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.		040605	1	260
				(2)	HWY. 16 - PORTER RD. (WIDENING) (S)			

"A FULLY CONTROLLED ACCESS FACILITY"
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

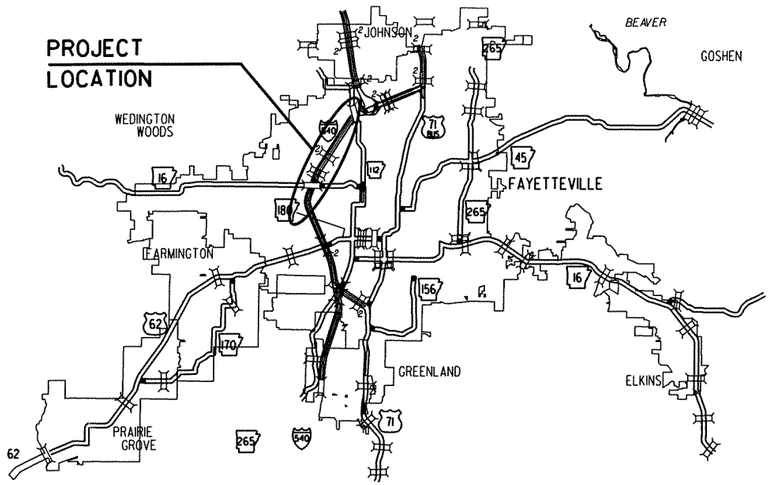
HWY. 16 - PORTER RD. (WIDENING) (S)

WASHINGTON COUNTY

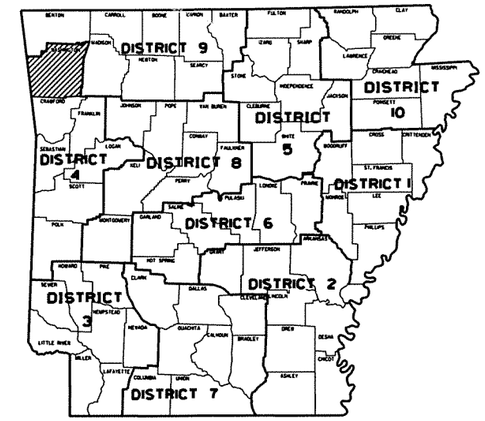
ROUTE 540 SECTION 4

JOB 040605

FED. AID PROJ. EFCA-9142(33)



VICINITY MAP



ARK. HWY. DIST. NO. 4

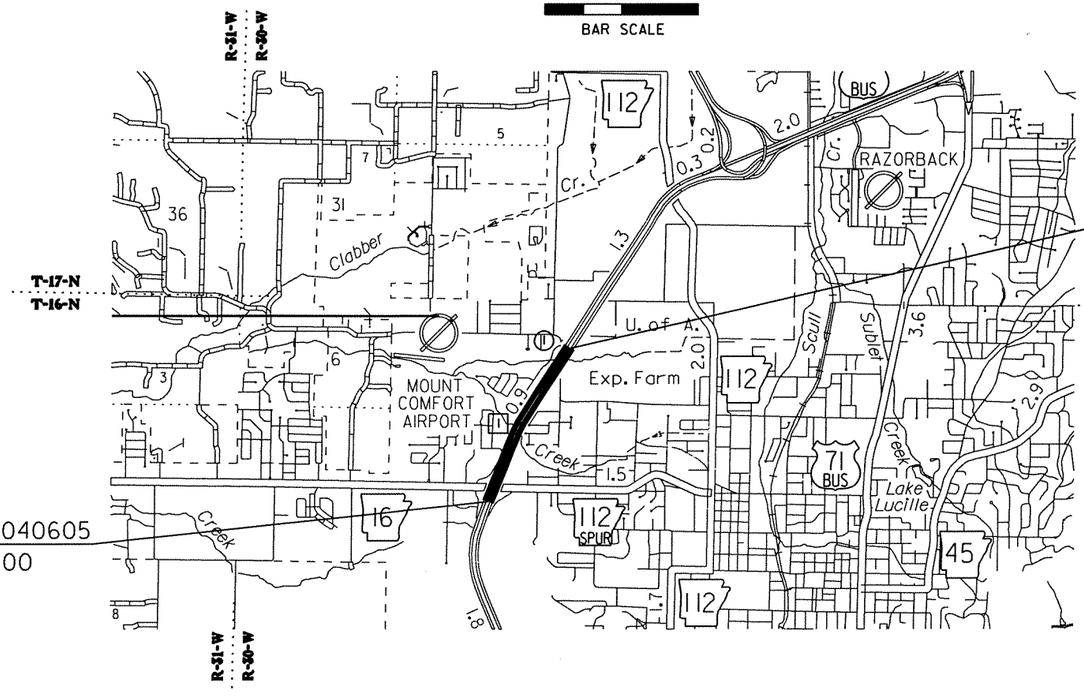
BRIDGE DATA

(1) STA. 222+11.92 BRIDGE END
BRIDGE NO. 07287
387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(110'-167'-110')
391'- 2" BRIDGE LENGTH
STA. 226+03.08 BRIDGE END

STRUCTURES OVER 20'-0" SPAN

[1] HAMESTRING CREEK
QUINT. 10' X 8' X 223' R.C. BOX CULV'T.
ON 30° LT. FWD. SKEW
WITH 31 WINGS LT. & RT.
(SPAN = 53'-11")
050 = 3201 CFS D.A. = 1094.4 ACRES

0 1/4 1/2 1 MILE
BAR SCALE



BEGIN JOB 040605
STA. 171+50.00
L.M. 63.74

END JOB 040605
STA. 239+77.13

• DESIGN TRAFFIC DATA •

DESIGN YEAR	2013
2013 ADT	65,000
2033 ADT	97,000
2033 DHV	10,670
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	12%
DESIGN SPEED	70 MPH

N

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 3917
FRANK VOZEL

6/21/13
DEPUTY DIRECTOR AND CHIEF ENGINEER

BEGINNING OF PROJECT	MID POINT OF PROJECT	END OF PROJECT
LATITUDE = N 36°04'39"	LATITUDE = N 36°05'11"	LATITUDE = N 36°05'39"
LONGITUDE = W 94°12'04"	LONGITUDE = W 94°11'45"	LONGITUDE = W 94°11'22"

GROSS LENGTH OF PROJECT			6827.13	FEET	OR	1.293	MILES
NET	"	" ROADWAY	6435.97	"	"	1.219	"
NET	"	" BRIDGES	391.16	"	"	0.074	"
NET	"	" PROJECT	6827.13	"	"	1.293	"

P.E. 012070
NON-PART.

r040605.dgn
5/3/12

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INDEX OF SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TIMOTHY D. BAXTER

6-14-13

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		2	260

(2) INDEX OF SHEETS

JOB NO. 040605

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/9/13				6	ARK.			
				JOB NO.		040605	3	260

(2) GOVERNING SPECS. AND GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-9-13

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 040605
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
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
606-2_____	PIPE CULVERTS
718-2_____	REFLECTORIZED PAINT PAVEMENT MARKINGS
804-1_____	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB 040605__	AIRPORT CLEARANCE REQUIREMENTS
JOB 040605__	ASPHALT CONCRETE HOT MIX SURFACE COURSE SURFACE TOLERANCE AND INCENTIVE PAYMENTS
JOB 040605__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 040605__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 040605__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 040605__	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 040605__	DRILLED SHAFT FOUNDATIONS
JOB 040605__	EXTENSION FOR PIPE CULVERTS
JOB 040605__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 040605__	HIGH PERFORMANCE PAVEMENT MARKING
JOB 040605__	INTERNET BIDDING
JOB 040605__	LRFD PRECAST REINFORCED CONCRETE BOX CULVERTS
JOB 040605__	MAINTENANCE OF TRAFFIC
JOB 040605__	NESTING SITES OF MIGRATORY BIRDS
JOB 040605__	PARTNERING REQUIREMENTS
JOB 040605__	PROSECUTION AND PROGRESS
JOB 040605__	REMOVAL AND DISPOSAL OF WIRE ROPE SAFETY FENCE
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JOB 040605__	SHORING
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JOB 040605__	STORM WATER POLLUTION PREVENTION PLAN
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JOB 040605__	UTILITY ADJUSTMENTS
JOB 040605__	VALUE ENGINEERING
JOB 040605__	WARM MIX ASPHALT
JOB 040605__	WIRE ROPE SAFETY FENCE END TERMINAL

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
6. 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.
7. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003, FOR PERMIT REQUIREMENTS.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

7/9/2013

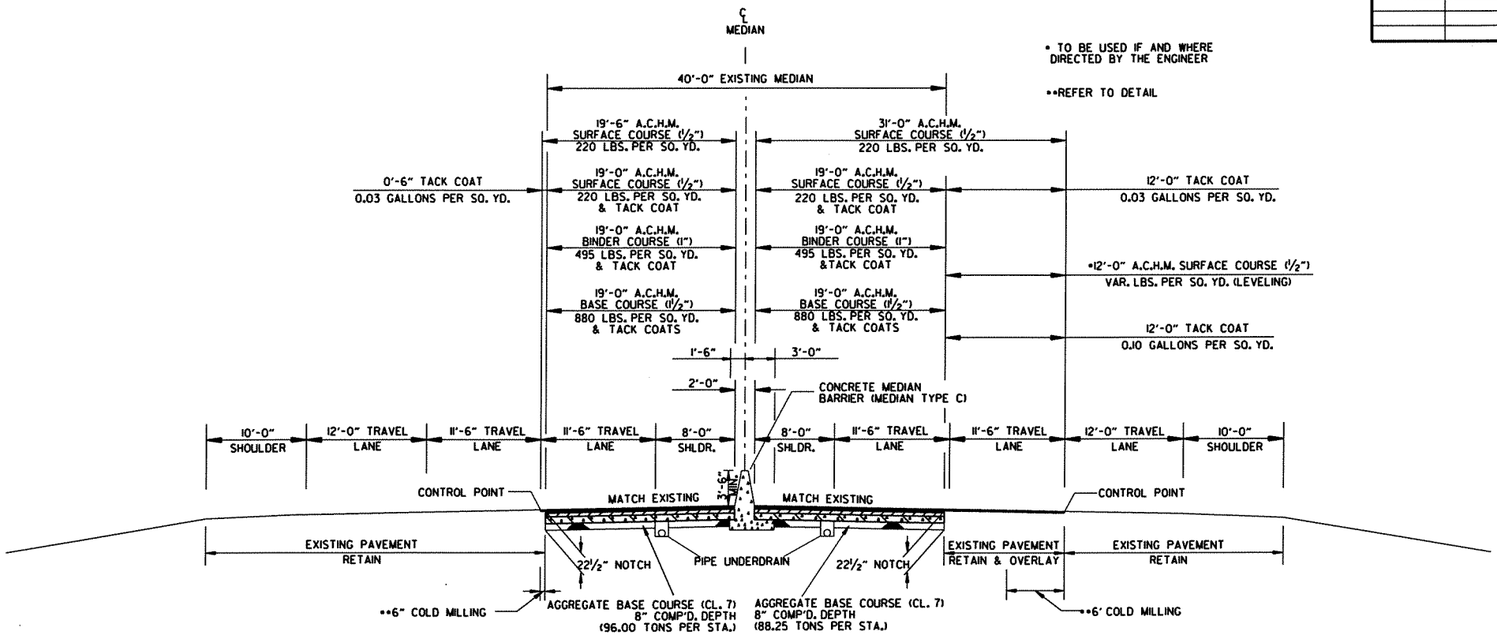
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GOVERNING SPCIFICATIONS AND GENERAL NOTES

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.		040605	4	260

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-20-13



TYPICAL SECTION OF IMPROVEMENT - I-540
NOTCH AND WIDEN INTO THE MEDIAN
STA. 171+50.00 TO STA. 194+59.89

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

**REFER TO DETAIL

NOTES:

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

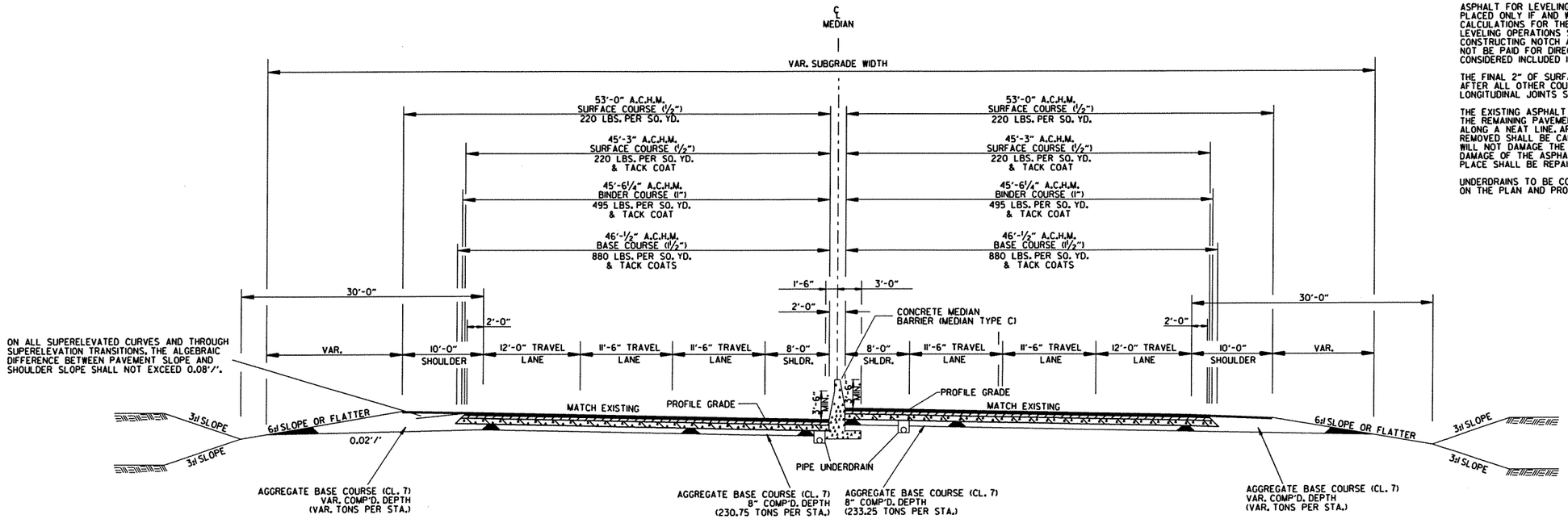
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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

THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

UNDERDRAINS TO BE CONNECTED TO DROP INLETS AS SHOWN ON THE PLAN AND PROFILE SHEETS.



TYPICAL SECTION OF IMPROVEMENT - I-540
FULL DEPTH - MATCH EXISTING
SUPERELEVATION
STA. 194+59.89 TO STA. 197+00.69

TYPICAL SECTIONS OF IMPROVEMENT

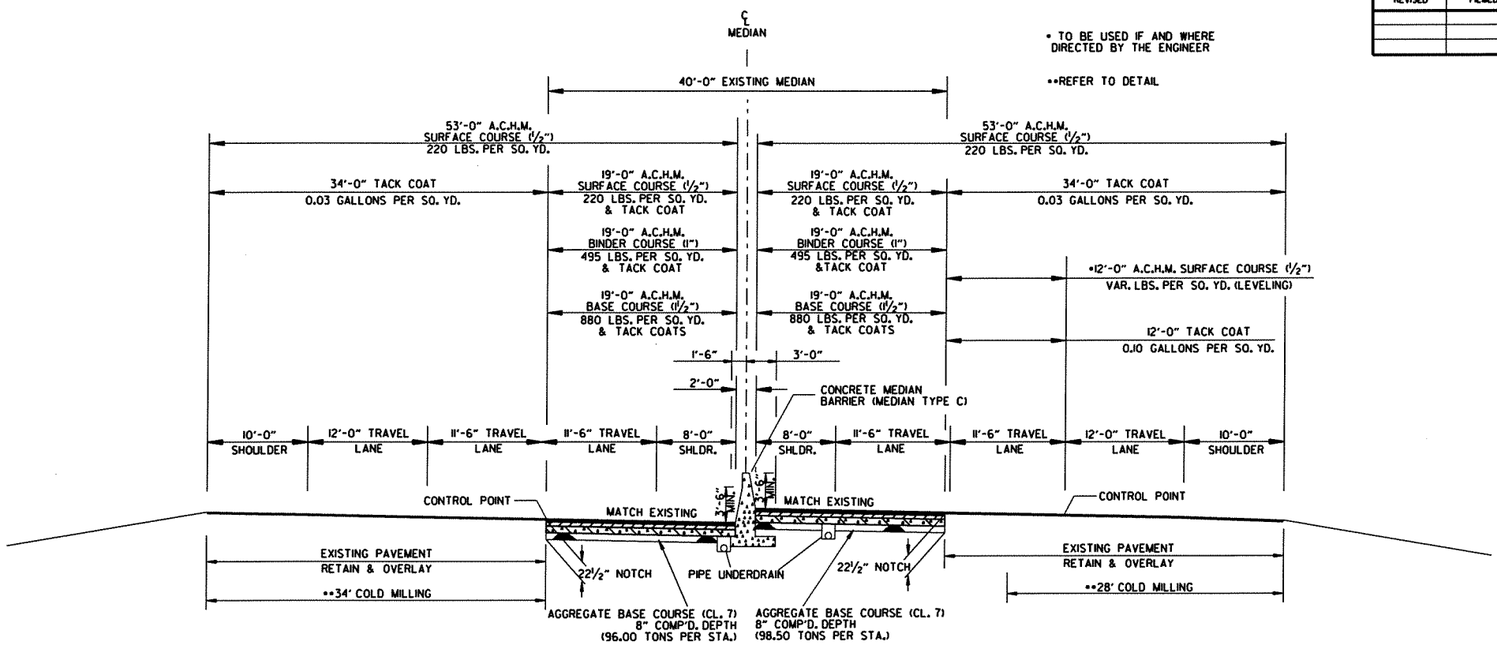
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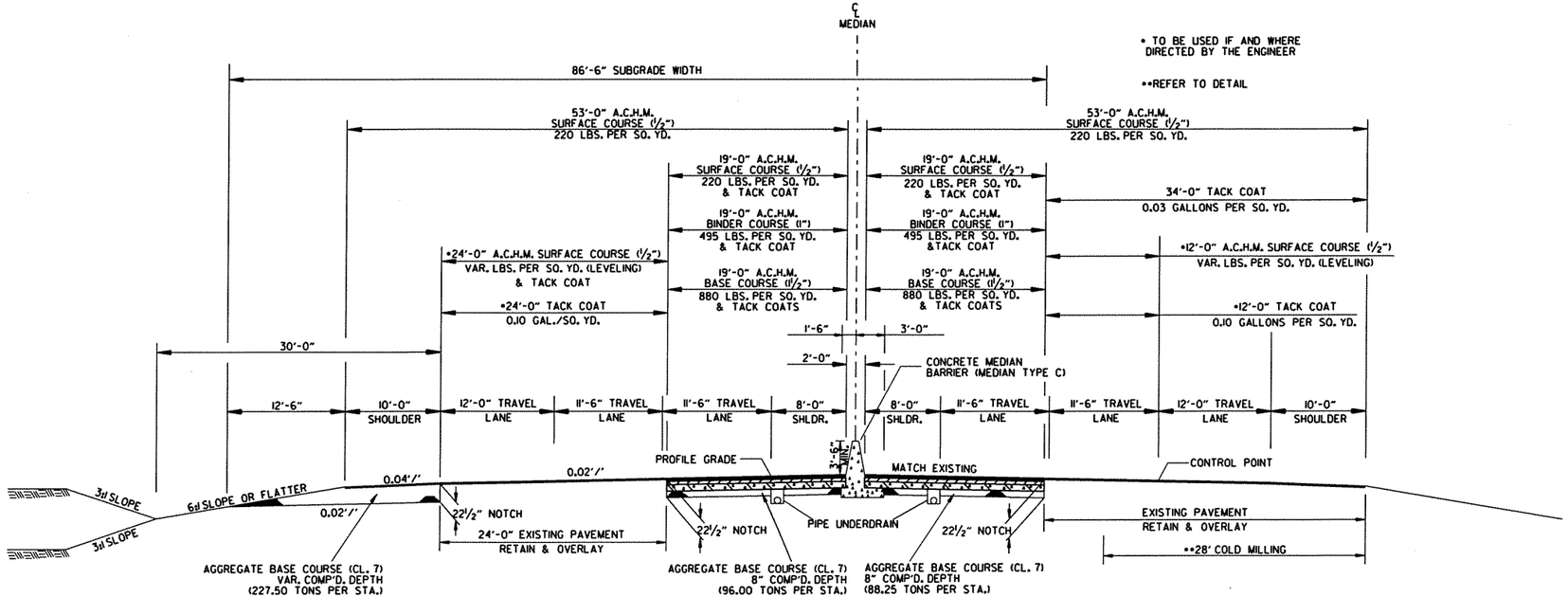
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				6	ARK.			
				JOB NO.		040605	5	260

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-20-13



TYPICAL SECTION OF IMPROVEMENT - I-540
NOTCH AND WIDEN INTO THE MEDIAN
SUPERELEVATION - MILL AND OVERLAY FULL WIDTH
STA. 197+00.69 TO STA. 206+23.95



TYPICAL SECTION OF IMPROVEMENT - I-540
FULL DEPTH W/ NOTCH ON LT.
NOTCH AND WIDEN INTO THE MEDIAN ON RT.
STA. 206+23.95 TO STA. 212+23.95

NOTES:

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

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UNDERDRAINS TO BE CONNECTED TO DROP INLETS AS SHOWN ON THE PLAN AND PROFILE SHEETS.

6/20/2013

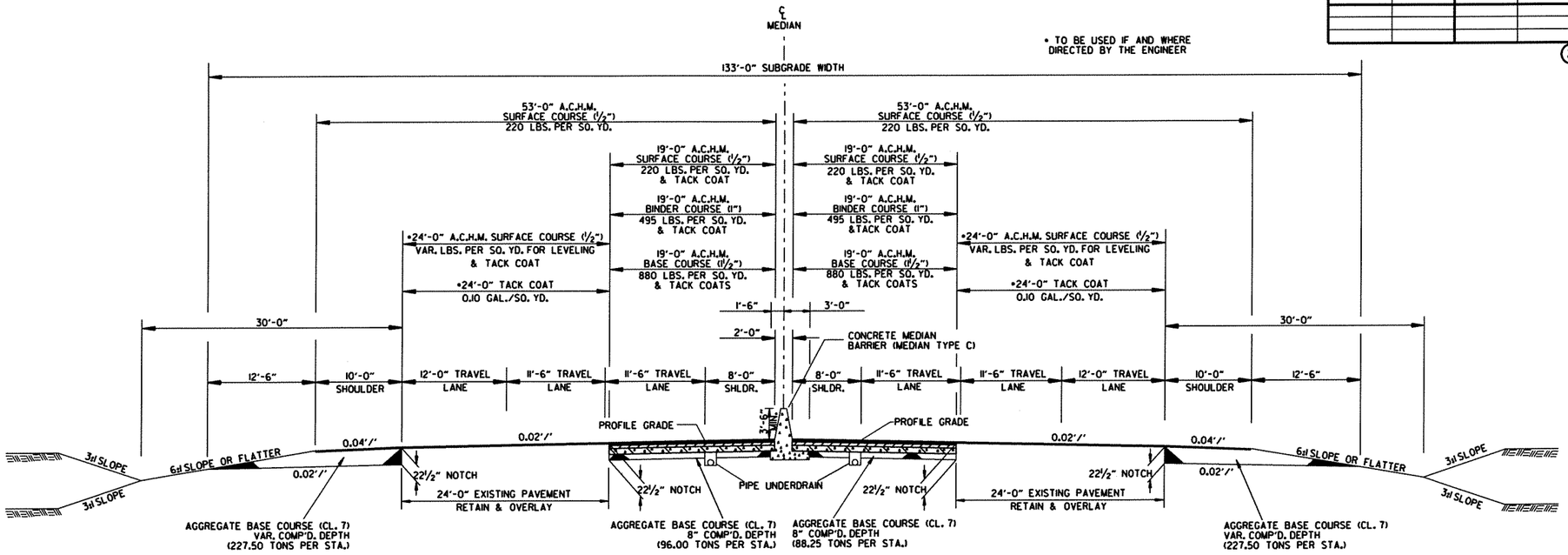
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TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	6	260

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-21-13



TYPICAL SECTION OF IMPROVEMENT - I-540
FULL DEPTH W/ NOTCH ON LT. & RT.
STA. 212+23.95 TO STA. 216+00.00
STA. 228+41.00 TO STA. 229+76.74

NOTES:

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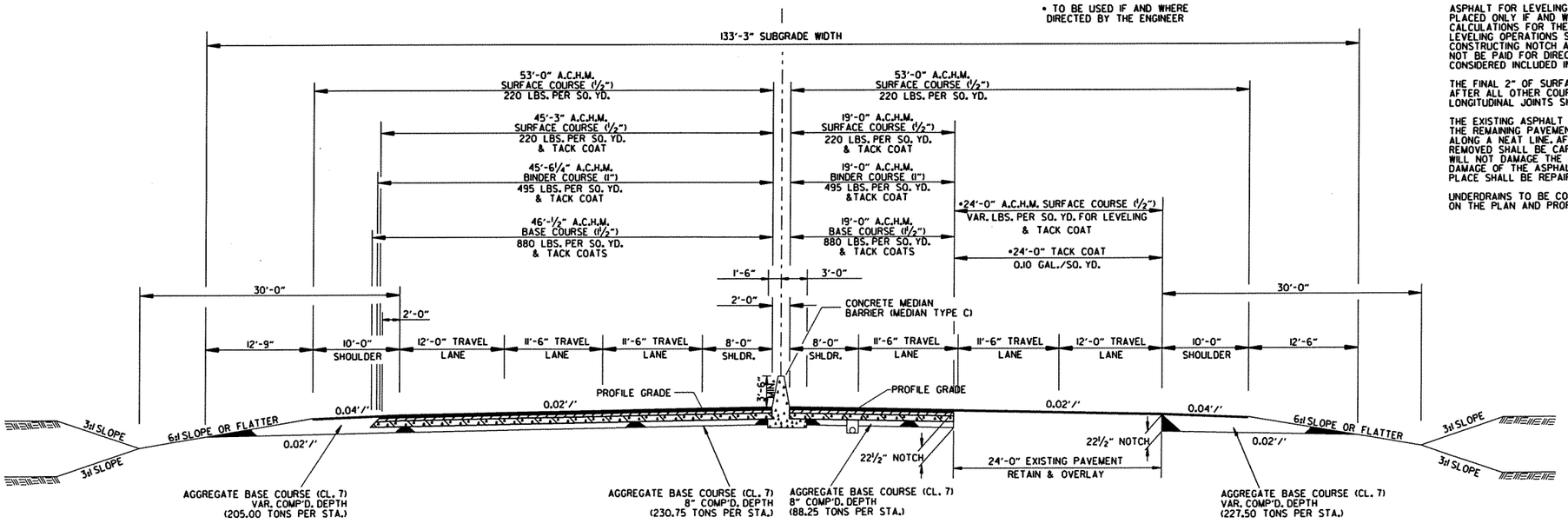
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UNDERDRAINS TO BE CONNECTED TO DROP INLETS AS SHOWN ON THE PLAN AND PROFILE SHEETS.



TYPICAL SECTION OF IMPROVEMENT - I-540
FULL DEPTH ON LT.
FULL DEPTH W/ NOTCH ON RT.
STA. 216+00.00 TO STA. 216+73.70
STA. 227+70.00 TO STA. 228+41.00

TYPICAL SECTIONS OF IMPROVEMENT

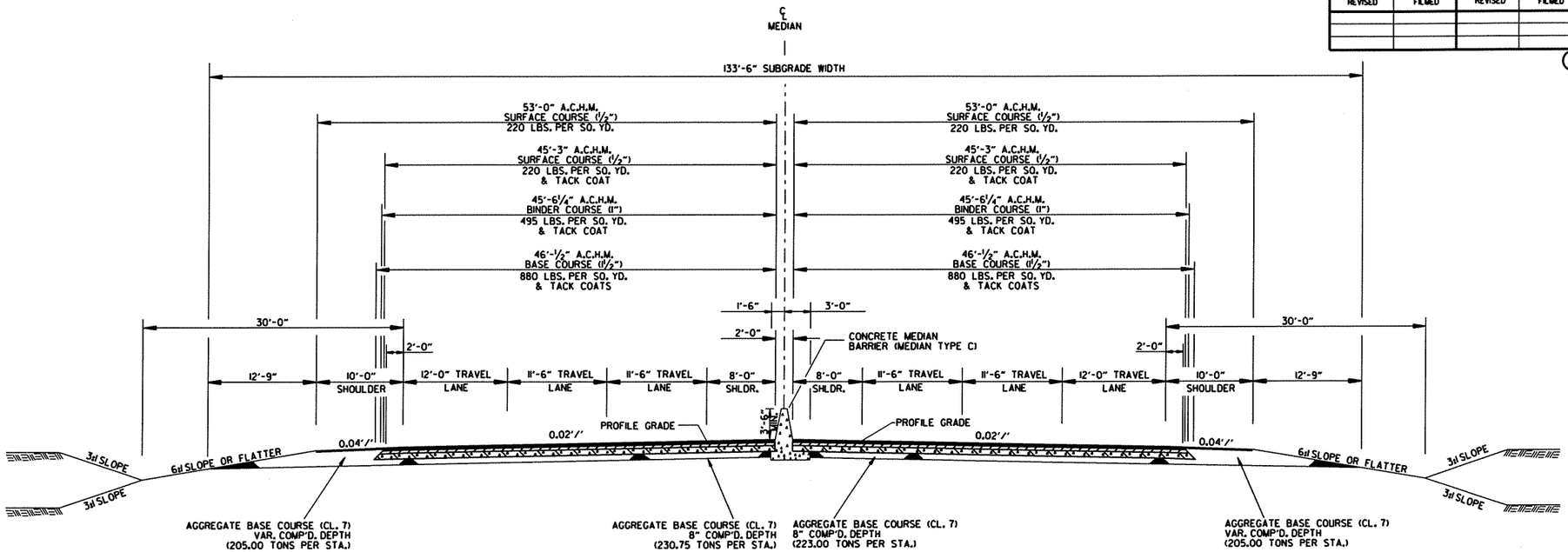
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-21-13



TYPICAL SECTION OF IMPROVEMENT - I-540
FULL DEPTH
STA. 216+73.70 TO STA. 222+11.92
STA. 226+03.08 TO STA. 227+70.00

NOTES:

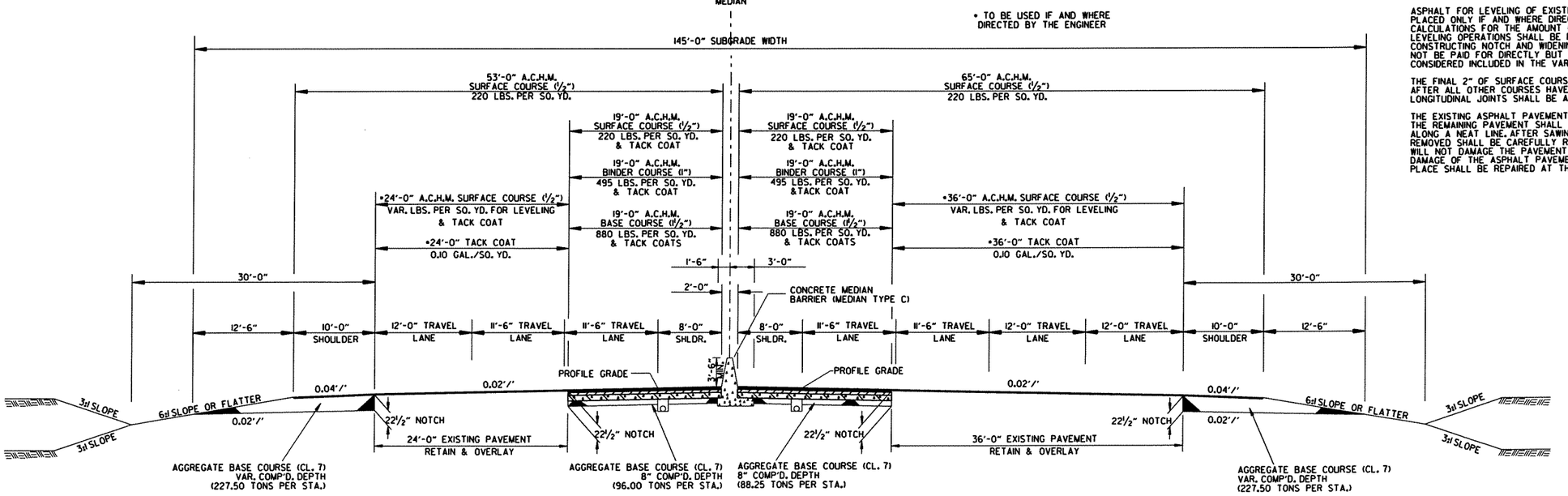
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TYPICAL SECTION OF IMPROVEMENT - I-540
FULL DEPTH W/ NOTCH ON LT.
4 LANE - FULL DEPTH W/ NOTCH ON RT.
STA. 229+76.74 TO STA. 232+26.75

TYPICAL SECTIONS OF IMPROVEMENT

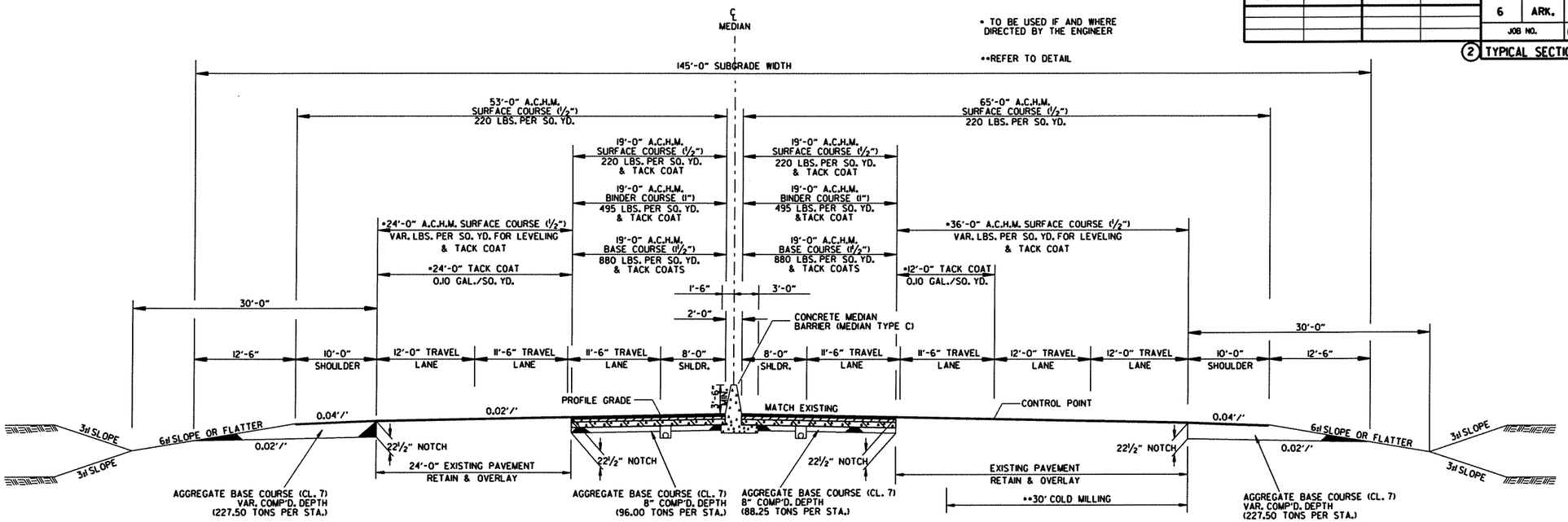
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-21-13



TYPICAL SECTION OF IMPROVEMENT - I-540
FULL DEPTH W/ NOTCH ON LT.
4 LANE - NOTCH AND WIDEN AND OVERLAY ON RT.
STA. 232+26.75 TO STA. 236+26.75

NOTES:

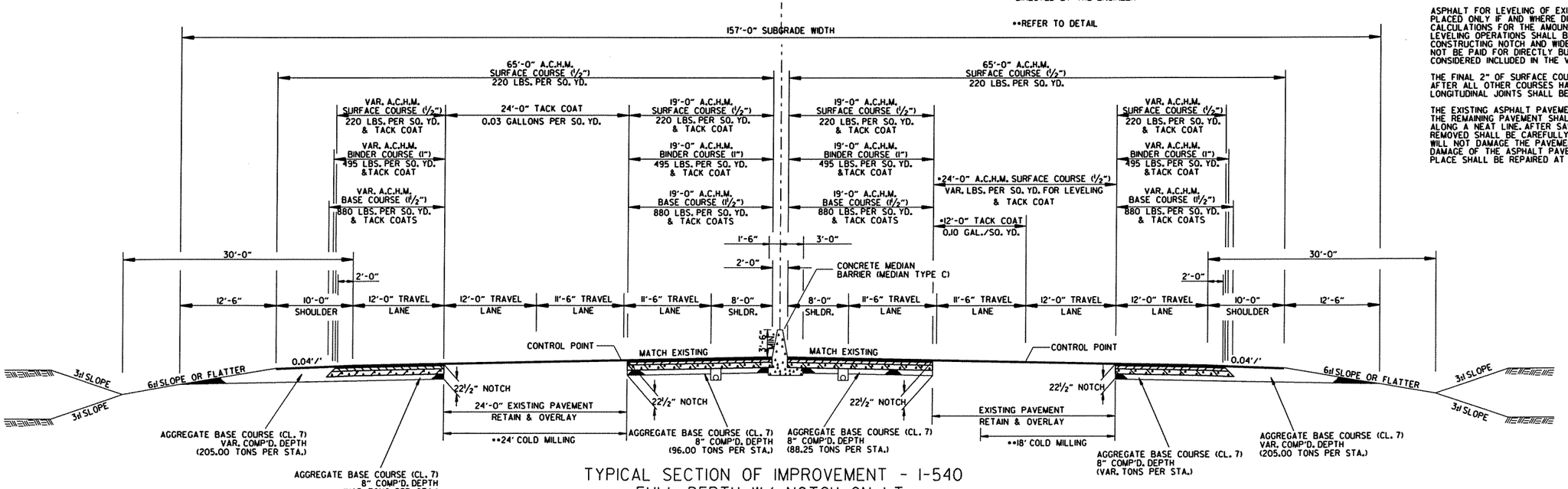
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TYPICAL SECTION OF IMPROVEMENT - I-540
FULL DEPTH W/ NOTCH ON LT.
4 LANE - NOTCH AND WIDEN AND OVERLAY ON RT.
STA. 236+26.75 TO STA. 239+77.13

TYPICAL SECTIONS OF IMPROVEMENT

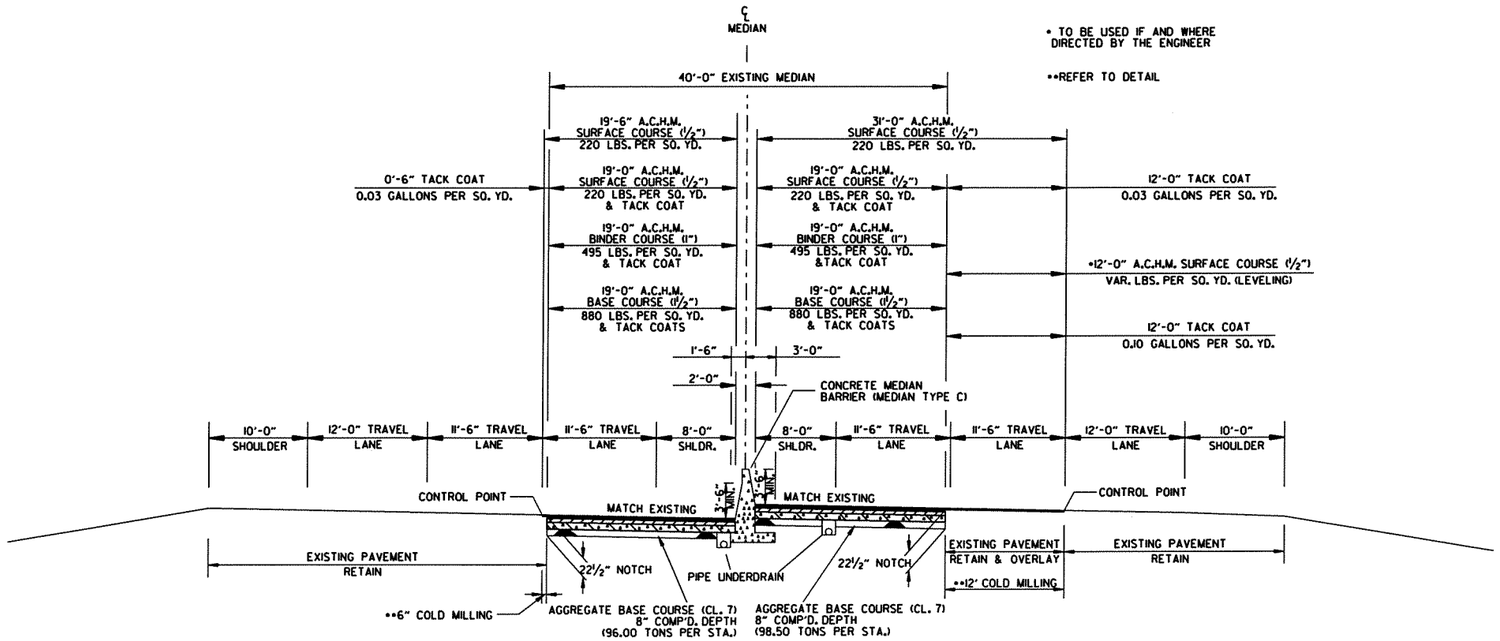
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-21-13



TYPICAL SECTION OF IMPROVEMENT - I-540
NOTCH AND WIDEN INTO THE MEDIAN
SUPERELEVATION
(FOR INFORMATION ONLY)

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

••REFER TO DETAIL

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TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

NOTES:

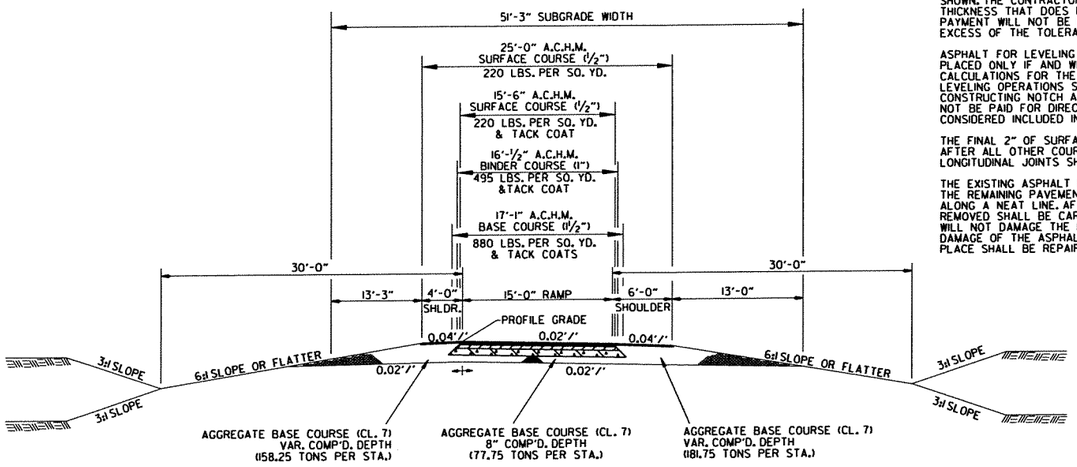
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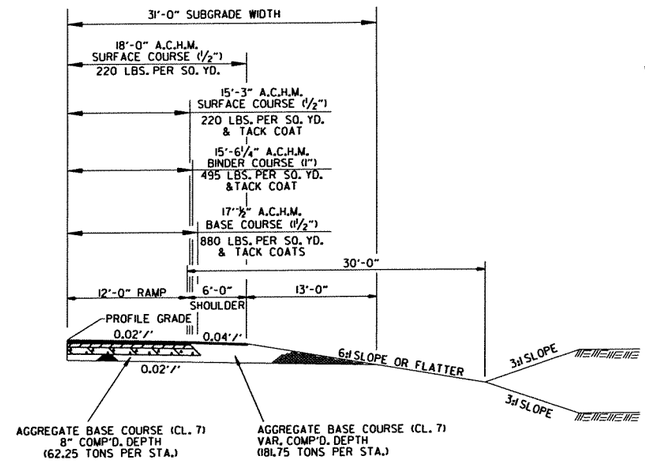
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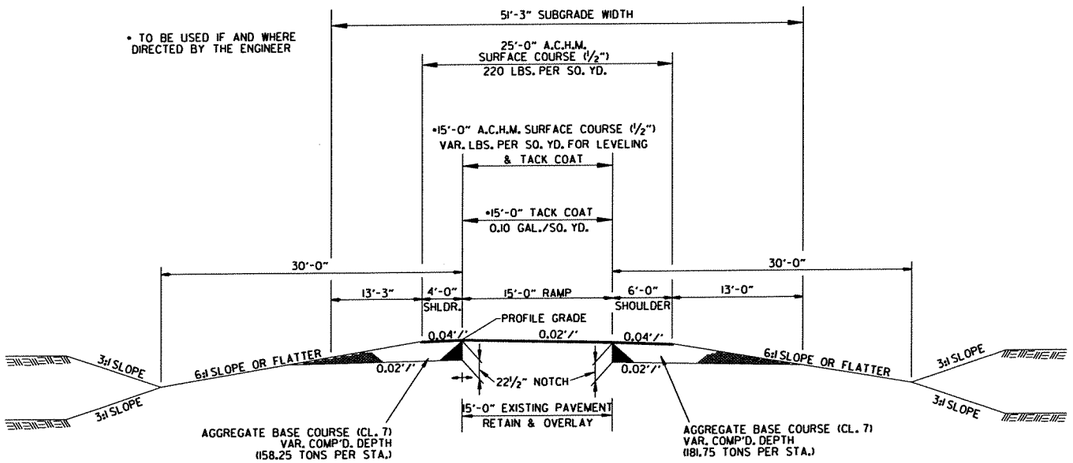


TYPICAL SECTION OF IMPROVEMENT - RAMPS
FULL DEPTH SECTION
(SHOWN IN THE DIRECTION OF TRAFFIC)

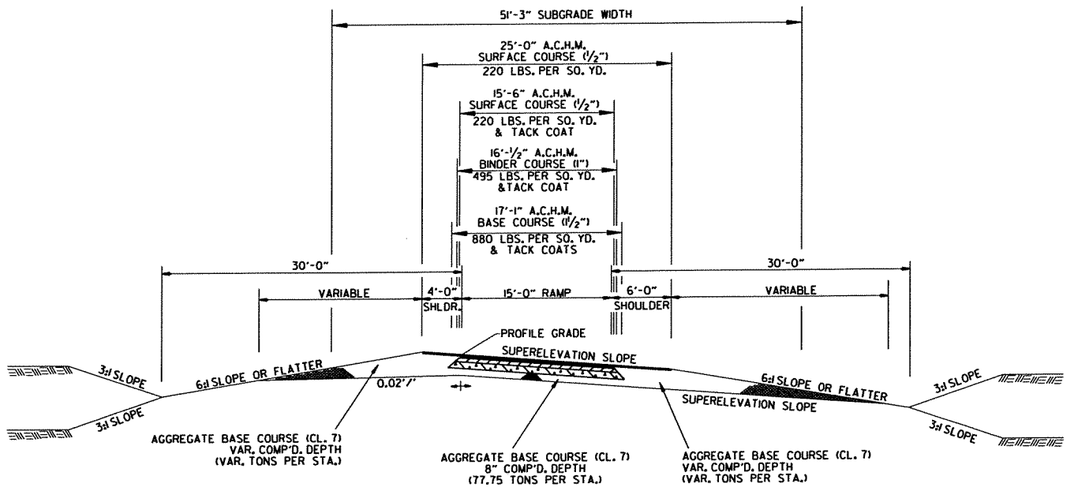


TYPICAL SECTION OF IMPROVEMENT - ACCELERATION LANE
FULL DEPTH SECTION
(SHOWN IN THE DIRECTION OF TRAFFIC)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



TYPICAL SECTION OF IMPROVEMENT - RAMPS
NOTCH SECTION
(SHOWN IN THE DIRECTION OF TRAFFIC)



TYPICAL SECTION OF IMPROVEMENT - RAMPS
SUPERELEVATION
(SHOWN IN THE DIRECTION OF TRAFFIC)

TYPICAL SECTIONS OF IMPROVEMENT

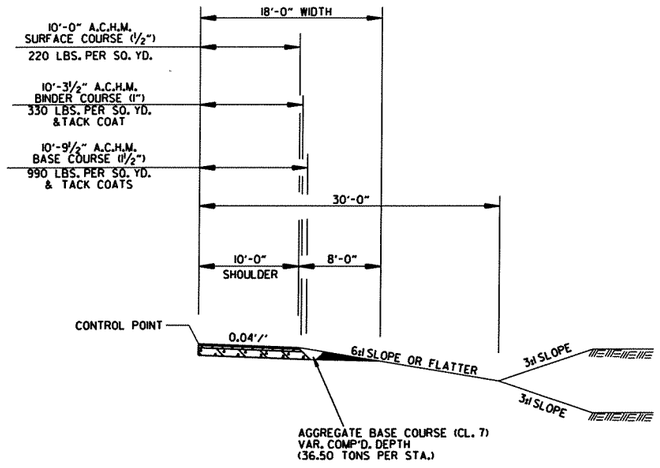
6/13/2013

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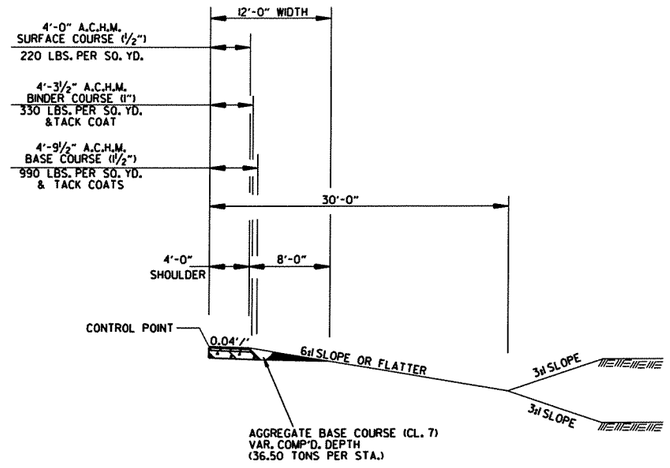
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



TYPICAL SECTION OF IMPROVEMENT
SHOULDER RECONSTRUCTION
(SHOWN IN THE DIRECTION OF TRAFFIC)



TYPICAL SECTION OF IMPROVEMENT
SHOULDER RECONSTRUCTION
(SHOWN IN THE DIRECTION OF TRAFFIC)

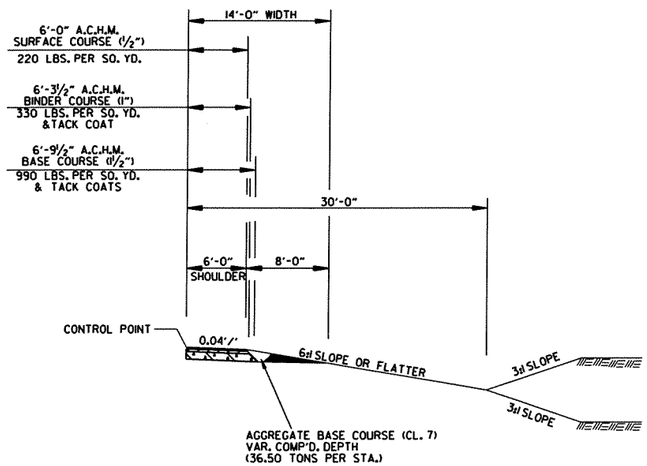
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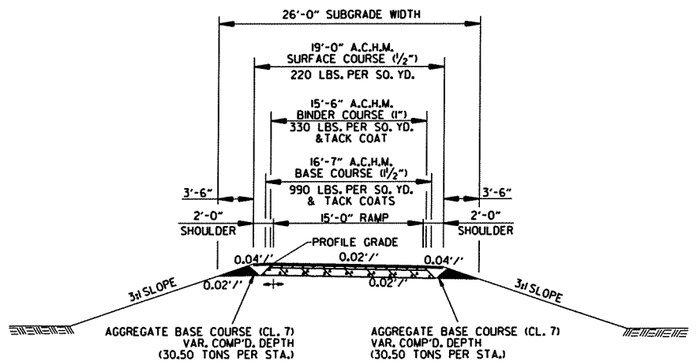
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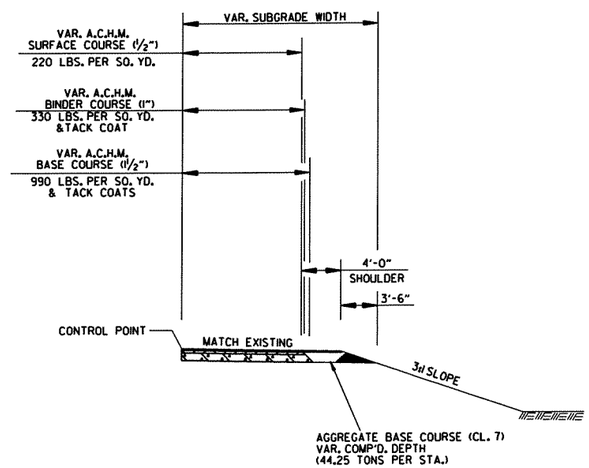
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TYPICAL SECTION OF IMPROVEMENT
SHOULDER RECONSTRUCTION
(SHOWN IN THE DIRECTION OF TRAFFIC)



TYPICAL SECTION OF IMPROVEMENT
TEMPORARY RAMP
(SHOWN IN THE DIRECTION OF TRAFFIC)



TYPICAL SECTION OF IMPROVEMENT
TEMPORARY WIDENING
(SHOWN IN THE DIRECTION OF TRAFFIC)

TYPICAL SECTIONS OF IMPROVEMENT

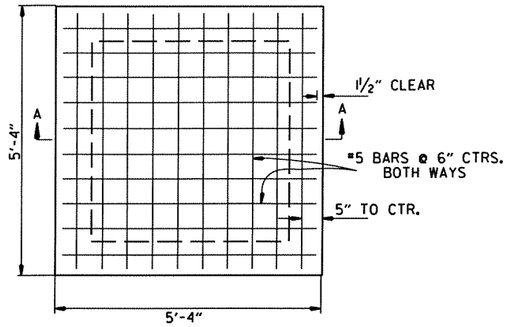
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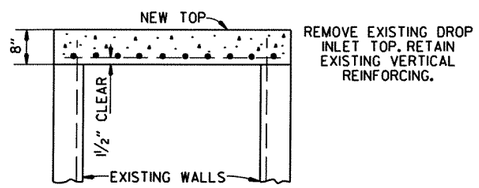
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(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

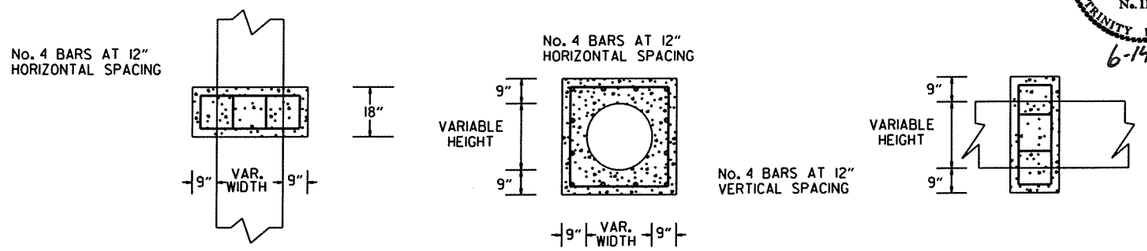


TOP VIEW



SECTION A-A

DETAILS OF MODIFIED DROP INLET



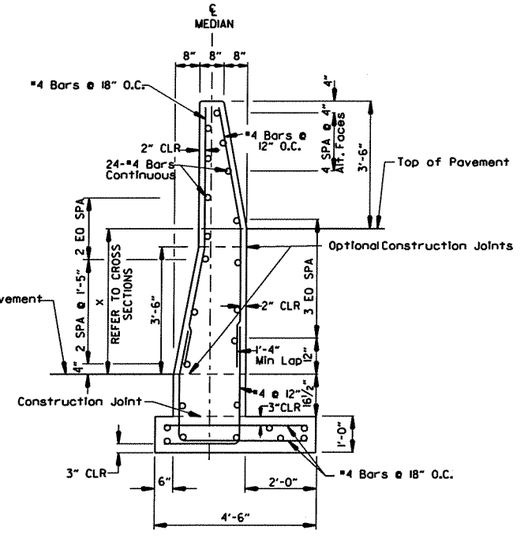
TOP VIEW

MIN 3" COVER

FRONT VIEW

SIDE VIEW

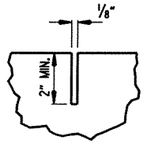
PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



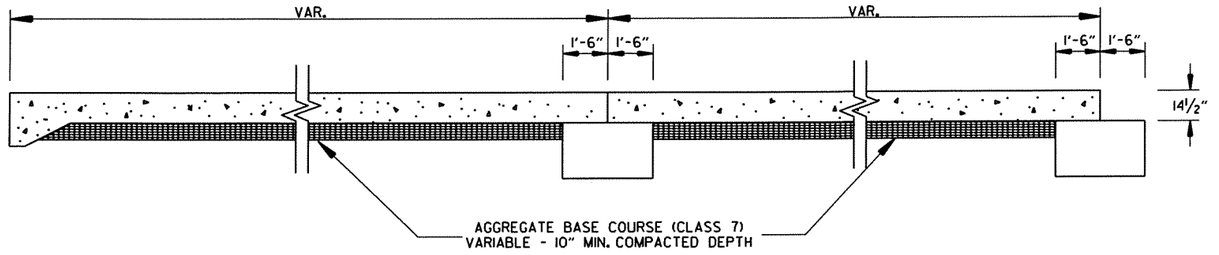
CONCRETE BARRIER WALL
(MEDIAN TYPE C)
x = 0'-0" to 5'-0" MAX

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 JOINTS REQUIRED @ 30'-0" MAXIMUM SPACING IS REQUIRED FOR TYPE MEDIAN C.
3. ALL CONTRACTION JOINTS TO BE FORMED IN FRESH CONCRETE ON TOP AND IN SIDES OF BARRIER WALL.
4. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A 3/4" CHAMFER.
5. THE DESIGN OF BARRIER WALL TYPE MEDIAN C IS BASED ON A MINIMUM FOUNDATION BEARING CAPACITY OF ONE TON PER SQUARE FOOT. UNSTABLE FOUNDATION MATERIAL SHALL BE REMOVED AND REPLACED TO PROVIDE A FIRM FOUNDATION AS DIRECTED BY THE ENGINEER.
6. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 120 FT FOR BARRIER TYPE MEDIAN C. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.

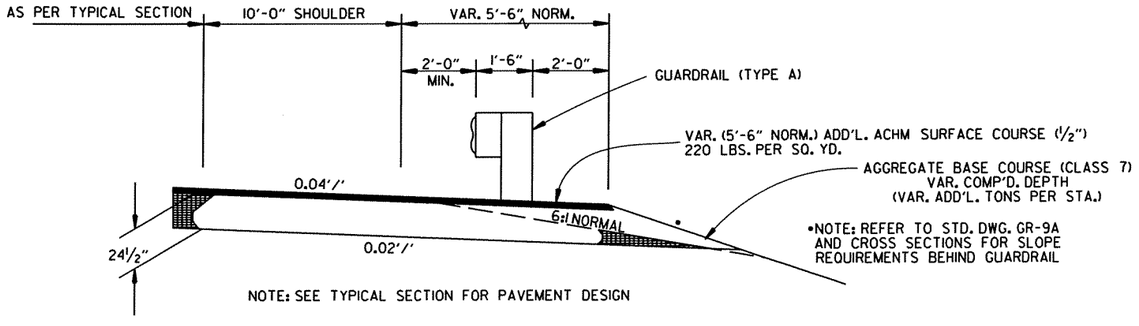


CONTRACTION JOINT DETAIL



DETAIL OF APPROACH SLAB

NOTE: REFER TO BRIDGE DRAWINGS 53987, 53988, & 53989 FOR ADDITIONAL INFORMATION.



NOTE: SEE TYPICAL SECTION FOR PAVEMENT DESIGN

WIDENING FOR GUARDRAIL

SPECIAL DETAILS

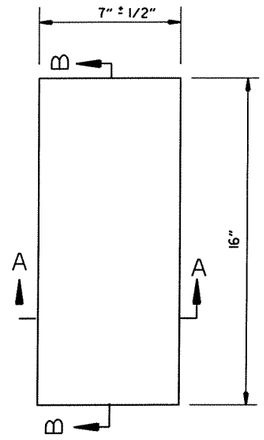
6/13/2013

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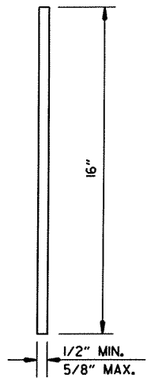
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				6	ARK.			
				JOB NO.		040605	13	260

(2) SPECIAL DETAILS

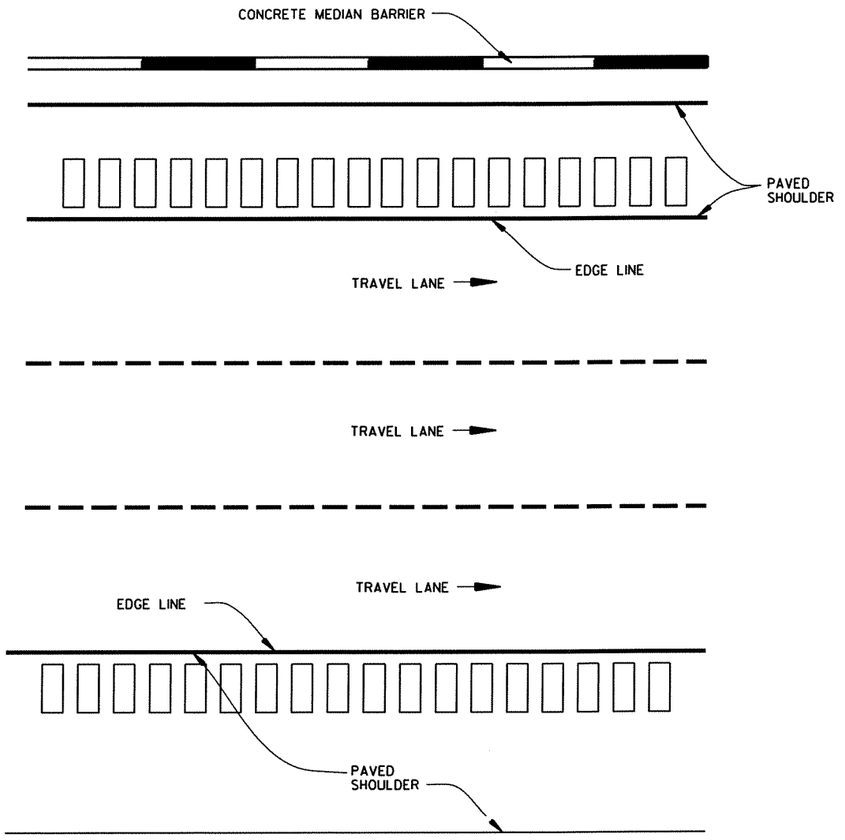
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



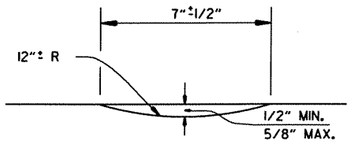
PLAN



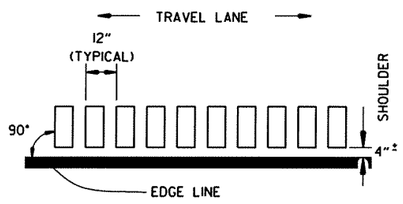
SECTION B-B



PLAN VIEW



SECTION A-A



LOCATION PLAN OF RUMBLE STRIPS
LEFT SHOULDER

DETAILS OF RUMBLE STRIPS

NOTES:

1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE AS WELL AS TO AVOID EXISTING LONGITUDINAL JOINTS.
2. THE 1/2" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

6/13/2013

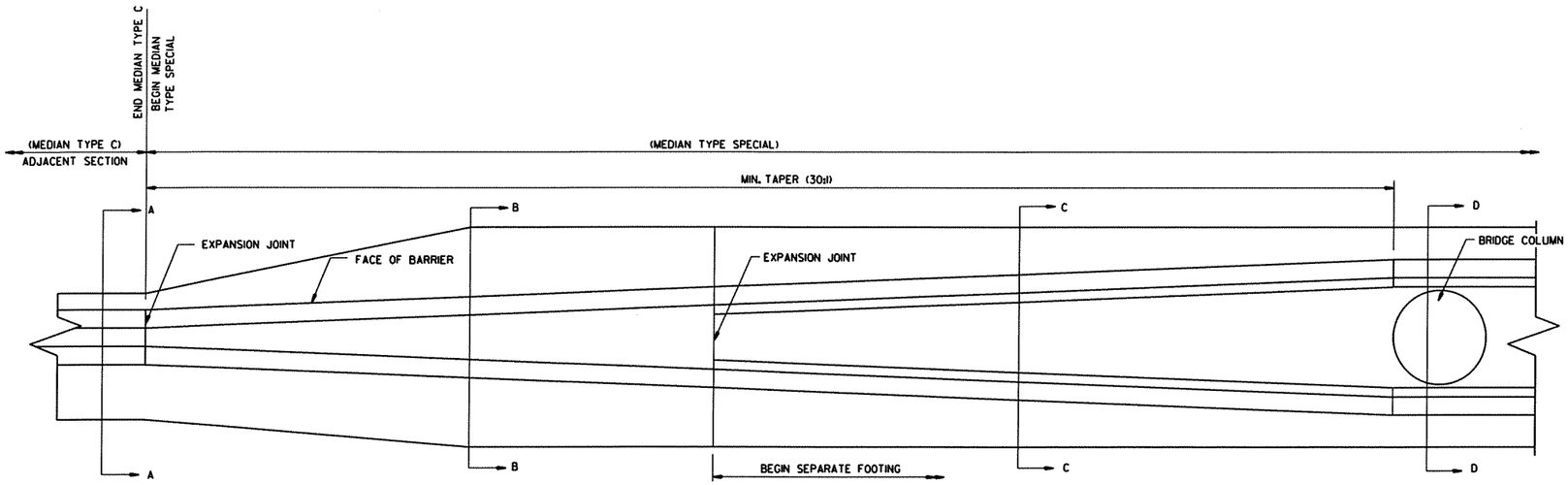
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SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	14	260

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

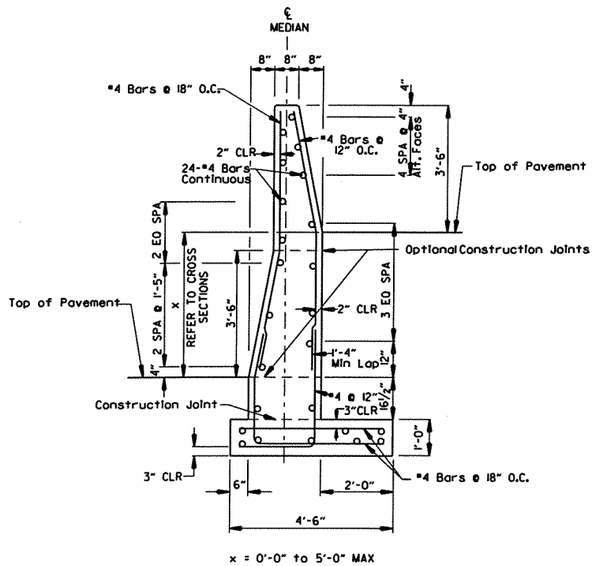


GENERAL NOTES FOR CONCRETE BARRIER WALLS

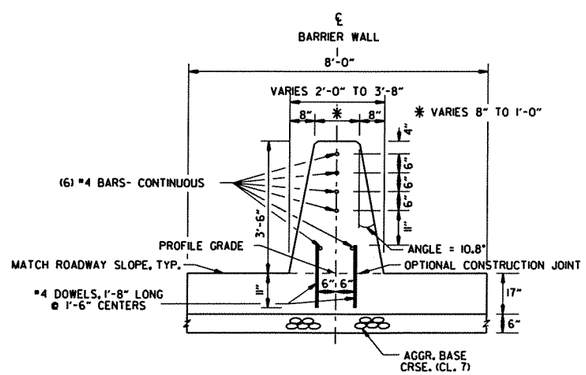
1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE STANDARD SPECIFICATIONS, 2003 EDITION.
2. CONTRACTION JOINTS REQUIRED @ 15'-0" MAXIMUM SPACING FOR BARRIER SECTION AA & BB. A 30'-0" MAXIMUM SPACING IS REQUIRED FOR BARRIER SECTION CC. CONTRACTION JOINTS ARE NOT PERMITTED 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. DRAINAGE OPENINGS TO BE CONSTRUCTED AS DIRECTED BY THE ENGINEER.

CONCRETE BARRIER WALL

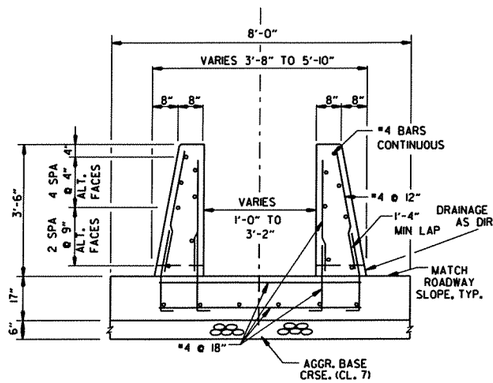
NOTE: TRANSITION FOR SOUTH SIDE SHOWN.
NORTH SIDE TRANSITION IS IDENTICAL.



