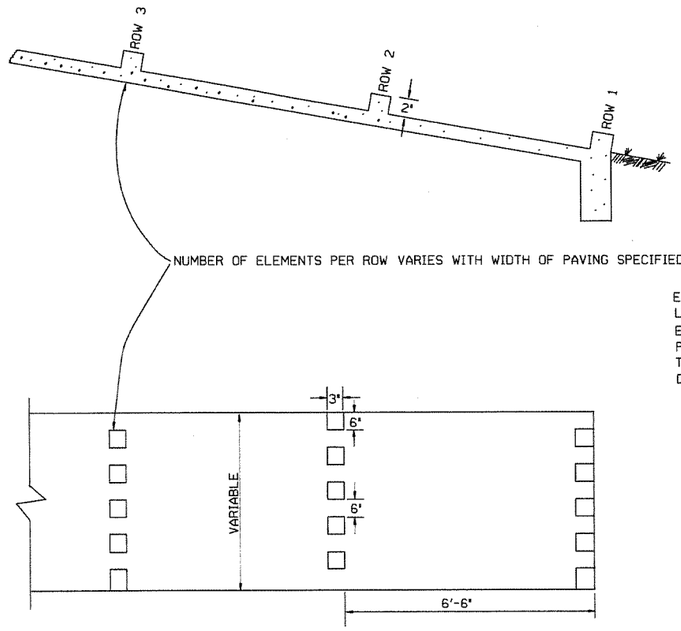
TYPE B

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 DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING



ENERGY DISSIPATORS
(NO SCALE)

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 UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

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.

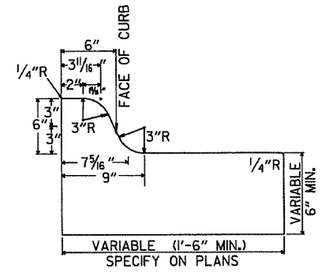
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

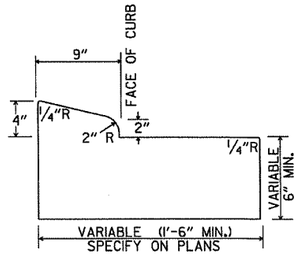
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

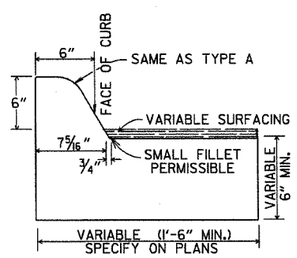
STANDARD DRAWING CDP-1



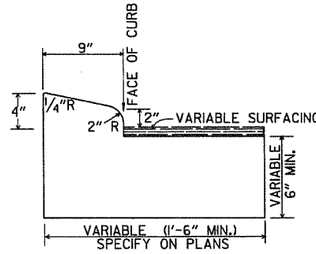
TYPE A



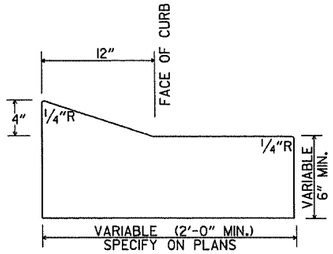
TYPE B-1



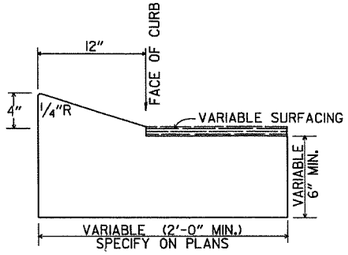
TYPE C



TYPE B-2

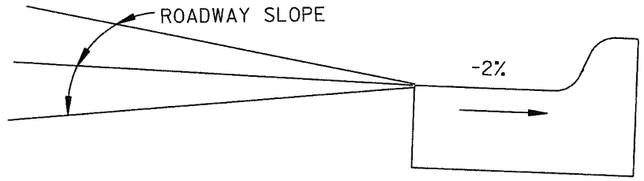


TYPE E-1



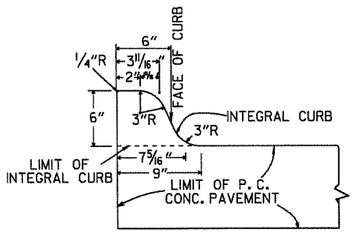
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

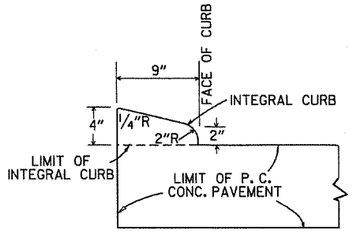


DETAIL OF GUTTER SLOPE

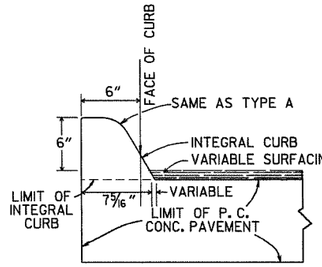
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

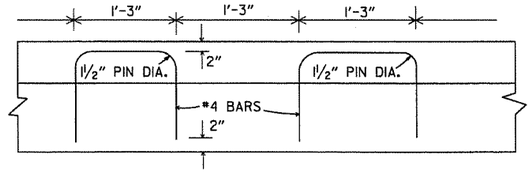


TYPE B

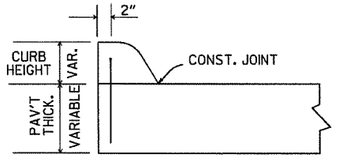


TYPE C

INTEGRAL CURB

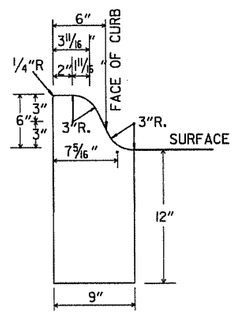


LONGITUDINAL SECTION

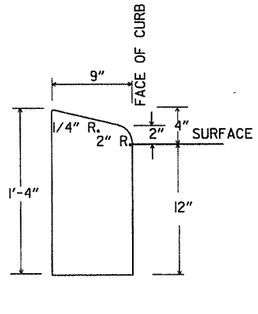


ELEVATION

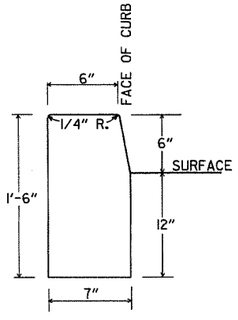
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



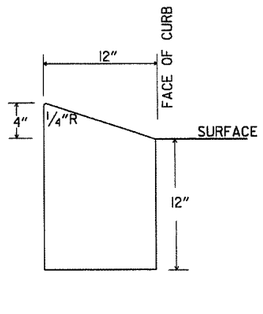
TYPE A



TYPE B

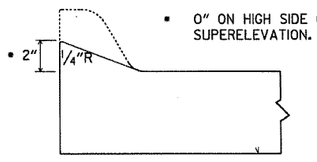


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

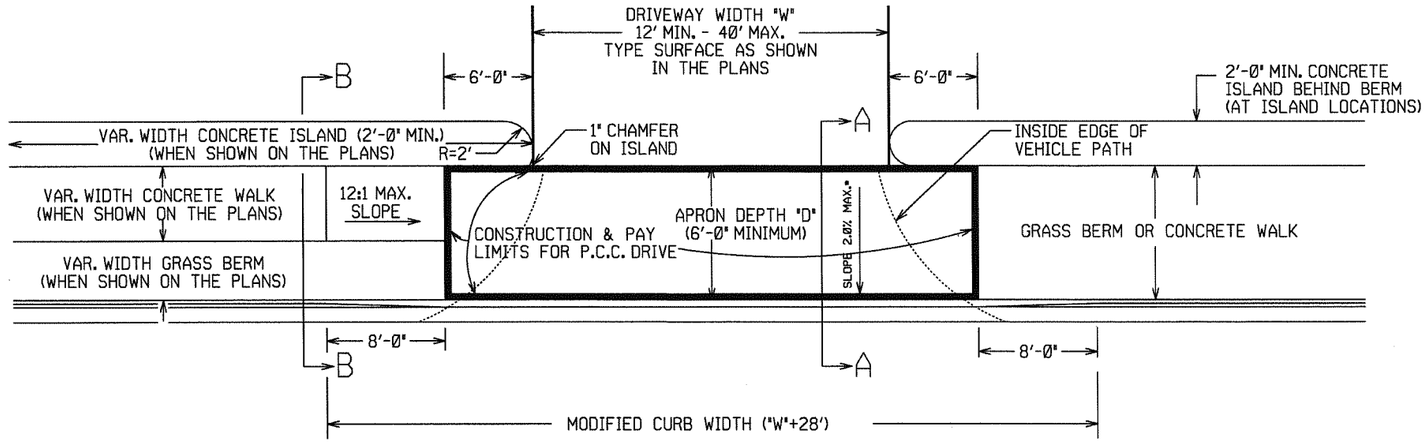
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B I	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

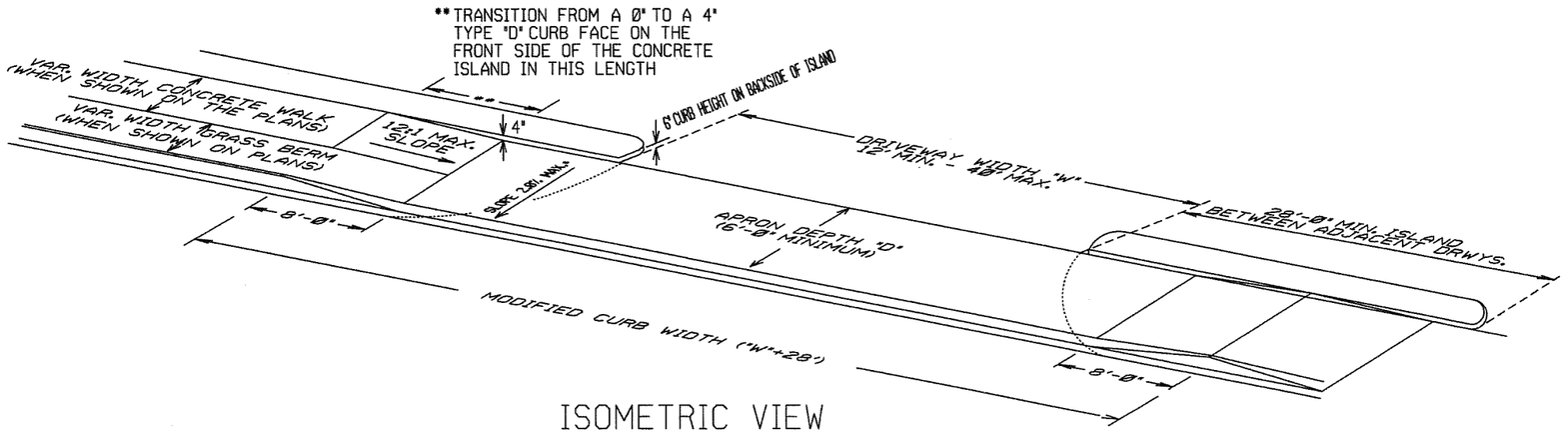
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

STANDARD DRAWING CG-1

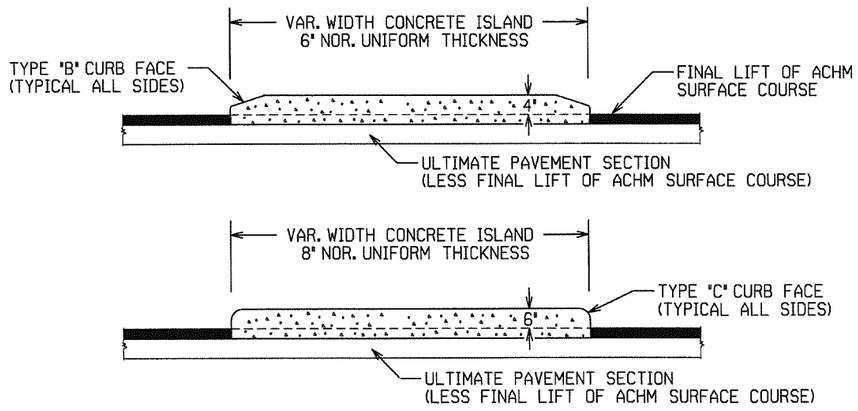


PLAN VIEW

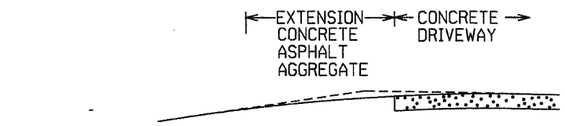


ISOMETRIC VIEW

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



CURBED ISLANDS FOR CHANNELIZATION



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

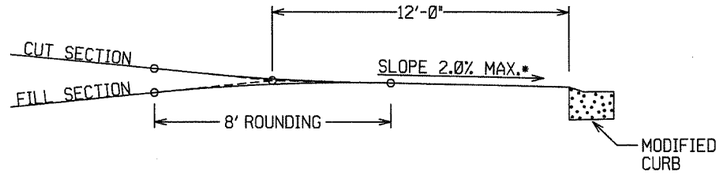
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

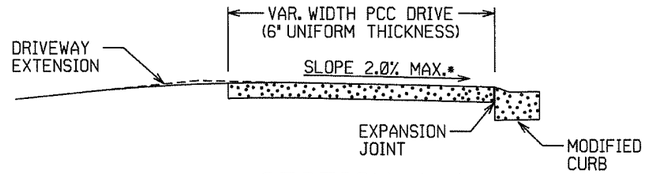
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

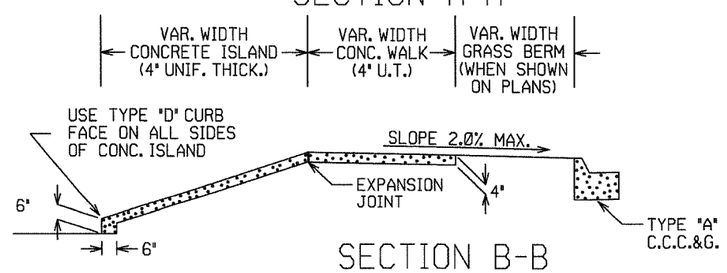


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



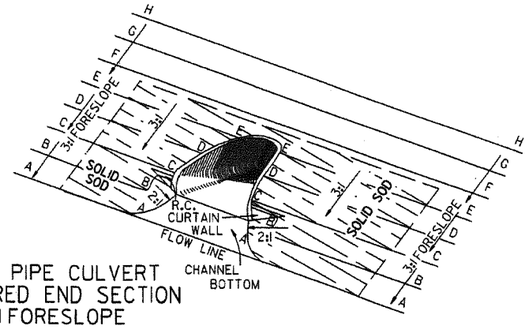
SECTION A-A



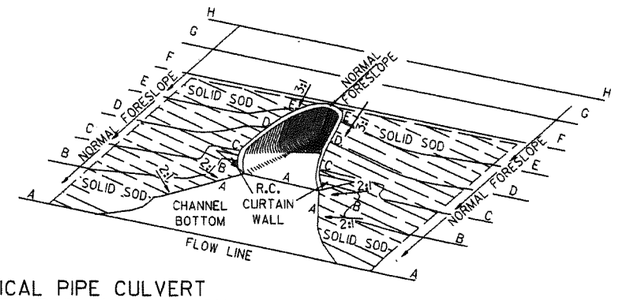
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

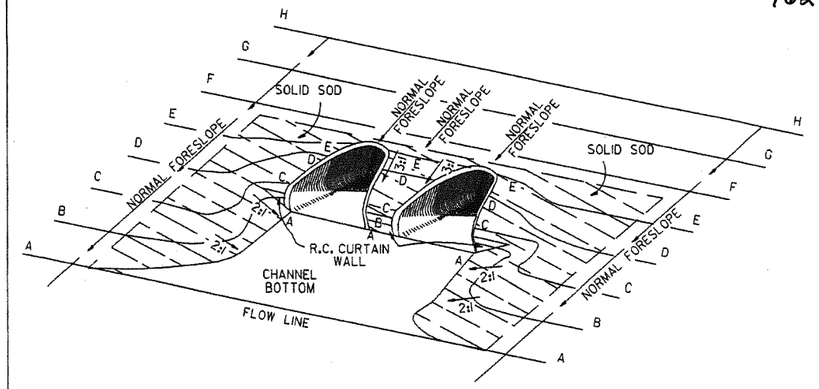
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



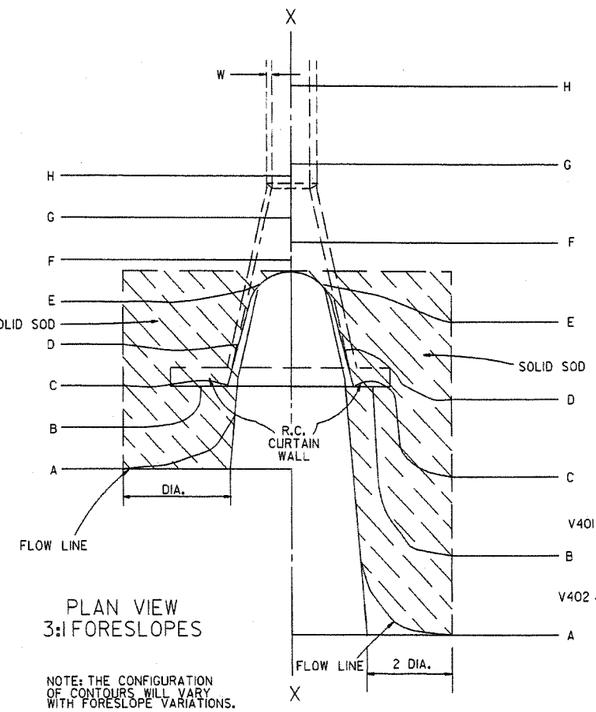
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

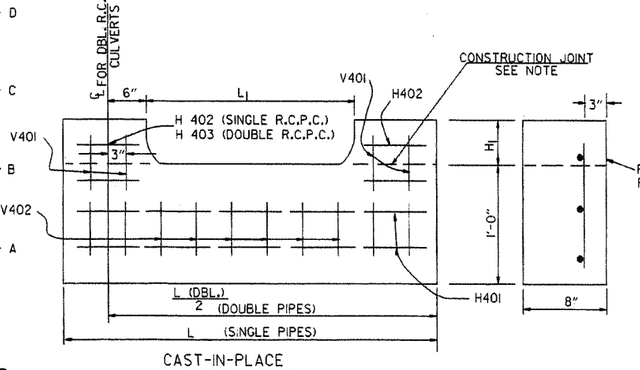
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

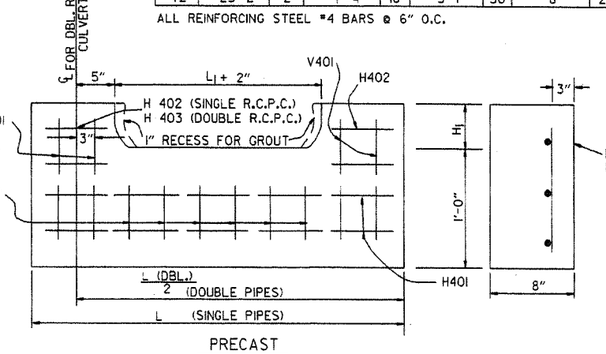
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0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



CAST-IN-PLACE

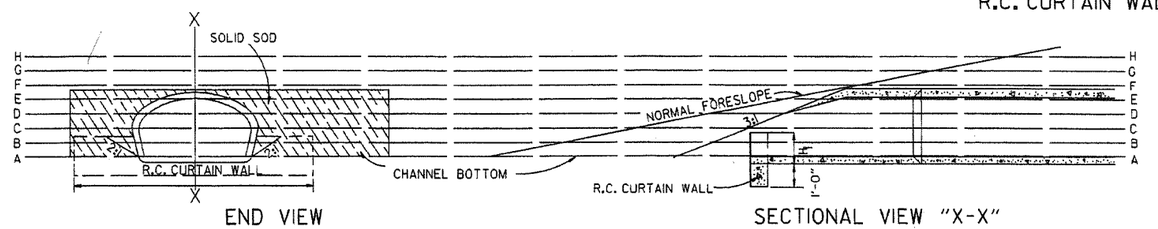
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



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"

REINFORCING STEEL SCHEDULE

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

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

SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	4:1	6:1	DOUBLE R.C.P.C. 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	

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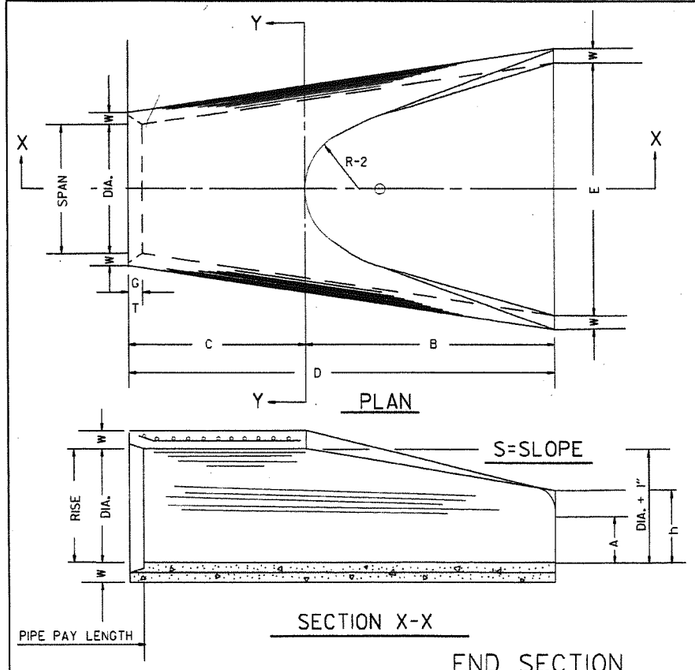
FLARED END SECTION

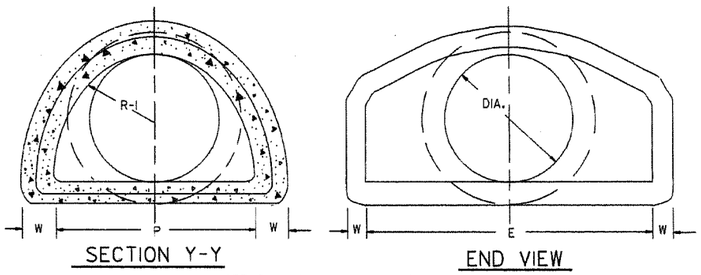
STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	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"	33⅜"	16⅞"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47⅛"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	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"	65⅛"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36⅛"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77⅛"	38⅝"	24"	5"	13250	4'-6"

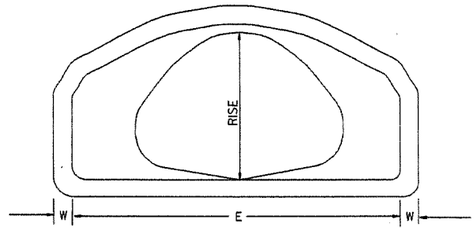


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

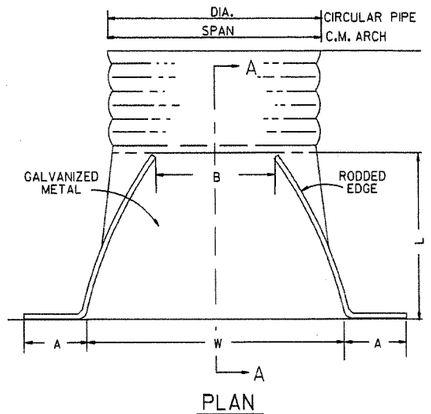
ARCH PIPE

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"	32⅜"	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"	36⅛"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅜"	22"	3½"	2½:1
42	51⅛	51	31⅝	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"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅝"	24"	5"	2¼:1

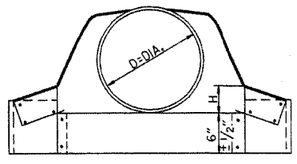
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



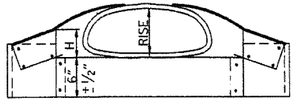
END VIEW
CONCRETE ARCH PIPE



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



CIRCULAR PIPE



C.M. ARCH PIPE

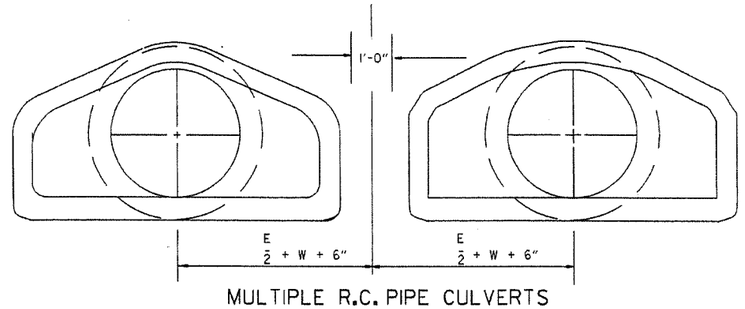
CIRCULAR PIPE

D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	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

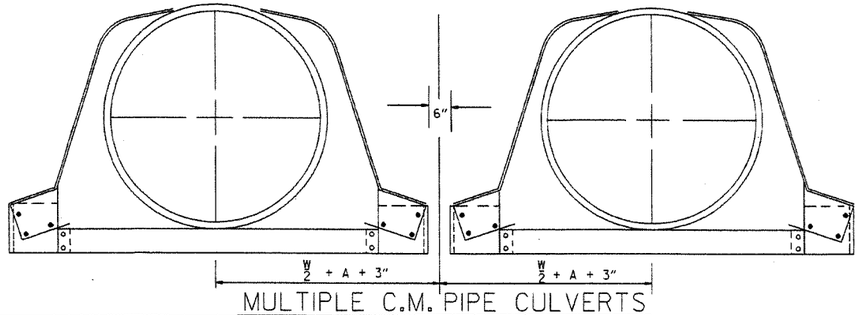
C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A I" ±	B MAX.	H I" ±	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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

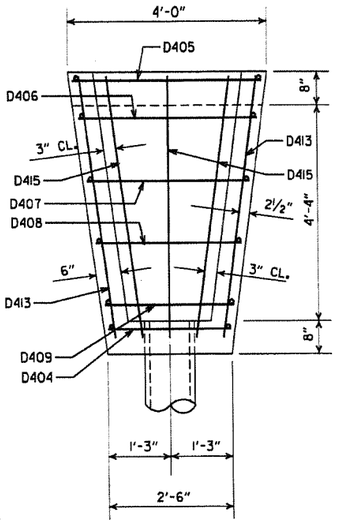
DATE	REVISION	BY MED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74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

ARKANSAS STATE HIGHWAY COMMISION

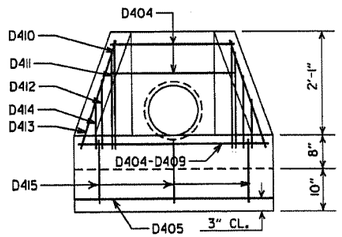
FLARED END SECTION

STANDARD DRAWING FES-2

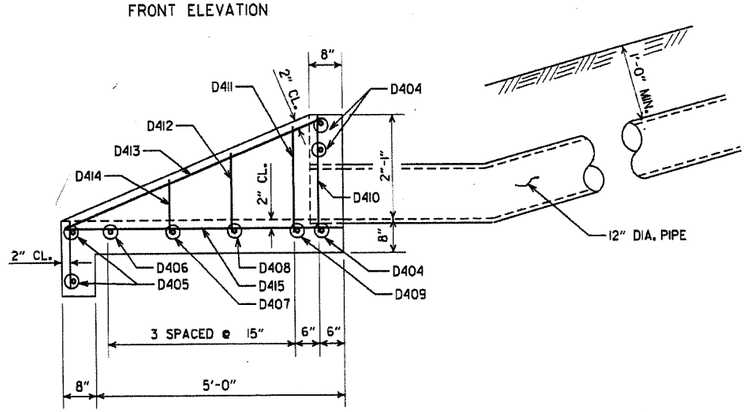
stdfes2.dgn



PLAN



FRONT ELEVATION

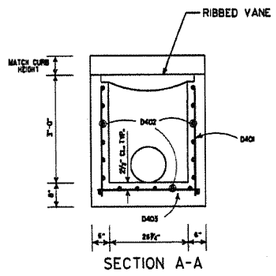


SIDE ELEVATION
CONCRETE SPILLWAY

BAR LIST (CONCRETE SPILLWAY)

MARK	NO. REQ'D.	LENGTH	BENDING DIAGRAM
D404	3	2'-2"	5'-4", 1'-2", 2" P.D., D415
D405	2	3'-8"	
D406	1	3'-5"	
D407	1	3'-1"	
D408	1	2'-9"	
D409	1	2'-5"	
D410	2	2'-5"	
D411	2	2'-2"	
D412	2	1'-9"	
D413	2	5'-6"	
D414	2	1'-2"	
D415	3	6'-5"	

DETAILS OF CONCRETE SPILLWAY (TYPE A)

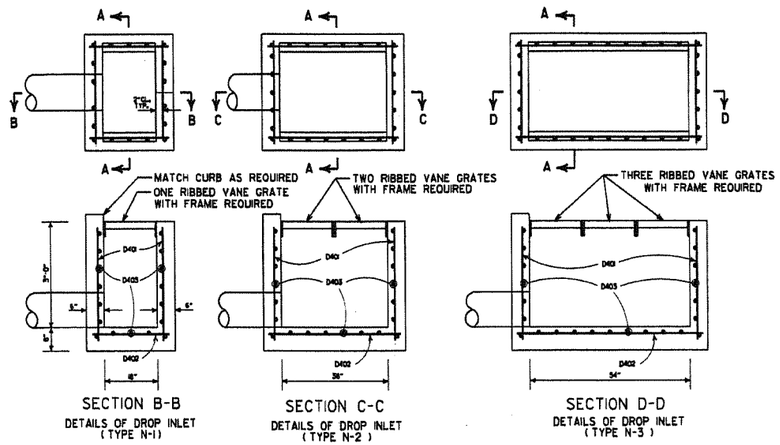


SECTION A-A

BAR LIST (DROP INLET)

MARK	TYPE N-1		TYPE N-2		TYPE N-3	
	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
D401	20	3'-0"	26	3'-0"	32	3'-0"
D402	19	2'-2"	19	3'-8"	19	5'-2"
D403	17	2'-11"	20	2'-11"	23	2'-11"

ALL BARS #4 @ 6" SPACING



SECTION B-B
DETAILS OF DROP INLET
(TYPE N-1)

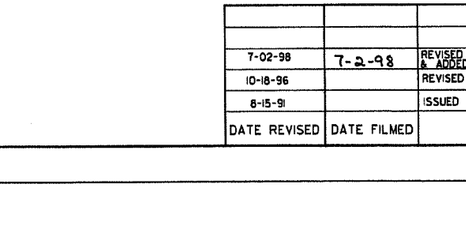
SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

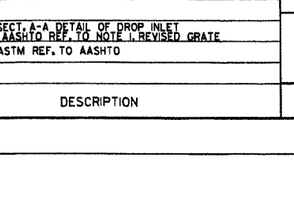
SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

DETAILS OF DROP INLET

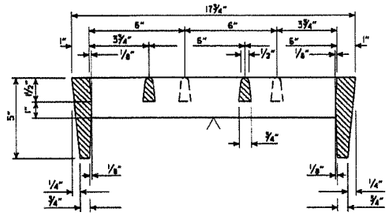
GENERAL NOTES (GRATE & FRAME)

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

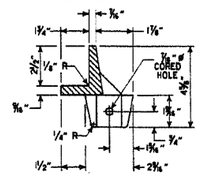




SECTION A-A



SECTION B-B

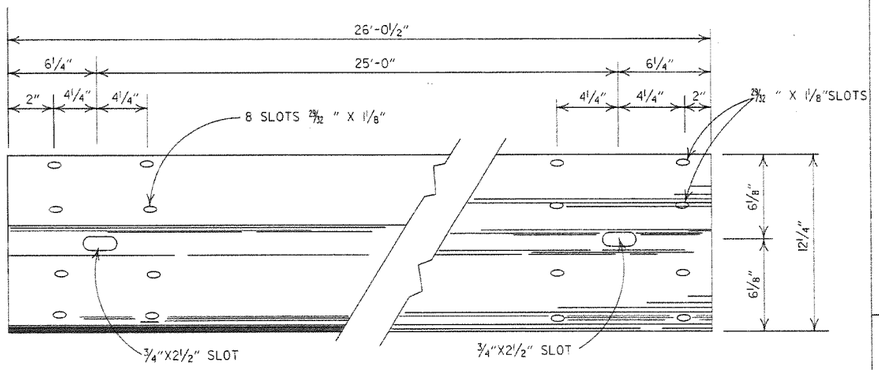


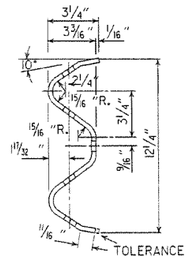
SECTION THRU FRAME

DETAILS OF RIBBED VANE GRATE AND FRAME

			ARKANSAS STATE HIGHWAY COMMISSION
			DETAILS OF DROP INLETS AND SPILLWAY OUTLET
7-02-98	7-2-98	REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1. REVISED GRATE	
10-18-96		REVISED ASTM REF. TO AASHTO	
8-15-91		ISSUED	
DATE REVISED	DATE FILMED	DESCRIPTION	STANDARD DRAWING FPC-9N

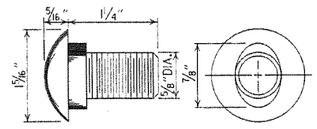
STD:fpc9N.DGN



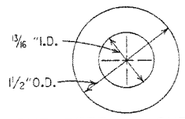


DETAILS OF W-BEAM GUARD RAIL

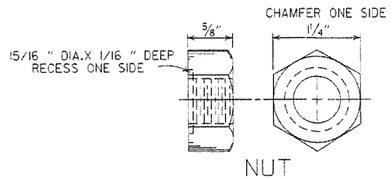
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



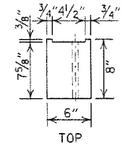
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

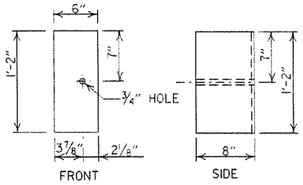


NUT

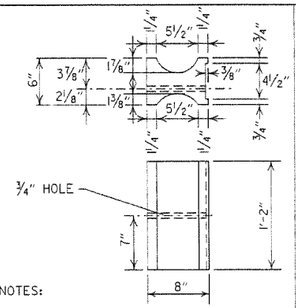


WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

TOP



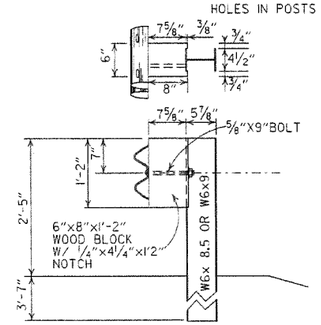
WOOD BLOCKOUT
(W-BEAM)



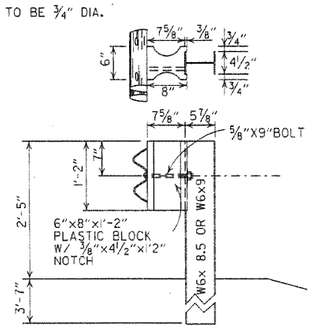
NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT
(W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.

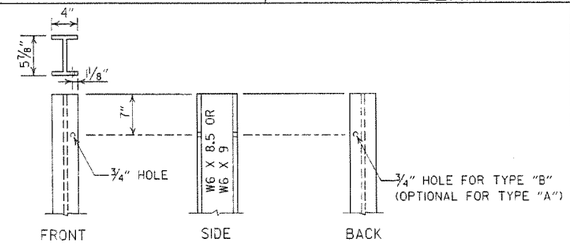


WOOD BLOCKOUT CONNECTIONS

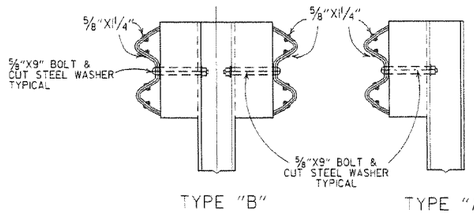


PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS
(W-BEAM)



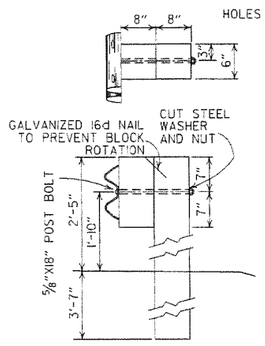
STEEL POST



TYPE "B" TYPE "A"

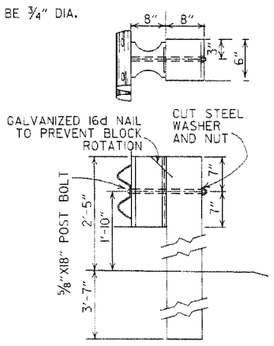
DETAILS OF STEEL LINE POST CONNECTIONS
(W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - 1/4".

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 3/4" BEYOND IT.

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

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

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

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

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

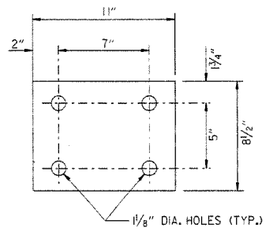
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

DATE	REVISION	DATE FILM
7-4-10	RAISED HEIGHT OF GUARD RAIL 1"	
0-15-09	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
6-2-90	REV. GEN. NOTE & DEPHT OF ANC. POST IN ROCK	6-2-90
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
0-9-87	REDRAWN & REVISED	802-0-9-87

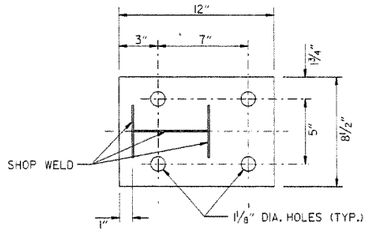
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8

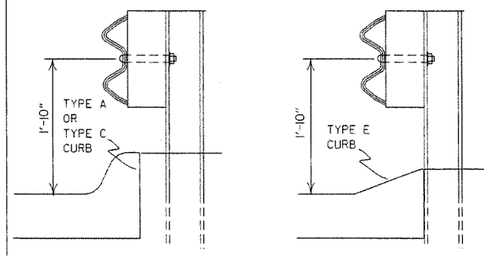


WASHER PLATE



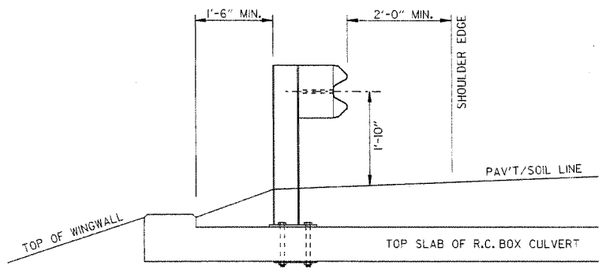
BASE PLATE

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

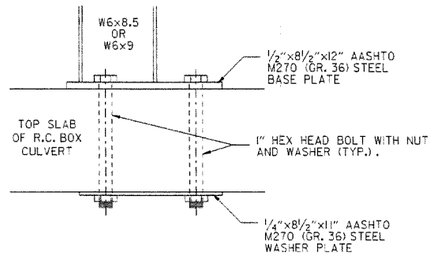


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

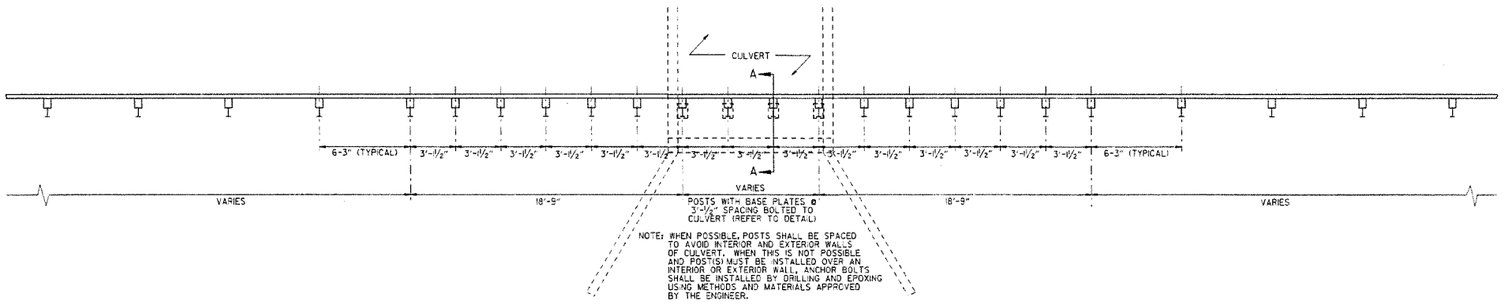
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



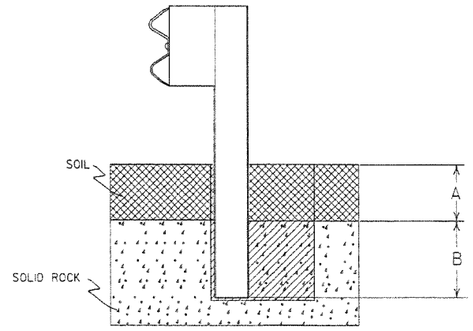
DETAIL OF CONNECTION



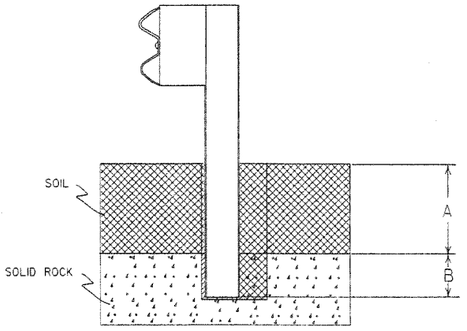
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

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.