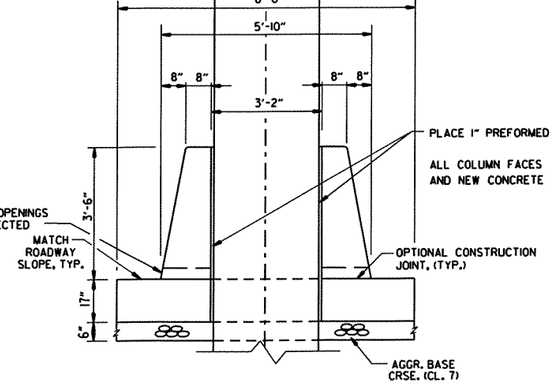
SECTION A-A



SECTION B-B

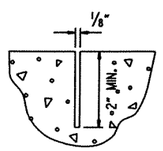


SECTION C-C



SECTION D-D

SEE SECTION C-C FOR REINFORCEMENT



CONTRACTION JOINT DETAIL

6/13/2013

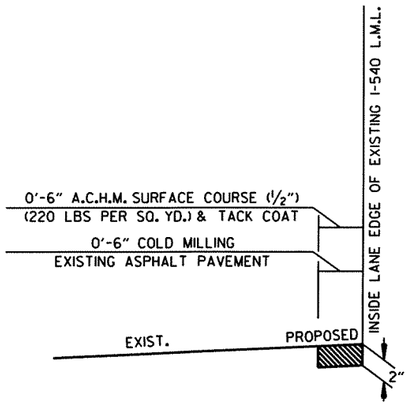
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SPECIAL DETAILS

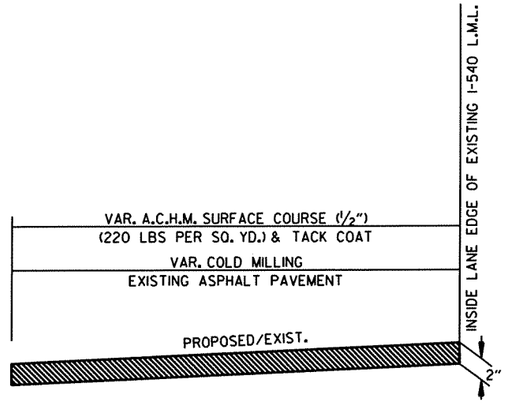
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				6	ARK.			
				JOB NO.		040605	15	260

(2) SPECIAL DETAILS

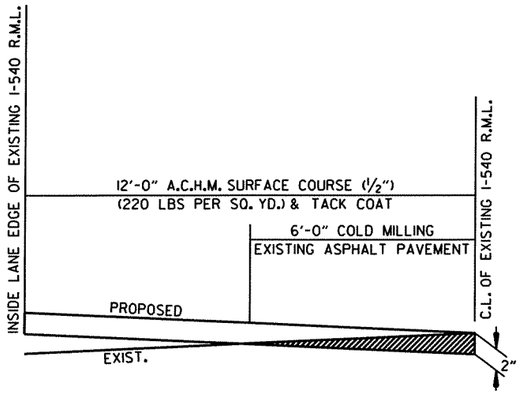
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



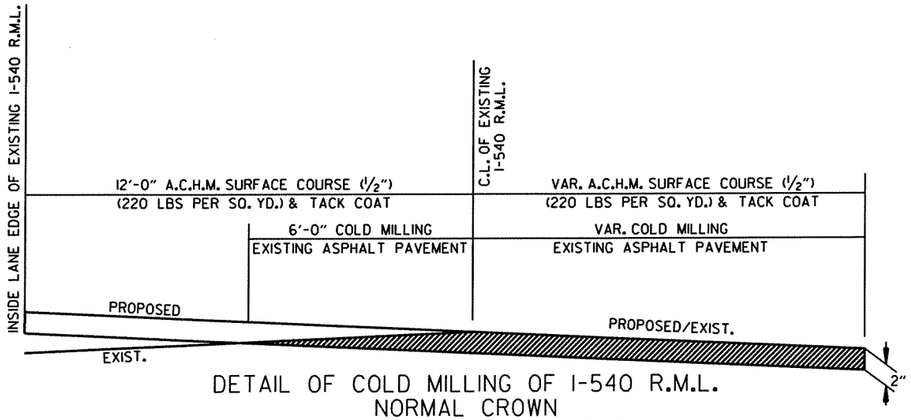
DETAIL OF COLD MILLING OF I-540 L.M.L.



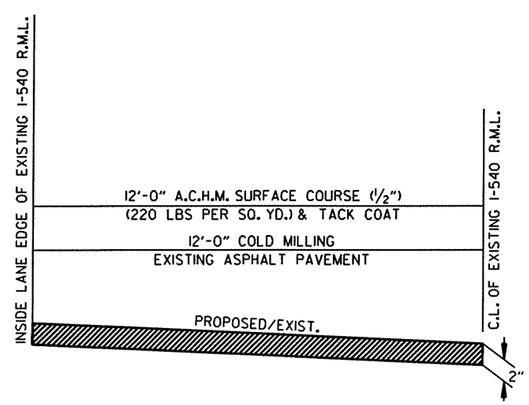
DETAIL OF COLD MILLING OF I-540 L.M.L.
OVERLAY EXIST. PAVEMENT



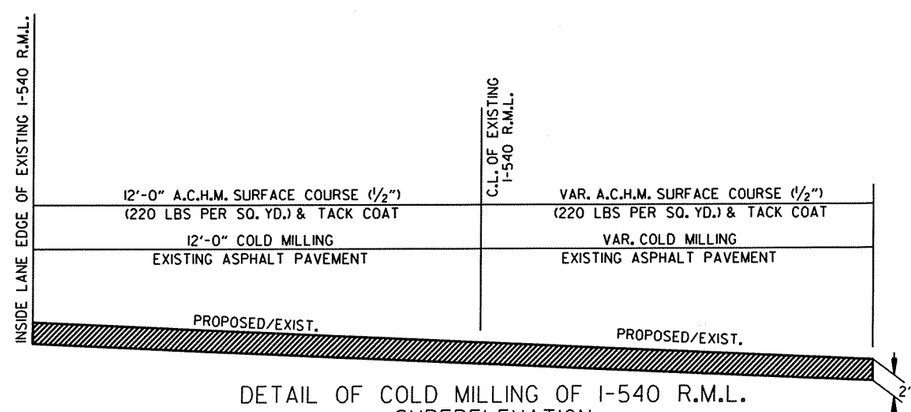
DETAIL OF COLD MILLING OF I-540 R.M.L.
NORMAL CROWN



DETAIL OF COLD MILLING OF I-540 R.M.L.
NORMAL CROWN
OVERLAY EXIST. PAVEMENT



DETAIL OF COLD MILLING OF I-540 R.M.L.
SUPERELEVATION



DETAIL OF COLD MILLING OF I-540 R.M.L.
SUPERELEVATION
OVERLAY EXIST. PAVEMENT

6/13/2013

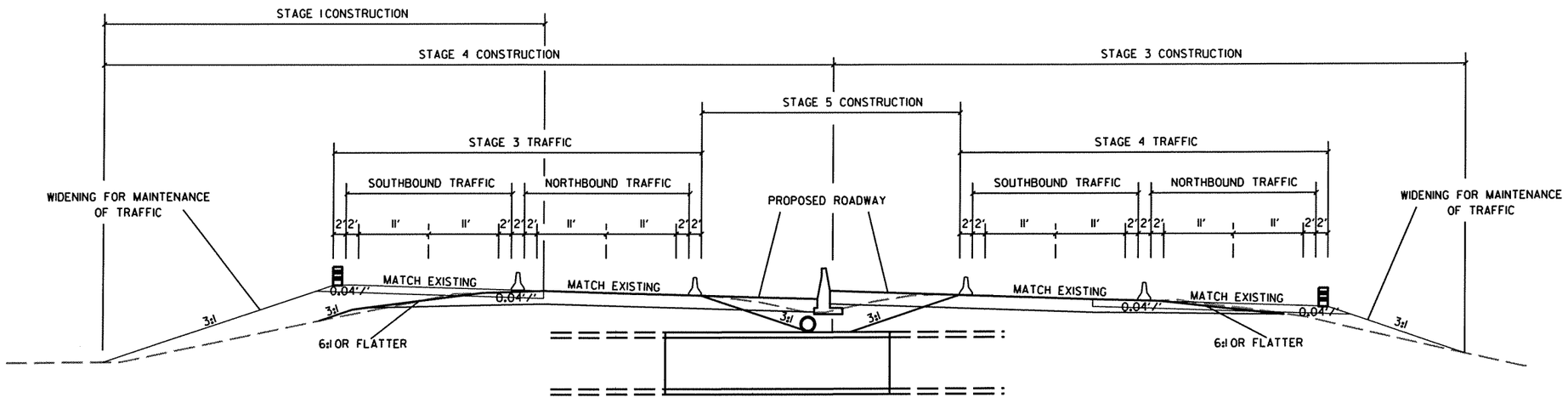
R040605.DGN

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	16	260

(2) SPECIAL DETAILS

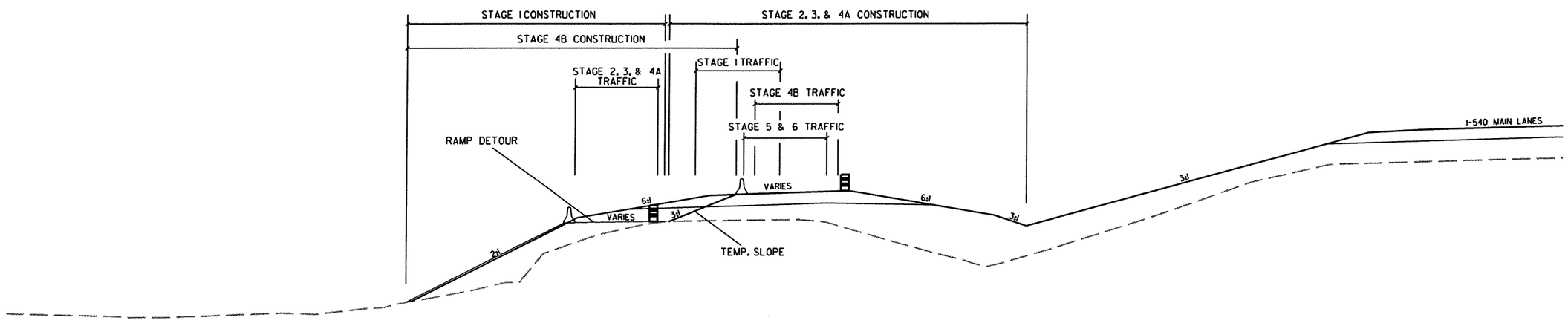
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



= PRECAST CONCRETE BARRIER WALL

= TRAFFIC DRUM

DETAIL FOR STAGE CONSTRUCTION
HAMESTRING CREEK



= PRECAST CONCRETE BARRIER WALL

= TRAFFIC DRUM

DETAIL FOR STAGE CONSTRUCTION
RAMP 4

6/13/2013

R040605.DGN

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.		040605	17	260

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	AP1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
53'-11"	8'-0"	0'-9"	0'-8"	30	3:1	60'-9 3/4"	2'-0"	8'-10"	2'-8"	-30	30	3'-2"	4'-2 5/8"	4'-3 7/8"	2'-4 1/2"	1'-4"	21'-0"	21'-0"	21'-4 3/8"	20'-7 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
14.92	1260

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	21	L	Min	3'-10"	4	12	7	L	4'-11"				L	-	4	18	8	Min
					Max	10'-10"														2'-1"
				X	Min	0'-9"				X	1'-6"	-	-	-	X	-				Max
					Max	1'-11"														17'-5"
				Y	Min	3'-2"				Y	3'-6"				Y	-				
					Max	9'-0"														
WING B	4	12	21	L	Min	3'-10"	4	12	7	L	4'-11"				L	-	4	18	8	Min
					Max	10'-10"														2'-1"
				X	Min	0'-9"				X	1'-6"	-	-	-	X	-				Max
					Max	1'-11"														17'-5"
				Y	Min	3'-2"				Y	3'-6"				Y	-				
					Max	9'-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	14	20'-8"	4	18	14	L	Min	5'-6"	4	8	21'-0"	4	18	13	Min			4	18	2	Min			4	2	21'-5"	4	2	20'-11"	6	12	8	L	3'-4"	629
									Max	11'-3"							2'-8"						28'-0"														
								X	Min	2'-4"							Max						Max												X	1'-8"	
									Max	2'-4"							3'-8"						28'-0"													
								Y	Min	3'-3"																											
									Max	9'-0"																										
WING B	4	18	14	20'-8"	4	18	14	L	Min	5'-6"	4	8	20'-4"	4	18	14	Min			4	18	2	Min			4	2	21'-5"	4	2	22'-10"	6	12	8	L	3'-4"	631
									Max	11'-3"							2'-8"						28'-0"													
								X	Min	2'-4"							Max						Max												X	1'-8"	
									Max	2'-4"							3'-9"						28'-0"													
								Y	Min	3'-3"																											
									Max	9'-0"																										

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. | OVERALL WIDTH | OVERALL HEIGHT | TOP SLAB REINFORCING STEEL a SIZE | a SPACING | a LENGTHS VARY | a NO. REQ'D | TOP SLAB REINFORCING STEEL c SIZE | c SPACING | c LENGTHS VARY | c NO. REQ'D | BOTTOM SLAB REINFORCING STEEL d SIZE | d SPACING | d LENGTHS VARY | d NO. REQ'D | BOTTOM SLAB REINFORCING STEEL f SIZE | f SPACING | f LENGTHS VARY | f NO. REQ'D | 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 | 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 | INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE | d2 SPACING | d2 NO. REQ'D | d2 LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

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.		040605	18	20

ⓘ SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. PUSEPTER
4/15/13

TABULAR DATA BY: CSL DATE: 04/12/13
CHECKED BY: CMW DATE: 4/15/13

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
53'-11"	8'-0"	0'-9"	0'-8"	30	3:1	60'-9 3/4"	2'-0"	8'-10"	2'-8"	-30	30	3'-2"	4'-2 5/8"	4'-3 7/8"	2'-4 1/2"	1'-4"	21'-0"	21'-0"	21'-4 3/8"	20'-7 5/8"	CU.YD	LBS.
																					16.82	1260

F1							F2				F3				F4				F5				F6				F7			F8			F9			F10		F11		F12			REINF. STEEL QTY. PER WING (LBS)
WING	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY			BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	
WING A	4	12	21	L	Min	3'-10"	4	12	7	L 4'-11"	-	-	-	L -	4	18	8	Min	4	18	4	20'-8"	4	18	14	L Min 5'-6"	4	8	21'-0"	4	18	13	Min	4	18	2	Min	4	2	21'-5"	4	2	20'-11"	6	12	8	L 3'-4"	629
					Max	10'-10"												2'-1"								Max 11'-3"							2'-8"			28'-0"								
				X	Min	0'-9"				X 1'-6"				X -				Max								Min 2'-4"							Max			Max							X 1'-8"	
					Max	1'-11"												17'-5"								Max 2'-4"							3'-8"			28'-0"							
				Y	Min	3'-2"				Y 3'-6"				Y -												Min 3'-3"																		
					Max	9'-0"																				Max 9'-0"																		
WING B	4	12	21	L	Min	3'-10"	4	12	7	L 4'-11"	-	-	-	L -	4	18	8	Min	4	18	4	20'-8"	4	18	14	L Min 5'-6"	4	8	20'-4"	4	18	14	Min	4	18	2	Min	4	2	21'-5"	4	2	22'-10"	6	12	8	L 3'-4"	631
					Max	10'-10"												2'-1"								Max 11'-3"							2'-8"			28'-0"							
				X	Min	0'-9"				X 1'-6"				X -				Max								Min 2'-4"							Max			Max							X 1'-8"	
					Max	1'-11"												17'-5"								Max 2'-4"							3'-9"			28'-0"							
				Y	Min	3'-2"				Y 3'-6"				Y -												Min 3'-3"																		
					Max	9'-0"																				Max 9'-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"

ⓘ 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 (DEFGREE)	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.	OVERALL WIDTH	OVERALL HEIGHT	TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINFORCING STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINFORCING STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D	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	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	INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH																																											
30	3:1	10	10	8	17'-7"	10.5	3	11.5	7.5	8	53'-11"	9'-10"	4	4	Max 53'-7" Min 3'-2" 53'-7"	88 6	6	4.5	Max 53'-7" Min 3'-2" 53'-7"	78 6	5	4	Max 53'-7" Min 3'-2" 53'-7"	88 6	5	7	Max 53'-7" Min 3'-2" 53'-7"	50 4	6	7.5	58	9'-6"	4	12	152	9'-6"	4	10	129	Max 33'-0" Min 1'-10"	4	9	149	Max 33'-0" Min 1'-10"	4	12	8	LONG 33'-0" SHORT 1'-10"	4	12	16	LONG 26'-9" MID 20'-6" SHORT 8'-1"

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
4	31'-10"	12	4	31'-10"	12	4	1'-9"	0'-9"	64

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	ⓘREINFORCING STEEL (GR 60) (Includes HDWL) LBS.
43.88	16941

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

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

ⓘ 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.

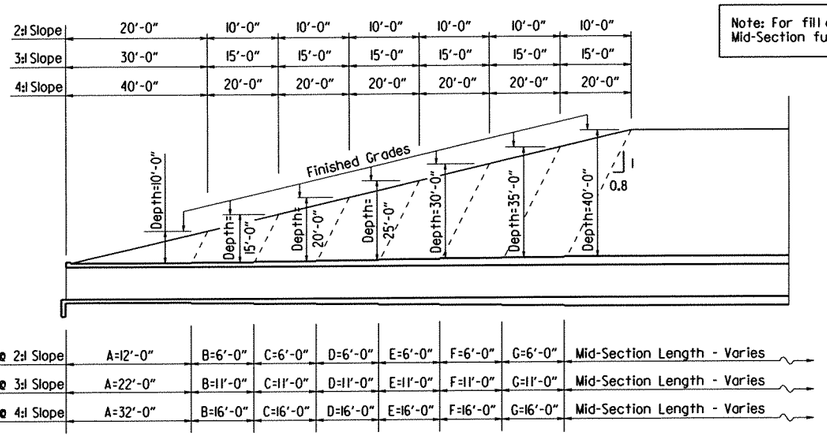
Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
Sta. 195+81

SPECIAL DETAILS

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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.		040605	19	260
				①		SPECIAL DETAILS		

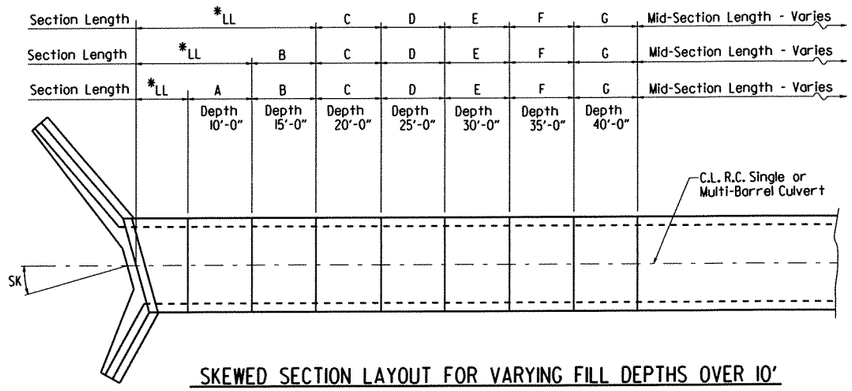


Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

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. 7510
CARL D. FUSELIER
4/15/13

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.

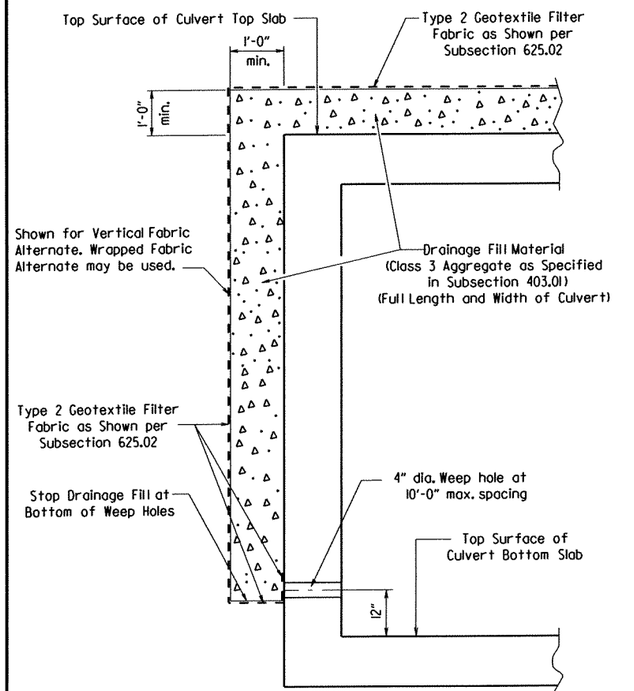
Weep Holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed 12" above the top of the bottom slab.

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.

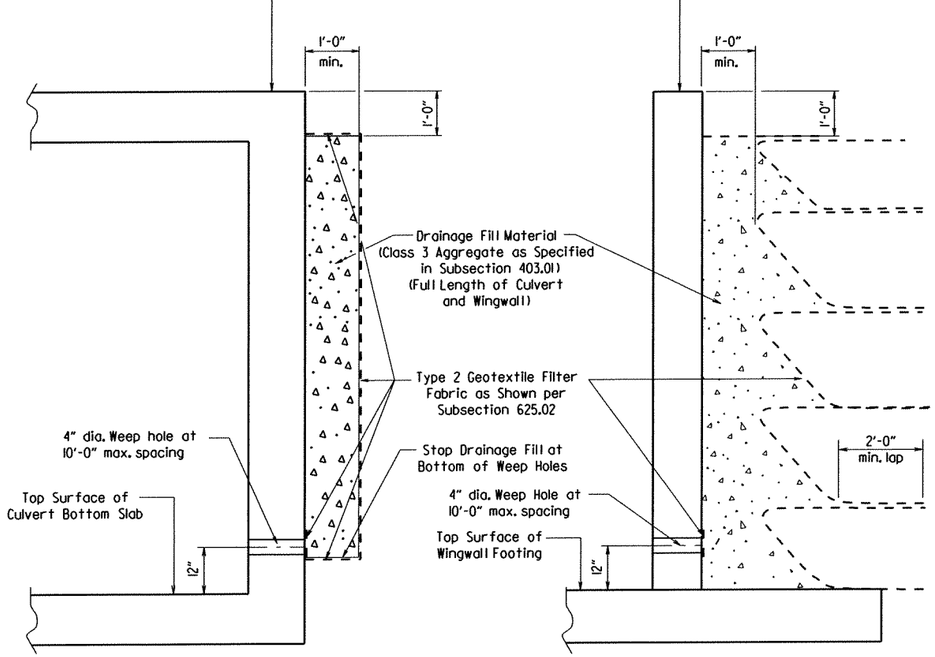
Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class S Concrete.

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".



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



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

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

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

WINGWALL & CULVERT DRAINAGE DETAIL

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

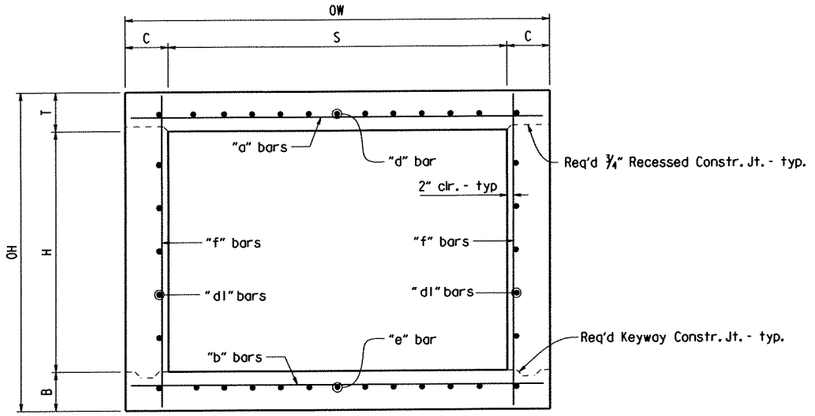
SPECIAL DETAILS

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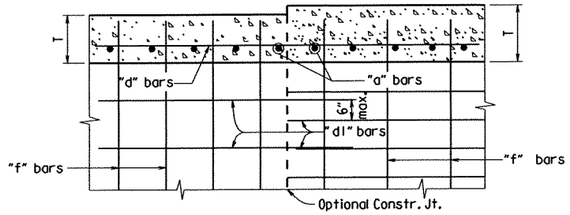
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				6	ARK.			
				JOB NO.		040605	20	260

SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL FUSELIER
4/15/13



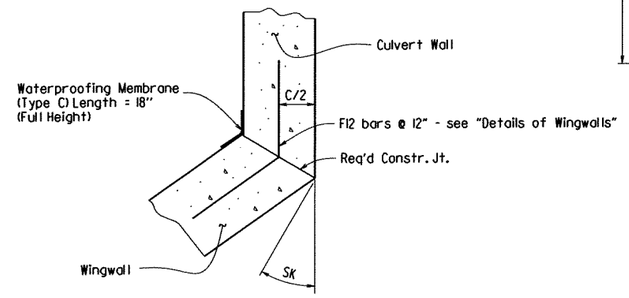
TYPICAL SECTION M-M



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

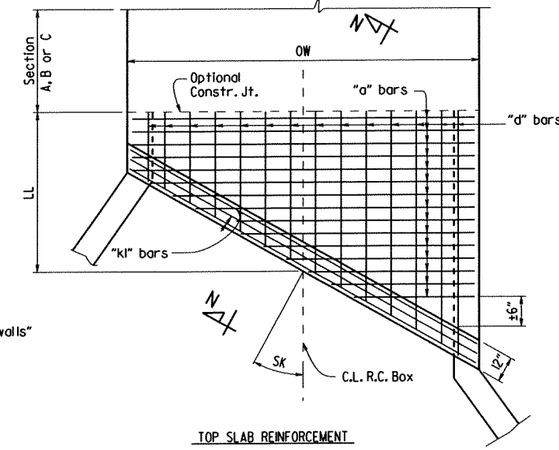
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

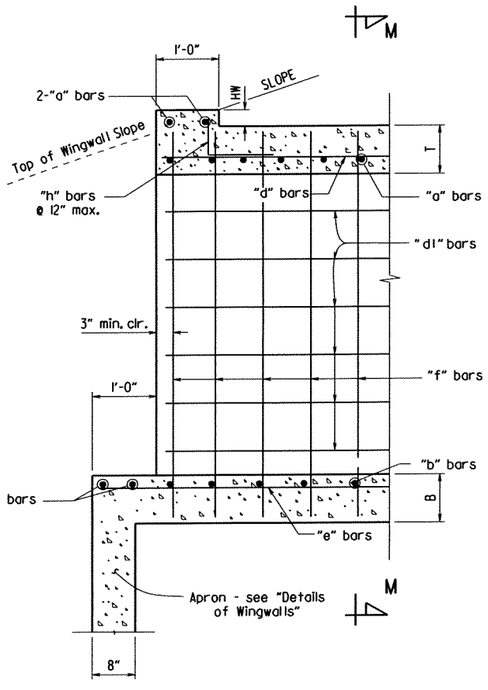


WINGWALL ATTACHMENT

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

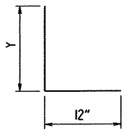


TOP SLAB REINFORCEMENT

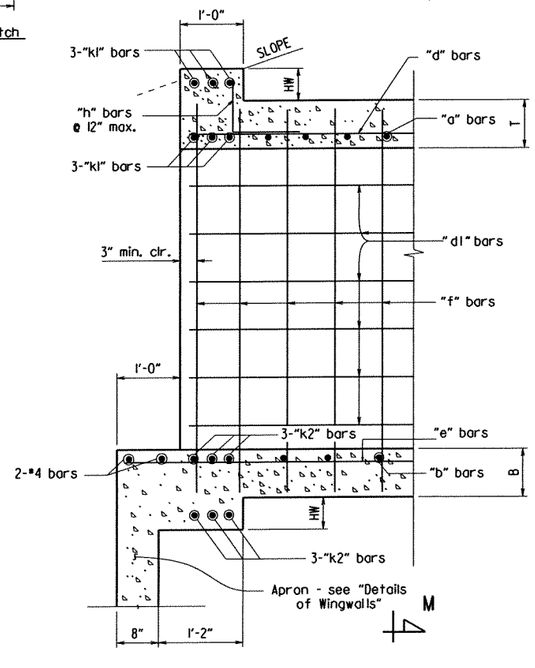


PART LONGITUDINAL SECTION

(Non-Skewed Ends)

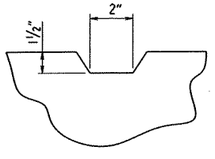


"h" bars sketch



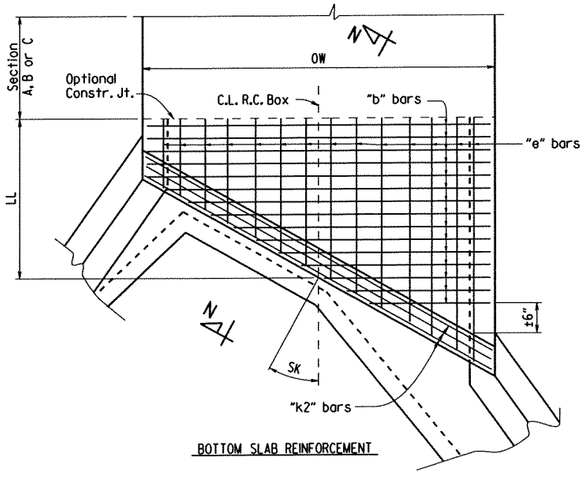
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

SHEET 2 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

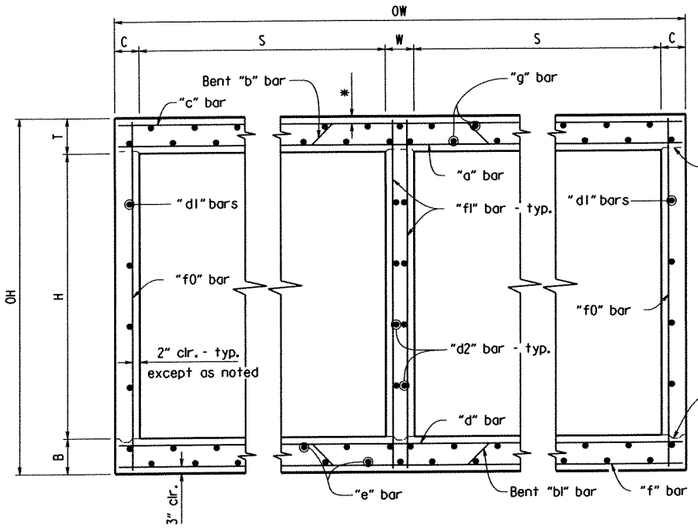
DETAILS OF SINGLE BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

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DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	21	260

SPECIAL DETAILS

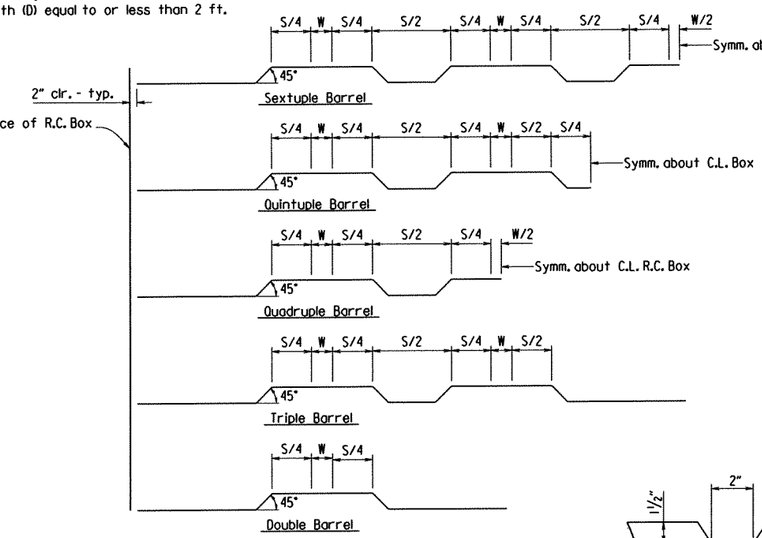


TYPICAL SECTION M-M

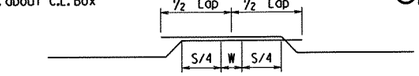
Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

Bottom Slab
Straight "d" bars shall alternate with Bent "b1" bars in top.
Straight "f" bars shall alternate with Bent "b1" 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.

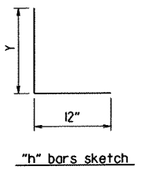


Bent "b" bars or Bent "b1" bars sketch

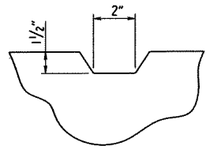


Optional Lap Detail
For Bent "b" bars and Bent "b1" bars

At the Contractor's option in lieu of providing Bent "b" or Bent "b1" 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 "b1" bar.

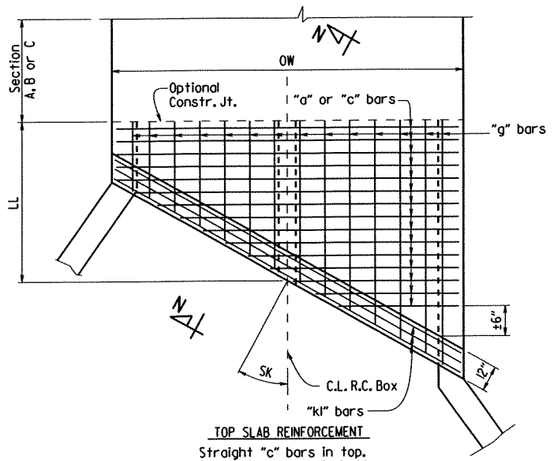


"h" bars sketch

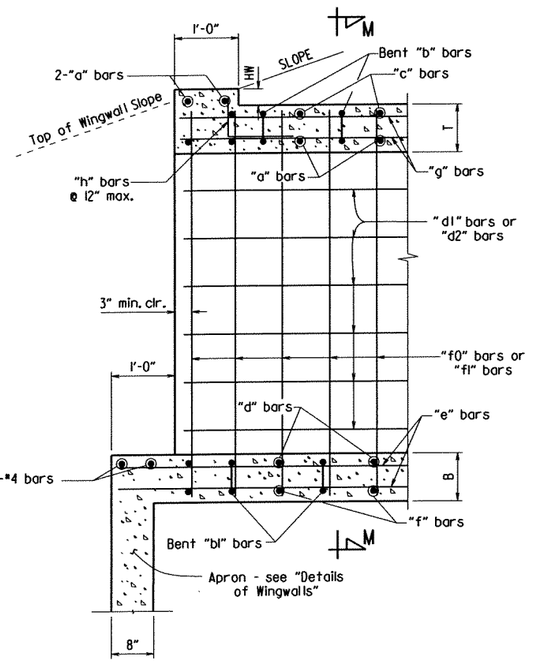


TYPICAL KEYWAY DETAIL

(All Construction Joints)

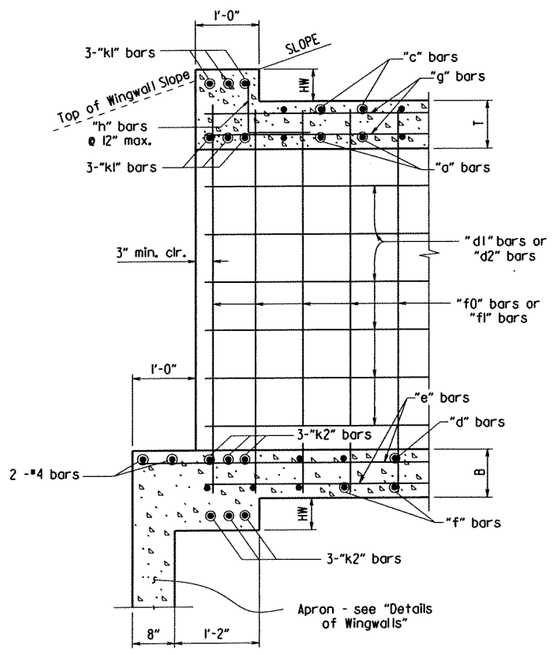


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



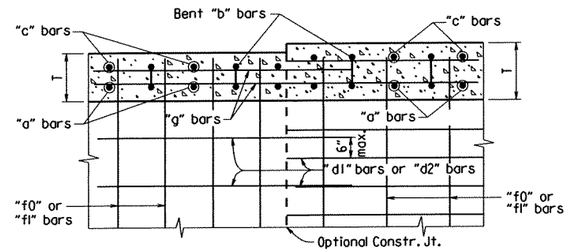
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

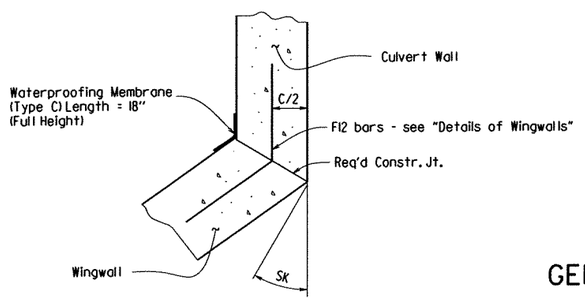
(Skewed Ends)



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

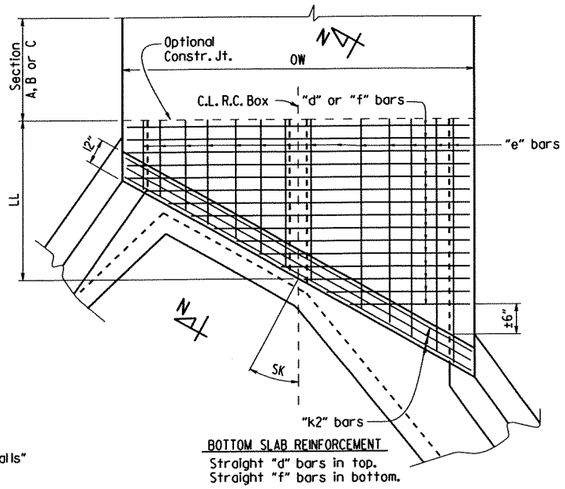
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

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

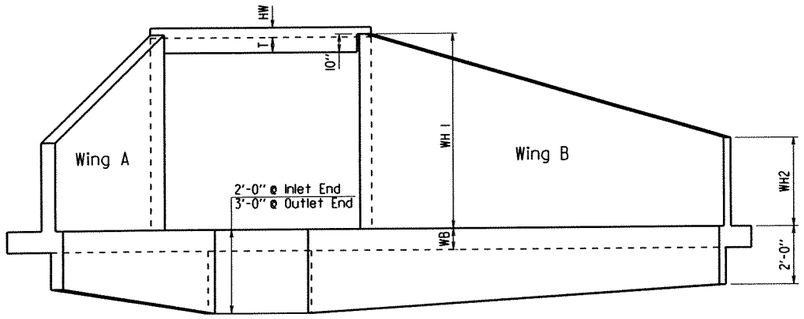
SPECIAL DETAILS

STATE OF ARKANSAS
CARL E. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
4/15/13

b040605_culvert.dgn

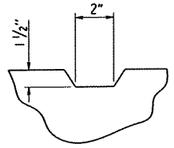
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	22	260

SPECIAL DETAILS



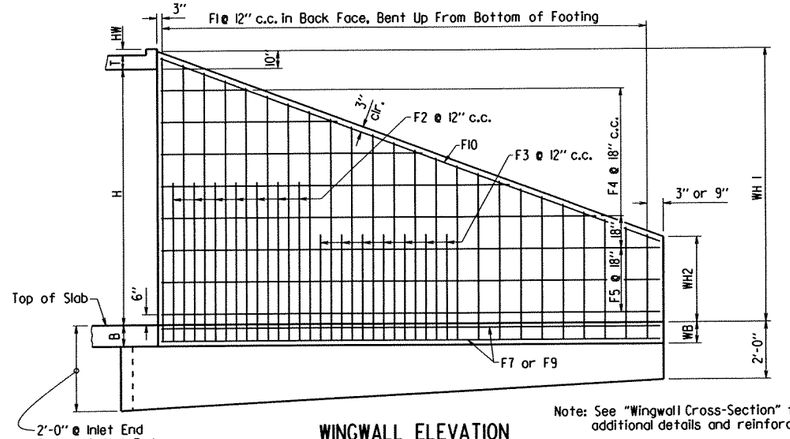
END ELEVATION

Flared Wingwalls Shown



TYPICAL KEYWAY DETAIL

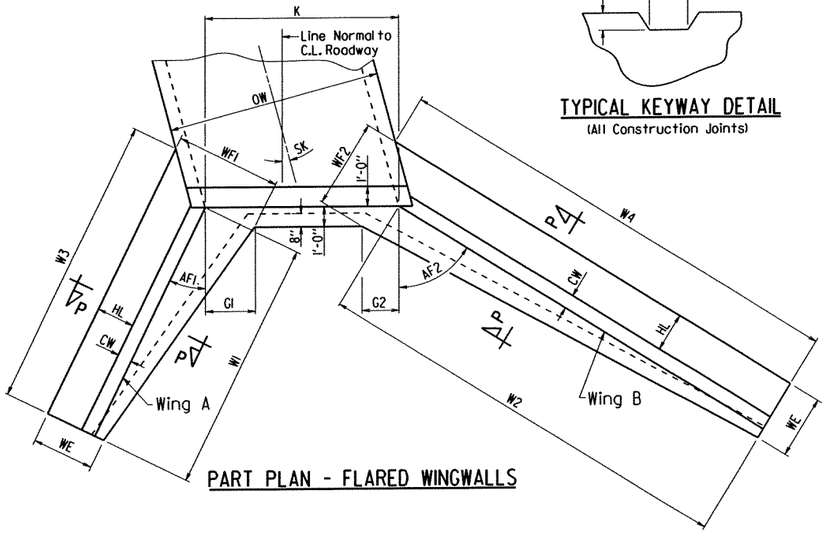
(All Construction Joints)



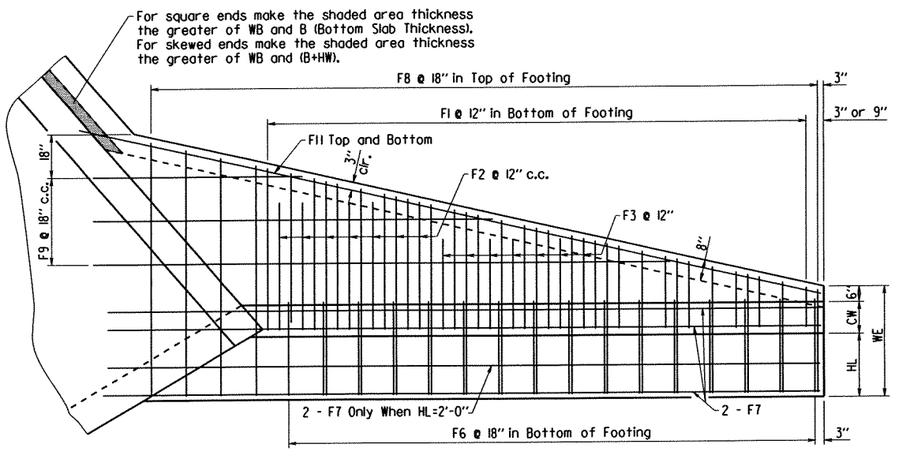
WINGWALL ELEVATION

Showing Back Face Reinforcement

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

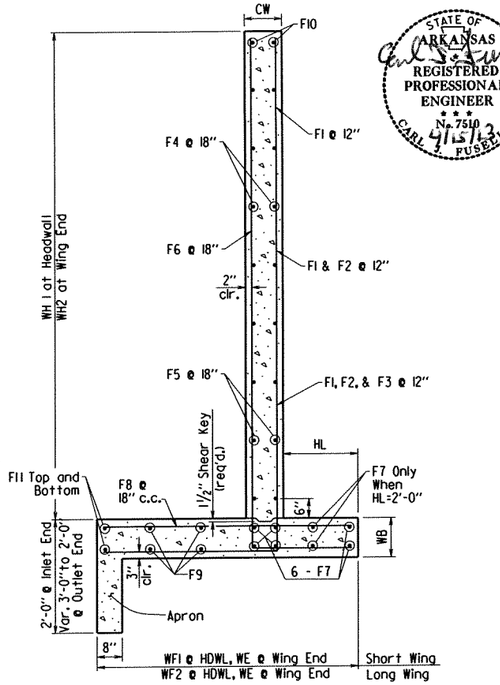


PART PLAN - FLARED WINGWALLS

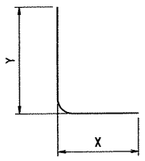


PLAN - FLARED WINGWALLS

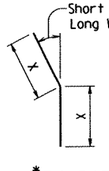
Showing Footing Reinforcement



WINGWALL SECTION P-P

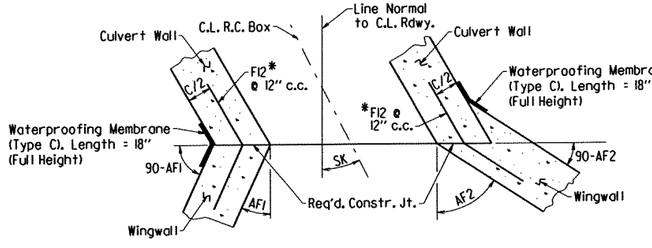


F1, F2, F3, & F6 BARS



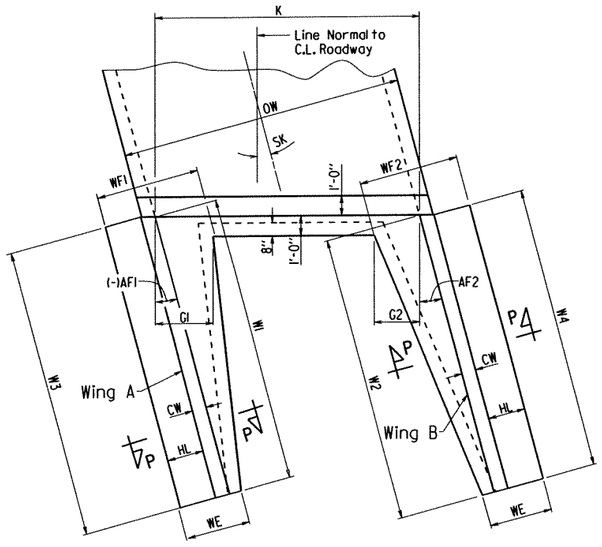
*F12 BAR

*F12 is a straight bar for parallel wingwalls

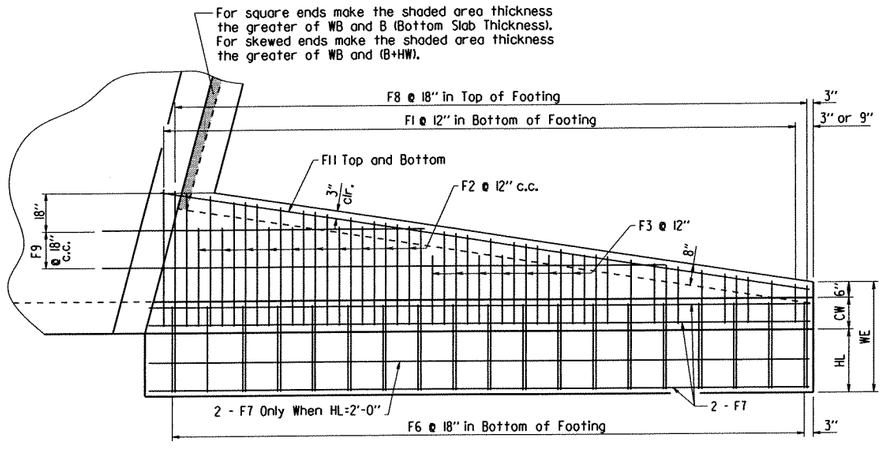


CONSTRUCTION JOINTS

Flared Wingwalls Shown



PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS

Showing Footing Reinforcement

SHEET 4 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF WINGWALLS

SPECIAL DETAILS

b040605_culvert.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	23	260

(1) SPECIAL DETAILS

① Intersection CL Existing R.C. Box Culvert and CL Bent No. 2 at CL Column and Drilled Shaft CL Sta. 223+53.79, 17.667' Left of CL

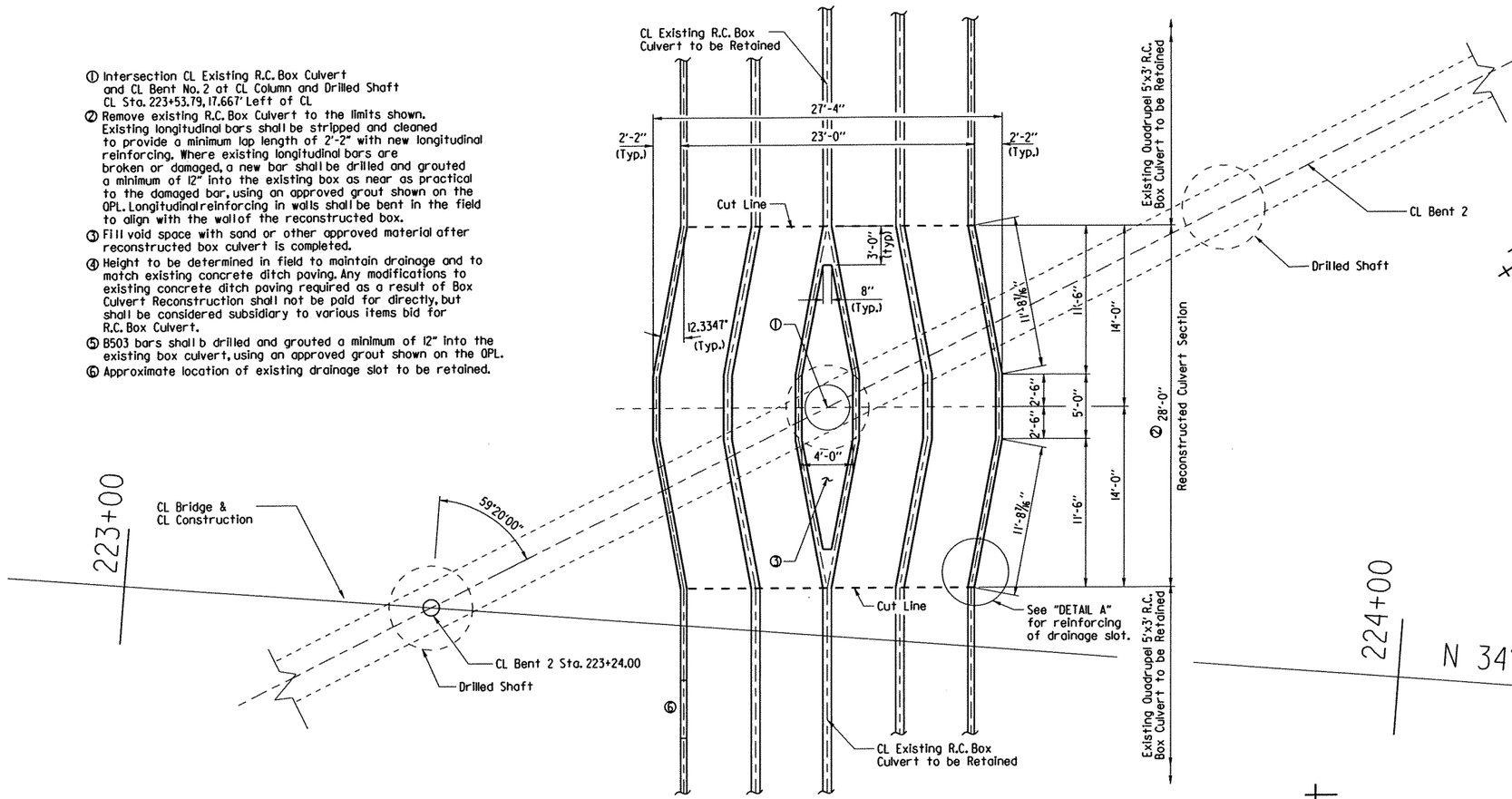
② Remove existing R.C. Box Culvert to the limits shown. Existing longitudinal bars shall be stripped and cleaned to provide a minimum lap length of 2'-2" with new longitudinal reinforcing. Where existing longitudinal bars are broken or damaged, a new bar shall be drilled and grouted a minimum of 12" into the existing box as near as practical to the damaged bar, using an approved grout shown on the QPL. Longitudinal reinforcing in walls shall be bent in the field to align with the wall of the reconstructed box.

③ Fill void space with sand or other approved material after reconstructed box culvert is completed.

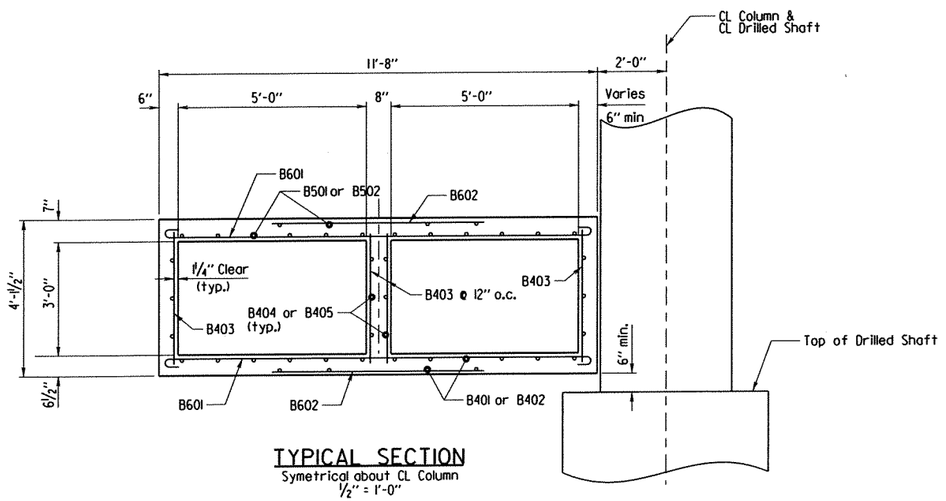
④ Height to be determined in field to maintain drainage and to match existing concrete ditch paving. Any modifications to existing concrete ditch paving required as a result of Box Culvert Reconstruction shall not be paid for directly, but shall be considered subsidiary to various items bid for R.C. Box Culvert.

⑤ B503 bars shall b drilled and grouted a minimum of 12" into the existing box culvert, using an approved grout shown on the QPL.

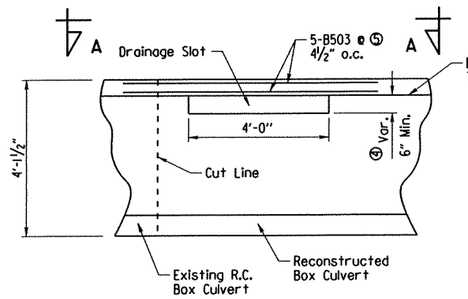
⑥ Approximate location of existing drainage slot to be retained.



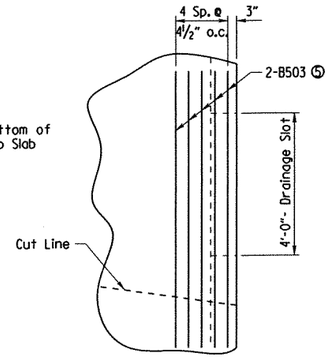
LAYOUT OF RECONSTRUCTED BOX CULVERT
3/16" = 1'-0"



TYPICAL SECTION
Symetrical about CL Column
½" = 1'-0"



DETAIL A
No Scale



SECTION A-A
No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
5-21-13
CARL J. FUSSELIER
BRIDGE ENGINEER

TABULAR DATA BY: CSL DATE: 4/22/2013
CHECKED BY: DHP DATE: 5-17-13

GENERAL NOTES
Concrete shall be Class S with a minimum 28 day compressive strength of 3500 psi.

All reinforcing steel shall be grade 60 (yield strength) = 60,000 psi conforming to AASHTO M31 or M322, Type A, with mill test reports.

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 direct payment will be for for Membrane Waterproofing, but shall be considered subsidiary to the various items bid for R.C. Box Culvert. Membrane Waterproofing shall conform to the requirements of Section 815 of the Standard Specifications.

Tolerances for reinforcing steel shall meet those listed in the Manual of Standard Practices, published by Concrete Reinforcing Steel Institute (CRSI).

The Contractor shall be responsible for maintaining drainage through the Box Culvert and Excavation during construction of the drilled shaft, column and Reconstruction of the R.C. Box Culvert. Construction operations shall not obstruct a significant portion of the waterway opening. Equipment or materials shall not be left in the Excavation during a significant rainfall event.

SHEET 1 OF 2

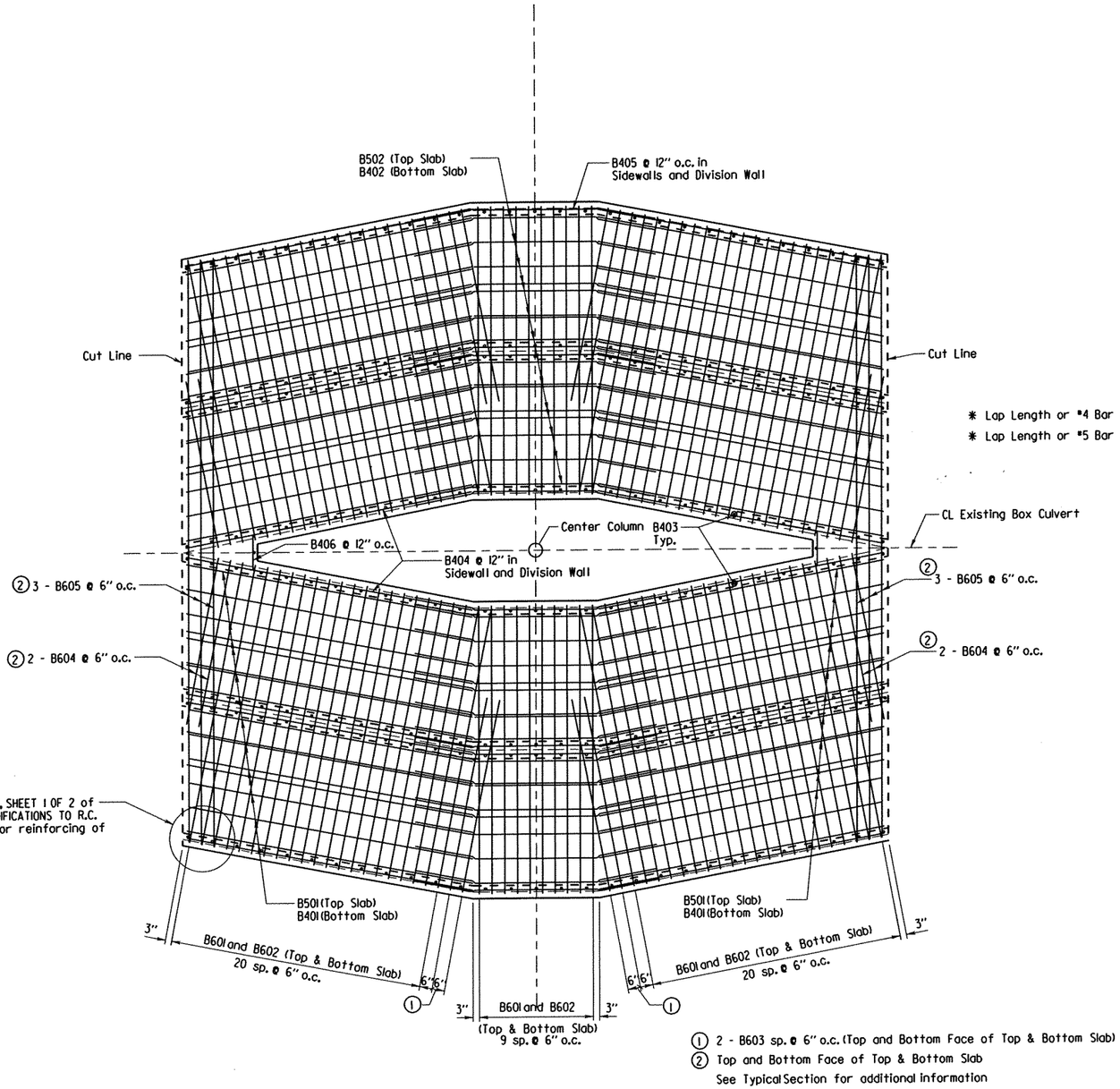
DETAILS OF MODIFICATIONS TO R.C. BOX CULVERT

SPECIAL DOUBLE BARREL BOX CULVERT
Sta 223+55.13

SPECIAL DETAILS

PRINT DATE: 5/17/2013

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.		040605	24	260
				①		SPECIAL DETAILS		



① 2 - B603 sp. @ 6" o.c. (Top and Bottom Face of Top & Bottom Slab)
② Top and Bottom Face of Top & Bottom Slab
See Typical Section for additional information

REINFORCING PLAN
Symetrical about CL Existing Box Culvert
3/8" = 1'-0"

TABLE OF QUANTITIES FOR MODIFCATIONS TO BOX CULVERT

Class S Concrete	Reinforcing Steel (Gr. 60)
38.1 yds.	10,170 lbs.

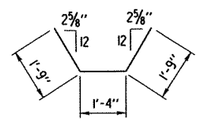
STATE OF ARKANSAS
CARL J. FUSSELL
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/2/13
Carl J. Fussell
BRIDGE ENGINEER

TABULAR DATA BY: CSL DATE: 4/22/2013
CHECKED BY: DHP DATE: 5-17-13

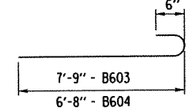
BAR LIST

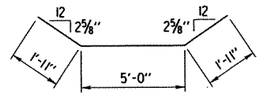
MARK	NO. REQ'D	LENGTH	PIN DIA.
B401	64	11'-7"	Str.
B402	32	8'-10"	3"
B403	234	3'-11"	Str.
B404	24	11'-7"	Str.
B405	24	8'-10"	3"
B406	6	4'-7"	3"
B501	64	11'-7"	Str.
B502	32	9'-8"	3¼"
B503	10	8'-0"	Str.
B601	208	12'-8"	4½"
B602	208	5'-8"	Str.
B603	32	8'-5"	4½"
B604	32	7'-4"	4½"
B605	24	24'-0"	4½"

BENDING DIAGRAMS

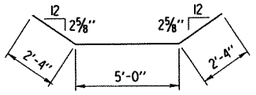


B406

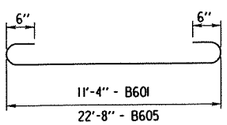




B402 & B405



B502



Dimensions are out to out of bars

SHEET 2 OF 2
DETAILS OF MODIFICATIONS TO R.C. BOX CULVERT
SPECIAL DOUBLE BARREL BOX CULVERT
Sta 223+55.13

SPECIAL DETAILS

PRINT DATE: 5/17/2013

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.		040605	25	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

BEGIN JOB 040605
STA. 171+50.00

170 +15 +30 E-6 E-7 | 00 E-5 | 175 00 E-5 | N 23°52'36" E | 180 00 E-5 | +15 +30 E-6 E-7

CURB CURB CURB CURB

TEMPORARY EROSION CONTROL
STAGE IA

6/13/2013

R040605.DGN

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.		040605	26	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

EARTHWORK

PAVED PARKING

SIGN

PC 191+59.85

PT 192+85.79

PI 194+77.97

E-11 L = 405'

N 23°52'36" E

N 17°34'46" E

N 26°04'50" E

PI 192+82.86

PC 193+58.46

PC 193+82.80

PT 195+62.82

PC 196+18.59

POB 2C

PI 197+66.72

E-11 L = 280'

PI 198+91.72

PC 198+97.40

PT 200+42.36

N 37°51'06" E

N 30°36'15" E

PT 198+84.01

PI 199+69.98

PC 204+47.42

PT 204+21.92

PC 205+63.76

PI 205+05.46

PC 205+31.27

PI 206+24.15

PT 206+81.49

E-11 L = 253'

N 34°23'19" E

N 30°36'15" E

N 34°30'40" E

PARKING

CONC

CURB

6/13/2013

R040605.DGN

TEMPORARY EROSION CONTROL STAGE IA

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.		040605	27	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE

PAVED PARKING
CONC PARKING
CURB
PC 215+95.36
PI 218+58.98
PC 220+81.85
PI 221+27.75
PT 222+20.65
PC 222+98.98
PI 223+39.81
PT 223+56.87
PC 224+12.05
PI 224+60.04
PI 225+17.88
POT 225+51.19
R=1019.79'
R=1219.41'
R=1145.92'
R=1145.92'
E-11 L = 1545'
E-11 L = 383'
E-11 L = 256'
E-6 +00
N 34°30'40" E
PAVED SHOULDER
SIGN
GATE
PAVED
CONC
E-5 +85
E-5 +00
E-7 +02
E-6 +15
E-5 +75
E-5 +75
E-5 +00
E-5 +00
E-5 +15
E-6 +00
E-6 +85
E-7 +02

TEMPORARY EROSION CONTROL
STAGE IA

6/13/2013

R040605.DGN

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.		040605	28	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

END JOB 040605
STA. 239+77.13

PAVED PARKING
ROAD UNDER CONSTRUCTION
CURB
GATE
SIGN
BUND

E-11 L = 718'
E-11 L = 266'

PI 238+26.9
PC 238+86.74
PT 240+06.44
PC 237+67.04
PT 238+86.74
PI 239+46.61
POE 246+54.39

230 235 240 245 246

E-6 E-7 E-6 E-5 E-5 E-5 E-5 E-5 E-7 E-6 E-5 E-5 E-5 E-5 E-7 E-7 E-6 E-5
85 +02 +15 +50 +00 +00 +50 +00 +65 +80 +00 +00 +50 +50 +02 +02 +15 +50

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

6/13/2013

R040605.DGN

TEMPORARY EROSION CONTROL STAGE IA

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.		040605	29	260

(2) TEMPORARY EROSION CONTROL DETAILS

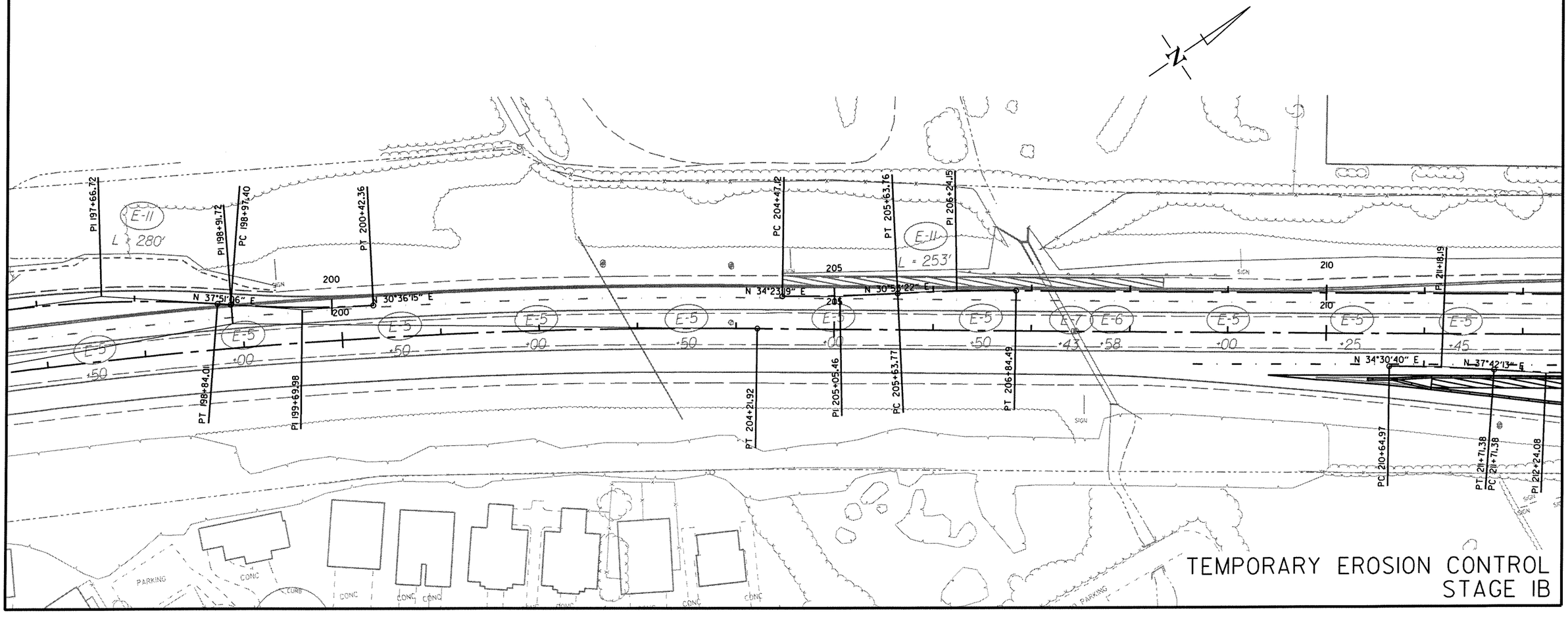
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE



TEMPORARY EROSION CONTROL
STAGE IB

6/13/2013

R040605.DGN

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.		040605	30	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

PAVED PARKING
CONC PARKING
CURB
E-11 L = 1545'
E-11 L = 256'
E-11 L = 383'
E-11 L = 778'
E-11 L = 395'
E-6 +00
E-6 +10
E-5 +85 +00
E-5 +75
E-5 +00
E-7 +15
PT 212+16.75
PI 212+24.08
PC 211+71.38
PT 211+71.38
N 34°30'40" E
N 34°32'34" E
37°42'13" E
215
220
225
SIGN
RET. WALL
PAVED SHOULDER
CONC
GATE
PAVED

TEMPORARY EROSION CONTROL
STAGE IB

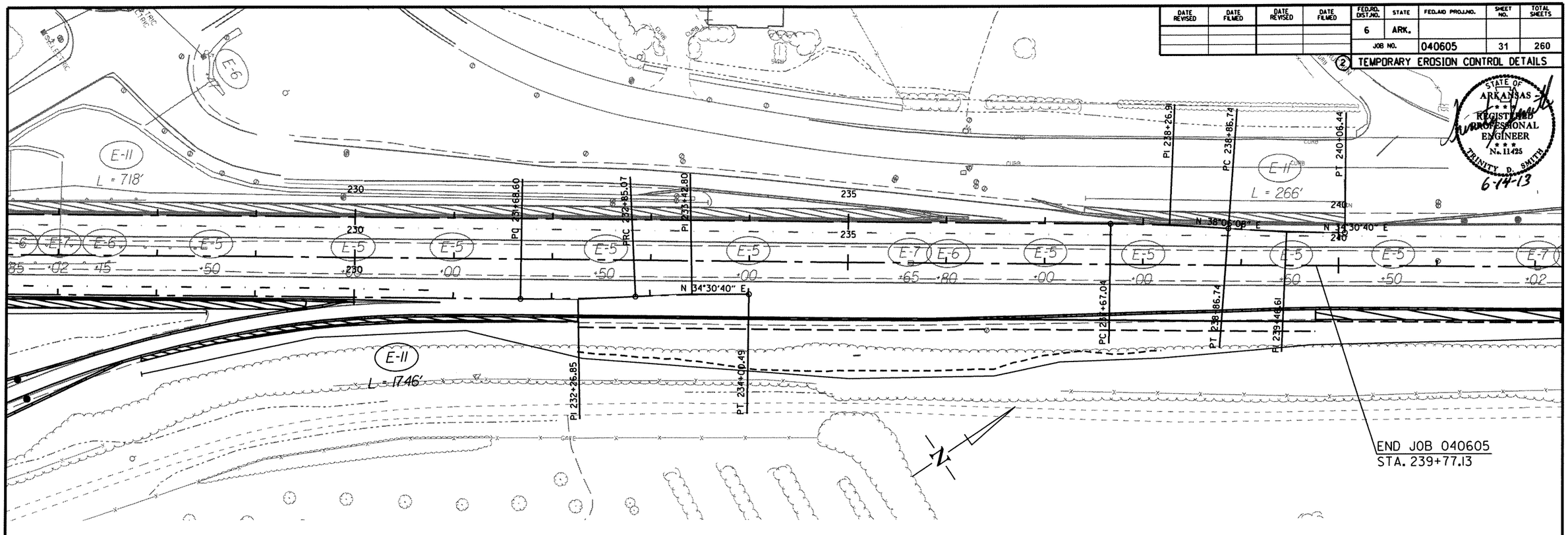
6/13/2013

R040605.DGN

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.		040605	31	260

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



REVISION BOX

DATE OF REVISION	REVISION

LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

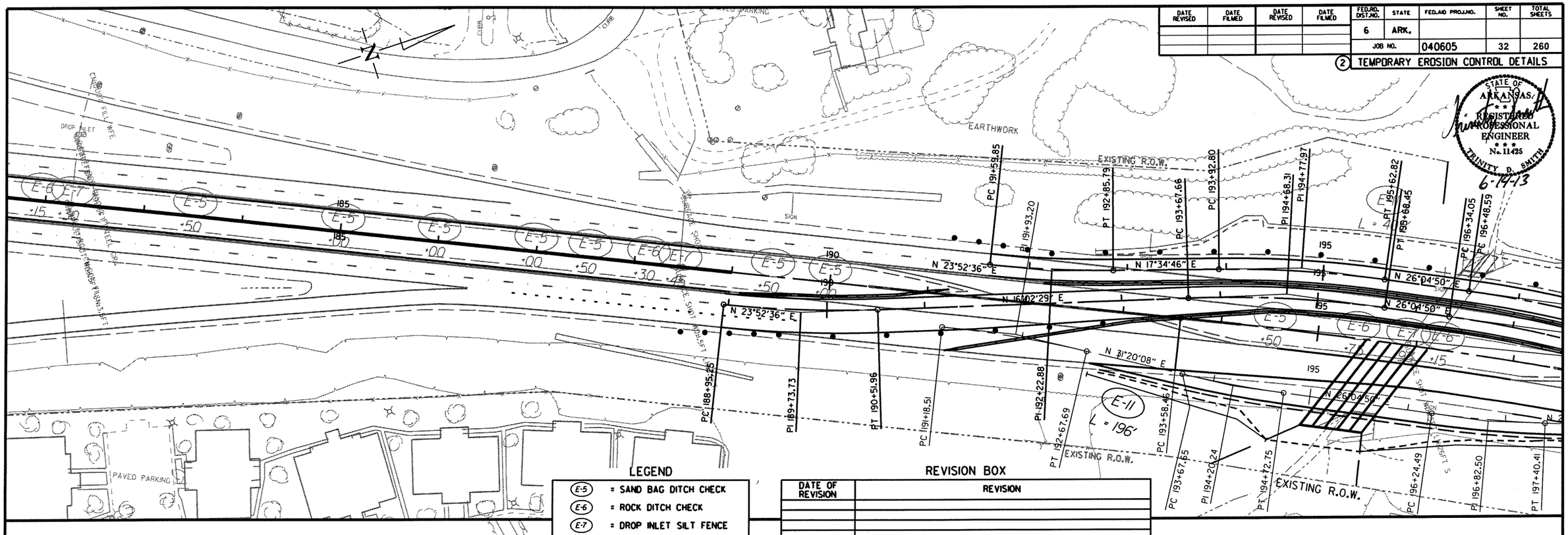
R040605.DGN 6/13/2013

TEMPORARY EROSION CONTROL STAGE IB

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.		040605	32	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

REVISION BOX

DATE OF REVISION	REVISION

END TEMPORARY EROSION CONTROL - HAMESTRING CREEK
(SEE TEMPORARY EROSION CONTROL - PORTER RD. DETAILS, SHEET 35 TO SHEET 42)

6/13/2013

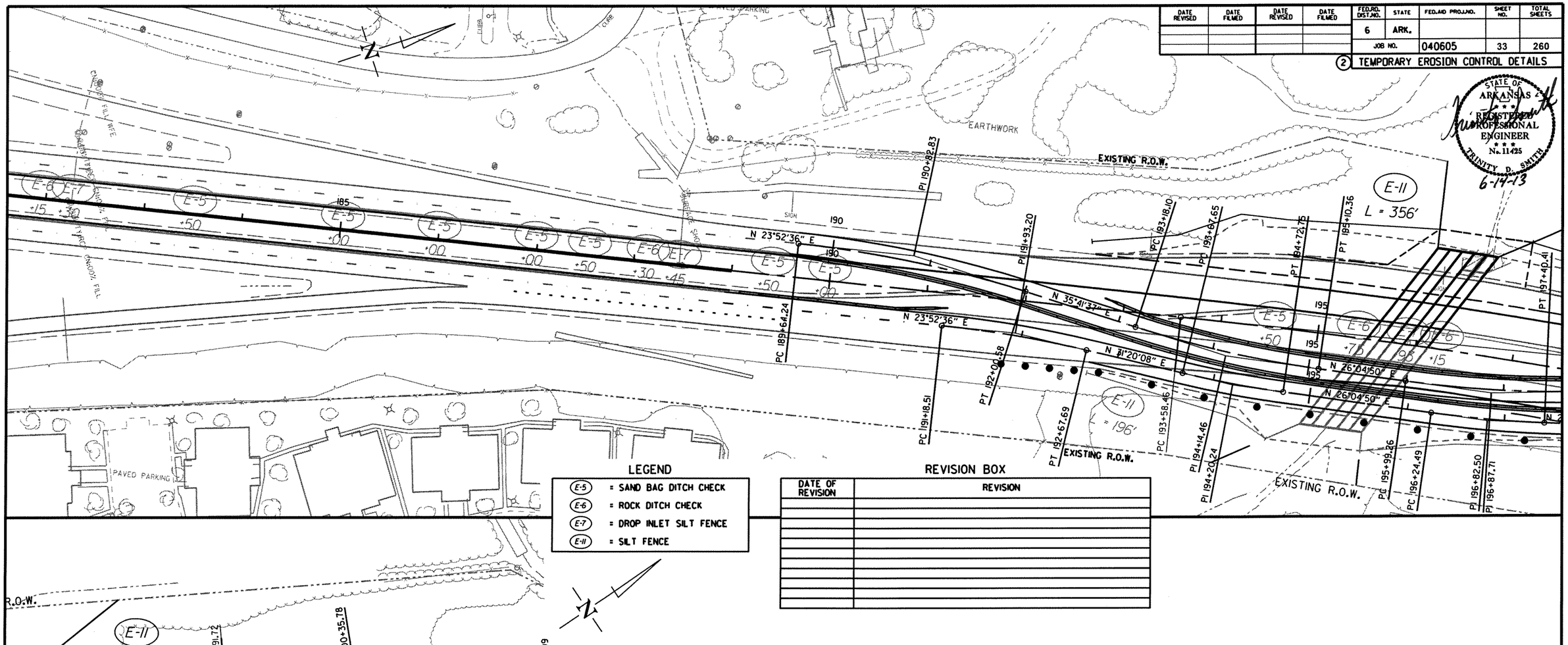
R040605.DGN

TEMPORARY EROSION CONTROL HAMESTRING CREEK - STAGE 3

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.		040605	33	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
TRINITY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11425
6-14-13

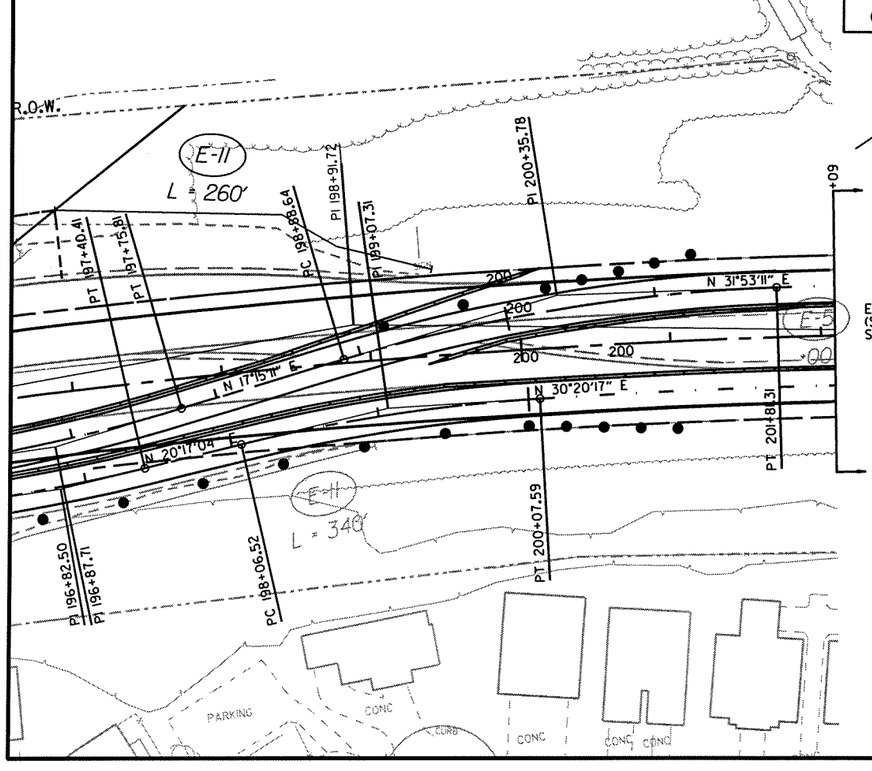


LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

REVISION BOX

DATE OF REVISION	REVISION



END TEMPORARY EROSION CONTROL - HAMESTRING CREEK
(SEE TEMPORARY EROSION CONTROL - PORTER RD. DETAILS, SHEET 35 TO SHEET 42)

6/13/2013

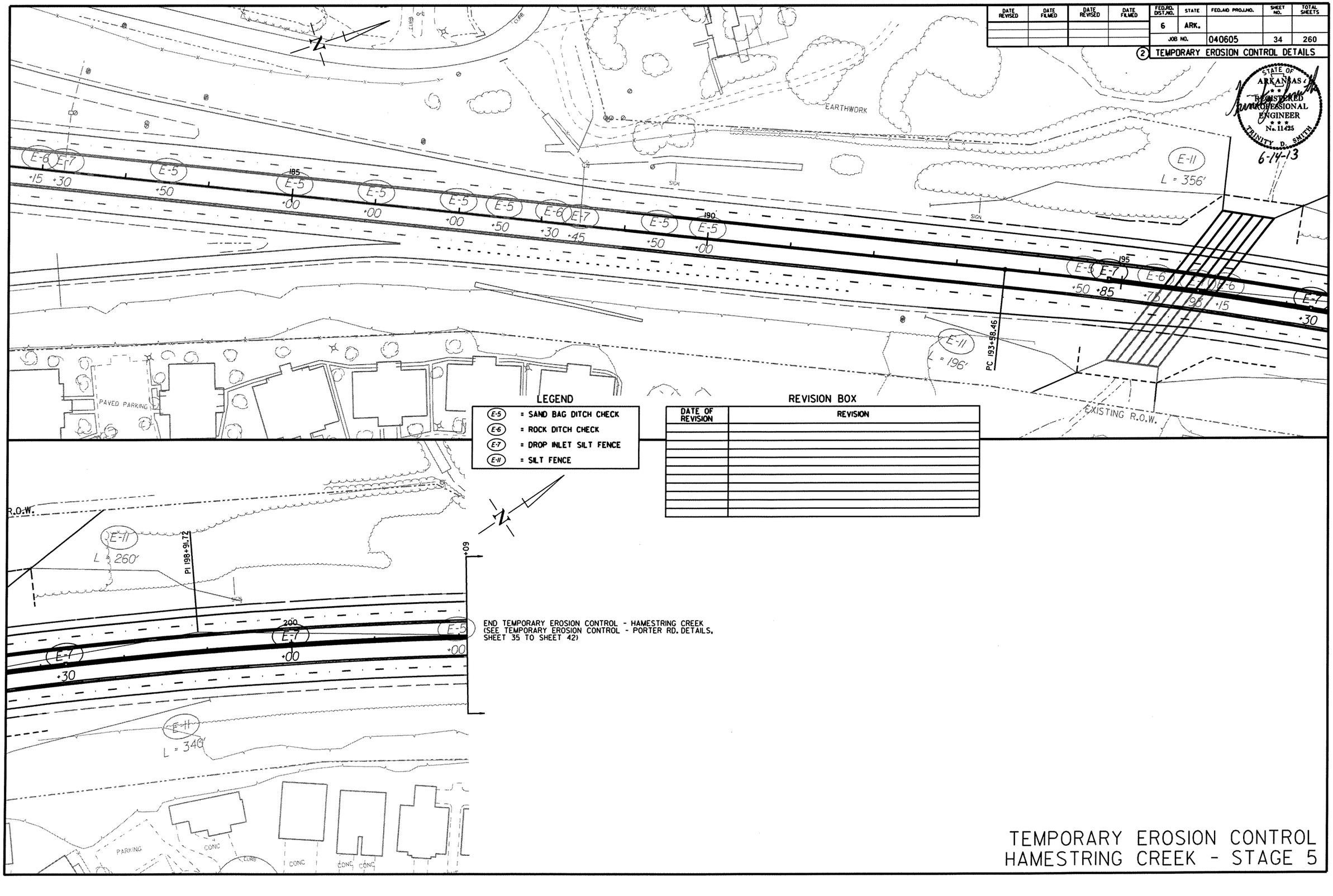
R040605.DGN

TEMPORARY EROSION CONTROL HAMESTRING CREEK - STAGE 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.		040605	34	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

REVISION BOX

DATE OF REVISION	REVISION

END TEMPORARY EROSION CONTROL - HAMESTRING CREEK
(SEE TEMPORARY EROSION CONTROL - PORTER RD. DETAILS, SHEET 35 TO SHEET 42)

6/13/2013

R040605.DGN

TEMPORARY EROSION CONTROL HAMESTRING CREEK - STAGE 5

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.		040605	35	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

PAVED PARKING
CURB
CONC PARKING
PC 215+95.36
PC 217+39.56
PT 218+58.98
PC 220+81.85
PT 222+20.20
PI 222+99.98
PC 224+12.06
PT 225+07.89
POE 225+51.16
PI 2
E-11 L = 1545'
E-11 L = 256'
E-11 L = 215'
E-11 L = 175'
E-6
R 21°19'41" E
R 19°31'26" E
R 12°11'28" E
N 34°30'40" E
N 34°32'34" E
N 15°23'
PT 224+60.04
PC 223+56.87
PC 222+24.18
PI 220+51.30
PI 219+85.84
PI 217+12.15
PT 214+71.38
PC 211+71.38
PI 212+24.08
37°42'13" E
PT 227+40.68
PC 226+19.19
SIGN
RETAINING WALL
GATE
PAVED
TEMPORARY EROSION CONTROL
PORTER RD. - STAGE 2 & 3

6/13/2013
R040605.DGN

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.		040605	36	260

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

EARTHWORK

PI 226+62.22

PC 226+30.47

N 75°23'38" E

PC 225+61.91

PT 227+40.68

PC 222+24.13

N 10°51'42" E

PI 219+85.84

PC 217+39.56

PT 221+90.62

N 24°19'08" E

N 34°30'40" E

N 34°32'34" E

PC 231+68.60

PI 232+26.85

E-11 L = 256'

E-11 L = 215'

E-11 L = 225'

E-11 = 1545'

E-5 +00

E-6 +00

E-7 +00

PAVED PARKING

CURB

SIGN

RET. WALL

GATE

CONC.

PAVED

LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

TEMPORARY EROSION CONTROL PORTER RD. - STAGE 4A

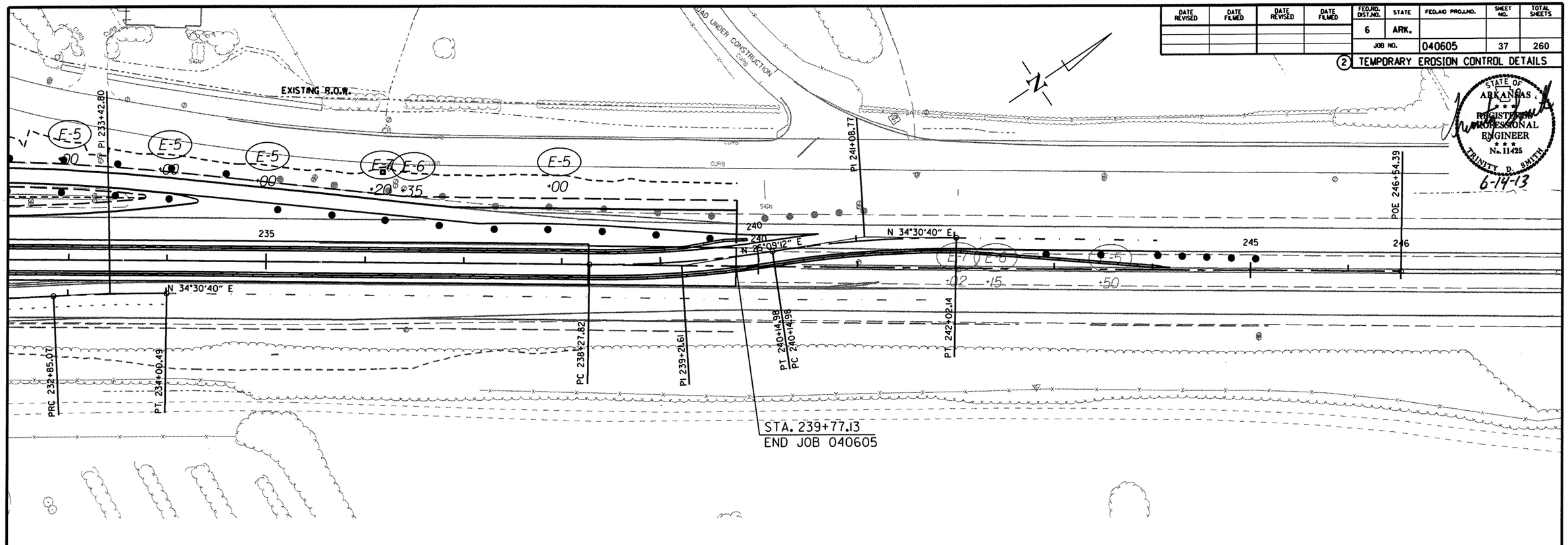
6/13/2013

R040605.DGN

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.		040605	37	260

(2) TEMPORARY EROSION CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

6/13/2013

R040605.DGN

TEMPORARY EROSION CONTROL
PORTER RD. - STAGE 4A

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.		040605	38	260

(2) TEMPORARY EROSION CONTROL DETAILS

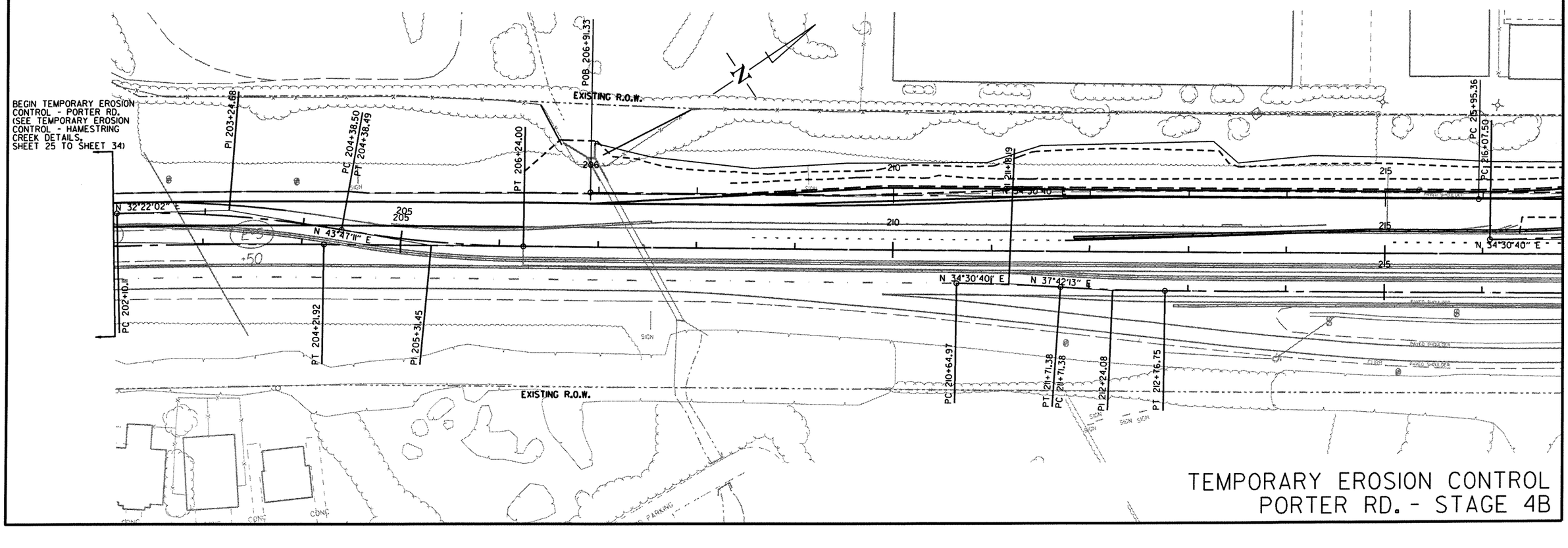
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE



TEMPORARY EROSION CONTROL
PORTER RD. - STAGE 4B

6/13/2013

R040605.DGN

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.		040605	39	260

(2) TEMPORARY EROSION CONTROL DETAILS

REVISION BOX

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

TEMPORARY EROSION CONTROL
PORTER RD. - STAGE 4B

6/13/2013

R040605.DGN

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.		040605	40	260

(2) TEMPORARY EROSION CONTROL DETAILS

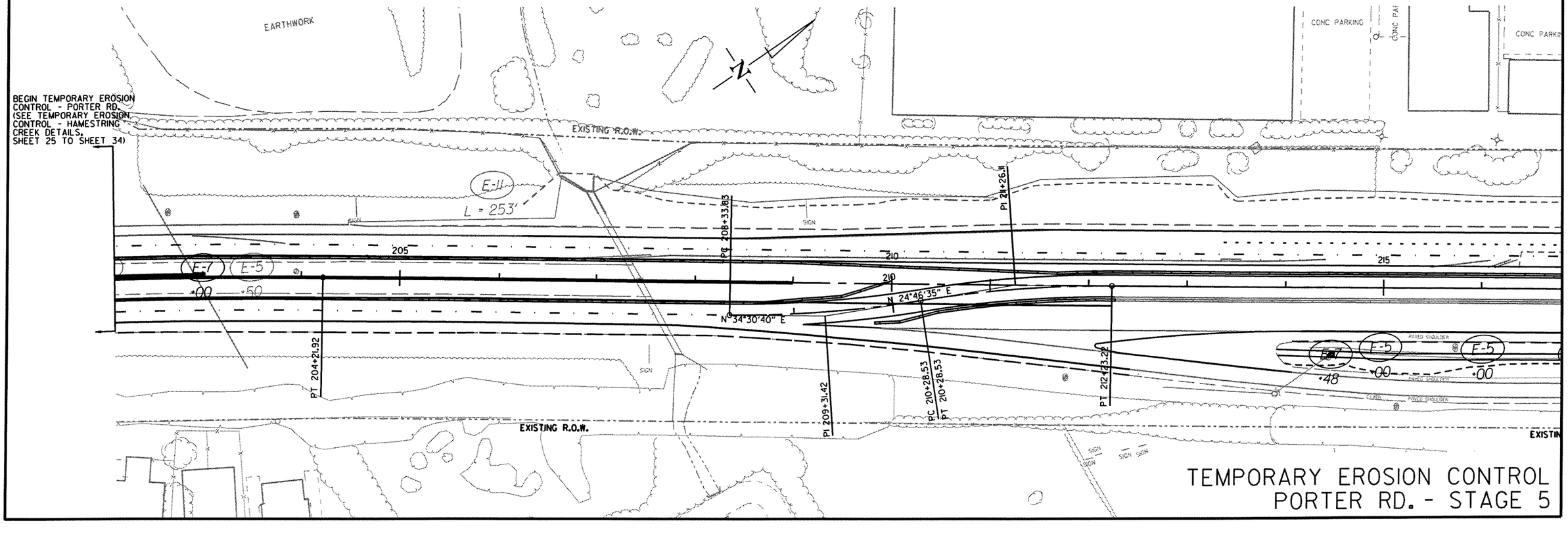
STATE OF ARKANSAS
TRINITY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11425
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE



TEMPORARY EROSION CONTROL
PORTER RD. - STAGE 5

6/13/2013

R040605.DGN

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.		040605	41	260

(2) TEMPORARY EROSION CONTROL DETAILS

REVISION BOX

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

EARTHWORK

PAVED PARKING

CURB

PARKING

SIGN

E-11 L = 296'

E-11 L = 215'

E-11 L = 550'

E-11 L = 1530'

EXISTING R.O.W.

E-5 +00

E-6 +00

E-7 +00

E-5 +50

E-6 +67

PBC 219+38.89

PC 220+07.82

PT 221+93.95

PI 221+13.48

N 19°28'42" E

N 34°30'40" E

N 11°46'03" E

PI 228+71.12

PT 231+02.12

PC 232+27.36

PI 234+22.24

220

225

230

CONC

GATE

PAVED

LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

TEMPORARY EROSION CONTROL PORTER RD. - STAGE 5

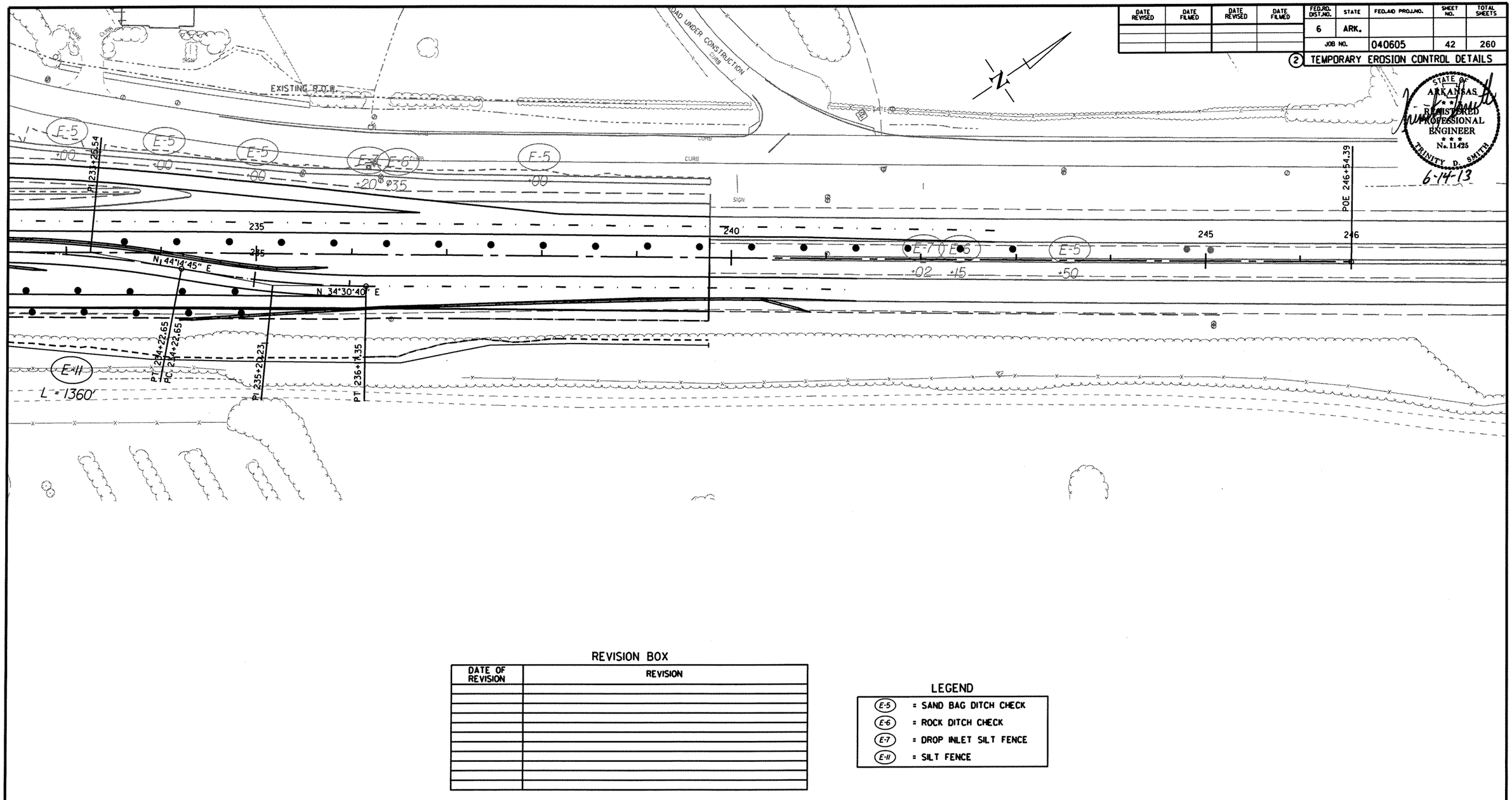
6/13/2013

R040605.DGN

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.		040605	42	260

(2) TEMPORARY EROSION CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

6/13/2013

R040605.DGN

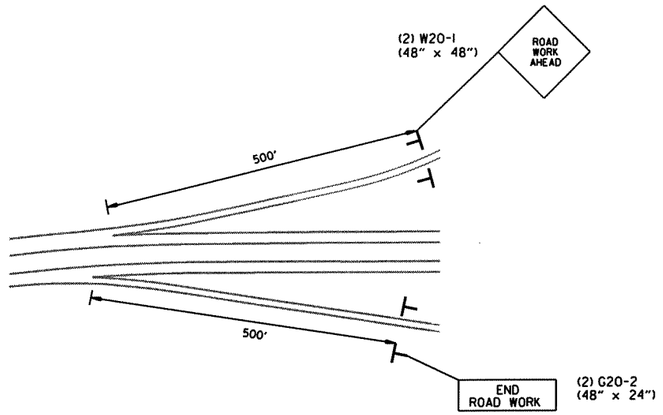
TEMPORARY EROSION CONTROL
PORTER RD. - STAGE 5

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.		040605	43	260

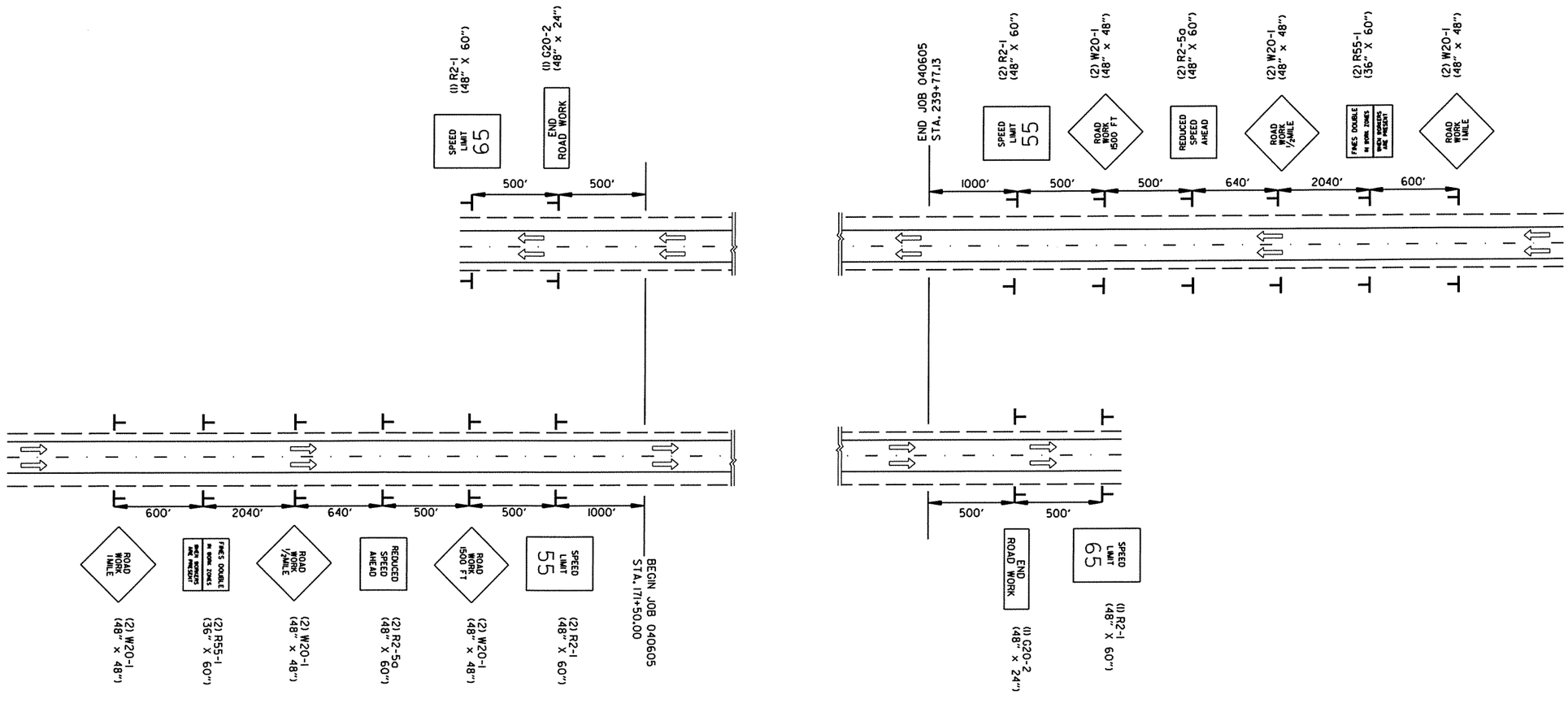
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

ADVANCE WARNING QUANTITIES
SIGNS = 620 SQ. FT.



DETAIL OF ENTRANCE AND EXIT RAMPS
(ALL STAGES)
EXIT 64
EXIT 65



ADVANCE WARNING SIGNS
(ALL STAGES)

R040605.DGN 6/13/2013

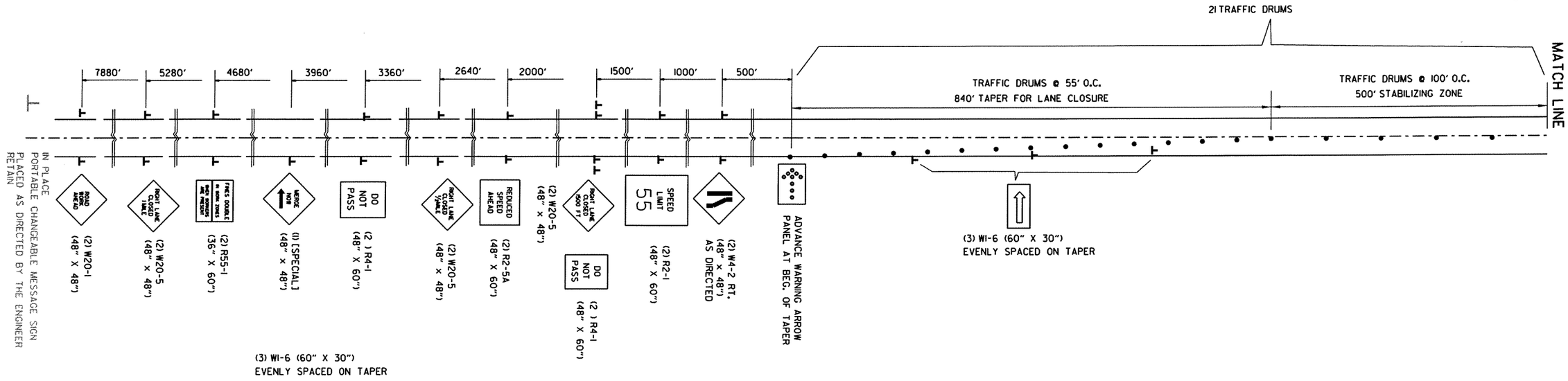
MAINTENANCE OF TRAFFIC DETAILS
ADVANCE WARNING

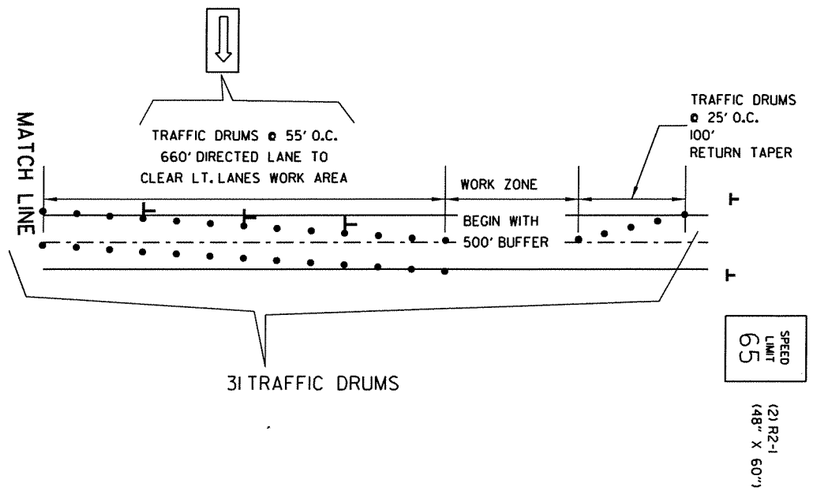
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	44	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS, REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

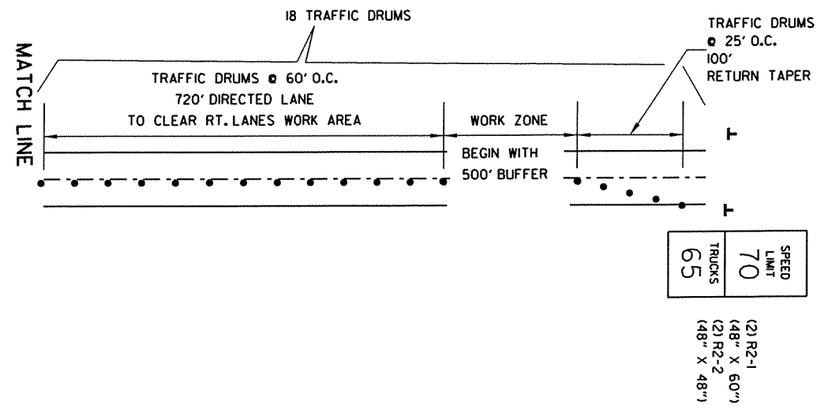
6-14-13





DIVERSION FOR LT. LANE WORK ZONE

2 SETS OF THIS NEEDED FOR JOB 040605, ONE EACH NORTHBOUND AND SOUTHBOUND



DIVERSION FOR RT. LANE WORK ZONE

2 SETS OF THIS NEEDED FOR RESURFACE JOB 040628, ONE EACH EASTBOUND AND WESTBOUND

6/13/2013

R040605.DGN

MAINTENANCE OF TRAFFIC DETAILS WORK ZONE - LANE CLOSURE

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.		040605	45	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE IA - CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAIL. INSTALL END ROAD WORK SIGNS AND SPEED LIMIT 65 SIGNS AT THE END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL. INSTALL ROAD WORK AHEAD (W20-1) SIGN AND END ROAD WORK (G20-2)ON RAMPS AS SHOWN ON THE ADVANCE WARNING DETAIL.

CLOSE INSIDE LANE OF RIGHT MAIN LANES USING THE DEVICES SHOWN ON THE MAINTENANCE OF TRAFFIC WORK ZONE - LANE CLOSURE DETAIL.

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), AND REVERSE CURVE (WI-4b) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS AND PRECAST CONCRETE BARRIERS AS SHOWN.

CORRECT THE PAVEMENT CROWN AS SHOWN IN THE SPECIAL DETAILS AND THE STAGE CONSTRUCTION DETAILS.

EXTEND THE HAMESTRING CREEK CONCRETE BOX CULVERT AS SHOWN USING TEMPORARY PIPE.

CONSTRUCT THE TEMPORARY PAVEMENT WIDENING AS SHOWN.

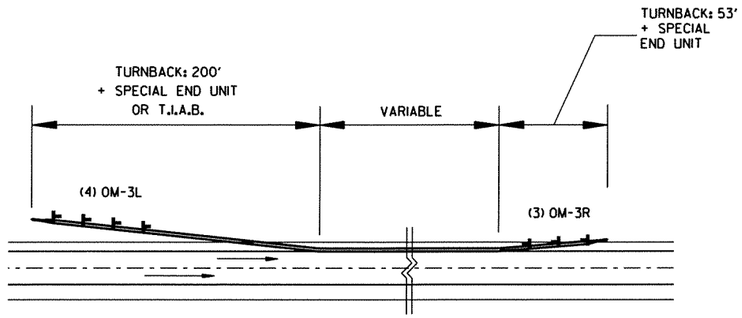
CONSTRUCT THE RAMP 4 DETOUR.

STAGE IA QUANTITIES

SIGNS = 1181 SQ. FT.
TRAFFIC DRUMS = 320 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 671 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 9284 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 3158 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH

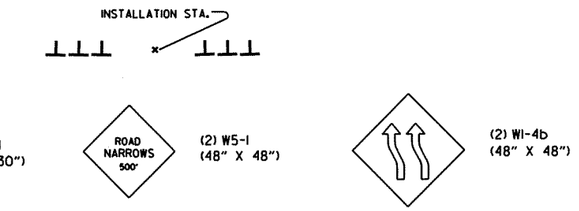
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR STAGE IA IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS SHEETS FOR STAGE IA.



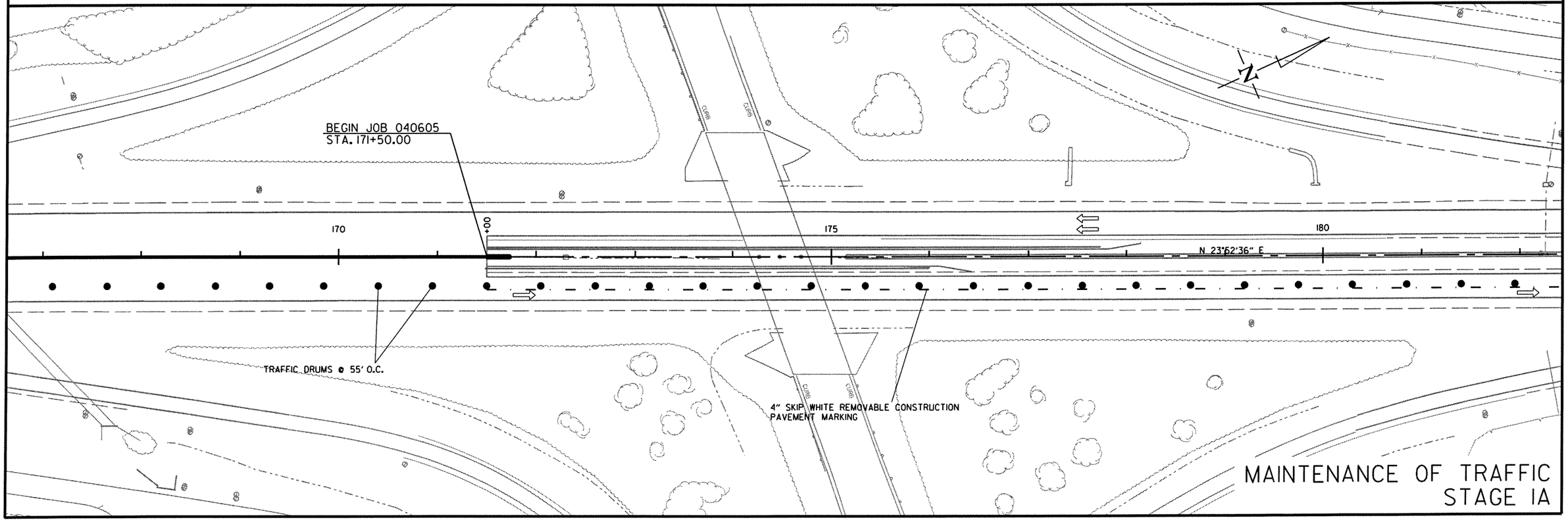
REFER ALSO TO STANDARD DRAWING TC-5 FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



ADVANCE WARNING SIGNS
I-540 L.M.L. - STA. 248+37

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



MAINTENANCE OF TRAFFIC
STAGE IA

6/13/2013

R040605.DGN

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.		040605	46	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

I-540 L.M.L. WEST SHIFT
P.I. 192+22.88
Δ = 6°17'50"LT.
D = 5°00'00"
T = 63.04'
L = 125.94'
P.C. 191+59.85
P.T. 192+85.79

I-540 L.M.L. WEST SHIFT
P.I. 194+77.97
Δ = 8°30'04"RT.
D = 5°00'00"
T = 85.17'
L = 169.87'
P.C. 193+92.80
P.T. 195+62.82

I-540 L.M.L. WEST SHIFT
P.I. 197+66.72
Δ = 11°46'16"RT.
D = 5°00'00"
T = 118.13'
L = 235.42'
P.C. 196+48.59
P.T. 198+84.01

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

100' LANE TAPER

53' P.C.C.B. TAPER

3706' P.C.C.B.
INCLUDES (2) SPECIAL END UNITS

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

TRAFFIC DRUMS @ 55' O.C.

STA. 196+00 - IN PLACE
DBL. 10' x 8' x 180' R.C. BOX CULV'T.
30° LT. FWD. SKEW
INSTALL
DBL. 96" x 30' TEMP. PIPE CULVERT
ON 30° LT. FWD. SKEW
GROUTED INTO END OF EXISTING R.C. BOX CULVERT
96" TEMPORARY CULVERT = 60 LIN. FT.
FLOWABLE FILL = 7 CU. YD.

DENOTES FULL DEPTH SHOULDER

I-540 L.M.L. WEST SHIFT
P.I. 197+66.72
Δ = 11°46'16"RT.
D = 5°00'00"
T = 118.13'
L = 235.42'
P.C. 196+48.59
P.T. 198+84.01

I-540 L.M.L. WEST SHIFT
P.I. 199+69.98
Δ = 7°14'51"LT.
D = 5°00'00"
T = 32.57'
L = 144.95'
P.C. 198+97.40
P.T. 200+42.36

I-540 L.M.L. WEST SHIFT
P.I. 205+05.46
Δ = 3°29'57"LT.
D = 3°00'00"
T = 58.34'
L = 116.64'
P.C. 204+47.12
P.T. 205+63.76

I-540 L.M.L. WEST SHIFT
P.I. 206+29.15
Δ = 3°37'18"RT.
D = 3°00'00"
T = 60.38'
L = 120.73'
P.C. 205+68.77
P.T. 206+84.49

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

3706' P.C.C.B.
INCLUDES (2) SPECIAL END UNITS

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

TRAFFIC DRUMS @ 55' O.C.

MAINTENANCE OF TRAFFIC STAGE IA

6/13/2013

R040605.DGN

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.	040605		47	260

(2) MAINTENANCE OF TRAFFIC DETAILS

DENOTES FULL DEPTH SHOULDER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

RAMP 4 DETOUR
P.I. 217+27.75
Δ = 13°10'53"LT.
D = 5°00'00"
T = 132.40'
L = 263.63'
P.C. 215+95.36
P.T. 218+58.98

RAMP 4 DETOUR
P.I. 221+51.30
Δ = 11°04'38"LT.
D = 8°00'00"
T = 69.45'
L = 138.47'
P.C. 220+81.85
P.T. 222+20.31

RAMP 4 DETOUR
P.I. 222+96.98
Δ = 9°36'17"RT.
D = 8°00'00"
T = 60.17'
L = 120.06'
P.C. 222+36.81
P.T. 223+56.87

RAMP 4 DETOUR
P.I. 224+60.04
Δ = 7°39'58"LT.
D = 8°00'00"
T = 47.99'
L = 95.83'
P.C. 224+12.05
P.T. 225+07.88

353' P.C.C.B.
INCLUDES 20' P.C.C.B. TAPER
AND 200' P.C.C.B. TAPER WITH (1) SPECIAL END UNIT

200' LANE TAPER / P.C.C.B. TAPER

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

3706' P.C.C.B.
INCLUDES (2) SPECIAL END UNITS

3706' P.C.C.B.
INCLUDES (2) SPECIAL END UNITS

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

350' PAVING TRANSITION

TRAFFIC DRUMS @ 55' O.C.

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

1773' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
+ (1) T.I.A.B.

CONC PARKING
PAVED PARKING
CURB
PAVED SHOULDER
PAVED
CONC
N 34°30'40" E
N 21°19'41" E

MAINTENANCE OF TRAFFIC
STAGE IA

6/13/2013
R040605.DGN

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.		040605	48	260

(2) MAINTENANCE OF TRAFFIC DETAILS

DENOTES FULL DEPTH SHOULDER

I-540 L.M.L. WEST SHIFT
P.I. 238+26.91
Δ = 3°35'28"RT.
D = 3°00'00"
T = 59.87'
L = 119.70'
P.C. 237+67.04
P.T. 238+86.74

END JOB 040605
STA. 239+77.13

I-540 L.M.L. WEST SHIFT
P.I. 239+46.61
Δ = 3°35'28"LT.
D = 3°00'00"
T = 59.87'
L = 119.70'
P.C. 238+86.74
P.T. 240+06.44

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313' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
+ (1) T.I.A.B.

53' P.C.C.B. TAPER
INCLUDES (1) SPECIAL END UNIT

1773' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
+ (1) T.I.A.B.

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

40' P.C.C.B. TAPER

53' P.C.C.B. TAPER

566' P.C.C.B.
INCLUDES (2) SPECIAL END UNIT

200' P.C.C.B./LANE TAPER
TRAFFIC DRUMS @ 55' O.C.

350' PAVING TRANSITION

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

TRAFFIC DRUMS @ 55' O.C.

200' P.C.C.B./LANE TAPER
TRAFFIC DRUMS @ 55' O.C.

100' SHOULDER TAPER

POE 246+54.39

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

TRAFFIC DRUMS @ 25' O.C.
100' TAPER

TRAFFIC DRUMS @ 55' O.C.

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

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MAINTENANCE OF TRAFFIC STAGE IA

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.		040605	49	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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HAMESTRING CREEK STAGE IB - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), AND REVERSE CURVE (WI-4b) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS AND PRECAST CONCRETE BARRIERS AS SHOWN.

CONSTRUCT THE TEMPORARY PAVEMENT WIDENING AS SHOWN.

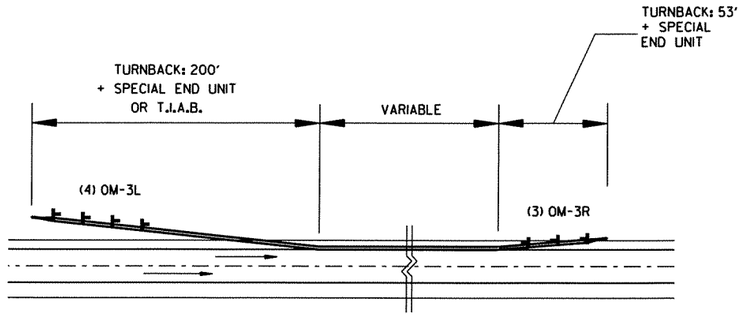
FINISH CONSTRUCTION FROM STAGE IA.

ADDITIONAL STAGE IB QUANTITIES

SIGNS = 936 SQ. FT.
TRAFFIC DRUMS = 19 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 3725 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 4246 LIN. FT.

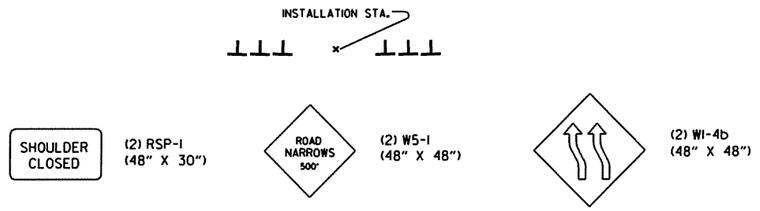
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR STAGE IB IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS SHEETS FOR STAGE IB.



REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 205+48
I-540 L.M.L. - STA. 248+37

DENOTES FULL DEPTH SHOULDER

PI 197+66.72
PI 198+91.72
PC 198+97.40
PT 200+42.36
PT 198+84.01
PI 199+69.98
PT 204+21.92
PC 204+47.42
PI 205+05.46
PC 205+63.77
PT 205+63.76
PI 206+24.15
POB 206+91.33
PT 206+84.49
PI 210+18.19
PC 210+64.97
PT 211+71.38
PC 211+71.38
PI 212+24.08
N 37°51'06" E
N 30°36'15" E
N 34°23'19" E
N 30°58'22" E
N 34°30'40" E
N 37°42'13" E
200
205
206
210
12'
11'
+65
+68
+08
4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
8" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
1953' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
200' LANE TAPER
20' P.C.C.B AND (1) T.I.A.B.
40' P.C.C.B. TAPER
393' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
PARKING
CONC
CURB
SIGN

MAINTENANCE OF TRAFFIC
STAGE IB

6/13/2013

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	50	260

(2) MAINTENANCE OF TRAFFIC DETAILS

DENOTES FULL DEPTH SHOULDER

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CONC PARKING
PAVED PARKING
CURB
SIGN
RET. WALL
CONC
GATE
PAVED

PC 215+95.36
PT 212+16.75
PI 212+24.08
PT 211+71.38
PC 211+71.38
PI 218+58.98
PC 220+81.85
PT 222+20.43
PI 222+96.98
PC 224+12.05
PT 225+07.88
PI 225+51.76
PI 224+60.04
PT 223+56.87
PC 222+36.81
PI 221+51.30
PI 221+27.75

N 37°42'13" E
N 2°19'47" E
N 10°25'05" E
N 19°51'26" E
N 34°30'40" E
N 34°32'34" E

11 12 13 14

53' P.C.C.B. TAPER
100' LANE TAPER
8" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
393' P.C.C.B. INCLUDES (1) SPECIAL END UNIT
4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
1953' P.C.C.B. INCLUDES (1) SPECIAL END UNIT + (1) T.L.A.B.
926' P.C.C.B. INCLUDES (2) SPECIAL END UNITS
453' P.C.C.B. INCLUDES (1) SPECIAL END UNIT
4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
TRAFFIC DRUMS @ 55' O.C.
200' P.C.C.B./LANE TAPER
TRAFFIC DRUMS @ 25' O.C.
100' SHOULDER TAPER

MAINTENANCE OF TRAFFIC STAGE IB

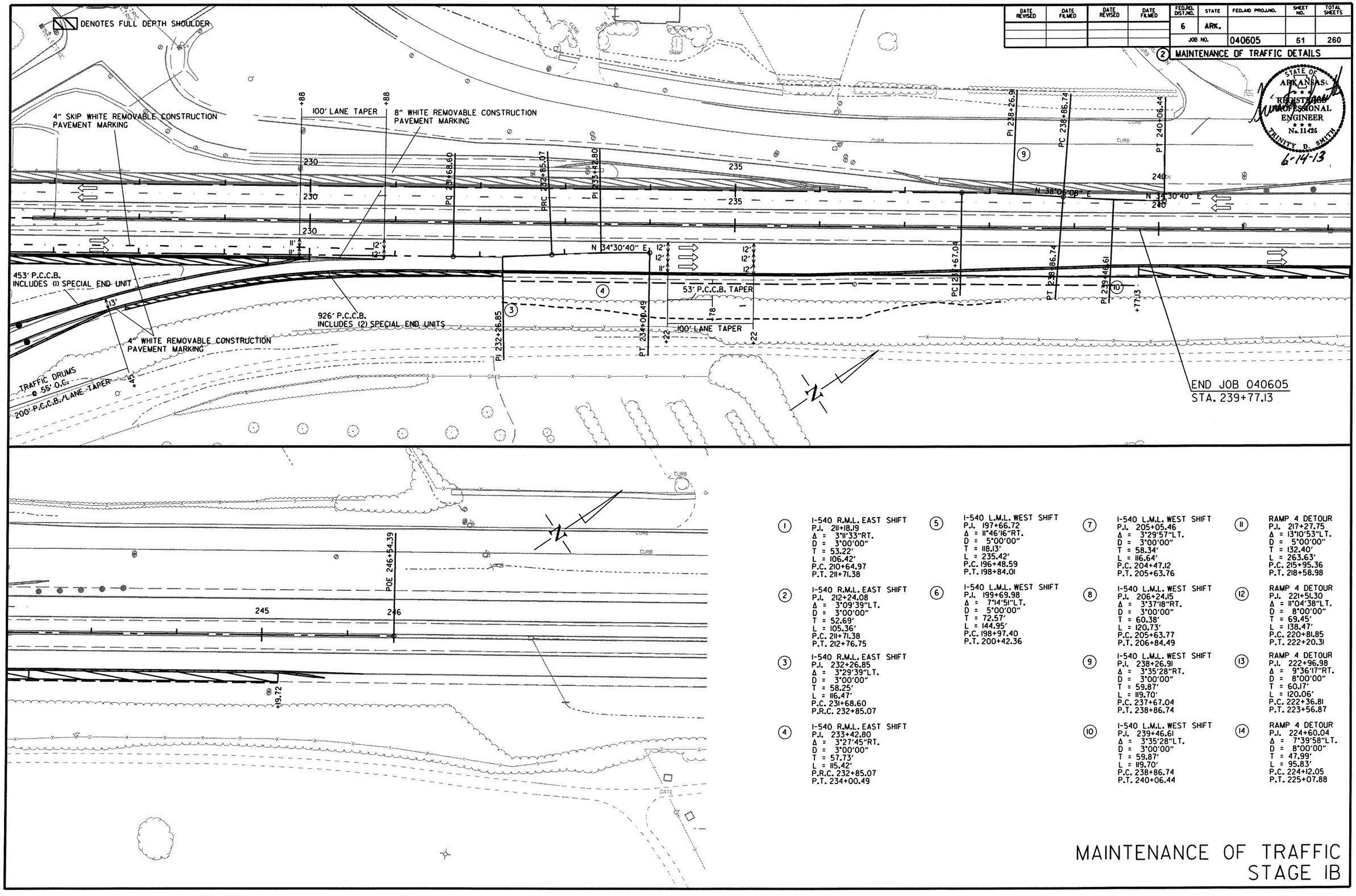
6/13/2013

R040605.DGN

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.		040605	51	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



(1) I-540 R.M.L. EAST SHIFT
P.I. 211+18.19
Δ = 3°11'33"RT.
D = 3°00'00"
T = 53.22'
L = 106.42'
P.C. 210+64.97
P.T. 211+71.38

(2) I-540 R.M.L. EAST SHIFT
P.I. 212+24.08
Δ = 3°09'39"LT.
D = 3°00'00"
T = 52.69'
L = 105.36'
P.C. 211+71.38
P.T. 212+76.75

(3) I-540 R.M.L. EAST SHIFT
P.I. 232+26.85
Δ = 3°29'39"LT.
D = 3°00'00"
T = 58.25'
L = 116.47'
P.C. 231+68.60
P.R.C. 232+85.07

(4) I-540 R.M.L. EAST SHIFT
P.I. 233+42.80
Δ = 3°27'45"RT.
D = 3°00'00"
T = 57.73'
L = 115.42'
P.R.C. 232+85.07
P.T. 234+00.49

(5) I-540 L.M.L. WEST SHIFT
P.I. 197+66.72
Δ = 11°46'16"RT.
D = 5°00'00"
T = 118.13'
L = 235.42'
P.C. 196+48.59
P.T. 198+84.01

(6) I-540 L.M.L. WEST SHIFT
P.I. 199+69.98
Δ = 7°14'51"LT.
D = 5°00'00"
T = 72.57'
L = 144.95'
P.C. 198+97.40
P.T. 200+42.36

(7) I-540 L.M.L. WEST SHIFT
P.I. 205+05.46
Δ = 3°29'57"LT.
D = 3°00'00"
T = 58.34'
L = 116.64'
P.C. 204+47.12
P.T. 205+63.76

(8) I-540 L.M.L. WEST SHIFT
P.I. 206+24.15
Δ = 3°37'18"RT.
D = 3°00'00"
T = 60.38'
L = 120.73'
P.C. 205+63.77
P.T. 206+84.49

(9) I-540 L.M.L. WEST SHIFT
P.I. 238+26.91
Δ = 3°35'28"RT.
D = 3°00'00"
T = 59.87'
L = 119.70'
P.C. 237+67.04
P.T. 238+86.74

(10) I-540 L.M.L. WEST SHIFT
P.I. 239+46.61
Δ = 3°35'28"LT.
D = 3°00'00"
T = 59.87'
L = 119.70'
P.C. 238+86.74
P.T. 240+06.44

(11) RAMP 4 DETOUR
P.I. 217+27.75
Δ = 13°10'53"LT.
D = 5°00'00"
T = 132.40'
L = 263.63'
P.C. 215+95.36
P.T. 218+58.98

(12) RAMP 4 DETOUR
P.I. 221+51.30
Δ = 11°04'38"LT.
D = 8°00'00"
T = 69.45'
L = 138.47'
P.C. 220+81.85
P.T. 222+20.31

(13) RAMP 4 DETOUR
P.I. 222+96.98
Δ = 9°36'17"RT.
D = 8°00'00"
T = 60.17'
L = 120.06'
P.C. 222+36.81
P.T. 223+56.87

(14) RAMP 4 DETOUR
P.I. 224+60.04
Δ = 7°39'58"LT.
D = 8°00'00"
T = 47.99'
L = 95.83'
P.C. 224+12.05
P.T. 225+07.88

MAINTENANCE OF TRAFFIC STAGE IB

6/13/2013

R040605.DGN

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.		040605	52	260

(2) MAINTENANCE OF TRAFFIC DETAILS

HAMESTRING CREEK STAGE 2 - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), AND REVERSE CURVE (W1-4b) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS AND PRECAST CONCRETE BARRIERS AS SHOWN.

INSTALL TEMPORARY PIPES AND CONSTRUCT TEMPORARY MEDIAN CROSSOVERS.

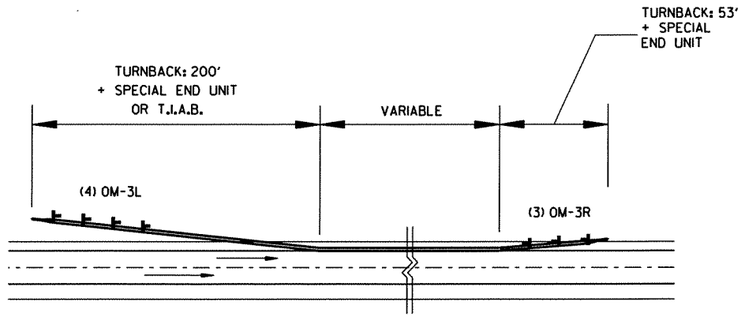
BEGIN CONSTRUCTION OF THE CONCRETE MEDIAN BARRIER WALL SOUTH OF HAMESTRING CREEK.

HAMESTRING CREEK - STAGE 2 ADDITIONAL QUANTITIES

SIGNS = 753 SQ. FT.
TRAFFIC DRUMS = 21 EACH
RELOCATING PRECAST CONCRETE BARRIER = 6253 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 8149 LIN. FT.
TYPE III BARRICADE RT. (24') = 1 EACH
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH

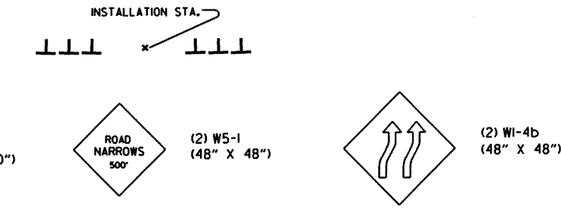
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR HAMESTRING CREEK - STAGE 2 IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS HAMESTRING CREEK - STAGE 2 SHEETS.



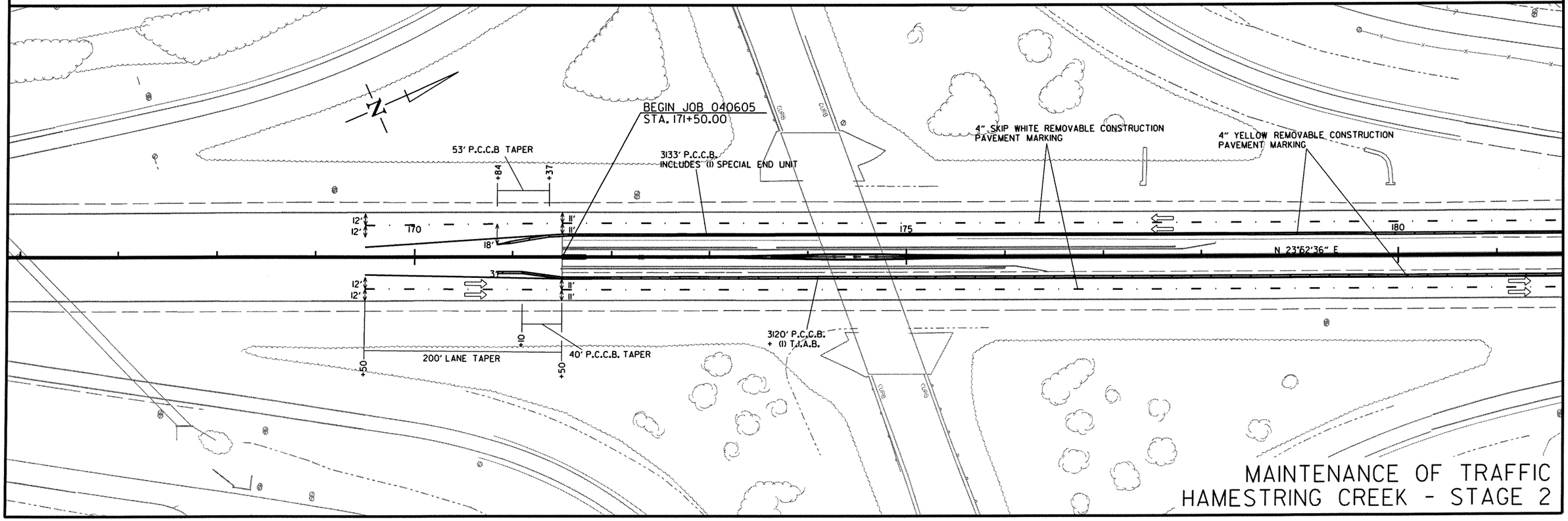
REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 165+90

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6-14-13



MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 2

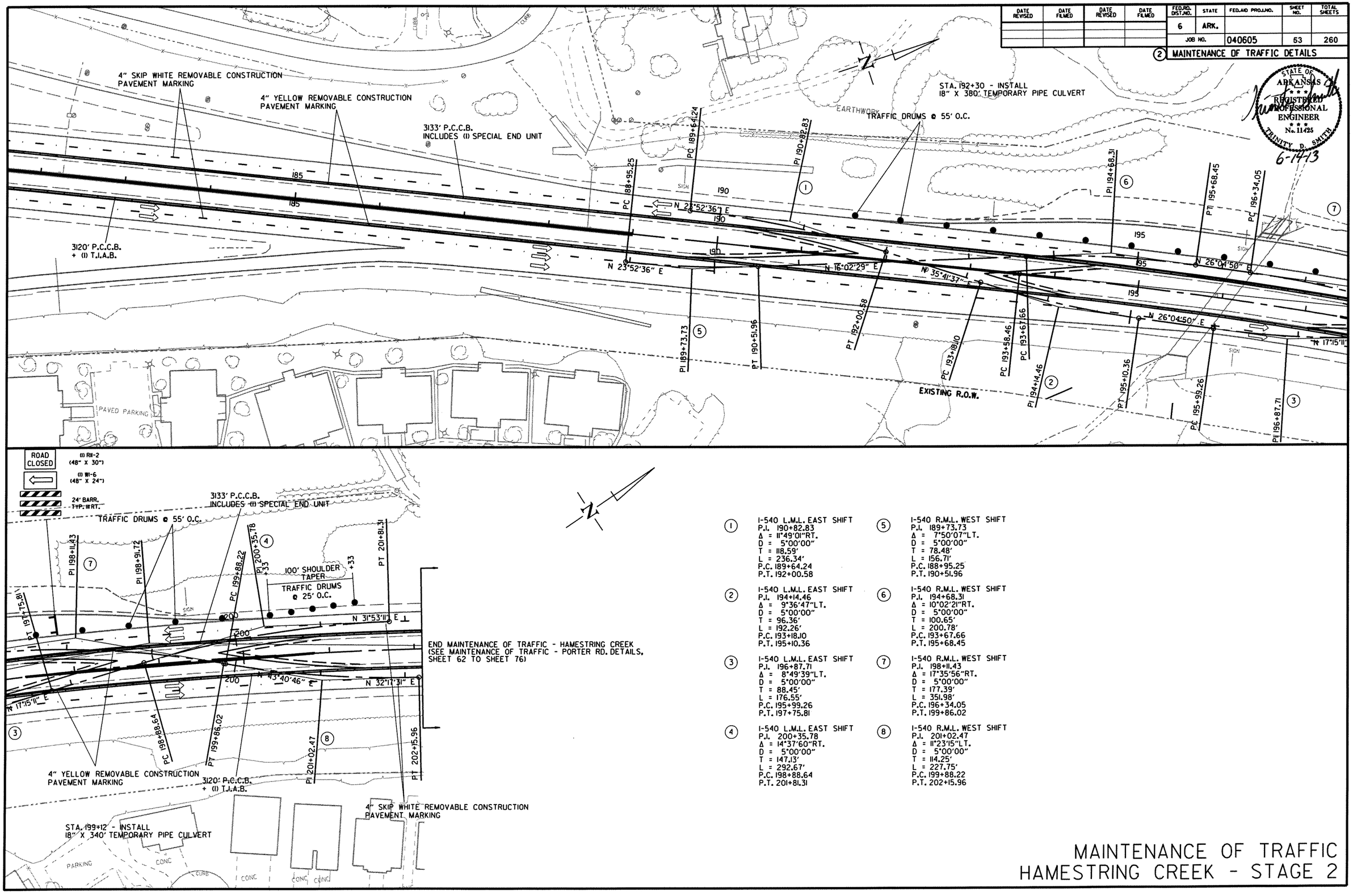
6/13/2013

R040605.DGN

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.		040605	53	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
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(1) I-540 L.M.L. EAST SHIFT
P.I. 190+82.83
Δ = 11°49'01"RT.
D = 5°00'00"
T = 118.59'
L = 236.34'
P.C. 189+64.24
P.T. 192+00.58

(2) I-540 L.M.L. EAST SHIFT
P.I. 194+14.46
Δ = 9°36'47"LT.
D = 5°00'00"
T = 96.36'
L = 192.26'
P.C. 193+18.10
P.T. 195+10.36

(3) I-540 L.M.L. EAST SHIFT
P.I. 196+87.71
Δ = 8°49'39"LT.
D = 5°00'00"
T = 88.45'
L = 176.55'
P.C. 195+99.26
P.T. 197+75.81

(4) I-540 L.M.L. EAST SHIFT
P.I. 200+35.78
Δ = 14°37'60"RT.
D = 5°00'00"
T = 147.13'
L = 292.67'
P.C. 198+88.64
P.T. 201+81.31

(5) I-540 R.M.L. WEST SHIFT
P.I. 189+73.73
Δ = 7°50'07"LT.
D = 5°00'00"
T = 78.48'
L = 156.71'
P.C. 188+95.25
P.T. 190+51.96

(6) I-540 R.M.L. WEST SHIFT
P.I. 194+68.31
Δ = 10°02'21"RT.
D = 5°00'00"
T = 100.65'
L = 200.78'
P.C. 193+67.66
P.T. 195+68.45

(7) I-540 R.M.L. WEST SHIFT
P.I. 198+11.43
Δ = 17°35'56"RT.
D = 5°00'00"
T = 177.39'
L = 351.98'
P.C. 196+34.05
P.T. 199+86.02

(8) I-540 R.M.L. WEST SHIFT
P.I. 201+02.47
Δ = 11°23'15"LT.
D = 5°00'00"
T = 114.25'
L = 227.75'
P.C. 199+88.22
P.T. 202+15.96

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MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 2

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.		040605	54	260

(2) MAINTENANCE OF TRAFFIC DETAILS

HAMESTRING CREEK STAGE 3 - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), REVERSE CURVE (W1-4b), AND TWO WAY TRAFFIC (W6-3) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS AND RELOCATE AND INSTALL PRECAST CONCRETE BARRIERS AS SHOWN.