Case 1

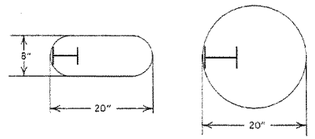


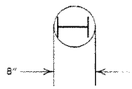
Case 2



Plan View Steel Posts

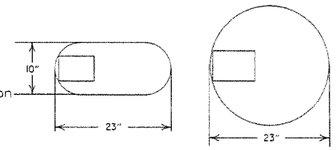
Either hole configuration acceptable

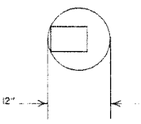




Plan View Wood Posts

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)

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

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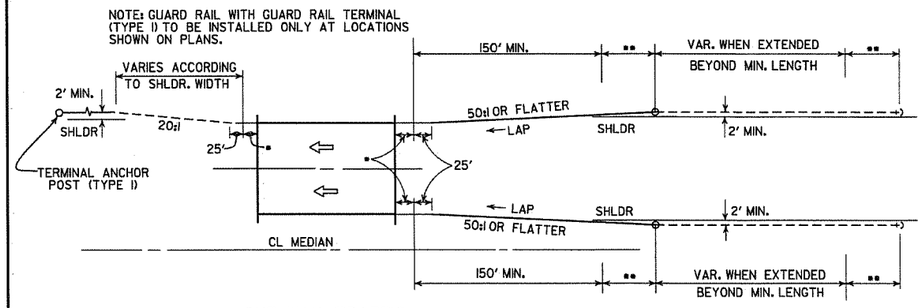
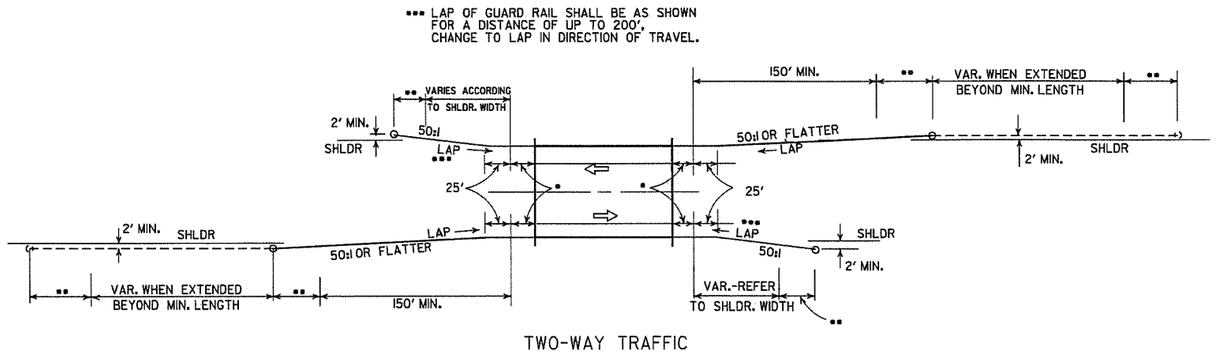
GUARD RAIL DETAILS

STANDARD DRAWING GR-8A



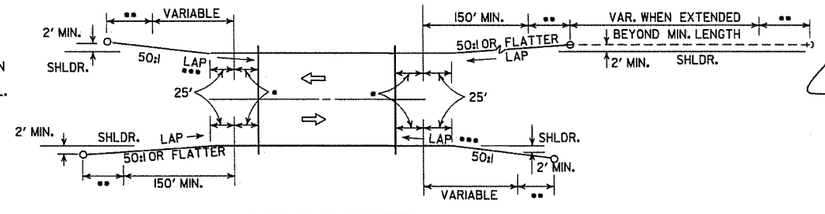
ONE-WAY TRAFFIC



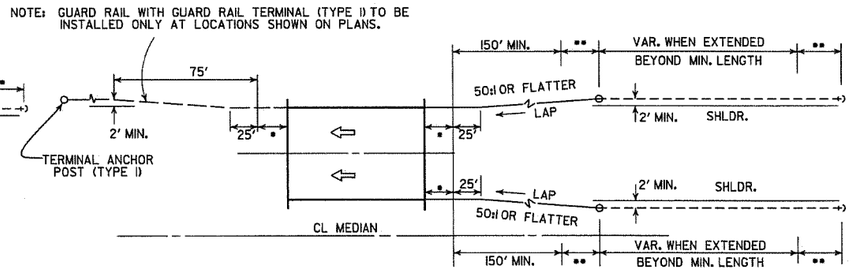
TWO-WAY TRAFFIC

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.



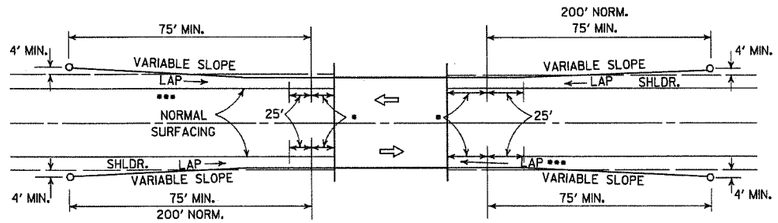
TWO-WAY TRAFFIC



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.



LEGEND

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

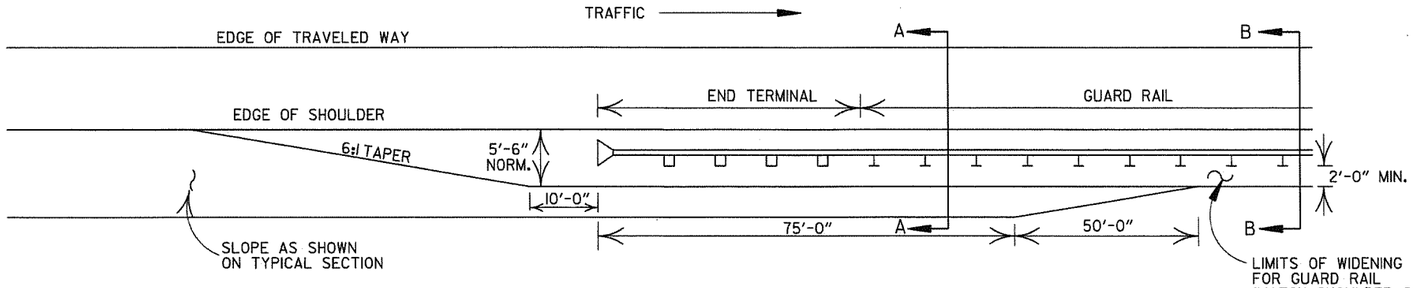
METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

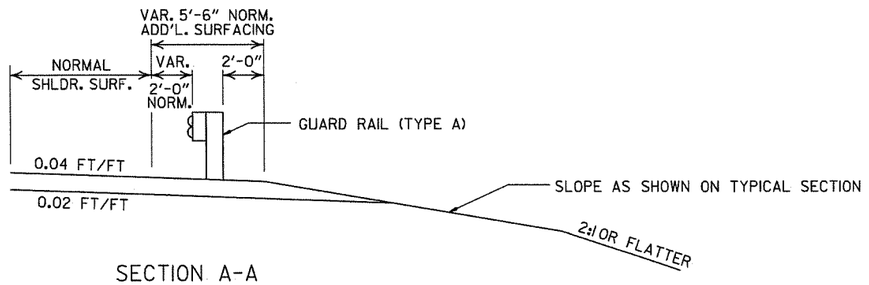
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87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

ARKANSAS STATE HIGHWAY COMMISSION

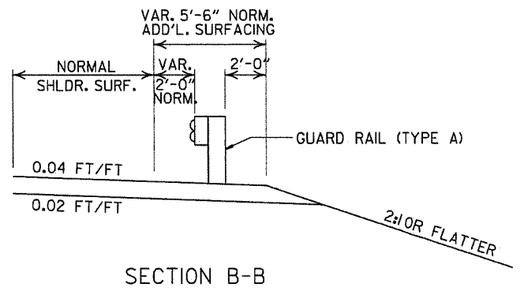
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





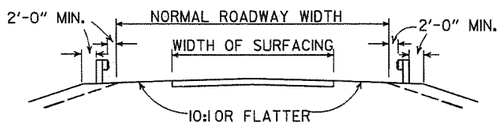
SECTION A-A



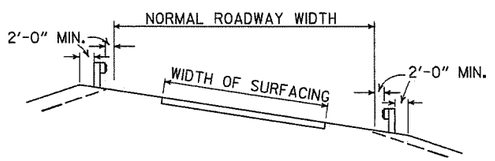
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

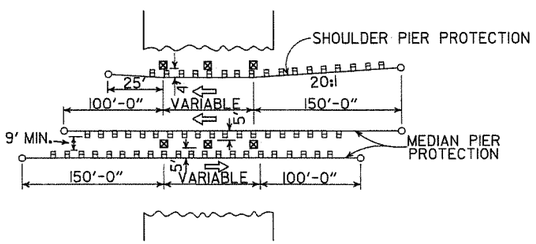


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



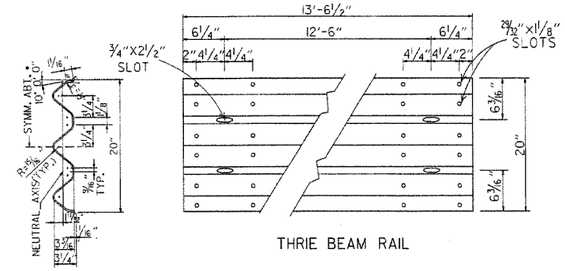
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

ARKANSAS STATE HIGHWAY COMMISSION

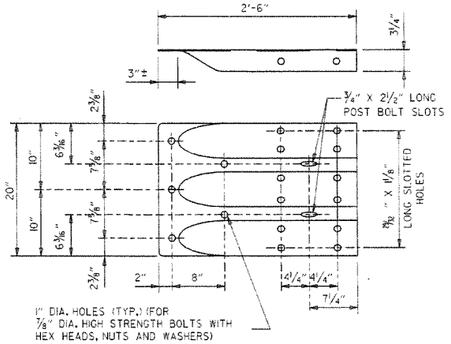
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A



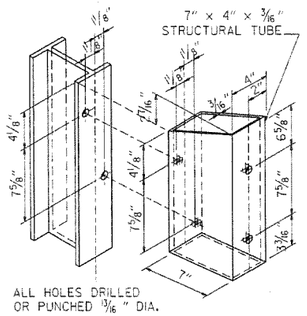
THRIE BEAM RAIL

SECTION THRU
THRIE BEAM RAIL



1" DIA. HOLES (TYP.) (FOR ⅞" DIA. HIGH STRENGTH BOLTS WITH HEX HEADS, NUTS AND WASHERS)

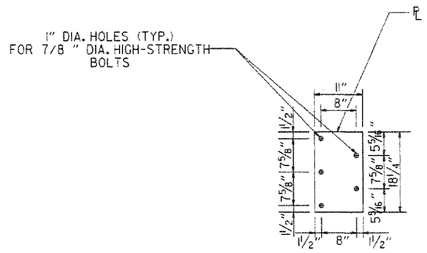
SPECIAL END SHOE



ALL HOLES DRILLED OR PUNCHED ⅜" DIA.

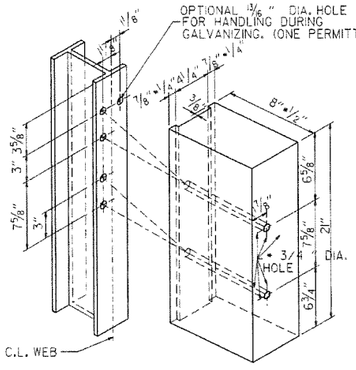
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL

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



CONNECTOR PLATE

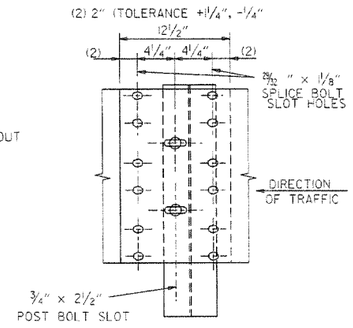
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS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



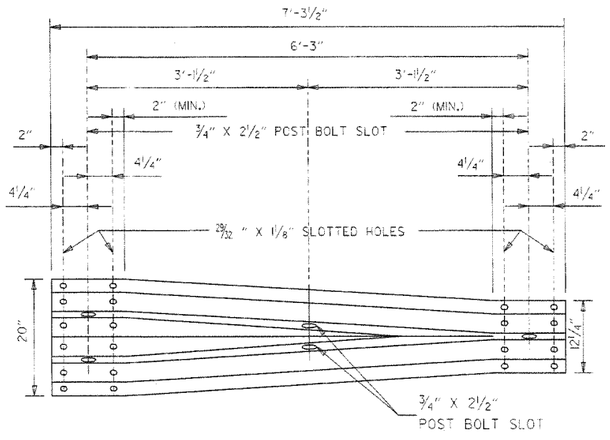
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD
OR PLASTIC BLOCKOUTS

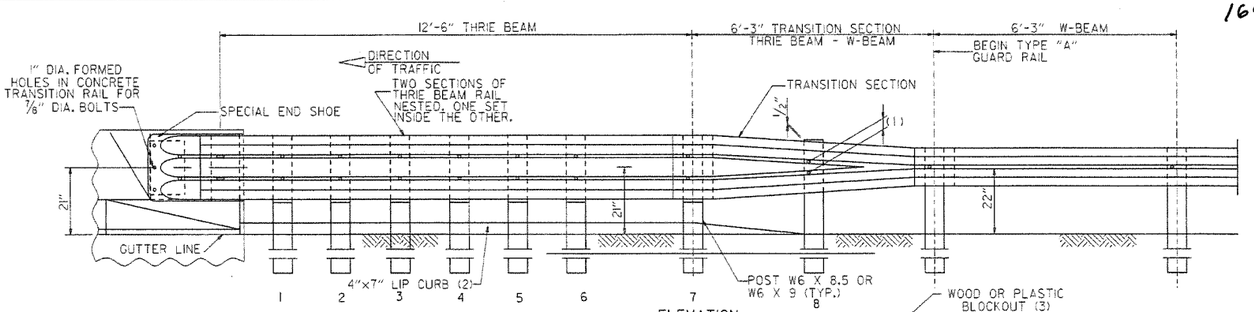
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



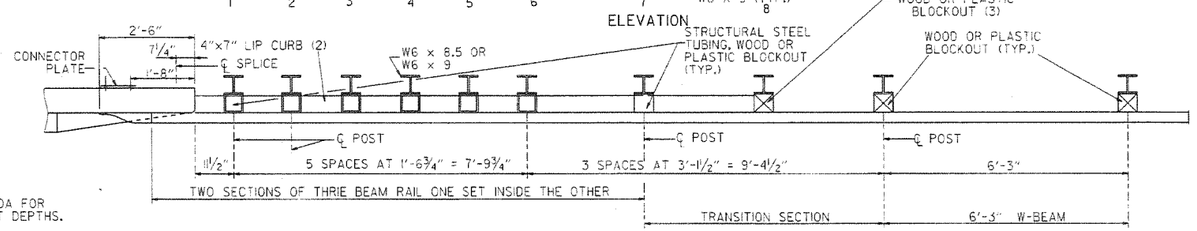
THRIE BEAM RAIL
SPLICE AT POST



TRANSITION SECTION

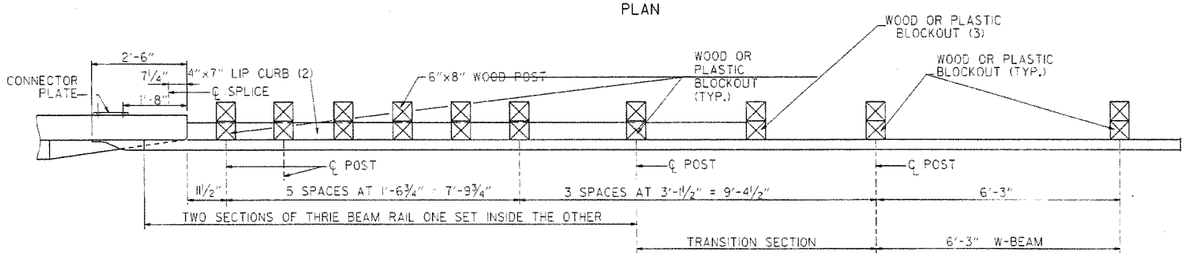


ELEVATION



PLAN

NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.



PLAN

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

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

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

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

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 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 9.7# (1400 #) OR NO. 1 1350 # SOUTHERN PINE.

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

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

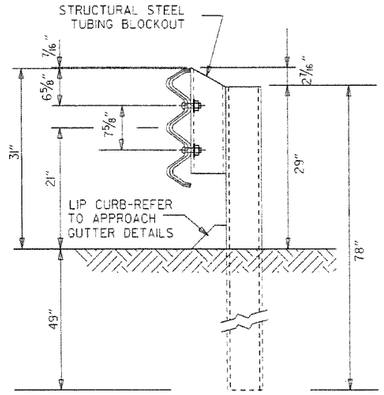
THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

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	

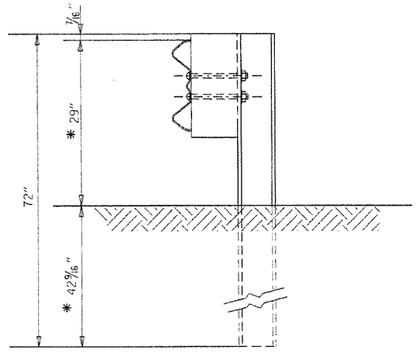
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10

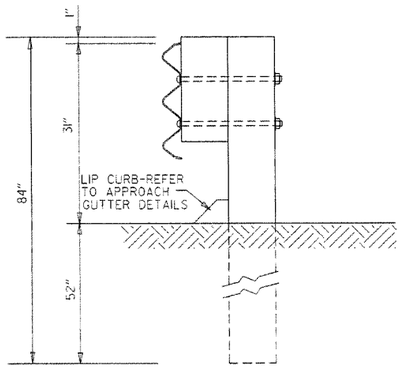


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

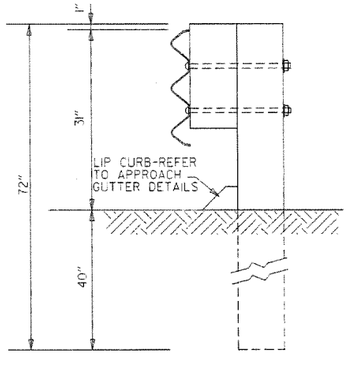


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

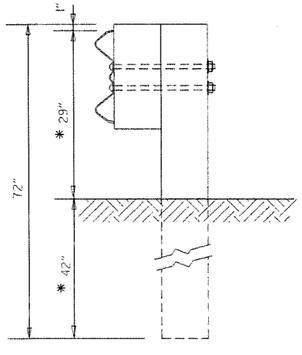
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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.

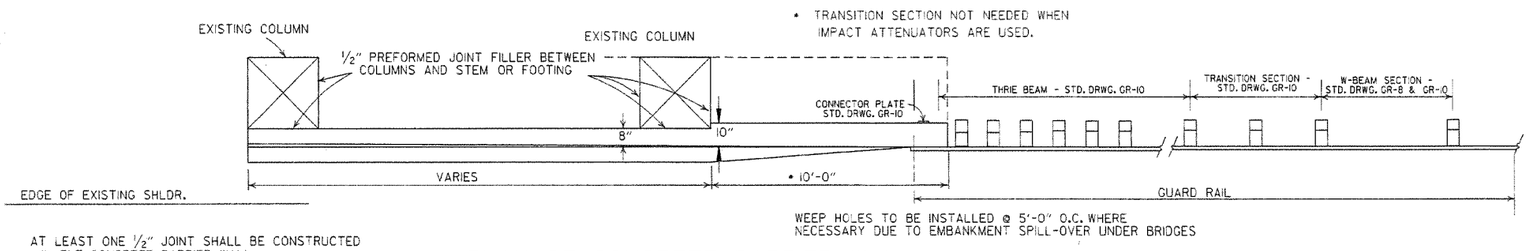
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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

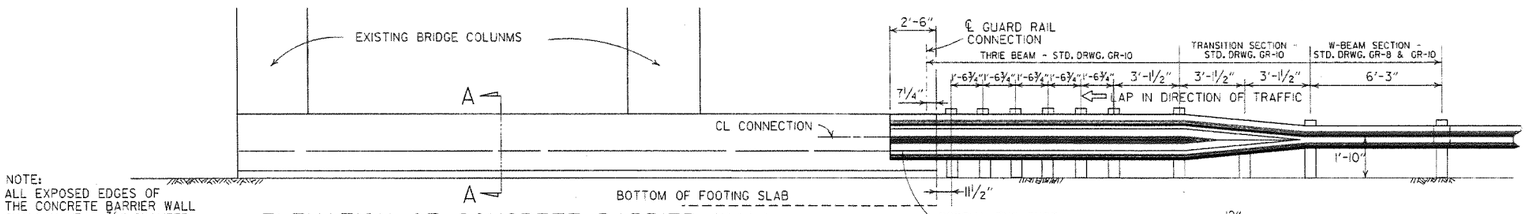
STANDARD DRAWING GR-10A



• TRANSITION SECTION NOT NEEDED WHEN IMPACT ATTENUATORS ARE USED.

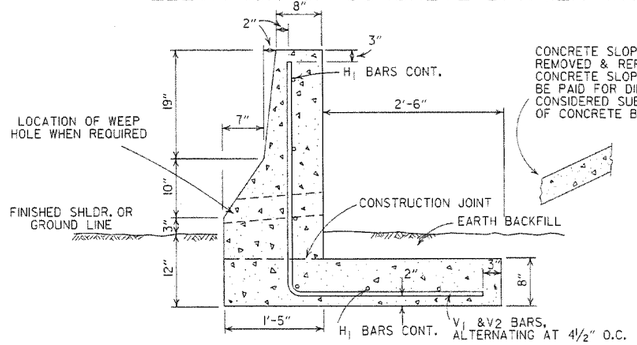
AT LEAST ONE ½" JOINT SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL. JOINTS SHALL BE EQUALLY SPACED AT A MAXIMUM OF 25'-0" O.C. FILL JOINT WITH PREFORMED JOINT FILLER.

PLAN OF CONCRETE BARRIER WALL



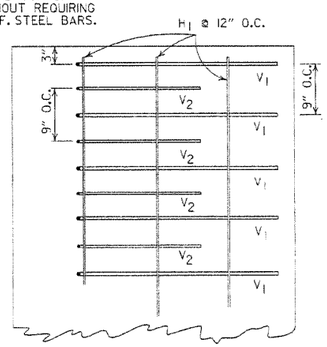
NOTE:
ALL EXPOSED EDGES OF THE CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.

ELEVATION OF CONCRETE BARRIER WALL

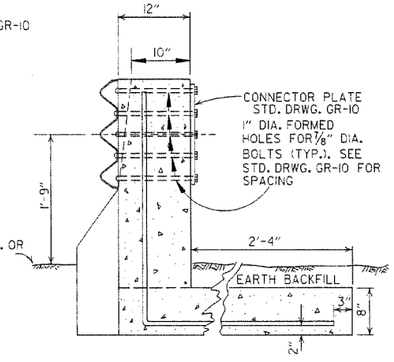


SECTION A-A

IF FOR ANY REASON IT IS NECESSARY TO CONSTRUCT THE FOOTING AT A LOWER ELEVATION THAN IS SHOWN, THE STEM MAY BE LENGTHENED 1'-0" BETWEEN FIN. SHLDR. AND TOP OF FOOTING WITHOUT REQUIRING HEAVIER REINF. STEEL BARS.



PLAN OF REINFORCING STEEL IN FOOTING

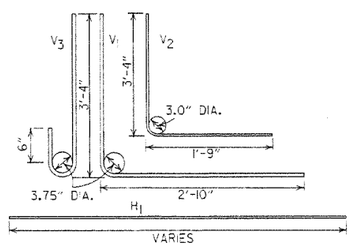


SECTION THRU CONNECTION

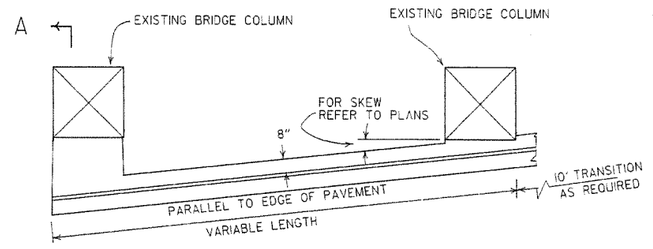
BAR LIST

MARK	NO.	SIZE	LENGTH
V1		#5	6'-2¼"
V2		#4	5'-1"
V3		#5	2'-11⅛"
H1	6	4	VAR.

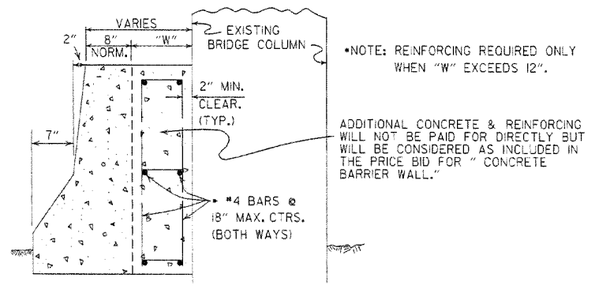
THE V3 BARS SHALL BE USED IN PLACE OF THE V1 & V2 BARS IN FRONT OF PIERS.



BEND DIAGRAMS



PLAN



•NOTE: REINFORCING REQUIRED ONLY WHEN "W" EXCEEDS 12".

ADDITIONAL CONCRETE & REINFORCING WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED AS INCLUDED IN THE PRICE BID FOR " CONCRETE BARRIER WALL."

SECTION A-A

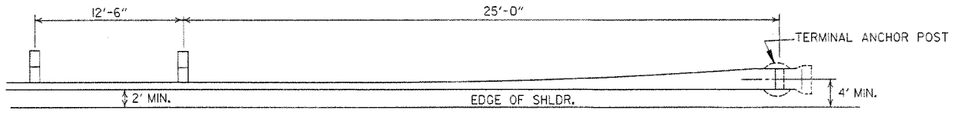
DETAILS OF CONCRETE BARRIER WALL WHEN PIERS ARE SKEWED TO ROADWAY

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF W-BEAM 1"	
8-22-02	REV. SECTION A-A OF DETAILS OF CONCRETE BARRIER WALL	
6-29-00	MOVED DIMENSION LINE	
5-18-00	ADDED NOTE	
3-30-00	REVISED TO INCLUDE THRIE BEAM	
6-2-94	ADDED TRANSITION SECTION NOTE	
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED DRAWING PLAN CONC. BARR.	8-15-91
2-16-89	ADDED SKEWED DETAILS	594-2-16-89
7-14-88	CHANGED TITLE	
10-9-87	REDRAWN & REVISED	

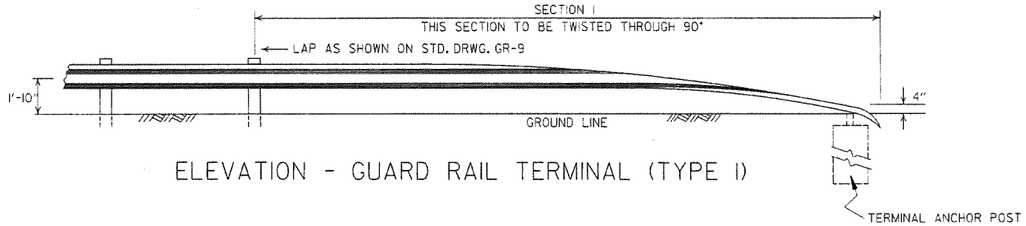
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE BARRIER WALL (PIER PROTECTION TYPE A)

STANDARD DRAWING GR-11

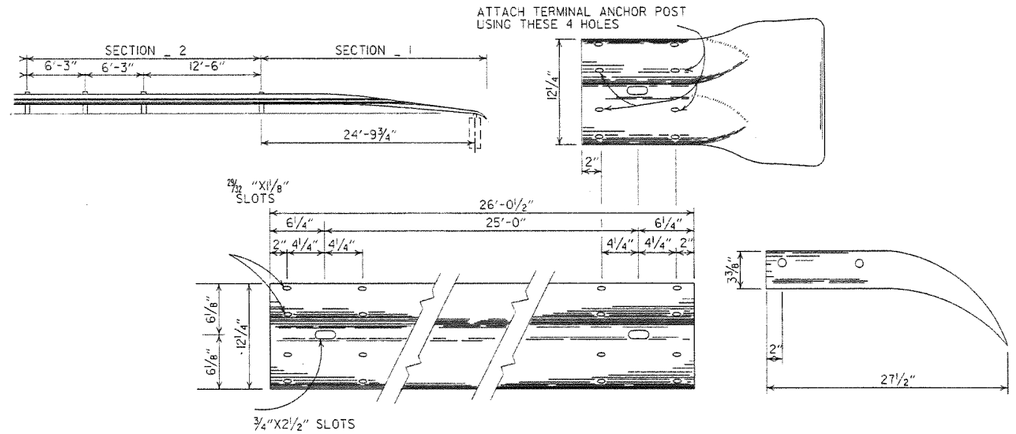


PLAN - GUARD RAIL TERMINAL (TYPE I)



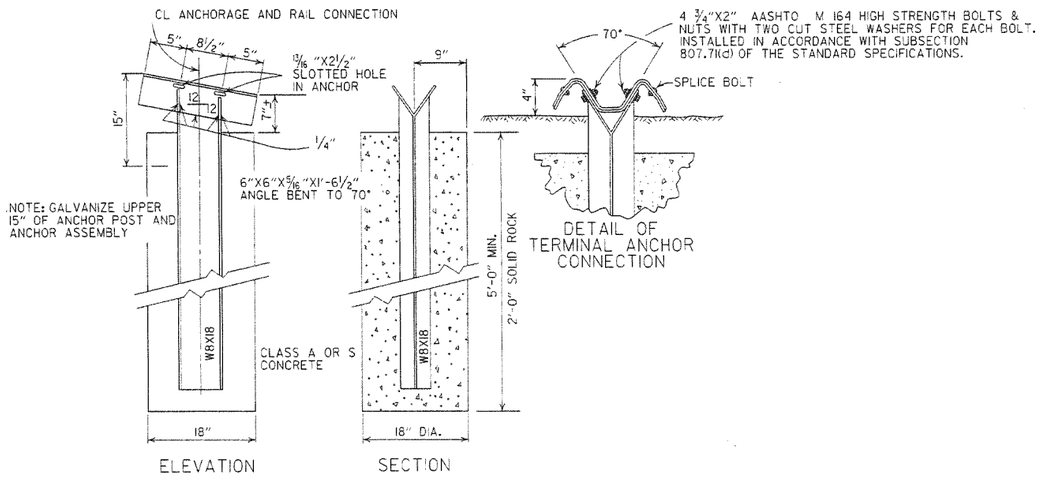
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

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.

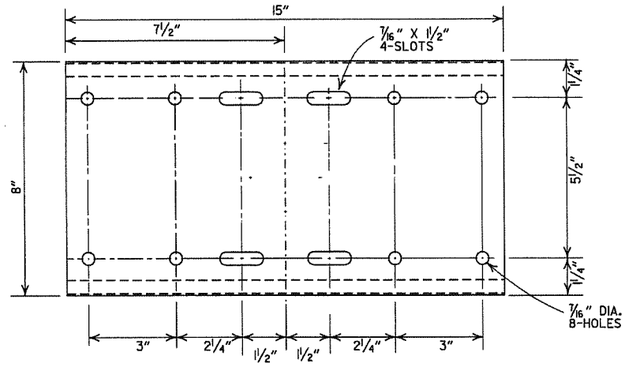
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL I"	
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

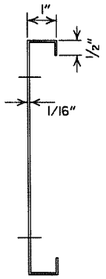
ARKANSAS STATE HIGHWAY COMMISSION

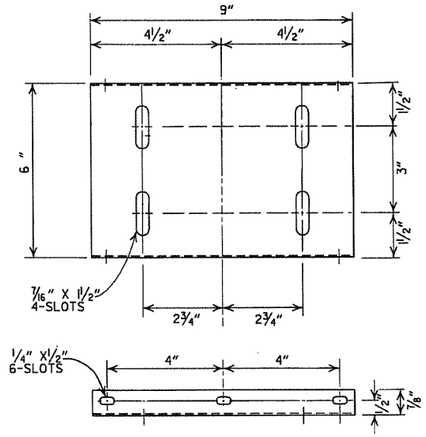
GUARD RAIL DETAILS

STANDARD DRAWING GRT-1

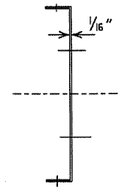


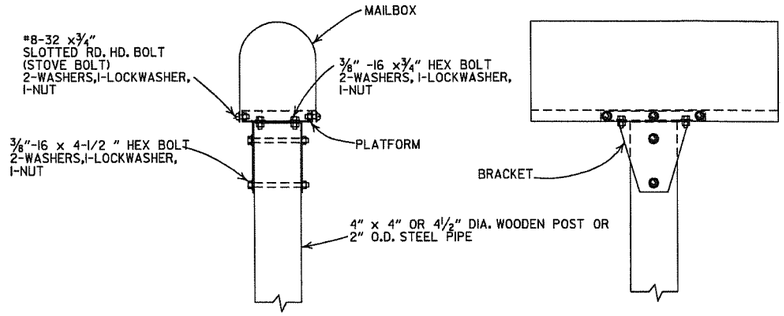
SHELF



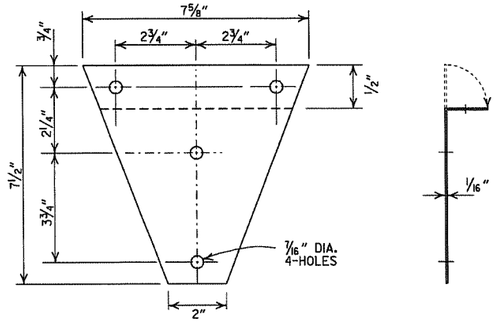


PLATFORM





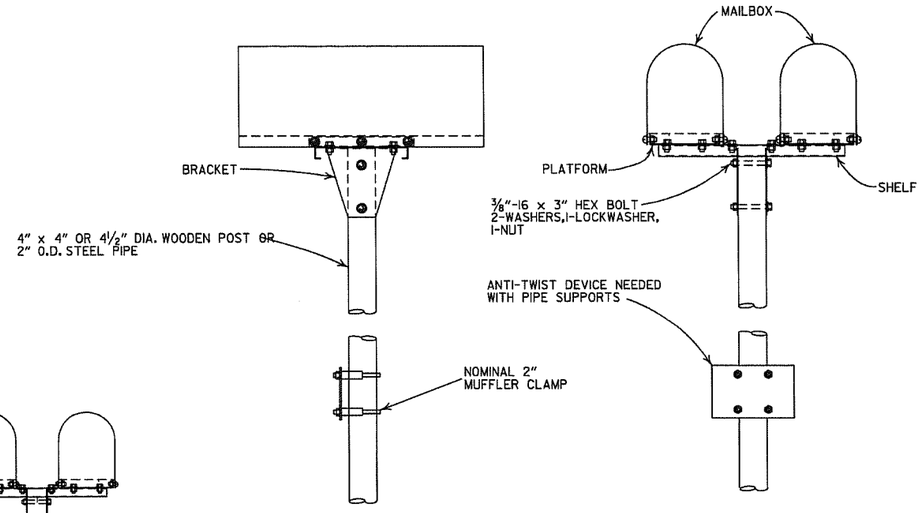
SINGLE INSTALLATION



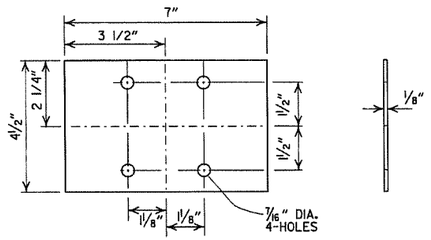
BRACKET

GENERAL NOTES

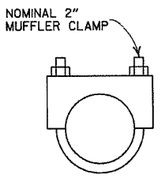
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



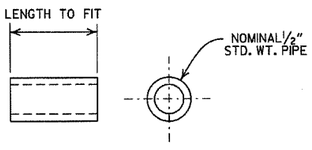
DOUBLE INSTALLATION



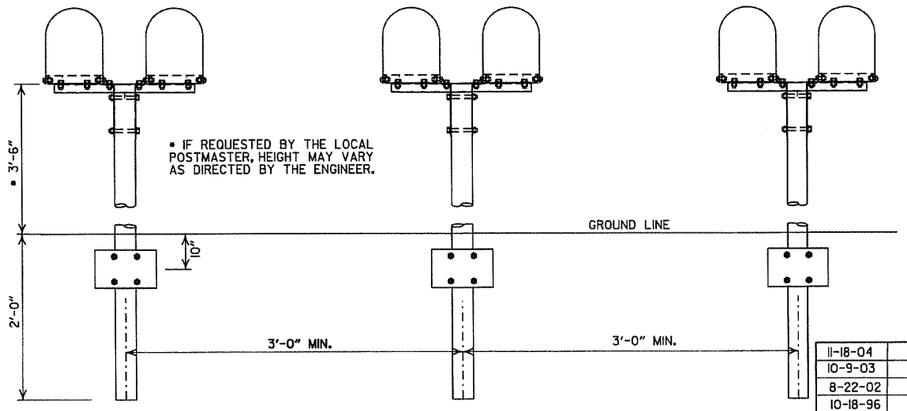
ANTI-TWIST PLATE



CLAMP



SPACER



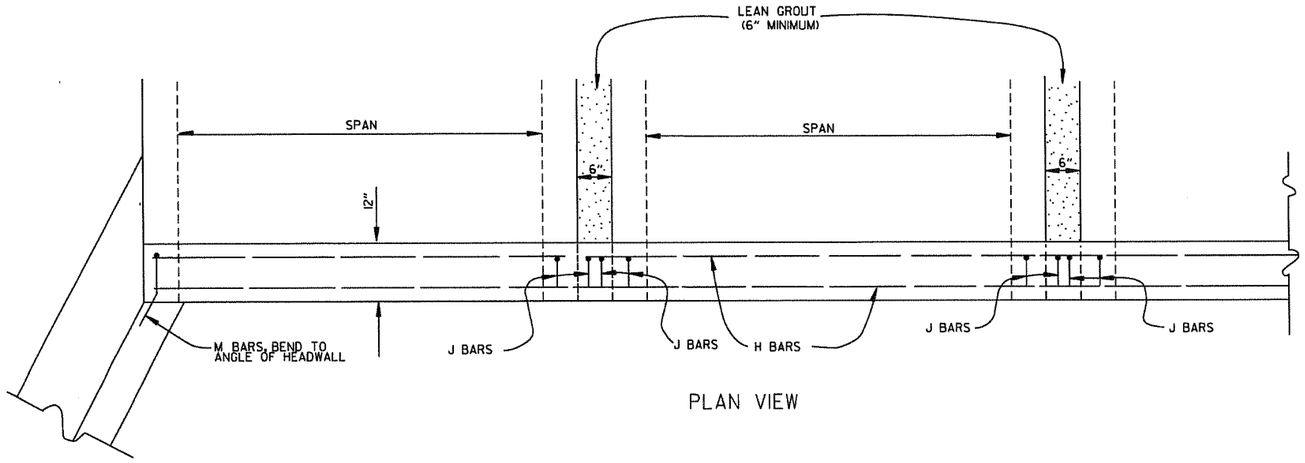
SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

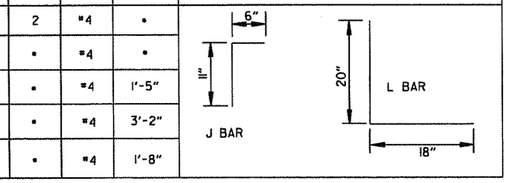
STANDARD DRAWING MB-1



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 ¾" 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.

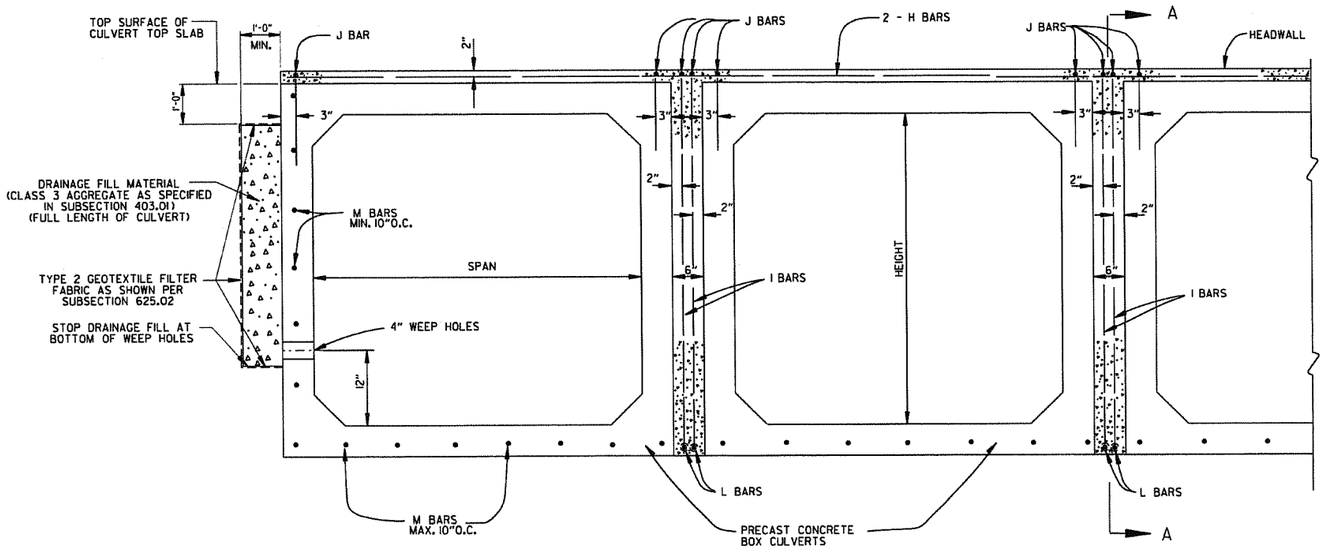
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

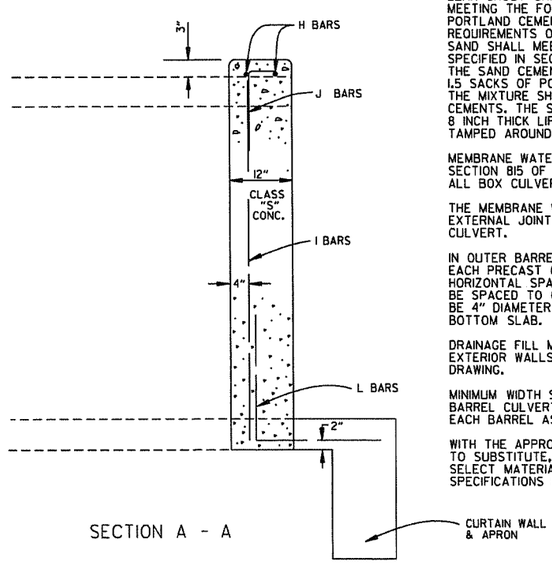
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT. SEE DETAILS ON THIS DRAWING.

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
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	31 5/16	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)(ii).

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.