SHIFT TRAFFIC WEST AS SHOWN, AND CONSTRUCT THE EAST PORTION OF THE PROPOSED CONCRETE BOX CULVERT.

RECONSTRUCT THE PORTION OF I-540 REMOVED TO CONSTRUCT THE CONCRETE BOX CULVERT AND CONSTRUCT THE TEMPORARY WIDENING AS SHOWN.

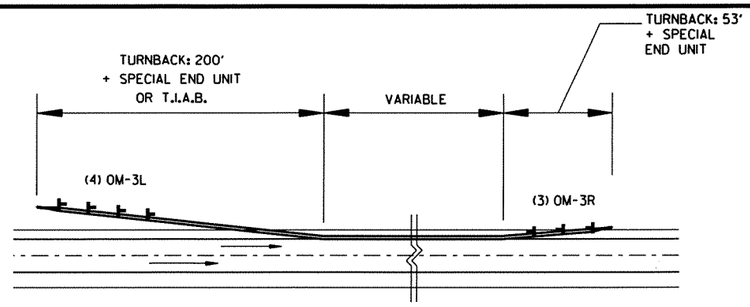
CONTINUE THE CONSTRUCTION OF THE CONCRETE MEDIAN BARRIER WALL SOUTH OF HAMESTRING CREEK.

HAMESTRING CREEK - STAGE 3 ADDITIONAL QUANTITIES

SIGNS = 944 SQ. FT.
TRAFFIC DRUMS = 40 EACH
RELOCATING PRECAST CONCRETE BARRIER = 2032 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 3428 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 1854 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 1891 LIN. FT.

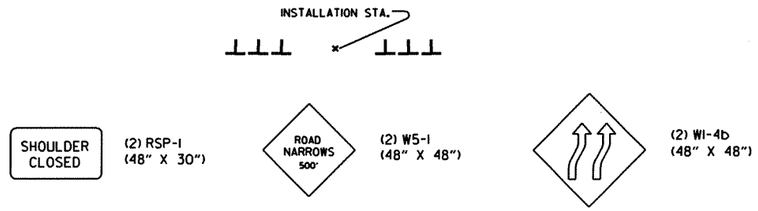
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR HAMESTRING CREEK - STAGE 3 IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS HAMESTRING CREEK - STAGE 3 SHEETS.

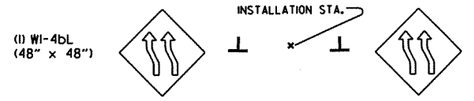


REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

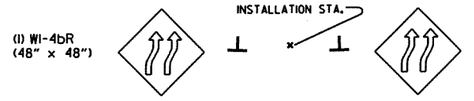
DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



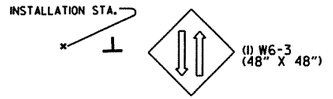
ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 165+90



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 178+95.25
I-540 L.M.L. - STA. 195+62.82

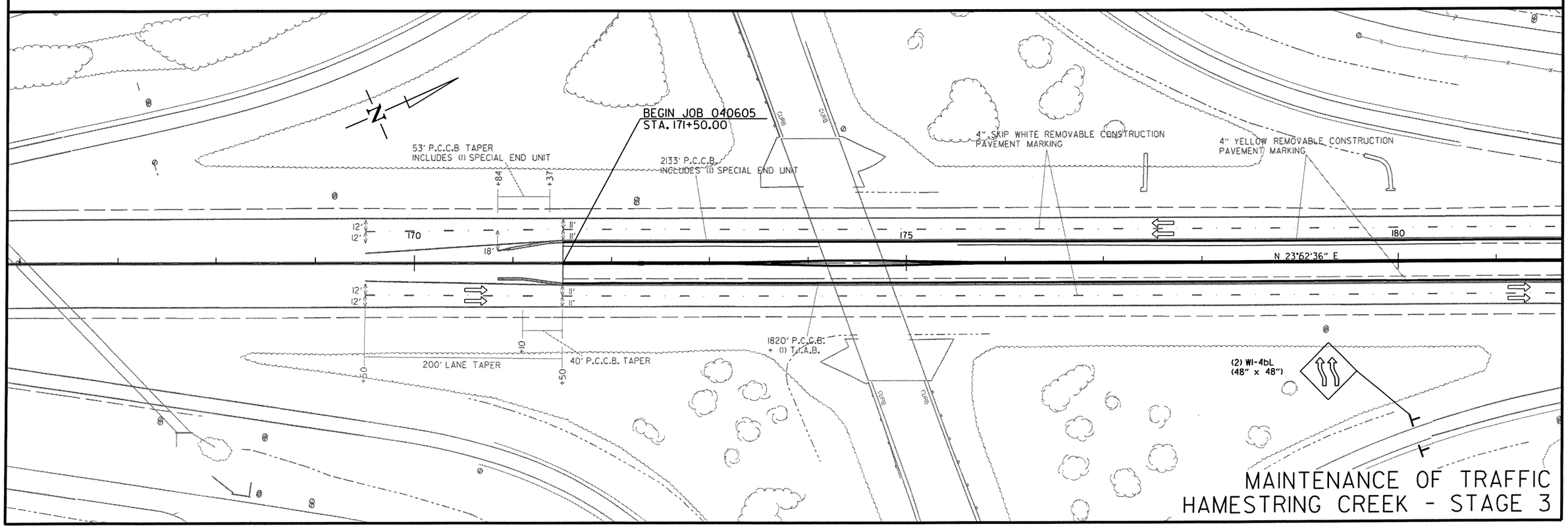


ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 196+34.05
I-540 L.M.L. - STA. 210+33.40



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 195+00
I-540 L.M.L. - STA. 197+00

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MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 3

6/13/2013

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	55	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
2133' P.C.C.B. INCLUDES (1) SPECIAL END UNIT
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
1820' P.C.C.B. + (1) T.I.A.B.
8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
TRAFFIC DRUMS @ 25' O.C.
100' SHOULDER TAPER
213' P.C.C.B. INCLUDES (1) SPECIAL END UNIT
4" YELLOW CONSTRUCTION PAVEMENT MARKING
20' P.C.C.B. TAPER + (1) SPECIAL END UNIT
TRAFFIC DRUMS @ 25' O.C.
100' SHOULDER TAPER
4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
TRAFFIC DRUMS @ 55' O.C.
200' P.C.C.B. TAPER + (1) SPECIAL END UNIT
4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING
4" WHITE CONSTRUCTION PAVEMENT MARKING
300' LANE TAPER
4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING
4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
TRAFFIC DRUMS @ 55' O.C.
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" WHITE CONSTRUCTION PAVEMENT MARKING
980' P.C.C.B.
786' P.C.C.B. INCLUDES (2) SPECIAL END UNIT
4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
EXISTING R.O.W.
PAVED PARKING
N 23°52'36" E
N 16°02'29" E
N 17°34'46" E
N 26°04'50" E
N 31°20'08" E

4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING
100' SHOULDER TAPER
4" YELLOW CONSTRUCTION PAVEMENT MARKING
TRAFFIC DRUMS @ 25' O.C.
4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
TRAFFIC DRUMS @ 55' O.C.
53' P.C.C.B TAPER INCLUDES (1) SPECIAL END UNIT
980' P.C.C.B.
END MAINTENANCE OF TRAFFIC - HAMESTRING CREEK (SEE MAINTENANCE OF TRAFFIC - PORTER RD. DETAILS, SHEET 62 TO SHEET 76)
4" WHITE CONSTRUCTION PAVEMENT MARKING
TRAFFIC DRUMS @ 55' O.C.
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
53' P.C.C.B. TAPER INCLUDES (1) SPECIAL END UNIT
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
786' P.C.C.B. INCLUDES (2) SPECIAL END UNIT
4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
N 37°51'06" E
N 30°36'15" E
N 43°48'45" E
N 30°20'17" E
N 32°17'31" E
PARKING
CONC
CURB

(1) I-540 L.M.L. WEST SHIFT
P.I. 192+22.88
Δ = 6°17'50"LT.
D = 5°00'00"
T = 63.04'
L = 125.94'
P.C. 191+59.85
P.T. 192+85.79

(2) I-540 L.M.L. WEST SHIFT
P.I. 194+77.97
Δ = 8°30'04"RT.
D = 5°00'00"
T = 85.17'
L = 169.87'
P.C. 193+92.80
P.T. 195+62.82

(3) I-540 L.M.L. WEST SHIFT
P.I. 197+66.72
Δ = 11°46'16"RT.
D = 5°00'00"
T = 118.13'
L = 235.42'
P.C. 196+48.59
P.T. 198+84.01

(4) I-540 L.M.L. WEST SHIFT
P.I. 199+69.98
Δ = 7°14'51"LT.
D = 5°00'00"
T = 72.57'
L = 144.95'
P.C. 198+97.40
P.T. 200+42.36

(5) I-540 R.M.L. WEST SHIFT
P.I. 189+73.73
Δ = 7°50'07"LT.
D = 5°00'00"
T = 78.48'
L = 156.71'
P.C. 188+95.25
P.T. 190+51.96

(6) I-540 R.M.L. WEST SHIFT
P.I. 194+68.31
Δ = 10°02'21"RT.
D = 5°00'00"
T = 100.65'
L = 200.78'
P.C. 193+67.66
P.T. 195+68.45

(7) I-540 R.M.L. WEST SHIFT
P.I. 198+11.43
Δ = 17°35'56"RT.
D = 5°00'00"
T = 177.39'
L = 351.98'
P.C. 196+34.05
P.T. 199+86.02

(8) I-540 R.M.L. WEST SHIFT
P.I. 201+02.47
Δ = 11°23'15"LT.
D = 5°00'00"
T = 114.25'
L = 227.75'
P.C. 199+88.22
P.T. 202+15.96

(9) I-540 R.M.L. EAST SHIFT
P.I. 191+93.20
Δ = 7°27'32"RT.
D = 5°00'00"
T = 74.70'
L = 149.07'
P.C. 191+18.51
P.T. 192+67.69

(10) I-540 R.M.L. EAST SHIFT
P.I. 194+20.24
Δ = 5°15'18"LT.
D = 5°00'00"
T = 52.59'
L = 105.10'
P.C. 193+67.65
P.T. 194+72.75

(11) I-540 R.M.L. EAST SHIFT
P.I. 196+82.50
Δ = 5°47'46"LT.
D = 5°00'00"
T = 58.01'
L = 115.92'
P.C. 196+24.49
P.T. 197+40.41

(12) I-540 R.M.L. EAST SHIFT
P.I. 199+07.31
Δ = 10°03'13"RT.
D = 5°00'00"
T = 100.79'
L = 201.07'
P.C. 198+06.52
P.T. 200+07.59

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MAINTENANCE OF TRAFFIC HAMESTRING CREEK - STAGE 3

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.		040605	56	260

(2) MAINTENANCE OF TRAFFIC DETAILS

HAMESTRING CREEK STAGE 4 - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), REVERSE CURVE (W1-4b), AND TWO WAY TRAFFIC (W6-3) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS AND RELOCATE AND INSTALL PRECAST CONCRETE BARRIERS AS SHOWN.

SHIFT TRAFFIC EAST AS SHOWN, AND CONSTRUCT THE WEST PORTION OF THE PROPOSED CONCRETE BOX CULVERT.

RECONSTRUCT THE PORTION OF I-540 REMOVED TO CONSTRUCT THE CONCRETE BOX CULVERT AS SHOWN.

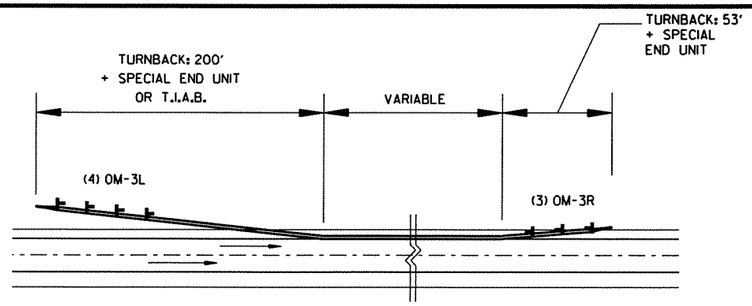
FINISH THE CONSTRUCTION OF THE CONCRETE MEDIAN BARRIER WALL SOUTH OF HAMESTRING CREEK.

HAMESTRING CREEK - STAGE 4 ADDITIONAL QUANTITIES

SIGNS = 944 SQ. FT.
TRAFFIC DRUMS = 39 EACH
RELOCATING PRECAST CONCRETE BARRIER = 2219 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 3913 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 1685 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 735 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMNET MARKINGS = 1149 LIN. FT.

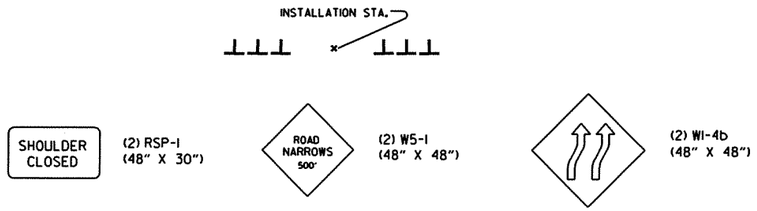
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR HAMESTRING CREEK - STAGE 4 IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS HAMESTRING CREEK - STAGE 4 SHEETS.

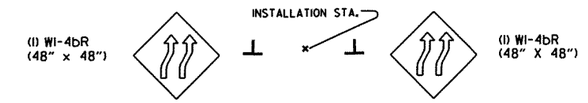


REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF PCCB TURNBACKS.

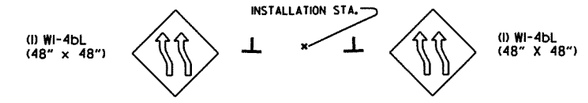
DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



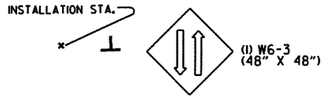
ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 165+90



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 181+18.51
I-540 L.M.L. - STA. 211+81.31



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 196+24.49
I-540 L.M.L. - STA. 195+10.36



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 194+75
I-540 L.M.L. - STA. 196+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 4

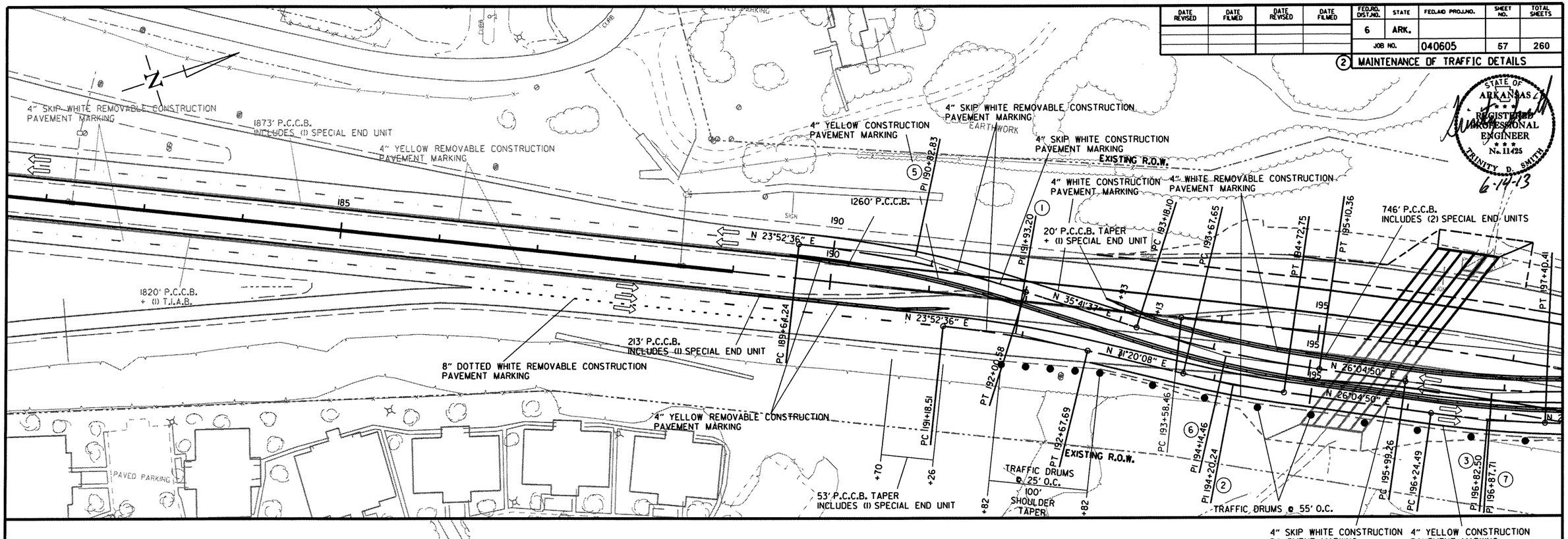
6/13/2013

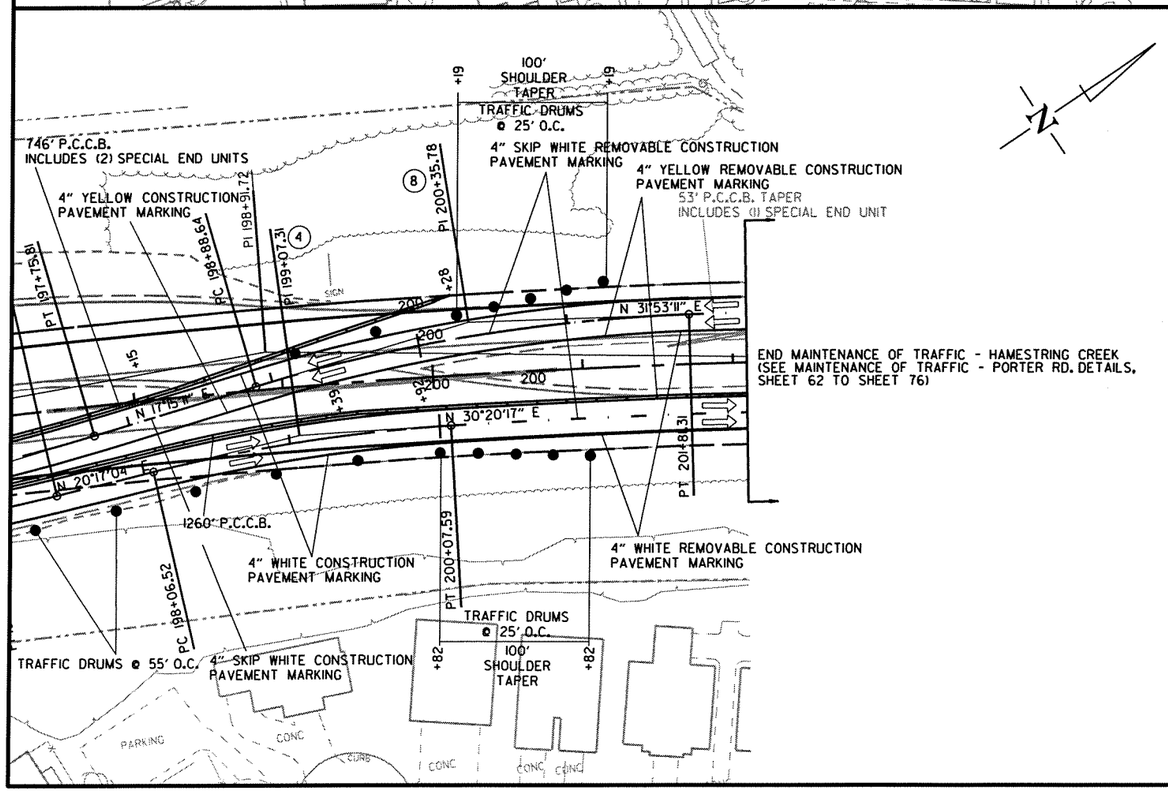
R040605.DGN

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.		040605	57	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13





END MAINTENANCE OF TRAFFIC - HAMESTRING CREEK
(SEE MAINTENANCE OF TRAFFIC - PORTER RD. DETAILS, SHEET 62 TO SHEET 76)

① I-540 R.M.L. EAST SHIFT
P.I. 191+93.20
Δ = 7°27'32"RT.
D = 5°00'00"
T = 74.70'
L = 149.07'
P.C. 191+18.51
P.T. 192+67.69

② I-540 R.M.L. EAST SHIFT
P.I. 194+20.24
Δ = 5°15'18"LT.
D = 5°00'00"
T = 52.59'
L = 105.10'
P.C. 193+67.65
P.T. 194+72.75

③ I-540 R.M.L. EAST SHIFT
P.I. 196+82.50
Δ = 5°47'46"LT.
D = 5°00'00"
T = 58.01'
L = 115.92'
P.C. 196+24.49
P.T. 197+40.41

④ I-540 R.M.L. EAST SHIFT
P.I. 199+07.31
Δ = 10°03'13"RT.
D = 5°00'00"
T = 100.79'
L = 201.07'
P.C. 198+06.52
P.T. 200+07.59

⑤ I-540 L.M.L. EAST SHIFT
P.I. 190+82.83
Δ = 11°49'01"RT.
D = 5°00'00"
T = 118.59'
L = 236.34'
P.C. 189+64.24
P.T. 192+00.58

⑥ I-540 L.M.L. EAST SHIFT
P.I. 194+14.46
Δ = 9°36'47"LT.
D = 5°00'00"
T = 96.36'
L = 192.26'
P.C. 193+18.10
P.T. 195+10.36

⑦ I-540 L.M.L. EAST SHIFT
P.I. 196+87.71
Δ = 8°49'39"LT.
D = 5°00'00"
T = 88.45'
L = 176.55'
P.C. 195+99.26
P.T. 197+75.81

⑧ I-540 L.M.L. EAST SHIFT
P.I. 200+35.78
Δ = 14°37'60"RT.
D = 5°00'00"
T = 147.13'
L = 292.67'
P.C. 198+88.64
P.T. 201+81.31

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MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 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.		040605	58	260

(2) MAINTENANCE OF TRAFFIC DETAILS

HAMESTRING CREEK STAGE 5 - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), REVERSE CURVE (WI-4b), AND TWO WAY TRAFFIC (W6-3) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS AND RELOCATE AND INSTALL PRECAST CONCRETE BARRIERS AS SHOWN.

SHIFT TRAFFIC AS SHOWN AND REMOVE TEMPORARY CROSSOVERS.

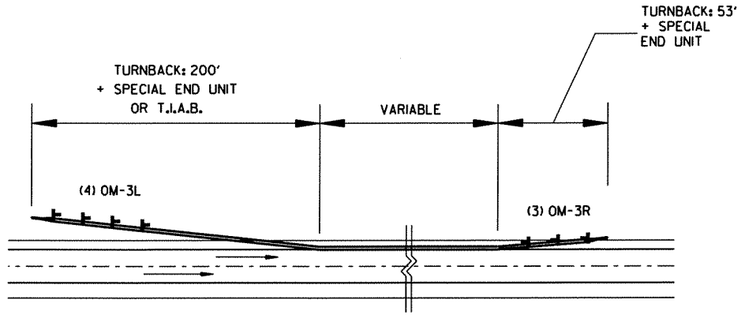
CONSTRUCT REMAINING PORTIONS OF THE MEDIAN CONCRETE BARRIER WALL.

HAMESTRING CREEK - STAGE 5 ADDITIONAL QUANTITIES

SIGNS = 745 SQ. FT.
RELOCATING PRECAST CONCRETE BARRIER = 2200 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 3173 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 2307 LIN. FT.

NOTE:

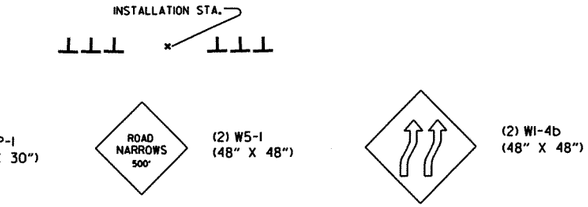
THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR HAMESTRING CREEK - STAGE 5 IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS HAMESTRING CREEK - STAGE 5 SHEETS.



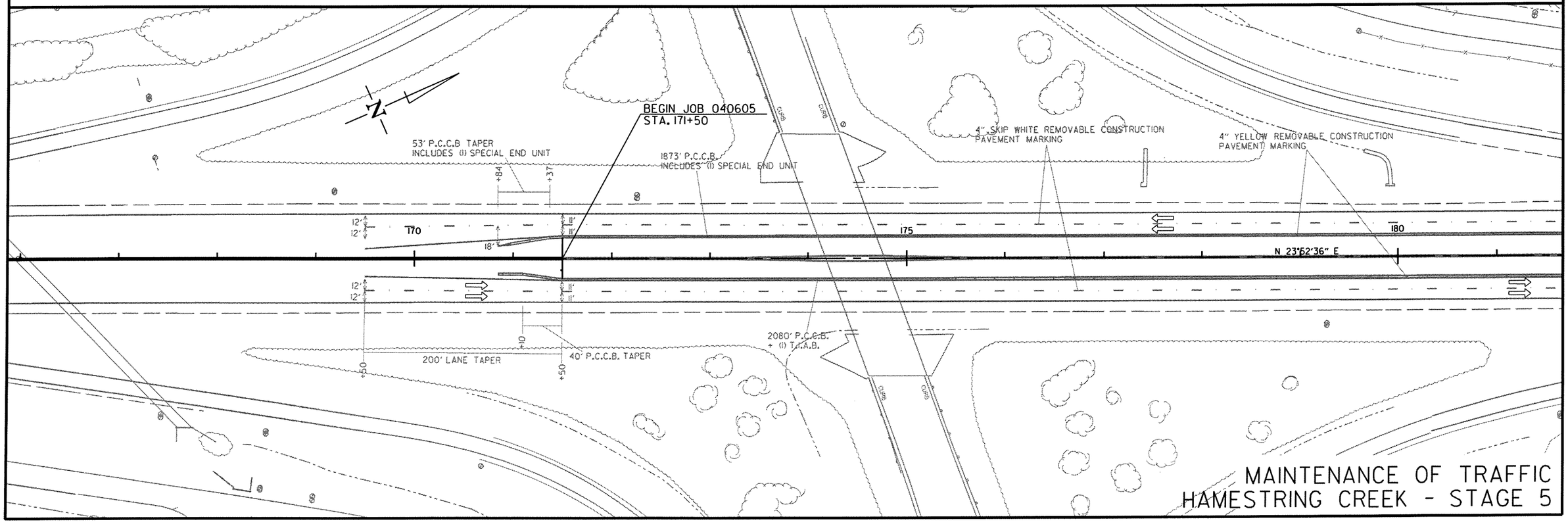
REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 165+90



MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 5

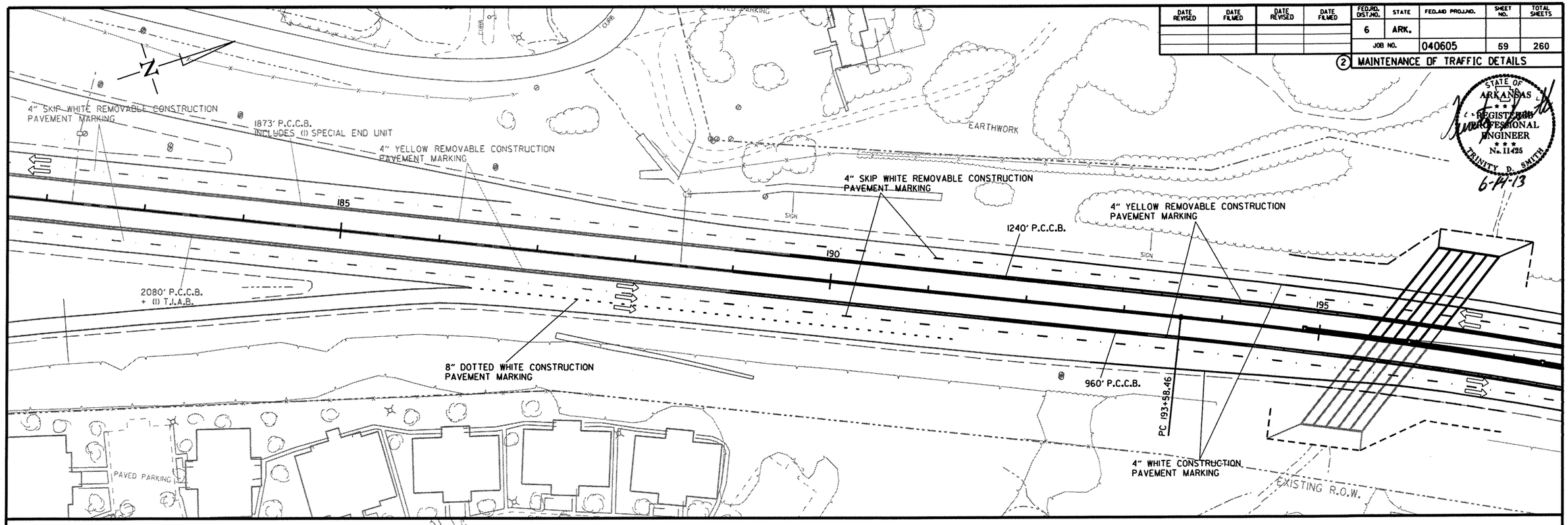
6/13/2013

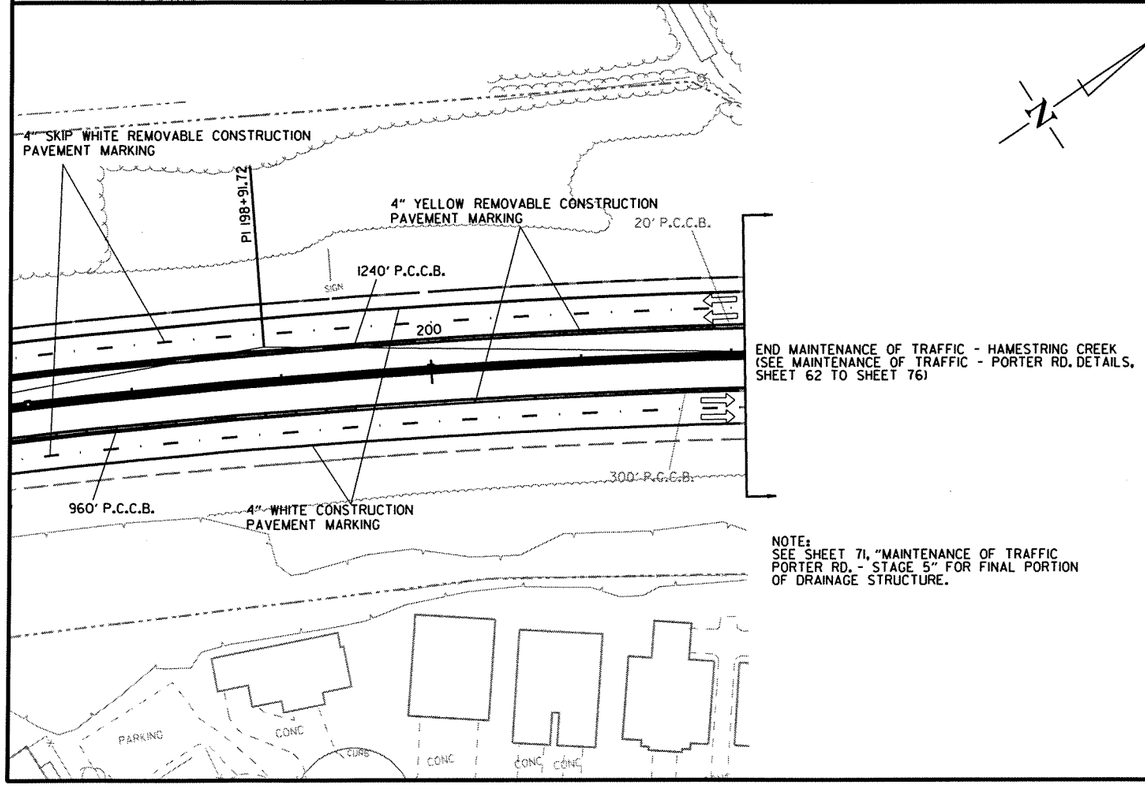
R040605.DGN

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.		040605	59	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13





END MAINTENANCE OF TRAFFIC - HAMESTRING CREEK
(SEE MAINTENANCE OF TRAFFIC - PORTER RD. DETAILS, SHEET 62 TO SHEET 76)

NOTE:
SEE SHEET 71, "MAINTENANCE OF TRAFFIC PORTER RD. - STAGE 5" FOR FINAL PORTION OF DRAINAGE STRUCTURE.

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MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 5

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.		040605	60	260

(2) MAINTENANCE OF TRAFFIC DETAILS

HAMESTRING CREEK STAGE 6 - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), REVERSE CURVE (W1-4b), AND TWO WAY TRAFFIC (W6-3) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS AND RELOCATE PRECAST CONCRETE BARRIERS AS SHOWN.

UPON THE COMPLETION OF PORTER RD. STAGE 6 AND HAMESTRING CREEK STAGE 6, REMOVE THE PRECAST CONCRETE BARRIERS AND PLACE LANE CLOSURE DEVICES AS SHOWN IN THE MAINTENANCE OF TRAFFIC DETAILS WORK ZONE - LANE CLOSURE DETAIL.

COLD MILL MAIN LANES AS SHOWN IN THE TYPICAL SECTIONS AND SPECIAL DETAILS TO A DEPTH OF 2".

PLACE FINAL 2" LIFT OF A.C.H.M SURFACE.

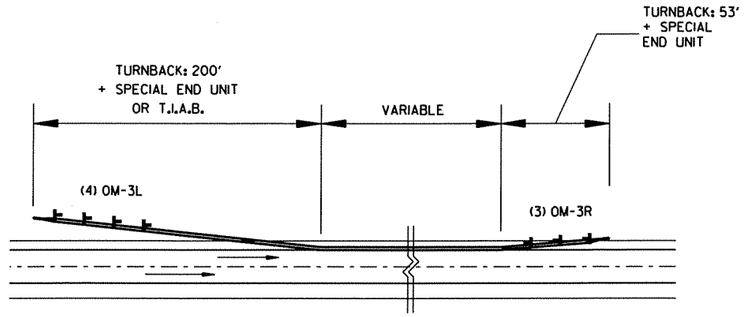
PLACE PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

HAMESTRING CREEK - STAGE 6 ADDITIONAL QUANTITIES

SIGNS = 745 SQ. FT.
RELOCATING PRECAST CONCRETE BARRIER = 73 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 6194 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 1955 LIN. FT.

NOTE:

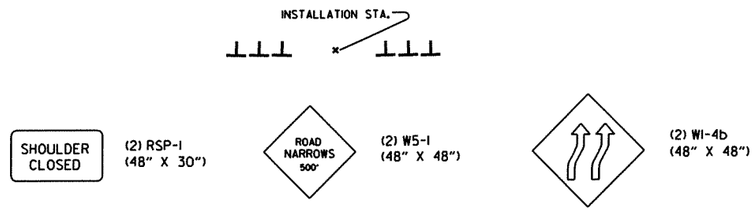
THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR HAMESTRING CREEK - STAGE 6 IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS HAMESTRING CREEK - STAGE 6 SHEETS.



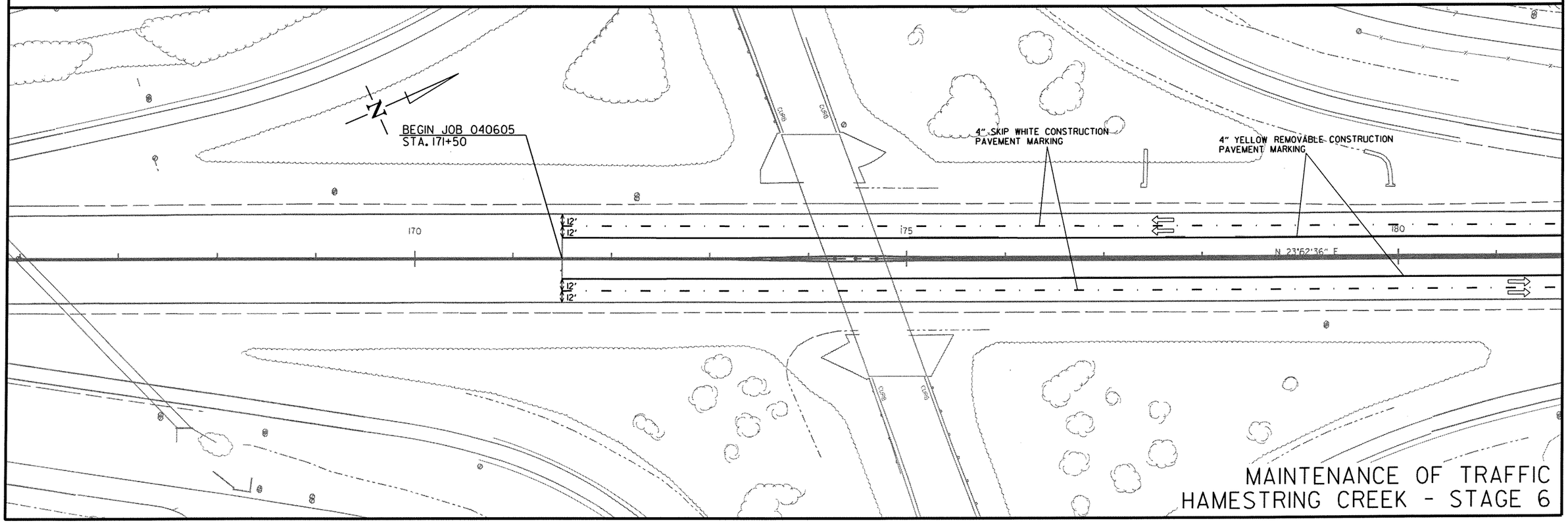
REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 196+49



MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 6

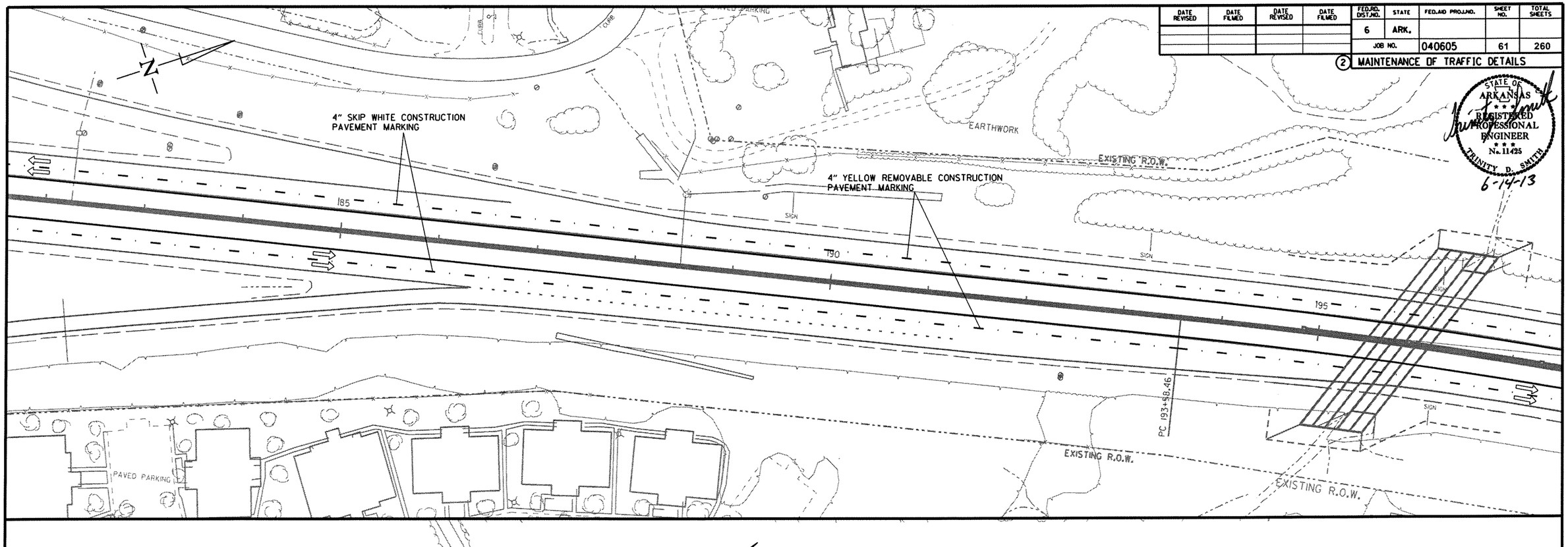
6/13/2013

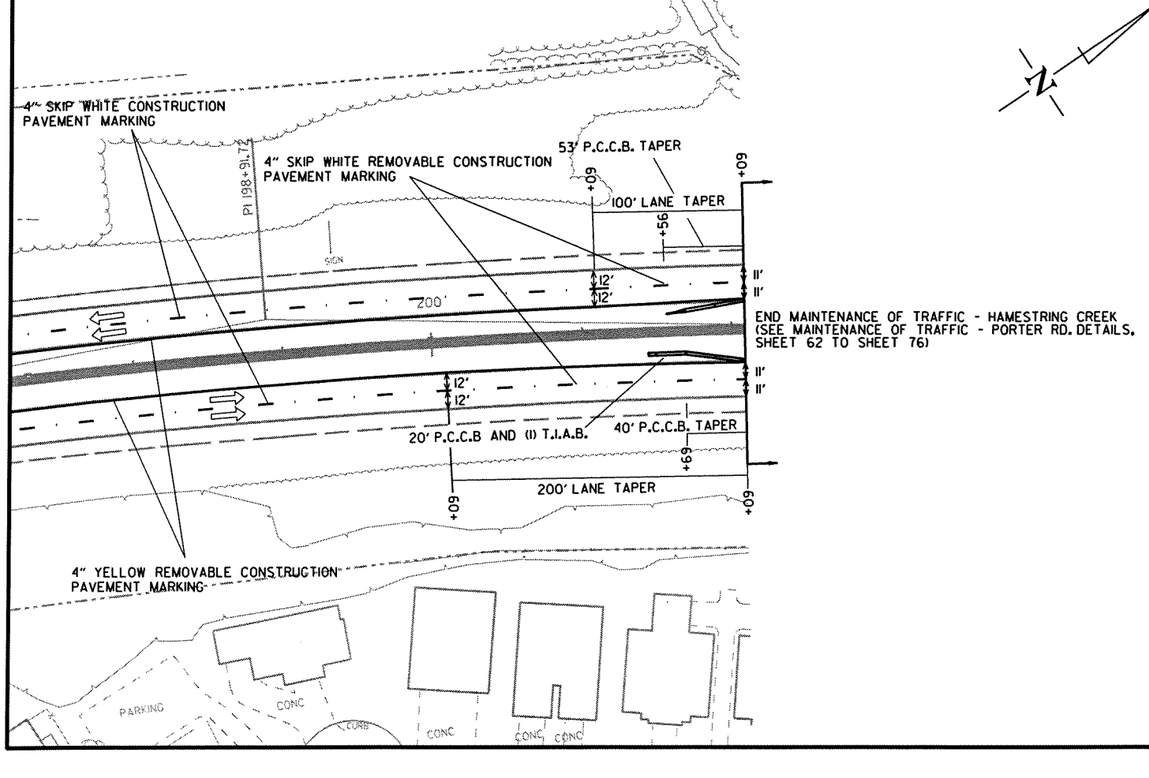
R040605.DGN

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.		040605	61	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13





6/13/2013

R040605.DGN

MAINTENANCE OF TRAFFIC
HAMESTRING CREEK - STAGE 6

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.		040605	62	260

(2) MAINTENANCE OF TRAFFIC DETAILS

PORTER RD. STAGE 2 & 3 - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), AND REVERSE CURVE (W1-4b) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS, PRECAST CONCRETE BARRIERS, AND TRAFFIC DRUMS AS SHOWN.

SHIFT RAMP 4 TRAFFIC ONTO THE RAMP 4 DETOUR.

REMOVE THE PORTIONS OF THE EXISTING BRIDGE AS SHOWN IN THE BRIDGE PLANS, "DETAILS OF STAGE CONSTRUCTION".

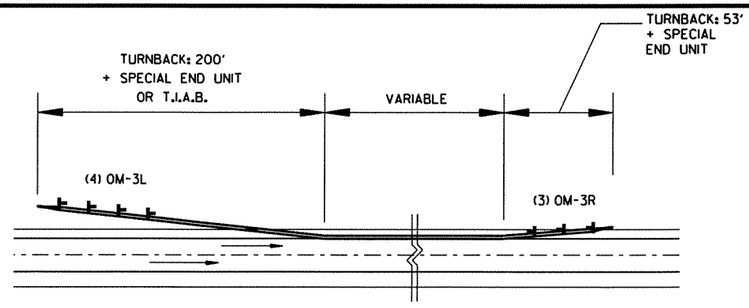
CONSTRUCT THE CENTER PORTION OF THE PROPOSED BRIDGE OVER PORTER RD. AS SHOWN IN THE BRIDGE PLANS, "DETAILS OF STAGE CONSTRUCTION" AND MEDIAN PORTION OF ROADWAY FOR TRAFFIC SHOWN IN "PORTER RD. - STAGE 4A".

PORTER RD. - STAGE 2 & 3 ADDITIONAL QUANTITIES

SIGNS = 994 SQ. FT.
TRAFFIC DRUMS = 35 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 7360 LIN. FT.
RELOCATING PRECAST CONCRETE BARRIER = 4118 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH
TYPE III BARRICADE LT. (16') = 1 EACH
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 6785 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 14010 LIN. FT.
REMOVABLE CONSTRUCTION PAVMENT MARKINGS = 5083 LIN. FT.

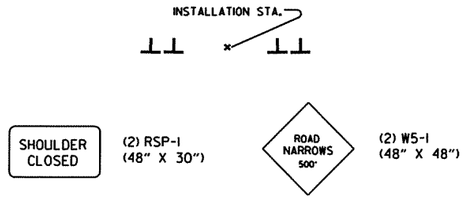
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR PORTER RD. - STAGE 2 & 3 IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS PORTER RD. - STAGE 2 & 3 SHEETS.

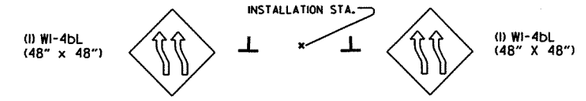


REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

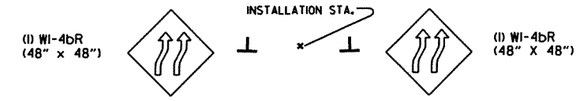
DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 207+90
I-540 L.M.L. - STA. 250+00

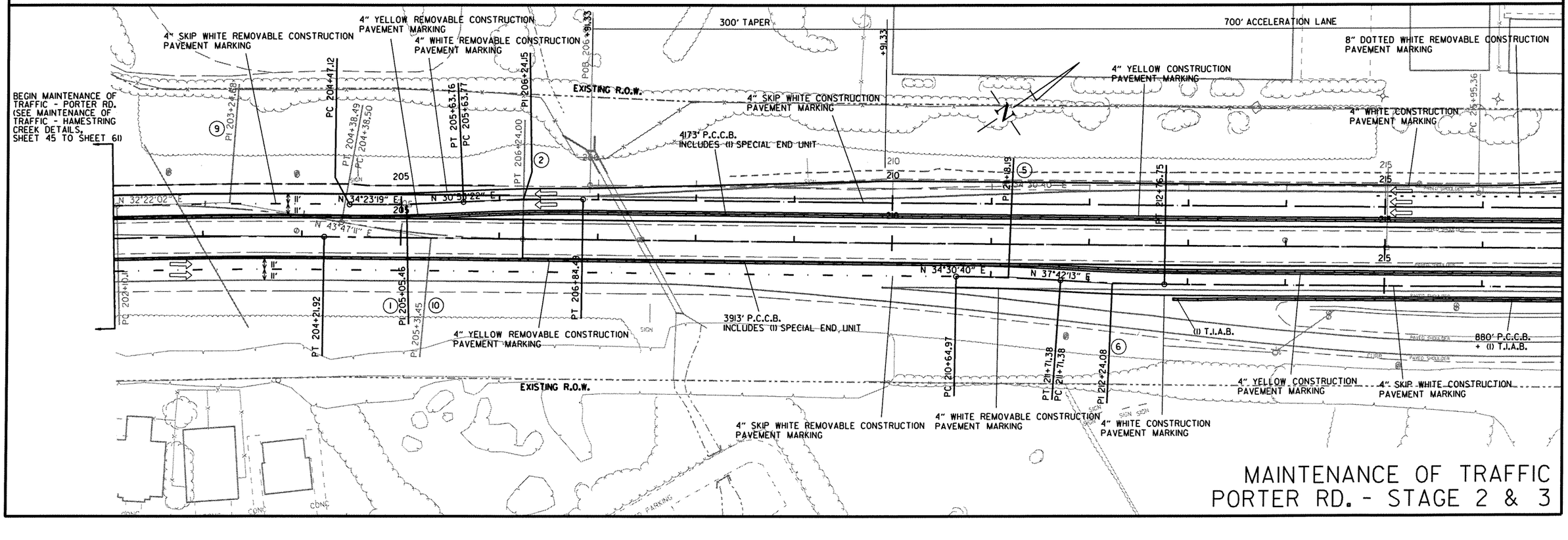


ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 226+68.60
I-540 L.M.L. - STA. 211+84.49



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 205+64.97
I-540 L.M.L. - STA. 245+06.44

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 2 & 3

6/13/2013

R040605.DGN

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.		040605	63	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

DENOTES FULL DEPTH SHOULDER

(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYP. III LT.
ROAD CLOSED

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
200' P.C.C.B. TAPER
4" YELLOW CONSTRUCTION PAVEMENT MARKING
4" WHITE CONSTRUCTION PAVEMENT MARKING
8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
826' P.C.C.B. INCLUDES (2) SPECIAL END UNIT
TRAFFIC DRUMS @ 55' O.C.
8" WHITE CONSTRUCTION PAVEMENT MARKING
53' P.C.C.B. TAPER INCLUDES (1) SPECIAL END UNIT
493' P.C.C.B. INCLUDES (1) SPECIAL END UNIT
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING
417' P.C.C.B. INCLUDES (1) SPECIAL END UNIT
800' P.C.C.B. + (1) T.I.A.B.
880' P.C.C.B. + (1) T.I.A.B.
391' P.C.C.B. INCLUDES (1) SPECIAL END UNIT
393' P.C.C.B. INCLUDES (1) SPECIAL END UNIT
8" WHITE CONSTRUCTION PAVEMENT MARKING
4" WHITE CONSTRUCTION PAVEMENT MARKING
4" YELLOW CONSTRUCTION PAVEMENT MARKING
8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" YELLOW CONSTRUCTION PAVEMENT MARKING

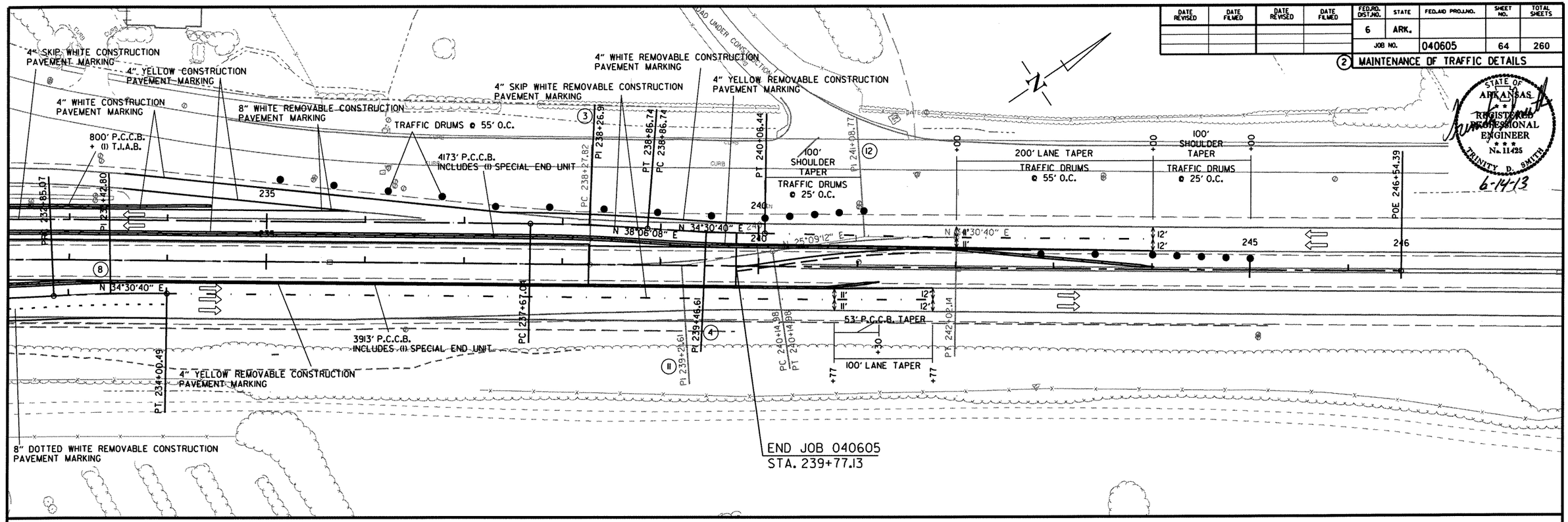
EARTHWORK
PAVED PARKING
PARKING
CURB
SIGN
FENCE
CONC.
GATE
PAVED
ELEC. MH
N 15°42'38" E
N 34°30'40" E
N 34°32'34" E
PC 224+12.05
PT 224+60.04
PC 224+68.68
PT 225+19.19
PC 225+04.98
PT 225+56.87
PC 222+24.18
PT 222+51.30
PC 222+68.68
PT 222+95.80
PC 218+39.56
PT 218+86.68
PC 219+35.84
PT 219+85.84
PC 231+68.60
PT 232+26.85
PT 227+40.68
PT 226+62.
PT 225+04.98
PT 225+56.87
PT 222+51.30
PT 222+95.80
PT 218+86.68
PT 219+85.84
PC 224+30.47
PT 224+78.47
PC 225+19.19
PT 225+68.19
PC 226+62.
PT 227+11.00
PC 231+68.60
PT 232+26.85
L+91.33
220
225
230
(13)
(14)
(15)
(16)
(7)

6/13/2013
R040605.DGN

MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 2 & 3

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	64	260

(2) MAINTENANCE OF TRAFFIC DETAILS



(1)	I-540 L.M.L. WEST SHIFT P.I. 205+05.46 Δ = 3°29'57"LT. D = 3°00'00" T = 58.34' L = 116.64' P.C. 204+47.12 P.T. 205+63.76	(5)	I-540 R.M.L. EAST SHIFT P.I. 211+18.19 Δ = 3°11'33"RT. D = 3°00'00" T = 53.22' L = 106.42' P.C. 210+64.97 P.T. 211+71.38	(9)	I-540 L.M.L. MEDIAN SHIFT P.I. 203+24.68 Δ = 11°25'10"RT. D = 5°00'00" T = 114.57' L = 228.39' P.C. 202+10.11 P.T. 204+38.49	(13)	RAMP 4 DETOUR P.I. 217+27.75 Δ = 13°10'53"LT. D = 5°00'00" T = 132.40' L = 263.63' P.C. 215+95.36 P.T. 218+58.98
(2)	I-540 L.M.L. WEST SHIFT P.I. 206+24.15 Δ = 3°37'18"RT. D = 3°00'00" T = 60.38' L = 120.73' P.C. 205+63.77 P.T. 206+84.49	(6)	I-540 R.M.L. EAST SHIFT P.I. 212+24.08 Δ = 3°09'39"LT. D = 3°00'00" T = 52.69' L = 105.36' P.C. 211+71.38 P.T. 212+76.75	(10)	I-540 L.M.L. MEDIAN SHIFT P.I. 205+31.45 Δ = 9°16'31"LT. D = 5°00'00" T = 92.96' L = 185.51' P.C. 204+38.50 P.T. 206+24.00	(14)	RAMP 4 DETOUR P.I. 221+51.30 Δ = 11°04'38"LT. D = 8°00'00" T = 69.45' L = 138.47' P.C. 220+81.85 P.T. 222+20.31
(3)	I-540 L.M.L. WEST SHIFT P.I. 238+26.91 Δ = 3°35'28"RT. D = 3°00'00" T = 59.87' L = 119.70' P.C. 237+67.04 P.T. 238+86.74	(7)	I-540 R.M.L. EAST SHIFT P.I. 232+26.85 Δ = 3°29'39"LT. D = 3°00'00" T = 58.25' L = 116.47' P.C. 231+68.60 P.R.C. 232+85.07	(11)	I-540 L.M.L. MEDIAN SHIFT P.I. 239+21.61 Δ = 9°21'28"LT. D = 5°00'00" T = 93.79' L = 187.16' P.C. 238+27.82 P.T. 240+14.98	(15)	RAMP 4 DETOUR P.I. 222+96.98 Δ = 9°36'17"RT. D = 8°00'00" T = 60.17' L = 120.06' P.C. 222+36.81 P.T. 223+56.87
(4)	I-540 L.M.L. WEST SHIFT P.I. 239+46.61 Δ = 3°35'28"LT. D = 3°00'00" T = 59.87' L = 119.70' P.C. 238+86.74 P.T. 240+06.44	(8)	I-540 R.M.L. EAST SHIFT P.I. 233+42.80 Δ = 3°27'45"RT. D = 3°00'00" T = 57.73' L = 115.42' P.R.C. 232+85.07 P.T. 234+00.49	(12)	I-540 L.M.L. MEDIAN SHIFT P.I. 241+08.77 Δ = 9°21'28"RT. D = 5°00'00" T = 93.79' L = 187.16' P.C. 240+14.98 P.T. 242+02.14	(16)	RAMP 4 DETOUR P.I. 224+60.04 Δ = 7°39'58"LT. D = 8°00'00" T = 47.99' L = 95.83' P.C. 224+12.05 P.T. 225+07.88

STATE OF ARKANSAS
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MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 2 & 3

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	65	260

(2) MAINTENANCE OF TRAFFIC DETAILS

PORTER RD. STAGE 4A - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), AND REVERSE CURVE (WI-4b) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS, PRECAST CONCRETE BARRIERS, AND TRAFFIC DRUMS AS SHOWN.

SHIFT LEFT MAIN LANE TRAFFIC INTO THE MEDIAN, AS SHOWN.

REMOVE THE PORTIONS OF THE EXISTING BRIDGE AS SHOWN IN THE BRIDGE PLANS, "DETAILS OF STAGE CONSTRUCTION".

CONSTRUCT THE LEFT MAIN LANES PORTION OF THE PROPOSED BRIDGE OVER PORTER RD. AS SHOWN IN THE BRIDGE PLANS, "DETAILS OF STAGE CONSTRUCTION".

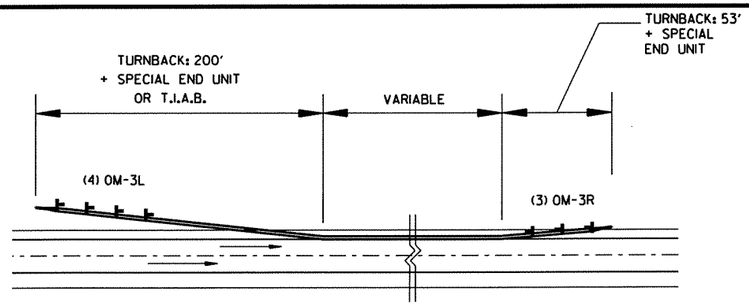
CONSTRUCT LEFT MAIN LANES AND RAMP 4 TO LEFT PAVEMENT EDGE.

PORTER RD. - STAGE 4A ADDITIONAL QUANTITIES

SIGNS = 975 SQ. FT.
TRAFFIC DRUMS = 62 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 3413 LIN. FT.
RELOCATING PRECAST CONCRETE BARRIER = 5459 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 9918 LIN. FT.

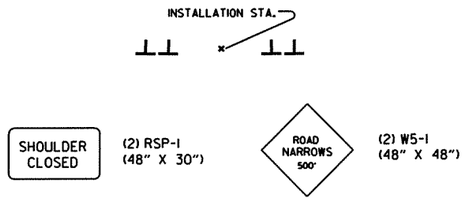
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR PORTER RD. - STAGE 4A IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS PORTER RD. - STAGE 4A SHEETS.

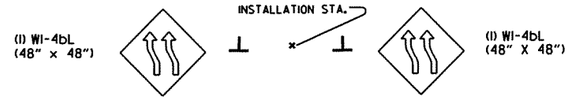


REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF PC.C.B. TURNBACKS.

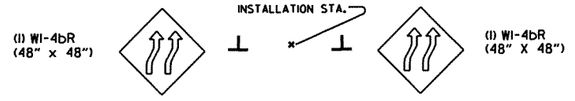
DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 207+90
I-540 L.M.L. - STA. 250+00

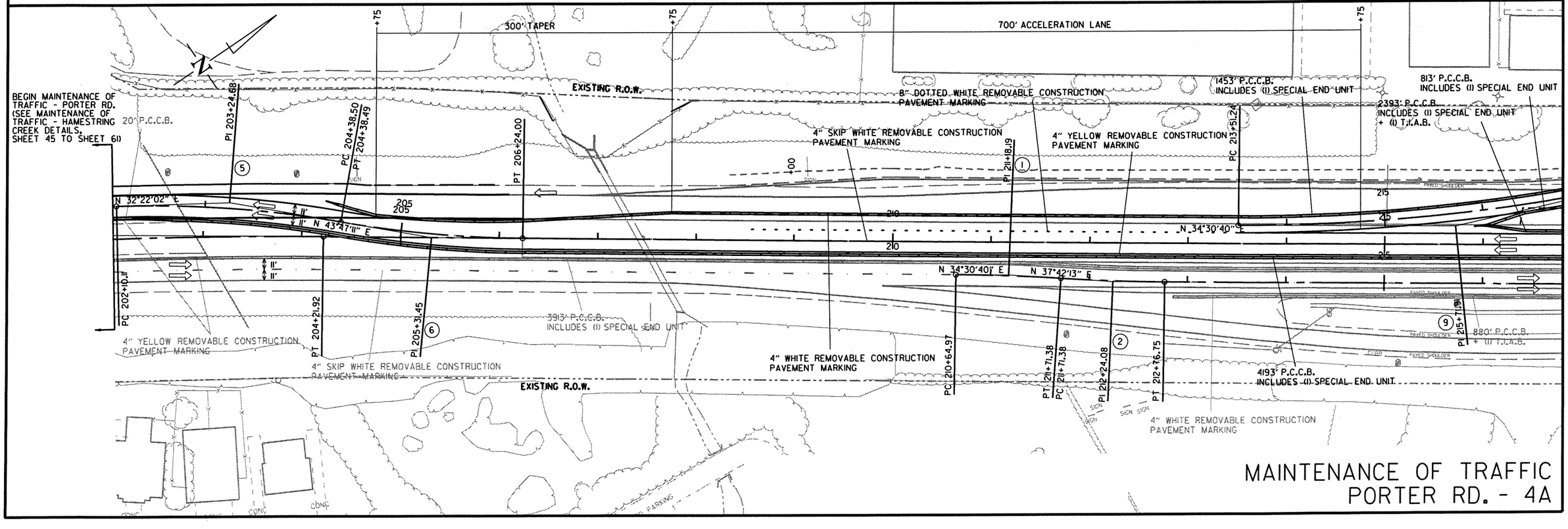


ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 226+68.60
I-540 L.M.L. - STA. 247+02.14



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 205+64.97
I-540 L.M.L. - STA. 211+24.00

STATE OF ARKANSAS
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TRINITY D. SMITH
6-14-13



MAINTENANCE OF TRAFFIC
PORTER RD. - 4A

6/13/2013

R040605.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	66	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

DENOTES FULL DEPTH SHOULDER

EARTHWORK

PAVED PARKING

ROAD CLOSED

(1) R1-2 (48" X 30")

(1) W1-6 (48" X 24")

16' BARR. TYP. W/LT.

200' P.C.C.B. TAPER

PI 226+62.22

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

773' P.C.C.B. INCLUDES (1) SPECIAL END UNIT

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

PT 222+24.13

N 10°15'00" E

80'

PI 225+19.36

PT 227+40.68

N 75°33'38" E

218

PC 228+30.47

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

TRAFFIC DRUMS @ 55' O.C.

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

813' P.C.C.B. INCLUDES (1) SPECIAL END UNIT

PC 217+39.56

PT 217+90.82

N 21°19'27" E

200' P.C.C.B. TAPER

+08

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

2393' P.C.C.B. INCLUDES (1) SPECIAL END UNIT + (1) T.L.A.B.

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

N 34°30'40" E

N 34°32'34" E

PI 219+85.84

BBO' P.C.C.B. + (1) T.L.A.B.

393' P.C.C.B. INCLUDES (1) SPECIAL END UNIT

4193' P.C.C.B. INCLUDES (1) SPECIAL END UNIT

3913' P.C.C.B. INCLUDES (1) SPECIAL END UNIT

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

8" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

PC 231+68.60

PI 232+26.85

CONS.