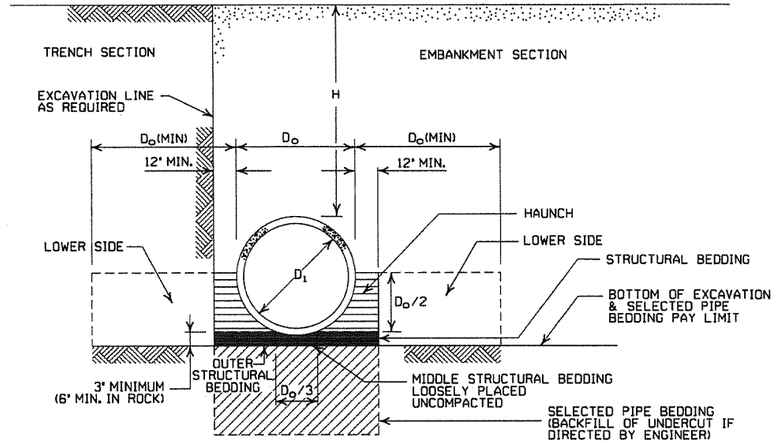
- LEGEND -

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 (2003 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
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
		2 ⅔ 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.)		MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)	
				INSTALLATION		INSTALLATION			INSTALLATION		INSTALLATION	
				TYPE 1		TYPE 1			TYPE 1		TYPE 1	
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					2 ⅔ 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.

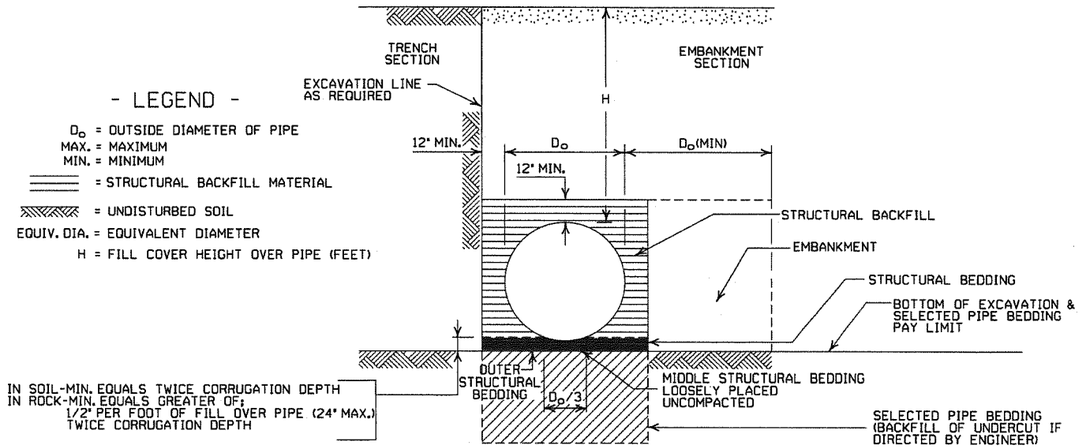
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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



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 (2003 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.

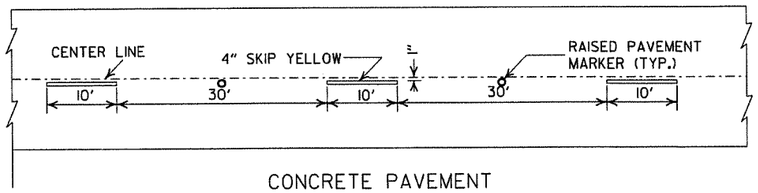
② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED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

DATE	REVISION	DATE FILMED
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

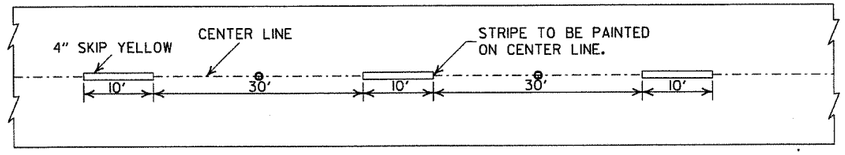
ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

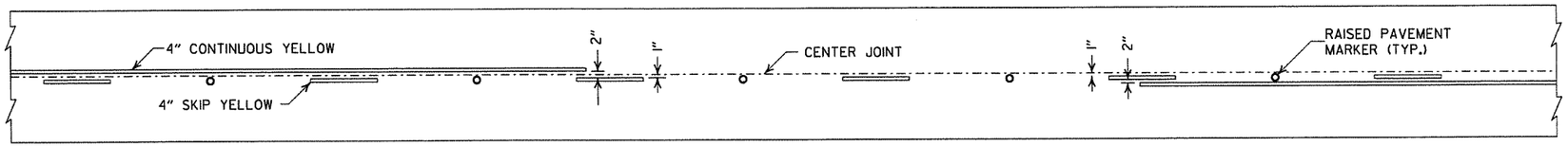


CONCRETE PAVEMENT

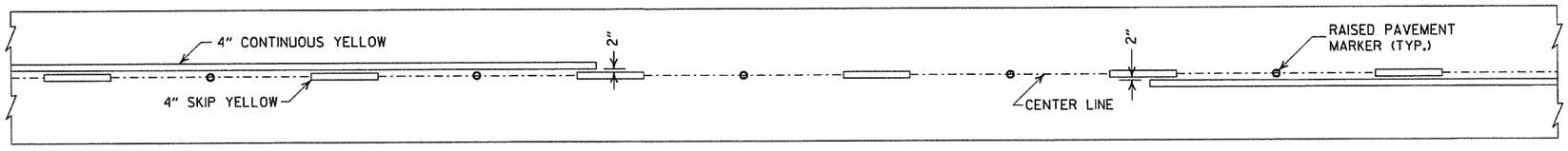


ASPHALT PAVEMENT

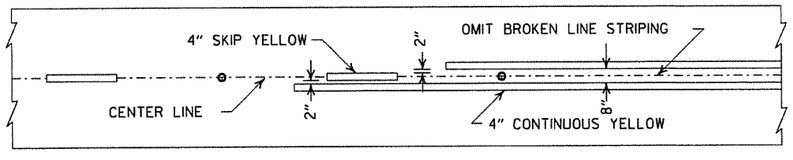
BROKEN LINE STRIPING



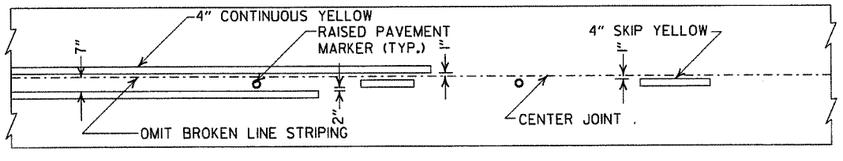
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT



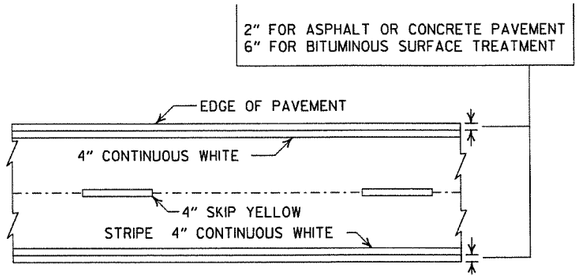
ASPHALT PAVEMENT



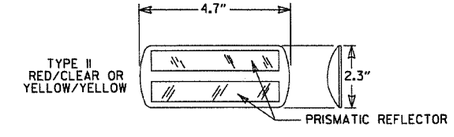
CONCRETE PAVEMENT

NOTES:

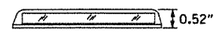
1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.



PAVEMENT EDGE LINE MARKING



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

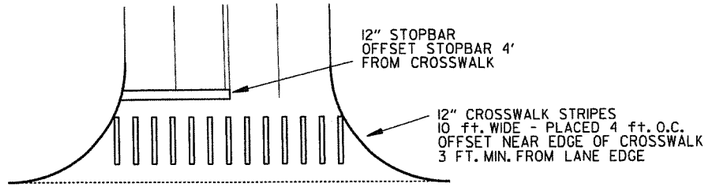
GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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.

STRIPING AT ADJACENT NO PASSING LANES



CROSSWALK AND STOPBAR DETAILS

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

ARKANSAS STATE HIGHWAY COMMISSION

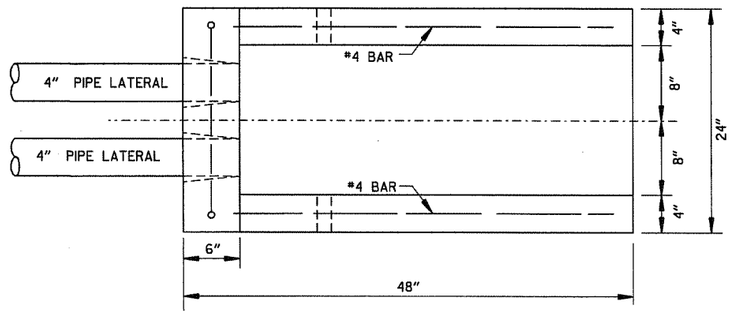
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

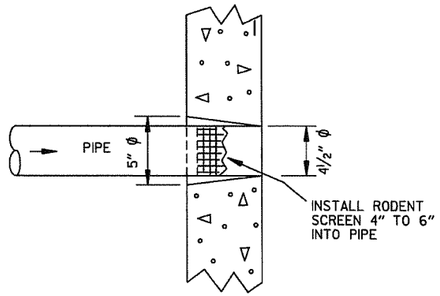
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

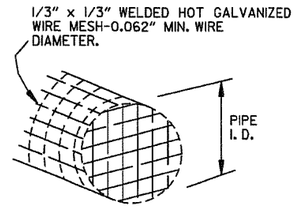
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



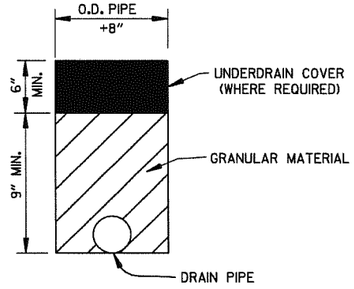
PLAN VIEW

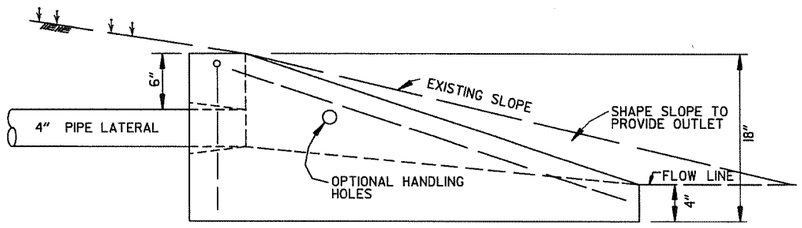


DETAIL OF HOLE FOR 4" PIPE

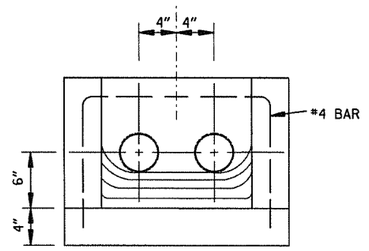


DETAIL OF RODENT SCREEN

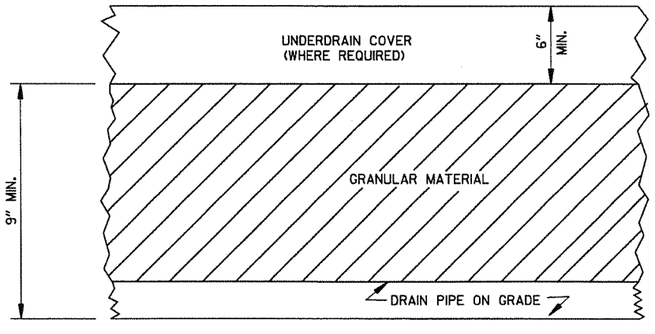




SIDE VIEW

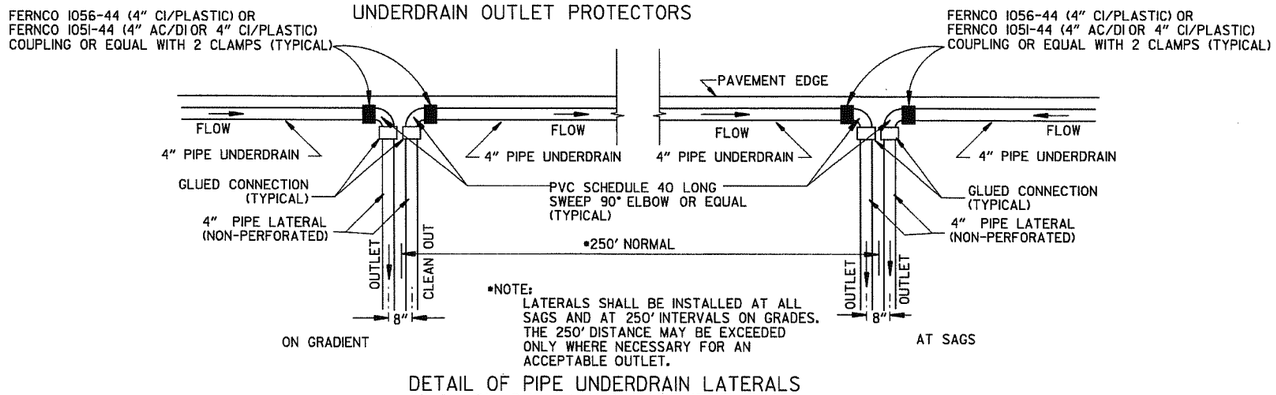


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

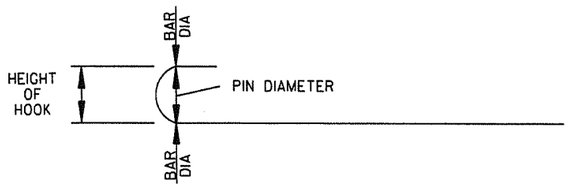
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

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

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

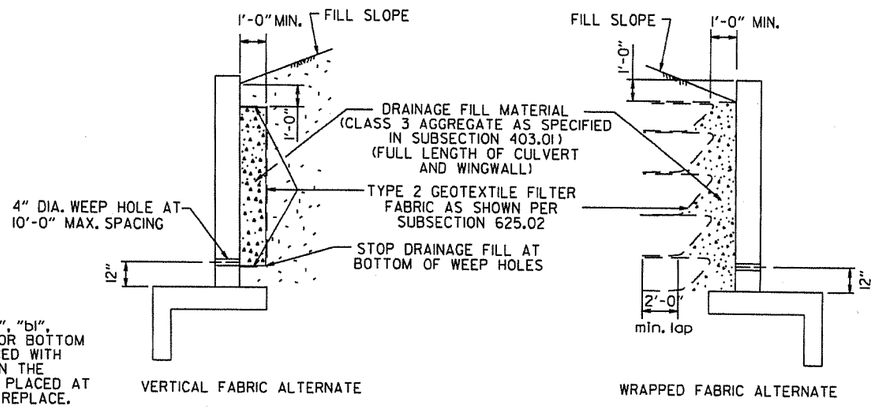
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

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

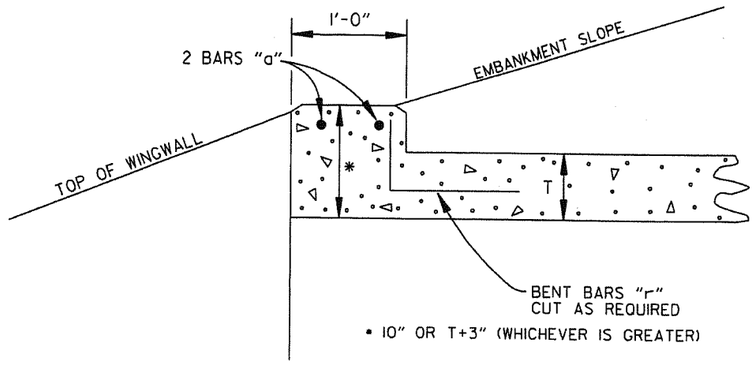
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

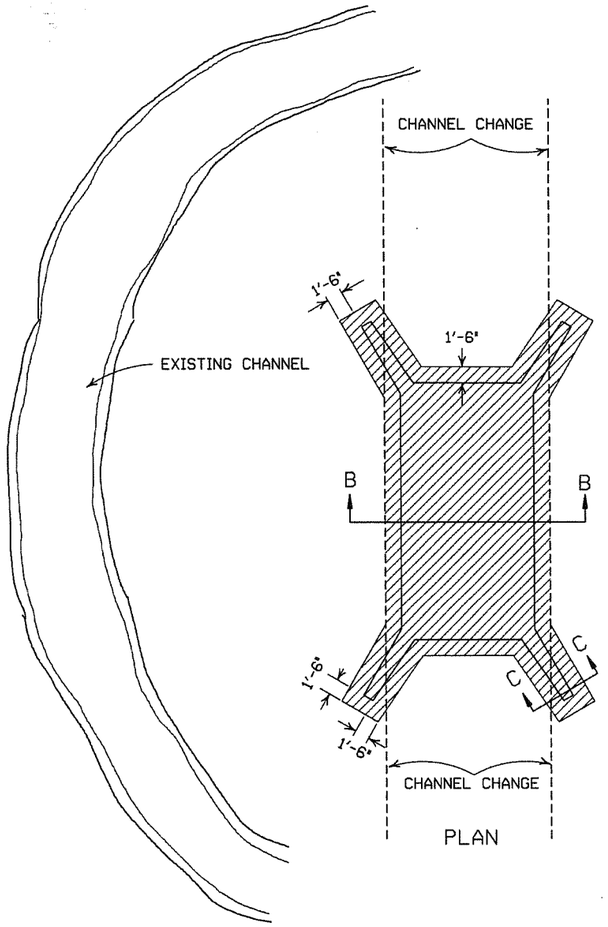
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
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

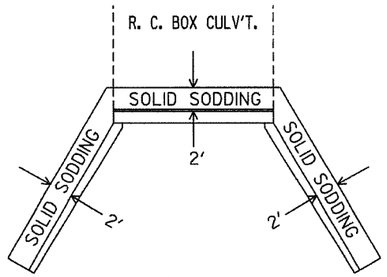
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

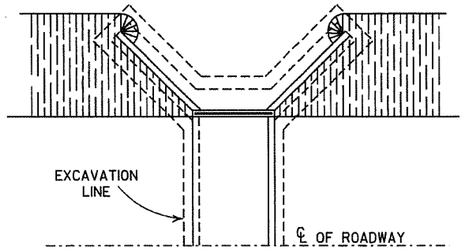
SOLID SODDING



PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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



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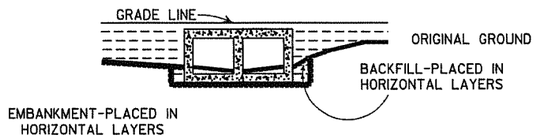
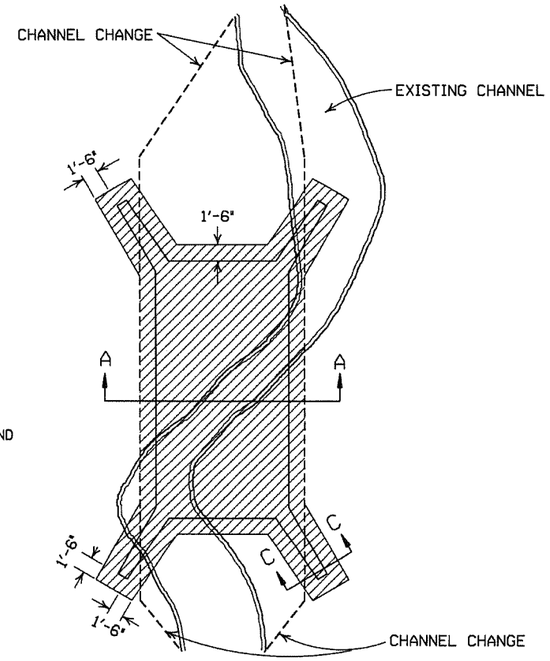
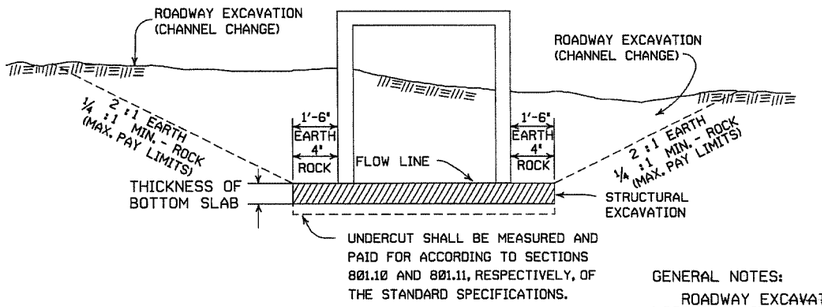


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

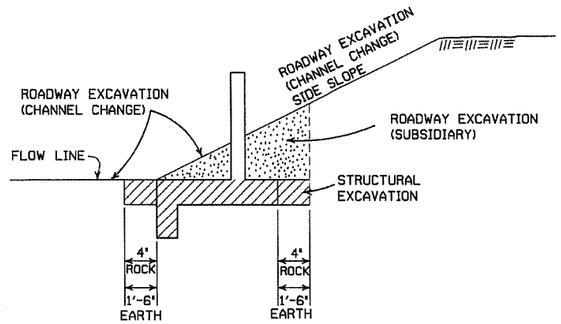


PLAN

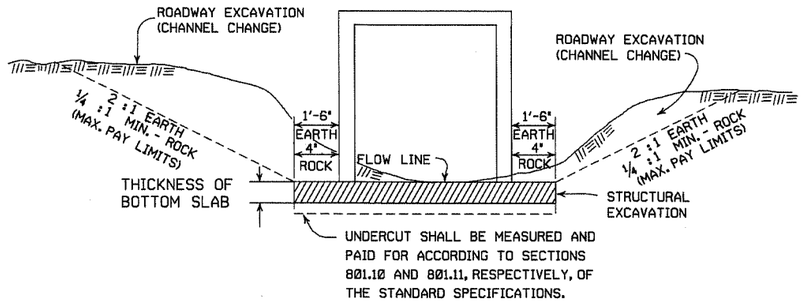


SECTION B-B

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.

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	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

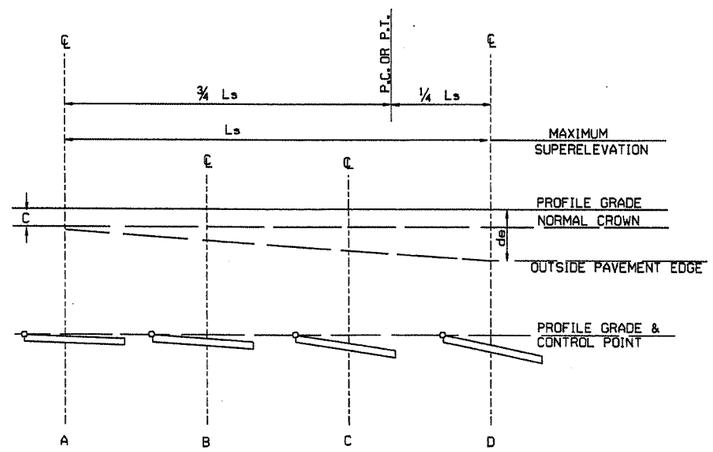
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	65 MPH e	65 MPH Ls (FT) MINIMUM	65 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15′	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30′	N.C.			N.C.			N.C.			0.022			0.023			0.025			0.028		
0° 45′	N.C.			N.C.			R.C.			0.032			0.033			0.033	250	350	0.037	275	350
1° 00′	N.C.			R.C.			0.021			0.037			0.043	250	350	0.041			0.046		
1° 15′	N.C.			0.021			0.026			0.043	225	350	0.049			0.048			0.054		
1° 30′	N.C.			0.025	175	250	0.031	200	300	0.048			0.055			0.055			0.062		
1° 45′	N.C.			0.028			0.036			0.053			0.061			0.062			0.070		
2° 00′	R.C.			0.031			0.040			0.058			0.067			0.069	265		0.078	300	
2° 15′	R.C.			0.034			0.045			0.063			0.072			0.075	280		0.085	315	400
2° 30′	0.021			0.037			0.049			0.067	230		0.077	260		0.081	300		0.091	335	
2° 45′	0.023			0.040			0.053			0.072	245		0.082	275		0.087	315		0.096	350	
3° 00′	0.025	150		0.043			0.057			0.076	255		0.086	285		0.090	325	400	0.098	360	450
3° 15′	0.027			0.046			0.061	205		0.080	265		0.090	295		0.095	340		0.100	360	
3° 30′	0.029			0.049			0.065	215		0.083	275		0.093	305		0.097	345				
3° 45′	0.031			0.051			0.069	225		0.087	280		0.096	315		0.099	350				
4° 00′	0.033			0.056			0.072	240		0.091	295		0.098	320							
4° 30′	0.037			0.061			0.078	250		0.094	300	400									
5° 00′	0.040						0.083	250		0.096	305										
5° 30′	0.043			0.066	185		0.088	260		0.100	315										
6° 00′	0.046			0.070	190		0.092	270	350												
6° 30′	0.050			0.074	200		0.095	280													
7° 00′	0.053			0.078	210		0.098	285													
7° 30′	0.056			0.081	215		0.099	290													
8° 00′	0.058			0.084	220	300	0.100	290													
8° 30′	0.061			0.087	225																
9° 00′	0.063			0.089	230																
10° 00′	0.068	160		0.094	235																
11° 00′	0.072	170		0.097	250																
12° 00′	0.076	175		0.099	250																
13° 00′	0.080	180		0.100	250																
14° 00′	0.083	190																			
15° 00′	0.086	195																			
16° 00′	0.089	200																			
17° 00′	0.091	200																			
18° 00′	0.093	205																			
19° 00′	0.095	210																			
20° 00′	0.097	215	300																		
21° 00′	0.098	215																			
22° 00′	0.099	215																			
23° 00′	0.099	215																			
24° 00′	0.100	220																			

D MAX = 24° 45′ | D MAX = 13° 15′ | D MAX = 8° 15′ | D MAX = 6° 30′ | D MAX = 5° 15′ | D MAX = 4° 15′ | D MAX = 3° 30′



ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$

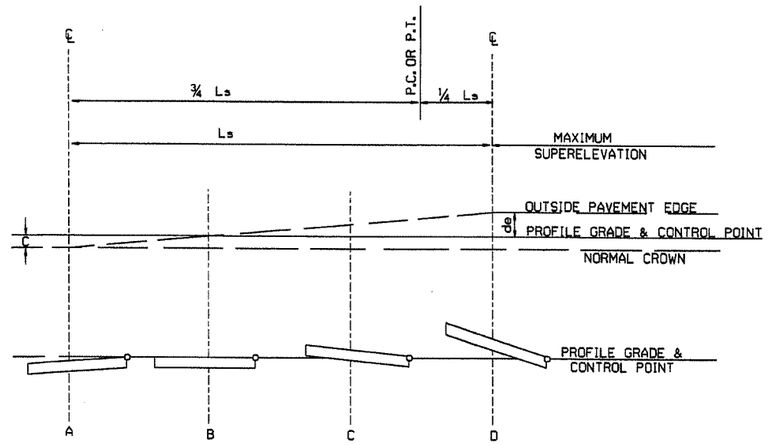
ABBREVIATIONS

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

GENERAL NOTES

1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. MINIMUM Ls VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
5. DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLOWS:

6 LANE DIVIDED---------+20%
8 LANE DIVIDED---------+50%



ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

DATE	REVISION	DATE FILMED
01-09-87	ISSUED	578-1-15-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

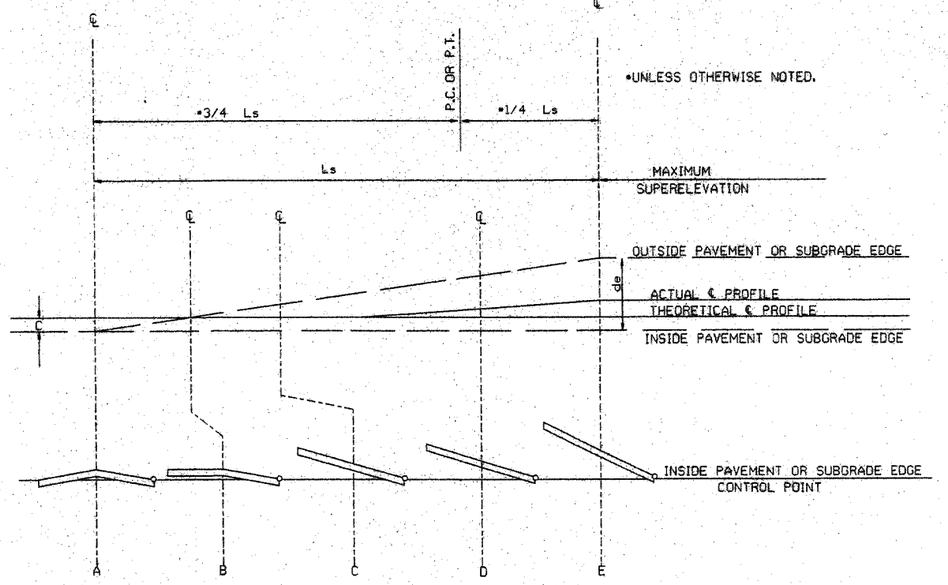
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 45'	N.C.			N.C.			R.C.			0.022			0.023			0.028		
1° 00'	N.C.			N.C.			0.021			0.026			0.030			0.037	275	300
1° 15'	N.C.			R.C.			0.026			0.032			0.037			0.046		
1° 30'	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.054		
1° 45'	N.C.			0.025			0.036			0.043			0.049			0.062		
2° 00'	R.C.			0.028	175		0.040			0.048			0.055			0.070		
2° 15'	R.C.			0.031			0.045		250	0.053			0.061			0.078	300	350
2° 30'	0.021			0.034			0.049			0.058			0.067			0.085	315	
2° 45'	0.023			0.037			0.053			0.063			0.072			0.091	335	
3° 00'	0.025			0.040		200	0.057			0.067	230		0.077	260		0.096	350	400
3° 15'	0.027	150		0.043			0.061			0.072	245		0.082	275		0.098	360	
3° 30'	0.029		200	0.046			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45'	0.031			0.049			0.069	215		0.080	265		0.090	295		D MAX = 3° 30'		
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305	350			
4° 30'	0.037			0.056			0.078	240		0.087	280		0.096	315				
5° 00'	0.040			0.061			0.083	250		0.091	295	350	0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.094	300		D MAX = 5° 15'					
6° 00'	0.046			0.070	190		0.092	270		0.098	305							
6° 30'	0.050			0.074	200		0.095	280	300	0.100	315							
7° 00'	0.053			0.078	210		0.098	285		D MAX = 6° 30'								
7° 30'	0.056			0.081	215		0.099	290										
8° 00'	0.058			0.084	220		0.100	290										
8° 30'	0.061			0.087	225	250	D MAX = 8° 15'											
9° 00'	0.063			0.089	230													
10° 00'	0.068	160		0.094	235													
11° 00'	0.072	170		0.097	250													
12° 00'	0.076	175		0.099	250													
13° 00'	0.080	180		0.100	250													
14° 00'	0.083	190		D MAX = 13° 15'														
15° 00'	0.086	195																
16° 00'	0.089	200																
17° 00'	0.091	200																
18° 00'	0.093	205																
19° 00'	0.095	210																
20° 00'	0.097	215	250															
21° 00'	0.098	215																
22° 00'	0.099	215																
23° 00'	0.099	215																
24° 00'	0.100	220																

D MAX = 24° 45'

ABBREVIATIONS

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



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

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

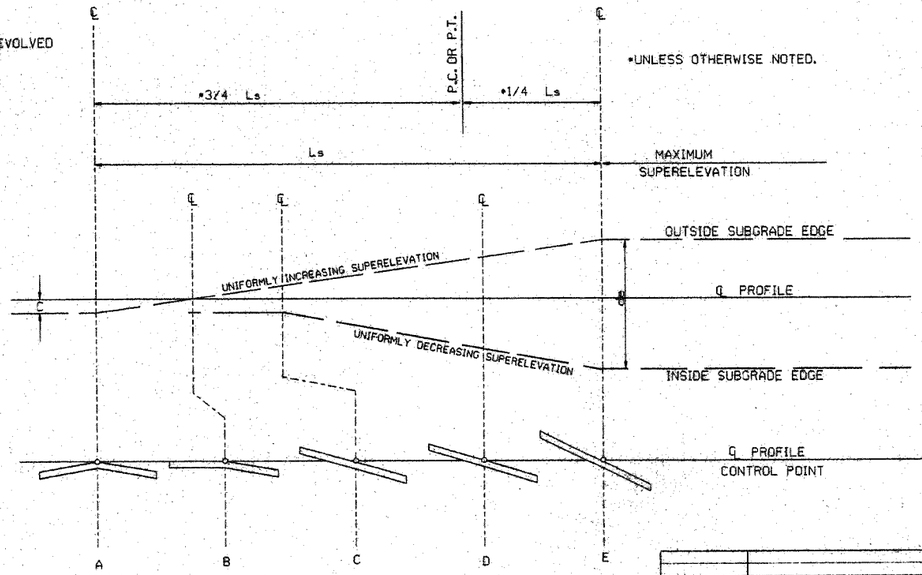
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

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

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

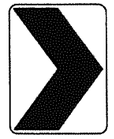
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

FILE STDSE2.DGN

R1-1
30"X30"

W1-3
30"X30"
(LT. OR RT.)

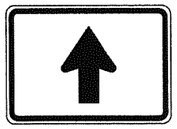


W1-8
18"X24"

W2-5
30"X30"

W3-1
36"X36"

W5-1
36"X36"



M6-3
21"X15"

R1-2
36"X36"X36"

W1-4
30"X30"
(LT. or RT.)

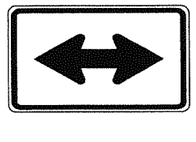
W2-1
30"X30"

S1-1
36"X36"

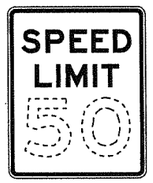
W3-2
36"X36"

County
Route Marker
M1-6
24"X24"

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



M6-4
21"X15"



R2-1
24"X30"

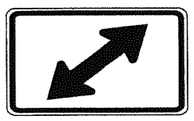
W1-5
30"X30"
(LT. or RT.)

W2-2
30"X30"

W5-2
36"X36"

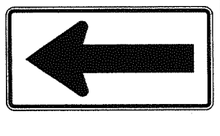
W8-3
36"X36"

R1-3P
18"X6"



M6-5
21"X15"

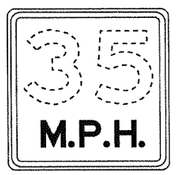
W1-1
30"X30"
(LT. or RT.)



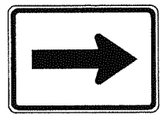
W1-6
48"X24"

W2-3
30"X30"
(LT. or RT.)

W5-3
36"X36"

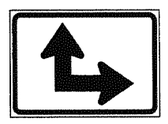


W13-1P
18"X18"



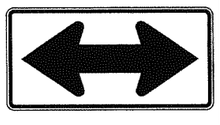
M6-1
21"X15"

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



M6-6
21"X15"

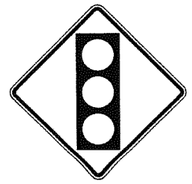
W1-2
30"X30"
(LT. or RT.)



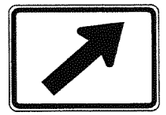
W1-7
48"X24"

W2-4
30"X30"

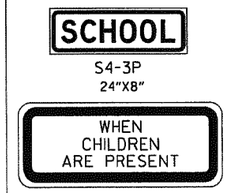
W10-1
36" DIAMETER



W3-3
36"X36"

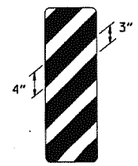


M6-2
21"X15"



S4-3P
24"X8"

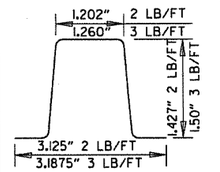
S4-2P
24"X10"



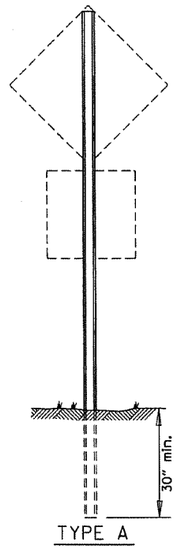
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

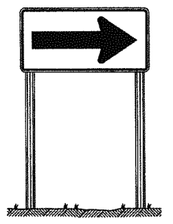


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

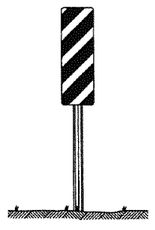


TYPE A

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



TYPE B



TYPE C

MINIMUM WEIGHT

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

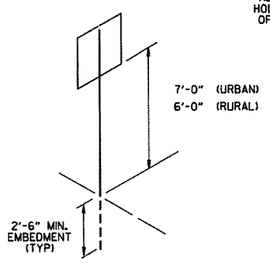
STANDARD HIGHWAY SIGNS

DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-5-76	STEEL POST WT. FROM 2"-3"; ADDED S4-2 & S4-3	504-5-5-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-26-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

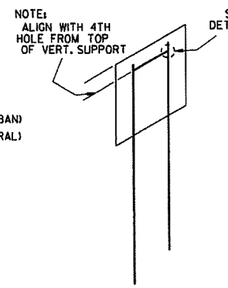
SUPPORT ASSEMBLIES

ARKANSAS STATE HIGHWAY COMMISSION

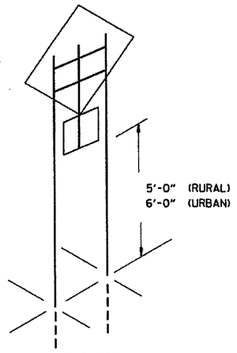
STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES
STANDARD DRAWING SHS-1



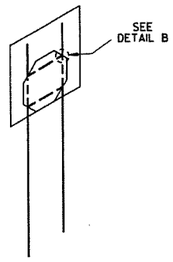
U-1



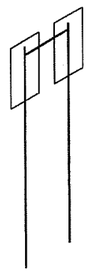
U-2



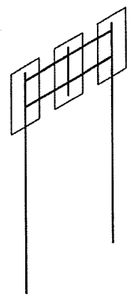
U-2 (A)



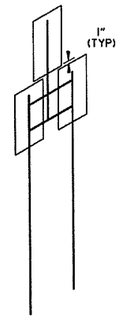
U-2 (B)



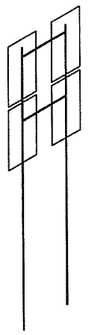
U-2 (1)



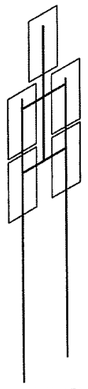
U-2 (2)



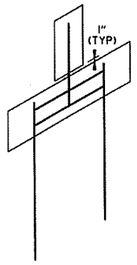
U-2 (3)



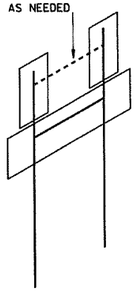
U-2 (4)



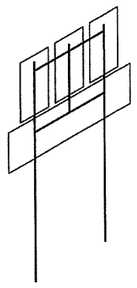
U-2 (5)



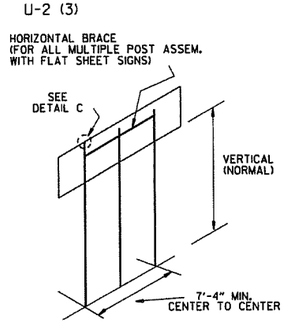
U-2 (6)



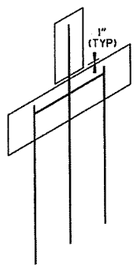
U-2 (7)



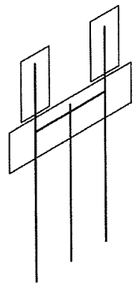
U-2 (8)



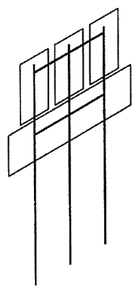
U-3



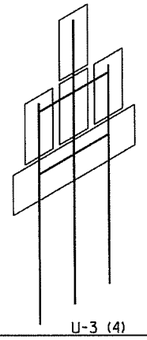
U-3 (1)



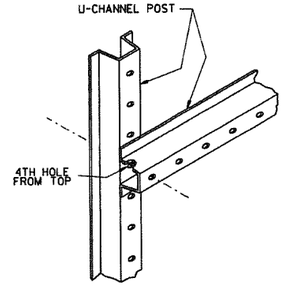
U-3 (2)



U-3 (3)

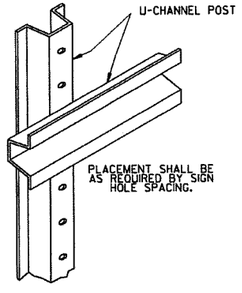


U-3 (4)



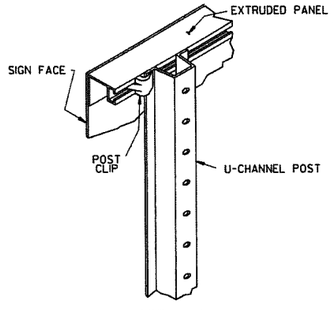
DETAIL A

SHOWING HORIZONTAL BRACE



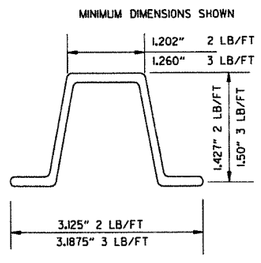
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION

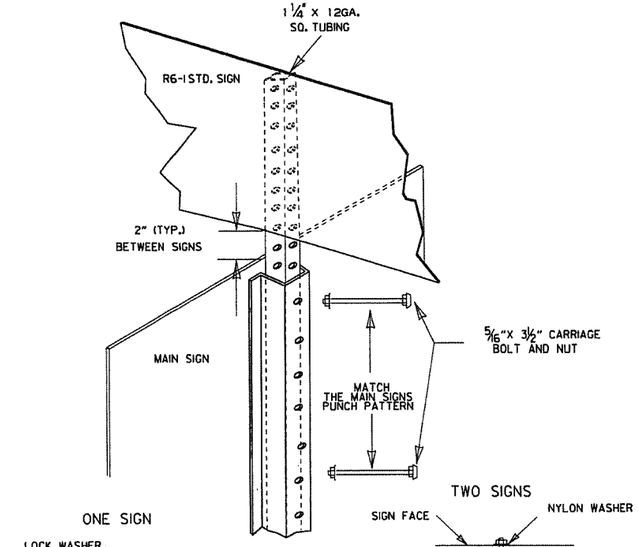


DETAIL C

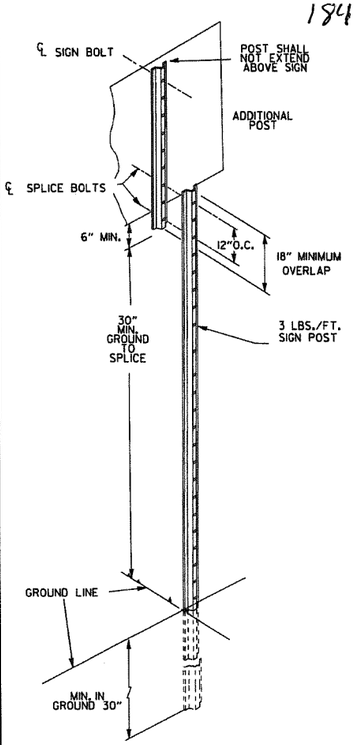
SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



DETAIL C
U-CHANNEL POST



DETAIL E
R6-1 EXTENSION
FOR U-CHANNEL POST



DETAIL F
DETAIL OF SPLICES

NOTES:

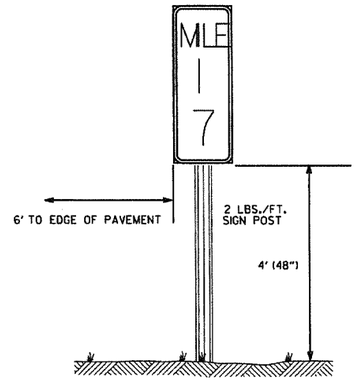
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

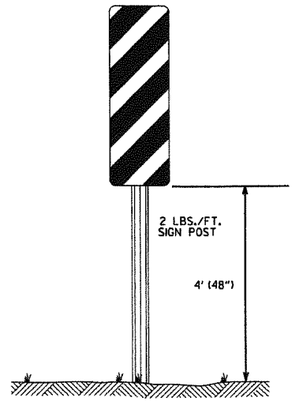
NORMAL INSTALLATIONS WILL REQUIRE $\frac{5}{16}$ " DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.