GATE PAVED

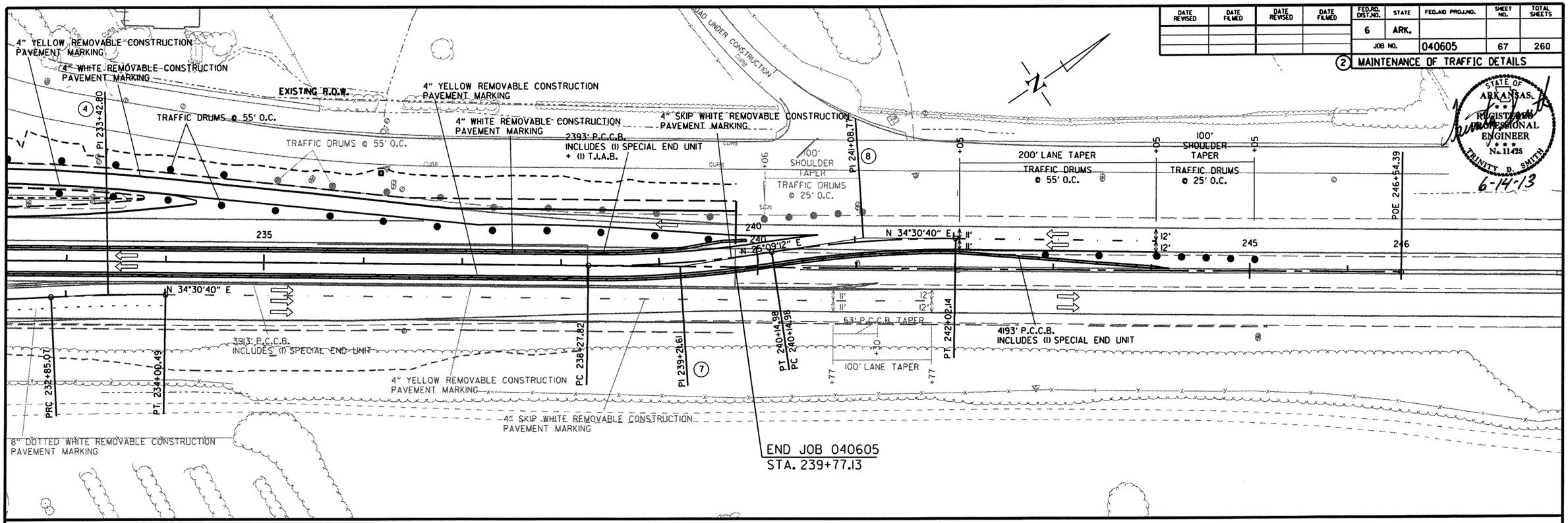
6/13/2013

R040605.DGN

MAINTENANCE OF TRAFFIC PORTER RD. - STAGE 4A

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.		040605	67	260

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

(1) I-540 R.M.L. EAST SHIFT
P.I. 211+18.19
Δ = 3°11'33"RT.
D = 3°00'00"
T = 53.22'
L = 106.42'
P.C. 210+64.97
P.T. 211+71.38

(2) I-540 R.M.L. EAST SHIFT
P.I. 212+24.08
Δ = 3°09'39"LT.
D = 3°00'00"
T = 52.69'
L = 105.36'
P.C. 211+71.38
P.T. 212+76.75

(3) I-540 R.M.L. EAST SHIFT
P.I. 232+26.85
Δ = 3°29'39"LT.
D = 3°00'00"
T = 58.25'
L = 116.47'
P.C. 231+68.60
P.R.C. 232+85.07

(4) I-540 R.M.L. EAST SHIFT
P.I. 233+42.80
Δ = 3°27'45"RT.
D = 3°00'00"
T = 57.73'
L = 115.42'
P.R.C. 232+85.07
P.T. 234+00.49

(5) I-540 L.M.L. MEDIAN SHIFT
P.I. 203+24.68
Δ = 11°25'10"RT.
D = 5°00'00"
T = 114.57'
L = 228.39'
P.C. 202+10.11
P.T. 204+38.49

(6) I-540 L.M.L. MEDIAN SHIFT
P.I. 205+31.45
Δ = 9°16'31"LT.
D = 5°00'00"
T = 92.96'
L = 185.51'
P.C. 204+38.50
P.T. 206+24.00

(7) I-540 L.M.L. MEDIAN SHIFT
P.I. 239+21.61
Δ = 9°21'28"LT.
D = 5°00'00"
T = 93.79'
L = 187.16'
P.C. 238+27.82
P.T. 240+14.98

(8) I-540 L.M.L. MEDIAN SHIFT
P.I. 241+08.77
Δ = 9°21'28"RT.
D = 5°00'00"
T = 93.79'
L = 187.16'
P.C. 240+14.98
P.T. 242+02.14

(9) RAMP 4 - SHIFT
P.I. 215+71.91
Δ = 13°10'53"LT.
D = 3°00'00"
T = 220.66'
L = 439.38'
P.C. 213+51.24
P.T. 217+90.62

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MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 4A

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.		040605	68	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

PORTER RD. STAGE 4B - CONSTRUCTION SEQUENCE

SHIFT RAMP 4 TRAFFIC ONTO RAMP 4 AS SHOWN.

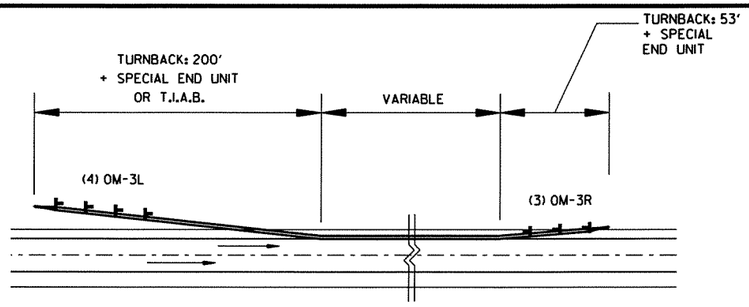
CONSTRUCT FINAL PORTION OF RAMP 4 AND FINISH SLOPES AND CONSTRUCT REMAINING LEFT MAIN LANES.

PORTER RD. - STAGE 4B ADDITIONAL QUANTITIES

SIGNS = 1040 SQ. FT.
TRAFFIC DRUMS = 62 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 680 LIN. FT.
RELOCATING PRECAST CONCRETE BARRIER = 1579 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 2258 LIN. FT.

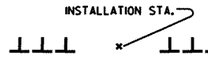
NOTE:

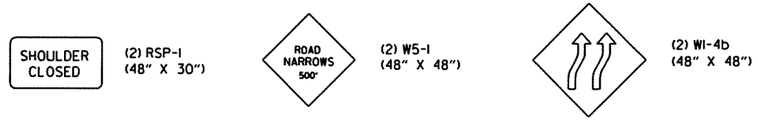
THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR PORTER RD. - STAGE 4B IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS PORTER RD. - STAGE 4B SHEETS.



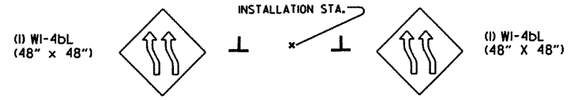
REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

DETAIL OF OBJECT MARKERS AT PRECAST CONCRETE BARRIER TURNBACKS

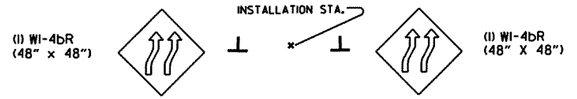




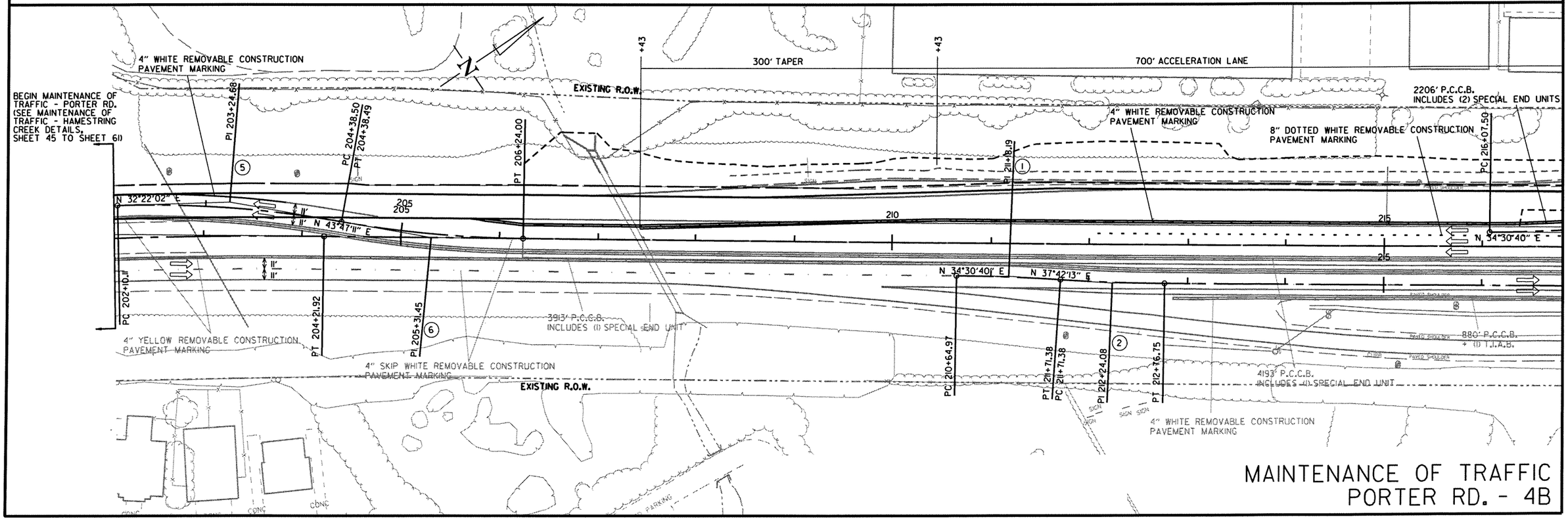
ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 207+90
I-540 L.M.L. - STA. 250+00



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 226+68.60
I-540 L.M.L. - STA. 247+02.14



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 205+64.97
I-540 L.M.L. - STA. 211+24.00



MAINTENANCE OF TRAFFIC
PORTER RD. - 4B

6/13/2013

R040605.DGN

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.		040605	69	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

N

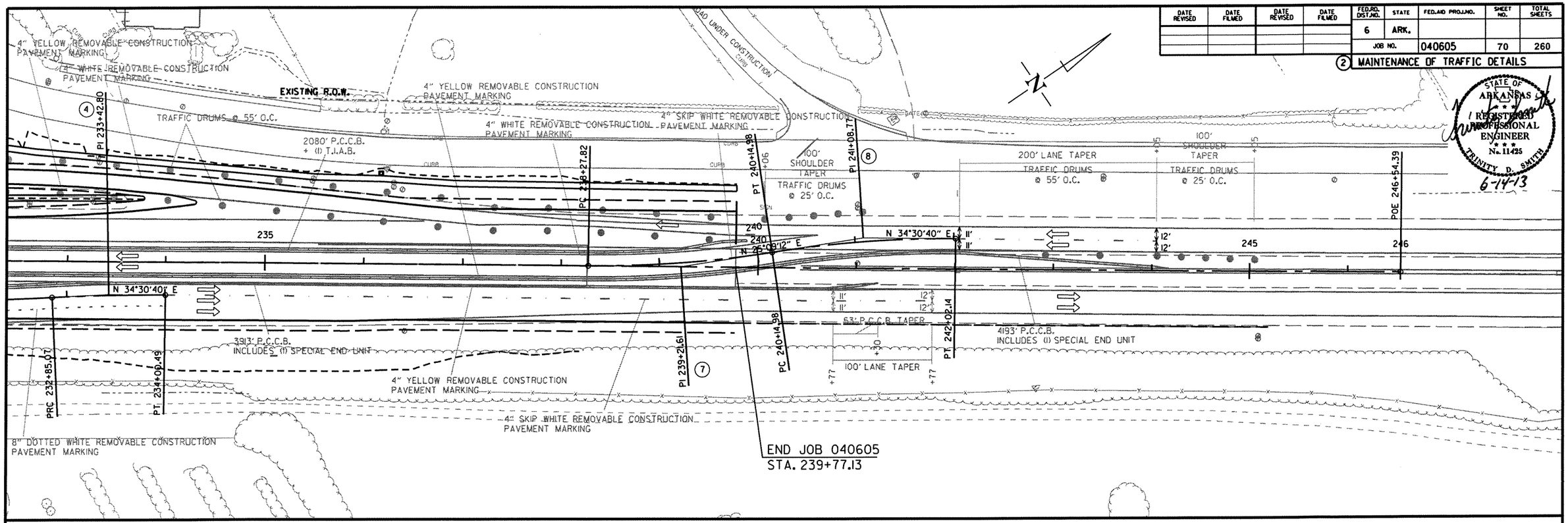
PAVED PARKING
CURB
EARTHWORK
PT 226+62.17
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
2206' P.C.C.B.
INCLUDES (2) SPECIAL END UNITS
200' P.C.C.B. TAPER
+40.68
PT 228+30.47
PARKING
SIGN
225
15%
N 15°43'38" E
228
TRAFFIC DRUMS @ 55' O.C.
700' ACCELERATION LANE
+43
FIELD
EXISTING R.O.W.
PC 217+39.56
PT 218+79.39
POE 220+41.29
220
200'-LANE SHIFT
19+19+235.45
PT 227+40.68
2080' P.C.C.B.
+ (1) T.I.A.B.
N 20°33'01" E
N 34°30'40" E
N 34°32'34" E
230
PI 219+85.84
PI 217+44.08
9
53' P.C.C.B. TAPER
INCLUDES (1) SPECIAL END UNIT
8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
393' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
4193' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
3913' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
8" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
PC 231+68.60
PI 232+26.85
3
CONS.
GATE
PAVED

6/13/2013
R040605.DGN

MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 4B

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.		040605	70	260

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

(1) I-540 R.M.L. EAST SHIFT
P.I. 211+18.19
Δ = 3°11'33"RT.
D = 3°00'00"
T = 53.22'
L = 106.42'
P.C. 210+64.97
P.T. 211+71.38

(2) I-540 R.M.L. EAST SHIFT
P.I. 212+24.08
Δ = 3°09'39"LT.
D = 3°00'00"
T = 52.69'
L = 105.36'
P.C. 211+71.38
P.T. 212+76.75

(3) I-540 R.M.L. EAST SHIFT
P.I. 232+26.85
Δ = 3°29'39"LT.
D = 3°00'00"
T = 58.25'
L = 116.47'
P.C. 231+68.60
P.R.C. 232+85.07

(4) I-540 R.M.L. EAST SHIFT
P.I. 233+42.80
Δ = 3°27'45"RT.
D = 3°00'00"
T = 57.73'
L = 115.42'
P.R.C. 232+85.07
P.T. 234+00.49

(5) I-540 L.M.L. MEDIAN SHIFT
P.I. 203+24.68
Δ = 11°25'10"RT.
D = 5°00'00"
T = 114.57'
L = 228.39'
P.C. 202+10.11
P.T. 204+38.49

(6) I-540 L.M.L. MEDIAN SHIFT
P.I. 205+31.45
Δ = 9°16'31"LT.
D = 5°00'00"
T = 92.96'
L = 185.51'
P.C. 204+38.50
P.T. 206+24.00

(7) I-540 L.M.L. MEDIAN SHIFT
P.I. 239+21.61
Δ = 9°21'28"LT.
D = 5°00'00"
T = 93.79'
L = 187.16'
P.C. 238+27.82
P.T. 240+14.98

(8) I-540 L.M.L. MEDIAN SHIFT
P.I. 241+08.77
Δ = 9°21'28"RT.
D = 5°00'00"
T = 93.79'
L = 187.16'
P.C. 240+14.98
P.T. 242+02.14

(9) I-540 RAMP 4 TEMPORARY SHIFT
P.I. 217+44.08
Δ = 13°35'39"LT.
D = 5°00'00"
T = 136.58'
L = 271.88'
P.C. 216+07.50
P.T. 218+79.38

6/13/2013

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MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 4B

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.		040605	71	260

(2) MAINTENANCE OF TRAFFIC DETAILS

PORTER RD. STAGE 5 - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), AND REVERSE CURVE (W1-4b) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS, PRECAST CONCRETE BARRIERS, AND TRAFFIC DRUMS AS SHOWN.

SHIFT RIGHT MAIN LANE TRAFFIC TO THE MEDIAN, AS SHOWN.

REMOVE THE PORTIONS OF THE EXISTING BRIDGE AS SHOWN IN THE BRIDGE PLANS, "DETAILS OF STAGE CONSTRUCTION".

CONSTRUCT THE RIGHT MAIN LANES PORTION OF THE PROPOSED BRIDGE OVER PORTER RD. AS SHOWN IN THE BRIDGE PLANS, "DETAILS OF STAGE CONSTRUCTION".

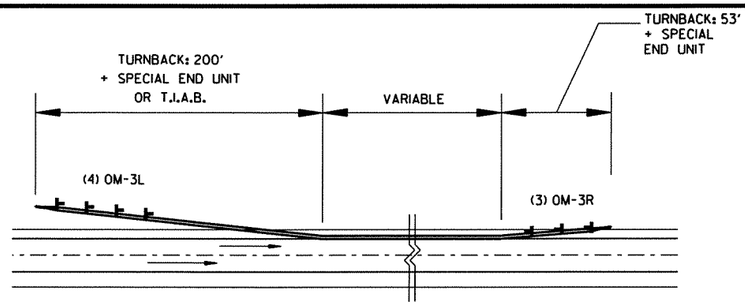
CONSTRUCT THE RIGHT MAIN LANES.

PORTER RD. - STAGE 5 ADDITIONAL QUANTITIES

SIGNS = 839 SQ. FT.
TRAFFIC DRUMS = 71 EACH
RELOCATING PRECAST CONCRETE BARRIER = 2999 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 1183 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 6099 LIN. FT.

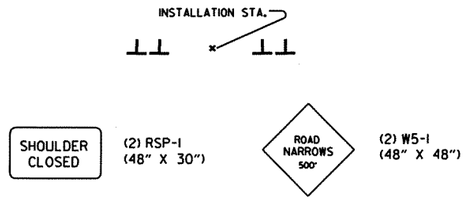
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR PORTER RD. - STAGE 5 IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS PORTER RD. - STAGE 5 SHEETS.

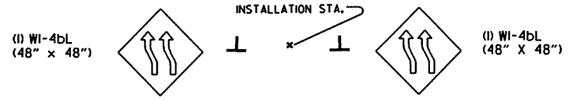


REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

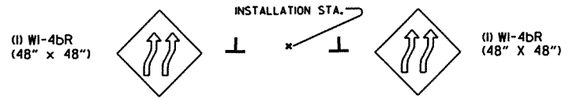
DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 204+90

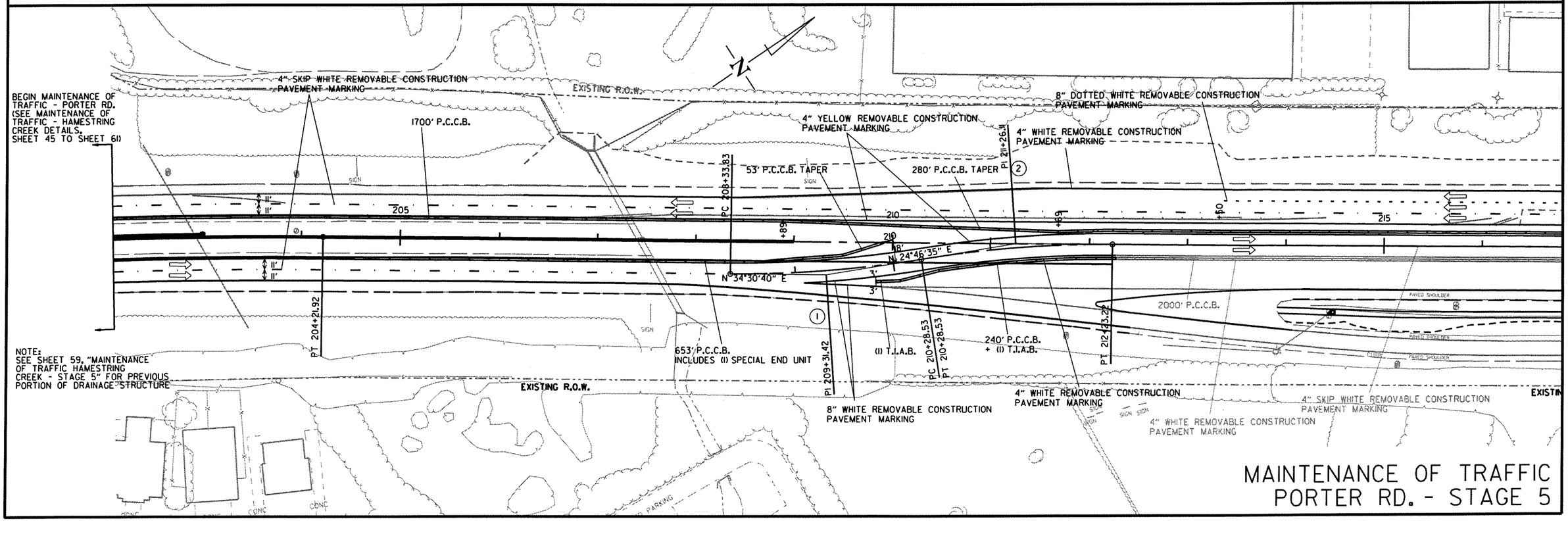


ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 198+33.83



ADVANCE WARNING SIGNS
I-540 R.M.L. - STA. 222+27.96
I-540 L.M.L. - STA. 252+77

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 5

6/13/2013

R040605.DGN

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.		040605	72	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

EARTHWORK

PAVED PARKING

CURB

4" YELLOW CONSTRUCTION PAVEMENT MARKING

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

EXISTING R.O.W.

8" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

1320' P.C.C.B.

353' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" YELLOW CONSTRUCTION PAVEMENT MARKING

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

PI 228+17.12

220

225

230

N 34°30'40" E

2000' P.C.C.B.

1700' P.C.C.B.

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

POB 219+38.89

PC 220+07.82

N 19°28'42" E

PI 221+13.48

PI 221+93.95

N 11°46'03" E

PC 226+41.24

TRAFFIC DRUMS @ 55' O.C.

4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

PI 231+02.12

PC 232+27.36

53' P.C.C.B. TAPER
INCLUDES (1) SPECIAL END UNIT

GATE PAVED

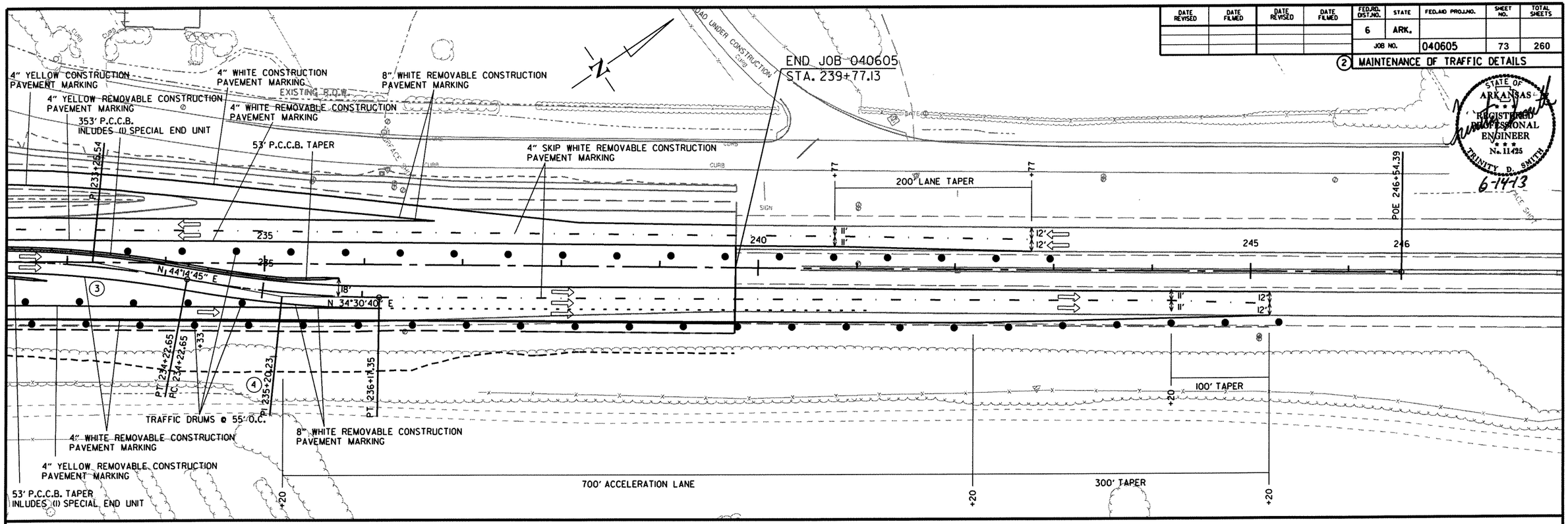
CONS

MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 5

R040605.DGN 6/13/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	73	260

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

(1) I-540 R.M.L. MEDIAN SHIFT
P.I. 209+31.42
Δ = 9°44'05"LT.
D = 5°00'00"
T = 97.58'
L = 194.69'
P.C. 208+33.83
P.T. 210+28.53

(2) I-540 R.M.L. MEDIAN SHIFT
P.I. 211+26.11
Δ = 9°44'05"RT.
D = 5°00'00"
T = 97.58'
L = 194.69'
P.C. 210+28.53
P.T. 212+23.22

(3) I-540 R.M.L. MEDIAN SHIFT
P.I. 233+25.54
Δ = 9°44'05"RT.
D = 5°00'00"
T = 97.58'
L = 194.69'
P.C. 232+27.96
P.T. 234+22.65

(4) I-540 R.M.L. MEDIAN SHIFT
P.I. 235+20.23
Δ = 9°44'05"LT.
D = 5°00'00"
T = 97.58'
L = 194.69'
P.C. 234+22.65
P.T. 236+17.35

6/13/2013

R040605.DGN

MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 5

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.		040605	74	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

PORTER RD. STAGE 6 - CONSTRUCTION SEQUENCE

INSTALL SHOULDER CLOSED (RSP-1), ROAD NARROWS 500' (W5-1), AND REVERSE CURVE (W1-4b) SIGNS AS SHOWN.

INSTALL REMOVABLE CONSTRUCTION PAVEMENT MARKINGS, PRECAST CONCRETE BARRIERS, AND TRAFFIC DRUMS AS SHOWN.

SHIFT TRAFFIC AS SHOWN.

CONSTRUCT THE FINAL PORTIONS OF I-540 AND FINISH THE MEDIAN CONCRETE BARRIER WALL.

UPON THE COMPLETION OF PORTER RD. STAGE 6 AND HAMESTING CREEK STAGE 6, REMOVE THE PRECAST CONCRETE BARRIERS AND PLACE LANE CLOSURE DEVICES AS SHOWN IN THE MAINTENANCE OF TRAFFIC DETAILS WORK ZONE - LANE CLOSURE DETAIL.

COLD MILL MAIN LANES AS SHOWN IN THE TYPICAL SECTIONS AND SPECIAL DETAILS TO A DEPTH OF 2".

PLACE FINAL 2" LIFT OF A.C.H.M SURFACE.

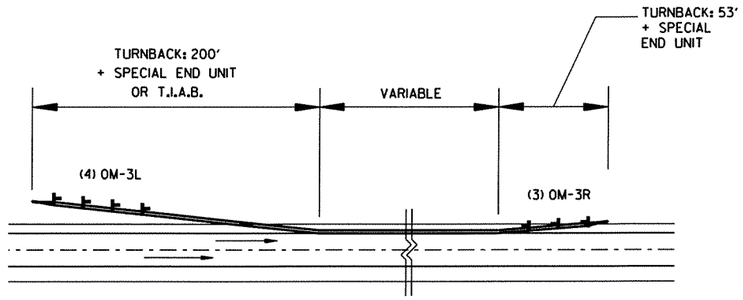
PLACE PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

PORTER RD. - STAGE 6 ADDITIONAL QUANTITIES

SIGNS = 745 SQ. FT.
TRAFFIC DRUMS = 7 EACH
RELOCATING PRECAST CONCRETE BARRIER = 6686 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 4185 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 4470 LIN. FT.

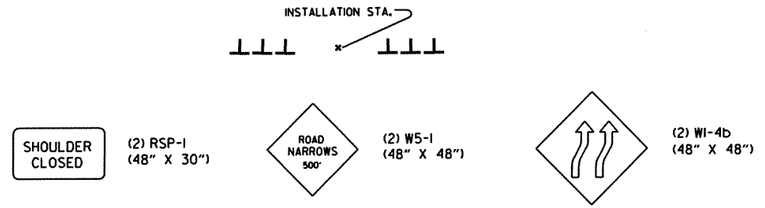
NOTE:

THE CONSTRUCTION PAVEMENT MARKING QUANTITY FOR PORTER RD. - STAGE 6 IS BASED ON A SINGLE APPLICATION OF THE STRIPING SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS PORTER RD. - STAGE 6 SHEETS.

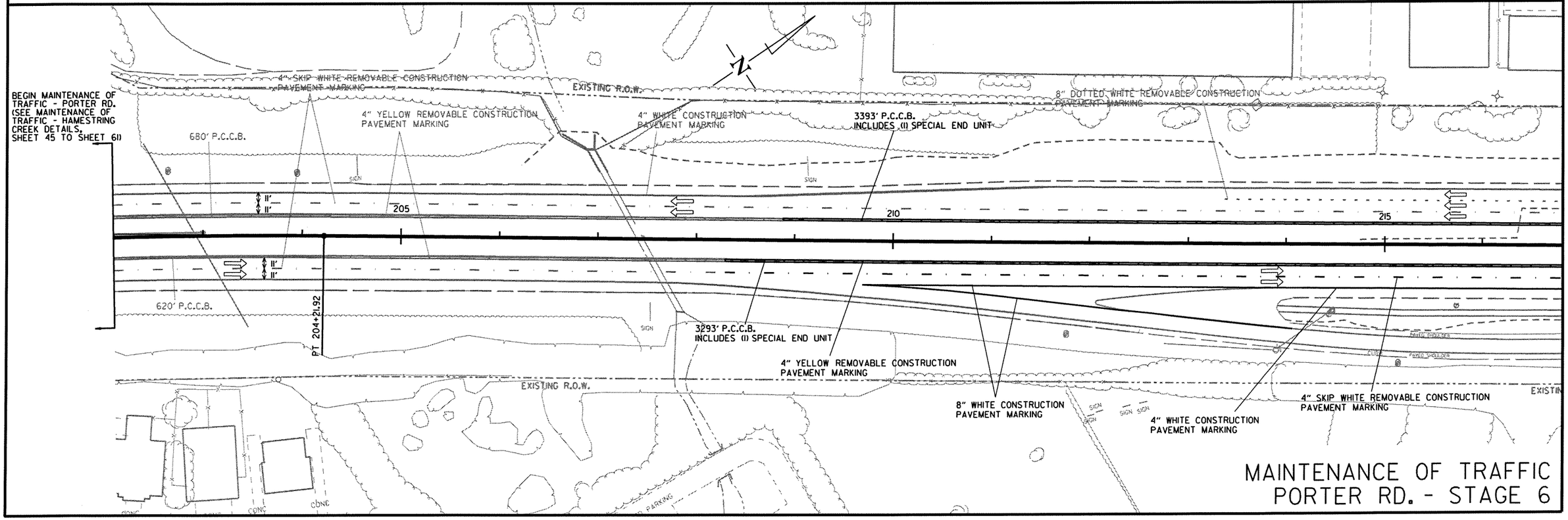


REFER ALSO TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



ADVANCE WARNING SIGNS
I-540 L.M.L. - STA. 248+77



MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 6

6/13/2013

R040605.DGN

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.		040605	75	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

EARTHWORK

PAVED PARKING

CURB

4" YELLOW CONSTRUCTION PAVEMENT MARKING

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

SIGN

EXISTING R.O.W.

8" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

3393' P.C.C.B
INCLUDES (1) SPECIAL END UNIT

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" YELLOW CONSTRUCTION PAVEMENT MARKING

220

225

230

N 34°30'40" E

3293' P.C.C.B
INCLUDES (1) SPECIAL END UNIT

4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" YELLOW CONSTRUCTION PAVEMENT MARKING

8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

8" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

TING R.O.W.

CONC.

GATE

PAVED

6/13/2013

R040605.DGN

MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 6

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.		040605	76	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

PAVED PARKING
CURB
SIGN
4" YELLOW CONSTRUCTION PAVEMENT MARKING
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" WHITE CONSTRUCTION PAVEMENT MARKING
EXISTING R.O.W.
8" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
3393' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
ROAD UNDER CONSTRUCTION
END JOB 040605
STA. 239+77.13
235
240
245
246
+77
200' LANE/P.C.C.B. TAPER
TRAFFIC DRUMS @ 55' O.C.
100' SHOULDER TAPER
TRAFFIC DRUMS @ 25' O.C.
POE 246+54.39
11'
12'
18'
3293' P.C.C.B.
INCLUDES (1) SPECIAL END UNIT
8" DOTTED WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" WHITE CONSTRUCTION PAVEMENT MARKING
4" SKIP WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING
4" YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
53' P.C.C.B. TAPER
+30
100' LANE TAPER

MAINTENANCE OF TRAFFIC
PORTER RD. - STAGE 6

6/13/2013
R040605.DGN

PERMANENT PAVEMENT MARKING

HIGH PERFORMANCE PAVEMENT MARKINGS
- 4" YELLOW = 18935 LIN. FT.
- 4" WHITE = 18338 LIN. FT.
- 4" WHITE SKIPS = 6128 LIN. FT.
- 8" WHITE = 3060 LIN. FT.

HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS
- 4" WHITE SKIPS = 293 LIN. FT.

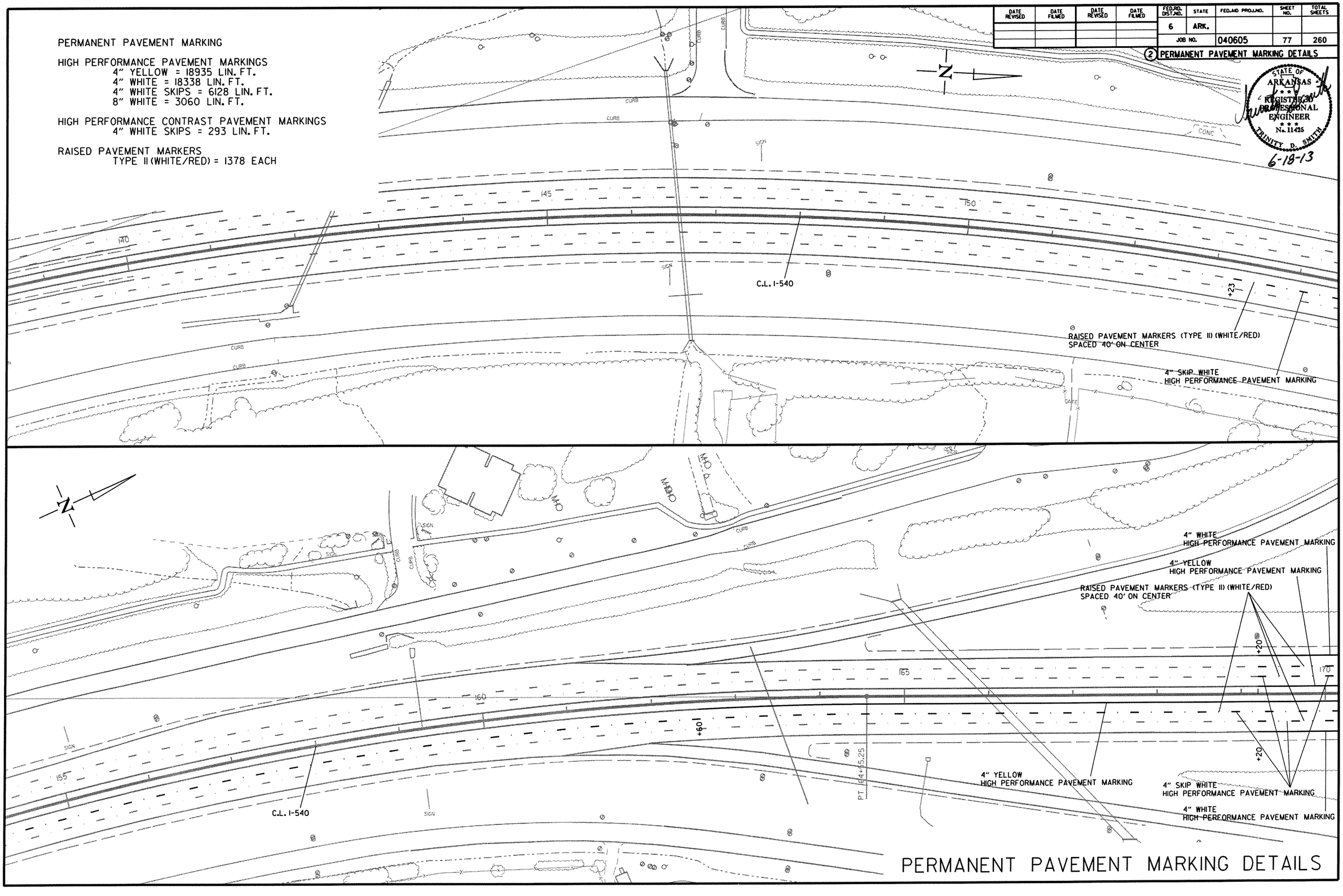
RAISED PAVEMENT MARKERS
- TYPE II (WHITE/RED) = 1378 EACH

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.		040605	77	260

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-18-13



PERMANENT PAVEMENT MARKING DETAILS

6/18/2013

R040605.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	78	260

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-18-13

BEGIN JOB 040605
STA. 171+50

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 40' ON CENTER

C.L. I-540

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

EXISTING R.O.W.

PAVED PARKING

PAVED PARKING

N 21°62'35" E

PERMANENT PAVEMENT MARKING DETAILS

6/18/2013

R040605.DGN

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.		040605	79	260

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-18-13

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

EARTHWORK

EXISTING R.O.W.

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

PI 198+91.72

185 190 195 200

C.L. I-540

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

PC 193+58.46

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

8" DOTTED WHITE HIGH PERFORMANCE PAVEMENT MARKING

EXISTING R.O.W.

EXISTING R.O.W.

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 40' ON CENTER

PARKING

CONC

CURB

RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 80' ON CENTER

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

EXISTING R.O.W.

RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 40' ON CENTER

PT 204+21.92

+66.53

+66.53

300' TAPER

700' ACCELERATION LANE

8" DOTTED WHITE HIGH PERFORMANCE PAVEMENT MARKING

200 205 210 215

C.L. I-540

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

EXISTING R.O.W.

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 40' ON CENTER

PERMANENT PAVEMENT MARKING DETAILS

6/18/2013

R040605.DGN

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.		040605	80	260

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-18-13

8" DOTTED WHITE HIGH PERFORMANCE PAVEMENT MARKING

700' ACCELERATION LANE

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" SKIP WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING (ON BRIDGE AND APPROACH SLABS)

RAISED PAVEMENT MARKERS (TYPE 3)(WHITE/RED) SPACED 40' ON CENTER

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

700' ACCELERATION LANE

EXISTING R.O.W.

C.L. I-540

PAVED PARKING

CONC PARKING

CURB

PAVED SHOULDER

SIGN

RETAINING WALL

EARTHWORK

PARKING

6/18/2013

R040605.DGN

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	81	260

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-18-13

PAVED PARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

EXISTING R.O.W.

180' LANE ADDITION TAPER

ROAD UNDER CONSTRUCTION

END JOB 040605
STA. 239+77.13

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

C.L. I-540

8" DOTTED WHITE HIGH PERFORMANCE PAVEMENT MARKING

RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 40' ON CENTER

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

840' LANE DROP TAPER

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

700' ACCELERATION LANE

300' TAPER

6/18/2013

R040605.DGN

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	82	260

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-18-13

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1A	STAGE 1B	HAMESTRING CREEK					PORTER ROAD					END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	HIGH PERFORMANCE CONTRAST PAVEMENT MARKING	HIGH PERFORMANCE PAVEMENT MARKING		
			STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 2 & 3	STAGE 4A	STAGE 4B	STAGE 5	STAGE 6						TYPE II (WHITE/RED)	4" WHITE	WHITE 4"	WHITE 8"	YELLOW 4"
	LIN. FT. - EACH													LIN. FT.		LIN. FT.		EACH	LIN. FT.	LIN. FT.		
REMOVAL OF PERMANENT PAVEMENT MARKINGS	3158			1854	735			6785						12532								
CONSTRUCTION PAVEMENT MARKINGS				1891	1685	2307	1955	14010			6099	4470			32417							
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS					1149											1149						
REMOVABLE CONSTRUCTION PAV'T MARKINGS	9284	4246	8149	3428	3913	3173	6194	5083	9918	2258	11183	4185					71014					
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)													1378					1378				
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")													293						293			
HIGH PERFORMANCE PAVEMENT MARKING WHITE (4")													24466							24466		
HIGH PERFORMANCE PAVEMENT MARKING WHITE (8")													3060								3060	
HIGH PERFORMANCE PAVEMENT MARKING YELLOW (4")													18935									18935
TOTALS:														12532	32417	1149	71014	1378	293	24466	3060	18935

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1A	STAGE 1B	HAMESTRING CREEK					PORTER ROAD					END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	ADVANCE WARNING ARROW PANEL	PORTABLE CHANGEABLE MESSAGE SIGN
					STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 2 & 3	STAGE 4A	STAGE 4B	STAGE 5	STAGE 6			NO.	SQ. FT.	EACH	RIGHT	LEFT	LIN. FT.		EACH		DAY	WEEK
			LIN. FT. - EACH																								
W20-1	ROAD WORK 1 MILE	48"x48"	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	64.0									
W20-1	ROAD WORK 1/2 MILE	48"x48"	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	64.0									
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	64.0									
W20-1	ROAD WORK AHEAD	48"x48"	6	4	4	4	4	4	4	4	4	4	4	4	8	8	8	128.0									
G20-2	END ROAD WORK	48"x24"	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	64.0									
SPECIAL 1	MERGE NOW + ARROW	48"x48"	1												2	2	2	32.0									
W20-5	RIGHT LANE CLOSED 1 MILE	48"x48"	2												4	4	4	64.0									
W20-5	RIGHT LANE CLOSED 1/2 MILE	48"x48"	2												4	4	4	64.0									
W20-5	RIGHT LANE CLOSE 1500 FT.	48"x48"	2												4	4	4	64.0									
W4-2R	RIGHT LANE CLOSIGN GRAPHIC	48"x48"	2												4	4	4	64.0									
R11-2	ROAD CLOSED	48"x30"			1					1	1					1	1	10.0									
OM-3L	OBJECT MARKER	12"x36"	12	20	4	8	8	4	4	16	16	16	8	4		20	20	60.0									
OM-3R	OBJECT MARKER	12"x36"	9	16	3	12	12	3	3	12	9	12	9	3		16	16	48.0									
W1-6	LARGE ARROW	48"x24"	6		1					1	1				12	12	12	96.0									
R4-1	DO NOT PASS	48"x60"	4												8	8	8	40.0									
RSP-1	SHOULDER CLOSED	48"x30"	2	4	2	2	2	2	2	4	4	4	2	2		4	4	80.0									
R55-1	FINES DOUBLE IN WORK ZONES	36"x60"	6	4	4	4	4	4	4	4	4	4	4	4	4	6	6	90.0									
R2-1	SPEED LIMIT 55 MPH	48"x60"	6	4	4	4	4	4	4	4	4	4	4	4	4	6	6	120.0									
R2-1	SPEED LIMIT 65 MPH	48"x60"	6	4	4	4	4	4	4	4	4	4	4	4	4	6	6	120.0									
R2-5a	REDUCED SPEED AHEAD	48"x60"	6	4	4	4	4	4	4	4	4	4	4	4	4	6	6	120.0									
W5-1	ROAD NARROWS 500'	48"x48"	2	4	2	2	2	2	2	4	4	4	2	2		4	4	64.0									
W1-4bR	DOUBLE REVERSE CURVE RT.	48"x48"			2	6	6	2	2	4	4	8	4	2		8	8	128.0									
W1-4bL	DOUBLE REVERSE CURVE LT.	48"x48"	2	4		6	6			4	4	4	2			6	6	96.0									
W6-3	TWO WAY TRAFFIC GRAPHIC	48"x48"				2	2									2	2	32.0									
	TRAFFIC DRUMS		320	19	21	40	39				62	62	71	7	503	503			503								
	TYPE III BARRICADE-RT. (24')				1											1				24							
	TYPE III BARRICADE-LT. (16')									1	1					1					16						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		6711	3725						7360	3413	680				21889						21889					
	RELOCATING PRECAST CONCRETE BARRIER				6253	2032	2219	2200	73	4118	5459	1579	2999	6686		33618							33618				
	TEMPORARY IMPACT ATTENUATION BARRIER		1	1	1				1	2	1		1			3								3			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		1	1	1				1	2	1		1			3									3		
	ADVANCE WARNING ARROW PANEL		1												2	2										840	
	PORTABLE CHANGEABLE MESSAGE SIGN		2	2	2	2	2	2	2	2	2	2	2	2	2	2											120
TOTALS:																	1776.0		503	24	16	21889	33618	3	3	840	120

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

6/18/2013

R040605.DGN

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.		040605	83	260

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
194+00	197+00	LT. & RT. OF I-540	3	3
206+00	208+00	LT. OF I-540	2	2
226+00	240+00	RT. OF I-540	14	14
TOTALS:			19	19

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	WIRE ROPE SAFETY FENCE	GUARDRAIL
			LIN. FT.	LIN. FT.
171+50	176+00	LT. OF R.M.L.		450
171+50	177+75	RT. OF L.M.L.		625
175+15	220+67	MEDIAN I-540	4552	
206+24	209+00	LT. OF L.M.L.		275
226+75	240+15	MEDIAN I-540	1340	
TOTALS:			5892	1350

NOTE: PAYMENT FOR REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS	DROP INLETS
		EACH	EACH	EACH
194+92	MEDIAN I-540			1
194+92	DBL. 10' x 8' x 180' R.C. BOX CULVERT		1	
214+51	RT. OF R.M.L.			1
215+02	MEDIAN I-540, REMOVE 4' OF PIPE OUTLET	1		1
223+21	LT. OF L.M.L.	1		1
221+89	RT. OF R.M.L.	1		1
227+02	MEDIAN I-540, REMOVE 4' OF PIPE OUTLET	1		1
TOTALS:		4	1	6

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
206+39	207+92	LT. OF L.M.L.	205
TOTAL:			205

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
222+12	BRIDGE END	1
TOTAL:		1

NOTE: SHOWN FOR INFORMATION ONLY. BENCH MARKS SHALL BE FURNISHED AND PLACED BY STATE FORCES.

WIRE ROPE SAFETY FENCE

STATION	LOCATION	END TERMINAL
		EACH
240+15	MEDIAN I-540	1
TOTAL:		1

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	STAGE 1A						1.26	1.26	25.7	902	42	198	4106			214
ENTIRE	PROJECT	STAGE 1B										9		2919			111
ENTIRE	PROJECT	HAMESTRING CREEK - STAGE 3						0.40	0.40	8.2				536			20
ENTIRE	PROJECT	HAMESTRING CREEK - STAGE 4						0.40	0.40	8.2				616			23
ENTIRE	PROJECT	HAMESTRING CREEK - STAGE 5						0.30	0.30	6.1			66				
ENTIRE	PROJECT	PORTER RD. - STAGE 2 &3						0.60	0.60	12.2		3		390			
ENTIRE	PROJECT	PORTER RD. - STAGE 4A						1.56			220	3	66	225			
ENTIRE	PROJECT	PORTER RD. - STAGE 4B						2.01						1826			
ENTIRE	PROJECT	PORTER RD. - STAGE 5						2.88			198	6	22	1910			
ENTIRE	PROJECT	PORTER RD. - STAGE 6															
ENTIRE	PROJECT	I-540 PERMANENT SEEDING	5.65	11.30	5.65	576.3	5.65										
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.								2.35	2.35	47.9	330	16	88	3132	133	133	253
																	11
TOTALS:			5.65	11.30	5.65	576.3	5.65	11.76	5.31	108.3	1650	79	440	15660	133	133	632

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

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

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

6/13/2013

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	84	260

(2) QUANTITIES

STATE OF ARKANSAS
TRINITY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11425
6-14-13

CRASH CUSHION

STATION	DESCRIPTION	EACH
239+77.13	C.L. I-540	1
TOTAL:		1

NOTE: THE CRASH CUSHION SHALL BE NON-GATING AND REDIRECTIVE AND COMPATIBLE WITH THE SITE GEOMETRY SHOWN ON THE PLANS.

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
				CU. YD.	
	ENTIRE	PROJECT	I-540, MAIN LANES	12438.2	16951.9
	ENTIRE	PROJECT	RAMP 2	416.1	1508.6
	ENTIRE	PROJECT	RAMP 3	860.3	12.5
	ENTIRE	PROJECT	RAMP 4	583.9	5542.9
	ENTIRE	PROJECT	RAMP 4 DETOUR	912.5	2330.1
	ENTIRE	PROJECT	I-540, HAMESTRING CREEK TEMP. WIDENING WEST	1191.4	1843.8
	ENTIRE	PROJECT	I-540, HAMESTRING CREEK TEMP. WIDENING EAST	1104.8	539.5
	ENTIRE	PROJECT	BRIDGE EXCAVATION	8400	
	ENTIRE	PROJECT	CROSSOVERS	2558.0	439.7
	ENTIRE	PROJECT	SHOULDER RECONSTRUCTION	2693.2	
	194+59.89	197+00.69	CHANNEL CHANGE	6797.76	3494.05
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE	500	500
			DIRECTED BY THE ENGINEER		
TOTALS:				38456.16	33163.05

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

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

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
213+90	219+43	RT. OF R.M.L. I-540	550.00	6	366.67	244.44	3.08
219+59	223+26	LT. OF L.M.L. I-540	372.57	6	248.38	165.59	2.09
224+63	228+83	RT. OF R.M.L. I-540	434.50	6	289.67	193.11	2.43
230+08	233+77	LT. OF L.M.L. I-540	367.40	6	244.93	163.29	2.06
227+83	228+43	RT. OF RAMP 3	65.00	6	43.33	28.89	0.36
228+17	239+77	LT. OF RAMP 3	1117.40	6	744.93	496.62	6.26
TOTALS:					1937.91	1291.94	16.28

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

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
218+24.17	220+92.92	RT. SIDE OF RT. MAIN LANES	200	1	1
227+22.08	230+90.83	LT. SIDE OF LT. MAIN LANES	300	1	1
TOTALS:			500	2	2

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
191+85	194+85	MEDIAN I-540, LT. OF C.L.	300	
191+85	194+85	MEDIAN I-540, RT. OF C.L.	300	
194+85	195+92	MEDIAN I-540, LT. OF C.L.	107	
194+85	195+92	MEDIAN I-540, RT. OF C.L.	107	
195+92	197+30	MEDIAN I-540, LT. OF C.L.	138	
195+92	197+30	MEDIAN I-540, RT. OF C.L.	138	
197+30	200+00	MEDIAN I-540, LT. OF C.L.	270	
197+30	200+00	MEDIAN I-540, RT. OF C.L.	270	
200+00	203+00	MEDIAN I-540, LT. OF C.L.	300	
200+00	203+00	MEDIAN I-540, RT. OF C.L.	300	
203+00	206+00	MEDIAN I-540, LT. OF C.L.	300	
203+00	206+00	MEDIAN I-540, RT. OF C.L.	300	
207+43	210+43	MEDIAN I-540, LT. OF C.L.	300	
207+43	210+43	MEDIAN I-540, RT. OF C.L.	300	
* ENTIRE PROJECT TO BE USED IF AND			3500	14
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			6930	14

* NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

UNDERDRAINS SHALL BE STUBBED INTO THE PROPOSED DROP INLET IF AND WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS TO BE INCLUDED IN THE UNIT PRICE BID FOR 4" PIPE UNDERDRAIN.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
171+50.00	194+59.89	I-540 L.M.L.	0.5	128.33
197+00.69	206+23.95	I-540 L.M.L.	34	3487.87
206+23.95	208+23.95	I-540 L.M.L.	24	533.33
237+77.13	239+77.13	I-540 L.M.L.	24	533.33
171+50.00	191+33.46	I-540 R.M.L.	6	1322.31
191+33.46	194+59.89	I-540 R.M.L.	12	435.24
197+00.69	212+23.95	I-540 R.M.L.	28	4739.03
212+23.95	214+23.95	I-540 R.M.L.	24	533.33
230+26.75	232+26.75	I-540 R.M.L.	30	666.67
232+26.75	239+77.13	I-540 R.M.L.	30	2501.27
239+77.13	243+27.13	I-540 R.M.L. TRANSITION	9	350.00
212+23.95	215+73.95	I-540 R.M.L., MAINTANENCE OF TRAFFIC	9	350.00
228+76.75	232+26.75	I-540 R.M.L., MAINTANENCE OF TRAFFIC	9	350.00
225+00.00	226+00.00	RAMP 2 TRANSITION	15	166.67
230+29.93	231+29.93	RAMP 3 TRANSITION	26.25	291.67
225+62.61	226+62.61	RAMP 4 TRANSITION	15	166.67
TOTAL:				16555.72

NOTE: SEE SPECIAL DETAILS

6/13/2013

R040605.DGN

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.		040605	85	260

(2) QUANTITIES

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE A)	* 16'-0" GATES
			LIN. FT.	EACH
194+06.22	194+58.71	RT. OF R.M.L.	61	1
195+57.25	195+58.22	RT. OF R.M.L.	35	
196+07.82	196+09.12	LT. OF L.M.L.	69	
197+00.71	197+94.85	LT. OF L.M.L.	111	1
206+39.00	206+87.00	LT. OF L.M.L.	48	
206+96.00	207+93.00	LT. OF L.M.L.	109	1
TOTALS:			433	3

* DENOTES ALTERNATE BID ITEM.

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
162+60.00	239+77.13	R.M.L. INSIDE SHOULDER	7330.13
171+50.00	239+77.13	L.M.L. INSIDE SHOULDER	6440.13
194+59.89	239+77.13	L.M.L. OUTSIDE SHOULDER	4130.24
194+59.89	239+77.13	R.M.L. OUTSIDE SHOULDER	4130.24
TOTAL:			22030.74

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	100
ENGINEER	
TOTAL:	100

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

APPROACH GUTTERS AND SLABS

STATION	LOCATION	APPROACH GUTTER (TYPE SPECIAL I)	APPROACH SLABS (TYPE SPECIAL I)	REINFORCING STEEL RDWY. (GR 60)	AGGREGATE BASE CRS. (CLASS 7)
		CU.YD.	CU.YD.	POUND	TON
222+11.92	I-540 MAIN LANES, APPROACH SLAB		330.80	38430	302.25
222+11.92	I-540 MAIN LANES, APPROACH GUTTTERS	37.50		2288	
226+03.08	I-540 MAIN LANES, APPROACH SLAB		330.80	38430	302.25
226+03.08	I-540 MAIN LANES, APPROACH GUTTTERS	37.50		2288	
TOTALS:		75.00	661.60	81436	604.5

NOTE: USE T =24.5" FOR 10' SHOULDER.

CONCRETE BARRIER WALL

STATION	STATION	LOCATION	MEDIAN TYPE C	MEDIAN TYPE SPECIAL
			LIN.FT.	LIN.FT.
171+50.00	173+25.25	MEDIAN I-540	175.25	
173+25.25	175+70.25	MEDIAN I-540		245.00
175+70.25	239+77.13	MEDIAN I-540	6406.88	
TOTALS:			6582.13	245.00

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
196+00	GROUT TEMP. PIPE INTO END OF EXISTING R.C. BOX	7
215+02	FILL AND ABANDON MEDIAN DRAIN	9
227+02	FILL AND ABANDON MEDIAN DRAIN	11
TOTAL:		27

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III)	FLARED END SECTIONS FOR R.C. PIPE CULVERTS	TEMPORARY PIPE CULVERTS		DROP INLETS	MODIFY DROP INLETS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
						TYPE										
		24"	24"	18"	60"	ST										
		LIN. FT.	EACH	LIN. FT.		EACH		LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL	
	I-540 - MAIN LANES															
182+26	MODIFY TYPE R D.I.						1									SPECIAL DETAIL
188+47	MODIFY TYPE R D.I.						1									SPECIAL DETAIL
194+85	D.I. 2.5' LT. OF C.L. W/ PIPE OUTLET	106				1										FPC-9S, PCC-1
195+92	D.I. 2.5' LT. OF C.L. W/ OUTLET IN TOP OF R.C. BOX					1										FPC-9S, PCC-1
197+30	D.I. 2.5' LT. OF C.L. W/ PIPE INLET & OUTLET	136				1										FPC-9S, PCC-1
200+00	D.I. 2.5' LT. OF C.L. W/ PIPE INLET & OUTLET	268				1										FPC-9S, PCC-1
203+00	D.I. 2.5' LT. OF C.L. W/ PIPE OUTLET	298				1										FPC-9S, PCC-1
207+43	EXTEND 6' x 6' R.C. BOX 26' LT., MODIFY TYPE T D.I.						1	6	6	28.67	26.93	4314	16.04	106.06	1.34	R-130X-0, W-X30, W-X303-1, PCB-1, RCB-1, RCB-2, RCB-3, SPECIAL DETAIL
214+48	D.I. 65.25' RT. OF C.L.	4				1										FPC-9S, PCC-1
236+17	ADJUST TYPE R D.I. AND MODIFY TO TYPE ST						1									FPC-9S
192+30	TEMPORARY PIPE CULVERT FOR MAINTENANCE OF TRAFFIC			380												
196+00	TEMPORARY PIPE CULVERT FOR MAINTENANCE OF TRAFFIC				60											
199+12	TEMPORARY PIPE CULVERT FOR MAINTENANCE OF TRAFFIC			340												
223+55.13	MODIFICATIONS TO R.C. BOX CULVERT										38.10	10170				SPECIAL DETAIL
	I-540 - RAMP 3															
230+09	D.I. W/ OUTLET & F.E.S.	172	1			1								8.00	0.10	FES-1, FES-2, FPC-9S, PCC-1
	I-540 - RAMP 4															
222+87	EXTEND QUAD. 5' x 3' R.C. BOX 28' RT.							5	3	29.83	44.72	12555	28.64	108.58	1.37	R430X-1, W-X30, W-X303-1, PCB-1, RCB-1, RCB-2, RCB-3
SUBTOTALS:		984	1	720	60	7	4				109.75	27039	44.68	222.64	2.81	
	I-540 MAIN LANES - STRUCTURES OVER 20' - 0" SPAN															
196+00	CONSTRUCT QUINT. 10' x 8' x 223' R.C. BOX							10	8	223	1022.00	193050	483.76	26.41	0.33	SPECIAL DETAILS, PCB-1, RCB-1, RCB-2
SUBTOTALS:											1022.00	193050	483.76	26.41	0.33	
TOTALS:		984	1	720	60	7	4				1131.75	220089	528.44	249.05	3.14	

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

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

6/13/2013

R040605.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/9/13				6	ARK.			
				JOB NO.		040605	86	260

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-9-13

BASE AND SURFACING (BOX 1 OF 2)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						ACHM BASE COURSE (1 1/2")					ACHM BINDER COURSE (1")					ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	(0.10 GAL. PER SQ. YD.)			(0.03 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	TOTAL PG 70-22	TOTAL PG 76-22
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	TON	FEET			TON	TON	FEET			TON	TON							
I-540 RIGHT MAIN LANES																																	
171+50.00	194+59.89	NOTCH AND WIDEN INTO THE MEDIAN	2309.9	88.25	2038.5	12.0	3079.9	307.99	88.0	22585.7	677.57	985.6	19.0	4876.5	880.0		2145.7	19.0	4876.5	495.0		1206.9	19.0	4876.5	220.0		536.4	31.0	7956.3	220.0		875.2		1411.6
194+59.89	197+00.69	FULL DEPTH - SUPERELEVATION	240.8	432.50	1041.5				182.9	4893.6	146.81	146.8	46.0	1230.8	880.0		541.6	45.5	1217.4	495.0		301.3	45.3	1212.0	220.0		133.3	53.0	1418.0	220.0		156.0		289.3
197+00.69	207+81.53	NOTCH AND WIDEN INTO THE MEDIAN	1080.8	98.50	1064.6	12.0	1441.1	144.11	110.0	13209.8	396.29	540.4	19.0	2281.7	880.0		1003.9	19.0	2281.7	495.0		564.7	19.0	2281.7	220.0		251.0	53.0	6364.7	220.0		700.1		951.1
207+81.53	213+90.90	NOTCH AND WIDEN ON LT. AND RT. - RAMP 1 GORE AREA	609.4	315.75	1924.2	24.0	1625.1	162.51	100.0	6771.1	203.13	365.6	19.0	1286.5	880.0		566.1	19.0	1286.5	495.0		318.4	19.0	1286.5	220.0		141.5	VAR.	3469.0	220.0		381.6		523.1
213+90.90	216+73.70	NOTCH AND WIDEN ON LT. AND RT.	282.8	88.25	249.6	VAR.	1296.1	129.61	100.0	3142.2	94.27	223.9	19.0	597.0	880.0		262.7	19.0	597.0	495.0		147.8	19.0	597.0	220.0		65.7	53.0	1665.4	220.0		183.2		248.9
216+73.70	221+40.85	FULL DEPTH	467.1	428.00	1999.2				182.9	9492.5	284.78	284.8	46.0	2387.4	880.0		1050.5	45.5	2361.5	495.0		584.5	45.3	2351.1	220.0		258.6	53.0	2750.7	220.0		302.6		561.2
226+04.33	227+70.00	FULL DEPTH	165.7	428.00	709.2				182.9	3367.4	101.02	101.0	46.0	846.9	880.0		372.6	45.5	837.7	495.0		207.3	45.3	834.0	220.0		91.7	53.0	975.8	220.0		107.3		199.0
227+70.00	229+76.74	NOTCH AND WIDEN ON LT. AND RT.	206.7	315.75	652.7	24.0	551.2	55.12	100.0	2296.7	68.90	124.0	19.0	436.4	880.0		192.0	19.0	436.4	495.0		108.0	19.0	436.4	220.0		48.0	53.0	1217.2	220.0		133.9		181.9
229+76.74	230+18.98	NOTCH AND WIDEN ON LT. AND RT.	42.2	315.75	133.2	42.0	196.9	19.69	112.0	525.2	15.76	35.5	19.0	89.1	880.0		39.2	19.0	89.1	495.0		22.1	19.0	89.1	220.0		9.8	VAR.	300.1	220.0		33.0		42.8
230+18.98	232+26.75	NOTCH AND WIDEN ON LT. AND RT.	207.8	315.75	656.1	36.0	831.2	83.12	112.0	2568.0	77.58	160.7	19.0	438.7	880.0		193.0	19.0	438.7	495.0		108.6	19.0	438.7	220.0		48.3	65.0	1500.8	220.0		165.1		213.4
232+26.75	236+77.13	NOTCH AND WIDEN ON LT. AND RT.	450.4	315.75	1422.1	12.0	600.5	60.05	112.0	5605.0	168.15	228.2	19.0	950.8	880.0		418.4	19.0	950.8	495.0		235.3	19.0	950.8	220.0		104.6	65.0	3252.9	220.0		357.8		462.4
236+77.13	239+77.13	NOTCH AND WIDEN ON LT. AND RT.	300.0	352.00	1056.0	12.0	400.0	40.00	105.4	3513.3	105.40	145.4	26.5	883.3	880.0		388.7	26.3	876.7	495.0		217.0	26.1	870.0	220.0		95.7	65.0	2166.7	220.0		238.3		334.0
239+77.13	243+27.13	PAVING TRANSITION	350.0																									12.0	466.7	220.0		51.3		51.3
I-540 LEFT MAIN LANES																																	
171+50.00	194+59.89	NOTCH AND WIDEN INTO THE MEDIAN	2309.9	96.00	2217.5				79.0	20275.8	608.27	608.3	19.0	4876.5	880.0		2145.7	19.0	4876.5	495.0		1206.9	19.0	4876.5	220.0		536.4	19.5	5004.8	220.0		550.5		1086.9
194+59.89	197+00.69	FULL DEPTH - SUPERELEVATION	240.8	496.50	1195.6				182.9	4893.6	146.81	146.8	46.0	1230.8	880.0		541.6	45.5	1217.4	495.0		301.3	45.3	1212.0	220.0		133.3	53.0	1418.0	220.0		156.0		289.3
197+00.69	206+23.95	NOTCH AND WIDEN INTO THE MEDIAN	923.3	96.00	886.4	12.0	1231.1	123.11	110.0	11284.8	338.54	461.7	19.0	1949.2	880.0		857.6	19.0	1949.2	495.0		482.4	19.0	1949.2	220.0		214.4	53.0	5437.2	220.0		598.1		812.5
206+23.95	216+00.00	NOTCH AND WIDEN ON LT. AND RT.	976.0	96.00	937.0	12.0	1301.3	130.13	110.0	11928.9	357.87	488.0	19.0	2060.4	880.0		906.6	19.0	2060.4	495.0		509.9	19.0	2060.4	220.0		226.6	53.0	5747.6	220.0		632.2		858.8
216+00.00	218+30.78	FULL DEPTH	230.8	220.25	508.3				172.0	4410.6	132.32	132.3	43.0	1102.7	880.0		485.2	43.0	1102.7	495.0		272.9	43.0	1102.7	220.0		121.3	43.0	1102.7	220.0		121.3		242.6
218+30.78	218+64.54	FULL DEPTH	33.8	VAR.	77.8				VAR.	675.0	20.25	20.3	VAR.	168.8	880.0		74.3	VAR.	168.8	495.0		41.8	VAR.	168.8	220.0		18.6	VAR.	168.8	220.0		18.6		37.2
218+64.54	222+09.99	FULL DEPTH	345.5	435.75	1505.5				182.9	7021.3	210.64	210.6	46.0	1765.9	880.0		777.0	45.5	1746.7	495.0		432.3	45.3	1739.0	220.0		191.3	53.0	2034.6	220.0		223.8		415.1
226+73.47	228+41.00	FULL DEPTH	167.5	435.75	729.9				182.9	3404.0	102.12	102.1	46.0	856.1	880.0		376.7	45.5	846.8	495.0		209.6	45.3	843.1	220.0		92.7	54.0	1005.0	220.0		110.6		203.3
228+41.00	232+20.32	NOTCH AND WIDEN ON LT. AND RT.	379.3	323.50	1227.0	24.0	1011.5	101.15	100.0	4214.4	126.43	227.6	19.0	800.7	880.0		352.3	19.0	800.7	495.0		198.2	19.0	800.7	220.0		88.1	53.0	2233.7	220.0		245.7		333.8
232+20.32	233+77.47	NOTCH AND WIDEN ON LT. AND RT.	157.2	VAR.	541.8	VAR.	490.4	49.04	100.0	1746.7	52.40	101.4	19.0	331.9	880.0		146.0	19.0	331.9	495.0		82.1	19.0	331.9	220.0		36.5	VAR.	984.1	220.0		106.1		142.6
233+77.47	234+30.31	NOTCH AND WIDEN ON LT. AND RT.	52.8	VAR.	146.7	VAR.	347.7	34.77	VAR.	793.5	23.81	58.6	19.0	111.5	880.0		49.1	19.0	111.5	495.0		27.6	19.0	111.5	220.0		12.3	VAR.	347.7	220.0		38.2		50.5
234+30.31	236+26.75	NOTCH AND WIDEN ON LT. AND RT.	196.4	287.75	565.1	VAR.	1529.7	152.97	VAR.	3188.2	95.65	248.6	19.0	414.6	880.0		182.4	19.0	414.6	495.0		102.6	19.0	414.6	220.0		45.6	VAR.	1658.8	220.0		182.5		228.1
236+26.75	236+75.09	NOTCH AND WIDEN ON LT. AND RT.	48.3	323.50	156.3	VAR.	86.6	8.66	VAR.	494.5	14.84	23.5	19.0	102.0	880.0		44.9	19.0	102.0	495.0		25.2	19.0	102.0	220.0		11.2	VAR.	224.3	220.0		24.7		35.9
236+75.09	239+77.13	NOTCH AND WIDEN ON LT. AND RT.	302.0	301.00	909.0				VAR.	3737.2	112.12	112.1	VAR.	1039.0	880.0		457.2	VAR.	1021.6	495.0		252.8	VAR.	1012.5	220.0		111.4	65.0	2181.1	220.0		239.9		351.3
I-540 RAMP 2																																	
225+00.00	226+00.00	TRANSITION	100.0																									15.0	166.7	220.0		18.3		18.3
226+00.00	229+77.52	NOTCH AND OVERLAY	377.5	340.00	1283.5	15.0	629.2	62.92	15.0	629.2	18.88	81.8																25.0	1048.6	220.0		115.3		115.3
I-540 RAMP 3																																	
230+29.93	231+93.86	NOTCH AND OVERLAY	163.9	340.00	557.3	VAR.	421.8	42.18	VAR.	421.8	12.65	54.8																VAR.	604.7	220.0		66.5		66.5
231+93.86	233+92.50	NOTCH AND OVERLAY	198.6	340.00	675.2	15.0	331.0	33.10	15.0	331.0	9.93	43.0																15.0	331.0	220.0		36.4		36.4
I-540 RAMP 4																																	
218+65.74	223+65.00	FULL DEPTH	499.3	417.75	2085.8				48.7	2701.8	81.05	81.1	17.1	948.7	880.0			16.0	887.6	495.0		219.7	15.5	859.9	220.0		94.6	25.0	1386.9	220.0		152.6		247.2
223+65.00	225+62.61	NOTCH AND OVERLAY	197.6	340.00	671.8	15.0	329.3	32.93	15.0	329.3	9.88	42.8																25.0	548.9	220.0		60.4		60.4
225+62.61	226+62.61	TRANSITION	100.0																														
I-540 RAMP 4 ACCELERATION LANE																																	
208+66.53	211+66.53	LANE TAPER	300.0	212.88	638.6				23.9	796.7	23.90	23.9	8.8	293.3	880.0		129.1	7.8	260.0	495.0		64.4	7.7	256.7	220.0		28.2	9.0	300.0	220.0		33.0		61.2
211+66.53	218+66.53	ACCELERATION LANE	700.0	244.00	1708.0				47.8	3717.8	111.53	111.5	17.5	1361.1	880.0		598.9	15.5	1205.6	495.0		298.4	15.3	1190.0	220.0		130.9	18.0	1400.0	220.0		154.0		284.9
LEVELING - I-540 RIGHT MAIN LANES																																	
171+50.00	192+50.00	CROWN CORRECTION	2100.0			12.0	2800.0	280.00				280.0											12.0	2800.0	VAR.		160.8						160.8
205+50.00	212+23.95	CROWN CORRECTION	674.0			12.0	898.7	89.87				89.9											13.0	973.6	VAR.		60.8						60.8
212+23.95	216+73.70	LEVELING	449.8			24.0	1199.5	119.95				120.0											24.0	1199.5	VAR.		503.1						503.1
227+70.00	232+26.75	LEVELING	456.8			24.7	1253.7	125.37				125.4											24.7	1253.7	VAR.		419.2						419.2
232+26.75	239+77.13	CROWN CORRECTION	750.4			12.0	1000.5	100.05				100.1											12.0	1000.5	VAR.		61.4						61.4
LEVELING - I-540 LEFT MAIN LANES																																	
206+23.95	216+00.00	LEVELING	976.0			VAR.	3269.3	326.93				326.9											VAR.	3269.3	VAR.		948.6						948.6
228+41.00	238+26.75	LEVELING	985.8			VAR.	5430.1	543.01				543.0											VAR.	5430.1	VAR.		686.9						686.9
LEVELING - RAMP 2																																	
226+00.00	229+75.56	LEVELING	375.6			15.0	626.0	62.60				62.6											15.0	626.0	VAR.		165.7						165.7
LEVELING - RAMP 3																																	
230+29.93	234+29.93	LEVELING	400.0			VAR.	742.5	74.25				74.3											VAR.	742.5	VAR.		74.6						74.6
LEVELING - RAMP 4																																	
223+65.00	225+62.61	LEVELING	197.6			15.0	329.3	32.93				32.9											15.0	329.3	VAR.		105.3						105.3
ADDITIONAL FOR GUARDRAIL WIDENING																																	
217+81.17	220+92.92	RT. SIDE OF RT. MAIN LANES	311.8	59.00	174.2																							5.5	180.5	220.0		19.9		19.9
227+22.08	231+33.83	LT. SIDE OF LT. MAIN LANES	411.8	59.00	233.2																							5.5	241.6	220.0		26.6		26.6
SUBTOTALS:					**32578.4**		**35281.2**			**164984.8**		**8477.8**		**35718.3**			**15299.0**		**35354.0**			**8750.0**		**52879.8**			**7064.4**		**69241.6**			**7616.6**		**14681.0**

BASIS OF ESTIMATE:
PG 76-22:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.0% MIN. AGGR.....5.0% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
PG 70-22:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.0% MIN. AGGR.....5.0% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

7/9/2013

R040605.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/9/13				6	ARK.			
				JOB NO.		040605	87	260

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-9-13

BASE AND SURFACING (BOX 2 OF 2)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BASE COURSE (1 1/2")					ACHM BINDER COURSE (1")					ACHM SURFACE COURSE (1/2")										
				TON / STATION	TON	(0.10 GAL. PER SQ. YD.)			(0.03 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	TOTAL PG 70-22	TOTAL PG 76-22
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	TON	FEET			TON	TON	FEET			TON	TON	FEET			TON	TON	TON	TON
TEMPORARY WIDENING - HAMESTRING CREEK																																
191+59.85	200+42.36	LEFT MAIN LANES	882.5	44.25	390.5				VAR.	5317.2			VAR.	1788.8	990.0	885.5		VAR.	1739.6	330.0	287.0												
192+72.76	200+07.59	RIGHT MAIN LANES	734.8	44.25	325.1				VAR.	4676.7			VAR.	1572.6	990.0	778.4		VAR.	1531.5	330.0	252.7						VAR.	1788.7	220.0	196.8		196.8	
SHOULDER RECONSTRUCTION																																
204+47.12	213+70.00	LEFT MAIN LANES - OUTSIDE SHOULDER	922.9	36.50	336.9				21.1	2163.7	64.91	64.9	10.8	1107.5	990.0	548.2		10.3	1056.2	330.0	174.3						10.0	1025.4	220.0	112.8		112.8	
218+19.08	223+20.30	LEFT MAIN LANES - OUTSIDE SHOULDER	501.2	36.50	171.4				21.1	1101.1	33.03	33.0	10.8	563.6	990.0	279.0		10.3	537.5	330.0	88.7						10.0	521.8	220.0	57.4		57.4	
226+29.66	235+82.67	LEFT MAIN LANES - OUTSIDE SHOULDER	953.0	36.50	347.8				21.1	2160.3	64.81	64.8	10.8	1105.8	990.0	547.4		10.3	1054.6	330.0	174.0						10.0	1023.8	220.0	112.6		112.6	
237+39.72	240+06.13	LEFT MAIN LANES - OUTSIDE SHOULDER	266.4	36.50	97.2				21.1	550.6	16.52	16.5	10.8	281.8	990.0	139.5		10.3	268.8	330.0	44.4						10.0	261.0	220.0	28.7		28.7	
211+08.68	221+99.87	RIGHT MAIN LANES - OUTSIDE SHOULDER	1091.2	36.50	398.3				21.1	2484.3	74.53	74.5	10.8	1271.6	990.0	629.4		10.3	1212.7	330.0	200.1						10.0	1177.4	220.0	129.5		129.5	
224+63.81	229+52.28	RIGHT MAIN LANES - OUTSIDE SHOULDER	488.5	36.50	178.3				21.1	1071.3	32.14	32.1	10.8	548.4	990.0	271.5		10.3	523.0	330.0	86.3						10.0	507.7	220.0	55.8		55.8	
239+77.13	245+19.72	RIGHT MAIN LANES - OUTSIDE SHOULDER	542.6	36.50	198.0				21.1	1198.2	35.95	36.0	10.8	613.3	991.0	303.9		10.3	584.9	331.0	96.8						11.0	624.6	220.0	68.7		68.7	
227+78.00	232+26.75	RAMP 2 - OUTSIDE SHOULDER	448.8	31.00	139.1				13.1	607.3	18.22	18.2	6.8	315.3	990.0	156.1		6.3	292.1	330.0	48.2						6.0	278.2	220.0	30.6		30.6	
218+65.74	219+57.99	RAMP 4 - INSIDE SHOULDER	92.3						VAR.	218.3	6.55	6.6	VAR.	74.5	990.0	36.9		VAR.	69.3	330.0	11.4						VAR.	66.2	220.0	7.3		7.3	
219+57.99	225+61.62	RAMP 4 - INSIDE SHOULDER	603.6	31.00	187.1				9.1	578.4	17.35	17.4	4.8	305.1	990.0	151.0		4.3	273.3	330.0	45.1						4.0	254.2	220.0	28.0		28.0	
TEMPORARY CROSSOVER CONSTRUCTION																																
189+69.06	194+56.63	MEDIAN I-540	487.6	44.25	211.8				VAR.	3822.8	114.68	114.7	VAR.	1270.4	990.0	628.8		VAR.	1282.0	330.0	211.5						VAR.	1505.7	220.0	165.6		165.6	
197+05.59	201+41.77	MEDIAN I-540	436.2	44.25	199.4				VAR.	3288.4	98.65	98.7	VAR.	1106.6	990.0	547.8		VAR.	1075.2	330.0	177.4						VAR.	1279.8	220.0	140.8		140.8	
239+77.13	241+62.44	MEDIAN I-540	185.3	44.25	82.5				VAR.	525.6	15.77	15.8	VAR.	178.7	990.0	88.5		VAR.	168.2	330.0	27.8						VAR.	243.5	220.0	26.8		26.8	
RAMP 4 - DETOUR																																
206+91.33	217+86.61	RAMP 4 - DETOUR	1095.3	30.50	56.9				VAR.	3651.3	109.54	109.5	VAR.	1235.7	990.0	611.7		VAR.	1179.9	330.0	194.7						VAR.	1356.3	220.0	149.2		149.2	
217+86.61	221+55.00	RAMP 4 - DETOUR	368.4	61.00	113.8				48.7	1993.5	59.81	59.8	16.6	621.3	990.0	307.5		15.5	580.1	330.0	95.7						19.0	711.1	220.0	78.2		78.2	
221+55.00	225+00.00	RAMP 4 - DETOUR	345.0	30.50	56.9				VAR.	1377.8	41.33	41.3	VAR.	467.5	991.0	231.6		VAR.	442.8	331.0	73.3						VAR.	517.5	221.0	57.2		57.2	
SUBTOTALS (BOX 1 OF 2):					**32578.4**		**35281.2**			**164984.8**		**8477.8**		**35718.3**			**15299.0**		**35354.0**			**8750.0**		**52879.8**		**7064.4**		**69241.6**			**7616.6**		**14681.0**
SUBTOTALS (BOX 2 OF 2):					**3491.0**					**36786.8**		**803.8**		**14428.5**		**7142.7**			**13871.7**		**2289.4**							**15170.9**		**1669.1**		**1669.1**	
TOTALS:					**36069.4**		**35281.2**			**201771.6**		**9281.6**		**50146.8**		**7142.7**	**15299.0**		**49225.7**		**2289.4**	**8750.0**		**52879.8**		**7064.4**		**84412.5**		**1669.1**	**7616.6**	**1669.1**	**14681.0**

BASIS OF ESTIMATE:
PG 76-22:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.0% MIN. AGGR.....5.0% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
PG 70-22:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.0% MIN. AGGR.....5.0% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

7/9/2013

R040605.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	88	260
				①	07287 -	QUANTITIES	- 53951	

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 040605

BRIDGE NO. / CODE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	SP & 802	SP & 802	803	SS & 804	SS & 804	805 ①	SP & 807	808	812	816	SP JOB 040605
		ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	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 (HP 12X53)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GRADE 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP	TEXTURED COATING FINISH
		UNIT	LUMP SUM	CU.YD.	CU.YD.	CU.YD.	GAL.	LB.	LB.	LIN.FT.	LB.	CU.IN.	EACH	CU.YD.	SQ.YD.
07287 X271 I-540 OVER PORTER RD.	BENT NO. 1			215	248.46		1.0	21,368		1,063	4,345	5,704.0		196	111
	BENT NO. 2				241.20			43,039				11,407.5			520
	BENT NO. 3				240.58			42,831				11,407.5			518
	BENT NO. 4			230	246.36		1.0	21,322		1,173	4,345	5,704.0		237	111
	387'-0" CONT. COMP. PLATE GIRDER UNIT					1294.10	99.9		355,830		1,537,950		1		622
SITE NO. 1 (BR. NO. 05075)			0.5												
SITE NO. 1 (BR. NO. 05824)			0.5												
TOTALS FOR JOB NO. 040605			1.0	445	976.60	1294.10	101.9	128,560	355,830	2,236	1,546,640	34,223.0	1	433	1882

① These steel piles are required to have special driving points which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP12x53)".