TYPICAL MILE MARKER INSTALLATION



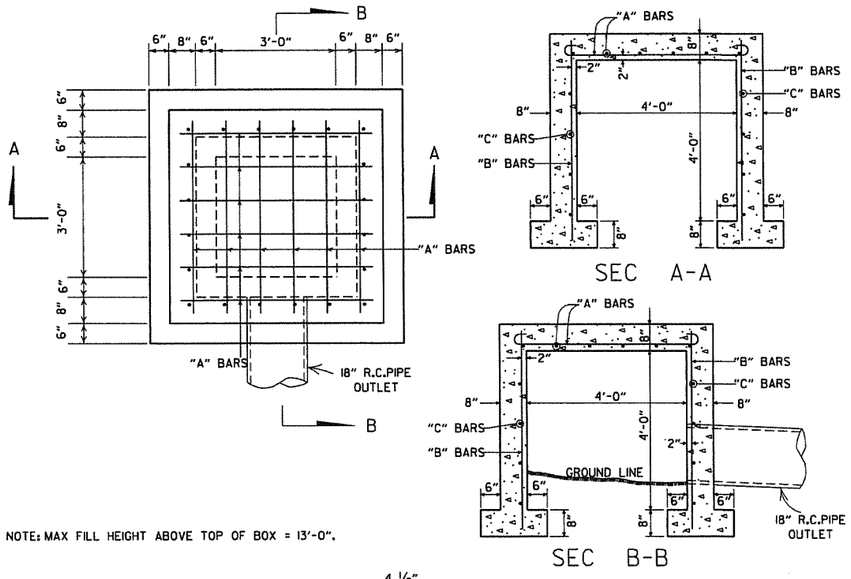
TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

DATE	REVISION	FILMED
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

STANDARD DRAWING SHS-2

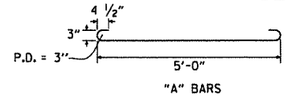


NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS

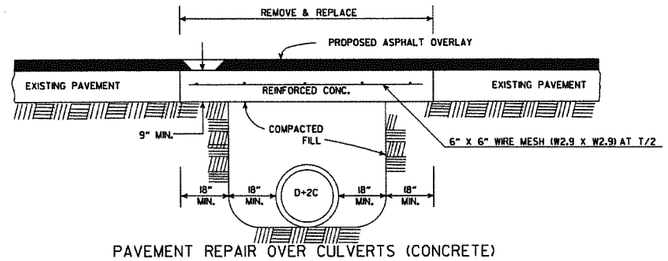


QUANTITIES

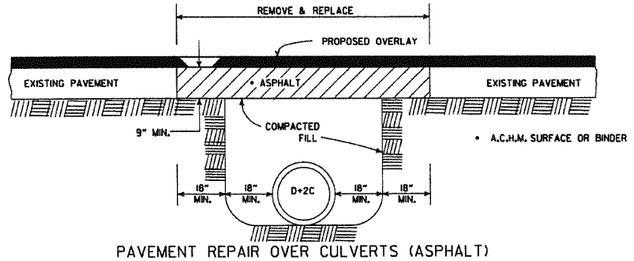
CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

GENERAL NOTE:
THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITTIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



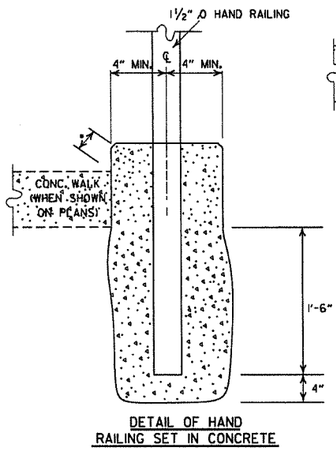
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



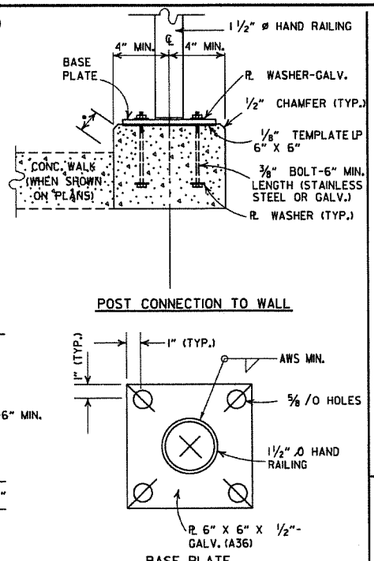
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

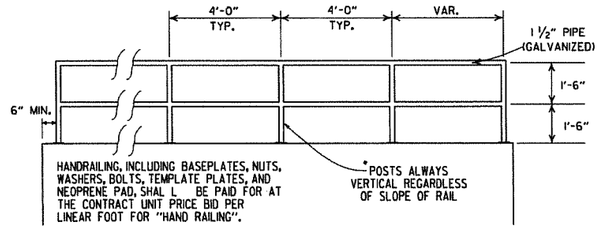
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



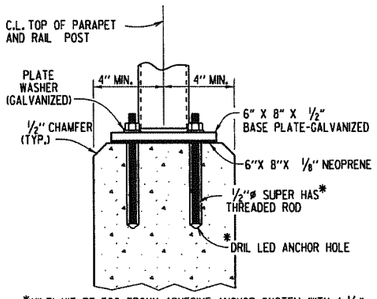
DETAIL OF HAND RAILING SET IN CONCRETE



POST CONNECTION DETAILS



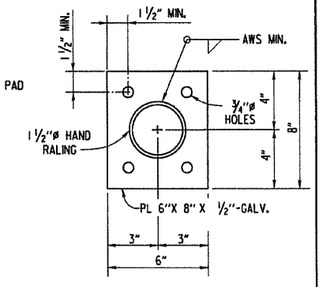
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

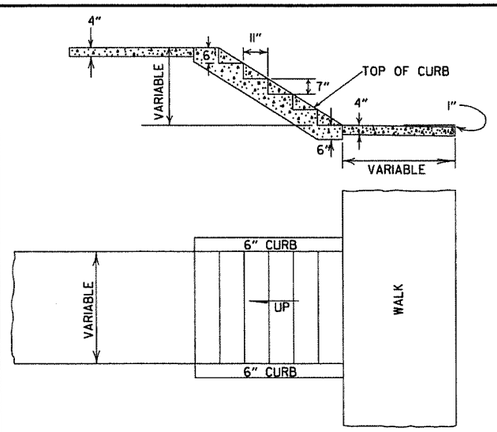
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE; REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	649-7-15-88
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1

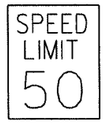
R1-1

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

R1-2

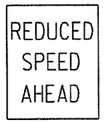
STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



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

R2-5A



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

R2-5C

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

R4-1

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

R4-2

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

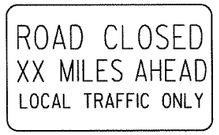
R5-1

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

RII-2

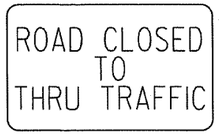
48"X30"

RII-3A



60"X30"

RII-4



60"X30"

RSP-1

48"X30"

WI-1

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

WI-2

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

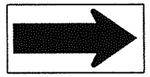
WI-3

STD. 48"X48"

WI-4

STD. 48"X48"

WI-6



STD. 48"X24"
SPECIAL 60"X30"

WI-8

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

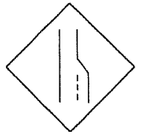
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

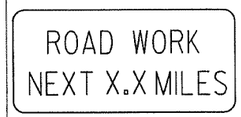
W8-11

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

W8-9

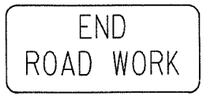
STD. 36"X36"
FWY. 48"X48"

G20-1



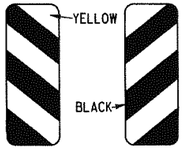
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

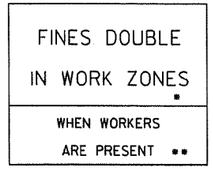
M4-9

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

M4-10

48"X18"

R55-1



36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	1/2 MILE
1000 FT	3/4 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.

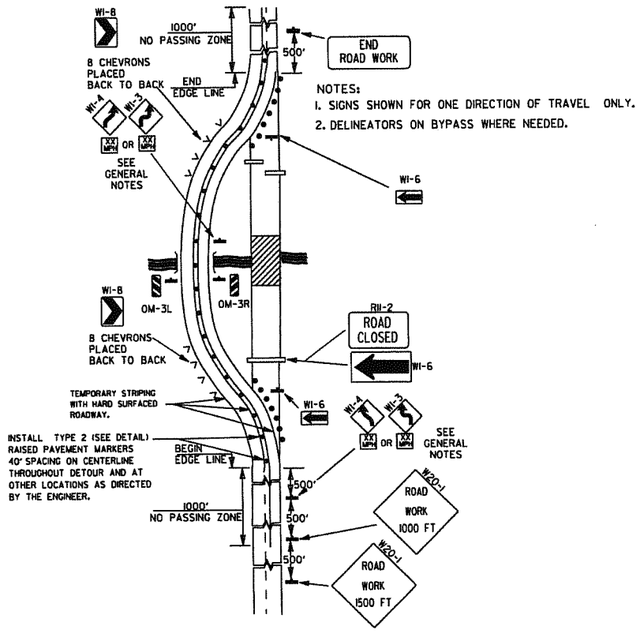
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
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	

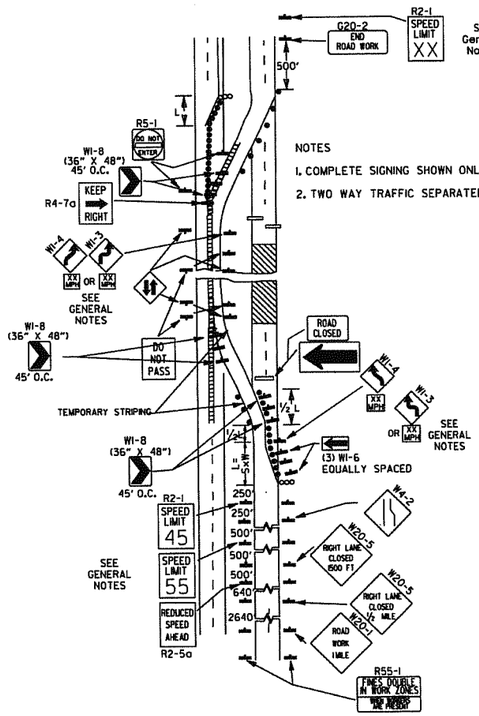
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

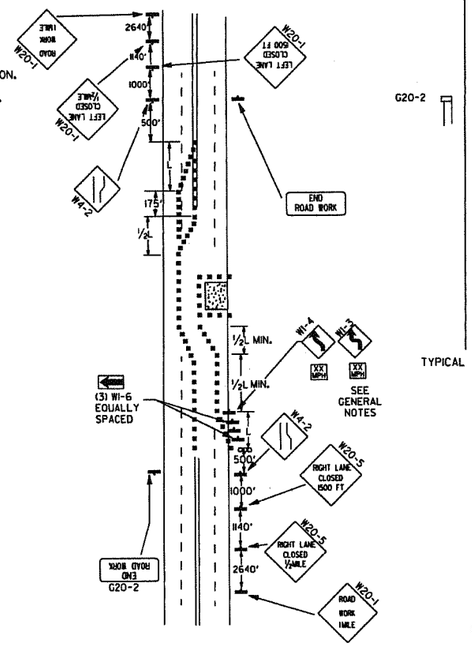
STANDARD DRAWING TC-1



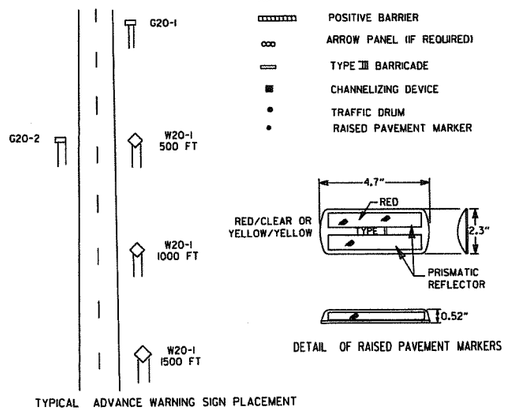
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



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

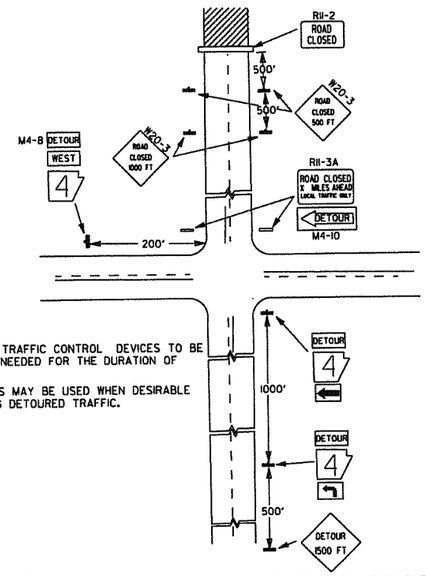


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



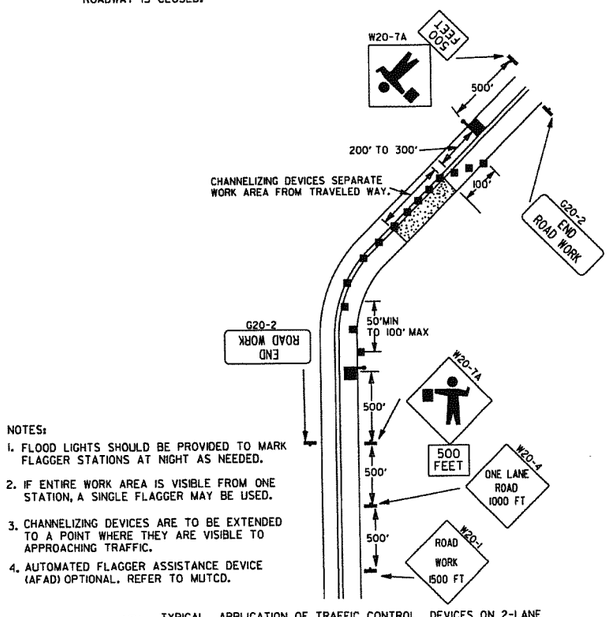
DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT



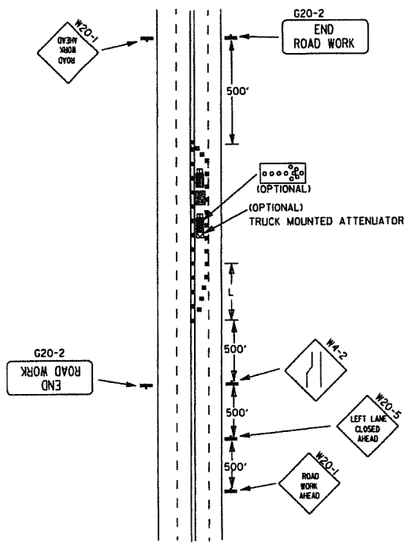
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



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

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:

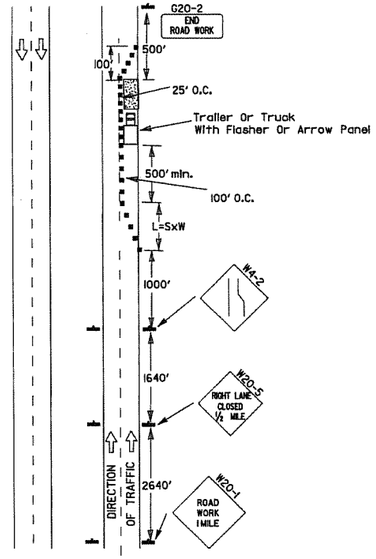
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE 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 1MILE 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. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.

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

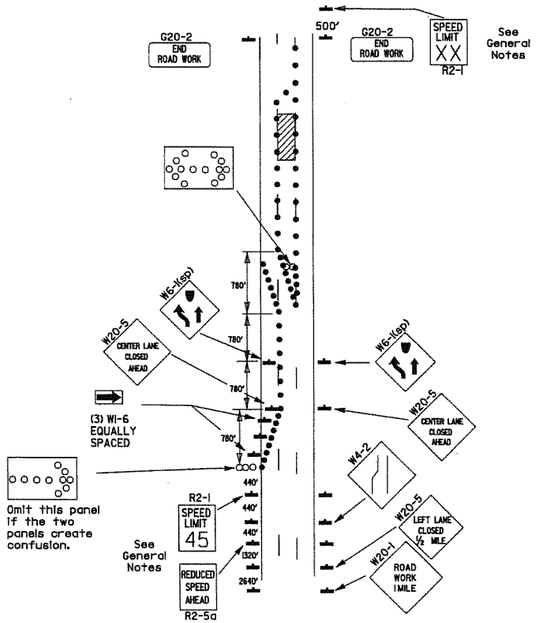
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



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



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

KEY:

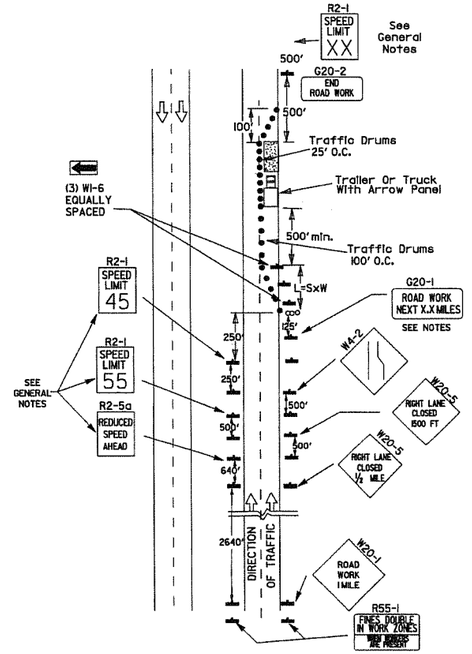
○○○ Arrow Panel (If Required)

■ Channelizing Device

● Traffic drum

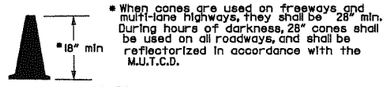
GENERAL NOTES:

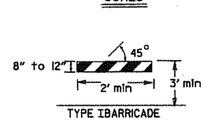
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
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.

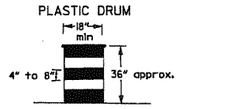


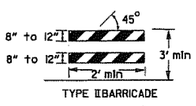
(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

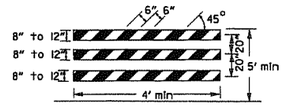
Channelizing devices



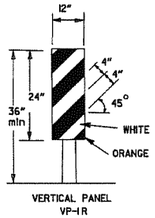




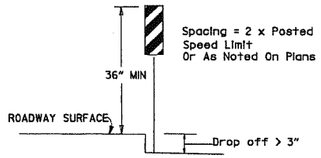




NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



VERTICAL PANEL PLACEMENT



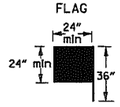
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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.

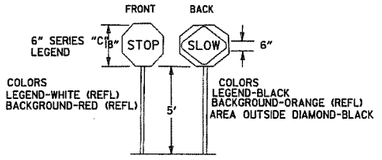
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

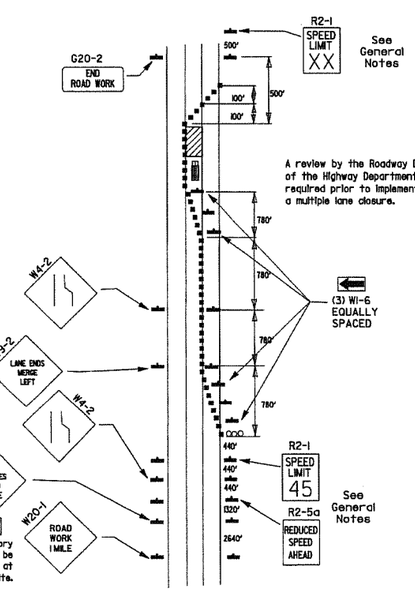
FLAG



Flag shall be of good grade red material

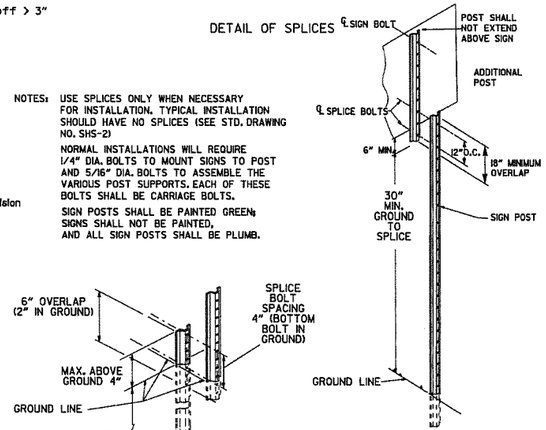
STOP SLOW PADDLE





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

DETAIL OF SPLICES



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

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

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

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

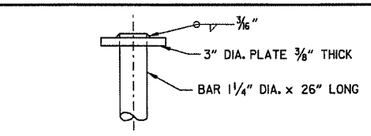
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

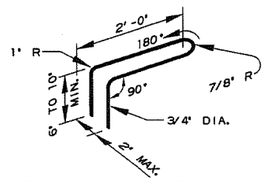
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

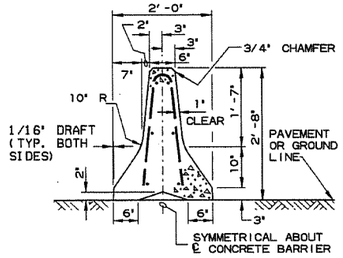
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", 90°, 3 3/8" R, LIFTING HOLE
S-2	HORIZ.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



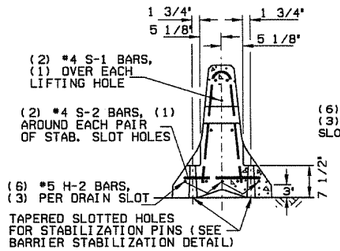
CONNECTION DETAILS



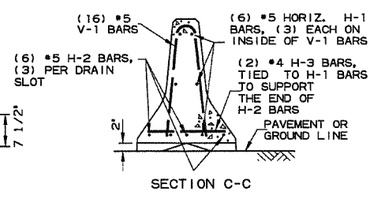
CONNECTION LOOP



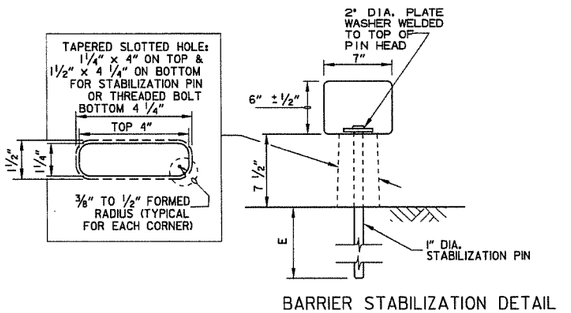
SECTION A-A



SECTION B-B



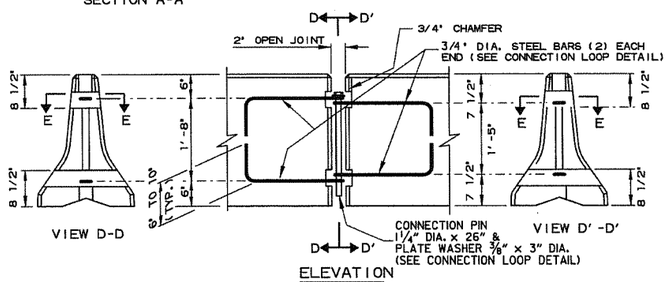
SECTION C-C



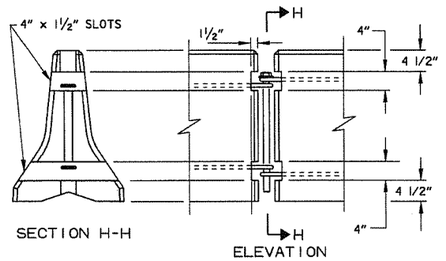
BARRIER STABILIZATION DETAIL

ROADWAY SECTION

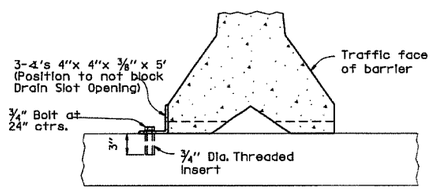
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



ELEVATION



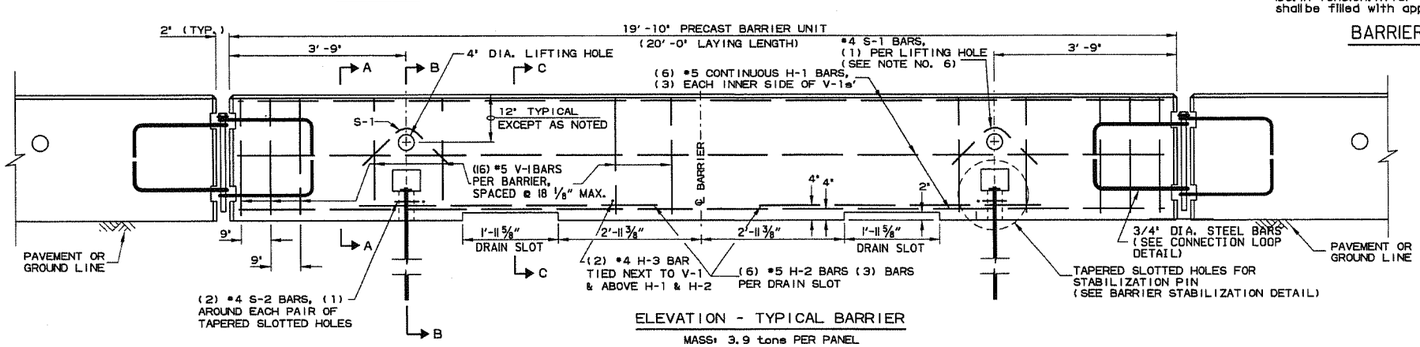
BARRIER REMOVAL SLOT DETAILS



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks to be retained. 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



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

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

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

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

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

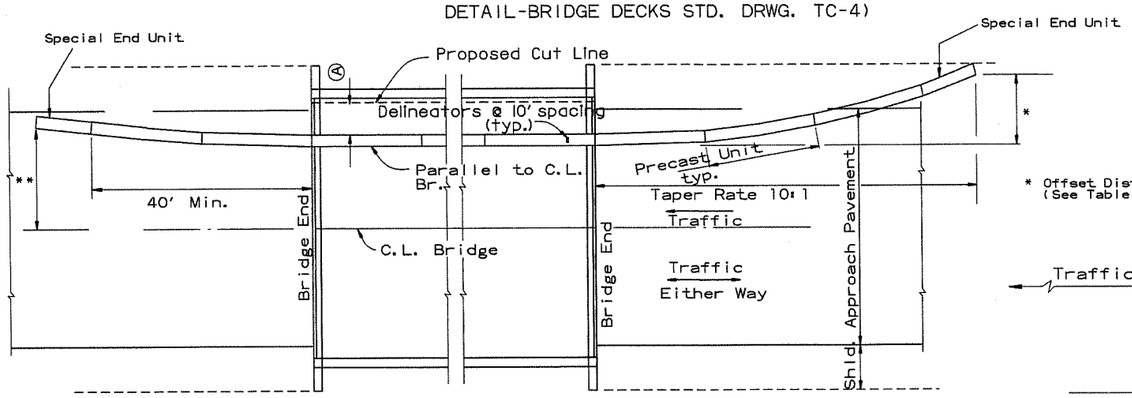
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

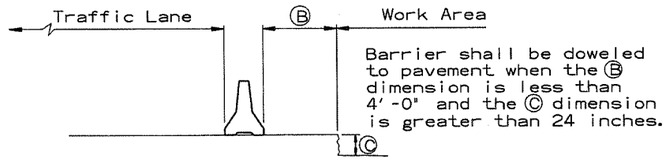
STANDARD DRAWING TC-4

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



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

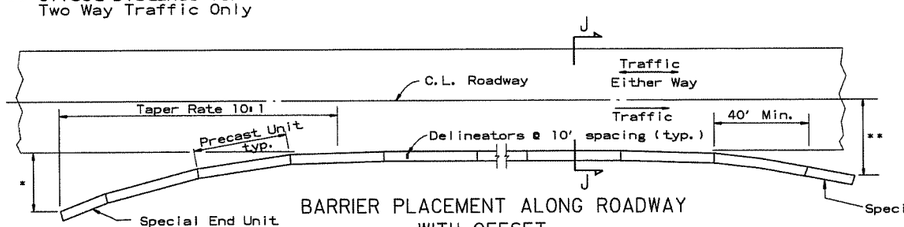


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

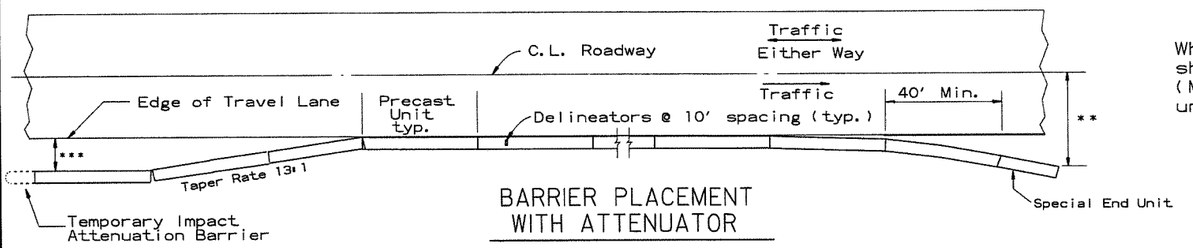
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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

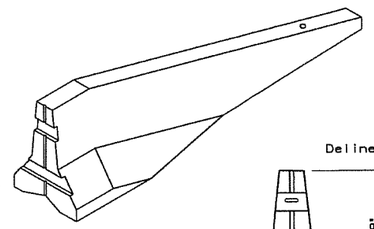


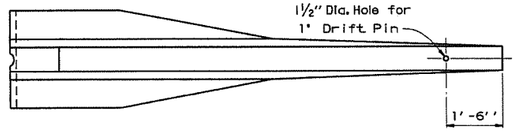
BARRIER PLACEMENT WITH ATTENUATOR

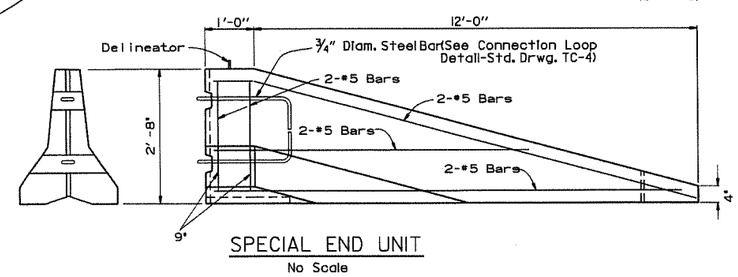
No Scale

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

** Offset Distance For Two Way Traffic Only







SPECIAL END UNIT

No Scale

General Notes

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

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

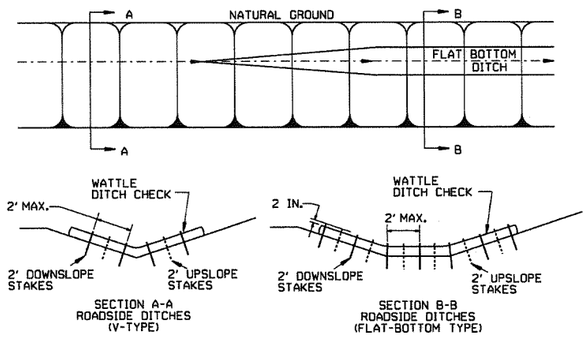
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

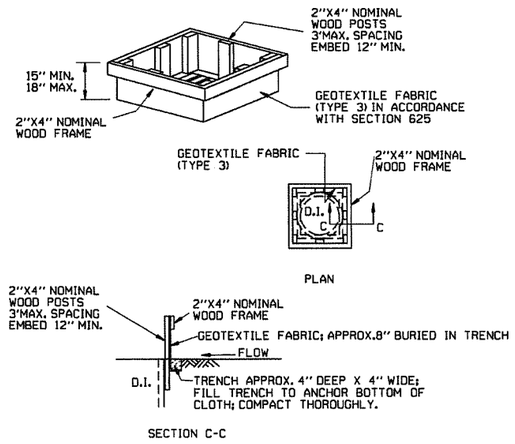
STANDARD DRAWING TC-5

GENERAL NOTES

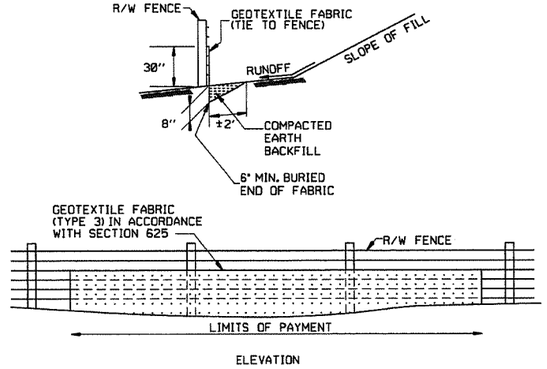
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



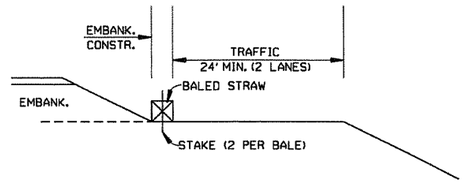
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

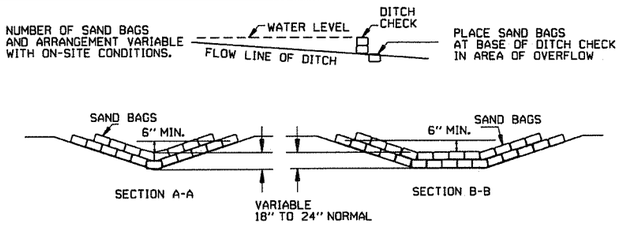
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

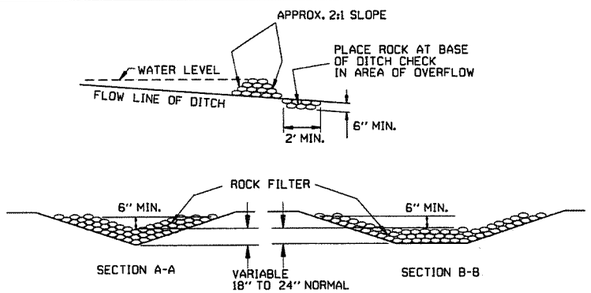
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED 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.



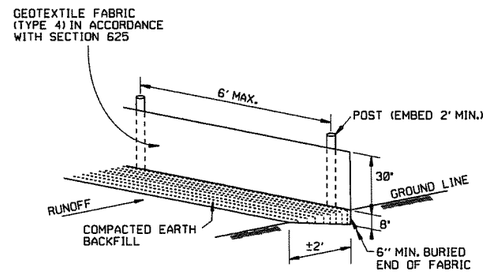
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

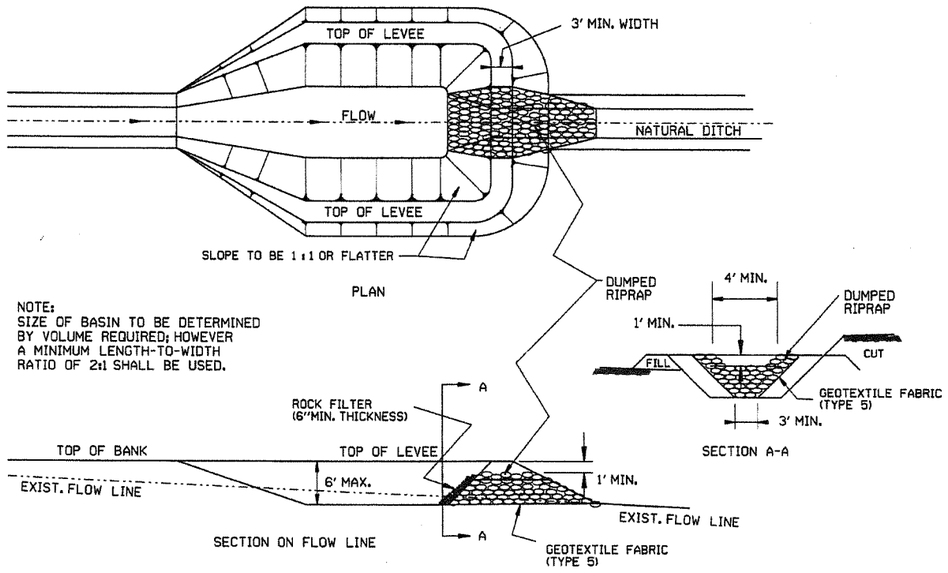
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

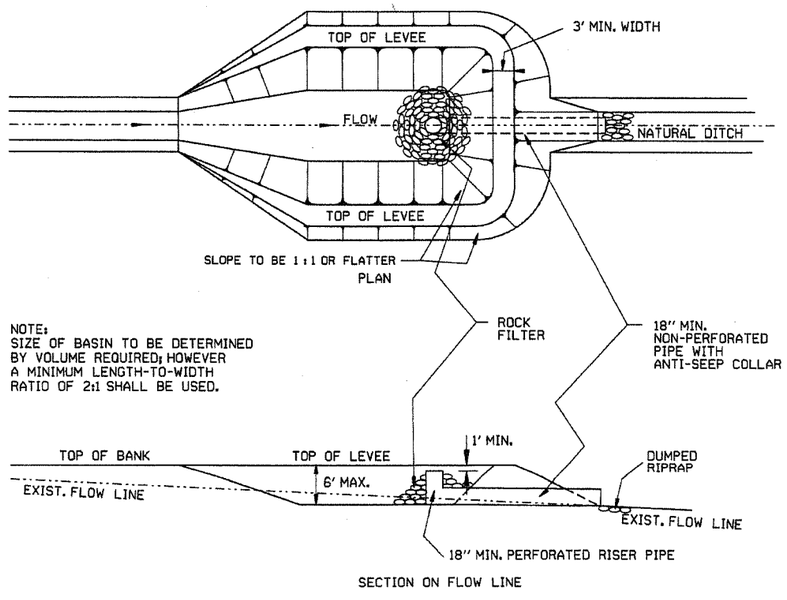
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

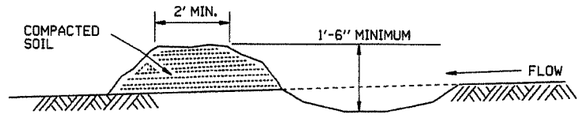
STANDARD DRAWING TEC-1



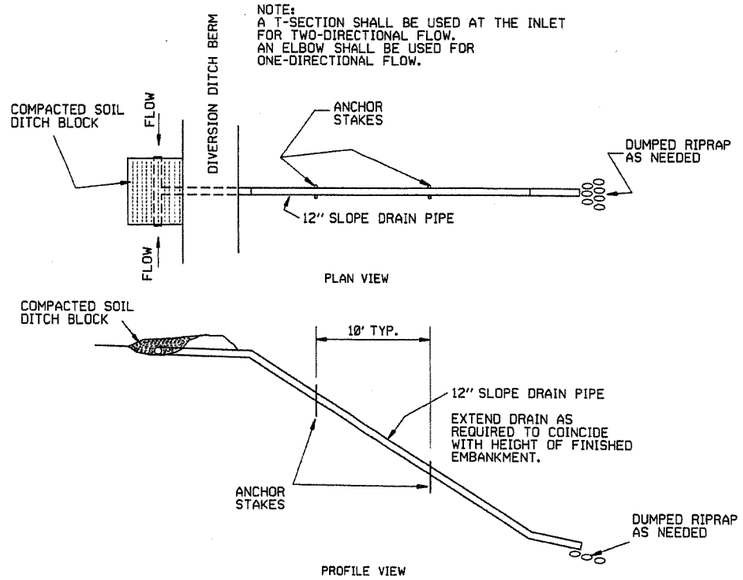
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



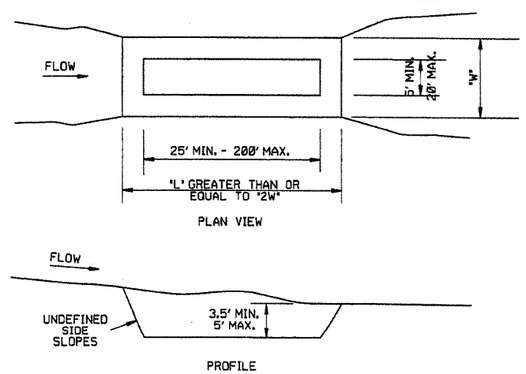
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

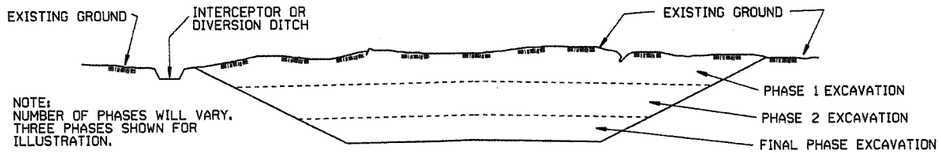
STANDARD DRAWING TEC-2

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



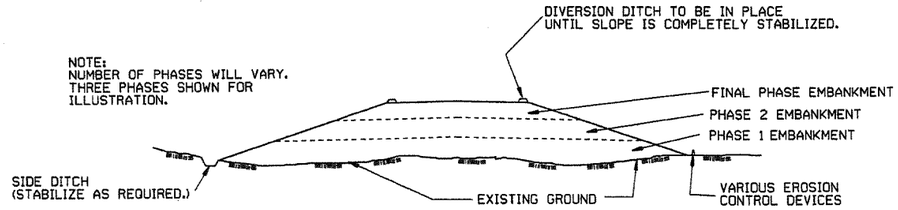
GENERAL NOTE

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.

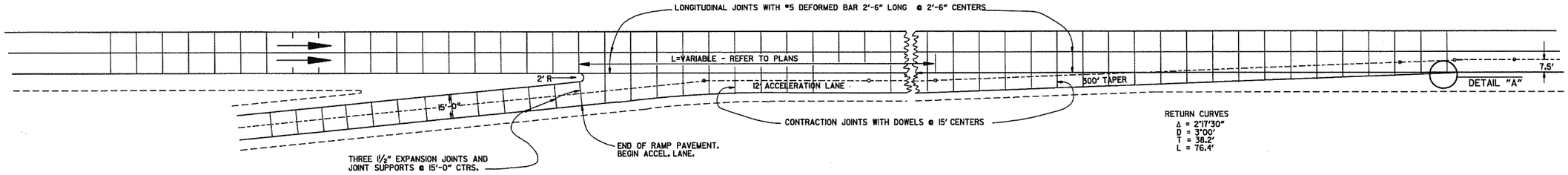
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

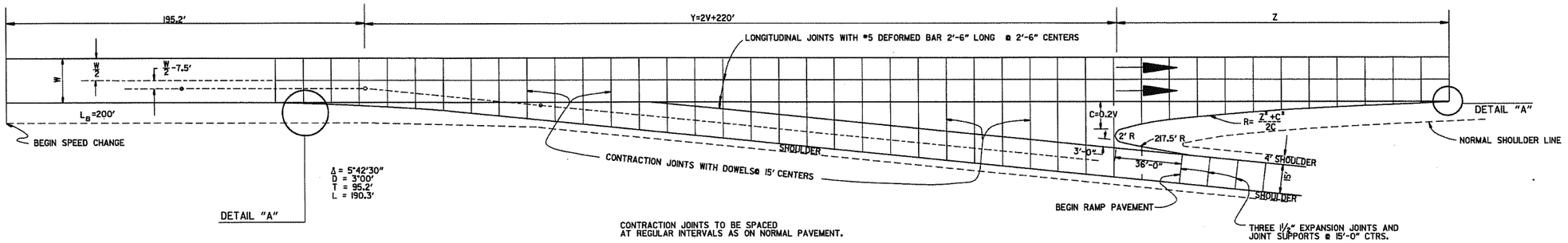
STANDARD DRAWING TEC-3

stdtec3.dgn



ENTRANCE RAMP

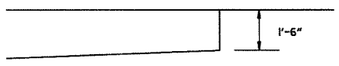
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



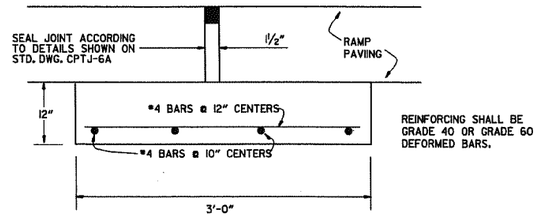
EXIT RAMP

EXIT RAMP

DESIGN SPEED V	Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R	ADDITIONAL SURFACING SQ. YDS.
40	300.0	8.0	96.0	580.0	602.43
50	320.0	10.0	120.0	725.0	687.23
60	340.0	12.0	168.0	1182.0	790.55
70	360.0	14.0	210.0	1582.0	902.27



DETAIL "A"



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

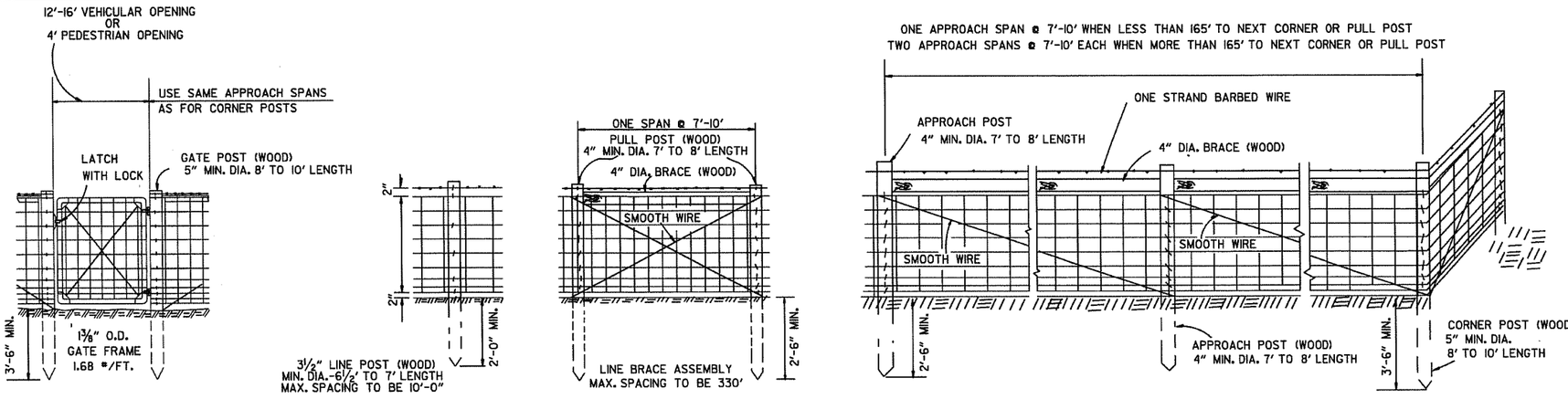
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.

DATE	REVISION	DATE FILM'D
8-22-02	DELETED NOTE	
11-16-01	CORRECTED SPELLING ON ENTRANCE RAMP NOTE	
5-13-99	ADDED, EDITED AND DELETED NOTES	
11-03-94	ADDED NOTE RE: REINF. BARS	
10-1-92	ADDED DETAIL A & OTHER MINOR CHANGES	10-1-92
1-25-90	REVISED EXPANSION JOINT	1-25-90
7-15-88	CONFORMED TO 1988 SPECIFICATIONS	65C-7-15-88
3-2-81	ISSUED	511-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

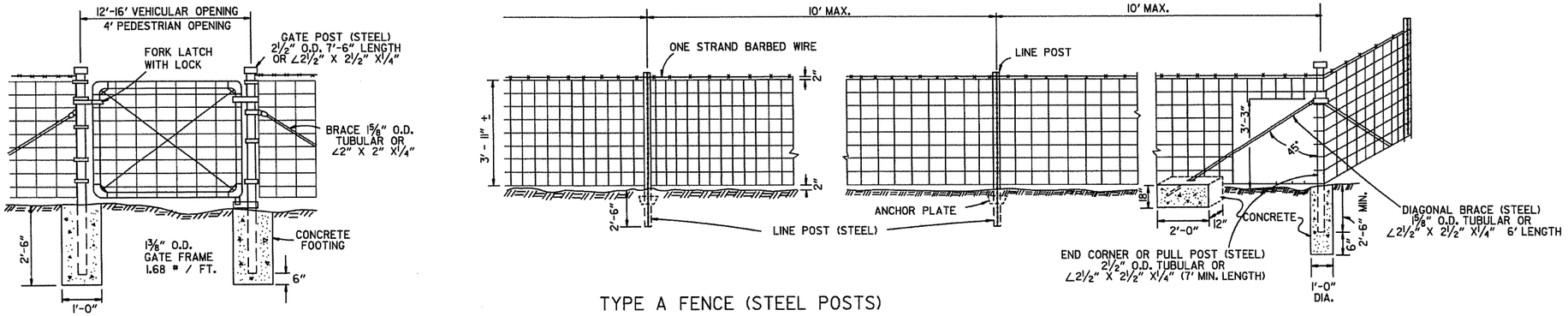
DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A



NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)



TYPE A FENCE (STEEL POSTS)

GENERAL NOTES:

STEEL LINE POSTS SHALL BE GALVANIZED, 7 FT. IN LENGTH.

TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK).

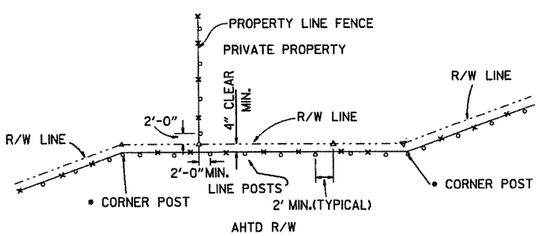
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF WOOD LINE POSTS OF 7' LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

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

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

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

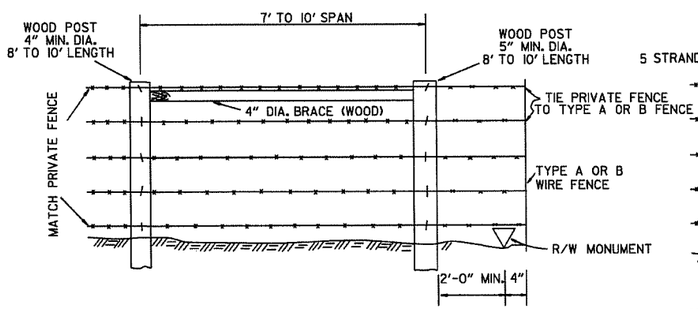
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD": AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF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



•NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

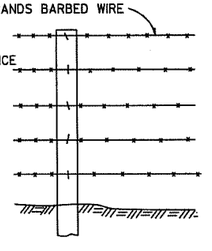
△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



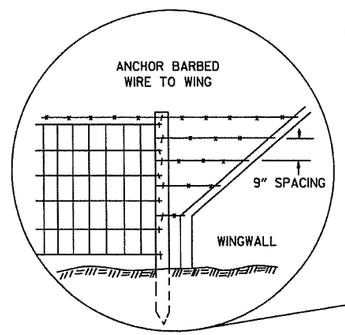
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

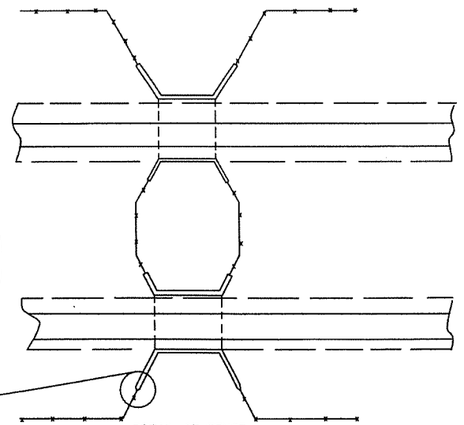
PRIVATE FENCE TERMINAL INSTALLATION



SPACING AND SIZE OF POSTS FOR TYPE B FENCE SHALL BE THE SAME AS TYPE A FENCE.

TYPE B FENCE





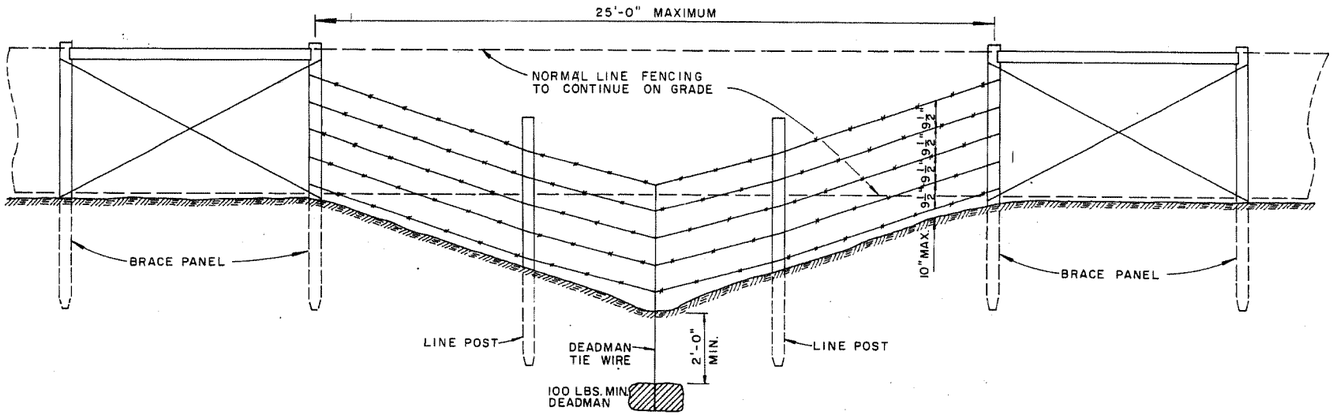
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

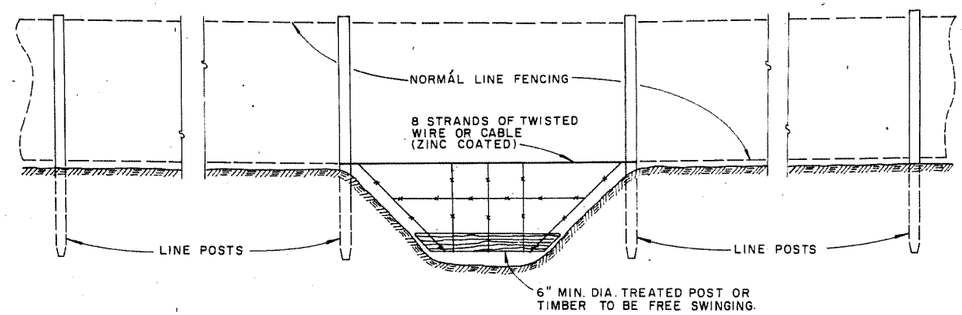
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.	
7-15-88	ADDED SPLICE NOTES	
7-15-88	ADDED HEIGHT DIMENSION	
4-3-87	REVISED VARIOUS NOTES AND GENERAL NOTES	
11-1-84	MAX. POST SPACING	
1-4-83	MIN. DIA. LINE POST	
10-2-72	REVISED & REDRAWN	

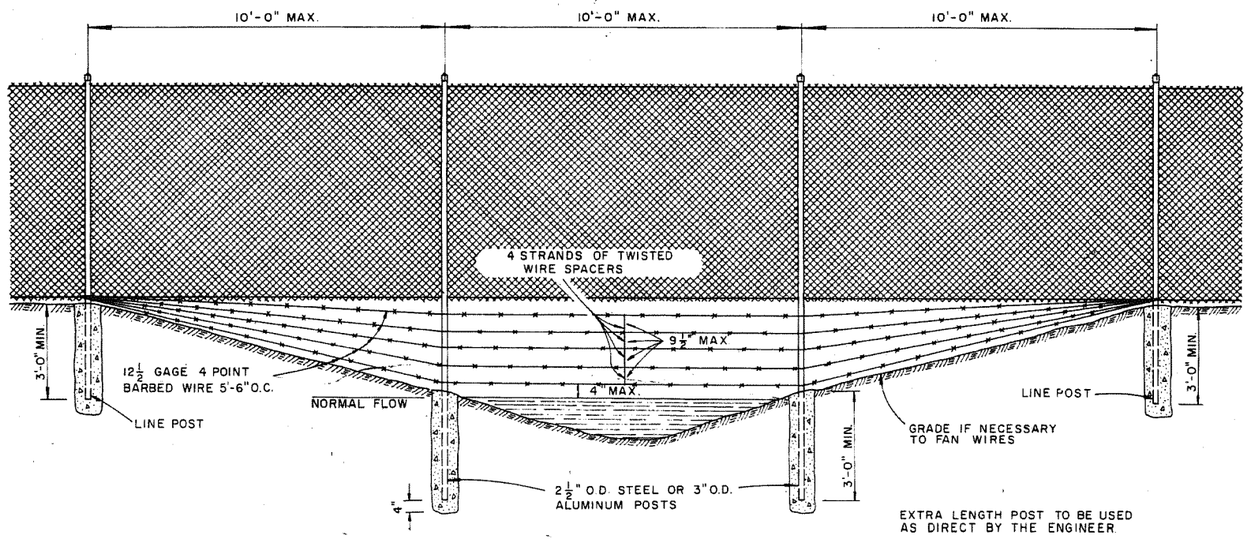
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE A AND B

STANDARD DRAWING WF-1







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

DATE	REVISION	DATE FILM'D.
4-20-79	REVISED TOP RAIL & TENSION WIRE	676 4-20-79
10-2-72	REVISED & REDRAWN	529 10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

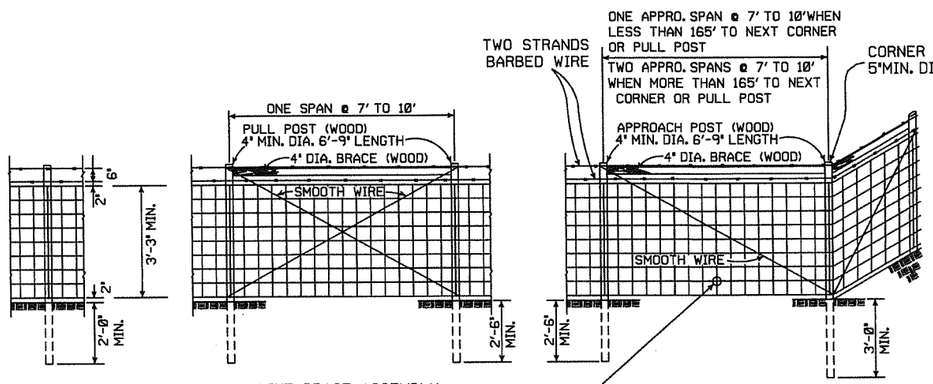
STANDARD DRAWING

WF-2

73

1M—11-71—67001—PP&SCo

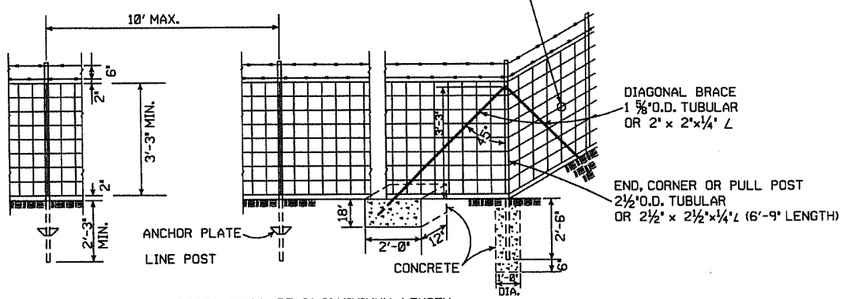
TYPE C FENCE (WOOD POSTS)

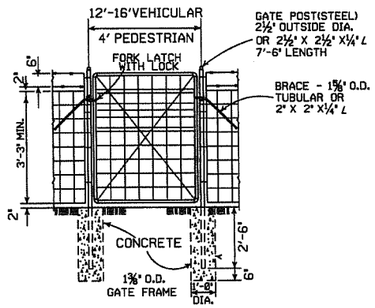


LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

OTHER APPROVED TIES WILL BE PERMITTED





NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

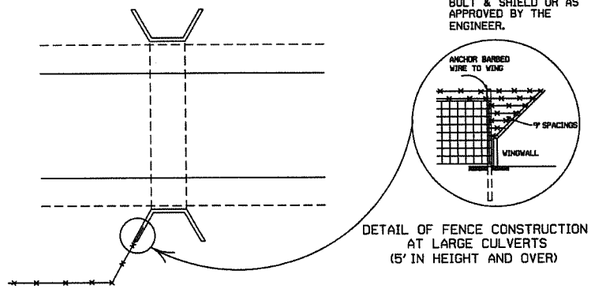
GENERAL NOTES:

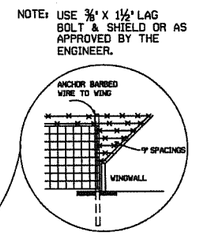
STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED.
TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO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

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

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

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





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

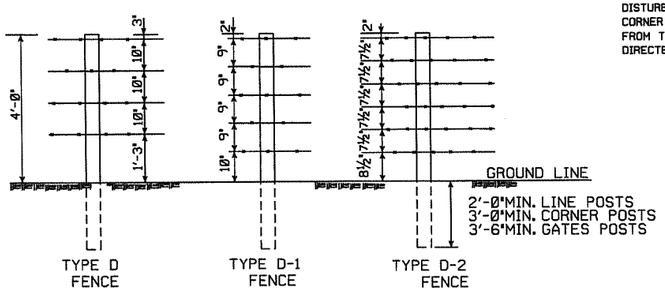
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

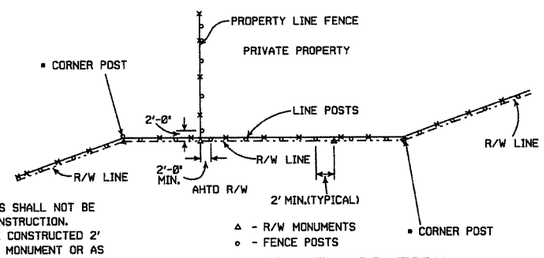
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

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

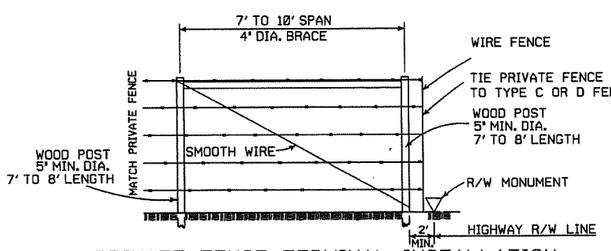


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



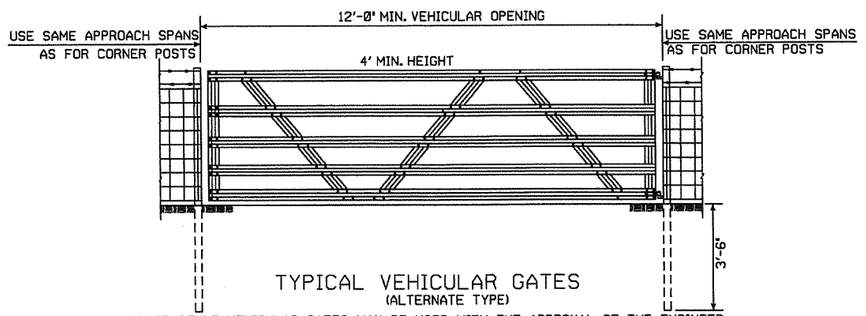
▪ NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

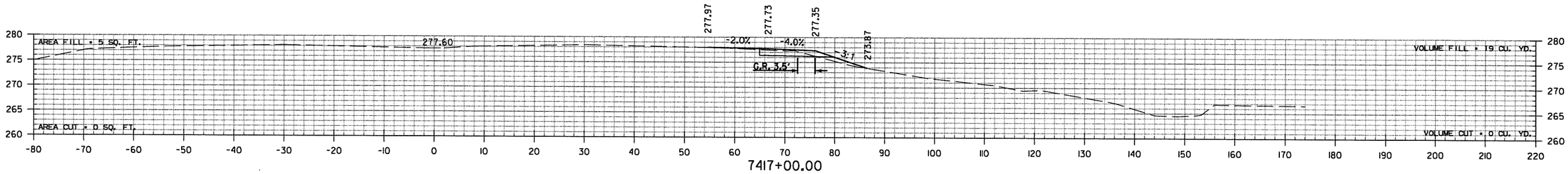
DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89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

ARKANSAS STATE HIGHWAY COMMISSION

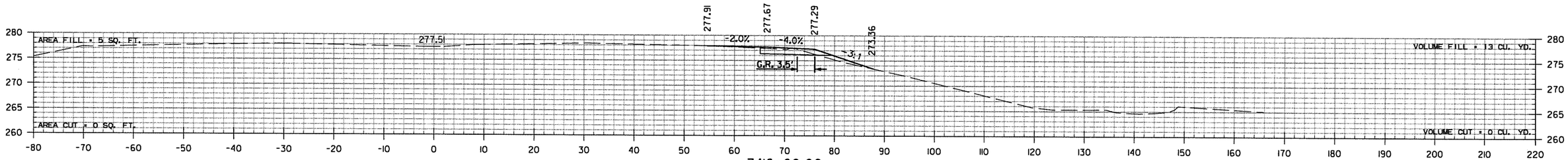
WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4

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.		080395	198	237
				(2) CROSS SECTIONS				

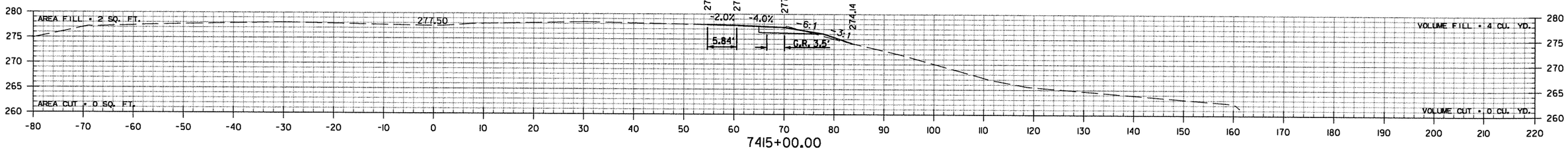


7417+00.00

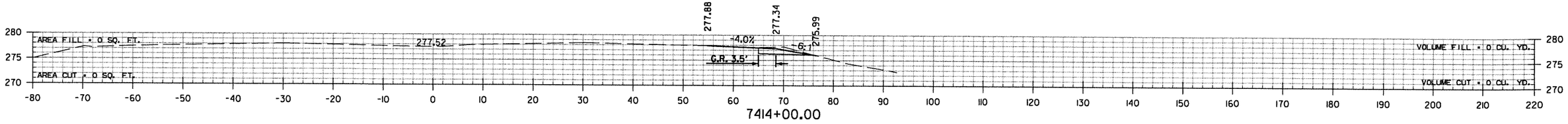


7416+00.00

STA. 7415+98.59 END TAPER



7415+00.00



7414+00.00

STA. 7413+98.59 BEGIN TAPER

STA. 7413+98.59 BEGIN RAMP I DECELERATION LANE

STA. 7413+98.59 BEGIN JOB 080395

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

C.L. MEDIAN I-40

STA. 7414+00 TO STA. 7417+00

scroberson 8/9/2013 2:07:54 PM
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L:\2009\090117230
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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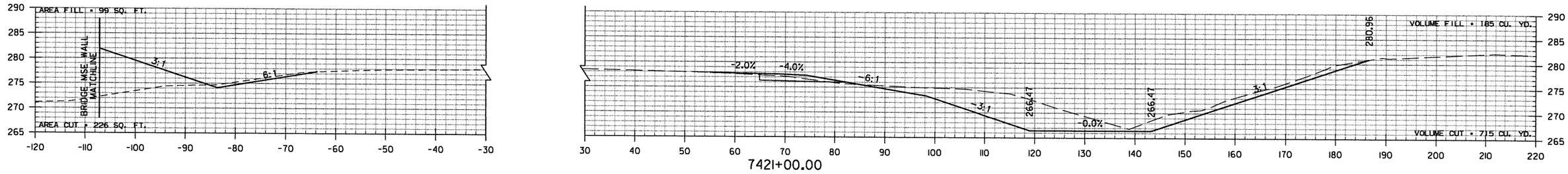
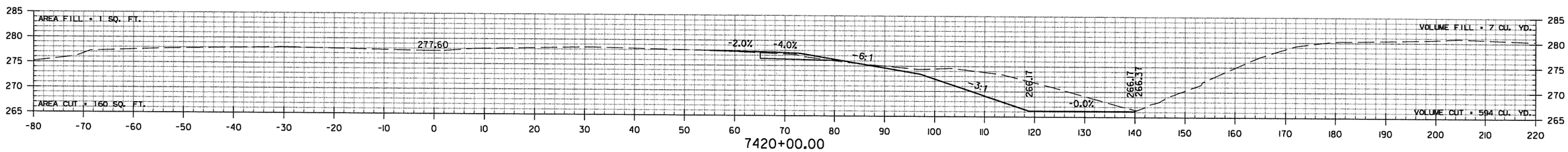
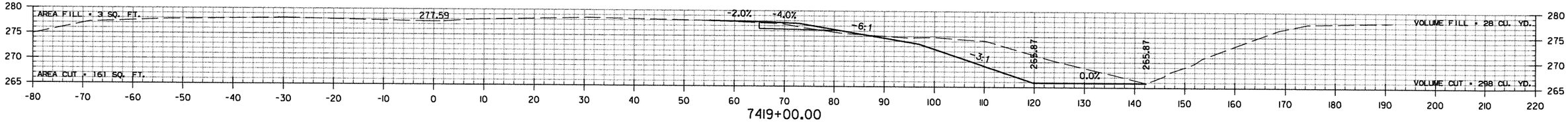
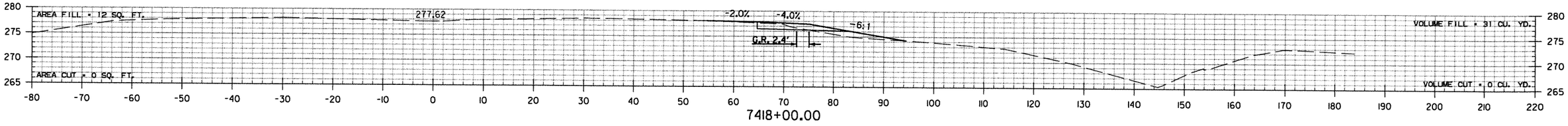
				JOB NO.		080395	199	237
				(2) CROSS SECTIONS				







STA. 7418+90.00
BEGIN SP. DITCH RT. 0.30%
ELEV. 265.84



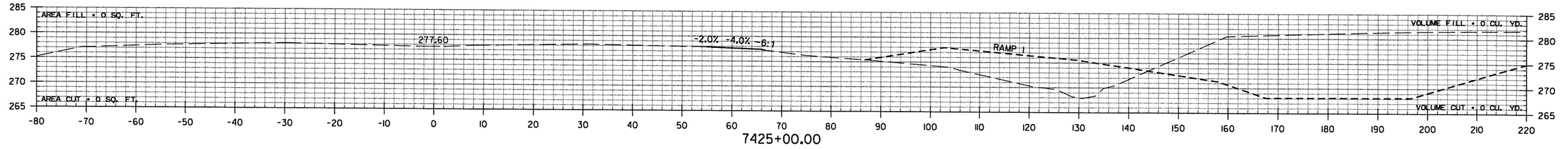
C.L. MEDIAN I-40
STA. 7418+00 TO STA. 7421+00

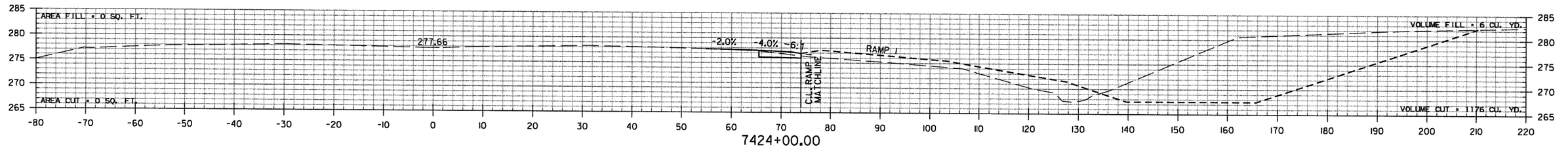
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	200	237
				(2) CROSS SECTIONS				

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

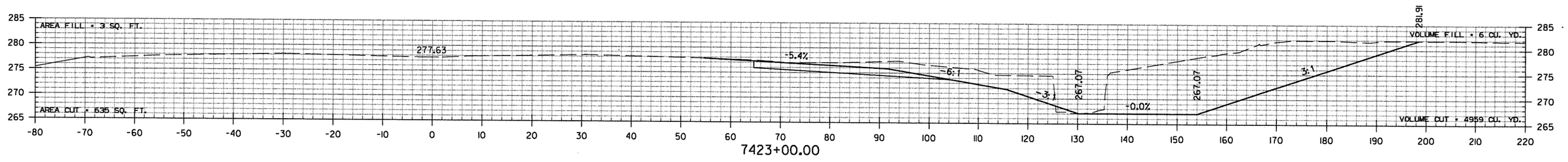
STA. 7425+42.24 END RAMP I DECELERATION LANE

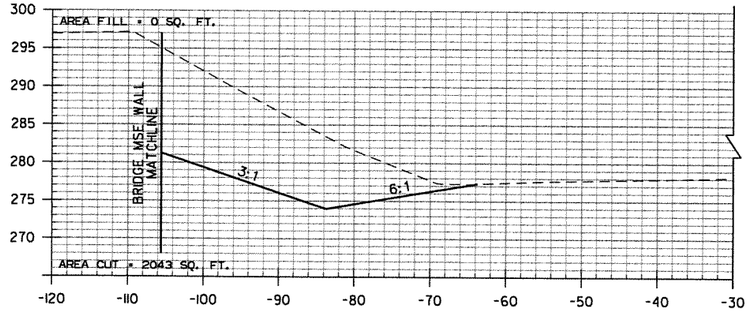
VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

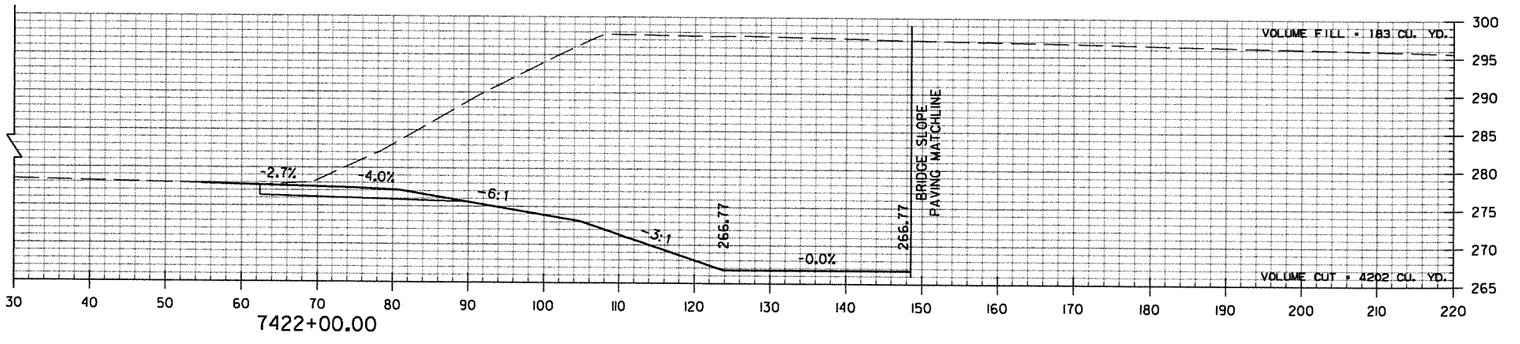




STA. 7423+37.00
END SP. DITCH RT. 0.30%
ELEV. 267.18







C.L. MEDIAN I-40
STA. 7422+00 TO STA. 7425+00

sgrobarsen 8/9/2013 2:08:09 PM
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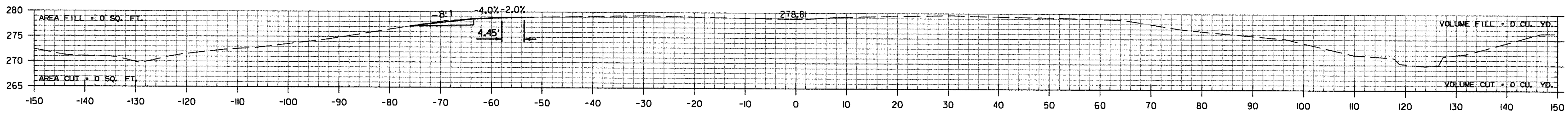
REVISED DATE:

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.		080395	201	237

(2) CROSS SECTIONS



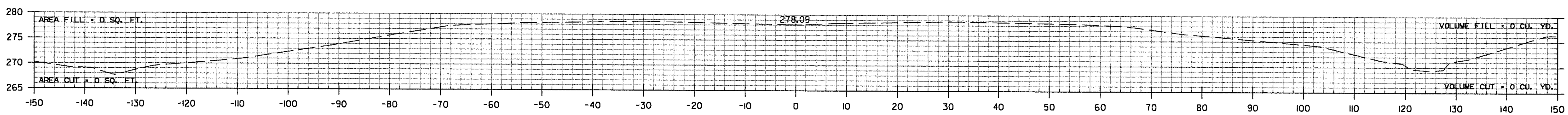
7429+00.00

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

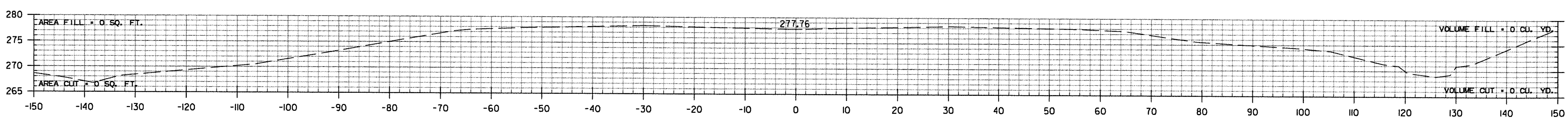
STA. 7428+06.21 BEGIN TAPER

STA. 7428+06.21 BEGIN RAMP 4 ACCELERATION LANE

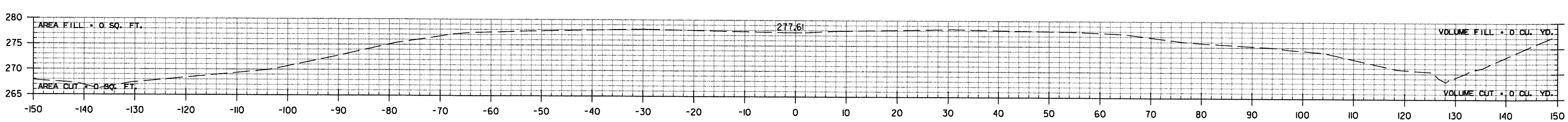
VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.