BRIDGE NO. / CODE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	SP JOB 040605	SP JOB 040605	SP JOB 040605	SP JOB 040605
		ITEM	SHORING	SILICONE JOINT SEALANT	DRILLED SHAFT (66" DIA.)	PERMANENT STEEL CASING (66" DIA.)
		UNIT	LUMP SUM	LIN.FT.	LIN.FT.	LIN.FT.
07287 X271 I-540 OVER PORTER RD.	BENT NO. 1					
	BENT NO. 2				206	129
	BENT NO. 3				232	155
	BENT NO. 4					
	387'-0" CONT. COMP. PLATE GIRDER UNIT			436		
SITE NO. 1 (BR. NO. 05075)						
SITE NO. 1 (BR. NO. 05824)						
TOTALS FOR JOB NO. 040605			1	436	438	284

STEWART LINZ
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. FUSELIER
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HWY. 16 - PORTER RD. (WIDENING) (S)
WASHINGTON COUNTY

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 04/04/13 FILENAME: b040605_ql.dgn
CHECKED BY: DHP DATE: 5-17-13 SCALE: No Scale
DESIGNED BY: _____ DATE: _____

BRIDGE NO. 07287 DRAWING NO. 53951

PRINT DATE: 5/17/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/9/13				6	ARK.			
				JOB NO.		040605	89	260

(2) SUMMARY OF QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-9-13

SUMMARY OF QUANTITIES (BOX 1 OF 2)

	ITEM NUMBER	ITEM		QUANTITY	UNIT
	201	CLEARING		19	STATION
	201	GRUBBING		19	STATION
	202	REMOVAL AND DISPOSAL OF FENCE		205	LIN. FT.
	202	REMOVAL AND DISPOSAL OF DROP INLETS		6	EACH
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		4	EACH
	202	REMOVAL AND DISPOSAL OF BOX CULVERTS		1	EACH
	SP & 202	REMOVAL AND DISPOSAL OF WIRE ROPE SAFETY FENCE		5892	LIN. FT.
	202	REMOVAL AND DISPOSAL OF GUARDRAIL		1350	LIN. FT.
	206	FLOWABLE SELECT MATERIAL		27	CU. YD.
	210	UNCLASSIFIED EXCAVATION		38456	CU. YD.
	210	COMPACTED EMBANKMENT		33163	CU. YD.
	SS & 303	AGGREGATE BASE COURSE (CLASS 7)		36674	TON
	401	TACK COAT		9282	GAL.
	SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		21469	TON
	SP, SS, & 405	ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2")		300	TON
	SP, SS, & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")		673	TON
	SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		10487	TON
	SP, SS, & 406	ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1")		114	TON
	SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")		438	TON
	SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		15436	TON
	SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		92	TON
	SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		822	TON
	412	COLD MILLING ASPHALT PAVEMENT		16556	SQ. YD.
	504	APPROACH SLABS (TYPE SPECIAL 1)		661.60	CU. YD.
	504	APPROACH GUTTERS (TYPE SPECIAL 1)		75.00	CU. YD.
	601	MOBILIZATION		1.00	LUMP SUM
	SP & 602	FURNISHING FIELD OFFICE		1	EACH
	603	TRAFFIC CONTROL SUPERVISOR		1.00	LUMP SUM
	SP, SS, & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
	603	18" TEMPORARY CULVERT		720	LIN. FT.
	603	60" TEMPORARY CULVERT		60	LIN. FT.
	SS & 604	SIGNS		1776	SQ. FT.
	SS & 604	BARRICADES		40	LIN. FT.
	SS & 604	TRAFFIC DRUMS		503	EACH
	SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		21889	LIN. FT.
	SS & 604	RELOCATING PRECAST CONCRETE BARRIER		33618	LIN. FT.
	SS & 604	CONSTRUCTION PAVEMENT MARKINGS		32417	LIN. FT.
	604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		71014	LIN. FT.
	604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		1149	LIN. FT.
	604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		12532	LIN. FT.
	SS & 604	ADVANCE WARNING ARROW PANEL		840	DAY
	SP, SS, & 604	PORTABLE CHANGEABLE MESSAGE SIGN		120	WEEK
	605	CONCRETE DITCH PAVING (TYPE B)		1938	SQ. YD.
	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		984	LIN. FT.
	606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		1	EACH
	606	SELECTED PIPE BEDDING		100	CU. YD.
	609	DROP INLETS (TYPE ST)		7	EACH
	611	UNDERDRAIN OUTLET PROTECTORS		14	EACH
	611	4" PIPE UNDERDRAINS		6930	LIN. FT.
	SS & 617	GUARDRAIL (TYPE A)		500	LIN. FT.
	SS & 617	GUARDRAIL TERMINAL (TYPE 2)		2	EACH
	SS & 617	THRIE BEAM GUARDRAIL TERMINAL		2	EACH
	619	WIRE FENCE (TYPE A)		433	LIN. FT.
*	619	16' STEEL GATES	(ALTERNATE NO. 1)	3	EACH
*	619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	3	EACH
	620	LIME		11	TON
	620	SEEDING		5.65	ACRE
	620	MULCH COVER		10.96	ACRE
	SS & 620	WATER		704.0	M.GAL.
	621	TEMPORARY SEEDING		11.76	ACRE
	621	SILT FENCE		15660	LIN. FT.
	621	SAND BAG DITCH CHECKS		1650	BAG
	621	DROP INLET SILT FENCE		440	LIN. FT.
	621	SEDIMENT BASIN		133	CU. YD.
	621	OBLITERATION OF SEDIMENT BASIN		133	CU. YD.
	621	SEDIMENT REMOVAL AND DISPOSAL		632	CU. YD.
	621	ROCK DITCH CHECKS		79	CU. YD.
	623	SECOND SEEDING APPLICATION		5.65	ACRE
	624	SOLID SODDING		1541	SQ. YD.
	631	CONCRETE BARRIER WALL (MEDIAN TYPE C)		6582	LIN. FT.
	631	CONCRETE BARRIER WALL (MEDIAN TYPE SPECIAL)		245	LIN. FT.
	635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
	640	MODIFYING DROP INLETS		4	EACH
	642	RUMBLE STRIPS IN ASPHALT SHOULDERS		22031	LIN. FT.

7/9/2013

R040605.DGN

SUMMARY OF QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/9/13				6	ARK.			
				JOB NO.		040605	90	260

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-9-13

SUMMARY OF QUANTITIES (BOX 2 OF 2)

	ITEM NUMBER	ITEM		QUANTITY	UNIT
*	SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	24466	LIN. FT.
*	SP	HIGH PERFORMANCE MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	24466	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	18935	LIN. FT.
*	SP	HIGH PERFORMANCE MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	18935	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	293	LIN. FT.
*	SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	293	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (8")	(ALTERNATE NO. 1)	3060	LIN. FT.
*	SP	HIGH PERFORMANCE MARKING TAPE WHITE (8")	(ALTERNATE NO. 2)	3060	LIN. FT.
	721	RAISED PAVEMENT MARKERS (TYPE II)		1378	EACH
	SS & 732	CRASH CUSHION		1	EACH
	801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		45	CU. YD.
	802	CLASS S CONCRETE-ROADWAY		109.75	CU. YD.
	SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		108475	POUND
	SP	TEMPORARY IMPACT ATTENUATION BARRIER		3	EACH
	SP	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		3	EACH
	SP	WIRE ROPE SAFETY FENCE END TERMINAL		1	EACH
		STRUCTURES OVER 20' SPAN			
	205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)		1.00	LUMP SUM
	636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
	801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		484	CU. YD.
	801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE		445	CU. YD.
	802	CLASS S CONCRETE-ROADWAY		1022.00	CU. YD.
	SP & 802	CLASS S CONCRETE-BRIDGE		976.60	CU. YD.
	SP & 802	CLASS S(AE) CONCRETE-BRIDGE		1294.10	CU. YD.
	803	CLASS 1 PROTECTIVE SURFACE TREATMENT		101.9	GAL.
	SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		193050	POUND
	SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		128560	POUND
	SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)		355830	POUND
	805	STEEL PILING (HP 12X53)		2236	LIN. FT.
	SP & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)		1546640	POUND
	808	ELASTOMERIC BEARINGS		34223.0	CU. IN.
	812	BRIDGE NAME PLATE (TYPE D)		1	EACH
	816	CONCRETE RIPRAP		433	CU. YD.
	SP	TEXTURED COATING FINISH		1882	SQ. YD.
	SP	SHORING		1.00	LUMP SUM
	SP	SILICONE JOINT SEALANT		436	LIN. FT.
	SP	DRILLED SHAFT (66" DIAMETER)		438	LIN. FT.
	SP	PERMANENT STEEL CASING (66" DIAMETER)		284	LIN. FT.

* DENOTES ALTERNATE BID ITEMS

REVISIONS

DATE	REVISION	SHEET NUMBER
7/9/2013	ADDED "PROSECUTION AND PROGRESS" SP, REVISED LEVELING QUANTITIES	3, 86, 87, 89, 90

7/9/2013

R040605.DGN

SUMMARY OF QUANTITIES AND REVISIONS

SURVEY CONTROL COORDINATES

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	630410.3757	664812.6446	1269.279	CTL	5/8" Rebar with 2" Aluminum Cap
2	631656.0335	664523.3552	1262.840	CTL	5/8" Rebar with 2" Aluminum Cap
3	632478.4613	664202.6173	1257.815	CTL	5/8" Rebar with 2" Aluminum Cap
4	633450.7938	663742.5099	1279.296	CTL	5/8" Rebar with 2" Aluminum Cap
5	633898.9316	664910.6994	1270.748	CTL	5/8" Rebar with 2" Aluminum Cap
6	633627.0246	664142.0462	1265.416	CTL	5/8" Rebar with 2" Aluminum Cap
7	633518.0523	663407.1715	1262.116	CTL	5/8" Rebar with 2" Aluminum Cap
8	633234.3302	662465.1187	1272.581	CTL	5/8" Rebar with 2" Aluminum Cap
9	634622.8893	663200.0585	1272.175	CTL	5/8" Rebar with 2" Aluminum Cap
10	635419.0692	662884.5908	1285.011	CTL	5/8" Rebar with 2" Aluminum Cap
11	636118.7931	662598.4150	1297.345	CTL	5/8" Rebar with 2" Aluminum Cap
12	636904.5223	662414.4759	1308.689	CTL	5/8" Rebar with 2" Aluminum Cap
13	637799.0836	662051.5256	1317.294	CTL	5/8" Rebar with 2" Aluminum Cap
14	638781.9309	661661.9346	1309.535	CTL	5/8" Rebar with 2" Aluminum Cap
15	639607.5524	661479.9249	1292.580	CTL	5/8" Rebar with 2" Aluminum Cap
16	640702.4582	661525.4144	1269.766	CTL	5/8" Rebar with 2" Aluminum Cap
17	641465.1409	661761.2031	1257.262	CTL	5/8" Rebar with 2" Aluminum Cap
18	642383.0905	662098.4537	1253.417	CTL	5/8" Rebar with 2" Aluminum Cap
19	642332.8502	663729.9868	1241.051	CTL	5/8" Rebar with 2" Aluminum Cap
20	642395.3592	662539.4315	1257.251	CTL	5/8" Rebar with 2" Aluminum Cap
21	642542.0960	661673.8951	1267.444	CTL	5/8" Rebar with 2" Aluminum Cap
22	642507.6650	660564.2388	1258.599	CTL	5/8" Rebar with 2" Aluminum Cap
23	643326.7632	662447.0173	1251.565	CTL	5/8" Rebar with 2" Aluminum Cap
24	644140.4015	662944.8592	1234.710	CTL	5/8" Rebar with 2" Aluminum Cap
25	644815.3314	663286.8506	1236.996	CTL	5/8" Rebar with 2" Aluminum Cap
26	645900.2393	664023.6765	1252.114	CTL	5/8" Rebar with 2" Aluminum Cap
27	646532.9923	664459.9824	1262.682	CTL	5/8" Rebar with 2" Aluminum Cap
28	645315.0527	664504.7902	1250.820	CTL	5/8" Rebar with 2" Aluminum Cap
29	645946.4647	664518.4409	1268.752	CTL	5/8" Rebar with 2" Aluminum Cap
30	646562.1668	664549.4368	1244.683	CTL	5/8" Rebar with 2" Aluminum Cap
31	647218.6188	664520.8881	1265.689	CTL	5/8" Rebar with 2" Aluminum Cap
32	647649.0986	664294.7090	1268.315	CTL	5/8" Rebar with 2" Aluminum Cap
33	647630.8910	663612.8375	1267.538	CTL	5/8" Rebar with 2" Aluminum Cap
34	647457.6035	664954.5613	1272.289	CTL	5/8" Rebar with 2" Aluminum Cap
35	648155.4761	665573.0038	1283.477	CTL	5/8" Rebar with 2" Aluminum Cap
36	648852.0004	666053.5650	1292.983	CTL	5/8" Rebar with 2" Aluminum Cap
37	649659.0172	666606.3684	1288.283	CTL	5/8" Rebar with 2" Aluminum Cap
38	650432.4829	667136.2451	1260.989	CTL	5/8" Rebar with 2" Aluminum Cap
39	651465.8406	667853.3224	1228.173	CTL	5/8" Rebar with 2" Aluminum Cap
40	652101.4961	668178.7263	1225.284	CTL	5/8" Rebar with 2" Aluminum Cap
41	652217.7648	667681.2493	1225.892	CTL	5/8" Rebar with 2" Aluminum Cap
42	652677.6781	668496.7121	1234.747	CTL	5/8" Rebar with 2" Aluminum Cap
43	653525.2543	668370.1193	1207.587	CTL	5/8" Rebar with 2" Aluminum Cap
44	652577.6202	669033.4803	1226.004	CTL	5/8" Rebar with 2" Aluminum Cap
45	652956.3054	669852.0035	1224.678	CTL	5/8" Rebar with 2" Aluminum Cap
46	652915.4194	670968.5436	1236.679	CTL	5/8" Rebar with 2" Aluminum Cap
47	654188.3509	671617.6696	1239.274	CTL	5/8" Rebar with 2" Aluminum Cap
48	654893.0251	671042.5445	1218.202	CTL	5/8" Rebar with 2" Aluminum Cap
49	655206.3045	670211.3995	1218.667	CTL	5/8" Rebar with 2" Aluminum Cap
50	655808.4005	669716.5119	1231.329	CTL	5/8" Rebar with 2" Aluminum Cap
51	656712.1046	669287.8527	1261.574	CTL	5/8" Rebar with 2" Aluminum Cap
52	657582.6577	668890.0581	1287.923	CTL	5/8" Rebar with 2" Aluminum Cap
53	654920.0351	670094.7751	1216.022	CTL	5/8" Rebar with 2" Aluminum Cap
54	654019.6223	670444.4565	1219.870	CTL	5/8" Rebar with 2" Aluminum Cap
55	653360.3997	670267.9991	1222.869	CTL	5/8" Rebar with 2" Aluminum Cap
56	653373.8178	670757.5769	1221.953	CTL	5/8" Rebar with 2" Aluminum Cap
57	653487.8744	671293.0818	1222.129	CTL	5/8" Rebar with 2" Aluminum Cap
58	653736.5224	672045.7542	1221.318	CTL	5/8" Rebar with 2" Aluminum Cap
59	654234.5252	673187.2239	1237.015	CTL	5/8" Rebar with 2" Aluminum Cap
60	653865.6850	669984.3272	1231.111	CTL	5/8" Rebar with 2" Aluminum Cap
61	653352.1576	670048.0728	1246.639	CTL	5/8" Rebar with 2" Aluminum Cap
62	653038.6560	670504.4569	1243.540	CTL	5/8" Rebar with 2" Aluminum Cap
100	640169.1054	661396.8193	1280.745	GPS	AHTD GPS 720034A
101	642492.8042	662000.3683	1275.915	GPS	AHTD GPS 720034
102	653467.9567	671855.8815	1248.188	GPS	AHTD GPS 720018 RESET
103	633341.4840	667878.9163	1259.231	GPS	AHTD GPS 720032
104	649060.6371	669973.0200	1294.441	GPS	AHTD GPS AGRONOMY
109	648580.8162	669118.6233	1288.978	CTL	5/8" Rebar with 2" Aluminum Cap
110	649473.8954	669106.5063	1295.190	CTL	5/8" Rebar with 2" Aluminum Cap
111	650289.7300	669192.0831	1291.328	CTL	5/8" Rebar with 2" Aluminum Cap
112	651206.5321	669131.8043	1253.748	CTL	5/8" Rebar with 2" Aluminum Cap
113	651994.9512	668593.4199	1255.043	CTL	5/8" Rebar with 2" Aluminum Cap * T-13 JOB* 040489
150	654556.2441	668296.9080	1205.880	CTL	5/8" Rebar with 2" Aluminum Cap * T-2 JOB* 4620 5
900	628878.7558	667768.5363	1241.400	BM	NGS MARK G 310 1989
901	630043.7573	667673.8200	1238.130	BM	USGS BRASS CAP STAMPED J27 1932 ON RR
902	630402.1391	666376.6382	1236.220	BM	SQUARE CUT IN CENTER OF
903	631080.5412	664628.4634	1263.999	BM	SQUARE CUT IN NORTH END OF
904	632305.5167	664208.7706	1255.669	BM	SQUARE CUT IN NORTH END OF
905	633473.2935	663792.7270	1281.186	BM	SQUARE CUT IN SOUTHEAST CORNER
906	633921.1975	664933.4096	1271.161	BM	SQUARE CUT IN CATCH BASIN OF
907	633675.7703	663971.8881	1260.270	BM	SQUARE CUT IN EAST END OF
908	633504.7763	663320.9446	1263.288	BM	SQUARE CUT IN BASE OF SIGNAL PO
909	633249.1651	662521.6654	1271.355	BM	SQUARE CUT IN BACK OF CATCH BAS
910	634355.2251	663171.6127	1270.743	BM	SQUARE CUT IN CATCH BASIN AT
911	635730.1559	662823.4266	1288.758	BM	SQUARE CUT IN NORTH END OF DROP
912	636492.2009	662518.6182	1301.231	BM	SQUARE CUT IN NORTH END DROP IN
913	637663.4835	662121.9048	1314.590	BM	SQUARE CUT IN CENTER OF HEADWAL
914	638878.4388	661648.2244	1306.161	BM	SQUARE CUT IN SOUTH END OF DROP
915	639793.2972	661403.6930	1287.117	BM	SQUARE CUT IN NORTH END OF DROP
916	641046.6726	661547.1748	1261.592	BM	SQUARE CUT IN SOUTH END OF DROP
917	642251.6212	662040.1656	1252.445	BM	SQUARE CUT IN SOUTH END OF DROP
918	642328.1703	663510.3170	1237.978	BM	SQUARE CUT IN NORTH END OF HEAD
919	642386.4913	662630.1447	1252.072	BM	SQUARE CUT IN BASE OF SIGNAL PO
920	642429.8510	661981.2351	1276.952	BM	SQUARE CUT IN SOUTHWEST CORNER
921	642513.8388	660570.8018	1259.057	BM	SQUARE CUT IN SOUTHWEST CORNER
922	643730.0947	662693.5999	1242.558	BM	SQUARE CUT IN DROP INLET OF
923	644359.6922	663057.1469	1230.167	BM	SQUARE CUT IN NORTH HEADWALL
924	645385.4266	663686.1538	1243.408	BM	SQUARE CUT IN CENTER HEADWALL
925	646539.4485	664464.8199	1262.885	BM	SQUARE CUT SOUTHEAST CORNER OF
926	645318.5647	664525.1971	1251.412	BM	SQUARE CUT IN CENTER OF HEADWAL
927	646664.6400	664563.0374	1242.308	BM	AHTD DISK SET IN CENTER HEADWAL
928	647631.3199	664398.3182	1267.136	BM	SQUARE CUT IN CENTER OF HEADWAL
929	647645.5263	663483.3369	1263.210	BM	SQUARE CUT IN TOP OF CATCH BASI
930	647717.9656	665202.6045	1274.601	BM	SQUARE CUT IN DROP INLET IN
931	648749.5405	665911.1776	1289.200	BM	SQUARE CUT IN DROP INLET IN
932	650169.8197	666888.1341	1269.244	BM	SQUARE CUT IN DROP INLET IN
933	650870.2209	667367.0251	1244.363	BM	SQUARE CUT IN DROP INLET IN
934	651672.7665	668004.1838	1224.753	BM	SQUARE CUT IN DROP INLET NORTH
935	652160.4629	668439.7602	1223.853	BM	SQUARE CUT IN DROP INLET NORTH
936	652756.9200	669508.3771	1223.310	BM	SQUARE CUT CENTER OF STORM MANH
937	653287.5617	670520.0001	1222.933	BM	SQUARE CUT EAST END OF HEADWALL
938	653627.8408	671911.7083	1217.922	BM	SQUARE CUT IN HEADWALL SOUTH OF
939	654208.6324	673193.6049	1237.161	BM	SQUARE CUT IN NORTHWEST CORNER
940	654204.2767	673331.5908	1212.080	BM	NGS MARK K 310 1989 ST VT
941	653340.7783	670098.6661	1245.657	BM	SQUARE CUT IN NORTHEAST CORNER
942	653108.5117	670376.6307	1245.101	BM	AHTD CAP
943	653475.3610	671554.3789	1248.566	BM	SOUTHEAST CORNER OF BR*5916
944	653776.8049	671641.1146	1246.913	BM	SQUARE CUT NORTHEAST CORNER OF
945	654749.2107	671238.0484	1220.412	BM	SQ CUT
946	655456.7223	669850.5221	1219.731	BM	SQUARE CUT AT BASE OF HWY SIGN
947	656439.6900	669472.2127	1251.720	BM	SQUARE CUT SOUTHEAST CORNER OF
948	657722.2372	668897.5404	1287.971	BM	SQUARE CUT BASE OF HWY SIGN
949	653646.2268	670335.2776	1218.372	BM	SQUARE CUT IN CENTER OF HEADWAL
950	652711.9785	668498.6783	1233.332	BM	SET IN BASE OF SIGNAL LIGHT
951	653529.8248	668453.6313	1209.833	BM	SQUARE CUT IN BASE OF SIGNAL PO
952	654555.0208	668310.9906	1207.739	BM	PAINTED BOLT ON FIRE HYDRANT
9907	648594.7231	669193.5301	1286.916	BM	SQUARE CUT ON TOP OF RCP AT
9908	649774.2992	669117.7236	1296.773	BM	MARKED X IN FH BOLT AT HWY 112
9909	650462.4014	669112.3499	1287.741	BM	SQUARE CUT NORTHEAST CORNER OF
9910	651318.3919	669167.5318	1256.429	BM	SQUARE CUT IN SIGNAL POLE AT GA
9911	651691.6866	668876.1859	1250.123	BM	SQUARE CUT IN HEADWALL NORTH OF
9912	652184.8140	668584.3591	1253.101	BM	AHTD CAP IN NORTHEAST CORNER OF
9915	656192.0699	673293.9522	1198.650	BM	NGS MARK A27 1932 BRASS CAP

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.9999168402 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.
GRID COORDINATES ARE STORED UNDER FILE NAME s012069gi A.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS:
720018 RESET
AGRONOMY - 720032
720034 - 720034A
CONVERGENCE ANGLE: 01-16-50.89 LEFT AT LT: 36-04-42.1 LG: 094-12-03.9
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

I-540

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	75+00.00	633100.1080	663885.8177
8001	PC	133+97.82	638569.0495	661677.8924
8003	PT	164+55.25	641545.1101	661727.0242
8004	PC	193+58.46	644199.8579	662902.1482
8006	PT	204+21.92	645126.8962	663420.1220
8007	POE	246+54.39	648614.5268	665818.1026

RAMP 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8008	POB	220+20.09	646443.8142	664325.5917
8009	PC	220+68.85	646484.0004	664353.2224
8011	PT	222+41.05	646625.8931	664450.7831
8012	PC	226+59.10	646970.3709	664687.6348
8014	PT	231+02.12	647335.4282	664938.6363

RAMP 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8016	POB	227+48.09	647043.7036	664738.0560
8017	PC	228+20.83	647103.6389	664779.2655
8019	PT	229+29.57	647193.2418	664840.8736
8020	PC	232+21.38	647433.7017	665006.2059
8022	PT	233+99.83	647580.7421	665107.3061
8023	PC	236+95.57	647824.4413	665274.8657
8025	PT	238+85.53	647980.9740	665382.4924

RAMP 4

POINT NO.	TYPE	STATION	NORTHING	EASTING
8028	PC	217+39.56	646212.6531	664166.6529
8030	PT	222+10.36	646600.6051	664433.3959
8031	PC	225+17.49	646853.6858	664607.4060
8033	PT	226+85.29	646991.9520	664702.4733
8034	POE	227+53.17	647047.8914	664740.9354

RAMP 4 - DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8035	POB	206+91.33	645380.0572	663527.4409
8036	PC	210+06.36	645729.9879	664039.6307
8038	PT	518+68.08	646263.3140	664168.8079
8039	PC	520+87.85	646466.8149	664248.8681
8041	PT	522+50.31	646598.0456	664281.4864
8042	PC	524+35.81	646713.2831	664345.4195
8044	PT	524+56.82	646830.0863	664315.5716
8045	PC	524+75.05	646881.9832	664334.3145
8047	PT	525+07.88	646974.0195	664360.7474
8031	POE	225+31.76	647016.9091	664370.0135

PORTER ROAD (FOR INFORMATION ONLY)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8048	POB	220+02.54	646429.3591	664315.6528
8049	POE	229+46.06	647206.8294	664850.2160

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID SYS.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	040605	91	260

2 SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11435 TERRELL D. SMITH
6-14-13

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.		040605	92	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

6-14-13

PN21
FD5/8" REBAR W/ CAP

BEGIN JOB 040605
STA. 171+50.00

PN320
FD5SQUARE CUT IN SOUTHWEST CORNER

PN901
FD5HTD GPS 720934

SURVEY BASELINE

170

175

180

185

PN23
FD5/8" REBAR W/ CAP

N 23°52'36" E
2903.21'

PN317
FD5SQUARE CUT IN SOUTH END OF DROP

PN318
FD5/8" REBAR W/ CAP

PN314
FCD8 SPIKE TRIG ELEV.

PN315
FCD8 SPIKE TRIG ELEV.

C.L. I-540

PN20
FD5/8" REBAR W/ CAP

PN319
FD5/8" REBAR W/ CAP

6/13/2013

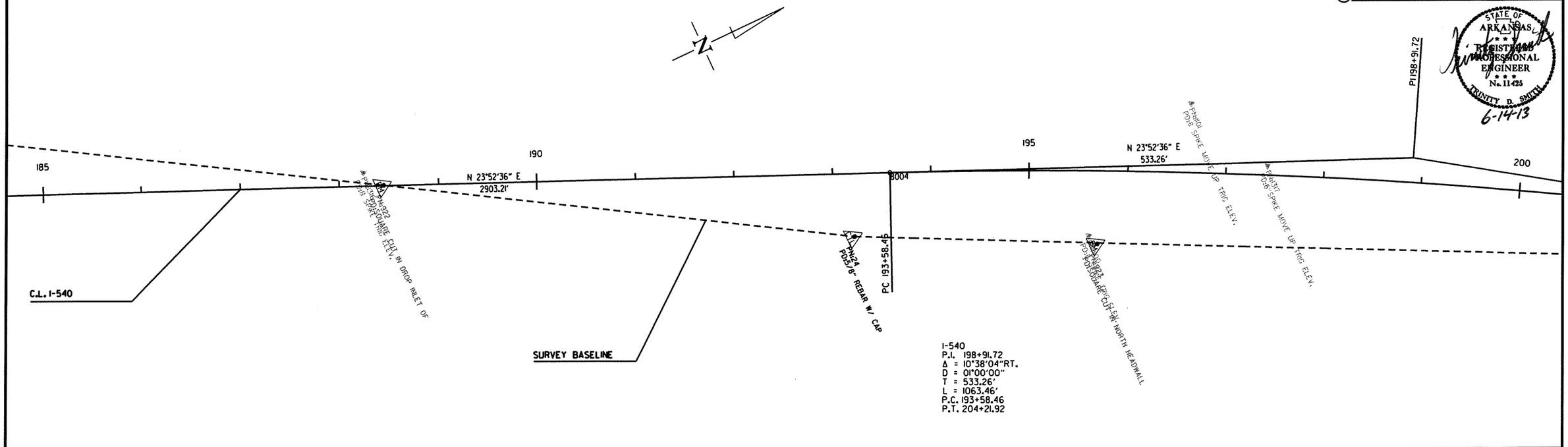
R040605.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	93	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13


185
190
195
200
N 23°52'36" E
2903.21'
N 23°52'36" E
533.26'
8004
PI 198+91.72
PK NAIL SET IN 8" SPIKE FOUND
PK NAIL SET IN 8" SPIKE FOUND
PK NAIL SET IN 8" SPIKE FOUND

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.		040605	94	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

RAMP 4 DETOUR
P.I. 217+27.75
Δ = 13°10'53"LT.
D = 5°00'00"
T = 132.40'
L = 263.63'
P.C. 215+95.36
P.T. 218+58.98

RAMP 4
P.I. 219+85.84
Δ = 24°15'31"LT.
D = 5°00'00"
T = 246.28'
L = 485.17'
P.C. 217+39.56
P.T. 222+24.73

RAMP 4 DETOUR
P.I. 221+51.30
Δ = 11°04'38"LT.
D = 8°00'00"
T = 69.45'
L = 138.47'
P.C. 220+81.85
P.T. 222+20.31

RAMP 4 DETOUR
P.I. 222+96.98
Δ = 9°36'17"RT.
D = 8°00'00"
T = 60.17'
L = 120.06'
P.C. 222+36.81
P.T. 223+56.87

RAMP 4 DETOUR
P.I. 224+60.04
Δ = 7°39'58"LT.
D = 8°00'00"
T = 47.99'
L = 95.83'
P.C. 224+12.05
P.T. 225+07.88

RAMP 4
P.I. 226+62.22
Δ = 65°08'29"RT.
D = 36°22'42"
T = 100.61'
L = 179.07
P.C. 225+61.61
P.T. 227+40.68

RAMP 3
P.I. 228+70.38
Δ = 43°47'47"LT.
D = 36°22'42"
T = 63.31'
L = 120.39'
P.C. 228+07.07
P.T. 229+27.46

RAMP 2
P.I. 221+13.48
Δ = 67°42'39"LT.
D = 36°22'42"
T = 105.66'
L = 186.13'
P.C. 220+07.82
P.T. 221+93.95

RAMP 2
P.I. 228+77.72
Δ = 22°44'37"RT.
D = 5°00'00"
T = 230.47'
L = 454.87'
P.C. 226+47.24
P.T. 231+02.12

C.L. RAMP 4
C.L. RAMP 4 DETOUR
C.L. I-540
SURVEY BASELINE
C.L. PORTER ROAD
C.L. RAMP 3
C.L. RAMP 2

PC 215+95.36
PC 217+39.56
PT 218+58.98
PC 220+81.85
PT 222+24.73
PI 222+96.98
PC 224+12.05
PT 225+07.88
PI 226+62.22
POE 510+91.20
POE 228+30.41
PT 223+56.87
PC 222+36.81
PI 221+51.30
PI 219+85.84
PI 217+27.75
PI 224+60.04
PT 224+60.04
PI 225+54.76
PT 223+40.68
POB 227+05.71
PI 229+27.46
PC 228+07.07
PI 228+70.38
PI 229+47.72
PC 226+47.24
POB 500+00.00
POB 219+38.89
PC 220+07.82
PT 221+93.95

PN#25 POSQUARE CUT
PN#26 POSQUARE CUT SOUTHEAST CORNER OF
PN#27 POD5/8" REBAR W/ CAP
PN#28 POD5/8" REBAR W/ CAP
PN#29 POD5/8" REBAR W/ CAP
PN#30 POD5/8" REBAR W/ CAP
PN#31 POPUNCH
PN#32 POD5/8" REBAR W/ CAP
PN#33 POD5/8" REBAR W/ CAP
PN#34 POD5/8" REBAR W/ CAP
PN#35 POD5/8" REBAR W/ CAP
PN#36 POD5/8" REBAR W/ CAP
PN#37 POD5/8" REBAR W/ CAP
PN#38 POD5/8" REBAR W/ CAP
PN#39 POD5/8" REBAR W/ CAP

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.		040605	95	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

C.L. RAMP 3

RAMP 3
P.I. 233+08.72
Δ = 5°21'46"RT.
D = 3°00'00"
T = 89.44'
L = 178.76'
P.C. 232+19.28
P.T. 233+98.04

RAMP 3
P.I. 237+90.47
Δ = 5°42'30"LT.
D = 3°00'00"
T = 95.22'
L = 190.28'
P.C. 236+95.25
P.T. 238+85.53

230 235 240 245

N 34°51'24" E 291.82'

8020

N 34°51'24" E 89.44'

N 40°13'10" E 89.44'

8022

N 40°13'10" E 297.22'

8023

N 40°13'10" E 95.22'

N 34°30'40" E 95.22'

8025

N 34°30'40" E 4232.48'

PI 233+08.72

PC 232+19.28

PT 233+98.04

PC 236+95.25

PT 238+85.53

PI 237+90.47

PN34 PD5/8" REBAR W/ CAP

PN35 PD5/8" REBAR W/ CAP

PN36 PD5/8" REBAR W/ CAP

PN37 PD5/8" REBAR W/ CAP

C.L. I-540

C.L. I-540

PN30 PDSQUARE CUT IN DROP INLET IN

PN31 PDSQUARE CUT IN DROP INLET IN

230

N 34°30'40" E 230.47'

8014

PI 231+02.12

RAMP 2
P.I. 228+77.72
Δ = 22°44'37"RT.
D = 5°00'00"
T = 230.47'
L = 454.87'
P.C. 226+47.24
P.T. 231+02.12

C.L. RAMP 2

END JOB 040605
STA. 239+77.13

245

POE 246+54.39

8007

C.L. I-540

SURVEY CONTROL DETAILS

6/13/2013

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				6	ARK.			
				JOB NO.		040605	96	260

(2) SOIL LOG

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
188+00	36	4	55.30	94	11	55.40	CL	0 - 5'	24	7	A-4(4)	RD/BR
214+00	36	5	17.60	94	11	39.90	CL	0/2.0'Z*	28	4	A-4(0)	RED
240+00	36	5	39.10	94	11	22.60	CL	0 - 5'	36	21	A-6(16)	RED

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

Z- AUGER REFUSAL

R040605.DGN 6/13/2013

SOIL LOG

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	97	260

(2) PLAN AND PROFILE SHEETS

CONCRETE MEDIAN BARRIER
TYPE C STA. 171+50.00 TO STA. 173+25.25
TYPE SPECIAL STA. 173+25.25 TO STA. 175+70.25
TYPE C STA. 175+70.25 TO STA. 239+77.13

BEGIN JOB 040605
STA. 171+50.00

STA. 175+15 TO STA. 220+67 - IN PLACE
WIRE ROPE SAFETY FENCE
REMOVE

STA. 171+50 TO STA. 177+75 - IN PLACE
GUARDRAIL RT. OF L.M.L.
REMOVE

STA. 182+26 - IN PLACE
TYPE R DROP INLET IN LT. MEDIAN
WITH 24" x 59' R.C. PIPE OUTLET
RETAIN

STA. 182+26 - IN PLACE
TYPE R DROP INLET IN MEDIAN
WITH 18" x 67' R.C. PIPE OUTLET
MODIFY DROP INLET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

170 175 180 185

N 23°52'36" E

SET PK NAIL IN PAVEMENT PUSQUARE CUT IN SOUTH END OF DROP

SET PK NAIL IN PAVEMENT PUSQUARE CUT IN SOUTHWEST CORNER

SET 5/8" REBAR W/ CAP

SET 5/8" REBAR W/ CAP

100' MEDIAN WALL TRANSITION

100' MEDIAN WALL TRANSITION

+25.25 +25.25 +70.25 +70.25

CONC APRON CURB CURB CONC APRON

SPECIAL FLOOD HAZARD AREA

STA. 171+50 TO STA. 176+00 - IN PLACE
GUARDRAIL LT. OF R.M.L.
REMOVE

EXISTING R.O.W.

I-540

STA. 158+07 - STA. 174+09
SPECIAL FLOOD HAZARD AREA

1270 1265 1260 1255 1250 1245 1240 1235 1230 1225

BM# 917 SQUARE CUT IN SOUTH END OF DROP
0.37 RT. OF STA. 172+28.05
ELEVATION = 1252.44

BM# 920 SQUARE CUT IN SOUTHWEST CORNER
125.66 LT. OF STA. 173+67.17
ELEVATION = 1276.95

BM# 919 SQUARE CUT IN BASE OF SIGNAL PO
485.27 RT. OF STA. 175+90.18
ELEVATION = 1252.07

170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00 178+00 179+00 180+00 181+00 182+00 183+00 184+00 185+00

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				JOB NO.		040605	98	260

(2) PLAN AND PROFILE SHEETS

CONCRETE MEDIAN BARRIER
TYPE C STA. 171+50.00 TO STA. 173+25.25
TYPE SPECIAL STA. 173+25.25 TO STA. 175+70.25
TYPE C STA. 175+70.25 TO STA. 239+77.13

STA. 188+47 - IN PLACE
TYPE E JCT. BOX, 7' LT. OF C.L.
WITH 42" x 8' R.C. PIPE INLET
& 42" X 68' R.C. PIPE OUTLET WITH F.E.S
RETAIN

STA. 188+47 - IN PLACE
TYPE R DROP INLET IN MEDIAN
WITH 18" x 67' R.C. PIPE OUTLET
MODIFY DROP INLET

STA. 175+15 TO STA. 220+67 - IN PLACE
WIRE ROPE SAFETY FENCE
REMOVE

STA. 191+85 - INSTALL
300' PIPE UNDERDRAIN 9' LT. OF C.L.
CONNECT TO DROP INLET STA. 194+85
PIPE UNDERDRAIN = 300 LIN. FT.

STA. 194+85 - CONSTRUCT
TYPE ST DROP INLET 2.5' LT. OF C.L.
WITH 24" X 106' R.C. PIPE OUTLET
CONNECT TO DROP INLET STA. 195+92
DROP INLET H = 5'-0"
USE 3 VANE GRATES
24" R.C. PIPE (CLASS III) (TYPE 3) BEDDING = 106 LIN. FT.

STA. 195+92 - IN PLACE
TYPE R DROP INLET IN MEDIAN
IN TOP OF R.C. BOX CULVERT
REMOVE & INSTALL WITH
TYPE ST DROP INLET 2.5' LT. OF C.L.
OUTLET INTO R.C. BOX CULVERT
USE 3 VANE GRATES
DROP INLET H = 5'-3"

EARTHWORK

EXISTING R.O.W.

STA. 194+85 - INSTALL
107' PIPE UNDERDRAIN 1'-6" LT. OF C.L.
CONNECT TO DROP INLET STA. 195+92
PIPE UNDERDRAIN = 107 LIN. FT.

STA. 197+30 - INSTALL
138' PIPE UNDERDRAIN 1'-6" LT. OF C.L.
CONNECT TO DROP INLET STA. 195+92
PIPE UNDERDRAIN = 138 LIN. FT.

STA. 196+00 - IN PLACE
DBL. 10' x 8' x 180' R.C. BOX CULV'T.
30° LT. FWD. SKEW
REMOVE AND CONSTRUCT
QUINT. 10' x 8' x 223' R.C. BOX CULV'T.
ON 30° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
050 = 3201 CFS D.A. = 1094.4 ACRES
CHANNEL CHANGE = 6797.76 UNCL. EXC.
3494.04 COMP. EMB.

16'-0" GATE

STA. 200+00 - INSTALL
270' PIPE UNDERDRAIN 1'-6" LT. OF C.L.
CONNECT TO DROP INLET STA. 197+30
PIPE UNDERDRAIN = 270 LIN. FT.

PI 198+91.72

STATE OF ARKANSAS
TRINITY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11425
6-14-13

185 190 195

N 23°52'36" E

N 34°30'40" E 200

SQUARE CUT IN DROP INLET OF

STA. 191+85 - INSTALL
300' PIPE UNDERDRAIN 9' RT. OF C.L.
CONNECT TO DROP INLET STA. 194+85
PIPE UNDERDRAIN = 300 LIN. FT.

PK NAIL & PASS'S" REBAR W/ CAP

PC 193+58.46

16'-0" GATE

SQUARE CUT IN NORTH HEADWALL

STA. 197+30 - CONSTRUCT
TYPE ST DROP INLET 2.5' LT. OF C.L.
WITH 24" X 136' R.C. PIPE OUTLET
CONNECT TO DROP INLET STA. 195+92
DROP INLET H = 5'-0"
USE 3 VANE GRATES
24" R.C. PIPE (CLASS III) (TYPE 3) BEDDING = 136 LIN. FT.

STA. 200+00 - INSTALL
270' PIPE UNDERDRAIN 9' RT. OF C.L.
CONNECT TO DROP INLET STA. 197+30
PIPE UNDERDRAIN = 270 LIN. FT.

STA.	STA.	MAIN LANES	SIDE	FENCE (TYPE A)	6'-0" GATE
194+06.22	194+58.71	RT.	RT.	61'	1
195+57.25	195+58.22	RT.	RT.	35'	
196+07.82	196+09.42	LT.	LT.	69'	
197+00.71	197+94.85	LT.	LT.	111'	1

SPECIAL FLOOD HAZARD AREA

STA. 194+85 - INSTALL
107' PIPE UNDERDRAIN 9' RT. OF C.L.
CONNECT TO DROP INLET STA. 195+92
PIPE UNDERDRAIN = 107 LIN. FT.

STA. 197+30 - INSTALL
138' PIPE UNDERDRAIN 9' RT. OF C.L.
CONNECT TO DROP INLET STA. 195+92
PIPE UNDERDRAIN = 138 LIN. FT.

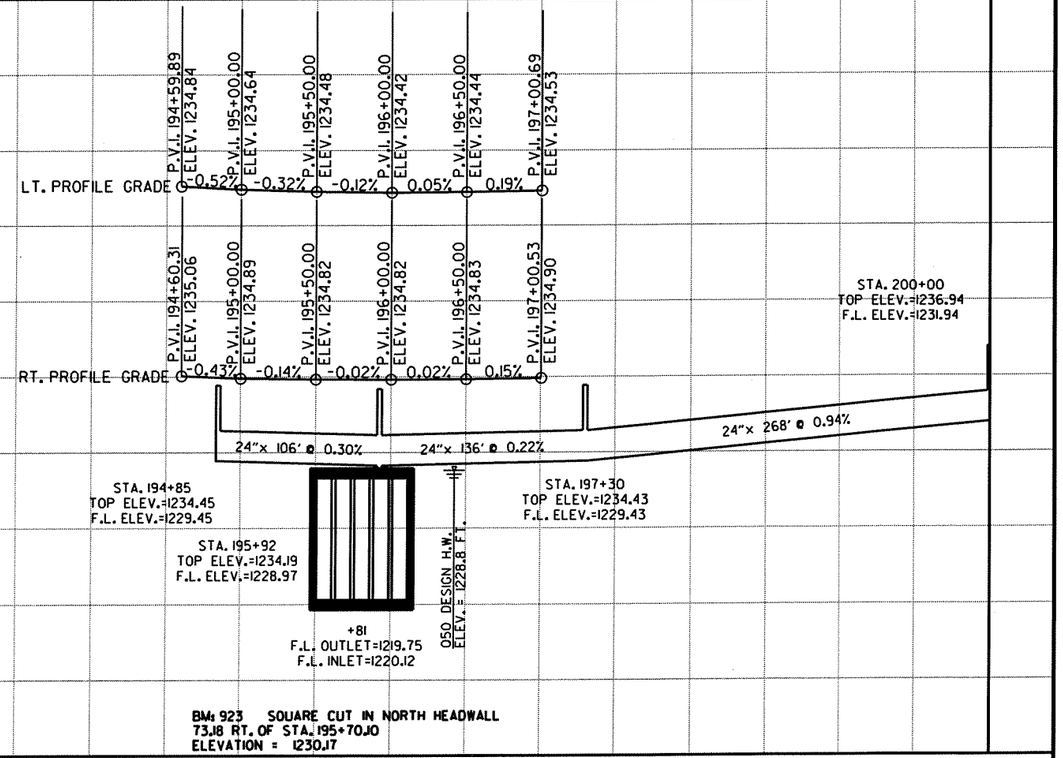
I-540
P.I. 198+91.72
Δ = 10°38'04" RT.
D = 0°00'00"
T = 533.26'
L = 1063.46'
P.C. 193+58.46
P.T. 204+21.92
e = MATCH EXISTING
Ls = MATCH EXISTING

STA. 200+00 - CONSTRUCT
TYPE ST DROP INLET 2.5' LT. OF C.L.
WITH 24" X 268' R.C. PIPE OUTLET
CONNECT TO DROP INLET STA. 197+30
DROP INLET H = 5'-0"
USE 3 VANE GRATES
24" R.C. PIPE (CLASS III) (TYPE 3) BEDDING = 268 LIN. FT.

SPECIAL FLOOD HAZARD AREA

I-540

STA. 192+25 - STA. 197+32
SPECIAL FLOOD HAZARD AREA



BM: 922 SQUARE CUT IN DROP INLET OF
0.46 LT. OF STA. 188+44.52
ELEVATION = 1242.56

BM: 923 SQUARE CUT IN NORTH HEADWALL
73.18 RT. OF STA. 195+70.10
ELEVATION = 1230.17

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				6	ARK.			
				JOB NO.		040605	99	260

(2) PLAN AND PROFILE SHEETS

CONCRETE MEDIAN BARRIER
TYPE C STA. 171+50.00 TO STA. 173+25.25
TYPE SPECIAL STA. 173+25.25 TO STA. 175+70.25
TYPE C STA. 175+70.25 TO STA. 239+77.13

STA. 203+00 - CONSTRUCT
TYPE ST DROP INLET 2.5' LT. OF C.L.
WITH 24" X 298' R.C. PIPE OUTLET
CONNECT TO DROP INLET STA. 200+00
DROP INLET H = 5'-0"
USE 3 VANE GRATES
24" R.C. PIPE (CLASS III) (TYPE 3) BEDDING = 298 LIN. FT.

STA. 207+43 - IN PLACE
6' x 6' x 163' R.C. BOX CUL-V'T.
WITH 3:1 WINGS LT. & RT.
ON 30° RT. FWD. SKEW
RETAIN AND EXTEND 26' LT.
050 = 250 C.F.S. D.A. = 142 ACRES
WITH TYPE T DROP INLET IN MEDIAN
MODIFY DROP INLET

FENCE (TYPE A)					16'-0" GATE
STA.	STA.	MAIN LANES	SIDE		
206+39.00	206+87.00	LT.	LT.	48'	
206+96.00	207+93.00	LT.	LT.	109'	1

STA. 206+39 TO STA. 207+92.40 - IN PLACE
TYPE A FENCE
REMOVE

STA. 210+43 - INSTALL
300' PIPE UNDERDRAIN 9' LT. OF C.L.
CONNECT TO DROP INLET STA. 207+43
PIPE UNDERDRAIN = 300 LIN. FT.

STA. 175+15 TO STA. 220+67 - IN PLACE
WIRE ROPE SAFETY FENCE
REMOVE

STA. 206+24 TO STA. 209+00 - IN PLACE
GUARDRAIL LT. OF L.M.L.
REMOVE

STA. 203+00 - INSTALL
300' PIPE UNDERDRAIN 1'-6" LT. OF C.L.
CONNECT TO DROP INLET STA. 200+00
PIPE UNDERDRAIN = 300 LIN. FT.

STA. 206+00 - INSTALL
300' PIPE UNDERDRAIN 1'-6" LT. OF C.L.
CONNECT TO DROP INLET STA. 203+00
PIPE UNDERDRAIN = 300 LIN. FT.

16'-0" GATE

+23.95

EXISTING R.O.W.

600' TRANSITION

300' TAPER

700' ACCELERATION LANE

+66.53

FIBER OPTIC MARKER

BURIED GAS MARKER

STATE OF ARKANSAS
TRINITY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11425
6-14-13

200 205 210 215

N 34°30'40" E

STA. 203+00 - INSTALL
300' PIPE UNDERDRAIN 9' RT. OF C.L.
CONNECT TO DROP INLET STA. 200+00
PIPE UNDERDRAIN = 300 LIN. FT.

I-540
P.I. 198+91.72
Δ = 10°40'00" RT.
D = 01°00'00"
T = 533.26'
L = 1063.46'
P.C. 193+58.46
P.T. 204+21.92
e = MATCH EXISTING
Ls = MATCH EXISTING

PT 204+21.92

STA. 206+00 - INSTALL
300' PIPE UNDERDRAIN 9' RT. OF C.L.
CONNECT TO DROP INLET STA. 203+00
PIPE UNDERDRAIN = 300 LIN. FT.

EXISTING R.O.W.

SQUARE CUT IN CENTER HEADWALL

SPECIAL FLOOD HAZARD AREA

SPECIAL FLOOD HAZARD AREA

NOSE +07.20

59.80'

STA. 210+43 - INSTALL
300' PIPE UNDERDRAIN 9' RT. OF C.L.
CONNECT TO DROP INLET STA. 207+43
PIPE UNDERDRAIN = 300 LIN. FT.

STA. 213+90 TO STA 219+43 RT. OF R.M.L.
CONCRETE DITCH PAVING (TYPE B) ("W"=6') = 366.67 SQ. YD.

STA. 214+51 - IN PLACE
TYPE ST DROP INLET RT. OF MAIN LANES
WITH 24" X 72' R.C. PIPE OUTLET
REMOVE DROP INLET

STA. 214+48 - CONSTRUCT
TYPE ST DROP INLET 65.25' RT. OF C.L.
WITH CONCRETE COLLARS
& 24" X 4' PIPE OUTLET
DROP INLET H = 4'-2"
USE 3 VANE GRATES
24" R.C. PIPE (CLASS III)(TYPE 3) = 4 LIN. FT.

I-540

STA. 206+22 - STA. 210+08
SPECIAL FLOOD HAZARD AREA

P.V.C. 206+23.95
ELEV. 1244.32

P.V.C. 212+23.95
ELEV. 1251.31

K=416.48
VC=375'
e=0.42'

1.17% (L.M.L. PROFILE)

1.10%

RT. DITCH GRADE 1.01%

214+00.00 (RT.)
1250.62

P.V.I. 214+11.45
ELEV. 1253.37

STA. 214+48
TOP ELEV.=1251.11
F.L. ELEV.=1246.94

STA. 200+00
TOP ELEV.=1236.94
F.L. ELEV.=1231.94

STA. 203+00
TOP ELEV.=1240.20
F.L. ELEV.=1235.20

24"x 298' @ 1.10%

+43
F.L. ELEV. INLET (EXIST.)=1235.31
F.L. OUTLET=1234.77

BM: 924 SQUARE CUT IN CENTER HEADWALL
72.74 RT. OF STA. 207+85.67
ELEVATION = 1243.41

1260 1255 1250 1245 1240 1235 1230 1225 1220 1215

200+00 201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00 215+00

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				6	ARK.			
				JOB NO.		040605	100	260

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-19-13

STA. 215+02 - IN PLACE
TYPE R DROP INLET IN M IAN
WITH 24" x 80' R.C. PIPE OUTLET
REMOVE DROP INLET
REMOVE 4' R.C. PIPE LT.
FILL AND ABANDON USING
FLOWABLE SELECT = 9 CU.YD.

CONCRETE MEDIAN BARRIER
TYPE C STA. 171+50.00 TO STA. 173+25.25
TYPE SPECIAL STA. 173+25.25 TO STA. 175+70.25
TYPE C STA. 175+70.25 TO STA. 239+77.13

STA. 175+15 TO STA. 220+67 - IN PLACE
WIRE ROPE SAFETY FENCE
REMOVE

STA. 219+59 TO STA 223+26 LT. OF L.M.L.
CONCRETE DITCH PAVING (TYPE B) ("W"=6') = 248.38 SQ. YD.

STA. 223+21 - IN PLACE
TYPE N DROP INLET LT. OF L.M.L.
WITH 12" x 73' PIPE OUTLET
REMOVE

STA. 223+55.13 - IN PLACE
QUAD. 5' x 3' x 150' R.C. BOX CULVERT
MODIFY

STA. 222+96.10 - STA. 226+03.37 IN PLACE
310' X 40' BRIDGE NO. 5824 CONSISTING
COUNTINUOUS COMPOSITE PLATE GIRDER UNIT
REMOVE AS EXISTING BRIDGE STRUCTURE
= 0.50 LUMP SUM

700' ACCELERATION LANE

EXISTING R.O.W.

STA. 213+90 TO STA 219+43 RT. OF R.M.L.
CONCRETE DITCH PAVING (TYPE B) ("W"=6') = 366.67 SQ. YD.

STA.	STA.	MAIN LANES	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
218+24.17	220+92.92	RT.	RT.	200'	1	1
227+22.08	230+90.83	LT.	LT.	300'	1	1

SPECIAL FLOOD HAZARD AREA

STA. 224+08.12 ON I-540 =
STA. 504+71.64 ON PORTER RD.
Δ 149°18'31"

STA. 221+89 - IN PLACE
TYPE N DROP INLET LT. OF L.M.L.
WITH 12" x 50' PIPE OUTLET
REMOVE

STA. 226+75 TO STA. 240+15 - IN PLACE
WIRE ROPE SAFETY FENCE
REMOVE

STA. 227+02 - IN PLACE
TYPE R DROP INLET IN MEDIAN
WITH 24" x 93' R.C. PIPE OUTLET
REMOVE DROP INLET
REMOVE 4' R.C. PIPE LT.
FILL AND ABANDON USING
FLOWABLE SELECT = 11 CU.YD.

I-540

STA. 224+63 TO STA 228+83 RT. OF R.M.L.
CONCRETE DITCH PAVING (TYPE B) ("W"=6') = 289.66 SQ. YD.

STA. 223+10 - STA. 224+55
SPECIAL FLOOD HAZARD AREA

STA. 222+27.41 - STA. 224+90.81 IN PLACE
264'-6" X 43' BRIDGE NO. 5075 CONSISTING
COUNTINUOUS I-BEAM UNIT
REMOVE AS EXISTING BRIDGE STRUCTURE
= 0.50 LUMP SUM

SLOPE INTERCEPT STA. 221+88.39
BRIDGE END STA. 222+11.92
P.V.I. 223+22.22 ELEV. 1271.59
BRIDGE END STA. 226+03.08
SLOPE INTERCEPT STA. 226+23.61
P.V.C. 227+46.75 ELEV. 1271.59
P.V.T. 227+34.72 ELEV. 1271.59
P.V.C. 219+09.72 ELEV. 1263.34
P.V.I. 215+98.95 ELEV. 1257.12

K=416.48
VC=375'
e=0.42'

K=412.41
VC=825'
e=-2.06'

K=417.39
VC=480'
e=0.69'

2.00%
RT. DITCH GRADE 2.03%
RT. DITCH GRADE 1.25%
RT. DITCH GRADE 2.76%

215+00.00 1251.63 (RT.)
217+00.00 1255.68 (RT.)
218+00.00 1256.93 (RT.)
218+25.00 1257.62 (RT.)

CONSTRUCT
387'-0" CONTINUOUS COMPOSITE
CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(110'-167'-110' SPANS)
BR. NO. 07287
111'-2" OUT TO OUT

BM: 925 SQUARE CUT SOUTHEAST CORNER OF
60.54 RT. OF STA. 221+77.77
ELEVATION = 1262.89

BM: 927 AHTD DISK SET IN CENTER HEADWAL
70.55 RT. OF STA. 223+36.58
ELEVATION = 1242.31

1280 1275 1270 1265 1260 1255 1250 1245 1240 1235

215+00 216+00 217+00 218+00 219+00 220+00 221+00 222+00 223+00 224+00 225+00 226+00 227+00 228+00 229+00 230+00

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				6	ARK.			
				JOB NO.	040605		101	260

(2) PLAN AND PROFILE SHEETS

CONCRETE MEDIAN BARRIER
TYPE C STA. 171+50.00 TO STA. 173+25.25
TYPE SPECIAL STA. 173+25.25 TO STA. 175+70.25
TYPE C STA. 175+70.25 TO STA. 239+77.13

STA. 230+08 TO STA 233+77 LT. OF L.M.L.
CONCRETE DITCH PAVING (TYPE B) ("W"=6') = 244.93 SQ. YD.

STA. 226+75 TO STA. 240+15 - IN PLACE
WIRE ROPE SAFETY FENCE
REMOVE

STA. 236+17 - IN PLACE
TYPE RM DROP INLET LT. OF L.M.L.
ADJUST TO GRADE
AND MODIFY TO TYPE ST DROP INLET
USE 3 VANE GRATES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

STA.	STA.	MAIN LANES	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
218+24.17	220+92.92	RT.	RT.	200'	1	1
227+22.08	230+90.83	LT.	LT.	300'	1	1

END JOB 040605
STA. 239+77.13

STA. 239+77.13 - INSTALL
CRASH CUSHION IN MEDIAN = 1 EACH

STA. 240+15 - INSTALL
WIRE ROPE SAFETY FENCE END TERMINAL

I-540

K=417.39
VC=480'
e=0.69'

1.15%

1.07% (L.M.L. PROFILE)

P.V.T. 232+26.75
ELEV. 1274.35

P.V.T. 238+26.75
ELEV. 1280.75

| | | | |

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

STA. 219+38.89 ON RAMP 2 =
STA. 500+20.40 ON PORTER RD.
Δ 104°20'30"

POB 219+38.89

PC 220+07.82

PT 221+93.95

PI 221+13.48

RAMP 2
P.I. 221+13.48
Δ = 67°42'39"LT.
D = 36°22'42"
T = 105.66'
L = 186.13'
P.C. 220+07.82
P.T. 221+93.95

N 19°28'42" E

N 34°30'40" E

N 3°49'11" E

N 11°46'03" E

100' TRANSITION

PC 226+47.24

PI 228+77.72

PI 227+70.38

PT 231+02.12

RAMP 2
P.I. 228+77.72
Δ = 22°44'37"RT.
D = 5°00'00"
T = 230.47'
L = 454.87'
P.C. 226+47.24
P.T. 231+02.12
e = 0.083'/'
Ls = 300'

N 34°51'24" E

PI 233+08.60

PC 232+19.28

PT 233+74.04

N 55°E

4.00'

SPECIAL FLOOD HAZARD AREA

SPECIAL FLOOD HAZARD AREA

CUT SOUTHEAST CORNER OF

REBAR W/ CAP

PK NAIL W/ CAP PDO5.08'

PK NAIL W/ CAP PDO5.78'

PK NAIL W/ CAP PDO5.20'

PK NAIL PDO.04'

PK NAIL PDO.20'

PK NAIL PDO.28'

PK NAIL W/ CAP

PK NAIL PDO.77'

PK NAIL PDO.77' PDO.04'

PK NAIL PDO.77' PDO.20'

PK NAIL PDO.77' PDO.28'

PK NAIL PDO.77' PDO.08'

PK NAIL PDO.77' PDO.78'

PK NAIL PDO.77' PDO.05'

PK NAIL PDO.77' PDO.08

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

STA. 227+83 TO STA. 228+43 RT. OF RAMP 3
CONCRETE DITCH PAVING (TYPE B) ("W"=6') = 43.33 SQ. YD.

STA. 227+05.71 ON RAMP 3 =
STA. 508+66.99 ON PORTER RD.
Δ 105°10'00"

RAMP 3
P.I. 228+70.38
Δ = 43°47'47"LT.
D = 36°22'42"
T = 63.31'
L = 120.39'
P.C. 228+07.07
P.T. 229+27.46

STA. 230+09 - CONSTRUCT
TYPE ST DROP INLET 13.75' RT. OF RAMP 3 C.L.
WITH 24" & 350' R.C. PIPE OUTLET WITH F.E.S.
H = 4'-3"
USE 3 VANE GRATE
24" R.C. PIPE (CLASS III) (TYPE 3) BEDDING = 172 LIN. FT.
24" F.E.S. = 1EACH

RAMP 3
P.I. 233+08.72
Δ = 5°21'46"RT.
D = 3°00'00"
T = 89.44'
L = 178.76'
P.C. 232+19.28
P.T. 233+98.04
e = MATCH EXISTING
Ls = MATCH EXISTING

STA. 228+17 TO STA 239+77.11 LT. OF RAMP 3
CONCRETE DITCH PAVING (TYPE B) ("W"=6') = 744.93 SQ. YD.

RAMP 3
P.I. 237+90.47
Δ = 5°42'30"LT.
D = 3°00'00"
T = 95.22'
L = 190.28'
P.C. 236+95.25
P.T. 238+85.53
e = MATCH EXISTING
Ls = MATCH EXISTING

RAMP 3

K=64.14
VC=125'
e=-0.30'

STA. 230+09
TOP ELEV.=1269.20
F.L. ELEV.=1264.99

24" x 172' @ 2.17%

P.V.C. 230+30.28
ELEV. 1269.63

P.V.I. 230+92.78
ELEV. 1271.63

P.V.T. 231+55.28
ELEV. 1272.41

P.V.I. 234+29.93
ELEV. 1275.82

1.24%

LT. DITCH GRADE 3.36%
LT. DITCH GRADE 1.65%
LT. DITCH GRADE 1.39%
LT. DITCH GRADE 1.10%
LT. DITCH GRADE 0.33%

230+29.93
1266.02 (LT.)

231+50.01
1270.05 (LT.)

232+50.01
1271.70 (LT.)

233+25.01
1272.74 (LT.)

233+93.93
1273.50 (LT.)

234+66.50
1273.74 (LT.)

1290 1285 1280 1275 1270 1265 1260 1255 1250 1245

227+00 228+00 229+00 230+00 231+00 232+00 233+00 234+00 235+00

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2 PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

SPECIAL FLOOD HAZARD AREA

STA. 222+87 - IN PLACE
QUAD. 5' x 3' x 120' R.C. BOX CULV'T.
30° RT. FWD. SKEW
WITH 3W WINGS LT. & RT.
RETAIN AND EXTEND 28' RT.
Q50 = 969 CFS D.A. = 460 ACRES

RAMP 4
P.I. 226+62.22
Δ = 65°08'29" RT.
D = 36°22'42"
T = 100.61'
L = 179.07'
P.C. 225+61.61
P.T. 227+40.68
e = 0.010'/'
Ls = 300

RAMP 4
P.I. 219+85.84
Δ = 24°15'31" LT.
D = 5°00'00"
T = 246.28'
L = 485.17'
P.C. 217+39.56
P.T. 222+24.73
e = 0.083'/'
Ls = 300

STA. 228+30.47 ON RAMP 4 =
STA. 508+72.90 ON PORTER RD.
Δ 108°25'34"

EARTHWORK

CONC PARKING
PAVED PARKING
CURB
SIGN
RET. WALL
EXISTING R.O.W.
100' TRANSITION
PAVED DRAIN
CURB INLET
PC 228+30.47
POT 227+05.1 510
PC 228+07.07
PT 228+72.72
PI 226+62.22
PI 222+24.73
PI 225+22.39
PI 227+40.68
PC 217+39.56
N 34°30'40" E
N 10°15'05" E
N 18°53'38" E
N 18°39'11" E
N 3°49'11" E
225
220
215
505
38
19°29'
62.61
44.00'
196.53'

RAMP 4

STA. 216+35.39 BEGIN SUPER
STA. 219+35.39 MAX SUPER (0.070'/')
STA. 219+55.17 MAX SUPER (0.070'/')
STA. 222+55.17 END SUPER

STA. 222+11 - STA. 223+76
SPECIAL FLOOD HAZARD AREA

STA. 223+22.61 BEGIN SUPER
STA. 225+62.61 MATCH EXISTING (0.080'/')

PI 219+85.84

P.V.C. 218+41.92
ELEV. 1261.33
2.00%
P.V.I. 220+14.42
ELEV. 1264.78
K=62.73
VC=345'
e=-2.37'
P.V.T. 221+86.92
ELEV. 1258.75
3.50%
P.V.C. 222+10.27
ELEV. 1257.93
K=58.33
VC=350'
e=2.62'
P.V.I. 223+85.27
ELEV. 1251.80
P.V.T. 225+60.27
ELEV. 1256.18
2.00%
P.V.I. 225+62.56
ELEV. 1256.24

+87
F.L. OUTLET(EXIST.)=1236.35
F.L. INLET=1236.51

1275 1270 1265 1260 1255 1250 1245 1240 1235 1230

218+00 219+00 220+00 221+00 222+00 223+00 224+00 225+00 226+00

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

STA. 192+25 - STA. 197+32
SPECIAL FLOOD HAZARD AREA

STA. 206+22 - STA. 210+08
SPECIAL FLOOD HAZARD AREA

SPECIAL FLOOD HAZARD AREA

SPECIAL FLOOD HAZARD AREA

SPECIAL FLOOD HAZARD AREA

EARTHWORK

N

PI 198+91.72

SIGN

200

205

210

POB 206+91.33

+91.33

300' TAPER

700' ACCELERATION LANE

EXISTING R.O.W.

206

210

N 34°30'40" E

PAVED PARKING

CURB

RAMP 4 DETOUR
P.I. 221+51.30
Δ = 11°04'38"LT.
D = 9°00'00"
T = 68.45'
L = 138.47'
P.C. 220+81.85
P.T. 222+20.31

RAMP 4 DETOUR
P.I. 222+96.98
Δ = 9°36'17"RT.
D = 8°00'00"
T = 60.17'
L = 120.06'
P.C. 222+36.81
P.T. 223+56.87

RAMP 4 DETOUR
P.I. 224+60.04
Δ = 7°39'58"LT.
D = 8°00'00"
T = 47.99'
L = 95.83'
P.C. 224+12.05
P.T. 225+07.88

RAMP 4 DETOUR
P.I. 217+27.75
Δ = 13°10'53"LT.
D = 5°00'00"
T = 132.40'
L = 263.63'
P.C. 215+95.36
P.T. 218+58.98

CONC PARKING

700' ACCELERATION LANE

PC 215+95.36

PC 217+39.56

PT 218+58.98

PC 220+81.85

PT 222+17.73

PC 222+36.81

PT 222+96.98

PC 224+12.05

PT 225+07.88

PC 225+91.91

PT 227+40.68

PI 224+60.04

PI 211+27.75

PI 219+85.84

PI 222+15.30

N 21°19'41" E

N 19°51'26" E

N 10°15'09" E

N 12°11'28" E

N 7°49'11" E

N 34°30'40" E

220

225

215

505

STA. 222+11 - STA. 223+76
SPECIAL FLOOD HAZARD AREA

RAMP 4 DETOUR

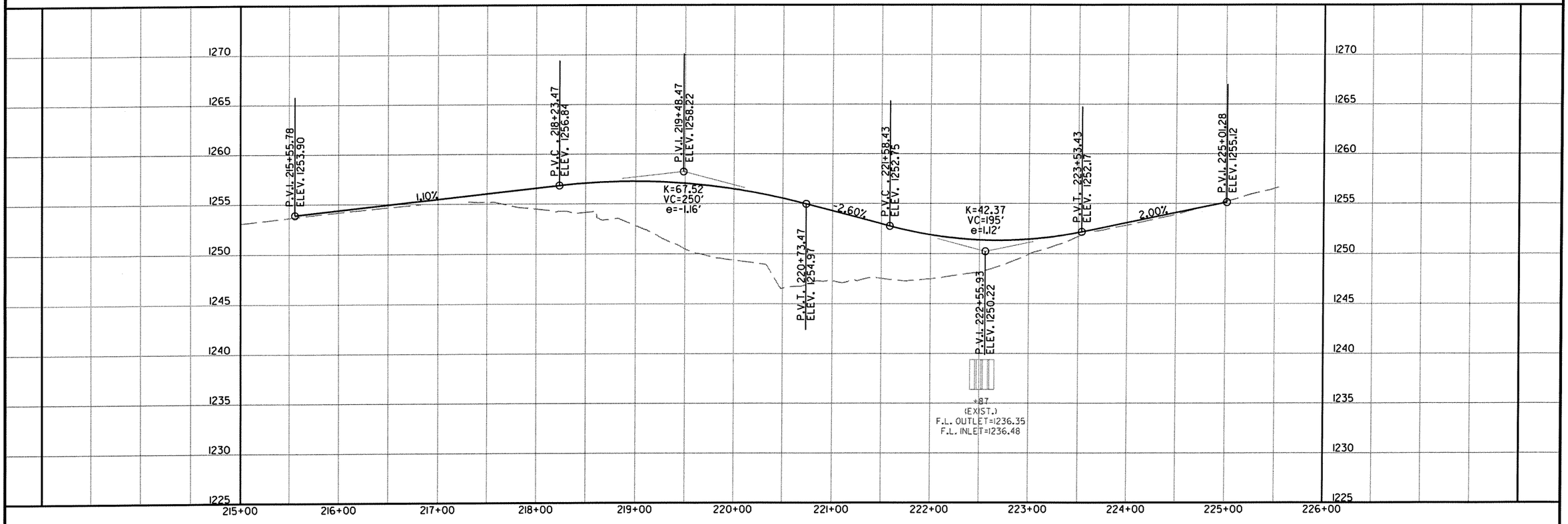
6/13/2013

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				6	ARK.			
				JOB NO.		040605	106	260

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13



RAMP 4 DETOUR

6/13/2013

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FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040605	107	260

(2) INTERCHANGE LAYOUT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-14-13

RAMP 4
P.I. 226+62.22
Δ = 65°08'29"RT.
D = 36°22'42"
T = 100.61'
L = 179.07
P.C. 225+61.61
P.T. 227+40.68
e = 0.010'/'
Ls = 300

RAMP 4
P.I. 219+85.84
Δ = 24°15'31"LT.
D = 5°00'00"
T = 246.28'
L = 485.17'
P.C. 217+39.56
P.T. 222+24.73
e = 0.083'/'
Ls = 300

STA. 228+30.47 ON RAMP 4 =
STA. 508+72.90 ON PORTER RD.
∡ 108°25'34"

RAMP 3
P.I. 228+70.38
Δ = 43°47'47"LT.
D = 36°22'42"
T = 63.31'
L = 120.39'
P.C. 228+07.07
P.T. 229+27.46

RAMP 3
P.I. 233+08.72
Δ = 5°21'46"RT.
D = 3°00'00"
T = 89.44'
L = 178.76'
P.C. 232+19.28
P.T. 233+98.04
e = MATCH EXISTING
Ls = MATCH EXISTING

RAMP 3
P.I. 237+90.47
Δ = 5°42'30"LT.
D = 3°00'00"
T = 95.22'
L = 190.28'
P.C. 236+95.25
P.T. 238+85.53
e = MATCH EXISTING
Ls = MATCH EXISTING

STA. 227+05.71 ON RAMP 3 =
STA. 508+66.99 ON PORTER RD.
∡ 105°10'00"

RAMP 2
P.I. 228+77.72
Δ = 22°44'37"RT.
D = 5°00'00"
T = 230.47'
L = 454.87'
P.C. 226+47.24
P.T. 231+02.12
NO SUPER

STA. 224+08.12 ON I-540 =
STA. 504+71.64 ON PORTER RD.
∡ 149°18'31"

STA. 219+38.89 ON RAMP 2 =
STA. 500+20.40 ON PORTER RD.
∡ 104°20'30"

RAMP 2
P.I. 221+13.48
Δ = 67°42'39"LT.
D = 36°22'42"
T = 105.66'
L = 186.13'
P.C. 220+07.82
P.T. 221+93.95

6/13/2013

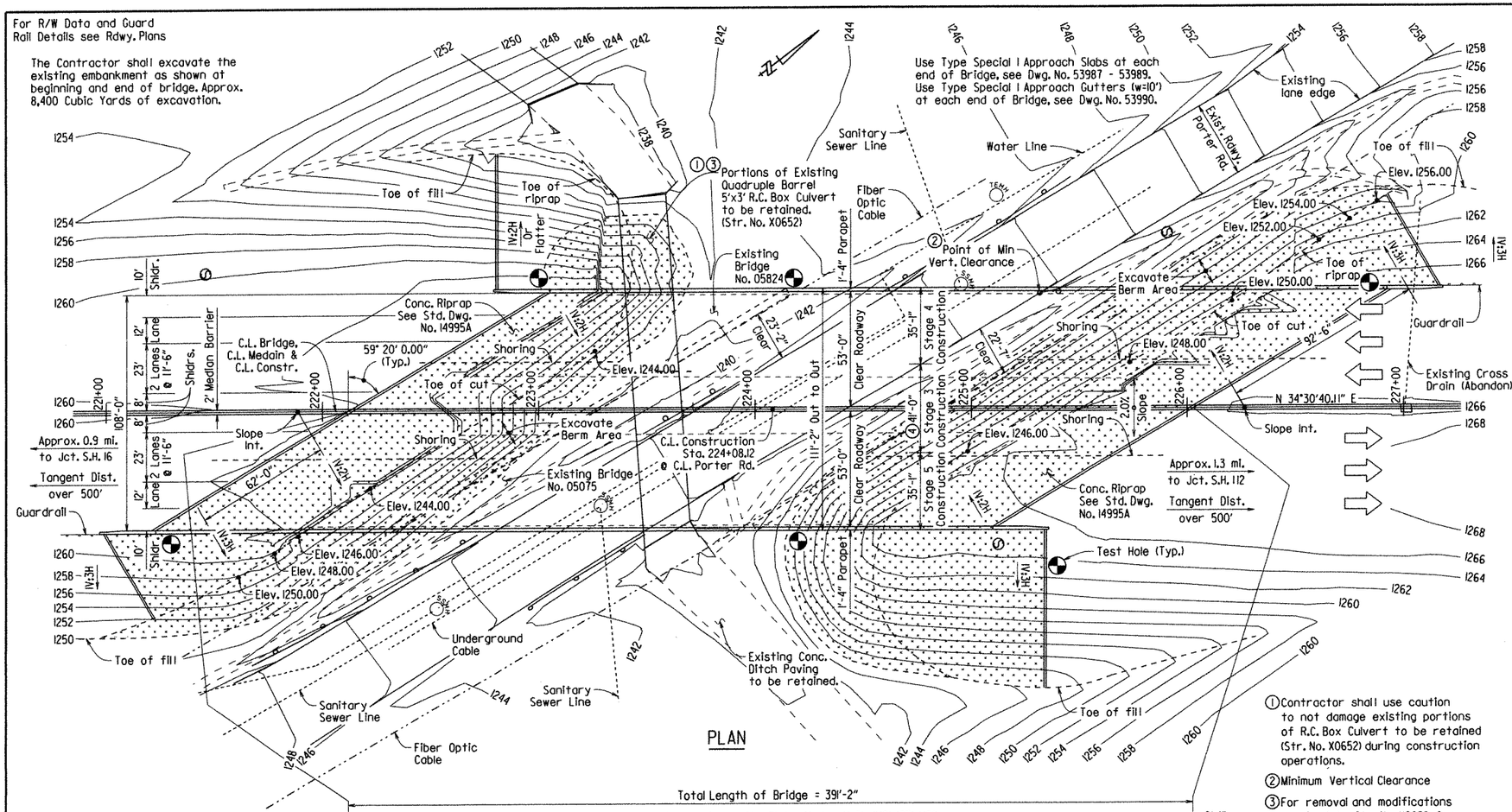
R040605.DGN

INTERCHANGE LAYOUT
I-540 - PORTER RD.

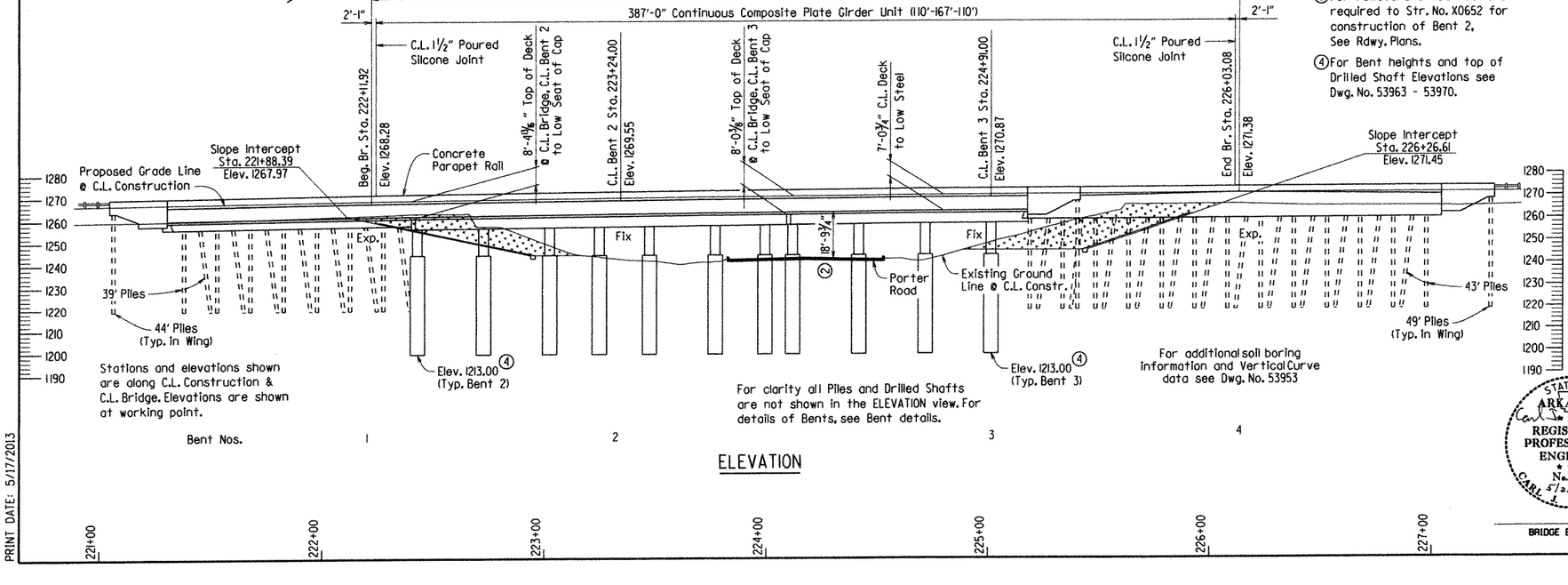
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	108	260
				① 07287	-	LAYOUT	-	53952

For R/W Data and Guard Rail Details see Rdwy. Plans

The Contractor shall excavate the existing embankment as shown at beginning and end of bridge. Approx. 8,400 Cubic Yards of excavation.



PLAN



ELEVATION

① Contractor shall use caution to not damage existing portions of R.C. Box Culvert to be retained (Str. No. X0652) during construction operations.

② Minimum Vertical Clearance

③ For removal and modifications required to Str. No. X0652 for construction of Bent 2, See Rdwy. Plans.

④ For Bent heights and top of Drilled Shaft Elevations see Dwg. No. 53963 - 53970.

GENERAL NOTES

BENCH MARK: BM 927 AHTD Disk Set in Center Headwall, 60.54 feet Right of C.L. Construction Sta. 223+36.58, Elev. 1242.31.

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, Section and subsection refer to the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 6th Edition (2012).

LIVE LOADING: HL-93

SEISMIC PERFORMANCE ZONE: 1 S_{DI} = 0.052 SITE CLASS: B

MATERIALS AND STRENGTHS:

Class S (AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M270, Grade 36)	Fy = 36,000 psi
Structural Steel (AASHTO M270, Grade 50W)	Fy = 50,000 psi

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

STEEL PILING: Piling in Bent 1 and 4 shall be HP12x53 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 70 tons per pile and into rock designated as Limestone Chert on the boring legend. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles to be driven after embankment to bottom of cap is in place. On all piling, the Contractor shall use approved steel H-Pile driving points.

DRILLED SHAFTS: All drilled shafts shall be founded a minimum of 11' into rock designated as Limestone Chert on the boring legend. No adjustment in plan tip elevation shall be made without prior approval of the Engineer. Methods of construction of the drilled shafts shall be in accordance with Special Provision Job 040605 "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 Roadway Surface Finish.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to the bridge surfaces as specified in Special Provision Job No. 040605 "Textured Coating Finish" and in accordance with subsection 802.19(b)(3). Textured Coating Finish shall not be applied to the surfaces where Class 1 Protective Surface Treatment is applied.

DETAIL DRAWINGS:	DRAWING NUMBER
End Bents	53957 - 53962 & 53971 - 53973
Intermediate Bents	53963 - 53970
387' Cont. Comp. Plate Girder Unit	53974 - 53985
Elastomeric Bearings	53986
Steel Piling	14995A
Type Special I Approach Slabs	53987 - 53989
Type Special I Approach Gutters	53990
Stage Construction	53954 - 53956

SHORING: Shoring will be required to retain existing and/or new embankments to maintain traffic during removal of Bridge Nos. 05075 and 05824 and construction of Bridge No. 07287. Shoring shall be constructed in accordance with Special Provision Job 040605 "Shoring". Payment shall be as specified in Special Provision "Shoring".

EXISTING BRIDGES: Existing Bridge No. 05075 consists of a 3 span Cont. Comp. I-Beam Unit 46.25' wide and 268.75' long supported by steel pile end bents and multiple column concrete int. bents on concrete footings and is located approximately 32' right of C.L. of Construction. Existing Bridge No. 05824 consists of a 3 span Cont. Comp. Plate Girder Unit 42.83' wide and 314.19' long supported by steel pile end bents and multiple column concrete int. bents on concrete footings and is located approximately 34' left of C.L. of Construction.

REMOVAL AND SALVAGE: The new bridge is to be built in stages. Partial removal of bridge Nos. 05075 and 05824 will be required for Stage 2 Construction. After Stage 3 Construction is complete and opened to traffic, the remaining portion of Bridge No. 05824 shall be removed in accordance with Section 205. After Stage 4 Construction is complete and opened to traffic, the remaining portion of Bridge No. 05075 shall be removed in accordance with Section 205. All material from the existing bridges shall be the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
BRIDGE ENGINEER

SHEET 1 OF 2

LAYOUT OF BRIDGE OVER PORTER ROAD HWY. 16 - PORTER RD. (WIDENING) (S) WASHINGTON COUNTY

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 11/2/12 FILENAME: b040605_11.dgn

CHECKED BY: DHP DATE: 5-17-13 SCALE: 1"=30'-0"

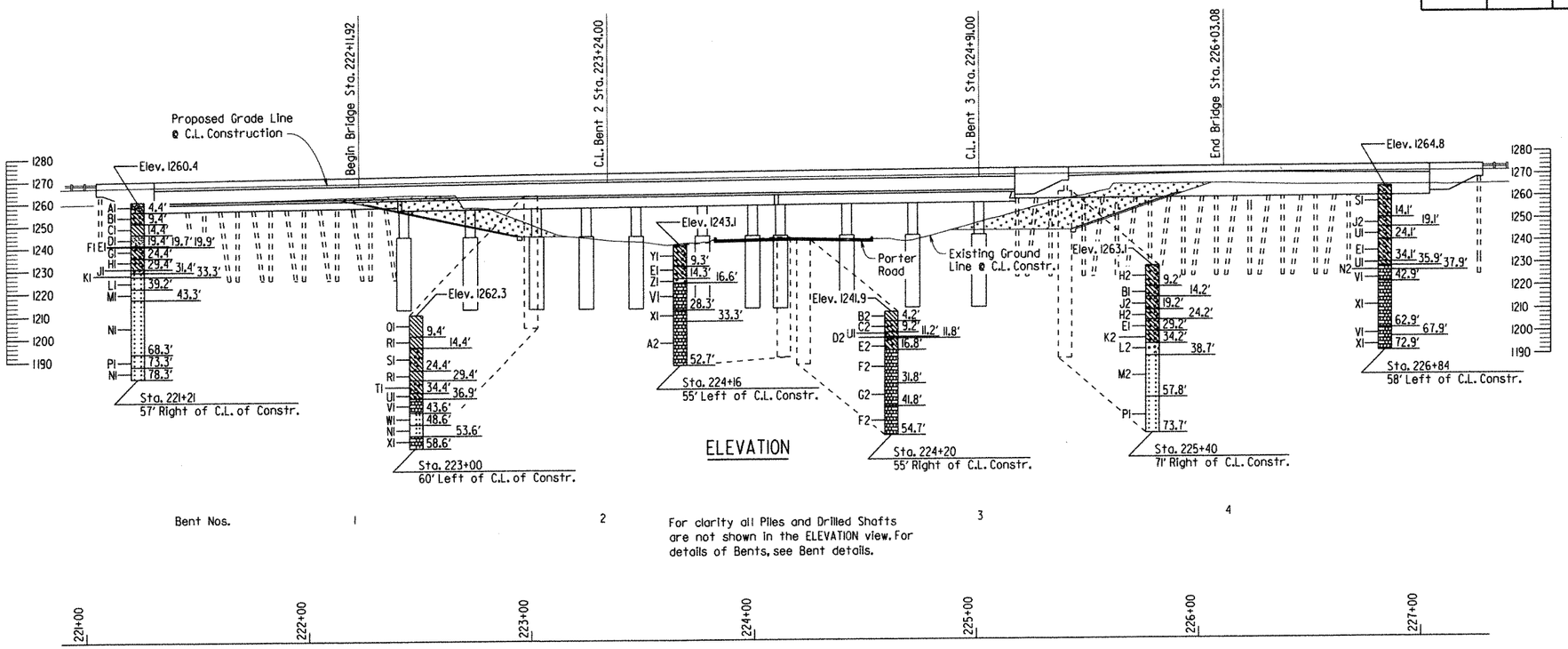
DESIGNED BY: CMW DATE: 10/25/12

BRIDGE NO. 07287 DRAWING NO. 53952

PRINT DATE: 5/17/2013

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.		040605	109	260
① 07287	-	LAYOUT	-	53953



ELEVATION

BORING LEGEND

A1-Moist, Very Stiff, Reddish Brown Clay with White Gravel (Chert Fragments) and Cobbles
B1-Moist, Very Stiff, Reddish Brown Clay with White Gravel (Chert Fragments)
C1-Moist, Stiff, Reddish Brown Clay with Trace of White Gravel (Chert Fragments)
D1-Moist, Dense, Brown Sand with Clay
E1-Moist, Hard, Reddish Brown Clay with White Gravel (Chert Fragments)
F1-Hard, Gray Cherty Limestone Cap (19.7' to 19.9')
G1-Moist, Hard, Reddish Brown Clay with White Gravel (Cherty Limestone Fragments)
H1-Moist, Very Hard, Brown Clay with White Gravel (Cherty Limestone Fragments)
J1-Wet, Very Dense, White Gravel (Cherty Limestone Fragments)
K1-CHERT - Light Gray, Thin Bedded, Weathered, Moderately Hard, with Moderate Dip
L1-CHERT - Light Gray, Thin Bedded, Weathered, Moderately Hard, with Slight Dip
M1-LIMY CHERT - Light Gray, Thin Bedded, Weathered, Moderately Hard, with Slight Dip
N1-LIMY CHERT - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip
P1-LIMY CHERT - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip and Fractured Layers
O1-Moist, Very Stiff, Gray and Brown Clay
R1-Moist, Stiff, Gray and Brown Clay
S1-Moist, Stiff, Reddish Brown Clay with White Gravel (Chert Fragments)
T1-Moist, Dense, White Gravel (Chert Fragments) with Reddish Brown Clay
U1-Moist, Very Dense, White Gravel (Chert Fragments) with Reddish Brown Clay
V1-LIMESTONE WITH FREQUENT CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
W1-LIMY CHERT - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip with Vertically Fractured Layers
X1-LIMESTONE WITH FREQUENT CHERT LAYERS - Gray, Thick Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
Y1-Moist, Stiff, Brown and Reddish Brown Clay with White Gravel (Chert Fragments)
Z1-Moist to Wet, Medium Dense, Reddish Brown and White Gravel (Chert Fragments) with Trace of Clay
A2-LIMESTONE WITH FREQUENT CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip and some Fractured Layers
B2-Moist, Stiff, Brown Clay
C2-Moist, Very Stiff, Brown Clay with Gravel (Chert Fragments)
D2-Moderately Hard, Gray Cherty Limestone Cap
E2-Moist, Hard, Reddish Brown and White Cherty Clay
F2-LIMESTONE WITH FREQUENT CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
G2-LIMESTONE WITH FREQUENT CHERT LAYERS - Gray, Thick Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
H2-Moist, Loose, White Gravel (Chert Fragments) with Reddish Brown Clay
J2-Moist, Medium Dense, White Gravel (Chert Fragments) with Reddish Brown Clay
K2-Moist, Very Hard, Reddish Brown Clay with White Gravel (Chert Fragments)
L2-Wet, Very Dense, White Gravel (Cherty Limestone Fragments) with Traxce of Clay
M2-LIMY CHERT - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip
N2-LIMESTONE - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip

"N" VALUES

Sta. 221+21 - 57' Right of C.L. Constr.
4.9- 5.9, N=16
9.9- 10.9, N=11
14.9- 15.9, N=49
19.9- 20.9, N=40
24.9- 25.9, N=61
29.9- 30.3, N=60(5")
31.4- 31.4, N=60(.01")

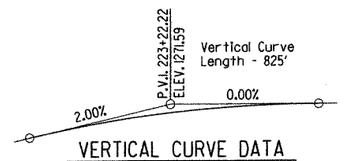
Sta. 223+00 - 60' Left of C.L. Constr.
4.9- 5.9, N=17
9.9- 10.9, N=10
14.9- 15.9, N=15
19.9- 20.9, N=9
24.9- 25.9, N=10
29.9- 30.9, N=46
34.4- 34.7, N=60(3")
36.9- 36.9, N=60(.01")

Sta. 224+16 - 55' Left of C.L. Constr.
4.8- 5.8, N=13
9.8- 10.8, N=60
14.8- 15.8, N=12
16.6- 16.6, N=60(.01")

Sta. 224+20 - 55' Right of C.L. Constr.
4.7- 5.7, N=16
9.7- 10.5, N=86(10")

Sta. 225+40 - 71' Right of C.L. Constr.
4.7- 5.7, N=10
9.7- 10.7, N=19
14.7- 15.7, N=18
19.7- 20.7, N=9
24.7- 25.7, N=45
29.7- 30.7, N=72
34.7- 35.7, N=62
38.7- 38.7, N=60(.01")

Sta. 226+84 - 58' Left of C.L. Constr.
4.6- 5.6, N=15
9.6- 10.6, N=11
14.6- 15.6, N=17
19.6- 20.5, N=109(11")
24.6- 25.6, N=51
29.6- 30.6, N=41
34.6- 34.9, N=60(4")
35.9- 35.9, N=60(.01")



VERTICAL CURVE DATA

@ C.L. Bridge and C.L. Construction

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
5/21/13

BRIDGE ENGINEER

SHEET 2 OF 2

LAYOUT OF BRIDGE OVER PORTER ROAD HWY. 16 - PORTER RD. (WIDENING) (S) WASHINGTON COUNTY

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

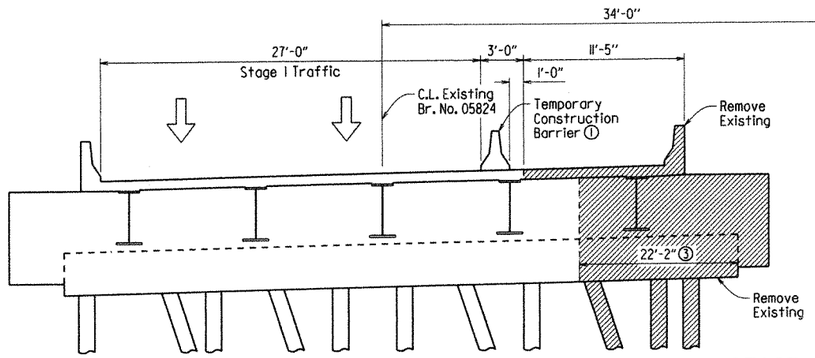
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CHECKED BY: DHP DATE: 5-17-13 SCALE: 1"=30'-0"
DESIGNED BY: CMW DATE: 10/25/12

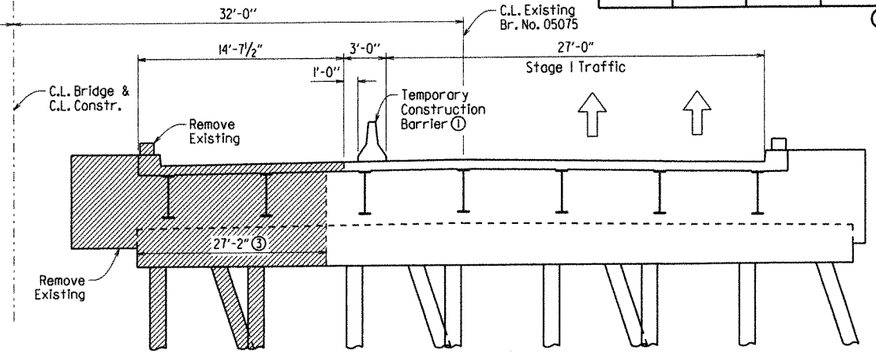
BRIDGE NO. 07287 DRAWING NO. 53953

PRINT DATE: 5/17/2013

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.		040605	110	260

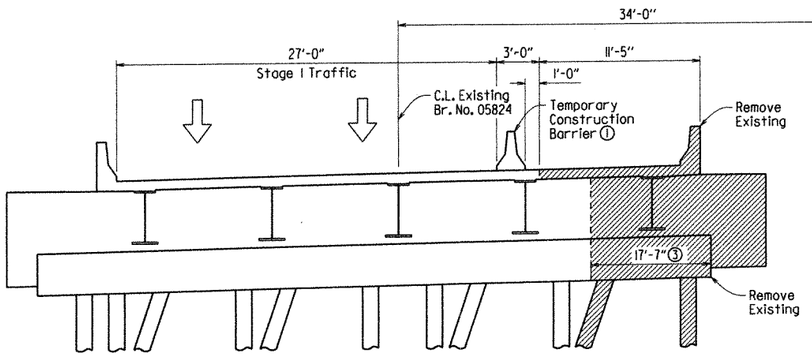
(1) 07287 - STAGE CONSTRUCTION - 53954

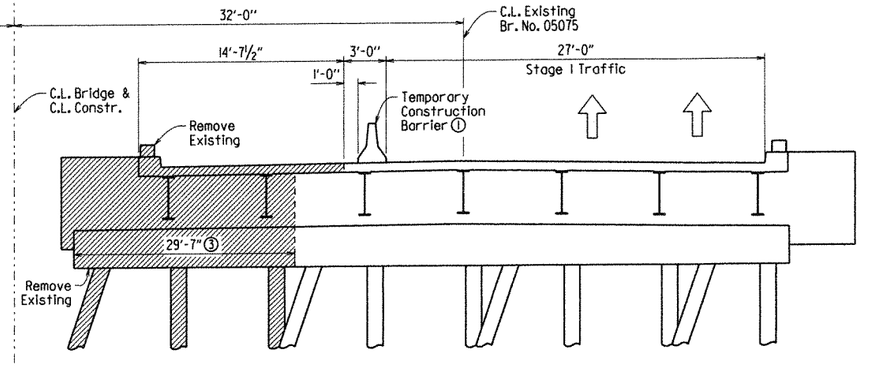




STAGE 2 CONSTRUCTION

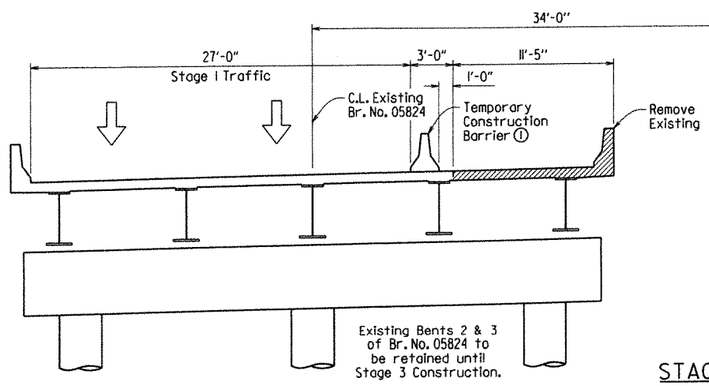
(Looking Forward)
(Shown at Bent 1)

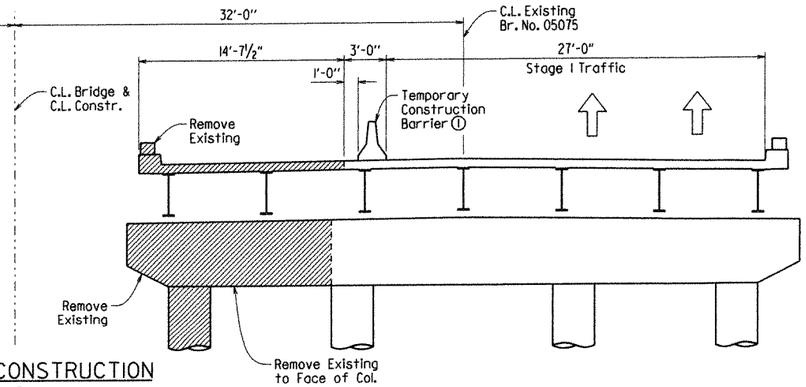




STAGE 2 CONSTRUCTION

(Looking Forward)
(Shown at Bent 4)





STAGE 2 CONSTRUCTION

(Looking Forward)
(Shown at Intermediate Bents)

NOTES:
Details that pertain to Maintenance of Traffic shown on bridge plans are for information only. See Roadway plans for Maintenance of Traffic.

For details of Temporary Construction Barrier, see Dwg. Nos. TC-4 and TC-5.

(1) Temporary Construction Barrier attached to Bridge Deck.

(2) Temporary Construction Barrier not attached to Bridge Deck.

(3) Distance measured along cap from end of cap.

STATE OF ARKANSAS
Carl J. Pusellier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. PUSELLIER

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF STAGE CONSTRUCTION

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

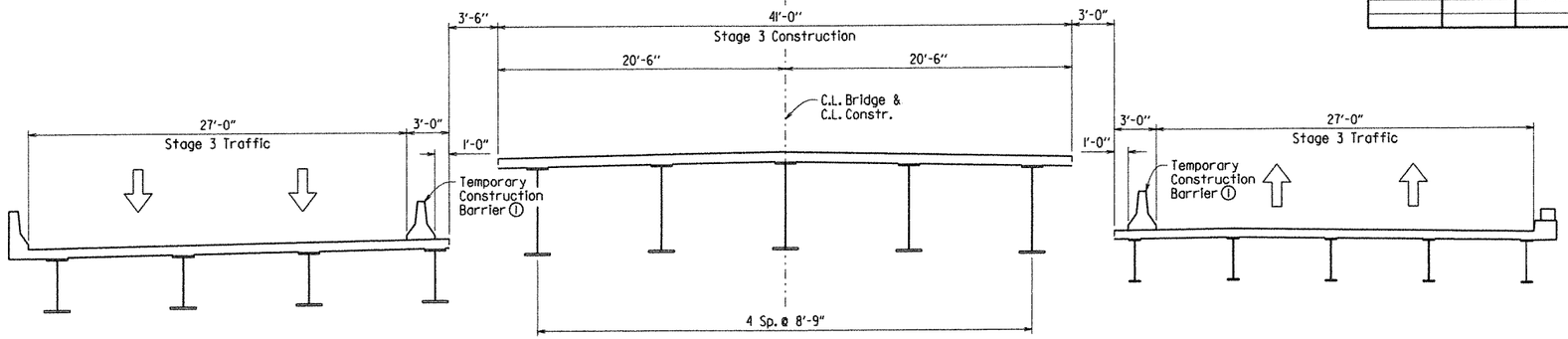
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DESIGNED BY: CSL DATE: Oct 2012

BRIDGE NO. 07287 DRAWING NO. 53954

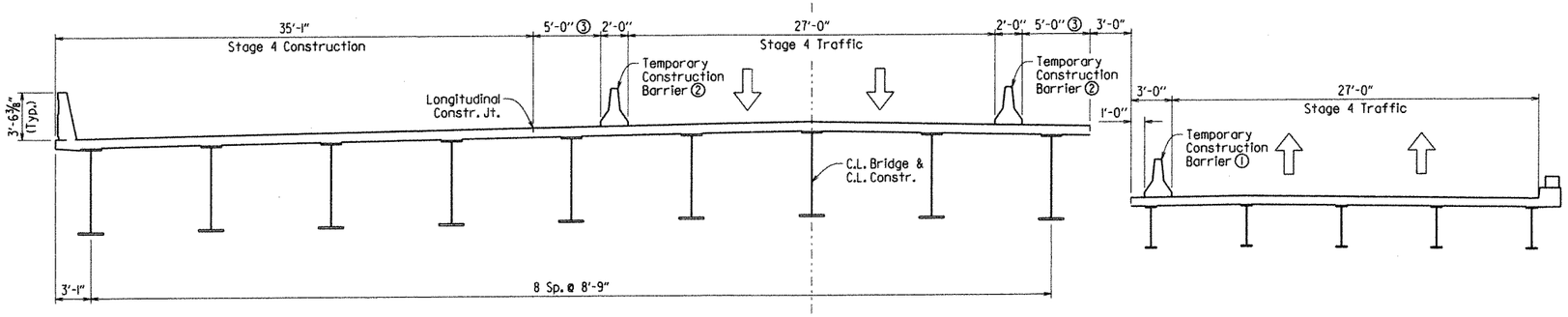
PRINT DATE: 5/17/2013

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.		040605	111	260

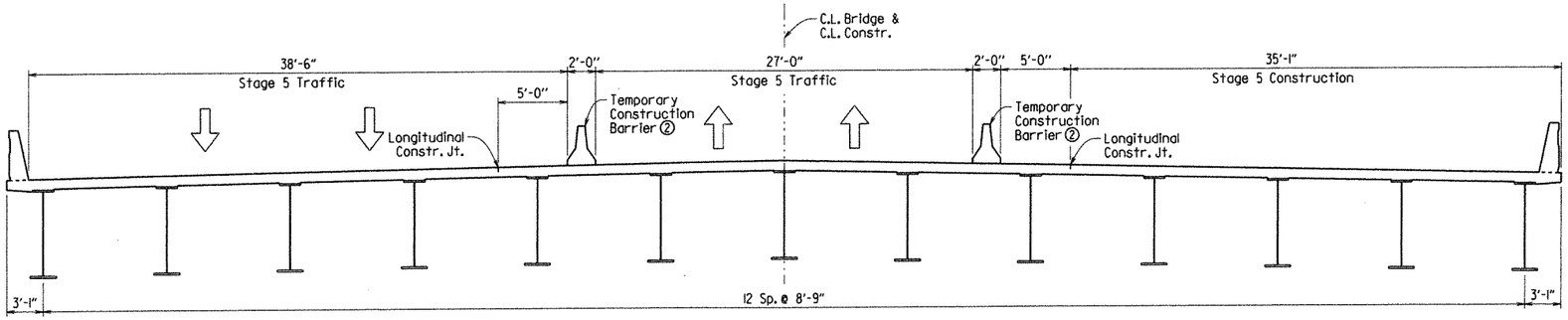
① 07287 - STAGE CONSTRUCTION - 53955



STAGE 3 CONSTRUCTION
(Looking Forward)



STAGE 4 CONSTRUCTION
(Looking Forward)



STAGE 5 CONSTRUCTION
(Looking Forward)

NOTES:
Details that pertain to Maintenance of Traffic shown on bridge plans are for information only. See Roadway plans for Maintenance of Traffic.

For details of Temporary Construction Barrier, see Dwg. Nos. TC-4 and TC-5.

① Temporary Construction Barrier attached to Bridge Deck.

② Temporary Construction Barrier not attached to Bridge Deck.

③ Construction vehicles shall not travel on the cantilever portion of the deck.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF STAGE CONSTRUCTION

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 11/26/12 FILENAME: b040605_sc.dgn
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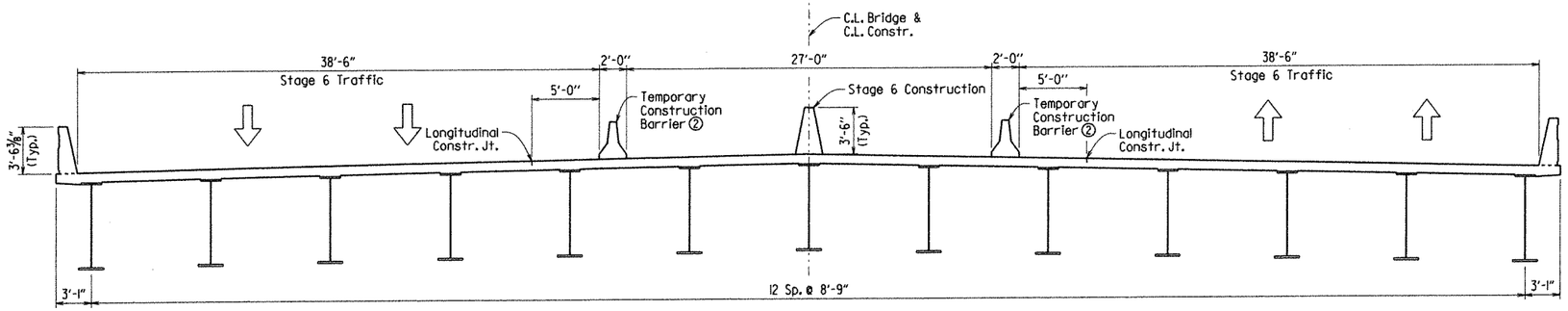
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PRINT DATE: 5/17/2013

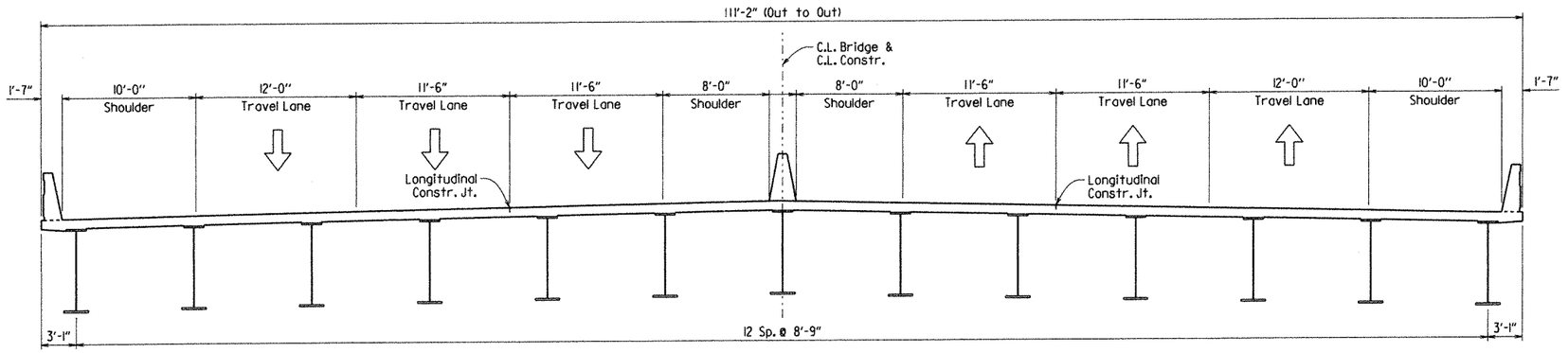
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040605	112	260

(1) 07287 - STAGE CONSTRUCTION - 53956



STAGE 6 CONSTRUCTION
(Looking Forward)



FINAL
(Looking Forward)

NOTES:
Details that pertain to Maintenance of Traffic shown on bridge plans are for information only. See Roadway plans for Maintenance of Traffic.

For details of Temporary Construction Barrier, see Dwg. Nos. TC-4 and TC-5.

① Temporary Construction Barrier attached to Bridge Deck.

② Temporary Construction Barrier not attached to Bridge Deck.

STATE OF ARKANSAS
Carl J. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/2/13
CARL J. FUSSELIER

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF STAGE CONSTRUCTION

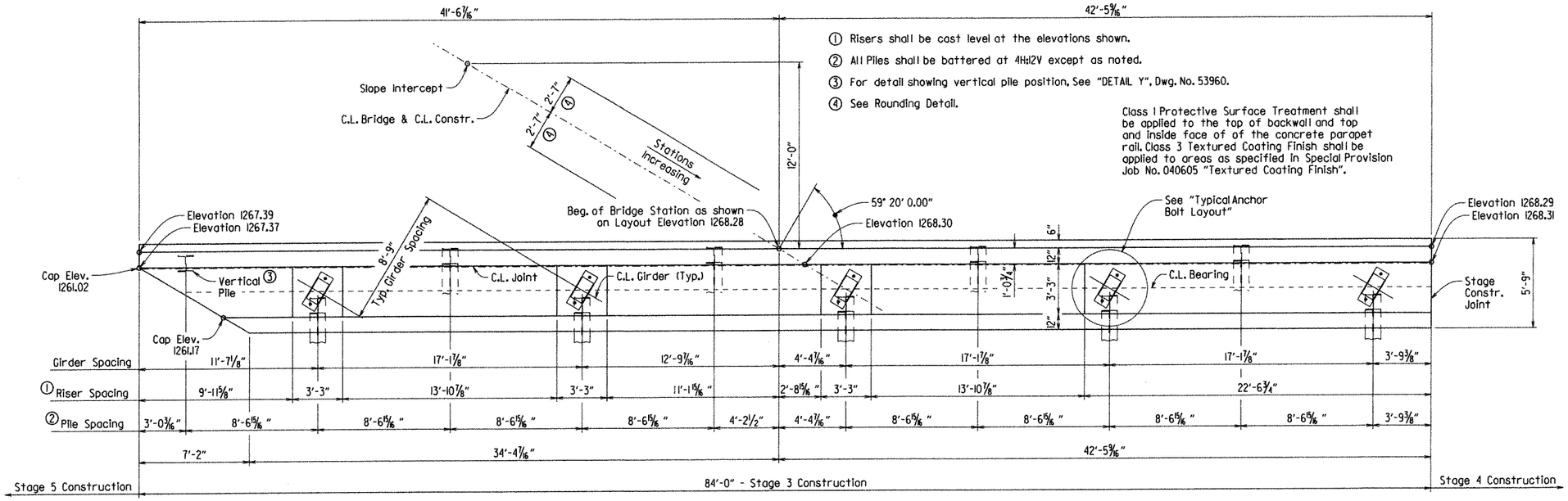
ROUTE 540 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: DATE:

BRIDGE NO. 07287 DRAWING NO. 53956

PRINT DATE: 5/17/2013

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.		040605	113	260
				(1)	07287 - END BENT DETAILS - 53957			



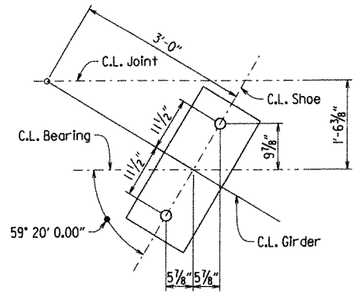
PLAN - STAGE 3 CONSTRUCTION

1/4" = 1'-0"

For "SECTION A-A", See Dwg. No. 53960.

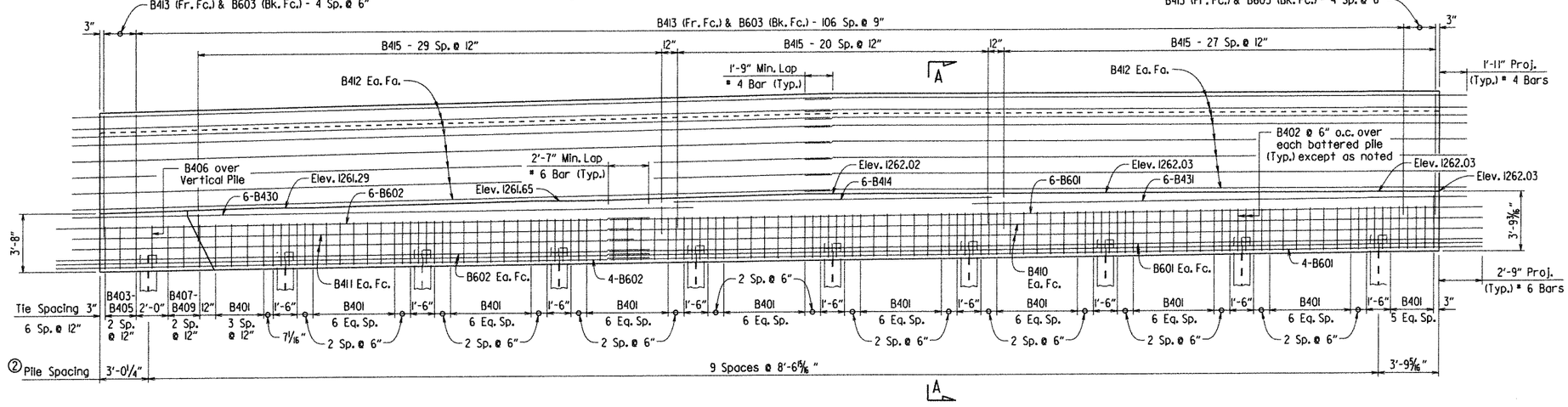
1. Risers shall be cast level at the elevations shown.
2. All Piles shall be battered at 4H:12V except as noted.
3. For detail showing vertical pile position, See "DETAIL Y", Dwg. No. 53960.
4. See Rounding Detail.

Class I Protective Surface Treatment shall be applied to the top of backwall and top and inside face of of the concrete parapet rail. Class 3 Textured Coating Finish shall be applied to areas as specified in Special Provision Job No. 040605 "Textured Coating Finish".



TYPICAL ANCHOR BOLT LAYOUT

NO SCALE

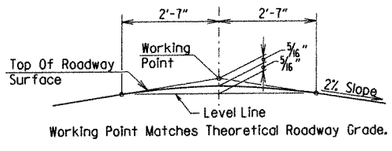


ELEVATION - STAGE 3 CONSTRUCTION

Looking Back

1/4" = 1'-0"

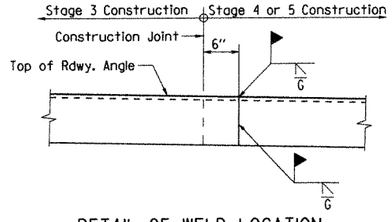
For General Notes, See Dwg. No. 53960.



Working Point Matches Theoretical Roadway Grade.

ROUNDING DETAIL

NO SCALE



DETAIL OF WELD LOCATION FOR EXPANSION DEVICE

NO SCALE

STATE OF ARKANSAS
Carl J. Fussellier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. FUSSELLIER

BRIDGE ENGINEER

SHEET 1 OF 3

DETAILS OF BENT 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 3/22/2013 FILENAME: b040605_bll.dgn

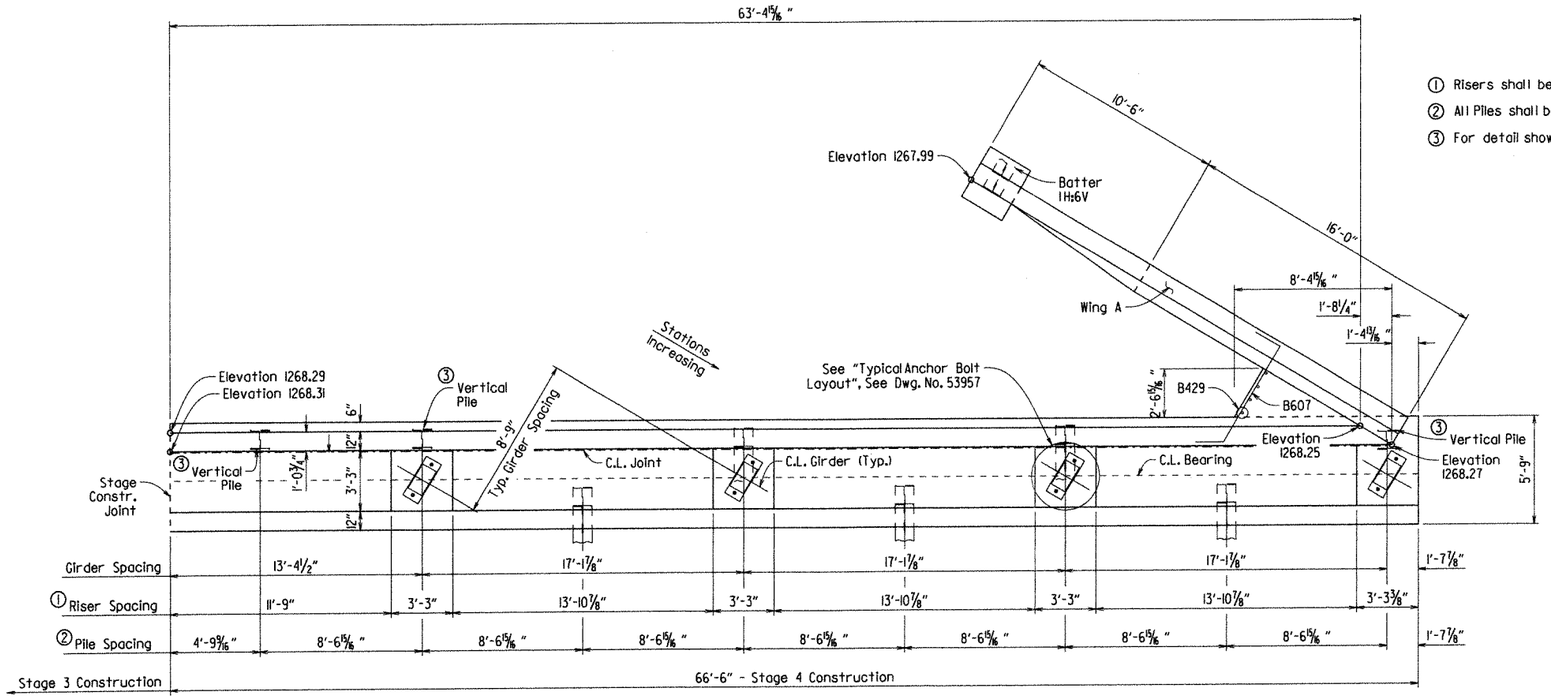
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DESIGNED BY: DHP DATE: 3-26-13

BRIDGE NO. 07287 DRAWING NO. 53957

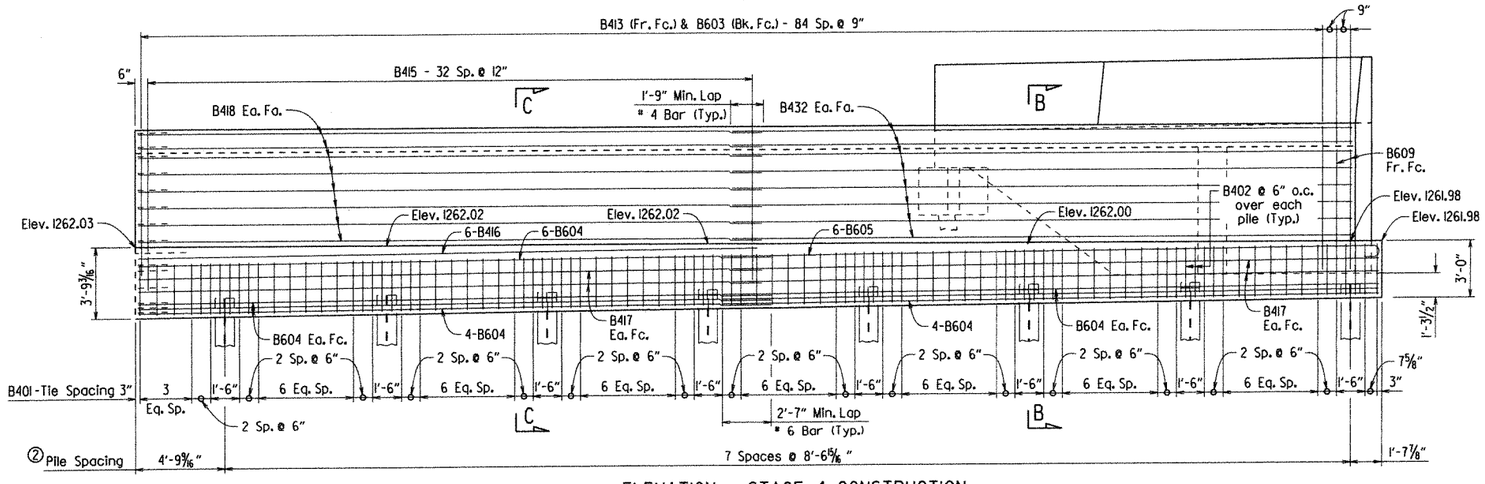
PRINT DATE: 5/17/2013

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.		040605	114	260
				① 07287 - END BENT DETAILS - 53958				



PLAN - STAGE 4 CONSTRUCTION

1/4" = 1'-0"



ELEVATION - STAGE 4 CONSTRUCTION

Looking Back

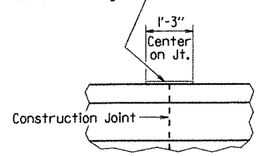
1/4" = 1'-0"

① Risers shall be cast level at the elevations shown.

② All Piles shall be battered at 4H:12V except as noted.

③ For detail showing vertical pile position, See "DETAIL Y", Dwg. No. 53960.

Membrane Waterproofing System Type C or an approved equal to extend full height of backwall and cap. See Section 815. No direct payment shall be made for this work. Payment will be subsidiary to the item "Class S Concrete-Bridge".



CONSTRUCTION JOINT DETAIL

NO SCALE

NOTES:

For Details of Wing and Rail, See Dwg. Nos. 53961 and 53962.

For "SECTION B-B" and "Section C-C", See Dwg. No. 53960.

For "DETAIL OF WELD LOCATION FOR EXPANSION DEVICE", See Dwg. No. 53957.

For General Notes, See Dwg. No. 53960.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 3

DETAILS OF BENT 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 3/22/2013 FILENAME: b040605_bll.dgn

CHECKED BY: DHP DATE: 5-17-13 SCALE: As shown

DESIGNED BY: DHP DATE: 3-26-13

BRIDGE NO. 07287 DRAWING NO. 53958

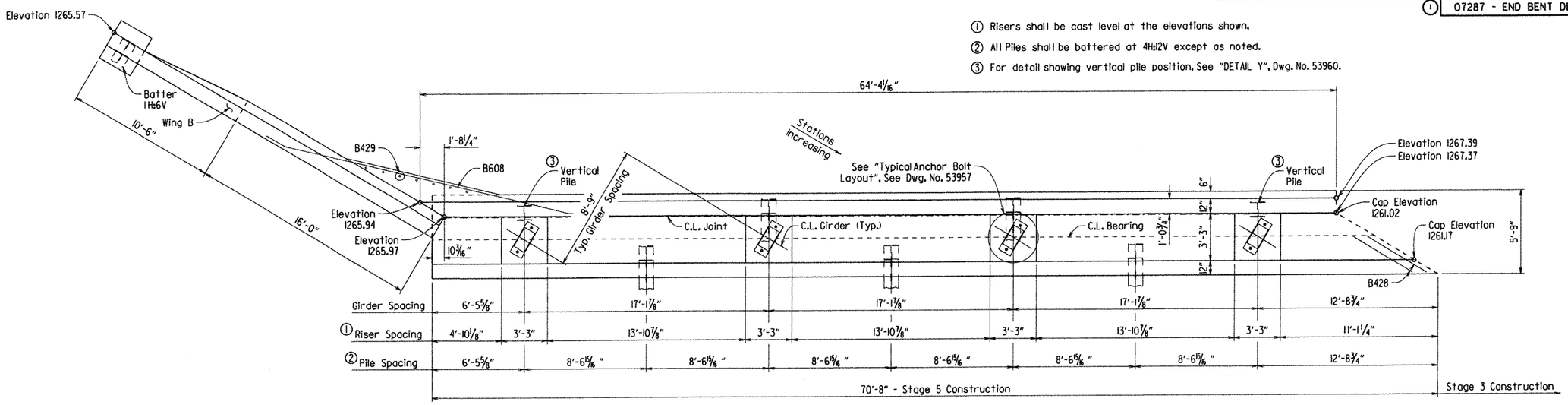
PRINT DATE: 5/17/2013

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.		040605	115	260
				①	07287 - END BENT DETAILS - 53959			

① Risers shall be cast level at the elevations shown.

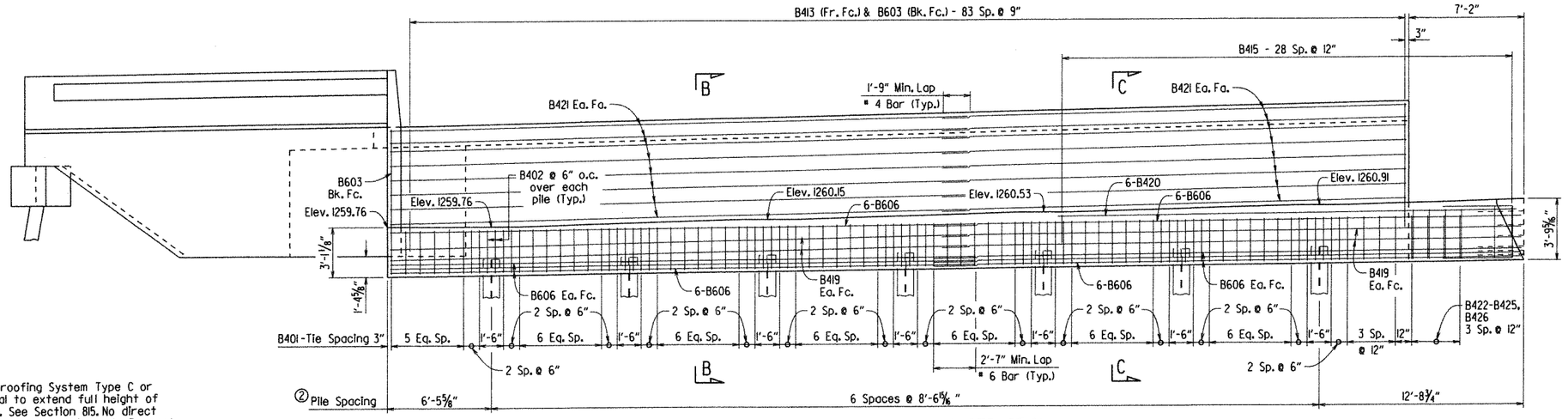
② All Piles shall be battered at 4H:12V except as noted.

③ For detail showing vertical pile position, See "DETAIL Y", Dwg. No. 53960.



PLAN - STAGE 5 CONSTRUCTION

¼" = 1'-0"

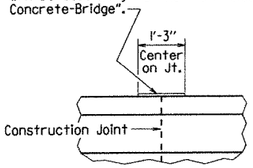


ELEVATION - STAGE 5 CONSTRUCTION

Looking Back

¼" = 1'-0"

Membrane Waterproofing System Type C or an approved equal to extend full height of backwall and cap. See Section 815. No direct payment shall be made for this work. Payment will be subsidiary to the item "Class S Concrete-Bridge".



CONSTRUCTION JOINT DETAIL

NO SCALE

NOTES:

For Details of Wing and Rail, See Dwg. Nos. 53961 and 53962.

For "SECTION B-B" and "Section C-C", See Dwg. No. 53960.

For "DETAIL OF WELD LOCATION FOR EXPANSION DEVICE", See Dwg. No. 53957.

For General Notes, See Dwg. No. 53960.

STATE OF ARKANSAS
Carl L. Puseller
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL L. PUSELLER

BRIDGE ENGINEER

SHEET 3 OF 3

DETAILS OF BENT 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 3/22/2013 FILENAME: b040605_bll.dgn

CHECKED BY: DHP DATE: 5-17-13 SCALE: As shown

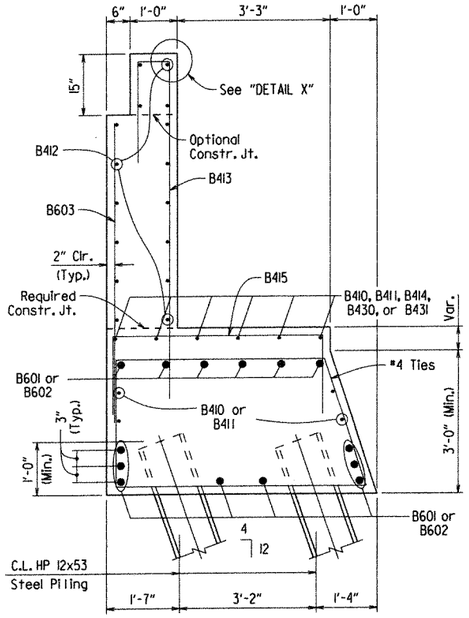
DESIGNED BY: DHP DATE: 3-20-13

BRIDGE NO. 07287 DRAWING NO. 53959

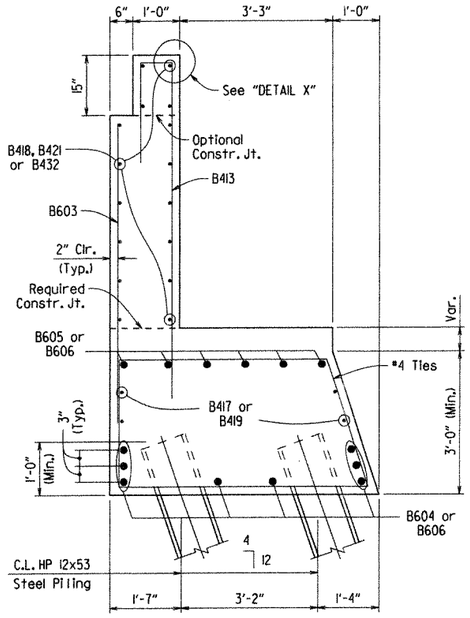
PRINT DATE: 5/17/2013

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.		040605	116	260

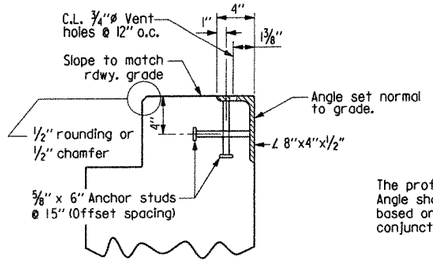
(1) 07287 - END BENT DETAILS - 53960



SECTION A-A
No Scale



SECTION B-B
No Scale



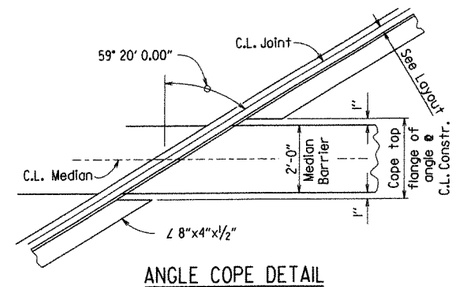
Concrete shall be hand packed under the joint armor.