7428+00.00



7427+00.00



7426+00.00

C.L. MEDIAN I-40
STA. 7426+00 TO STA. 7429+00

soroberson 8/19/2013 2:08:23 PM
WORKSPACE: AHTD
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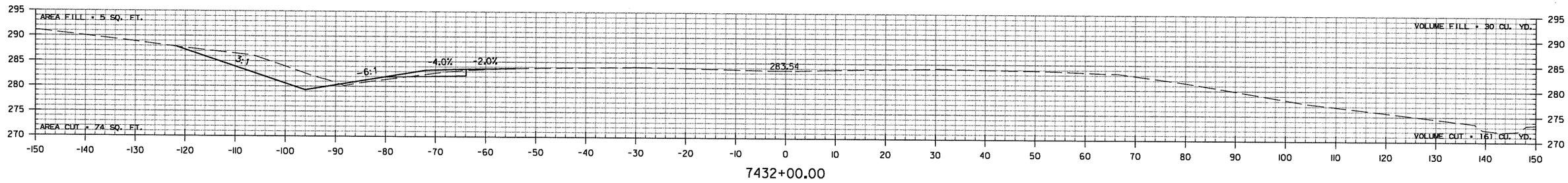
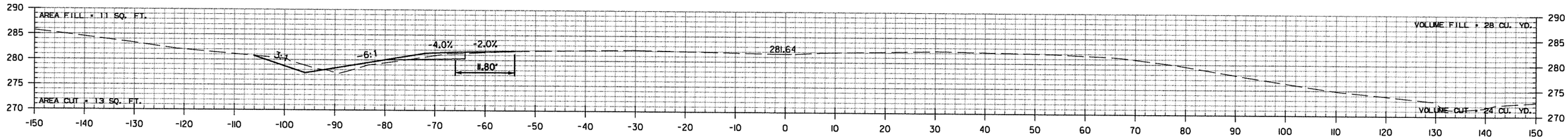
				JOB NO.		080395	202	237
				(2) CROSS SECTIONS				

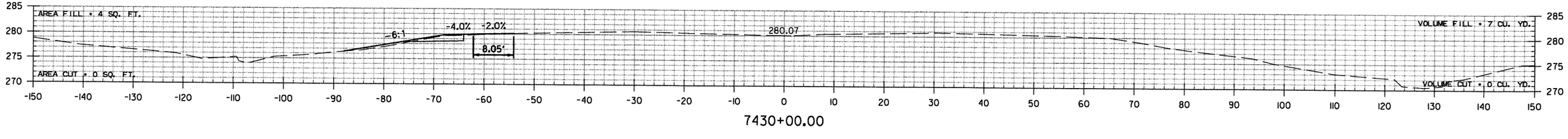


7432+00.00

STA. 7431+06.21 END TAPER



7431+00.00



7430+00.00

C.L. MEDIAN I-40
STA. 7430+00 TO STA. 7432+00

sgroberson 8/19/2013 2:08:36 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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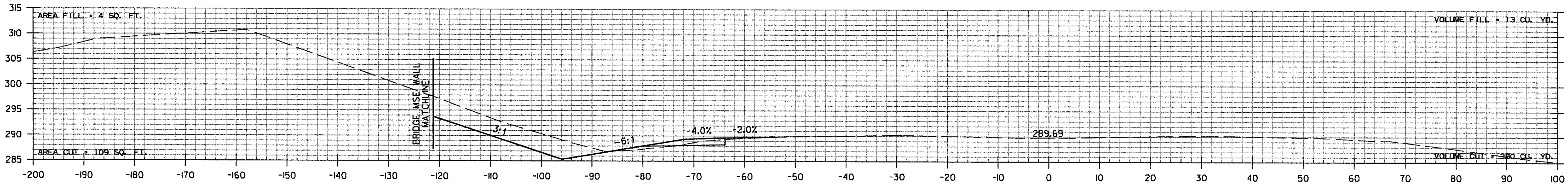
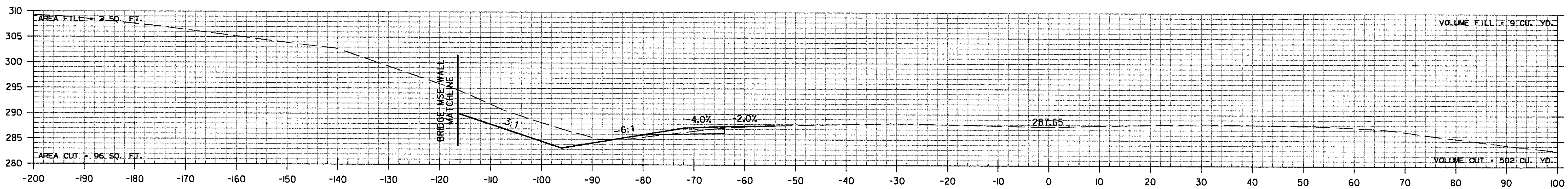
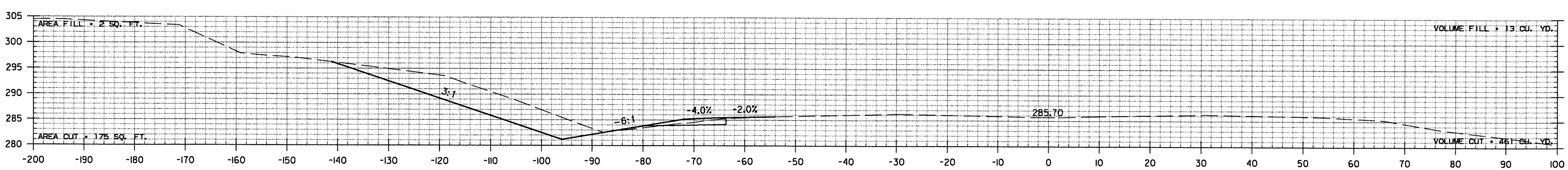
(2) CROSS SECTIONS



7435+00.00



7434+00.00



7433+00.00

C.L. MEDIAN I-40
STA. 7433+00 TO STA. 7435+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
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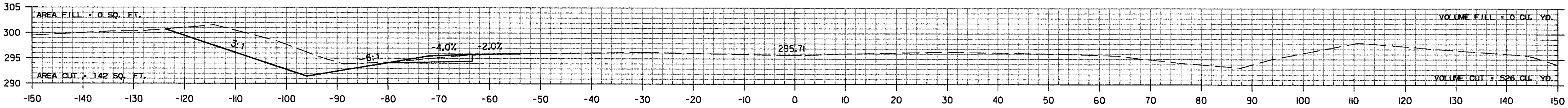
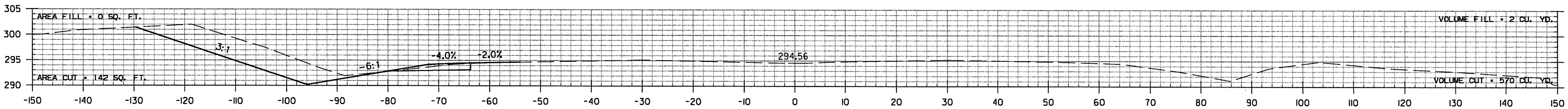
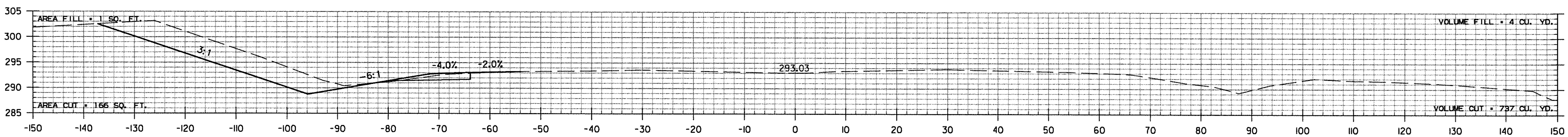
(2) CROSS SECTIONS



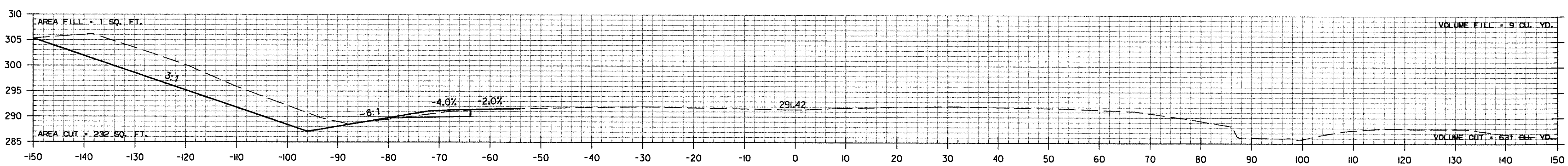
7439+00.00



7438+00.00



7437+00.00



7436+00.00

C.L. MEDIAN I-40
STA. 7436+00 TO STA. 7439+00

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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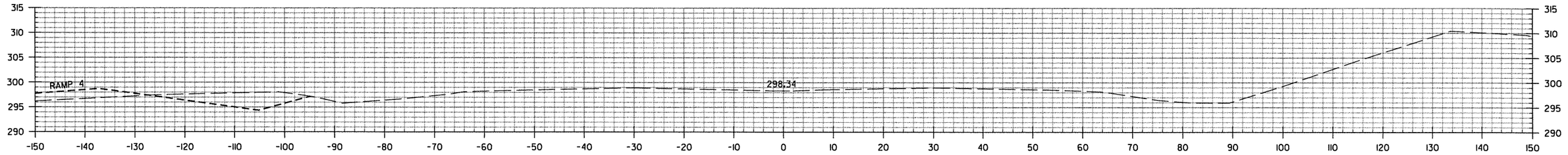
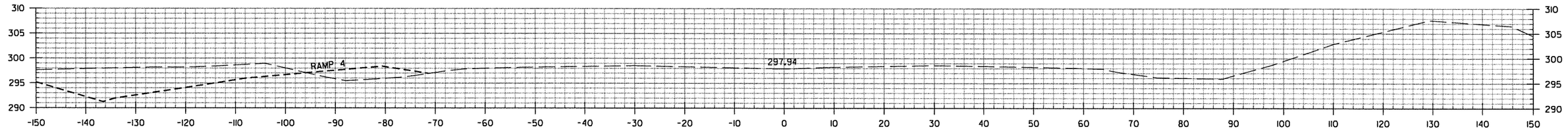
(2) CROSS SECTIONS



7443+00.00

STA. 7442+17.80 MAXIMUM SUPERELEVATION (S.E. = .100'/')

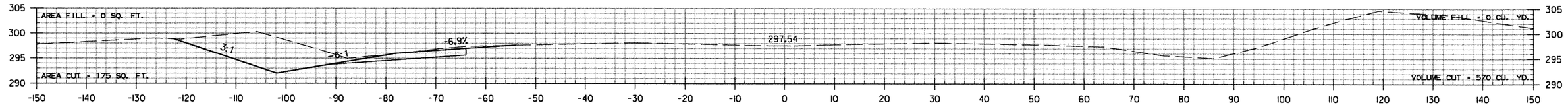


7442+00.00

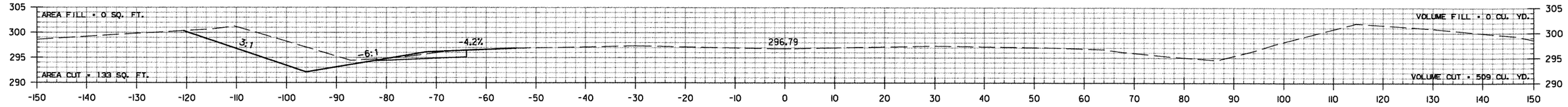
AREA FILL = 0 SQ. FT.
AREA CUT = 174 SQ. FT.

STA. 7441+06.21 END RAMP 4 ACCELERATION LANE

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 39 CU. YD.



7441+00.00



7440+00.00

STA. 7439+17.80 BEGIN SUPERELEVATION

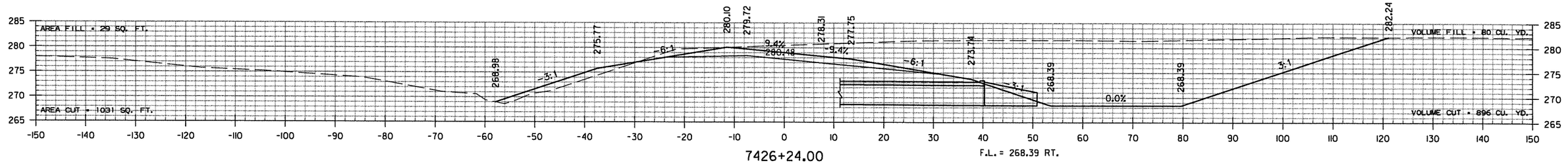
C.L. MEDIAN I-40
STA. 7440+00 TO STA. 7443+00

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.		080395	206	237

(2) CROSS SECTIONS

STA. 7426+50 CONSTRUCT
TRIPLE 8' X 4' X 104' R.C. BOX CULVERT
30° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 701 CFS DA = 406 ACRES

STA. 7426+39.00
END SP. DITCH RT. 0.00%
BEGIN SP. DITCH RT. 4.16%
ELEV. 268.39

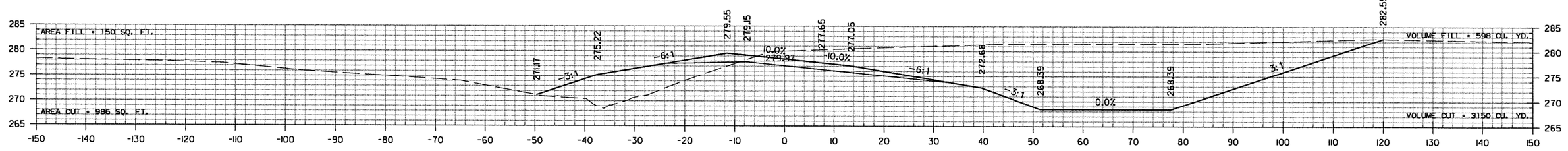


7426+24.00

F.L. = 268.39 RT.

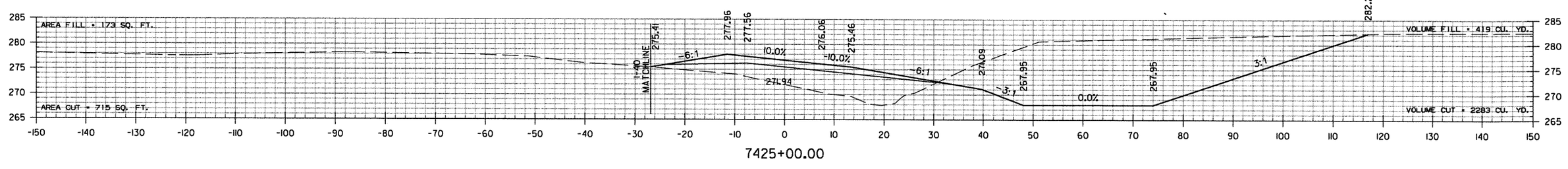
ROCK EXCAVATION FOR TRIPLE BOX
= 766 C.Y.

STA. 7426+01.48 MAXIMUM SUPERELEVATION (S.E. = .100'/')



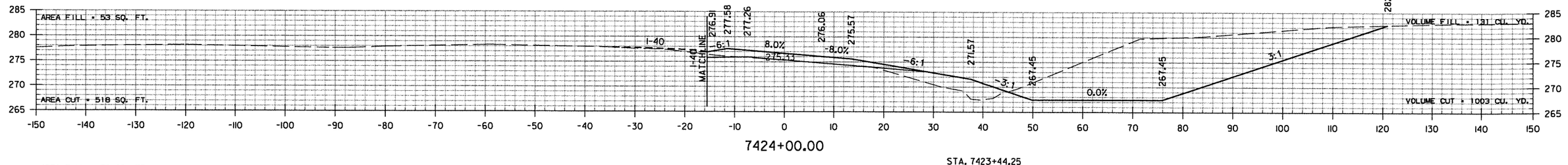
7426+00.00

STA. 7425+87.00
END SP. DITCH RT. 0.50%
BEGIN SP. DITCH RT. 0.00%
ELEV. 268.39



7425+00.00

STA. 7424+74.00 MAXIMUM SUPERELEVATION (S.E. = .100'/')



7424+00.00

AREA FILL = 73 SQ. FT.
AREA CUT = 449 SQ. FT.

STA. 7423+44.25 BEGIN RAMP I

STA. 7421+74.00 BEGIN SUPERELEVATION

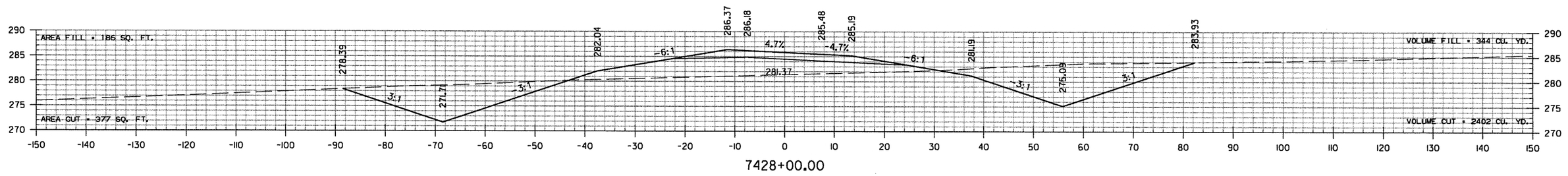
STA. 7423+44.25
BEGIN SP. DITCH RT. 0.50%
ELEV. 267.18

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

RAMP I
STA. 7424+00 TO STA. 7426+24

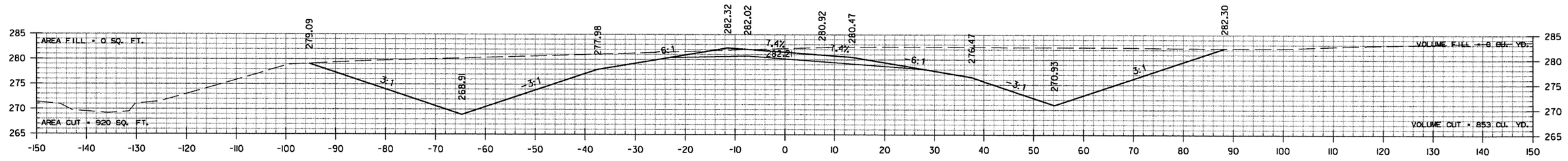
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	207	237

(2) CROSS SECTIONS



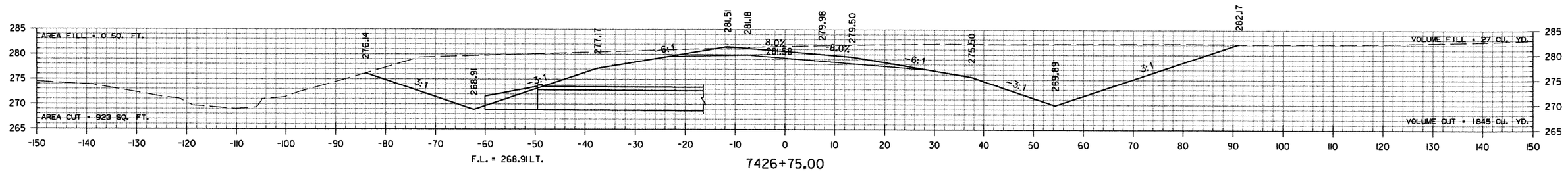
7428+00.00

STA. 7427+07.00
END SP. DITCH LT. 0.00%
BEGIN SP. DITCH LT. 3.01%
ELEV. 268.91



7427+00.00

STA. 7426+50 CONSTRUCT
TRIPLE 8' X 4' X 104' R.C. BOX CULVERT
30° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 701 CFS DA = 406 ACRES



F.L. = 268.91 LT.

7426+75.00

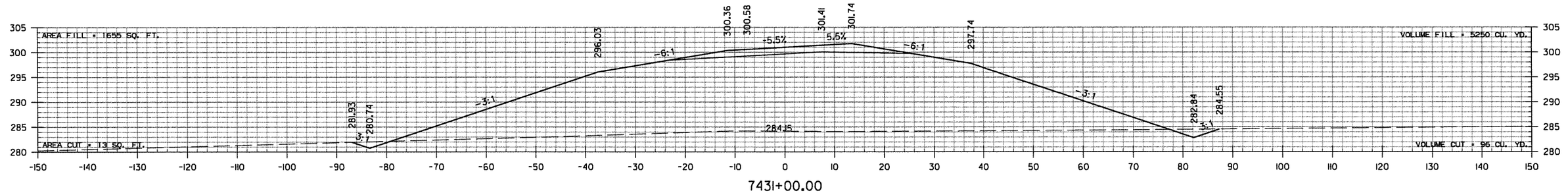
STA. 7426+63.00
BEGIN SP. DITCH LT. 0.00%
ELEV. 268.91

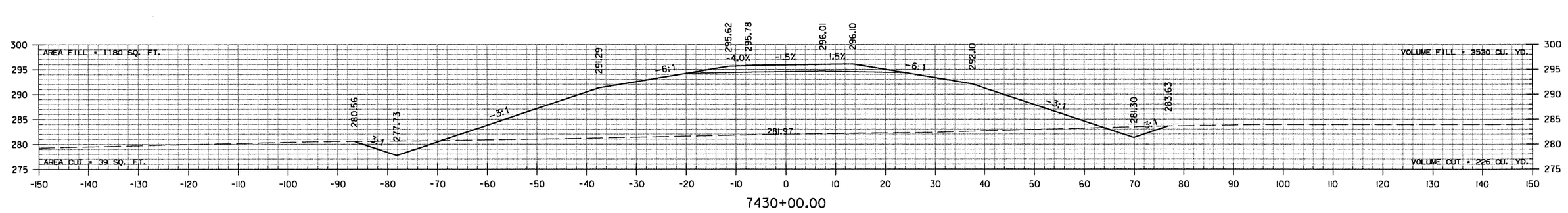
RAMP I
STA. 7426+75 TO STA. 7428+00

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.		080395	208	237

(2) CROSS SECTIONS

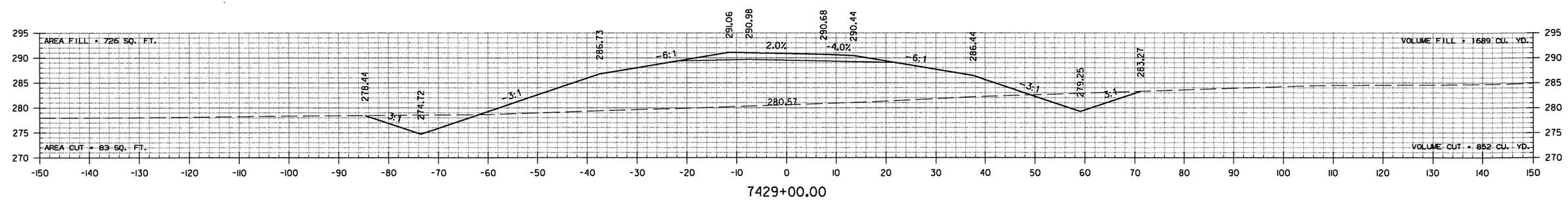
STA. 7431+78.17
END SP. DITCH LT. 3.01%
ELEV. 283.10





STA. 7429+12.34 BEGIN SUPERELEVATION
STA. 7429+01.48 END SUPERELEVATION

STA. 7429+20.00
END SP. DITCH RT. 4.16%
BEGIN SP. DITCH RT. 1.53%
ELEV. 280.08



RAMP I
STA. 7429+00 TO STA. 7431+00

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.		080395	209	237

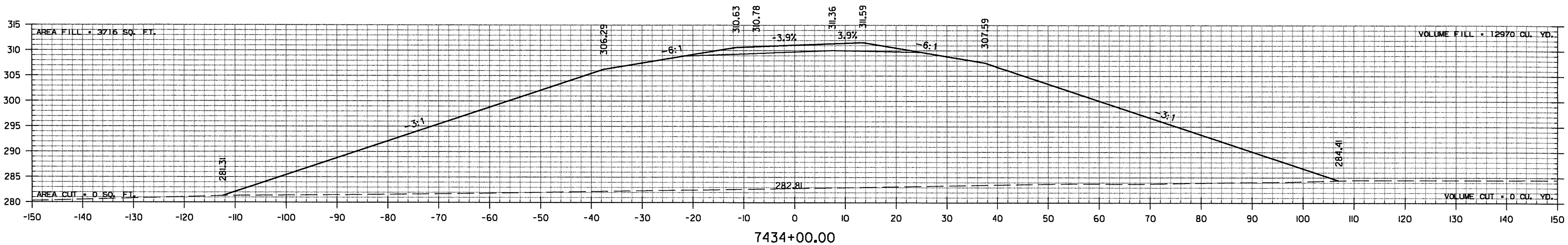
(2) CROSS SECTIONS

AREA FILL = 3648 SQ. FT.
AREA CUT = 0 SQ. FT.

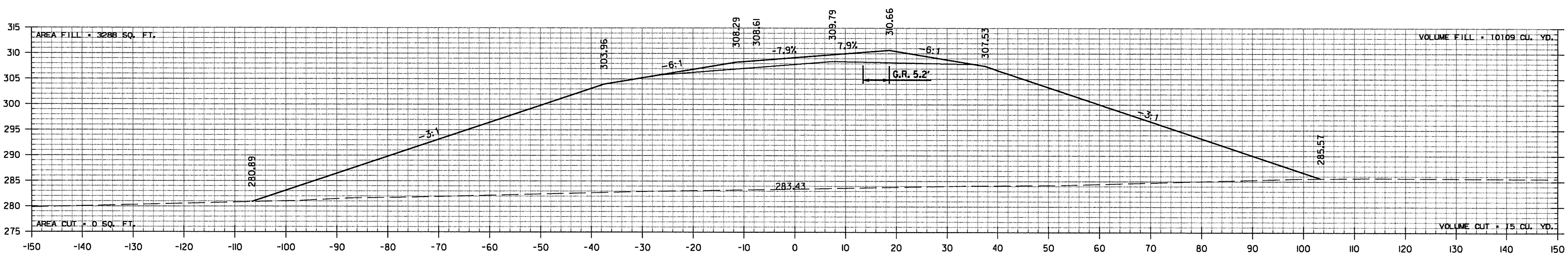
STA. 7434+11.39 END GRADING RAMP I

VOLUME FILL = 1500 CU. YD.
VOLUME CUT = 0 CU. YD.

STA. 7434+11.39 SUPERELEVATION (S.E. = .034'/')



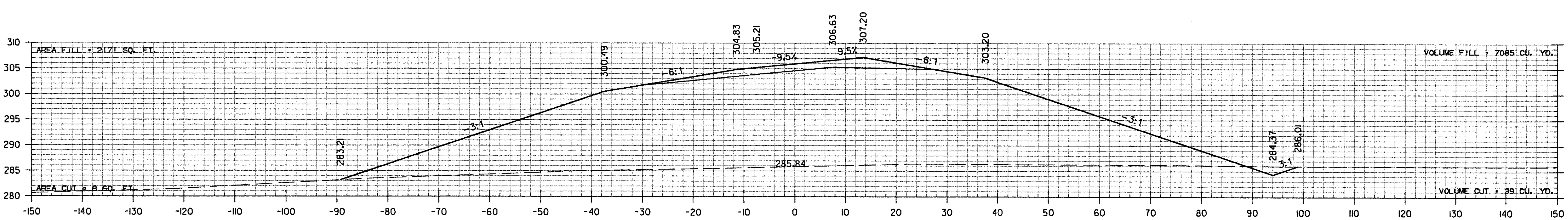
7434+00.00



7433+00.00

STA. 7432+46.39 MAXIMUM SUPERELEVATION (S.E. = .100'/')
STA. 7432+12.34 MAXIMUM SUPERELEVATION (S.E. = .100'/')

STA. 7432+90.00
END SP. DITCH RT. 1.53%
ELEV. 285.75



7432+00.00

RAMP I
STA. 7432+00 TO STA. 7434+00

saroberson 8/19/2013 2:19:02 PM
WORKSPACE: AHTD
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REVISED DATE:

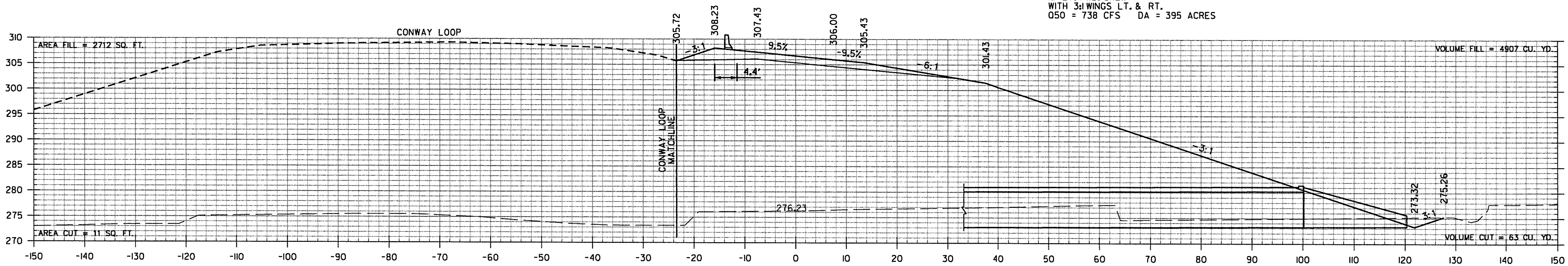
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	210	237

(2) CROSS SECTIONS

STA. 7433+75.00
END SP. DITCH RT. 0.00%
BEGIN SP. DITCH RT. 2.80%
ELEV. 273.32

STA. 7433+68.17 MAXIMUM SUPERELEVATION (S.E. = .100'/')

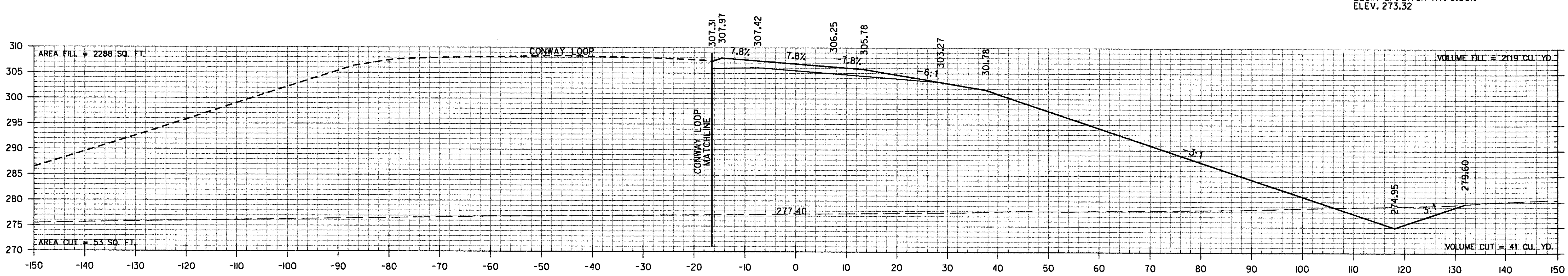
CONWAY LOOP STA. 22+48 CONSTRUCT
10' X 7' X 287' R.C. BOX CULVERT
19° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 738 CFS DA = 395 ACRES



7433+53.00

F.L. = 273.32 RT.

STA. 7433+37.00
END SP. DITCH RT. -4.41%
BEGIN SP. DITCH RT. 0.00%
ELEV. 273.32



7433+00.00

C.L. CONWAY LOOP STA. 24+88.32 BEGIN SUPERELEVATION

STA. 7432+74.42
BEGIN SP. DITCH RT. -4.41%
ELEV. 276.08

AREA FILL = 2113 SQ. FT.
AREA CUT = 33 SQ. FT.

STA. 7432+74.42 BEGIN RAMP 2

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

RAMP 2
STA. 7433+00 TO STA. 7433+53

saroberson 8/19/2013 2:19:46 PM
WORKSPACE: AHTD
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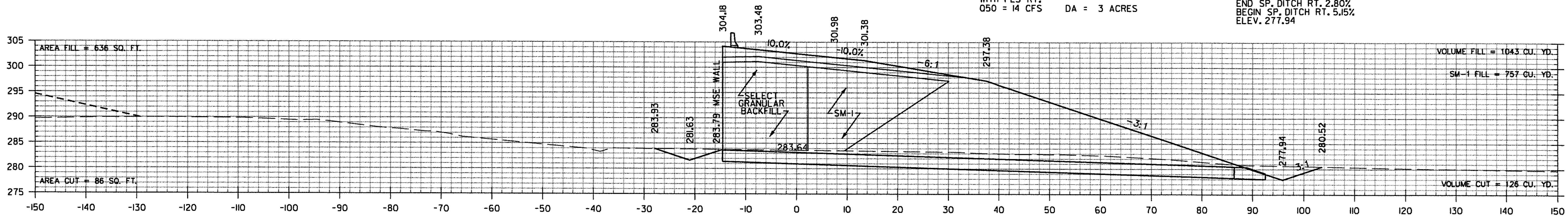
REVISED DATE:

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.		080395	211	237

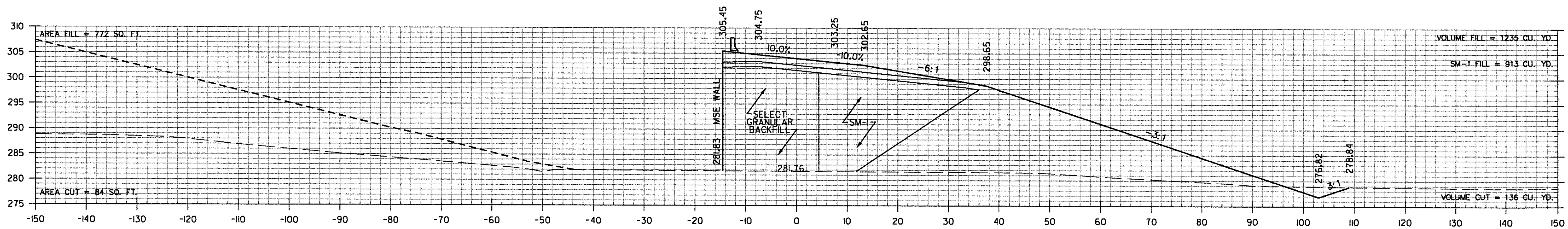
(2) CROSS SECTIONS

STA. 7435+40 CONSTRUCT
24" X 101' R.C. PIPE CULVERT
(CLASS IV) TYPE 3 BEDDING
WITH FES RT.
Q50 = 14 CFS DA = 3 ACRES

STA. 7435+40.00
END SP. DITCH RT. 2.80%
BEGIN SP. DITCH RT. 5.15%
ELEV. 277.94



7435+40.00

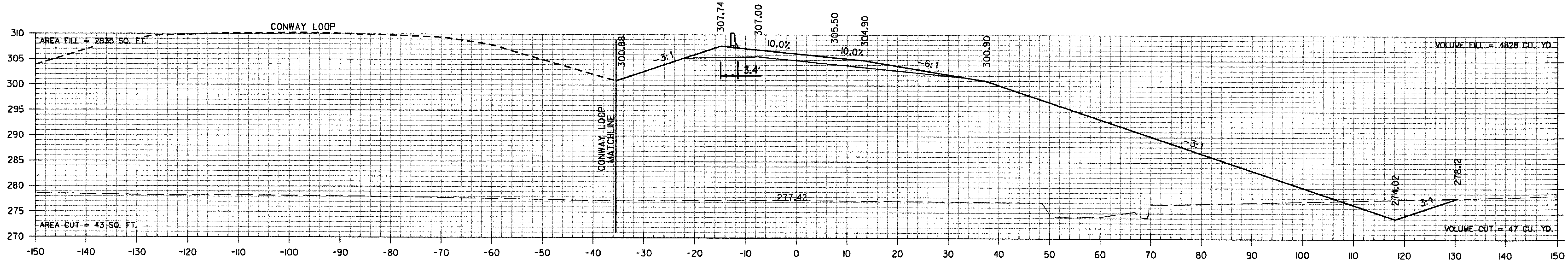


7435+00.00

AREA FILL = 895 SQ. FT.
AREA CUT = 99 SQ. FT.

STA. 7434+60.00 BEGIN WALL

VOLUME FILL = 4144 CU. YD.
VOLUME CUT = 158 CU. YD.



7434+00.00

RAMP 2
STA. 7434+00 TO STA. 7435+40

saroberson 8/19/2013 2:20:03 PM
WORKSPACE: AHTD
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REVISED DATE:

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.		080395	212	237

(2) CROSS SECTIONS

STA. 7438+71.82 END SUPERELEVATION

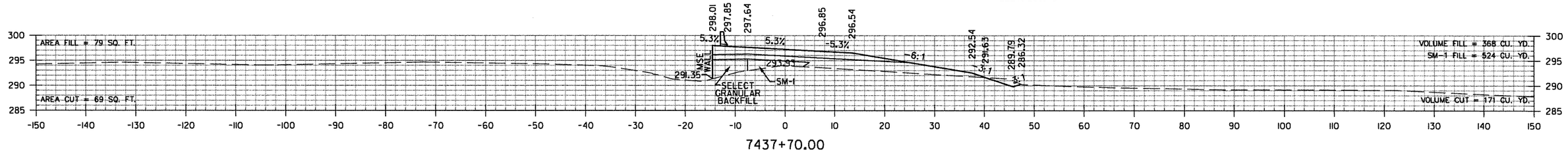
AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

STA. 7437+83.79 TOE OF SLOPE

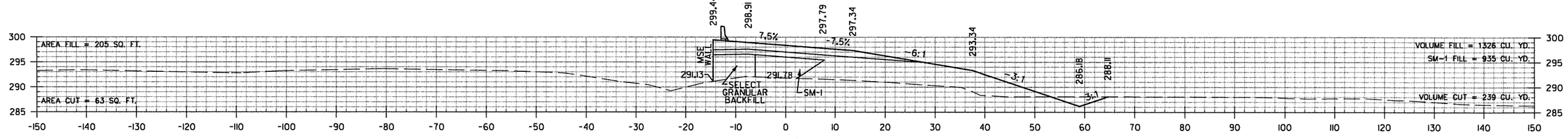
VOLUME FILL = 20 CU. YD.
VOLUME CUT = 18 CU. YD.

STA. 7437+70 END GRADING RAMP 2

STA. 7437+70
END SP. DITCH RT. 5.15%
ELEV. 289.79

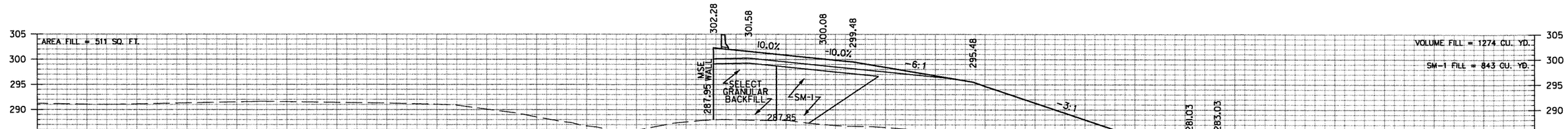


7437+70.00



7437+00.00

STA. 7436+21.82 MAXIMUM SUPERELEVATION (S.E. = .100'/')



7436+00.00

RAMP 2
STA. 7436+00 TO STA. 7437+70

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WORKSPACE: AHTD
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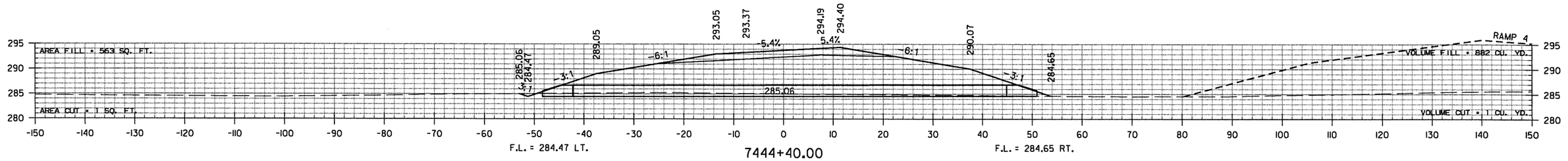
REVISED DATE:

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.		080395	213	237

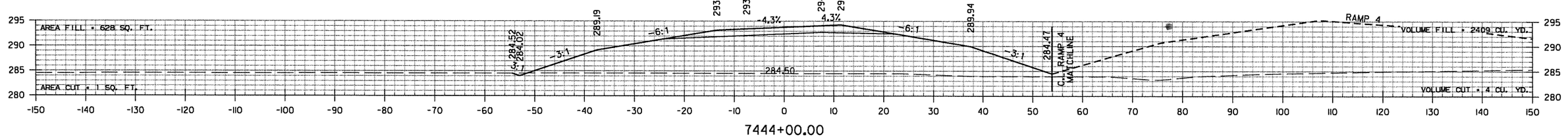
(2) CROSS SECTIONS

STA. 7444+40.00
END SP. DITCH LT. 1.12%
BEGIN SP. DITCH LT. 1.43%
ELEV. 284.47

STA. 7444+40 CONSTRUCT
24" X 87' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 19 CFS DA = 5 ACRES

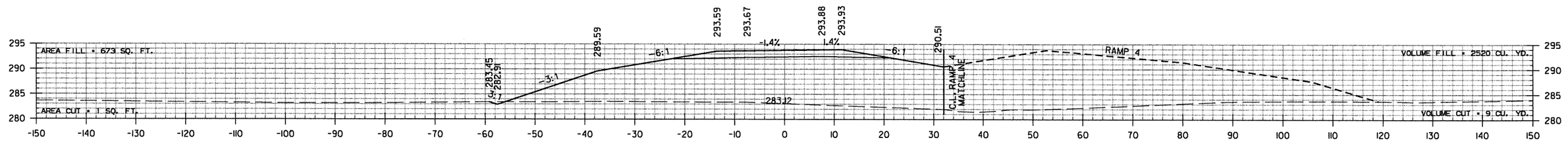


7444+40.00



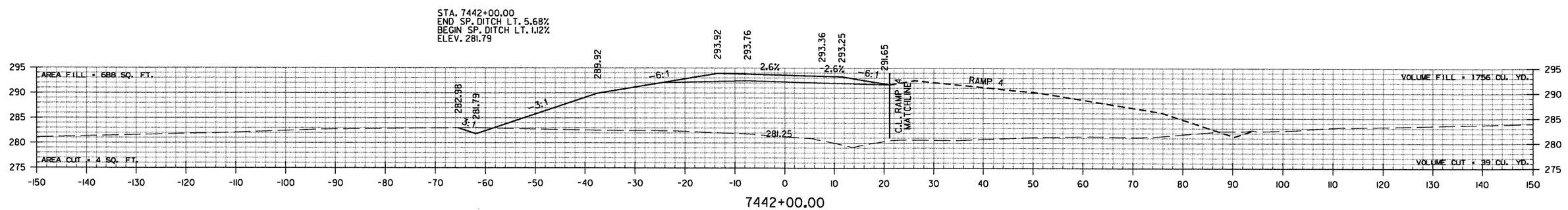
7444+00.00

STA. 7443+16.12 END SUPERELEVATION
STA. 7443+16.12 BEGIN SUPERELEVATION



7443+00.00

STA. 7442+00.00
END SP. DITCH LT. 5.68%
BEGIN SP. DITCH LT. 1.12%
ELEV. 281.79



7442+00.00

STA. 7441+34.94
BEGIN SP. DITCH LT. 5.68%
ELEV. 278.09

STA. 7441+34.94 SUPERELEVATION (S.E. = .0525'/')

STA. 7441+34.94 BEGIN RAMP 3

AREA FILL = 771 SQ. FT.
AREA CUT = 28 SQ. FT.

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

RAMP 3
STA. 7442+00 TO STA. 7444+40

sgroberson 8/19/2013 2:21:09 PM
WORKSPACE: AHTD
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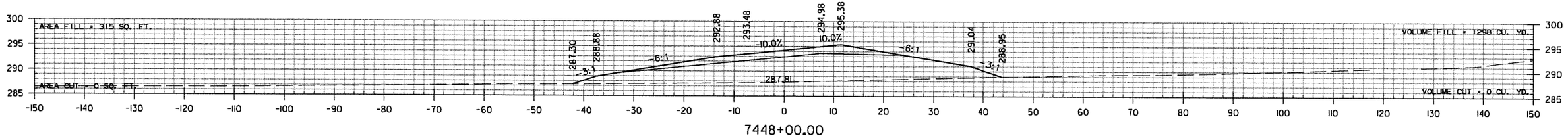
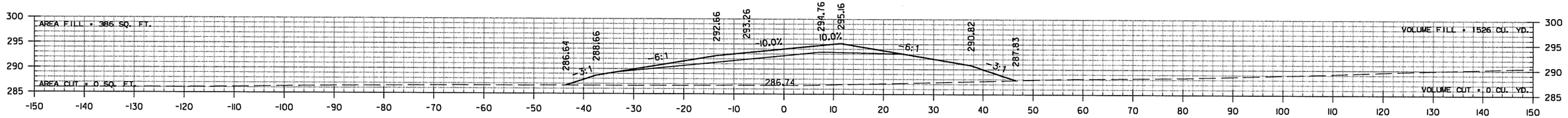
REVISED DATE:

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.		080395	214	237

(2) CROSS SECTIONS

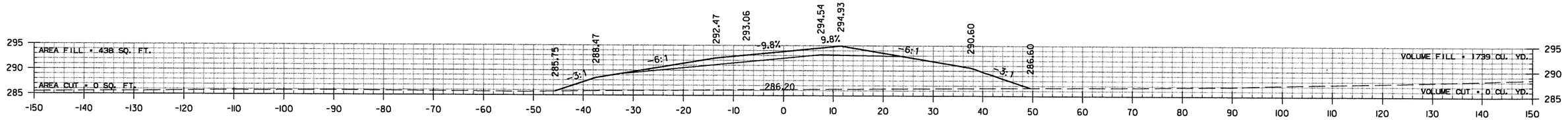


7448+00.00



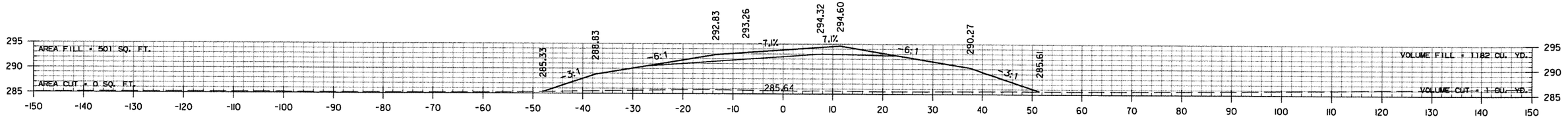
7447+00.00

STA. 7446+06.12 MAXIMUM SUPERELEVATION (S.E. = .100'/')



7446+00.00

STA. 7445+00.00
END SP. DITCH LT. 1.43%
ELEV. 285.33



7445+00.00

RAMP 3
STA. 7445+00 TO STA. 7448+00

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.		080395	215	237

(2) CROSS SECTIONS

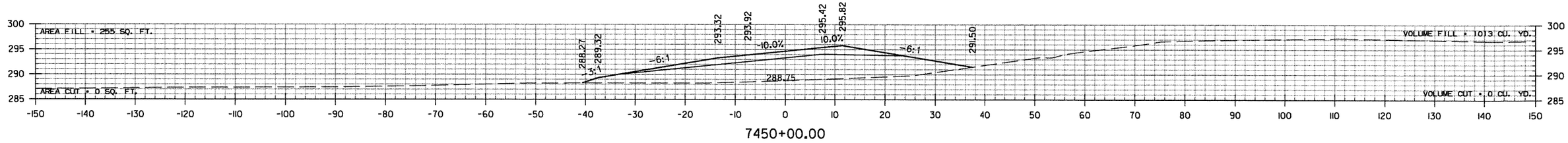
STA. 7450+60.65 MAXIMUM SUPERELEVATION (S.E. = .100'/')

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

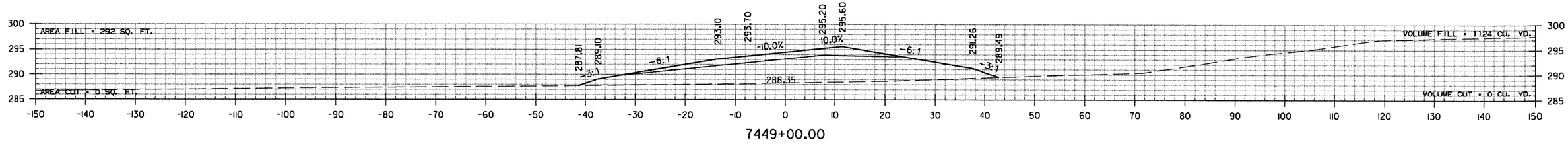
STA. 7450+17.63 TOE OF SLOPE

VOLUME FILL = 85 CU. YD.
VOLUME CUT = 0 CU. YD.

STA. 7450+00.00 END GRADING RAMP 3



7450+00.00



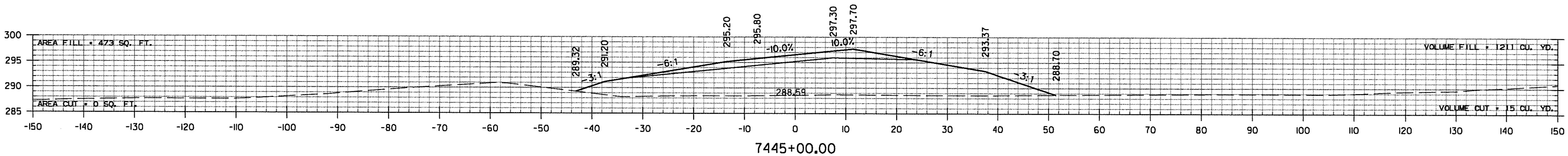
7449+00.00

RAMP 3
STA. 7449+00 TO STA. 7451+45

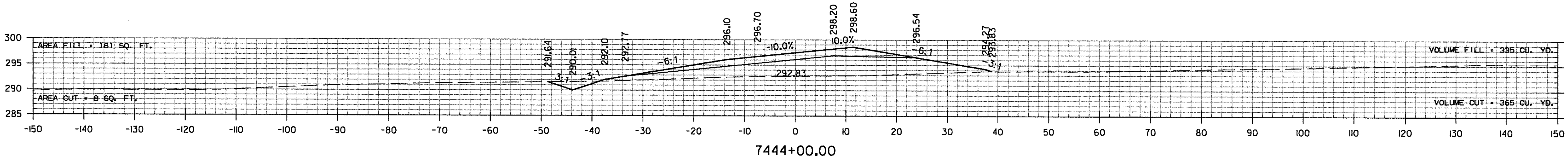
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	216	237

(2) CROSS SECTIONS

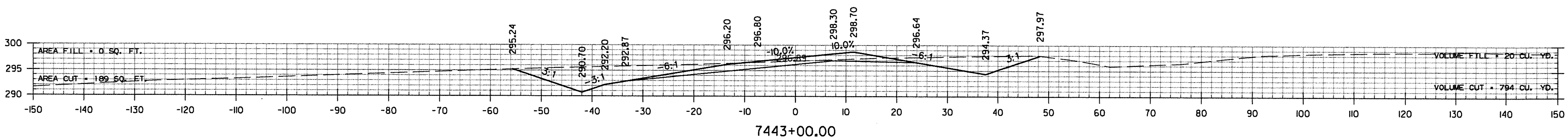
STA. 7445+00.00
END SP. DITCH LT. -0.69%
ELEV. 289.32



7445+00.00



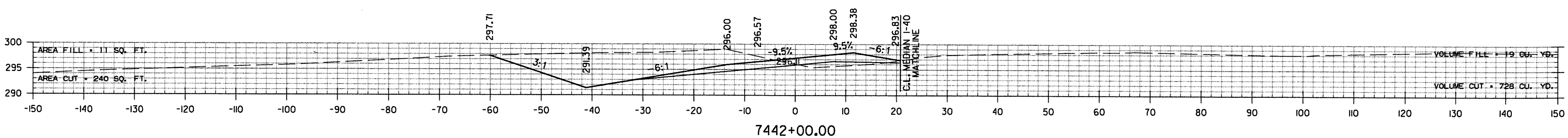
7444+00.00



7443+00.00

STA. 7442+00.00
BEGIN SP. DITCH LT. -0.69%
ELEV. 291.39

STA. 7442+17.80 MAXIMUM SUPERELEVATION (S.E. = .100'/')



7442+00.00

AREA FILL = 0 SQ. FT.
AREA CUT = 174 SQ. FT.

STA. 7441+05.30 BEGIN RAMP 4

STA. 7439+17.80 BEGIN SUPERELEVATION

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

RAMP 4
STA. 7442+00 TO STA. 7445+00

saroberson 8/19/2013 2:24:23 PM
WORKSPACE: AHTD
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REVISED DATE:

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.		080395	217	237
				(2) CROSS SECTIONS				

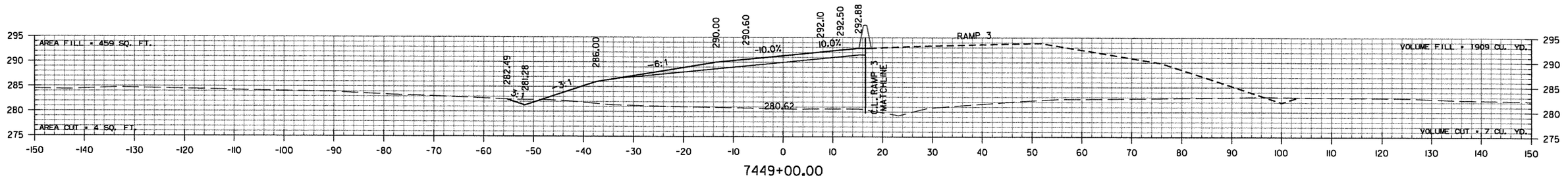
AREA FILL = 343 SQ. FT.
AREA CUT = 14 SQ. FT.

STA. 7449+63.52 END GRADING RAMP 4

VOLUME FILL = 951 CU. YD.
VOLUME CUT = 21 CU. YD.

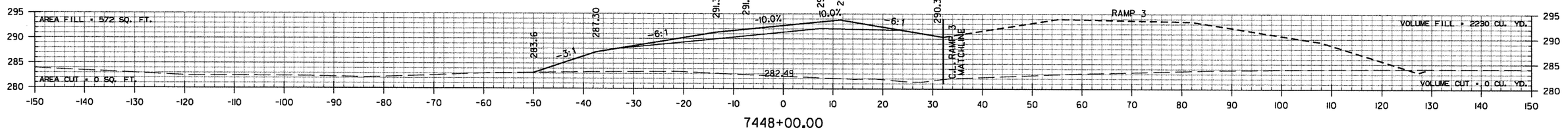
STA. 7449+63.52 SUPERELEVATION (S.E. = .100'/')

STA. 7449+63.52
END SP. DITCH LT. -0.67%
ELEV. 280.85

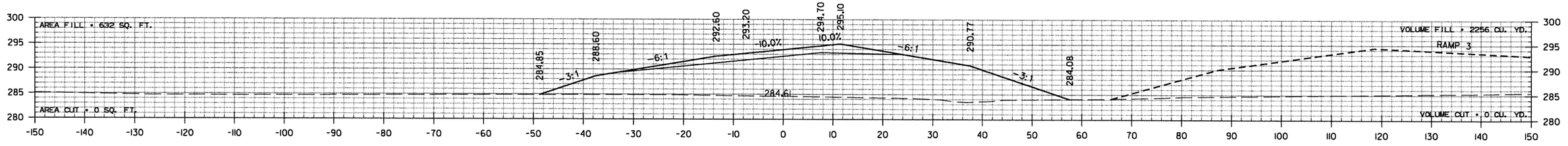


7449+00.00

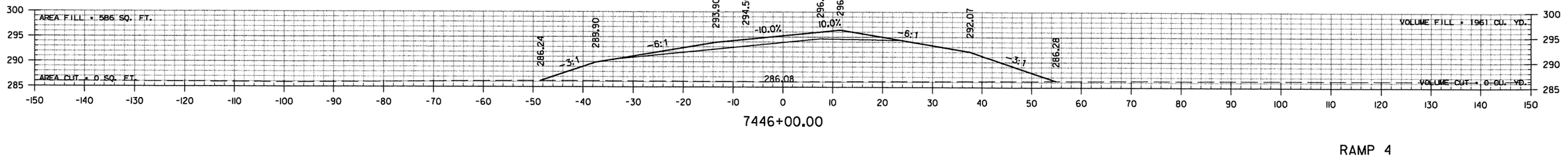
STA. 7448+50.00
BEGIN SP. DITCH LT. -0.67%
ELEV. 281.61



7448+00.00



7447+00.00



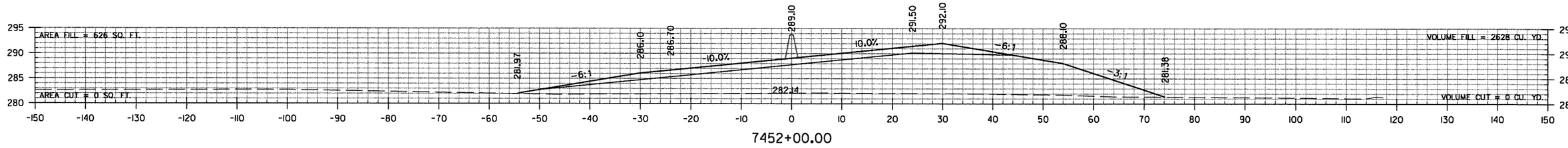
7446+00.00

RAMP 4
STA. 7446+00 TO STA. 7449+00

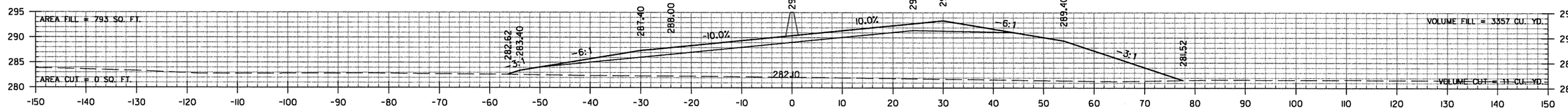
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	218	237

(2) CROSS SECTIONS

STA. 7452+50.00
BEGIN SP. DITCH LT. -2.41%
ELEV. 280.62



7452+00.00

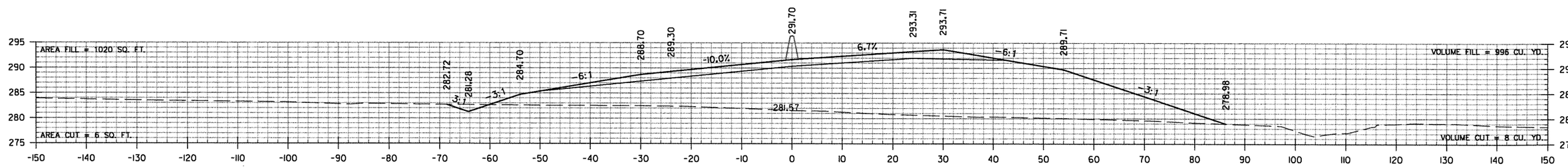


7451+00.00

STA. 7450+60.00
END SP. DITCH LT. 2.02%
ELEV. 282.49

STA. 7450+82.34 RT. LANES MAXIMUM SUPERELEVATION (S.E. = .100'/')

STA. 7450+00.00
END SP. DITCH RT. 6.14%
ELEV. 278.98

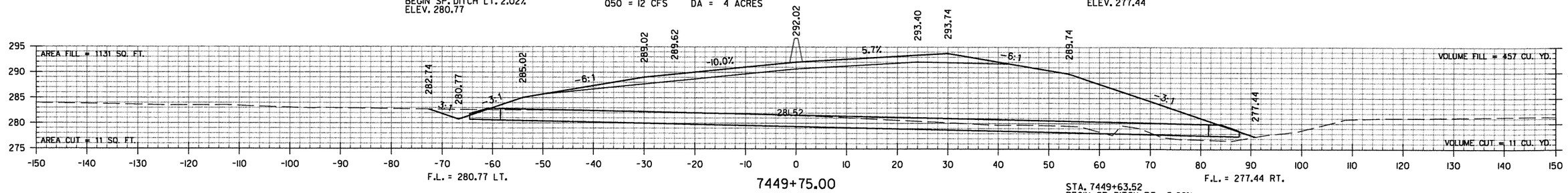


7450+00.00

STA. 7449+75 CONSTRUCT
24" X 140' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
050 = 12 CFS DA = 4 ACRES

STA. 7449+75.00
END SP. DITCH LT. -0.67%
BEGIN SP. DITCH LT. 2.02%
ELEV. 280.77

STA. 7449+75.00
END SP. DITCH RT. -5.68%
BEGIN SP. DITCH RT. 6.14%
ELEV. 277.44



F.L. = 280.77 LT.

7449+75.00

F.L. = 277.44 RT.

STA. 7449+63.52
BEGIN SP. DITCH LT. -0.67%
ELEV. 280.85

STA. 7449+63.52 LT. LANES SUPERELEVATION (S.E. = .100'/')
STA. 7449+63.52 RT. LANES SUPERELEVATION (S.E. = .0525'/')

STA. 7449+63.52 BEGIN MERGED RAMPS 3 & 4

STA. 7449+63.52
BEGIN SP. DITCH RT. -5.68%
ELEV. 278.09

AREA FILL = 1114 SQ. FT.
AREA CUT = 42 SQ. FT.

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

MERGED RAMPS 3 & 4
STA. 7449+75 TO STA. 7452+00

saroberson 8/19/2013 2:46:31 PM
WORKSPACE: AHTD
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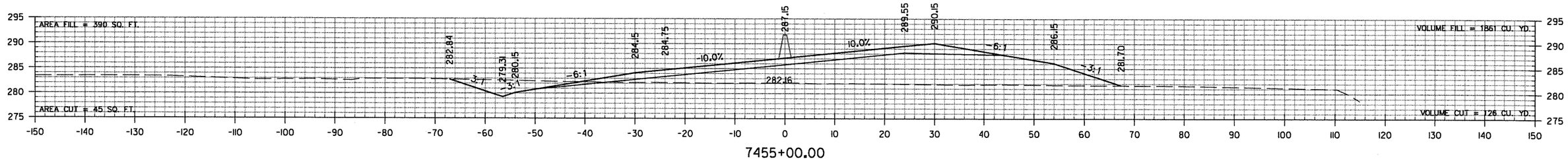
REVISED DATE:

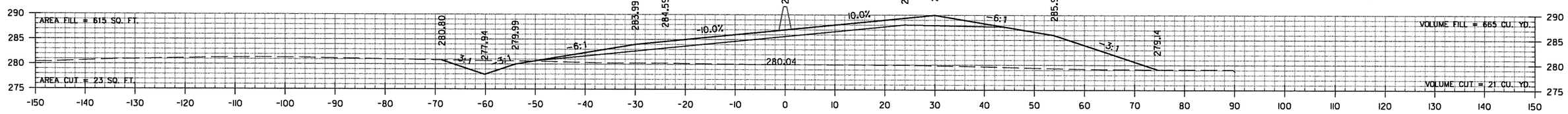
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	219	237

(2) CROSS SECTIONS

STA. 7455+00.00
END SP. DITCH LT. 1.37%
BEGIN SP. DITCH LT. -2.09%
ELEV. 279.31



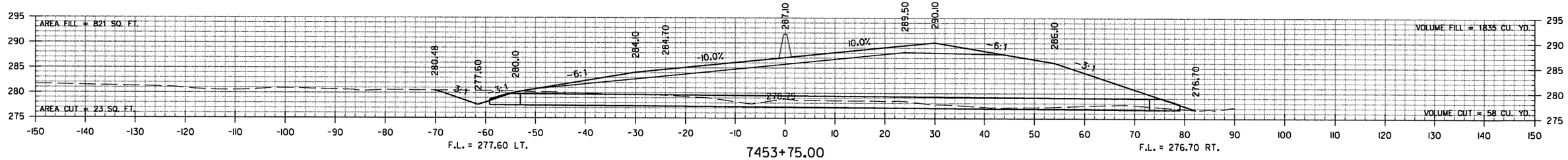
7455+00.00



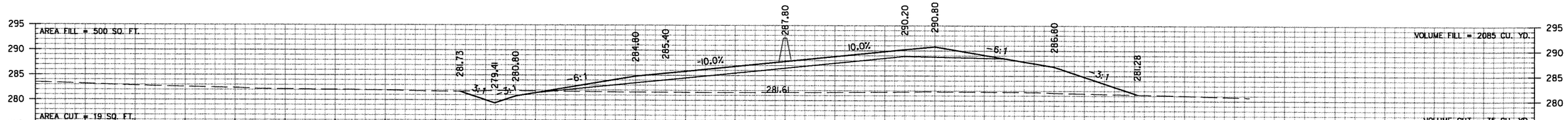
7454+00.00

STA. 7453+75.00
END SP. DITCH LT. -2.41%
BEGIN SP. DITCH LT. 1.37%
ELEV. 277.60

STA. 7453+75 CONSTRUCT
24" X 126' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 17 CFS DA = 8 ACRES



7453+75.00

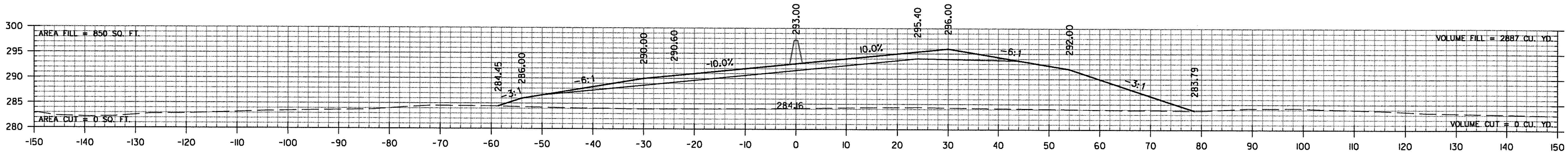


7453+00.00

MERGED RAMPS 3 & 4
STA. 7453+00 TO STA. 7455+00

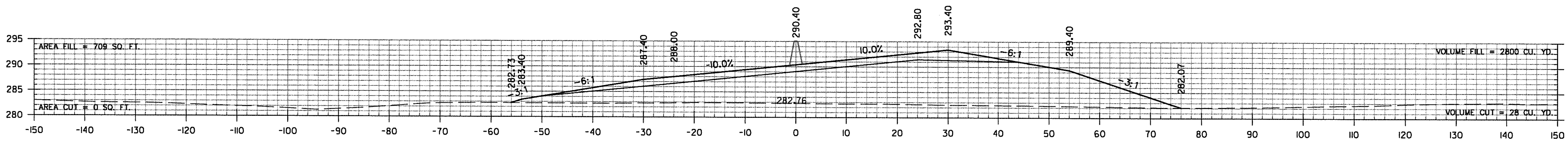
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	220	237

(2) CROSS SECTIONS

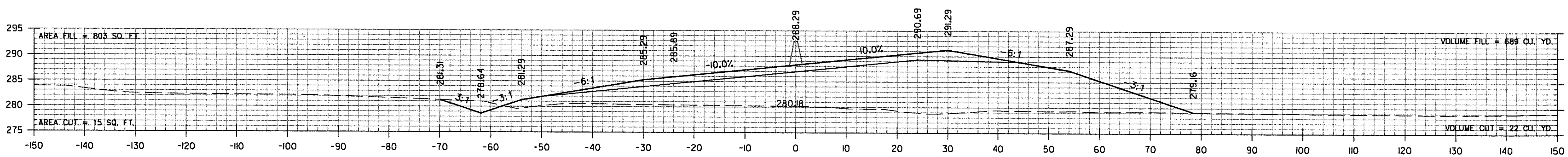


7458+00.00

STA. 7457+00.00
END SP. DITCH LT. 4.09%
ELEV. 282.73



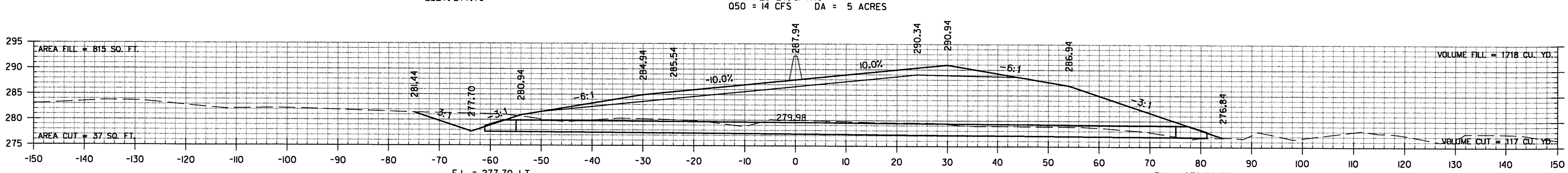
7457+00.00



7456+00.00

STA. 7455+77.00
END SP. DITCH LT. -2.09%
BEGIN SP. DITCH LT. 4.09%
ELEV. 277.70

STA. 7455+77 CONSTRUCT
24" X 130' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 14 CFS DA = 5 ACRES



7455+77.00

MERGED RAMPS 3 & 4
STA. 7455+77 TO STA. 7458+00

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REVISED DATE:

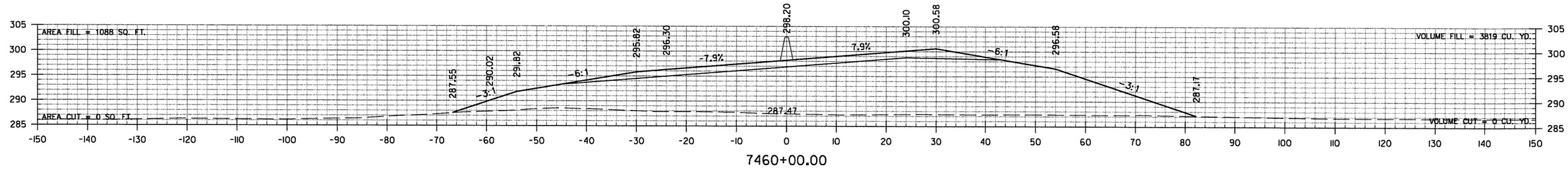
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	221	237
				(2) CROSS SECTIONS				

AREA FILL = 1131 SQ. FT.
AREA CUT = 0 SQ. FT.

STA. 7460+23.33 END GRADING MERGED RAMPS 3 & 4

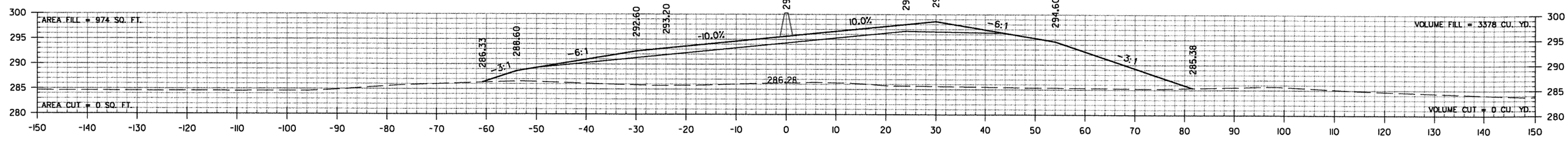
VOLUME FILL = 945 CU. YD.
VOLUME CUT = 0 CU. YD.

STA. 7460+23.33 SUPERELEVATION (S.E. = .070'/')



7460+00.00

STA. 7459+48.33 MAXIMUM SUPERELEVATION (S.E. = .100'/')



7459+00.00

MERGED RAMPS 3 & 4
STA. 7459+00 TO STA. 7460+00

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WORKSPACE: AHTD
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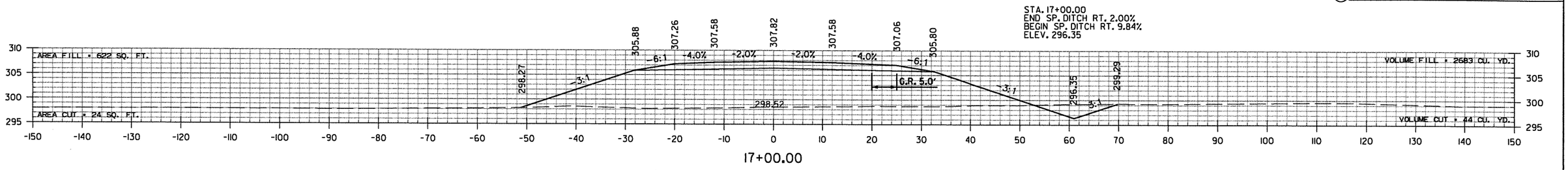
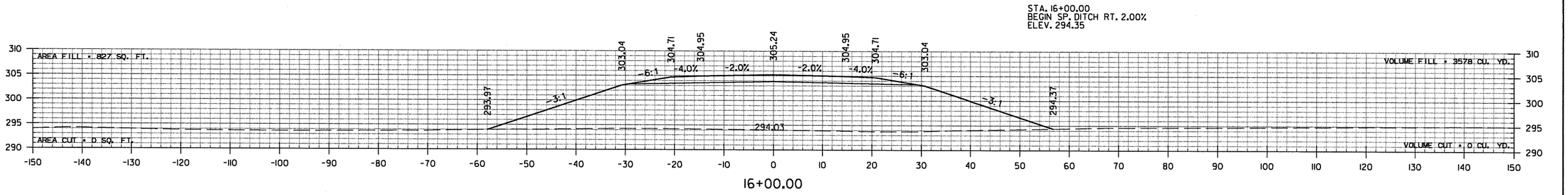
REVISED DATE:

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.		080395	222	237

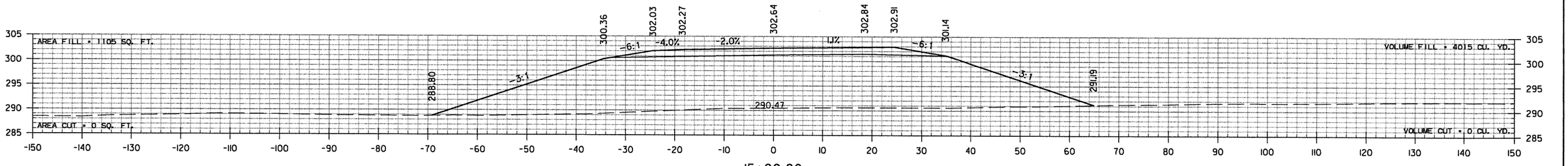
(2) CROSS SECTIONS

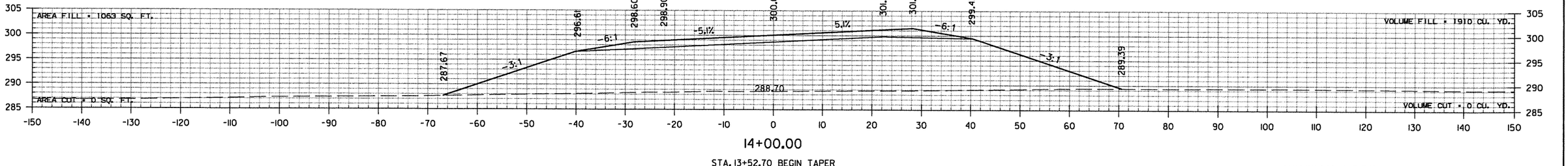


STA. 16+72.70 END TAPER



STA. 15+77.70 END SUPERELEVATION





STA. 13+52.70 BEGIN TAPER

STA. 13+52.70 SUPERELEVATION (S.E. = .070'/')

STA. 13+52.70 BEGIN CONWAY LOOP

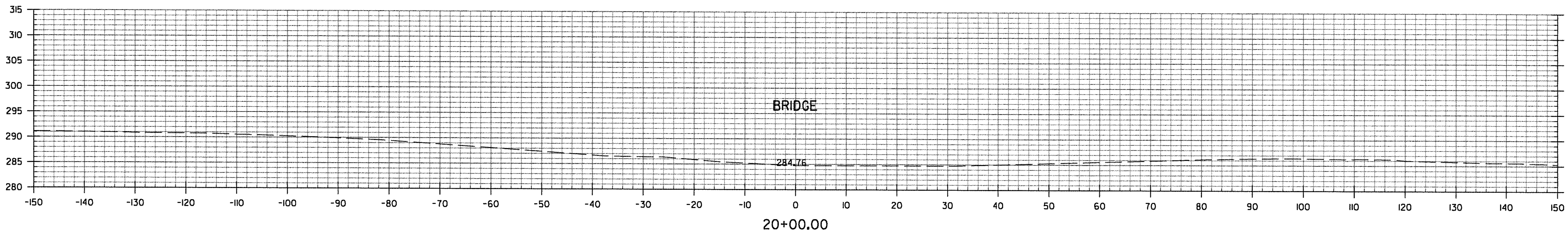
AREA FILL = 1131 SQ. FT.
AREA CUT = 0 SQ. FT.

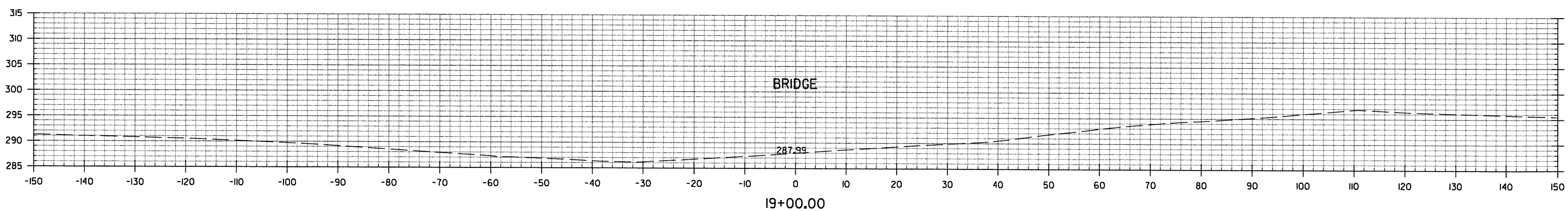
VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

CONWAY LOOP
STA. 14+00 TO STA. 17+00

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.		080395	223	237

(2) CROSS SECTIONS



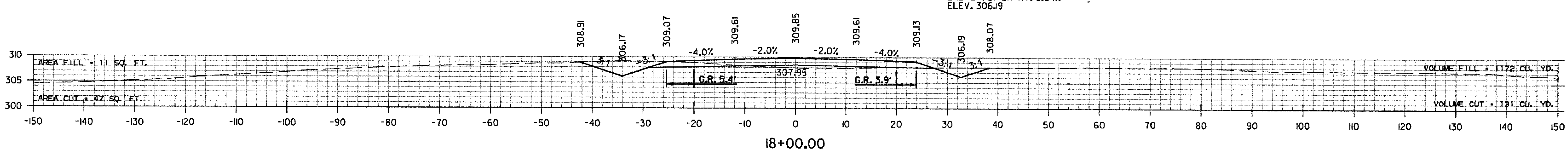


AREA FILL = 10 SQ. FT.
AREA CUT = 23 SQ. FT.

STA. 18+83.88 BEGIN BRIDGE
TOTAL SM-1 FILL = 3639 CU. YD.

STA. 18+00.00
END SP. DITCH RT. 9.84%
ELEV. 306.19

VOLUME FILL = 14 CU. YD.
VOLUME CUT = 45 CU. YD.



CONWAY LOOP
STA. 18+00 TO STA. 20+00

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WORKSPACE: AHTD
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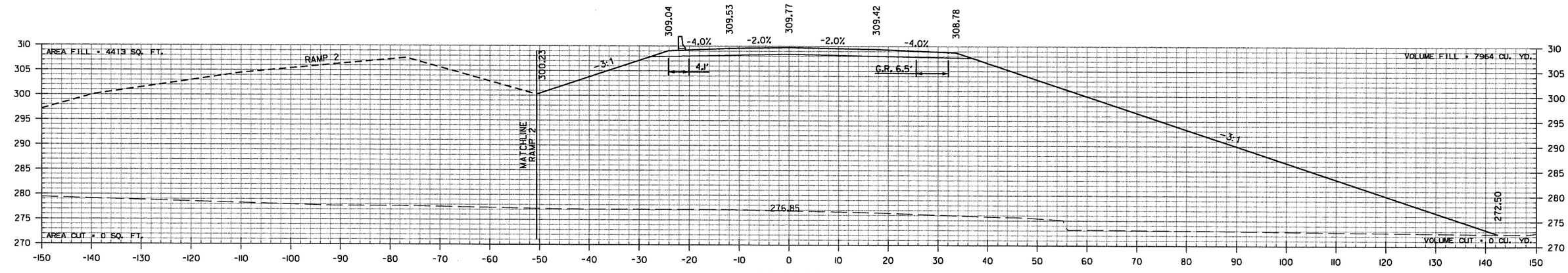
REVISED DATE:

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.		080395	224	237

(2) CROSS SECTIONS



22+00.00

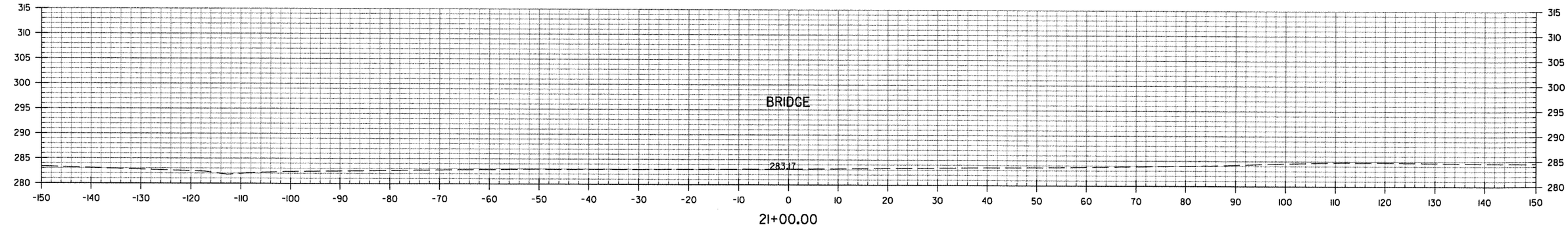
TOTAL SM-1 FILL = 7280 CU. YD.

STA. 21+29.64 BEGIN TAPER

STA. 21+04.13 END BRIDGE

AREA FILL = 4188 SQ. FT.
AREA CUT = 0 SQ. FT.

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.



21+00.00

CONWAY LOOP
STA. 21+00 TO STA. 22+00

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WORKSPACE AHTD
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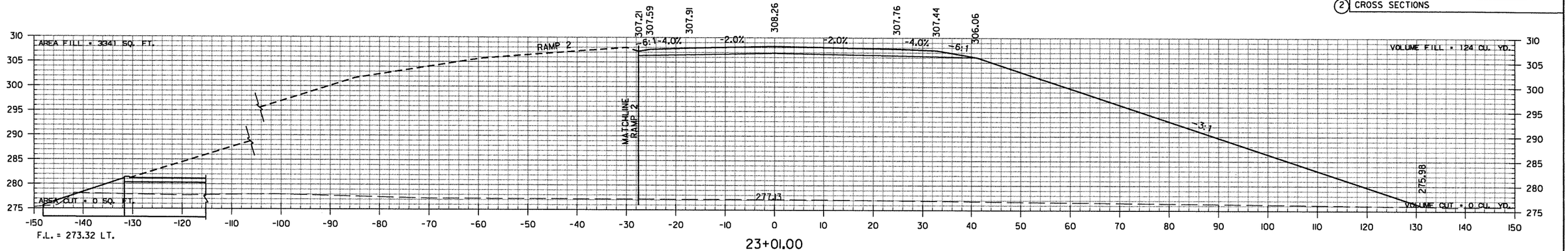
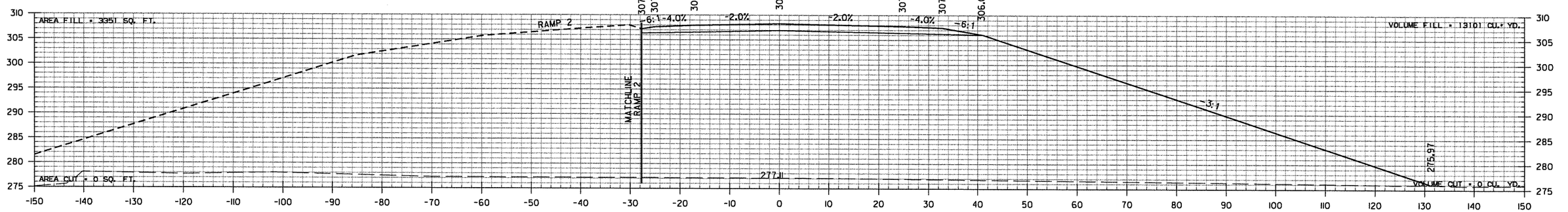
REVISED DATE:

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.		080395	225	237

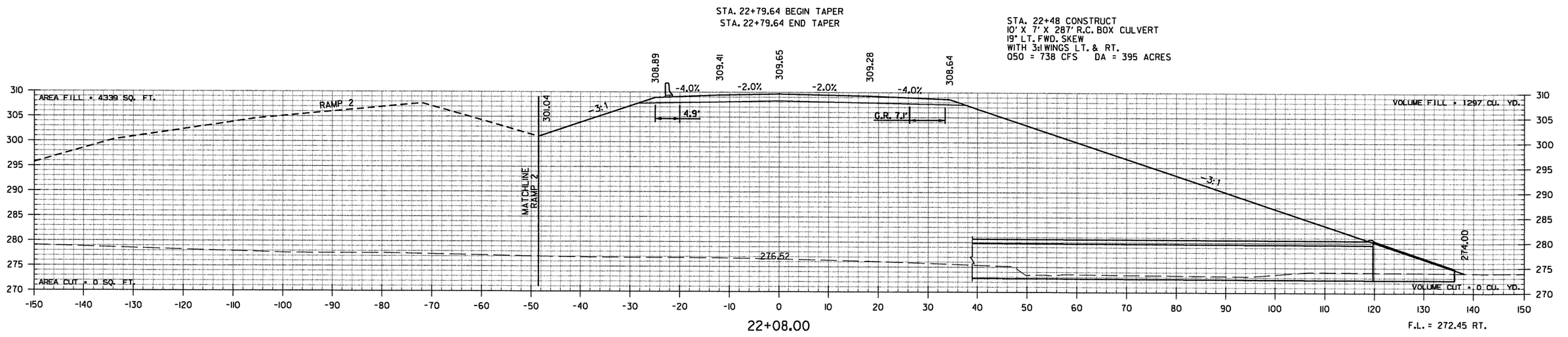
(2) CROSS SECTIONS





STA. 22+79.64 BEGIN TAPER
STA. 22+79.64 END TAPER

STA. 22+48 CONSTRUCT
10' X 7' X 287' R.C. BOX CULVERT
19° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 738 CFS DA = 395 ACRES



CONWAY LOOP
STA. 22+08 TO STA. 23+01

sarobertson 8/19/2013 2:13:40 PM
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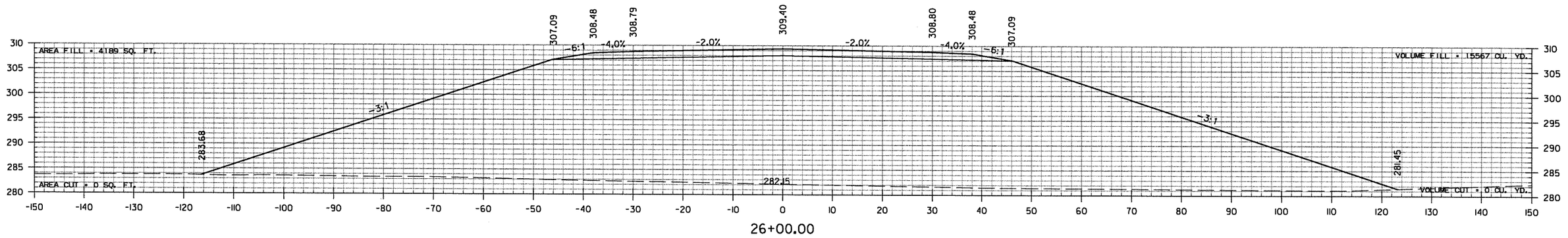
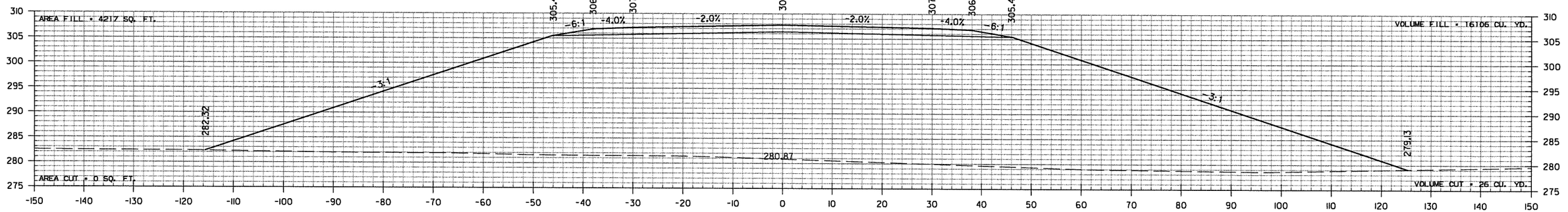
LAYOUTS\GS07230
REVISED DATE:

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.		080395	226	237

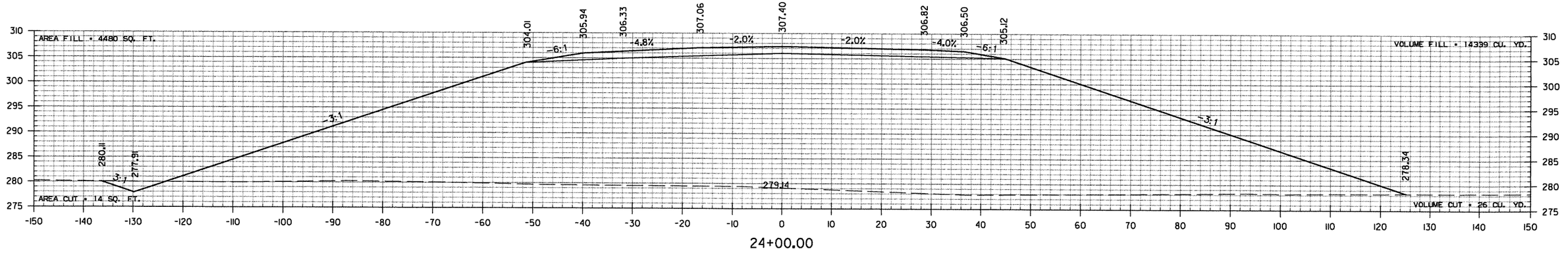
(2) CROSS SECTIONS



STA. 25+00.00
END SP. DITCH LT. 4.41%
ELEV. 282.32



STA. 24+39.64 END TAPER

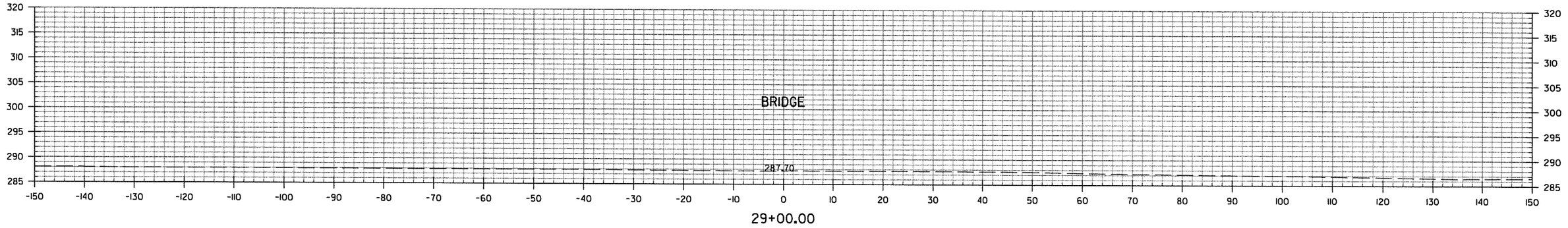


STA. 23+58.68
BEGIN SP. DITCH LT. 4.41%
ELEV. 276.08

CONWAY LOOP
STA. 24+00 TO STA. 26+00

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.		080395	227	237

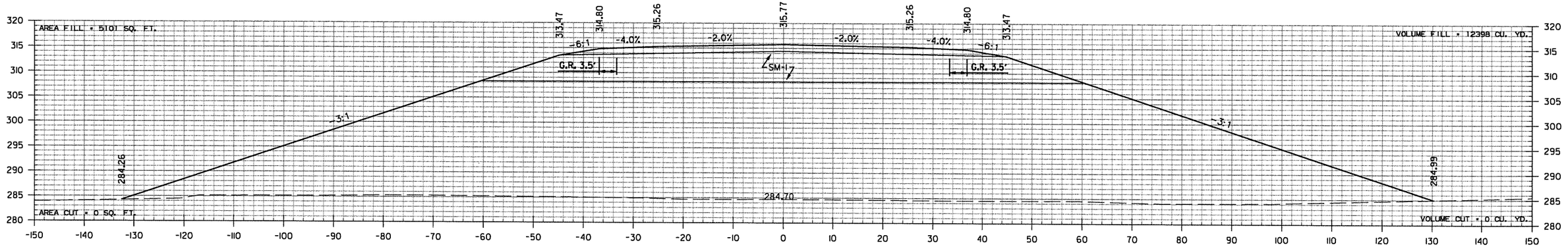
(2) CROSS SECTIONS

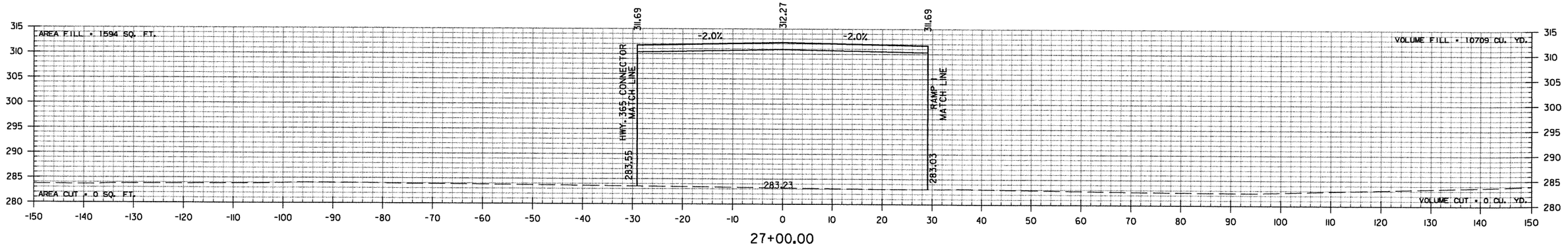


AREA FILL = 5163 SQ. FT.
AREA CUT = 0 SQ. FT.

STA. 28+50.31 BEGIN BRIDGE
TOTAL SM-1 FILL = 6967 CU. YD.

VOLUME FILL = 2851 CU. YD.
VOLUME CUT = 0 CU. YD.





CONWAY LOOP
STA. 27+00 TO STA. 29+00

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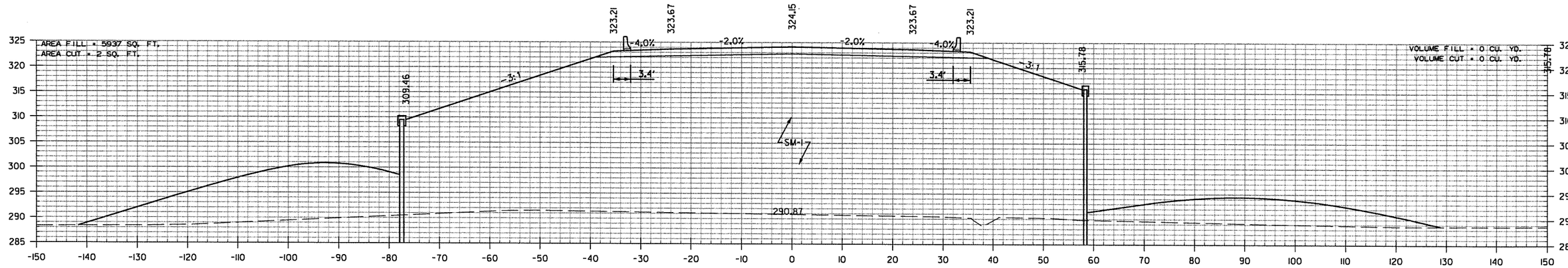
REVISED DATE:

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.		080395	228	237

(2) CROSS SECTIONS

STA. 31+00.00
BEGIN SP. DITCH LT. 2.20%
ELEV. 288.37

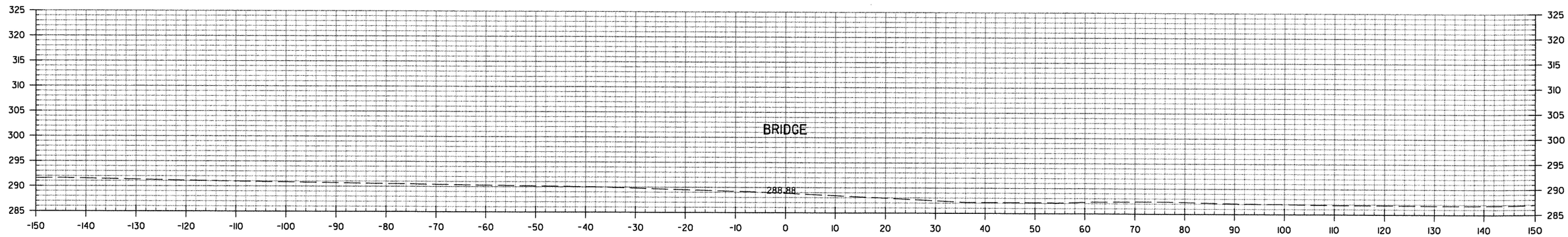
STA. 31+00.00
BEGIN SP. DITCH RT. 1.10%
ELEV. 288.71



31+00.00

TOTAL SM-1 FILL = 9139 CU. YD.

STA. 30+87.49 END BRIDGE



30+00.00

CONWAY LOOP
STA. 30+00 TO STA. 31+00

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.		080395	229	237
				(2) CROSS SECTIONS				

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

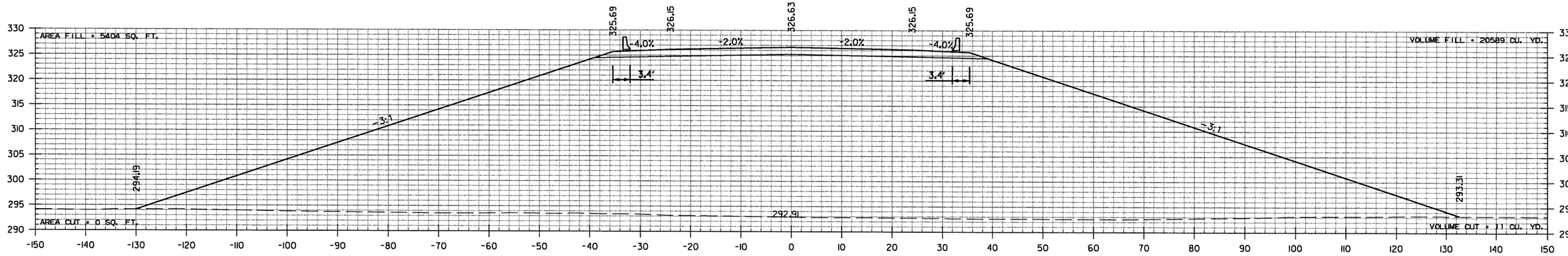
STA. 33+83.74 TOE OF SLOPE

VOLUME FILL = 8406 CU. YD.
VOLUME CUT = 0 CU. YD.

STA. 33+00.00
END SP. DITCH LT. 3.63%
ELEV. 294.19

STA. 33+00.00 END GRADING CONWAY LOOP

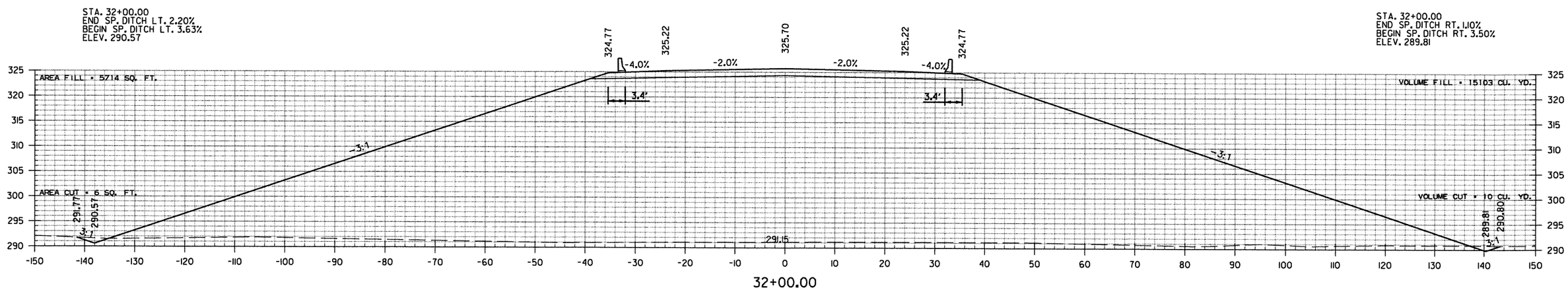
STA. 33+00.00
END SP. DITCH RT. 3.40%
ELEV. 293.31



33+00.00

STA. 32+00.00
END SP. DITCH LT. 2.20%
BEGIN SP. DITCH LT. 3.63%
ELEV. 290.57

STA. 32+00.00
END SP. DITCH RT. 1.10%
BEGIN SP. DITCH RT. 3.50%
ELEV. 289.81



32+00.00

CONWAY LOOP
STA. 32+00 TO STA. 33+00

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WORKSPACE: AHTD
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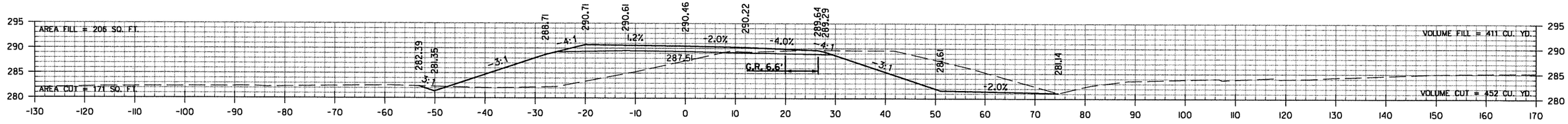
REVISED DATE:

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.		080395	230	237

(2) CROSS SECTIONS

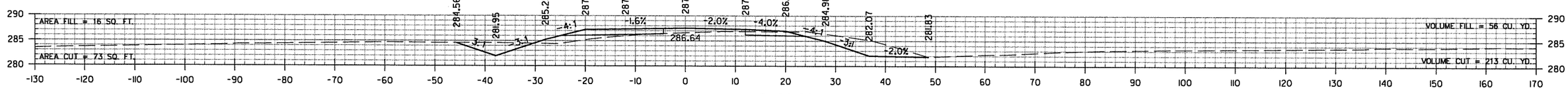
STA. 16+20.00
END SP. DITCH LT. -0.60%
ELEV. 281.24

STA. 16+84.47 MAXIMUM SUPERELEVATION (S.E. = .028'/')



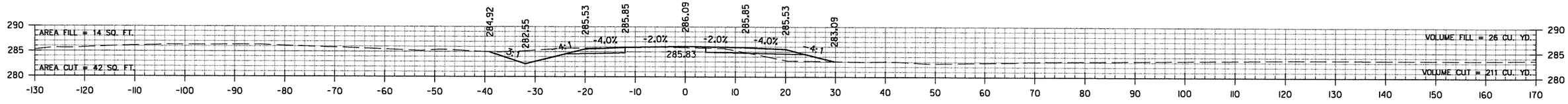
16+00.00

STA. 15+36 - SEE DRIVEWAY PROFILES SHEET FOR DRIVEWAY LAYOUT



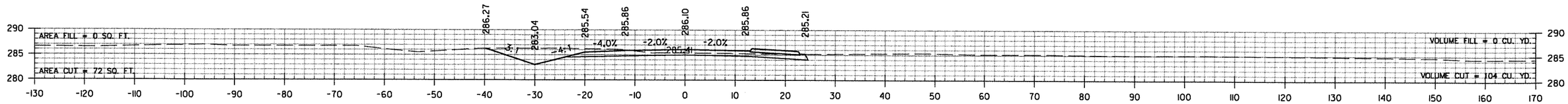
15+00.00

STA. 14+84.47 BEGIN SUPERELEVATION



14+00.00

STA. 13+50.00
BEGIN SP. DITCH LT. -0.60%
ELEV. 282.85



13+00.00

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

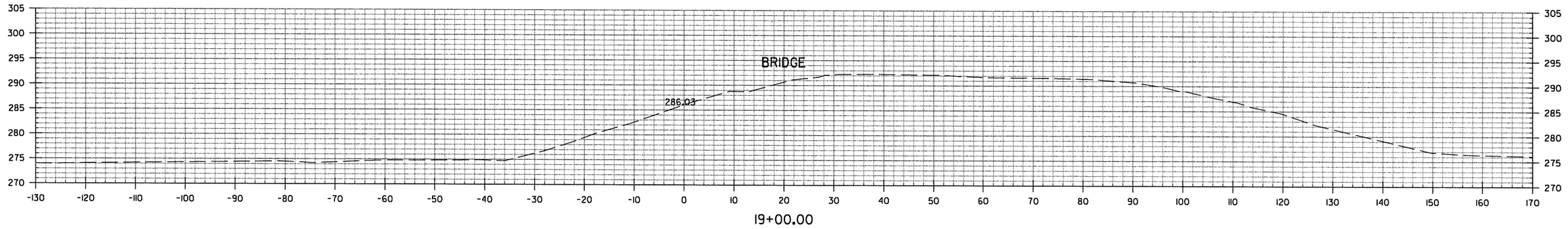
STA. 12+22.21 BEGIN LAWRENCE LANDING RD.

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

LAWRENCE LANDING RD.
STA. 13+00 TO STA. 16+00

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.		080395	231	237

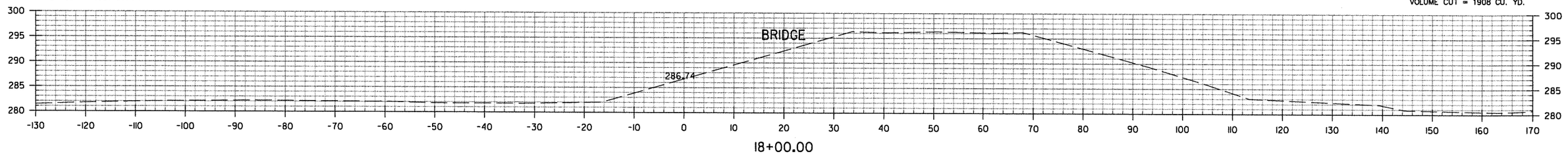
(2) CROSS SECTIONS



AREA FILL = 0 SQ. FT.
AREA CUT = 1631 SQ. FT.

STA. 18+53.97 BRIDGE EMBANKMENT TOE OF SLOPE

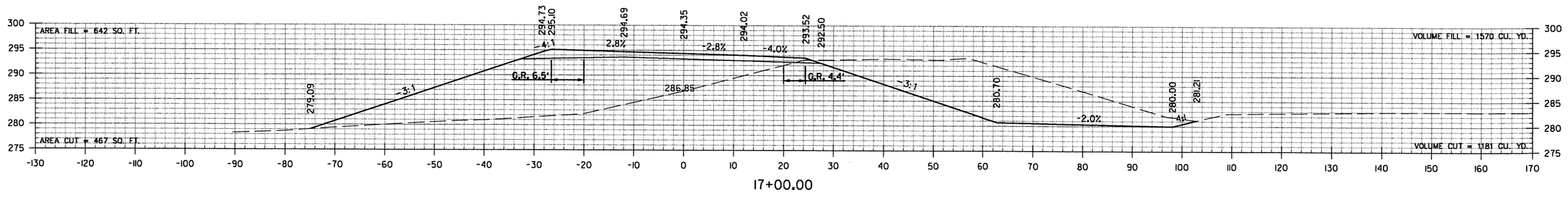
VOLUME FILL = 973 CU. YD.
VOLUME CUT = 1908 CU. YD.



AREA FILL = 834 SQ. FT.
AREA CUT = 4 SQ. FT.

STA. 17+90.92 BEGIN BRIDGE

VOLUME FILL = 2487 CU. YD.
VOLUME CUT = 794 CU. YD.



LAWRENCE LANDING RD.
STA. 17+00 TO STA. 19+00

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WORKSPACE: AHTD
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REVISED DATE:

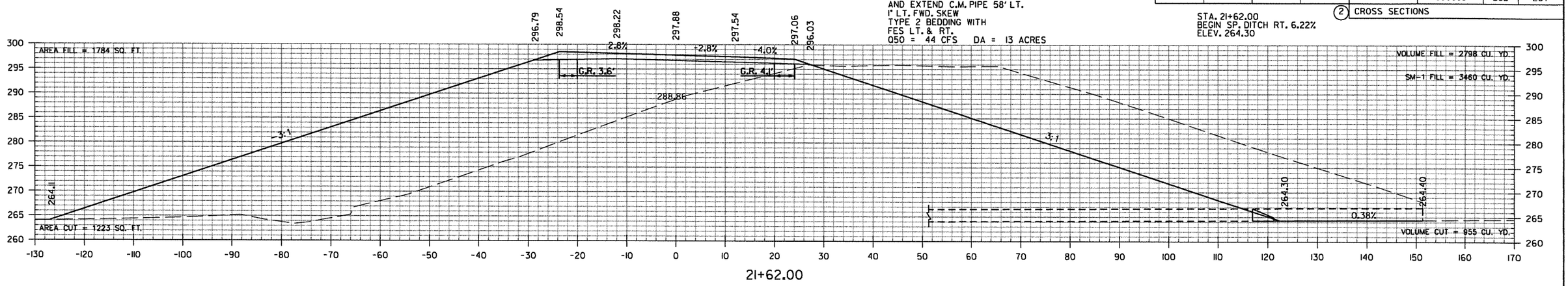
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080395	232	237

(2) CROSS SECTIONS

STA. 21+64 IN PLACE
30" X 218' C.M. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT.
REMOVE 35' PIPE RT.
AND EXTEND C.M. PIPE 58' LT.
1° LT. FWD. SKEW
TYPE 2 BEDDING WITH
FES LT. & RT.
Q50 = 44 CFS DA = 13 ACRES

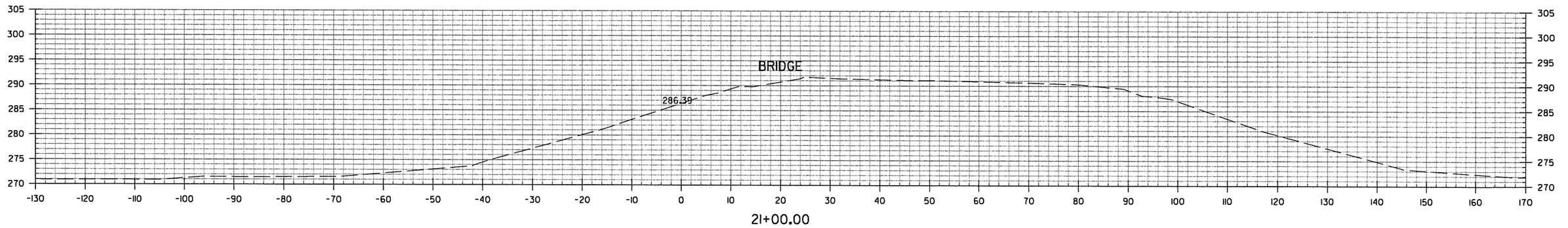
STA. 21+62.00
BEGIN SP. DITCH RT. 6.22%
ELEV. 264.30

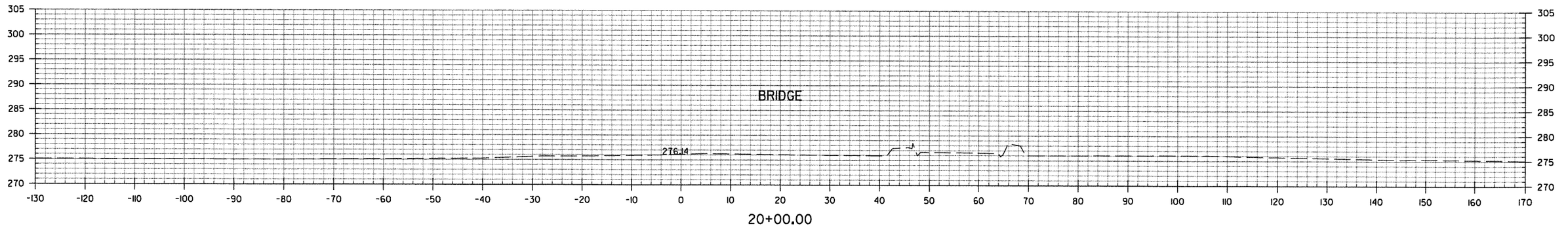


AREA FILL = 1813 SQ. FT.
AREA CUT = 5 SQ. FT.

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

STA. 21+01.08 END BRIDGE





LAWRENCE LANDING RD.
STA. 20+00 TO STA. 21+62

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WORKSPACE: AHTD
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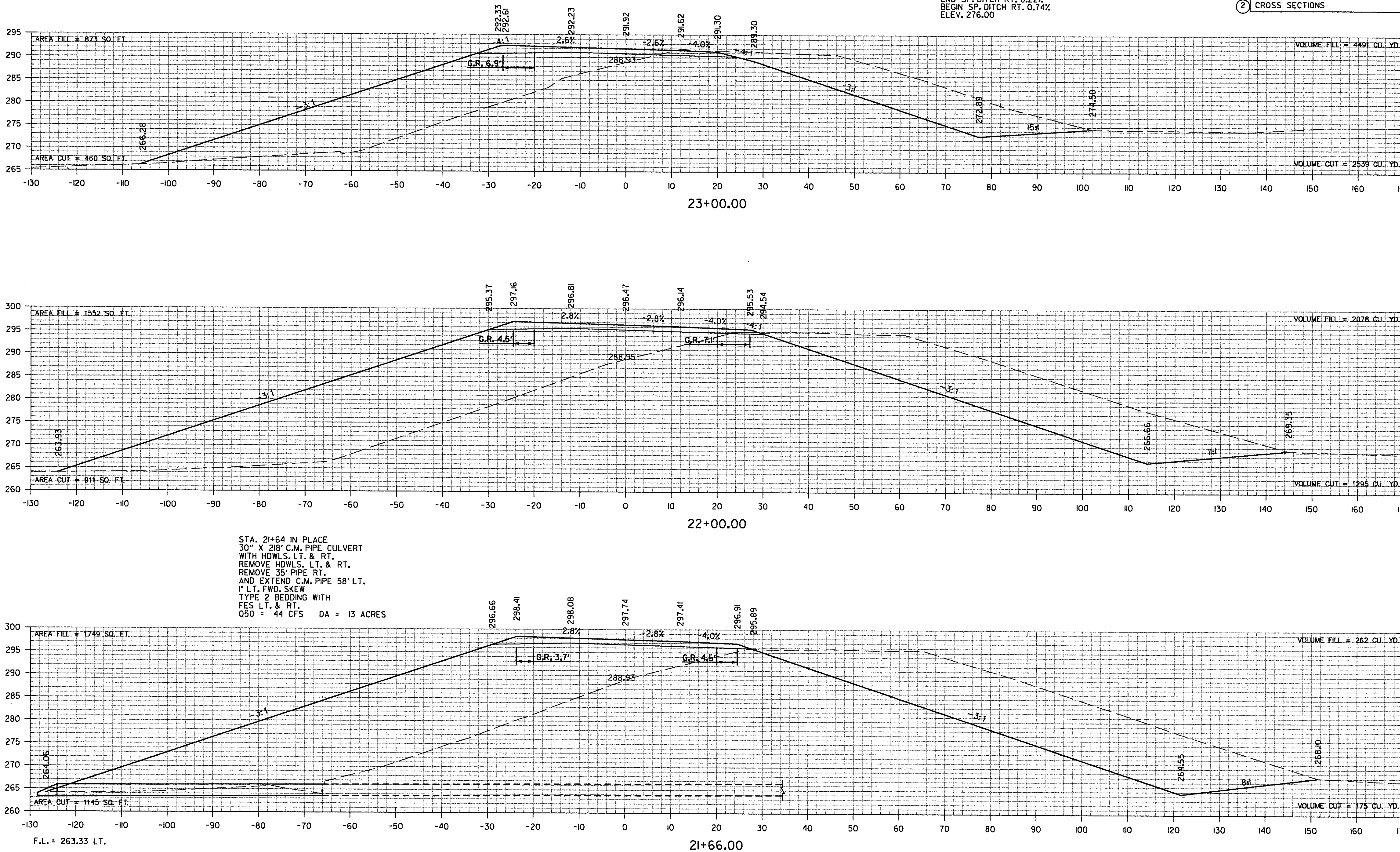
REVISED DATE:

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.		080395	233	237

(2) CROSS SECTIONS

STA. 23+50.00
END SP. DITCH RT. 6.22%
BEGIN SP. DITCH RT. 0.74%
ELEV. 276.00

STA. 21+64 IN PLACE
30" X 218' C.M. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT.
REMOVE 35' PIPE RT.
AND EXTEND C.M. PIPE 58' LT.
1° LT. FWD. SKEW
TYPE 2 BEDDING WITH
FES LT. & RT.
Q50 = 44 CFS DA = 13 ACRES



LAWRENCE LANDING RD.
STA. 21+66 TO STA. 23+00

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WORKSPACE: AHTD
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REVISED DATE:

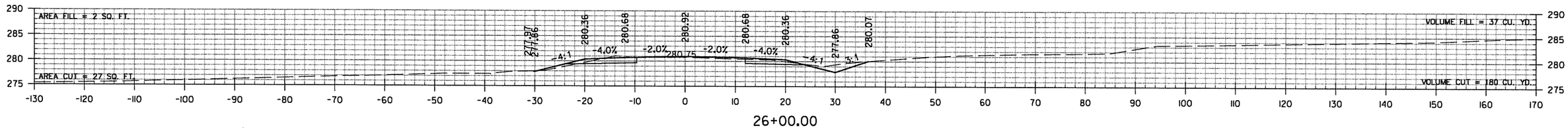
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080395	234	237
				(2) CROSS SECTIONS				

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

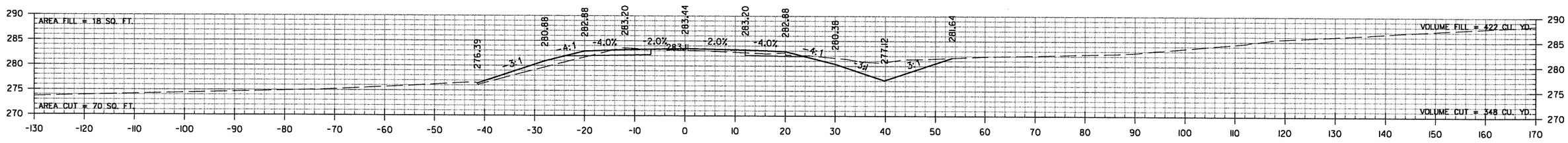
STA. 27+00.00 END TRANSITION

VOLUME FILL = 4 CU. YD.
VOLUME CUT = 50 CU. YD.

STA. 26+00.00
END SP. DITCH RT. 0.74%
ELEV. 277.86



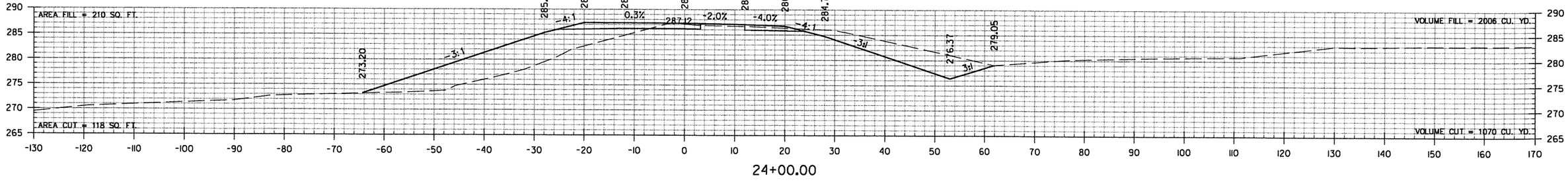
26+00.00



25+00.00

STA. 24+82.37 END SUPERELEVATION

STA. 24+78 - SEE DRIVEWAY PROFILES SHEET FOR DRIVEWAY LAYOUT



24+00.00

LAWRENCE LANDING RD.
STA. 24+00 TO STA. 26+00

sgrobarson 8/19/2013 2:10:53 PM
WORKSPACE: MHTD
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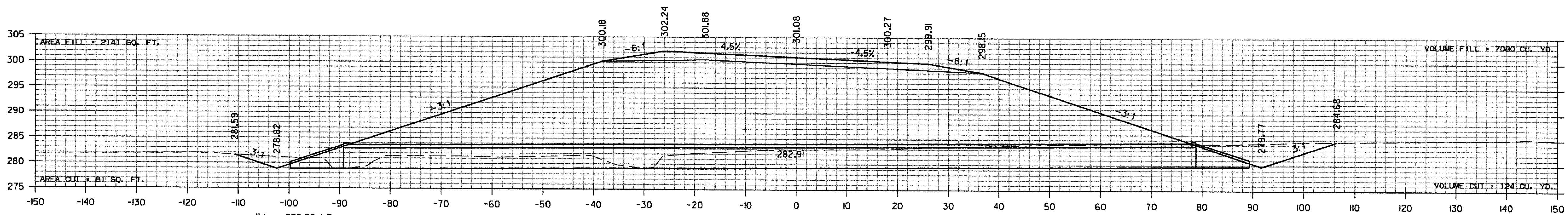
				6	ARK.			
				JOB NO.		080395	235	237

(2) CROSS SECTIONS

STA. 22+80 CONSTRUCT
8' X 4' X 168' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50 = 210 CFS DA = 73 ACRES

STA. 22+95.00
END SP. DITCH RT. 0.00%
BEGIN SP. DITCH RT. 0.54%
ELEV. 279.77

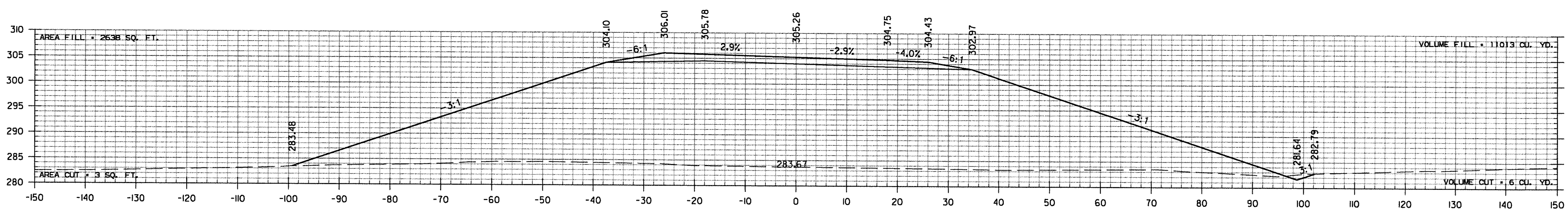


F.L. = 278.82 LT.

22+80.00

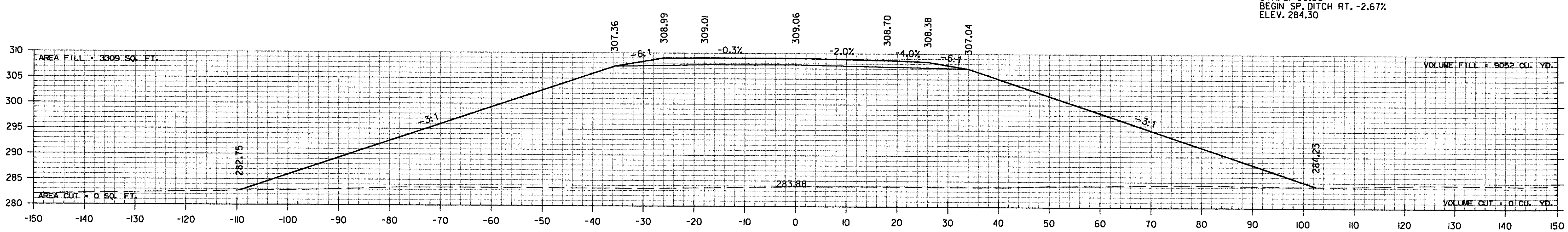
F.L. = 279.77 RT.

STA. 22+70.00
END SP. DITCH RT. -2.67%
BEGIN SP. DITCH RT. 0.00%
ELEV. 279.77



22+00.00

STA. 21+00.00
BEGIN SP. DITCH RT. -2.67%
ELEV. 284.30



21+00.00

STA. 20+56.27 BEGIN SUPERELEVATION

AREA FILL = 3674 SQ. FT.
AREA CUT = 0 SQ. FT.

STA. 20+30.46 BEGIN HWY. 365 CONNECTOR

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

HWY. 365 CONNECTOR
STA. 21+00 TO STA. 22+80

saroberson 8/19/2013 2:38:27 PM
WORKSPACE: AHTD
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				6	ARK.			
				JOB NO.		080395	236	237

(2) CROSS SECTIONS

STA. 26+77.53 END SUPERELEVATION

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

STA. 24+88.92 TOE OF SLOPE

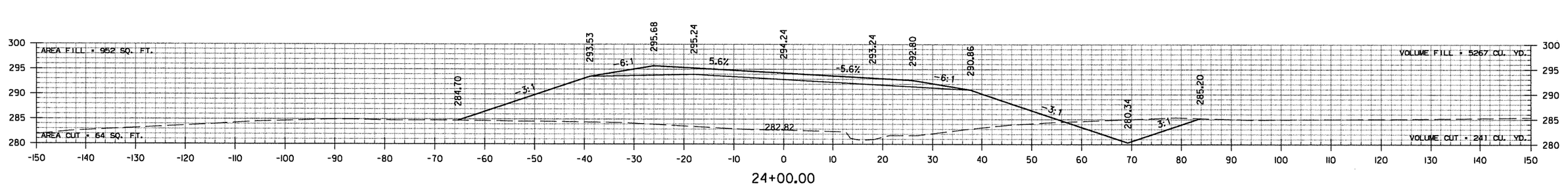
VOLUME FILL = 90 CU. YD.
VOLUME CUT = 6 CU. YD.

AREA FILL = 347 SQ. FT.
AREA CUT = 25 SQ. FT.

STA. 24+75.00 END GRADING HWY. 365 CONNECTOR

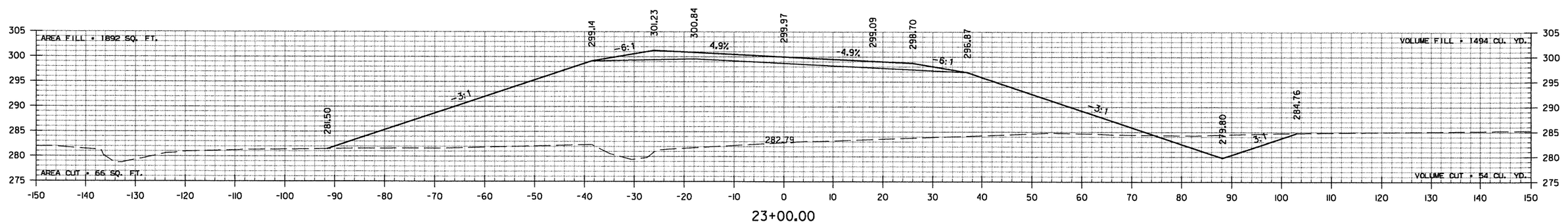
STA. 24+80.00
END SP. DITCH RT. 0.54%
ELEV. 280.77

VOLUME FILL = 1804 CU. YD.
VOLUME CUT = 124 CU. YD.



24+00.00

STA. 23+77.53 MAXIMUM SUPERELEVATION (S.E. = .060'/')
STA. 23+56.27 MAXIMUM SUPERELEVATION (S.E. = .060'/')



23+00.00

HWY. 365 CONNECTOR
STA. 23+00 TO STA. 24+00

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WORKSPACE, AHTD
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				6	ARK.			
				JOB NO.		080395	237	237

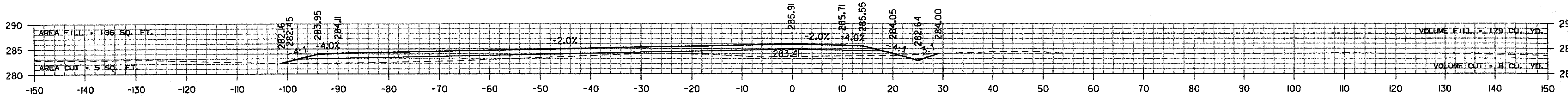
(2) CROSS SECTIONS

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

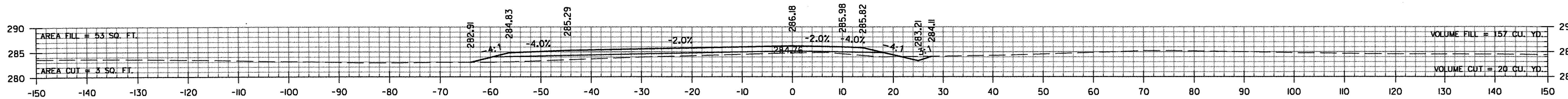
STA. 14+01.49 END MOORE ACCESS RD.

STA. 14+10.00
END SP. DITCH RT. -1.10%
ELEV. 282.00

VOLUME FILL = 126 CU. YD.
VOLUME CUT = 5 CU. YD.

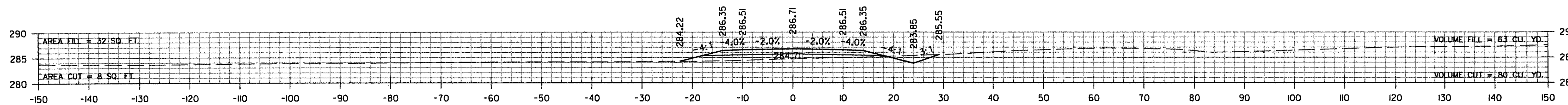


13+51.49

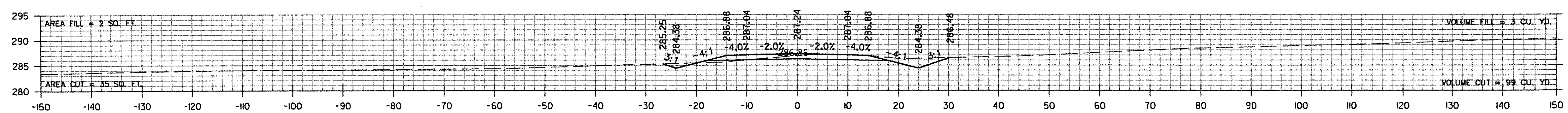


13+00.00

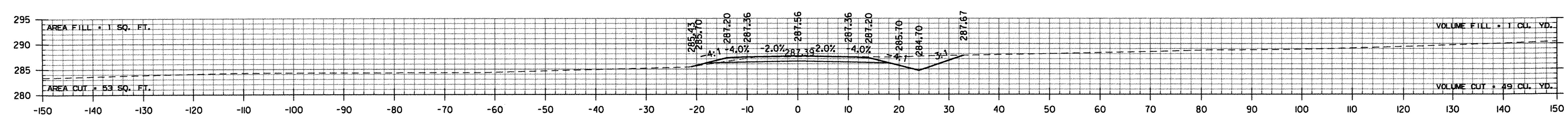
STA. 12+80.00
BEGIN SP. DITCH RT. -1.10%
ELEV. 283.43



12+00.00



11+00.00



10+38.96

AREA FILL = 0 SQ. FT.
AREA CUT = 0 SQ. FT.

STA. 9+88.96 BEGIN TRANSITION

VOLUME FILL = 0 CU. YD.
VOLUME CUT = 0 CU. YD.

MOORE ACCESS RD.
STA. 10+39 TO STA. 14+01

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WORKSPACE: AHTD
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