Cope top flange of angle at C.L. Construction, See "ANGLE COPE DETAIL".

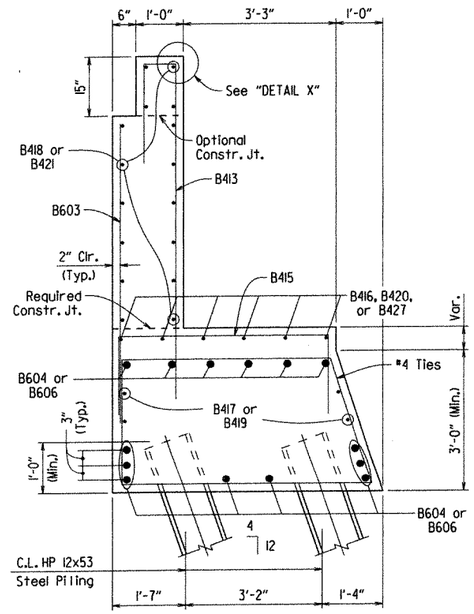
For joint details, see Dwg. No. 53985

DETAIL X
1½" = 1'-0"

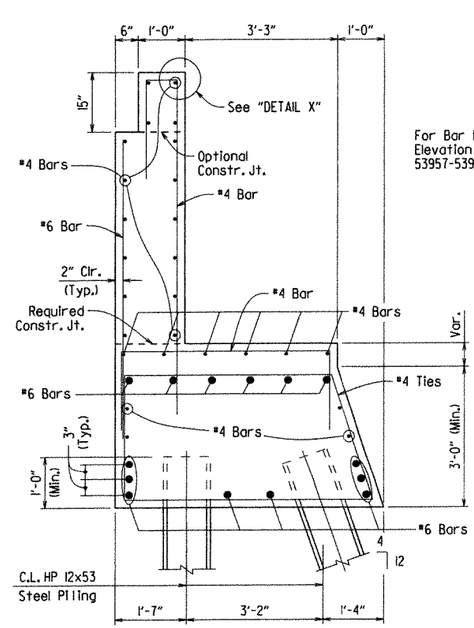
The profile of the Backwall Angle shall be established based on the Vertical Curve in conjunction with the skew.



ANGLE COPE DETAIL
No Scale



SECTION C-C
No Scale



DETAIL Y
No Scale

For Bar Designations, See Elevation Views, Dwg. Nos. 53957-53959 & 53971-53973.

GENERAL NOTES:

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

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

No portion of the backwall shall be poured before girders are in place. The portion of the backwall above the paving bracket shall not be placed until the adjacent deck pour has been made.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts.

For additional information, See Layout.

STATE OF ARKANSAS
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SHEET 1 OF 3
COMMON DETAILS OF BENTS 1 AND 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 3/25/2013 FILENAME: b040605_bl2.dgn
CHECKED BY: DHP DATE: 5-17-13 SCALE: As shown
DESIGNED BY: DHP DATE: 3-20-13

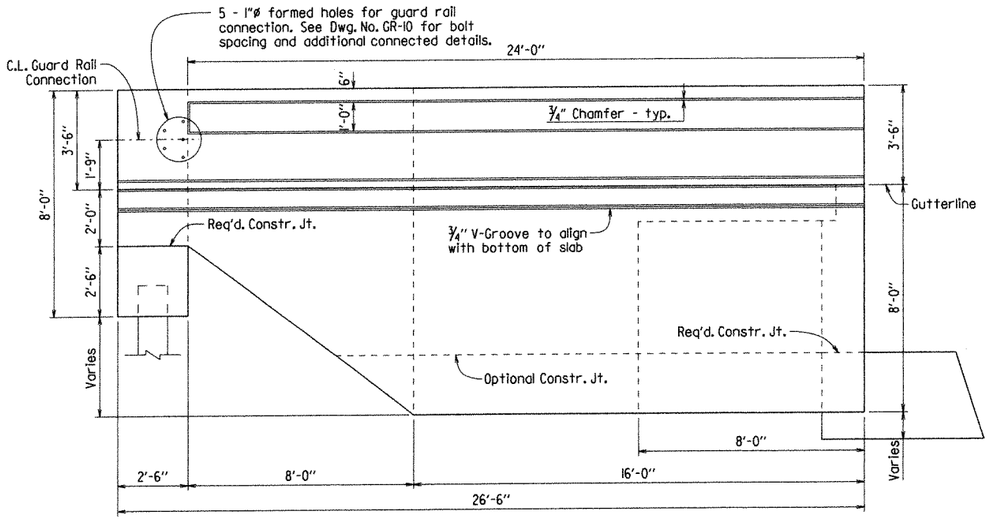
BRIDGE NO. 07287 DRAWING NO. 53960

PRINT DATE: 5/17/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

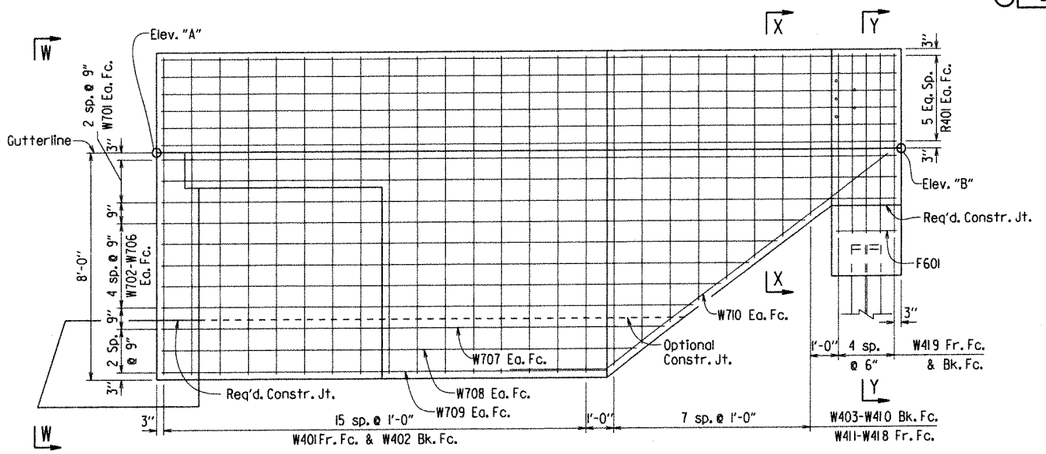
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040605	117	260

(1) 07287 - END BENT DETAILS - 53961



VIEW V-V

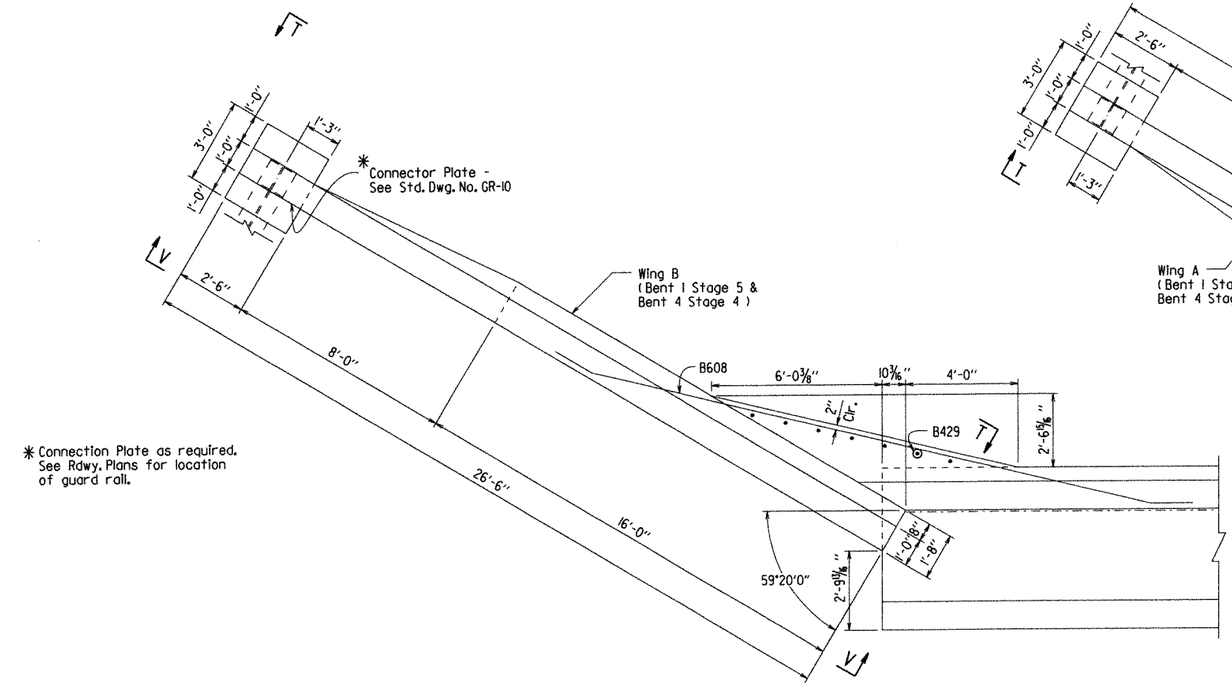
Scale: ⅜" = 1'-0"



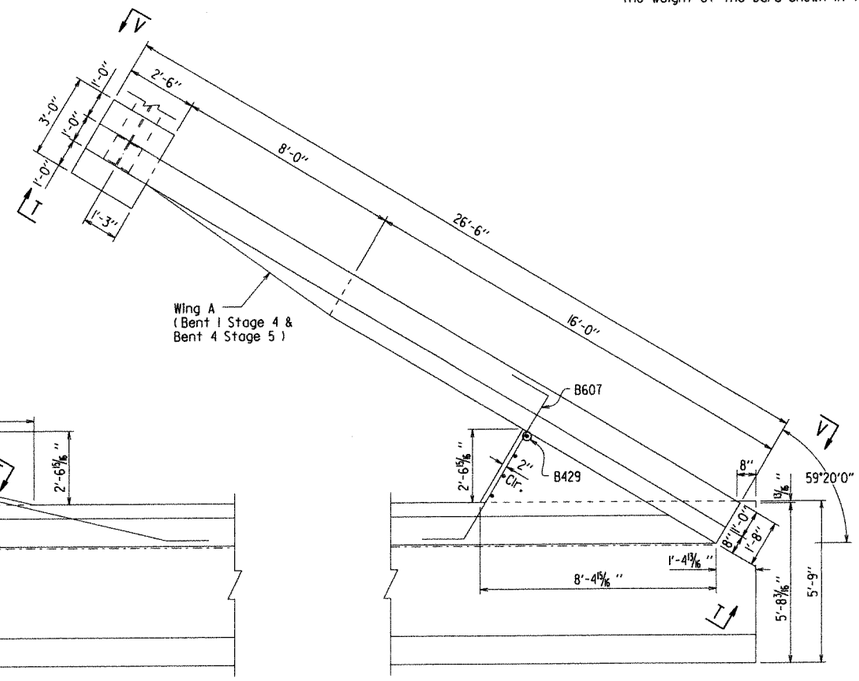
VIEW T-T

Scale: ⅜" = 1'-0"

At the Contractor's option, a single lap splice of 3'-6" (min.) may be used on bars W701 thru W709. Payment will be based on the weight of the bars shown in the plans.



* Connection Plate as required. See Rdwy. Plans for location of guard rail.



PLAN OF RAIL

Scale: ⅜" = 1'-0"

TABLE OF VARIABLES

Wing Location		Elev. "A"	Elev. "B"
Bent 1	Wing A	1268.27	1267.99
	Wing B	1265.97	1265.57
Bent 4	Wing A	1269.90	1270.03
	Wing B	1270.49	1270.51

STATE OF ARKANSAS
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SHEET 2 OF 3
COMMON DETAILS OF BENTS 1 AND 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

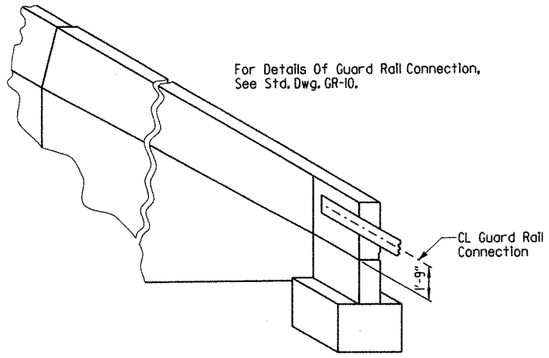
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BRIDGE NO. 07287 DRAWING NO. 53961

PRINT DATE: 5/20/2013

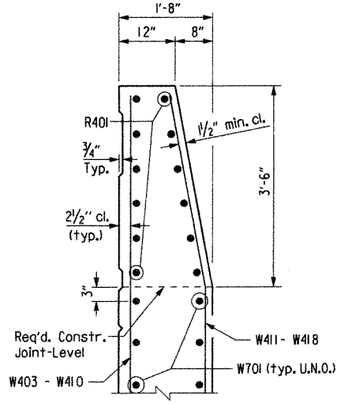
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				6	ARK.			
				JOB NO.		040605	118	260

① 07287 - END BENT DETAILS - 53962



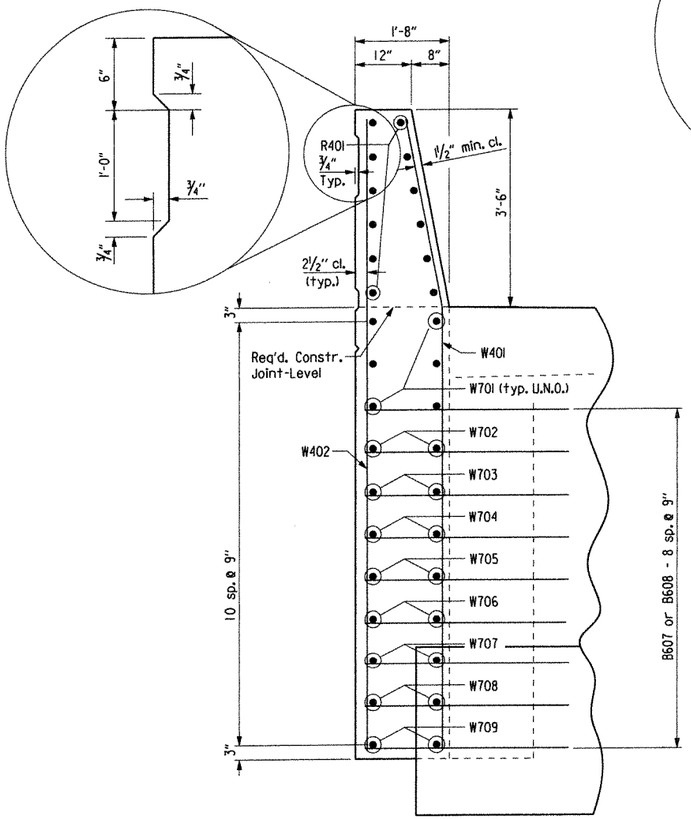
THREE DIMENSIONAL VIEW OF RAIL

No Scale



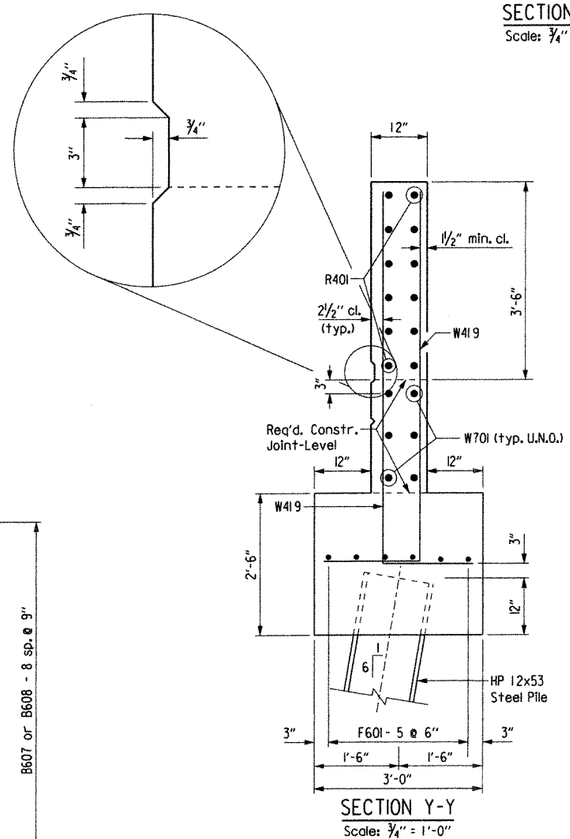
SECTION X-X

Scale: ¾" = 1'-0"



SECTION W-W

Scale: ¾" = 1'-0"



SECTION Y-Y

Scale: ¾" = 1'-0"

BAR LIST

Mark	Bent 1 - No. Req'd			Bent 4 - No. Req'd			Length	Pin Dia.
	Stage 3	Stage 4	Stage 5	Stage 3	Stage 4	Stage 5		
B401	99	85	80	99	80	85	15'-6"	2"
B402	18	16	14	18	14	16	9'-10"	2"
B403 - B405	1 Ea.	-	-	1 Ea.	-	-	8'-9" - 11'-1"	2"
B406	1	-	-	1	-	-	9'-2"	2"
B407 - B409	1 Ea.	-	-	1 Ea.	-	-	13'-6" - 15'-10"	2"
B410	4	-	-	10	-	-	53'-9"	Str.
B411	4	-	-	10	-	-	35'-10"	Str.
B412	32	-	-	32	-	-	44'-10"	Str.
B413	115	85	84	115	84	85	9'-9"	3"
B414	6	-	-	-	-	-	20'-6"	Str.
B415	79	33	29	79	22	33	8'-5"	2"
B416	-	6	-	-	-	6	32'-6"	Str.
B417	-	8	-	-	8	-	34'-0"	Str.
B418	-	16	-	-	-	16	33'-3"	Str.
B419	-	-	8	-	-	8	36'-1"	Str.
B420	-	-	6	-	-	-	28'-6"	Str.
B421	-	-	32	-	32	-	33'-4"	Str.
B422 - B425	-	-	1 Ea.	-	1 Ea.	-	12'-7" - 9'-0"	2"
B426	-	-	4	-	4	-	5'-7"	2"
B427	-	-	-	-	6	-	28'-3"	Str.
B428	-	-	2	-	2	-	7'-4"	2"
B429	-	4	7	-	7	4	6'-5"	Str.
B430	6	-	-	-	-	-	36'-9"	Str.
B431	6	-	-	-	-	-	31'-4"	Str.
B432	-	16	-	-	-	16	34'-2"	3"
B601	14	-	-	14	-	-	55'-0"	Str.
B602	14	-	-	14	-	-	37'-1"	Str.
B603	115	85	85	115	85	85	7'-7"	Str.
B604	-	22	-	-	-	22	34'-5"	Str.
B605	-	6	-	-	-	6	35'-1"	4½"
B606	-	-	28	-	28	-	36'-6"	Str.
B607	-	9	-	-	-	9	8'-8"	4½"
B608	-	-	9	-	9	-	23'-3"	4½"
B609	-	2	-	-	-	2	8'-10"	Str.
F601	-	6	6	-	6	6	2'-2"	Str.
R401	-	12	12	-	12	12	26'-2"	Str.
W401	-	16	16	-	16	16	11'-2"	3"
W402	-	16	16	-	16	16	11'-2"	Str.
W403 - W410	-	1 Ea.	1 Ea.	-	1 Ea.	1 Ea.	10'-11" - 5'-8"	Str.
W411 - W418	-	1 Ea.	1 Ea.	-	1 Ea.	1 Ea.	10'-11" - 5'-8"	3"
W419	-	10	10	-	10	10	8'-1"	2"
W701	-	6	6	-	6	6	26'-2"	Str.
W702 - W706	-	2 Ea.	2 Ea.	-	2 Ea.	2 Ea.	15'-10" - 19'-10"	Str.
W707	-	2	2	-	2	2	22'-0"	5¼"
W708	-	2	2	-	2	2	23'-0"	5¼"
W709	-	2	2	-	2	2	24'-0"	5¼"
W710	-	2	2	-	2	2	16'-0"	5¼"

Bending Diagram
Dimensions are out to out of bars.

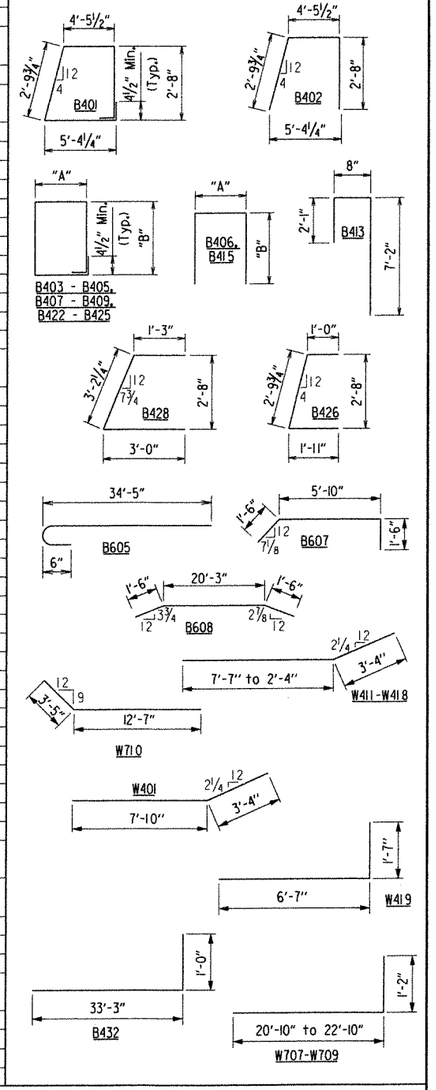


TABLE OF VARIABLES

	B403 - B405	B406	B407 - B409	B415	B422 - B425
A	4'-5" - 3'-2¾"	2'-7½"	2'-1/2" - 10¼"	4'-5"	2'-9¼" - 1'-0"
B	3'-4"	3'-4"	3'-4"	2'-1"	3'-4"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
5/21/13

BRIDGE ENGINEER

SHEET 3 OF 3
COMMON DETAILS OF BENTS 1 AND 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

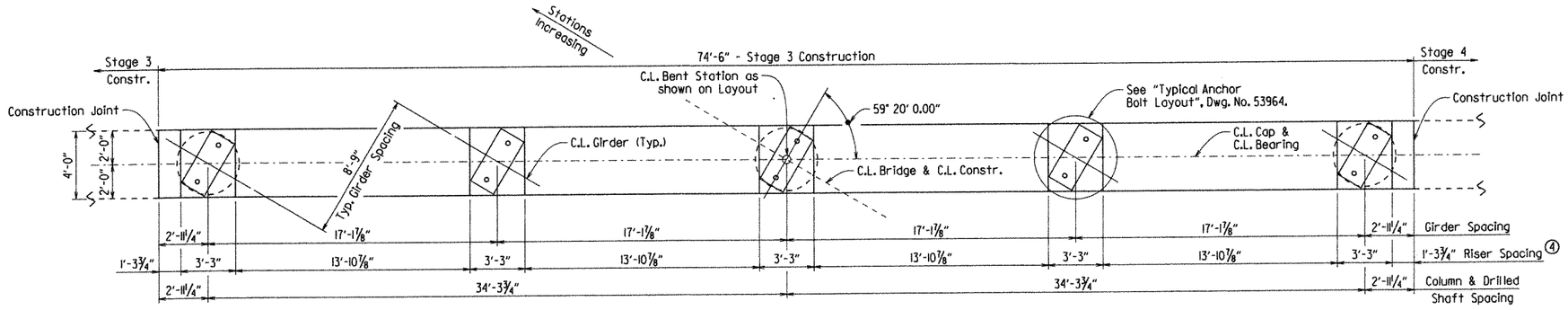
LITTLE ROCK, ARK.

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DESIGNED BY: DHP DATE: 3-28-13

BRIDGE NO. 07287 DRAWING NO. 53962

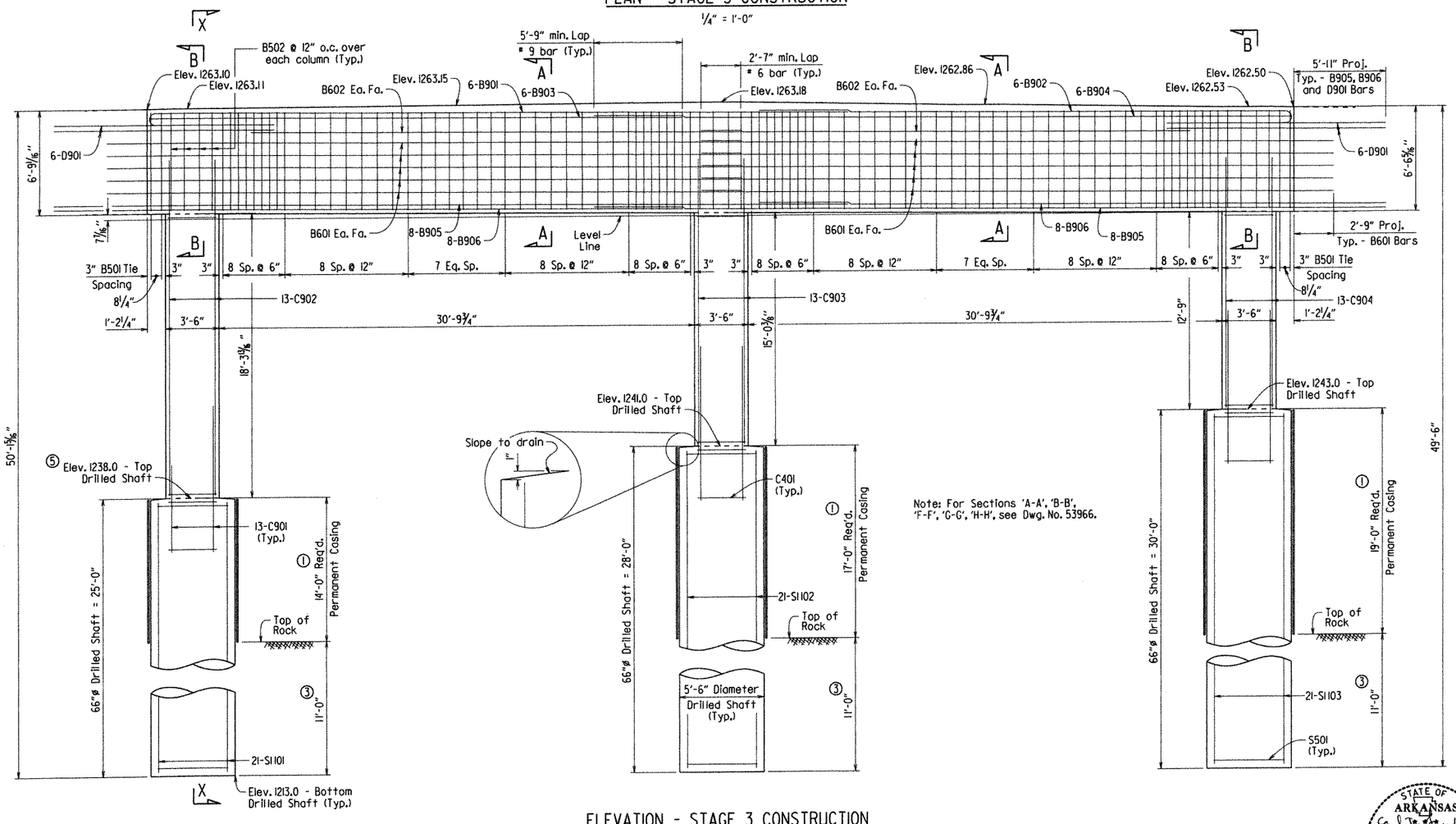
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				6	ARK.			
				JOB NO.		040605	114	260
				①		07287 - INT. BENT DETAILS - 53963		



PLAN - STAGE 3 CONSTRUCTION

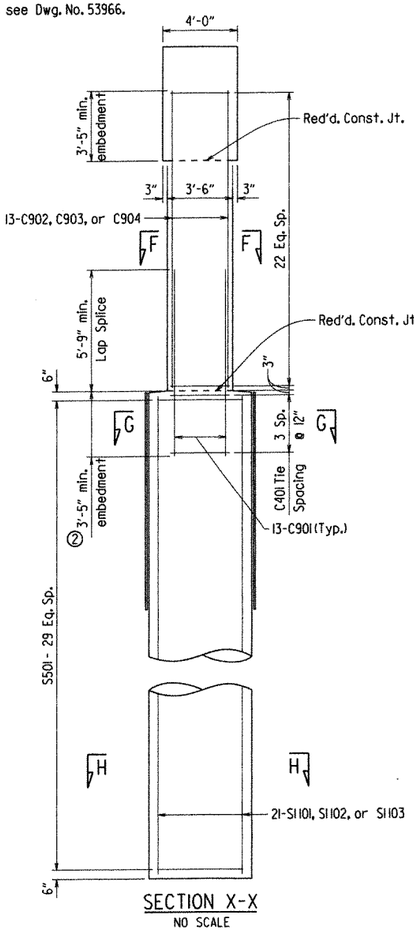
¼" = 1'-0"



ELEVATION - STAGE 3 CONSTRUCTION

Looking Ahead
¼" = 1'-0"

Note: For Sections 'A-A', 'B-B', 'F-F', 'G-G', 'H-H', see Dwg. No. 53966.



SECTION X-X

NO SCALE

① Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field.

② The column reinforcing cage, consisting of bars C401 & C901, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

③ Minimum penetration into competent rock below bottom of casing shall not be less than 11 feet.

④ Risers shall be cast level at the elevations shown.

⑤ The top of shaft elevation for this Drilled Shaft shall be set 6" below bottom of reconstructed R.C. Box Culvert No. X0652. The Contractor shall make field measurements to verify required top of shaft elevation and make any necessary adjustments. For details of removal and modifications to Str. No. X0652, See Rdwy. Plans.

For General Notes see Dwg. No. 53966.

STATE OF ARKANSAS
Carl J. Fuselier
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5/31/13
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SHEET 1 OF 4

DETAILS OF BENT 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 3/14/2013 FILENAME: b040605_b2l.dgn

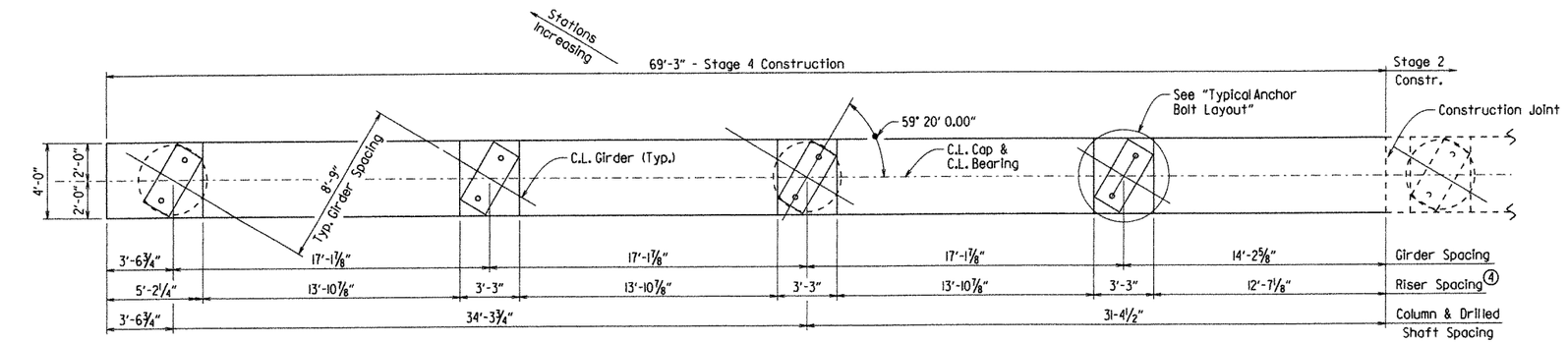
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BRIDGE NO. 07287 DRAWING NO. 53963

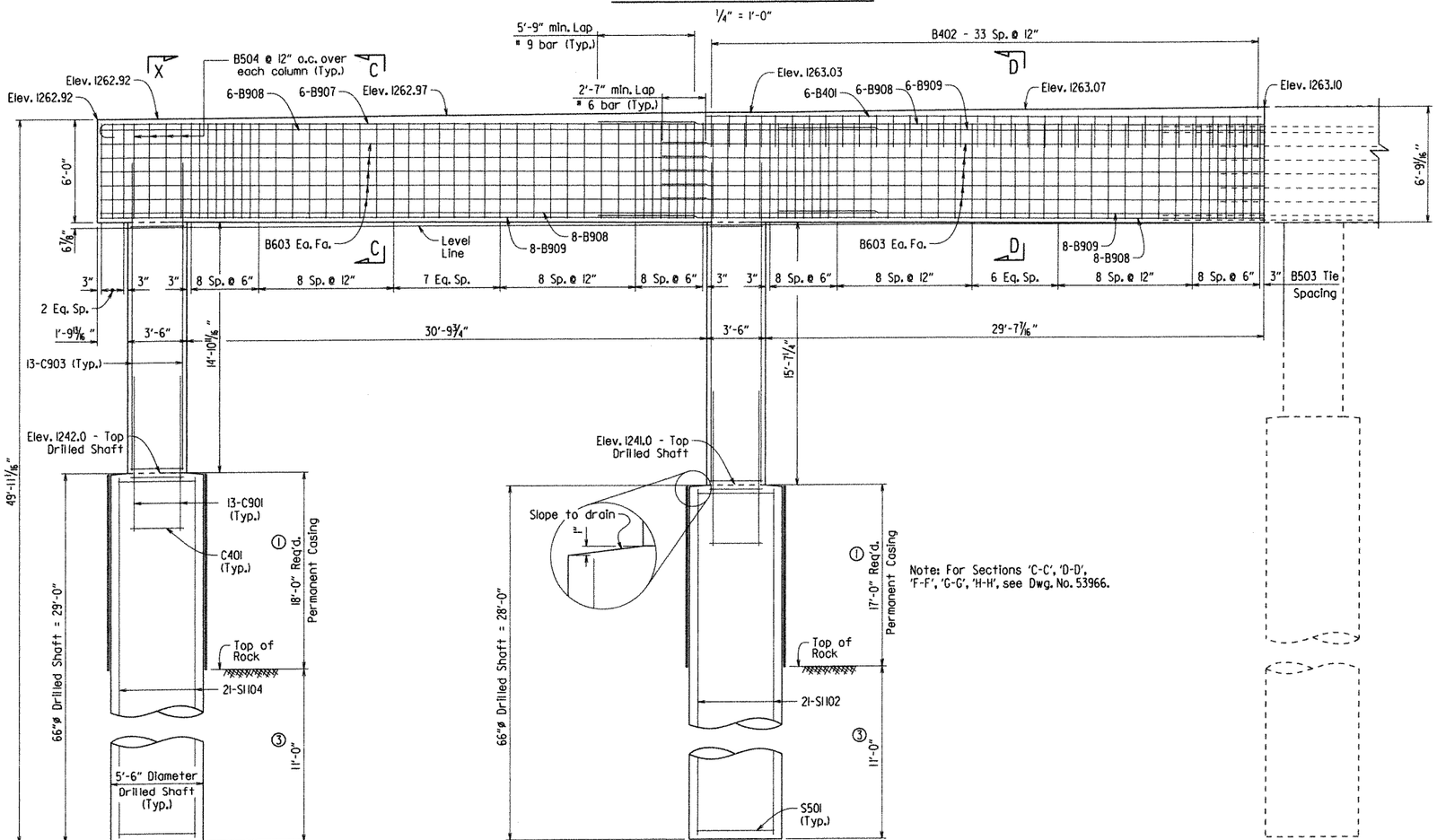
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	120	260
				①		07287 - INT. BENT DETAILS - 53964		



PLAN - STAGE 4 CONSTRUCTION

1/4" = 1'-0"



Note: For Sections 'C-C', 'D-D', 'F-F', 'G-G', 'H-H', see Dwg. No. 53966.

ELEVATION - STAGE 4 CONSTRUCTION

Looking Ahead
1/4" = 1'-0"

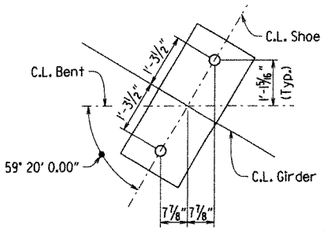
① Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field.

② The column reinforcing cage, consisting of bars C401 & C901, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

③ Minimum penetration into competent rock below bottom of casing shall not be less than 11 feet.

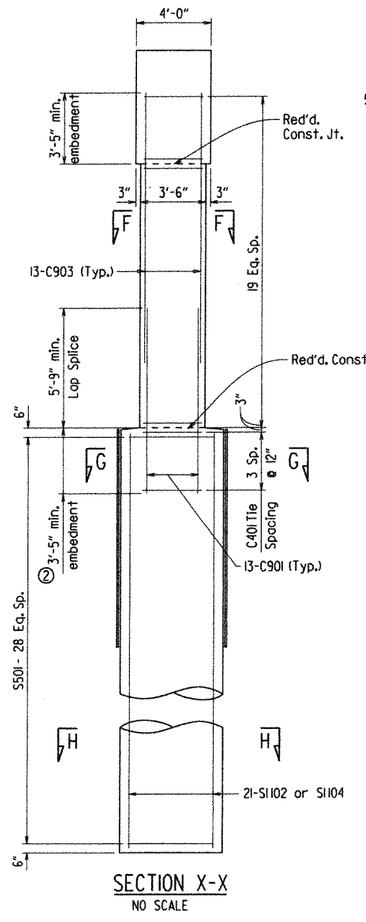
④ Risers shall be cast level at the elevations shown.

For General Notes see Dwg. No. 53966.



TYPICAL ANCHOR BOLT LAYOUT

NO SCALE



SECTION X-X

NO SCALE

STATE OF ARKANSAS
Carl J. Puselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. PUSELIER

BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF BENT 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

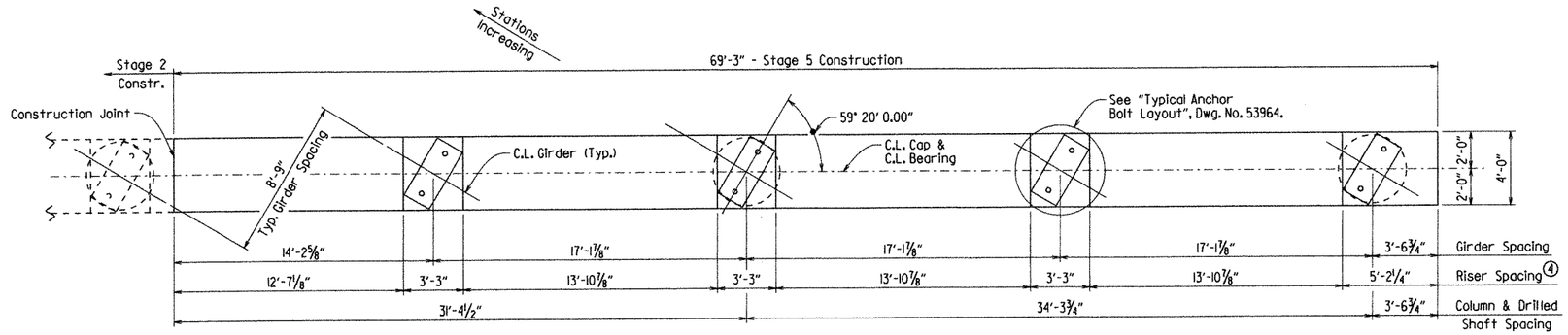
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BRIDGE NO. 07287 DRAWING NO. 53964

PRINT DATE: 5/17/2013

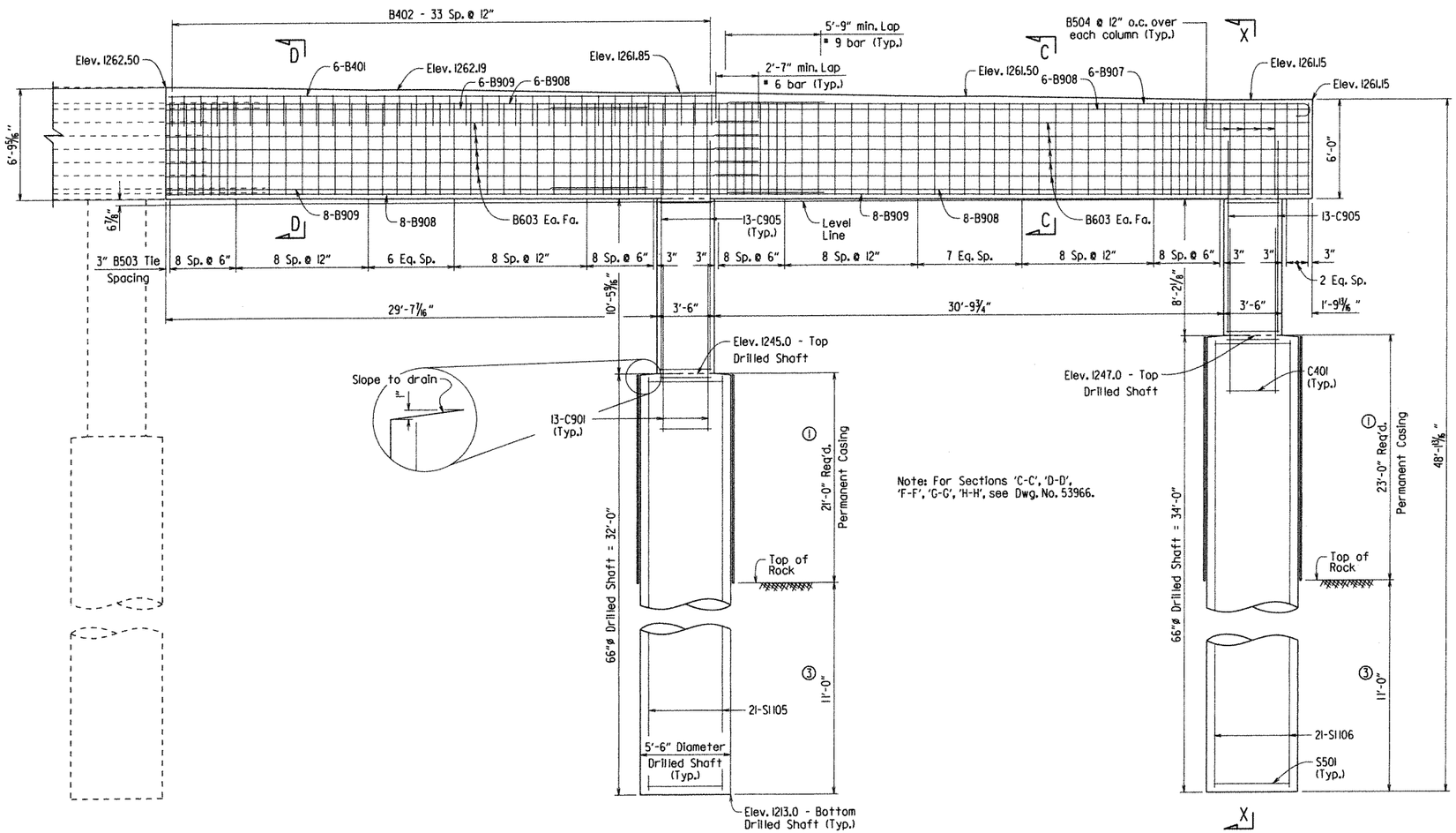
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				6	ARK.			
				JOB NO.		040605	121	260

(1) 07287 - INT. BENT DETAILS - 53965



PLAN - STAGE 5 CONSTRUCTION

1/4" = 1'-0"



Note: For Sections 'C-C', 'D-D', 'F-F', 'G-G', 'H-H', see Dwg. No. 53966.

ELEVATION - STAGE 5 CONSTRUCTION

Looking Ahead
1/4" = 1'-0"

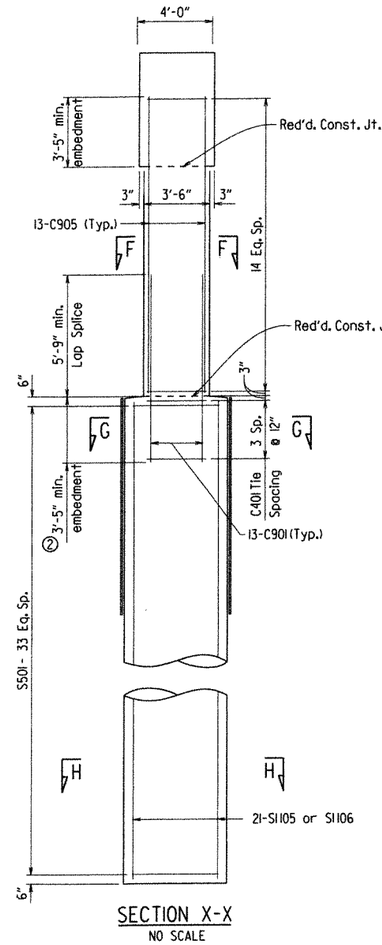
(1) Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field.

(2) The column reinforcing cage, consisting of bars C401 & C901, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

(3) Minimum penetration into competent rock below bottom of casing shall not be less than 11 feet.

(4) Risers shall be cast level at the elevations shown.

For General Notes see Dwg. No. 53966.



SECTION X-X

NO SCALE

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. FUSELIER
BRIDGE ENGINEER

SHEET 3 OF 4

DETAILS OF BENT 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 3/14/2013 FILENAME: b040605_b21.dgn

CHECKED BY: CMW DATE: 5/17/13 SCALE: As shown

DESIGNED BY: CMW DATE: 3/13

BRIDGE NO. 07287 DRAWING NO. 53965

PRINT DATE: 5/17/2013

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.		040605	122	260
				①	07287 - INT. BENT DETAILS - 53966			

GENERAL NOTES

Concrete in the cap and column shall be Class S with a minimum 28 day compressive strength, f'c = 3500 psi., and shall be poured in the dry. Concrete in the drilled shaft shall be Class S as modified by SP Job 040605 "Drilled Shaft Foundations". All exposed corners to be chamfered ¾" unless otherwise noted.

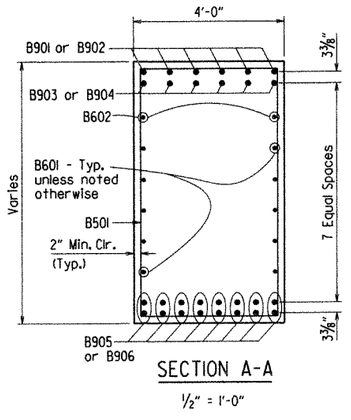
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

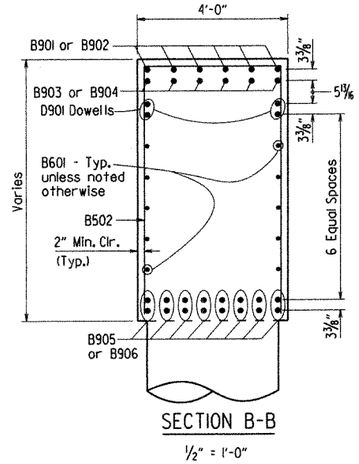
Drilled shafts shall conform to SP Job 040605 "Drilled Shaft Foundations" and shall be paid for at the unit bid price for "Drilled Shaft (66" Dia.)".

Class 3 Textured Coating Finish shall be applied to bent surfaces as specified in SP Job No. 040605 "Textured Coating Finish".



SECTION A-A

½" = 1'-0"



SECTION B-B

½" = 1'-0"

⑤ S501 and S1101 thru S1104 Bars are non-pay items and are subsidiary to SP Job 040605 "Drilled Shaft Foundations"

BAR LIST - STAGE 3 CONSTRUCTION

	MARK	NO. REQ'D.	LENGTH	"A"	P.D.
	B501	84	20'-6"	6'-4"	2½"
	B502	12	16'-2"	6'-4"	2½"
	B601	20	41'-4"	-	Str.
	B602	4	32'-0"	-	Str.
	B901	6	46'-10"	45'-6"	9"
	B902	6	35'-7"	34'-4"	9"
	B903	6	34'-4"	-	Str.
	B904	6	45'-6"	-	Str.
	B905	16	51'-6"	-	Str.
	B906	16	40'-5"	-	Str.
	C401	81	10'-9"	-	3"
	C901	39	9'-6"	-	Str.
	C902	13	22'-0"	-	Str.
	C903	13	19'-0"	-	Str.
	C904	13	16'-3"	-	Str.
	D901	24	14'-3"	-	Str.
⑤	S501	90	15'-6"	-	3¾"
⑤	S1101	21	24'-6"	-	Str.
⑤	S1102	21	27'-6"	-	Str.
⑤	S1103	21	29'-6"	-	Str.

BAR LIST - STAGE 4 CONSTRUCTION

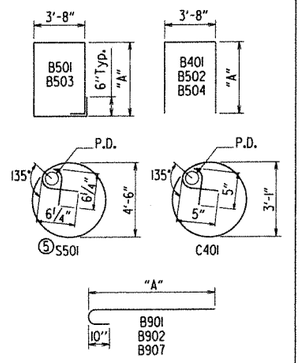
	MARK	NO. REQ'D.	LENGTH	"A"	P.D.
	B401	6	33'-2"	-	Str.
	B402	34	7'-6"	2'-0"	2"
	B503	82	19'-2"	5'-8"	2½"
	B504	8	14'-10"	5'-8"	2½"
	B603	20	35'-9"	-	Str.
	B907	6	33'-0"	31'-9"	9"
	B908	28	42'-11"	-	Str.
	B909	22	31'-9"	-	Str.
	C401	48	10'-9"	-	3"
	C901	26	9'-6"	-	Str.
	C903	26	19'-0"	-	Str.
⑤	S501	58	15'-6"	-	3¾"
⑤	S1102	21	27'-6"	-	Str.
⑤	S1104	21	28'-6"	-	Str.

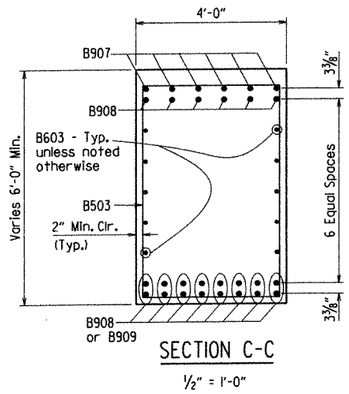
BAR LIST - STAGE 5 CONSTRUCTION

	MARK	NO. REQ'D.	LENGTH	"A"	P.D.
	B401	6	33'-2"	-	Str.
	B402	34	7'-6"	2'-0"	2"
	B503	82	19'-2"	5'-8"	2½"
	B504	8	14'-10"	5'-8"	2½"
	B603	20	35'-9"	-	Str.
	B907	6	33'-0"	31'-9"	9"
	B908	28	42'-11"	-	Str.
	B909	22	31'-9"	-	Str.
	C401	38	10'-9"	-	3"
	C901	26	9'-6"	-	Str.
	C905	26	14'-0"	-	Str.
⑤	S501	68	15'-6"	-	3¾"
⑤	S1105	21	31'-6"	-	Str.
⑤	S1106	21	33'-6"	-	Str.

BENDING DIAGRAMS

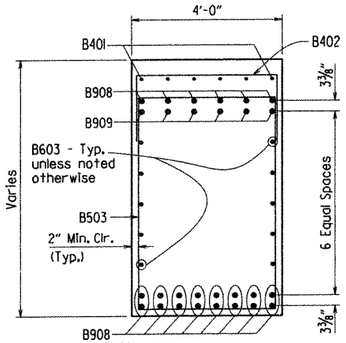
Dimensions are out to out of bars.





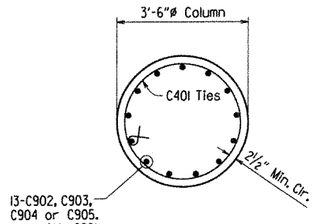
SECTION C-C

½" = 1'-0"



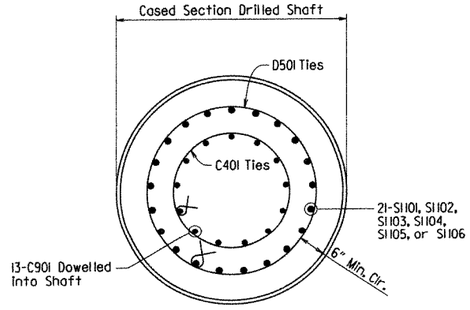
SECTION D-D

½" = 1'-0"



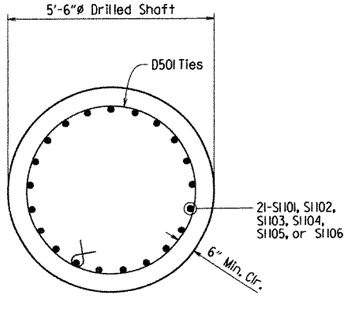
SECTION F-F

½" = 1'-0"



SECTION G-G

½" = 1'-0"



SECTION H-H

½" = 1'-0"

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 4 OF 4

DETAILS OF BENT 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 3/21/2013 FILENAME: b040605_b22.dgn

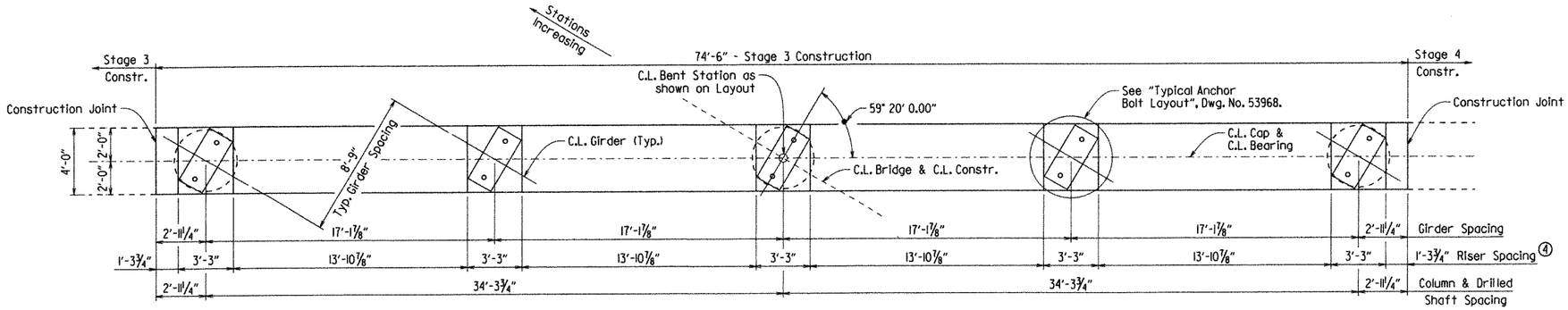
CHECKED BY: CMW DATE: 5/17/13 SCALE: As shown

DESIGNED BY: CMW DATE: 2/13

BRIDGE NO. 07287 DRAWING NO. 53966

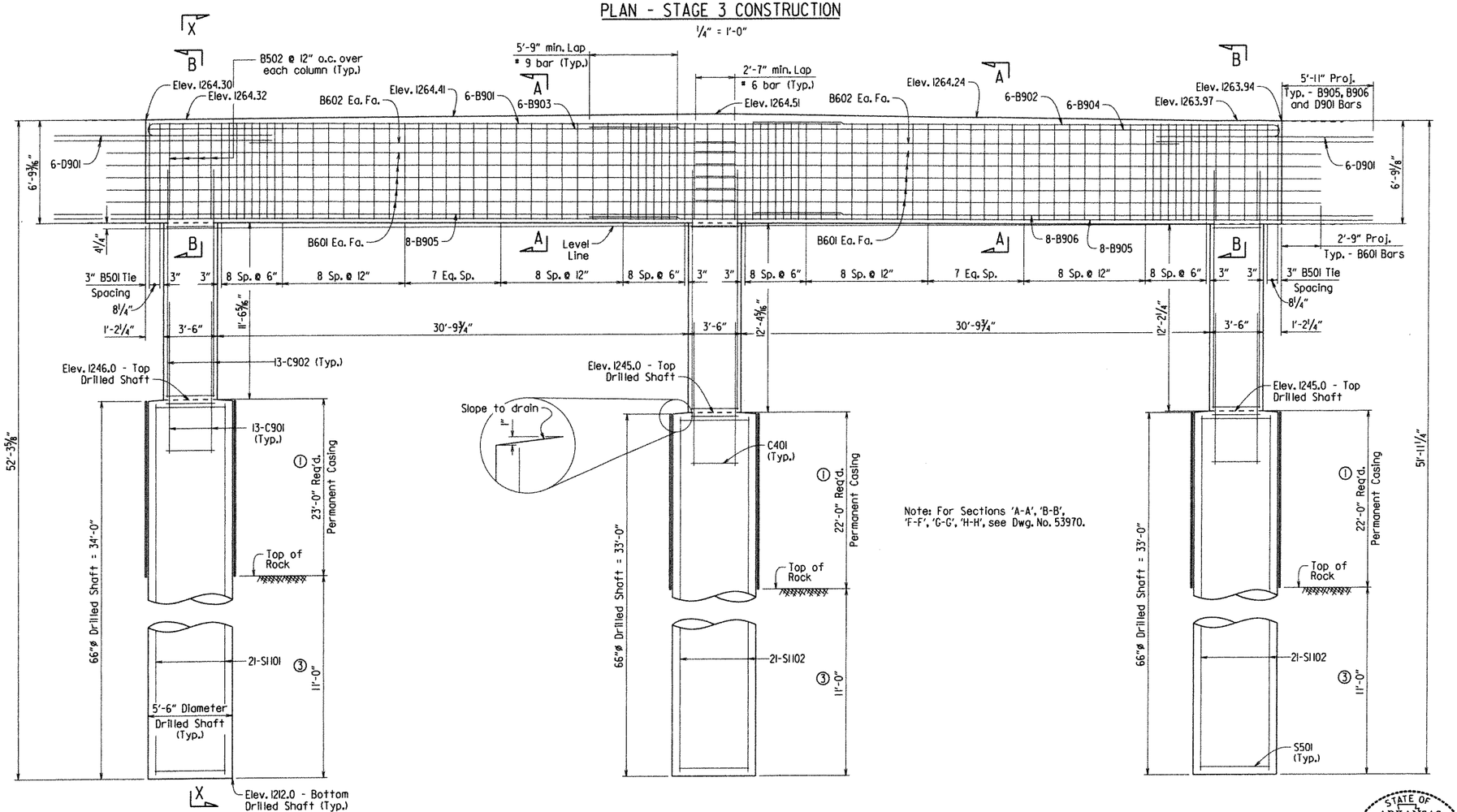
PRINT DATE: 5/17/2013

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.		040605	123	260
				①		07287 - INT. BENT DETAILS - 53967		



PLAN - STAGE 3 CONSTRUCTION

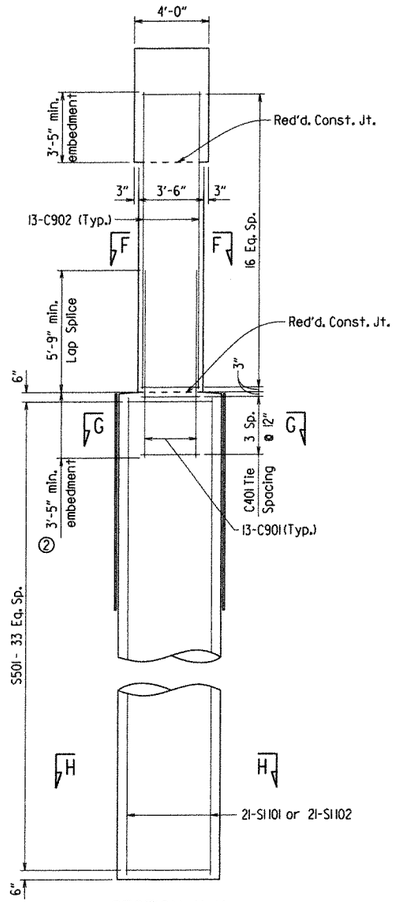
1/4" = 1'-0"



Note: For Sections 'A-A', 'B-B', 'F-F', 'G-G', 'H-H', see Dwg. No. 53970.

ELEVATION - STAGE 3 CONSTRUCTION

Looking Ahead
1/4" = 1'-0"



SECTION X-X

NO SCALE

STATE OF ARKANSAS
Carl J. Fusellier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5-21-13
CARL J. FUSELLIER

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF BENT 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

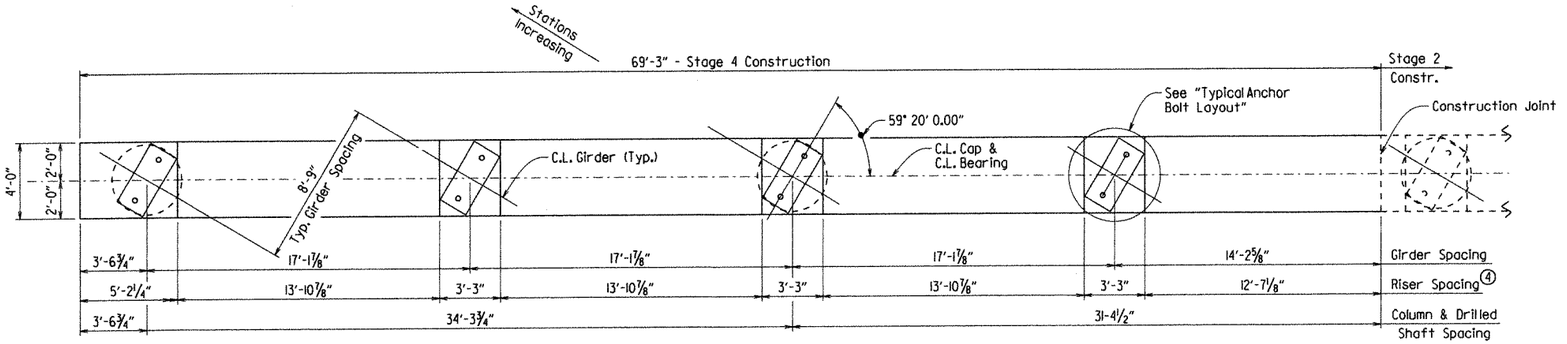
LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 3/14/2013 FILENAME: b040605_b31.dgn
CHECKED BY: CMW DATE: 5/17/13 SCALE: As shown
DESIGNED BY: CMW DATE: 2/13

BRIDGE NO. 07287 DRAWING NO. 53967

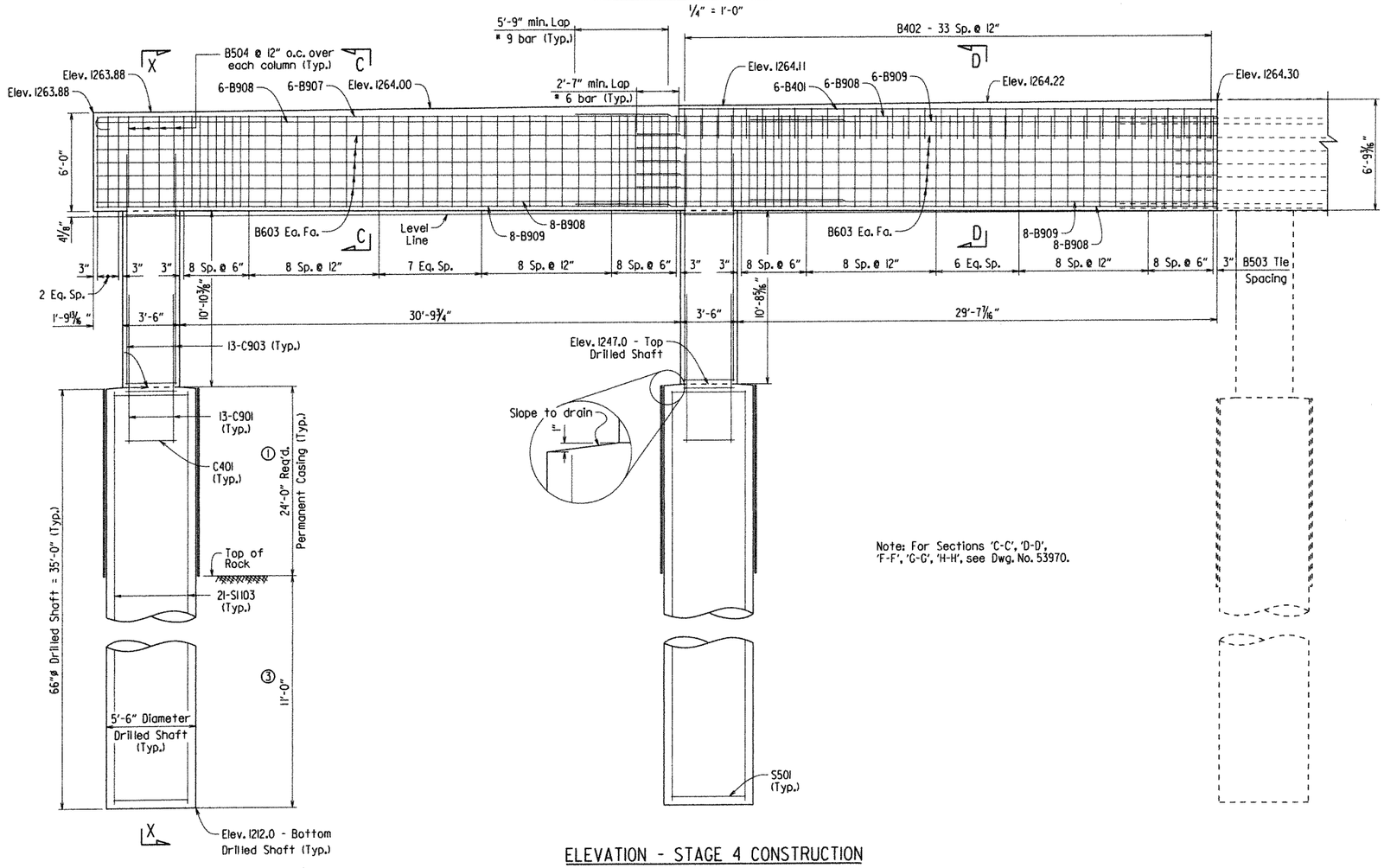
PRINT DATE: 5/17/2013

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.		040605	124	260
				①		07287 - INT. BENT DETAILS - 53968		



PLAN - STAGE 4 CONSTRUCTION

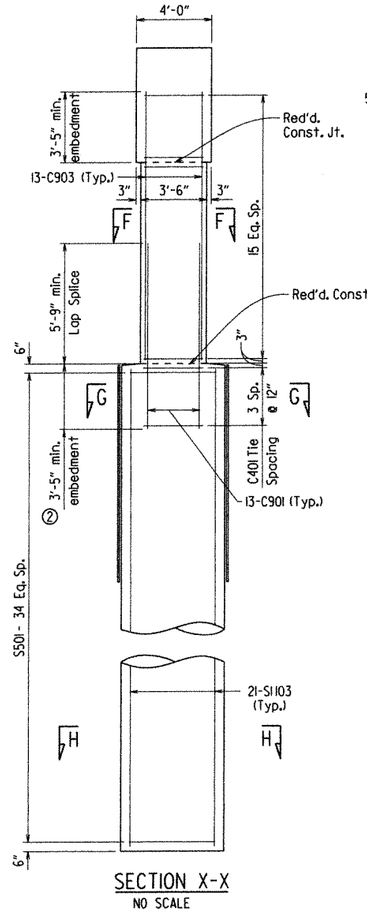
¼" = 1'-0"



Note: For Sections 'C-C', 'D-D', 'F-F', 'G-G', 'H-H', see Dwg. No. 53970.

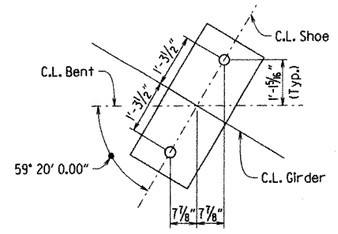
ELEVATION - STAGE 4 CONSTRUCTION

Looking Ahead
¼" = 1'-0"



SECTION X-X

NO SCALE



TYPICAL ANCHOR BOLT LAYOUT

NO SCALE

① Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field.

② The column reinforcing cage, consisting of bars C401 & C901, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

③ Minimum penetration into competent rock below bottom of casing shall not be less than 11 feet.

④ Risers shall be cast level at the elevations shown.

For General Notes see Dwg. No. 53970.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5-12-13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 4

DETAILS OF BENT 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 3/14/2013 FILENAME: b040605.b31.dgn

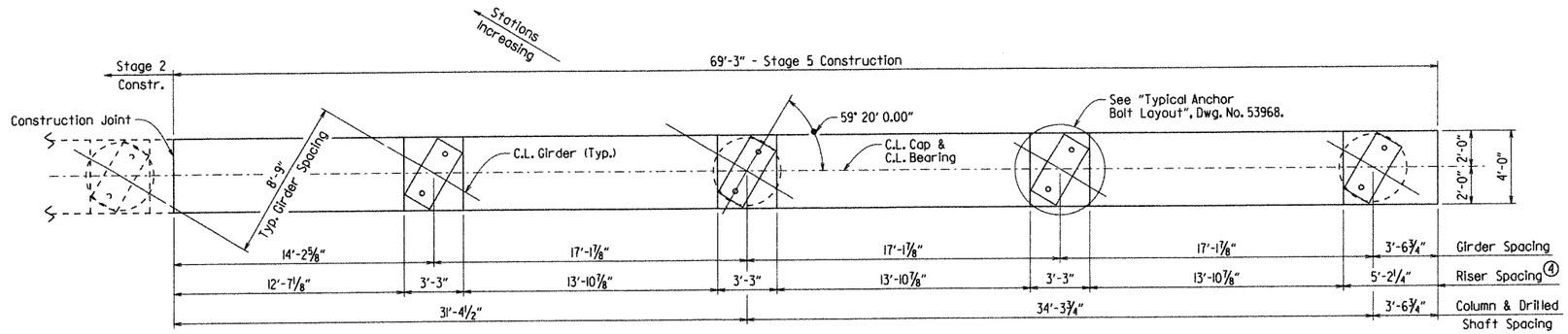
CHECKED BY: CMW DATE: 5/12/13 SCALE: As shown

DESIGNED BY: CMW DATE: 3/13

BRIDGE NO. 07287 DRAWING NO. 53968

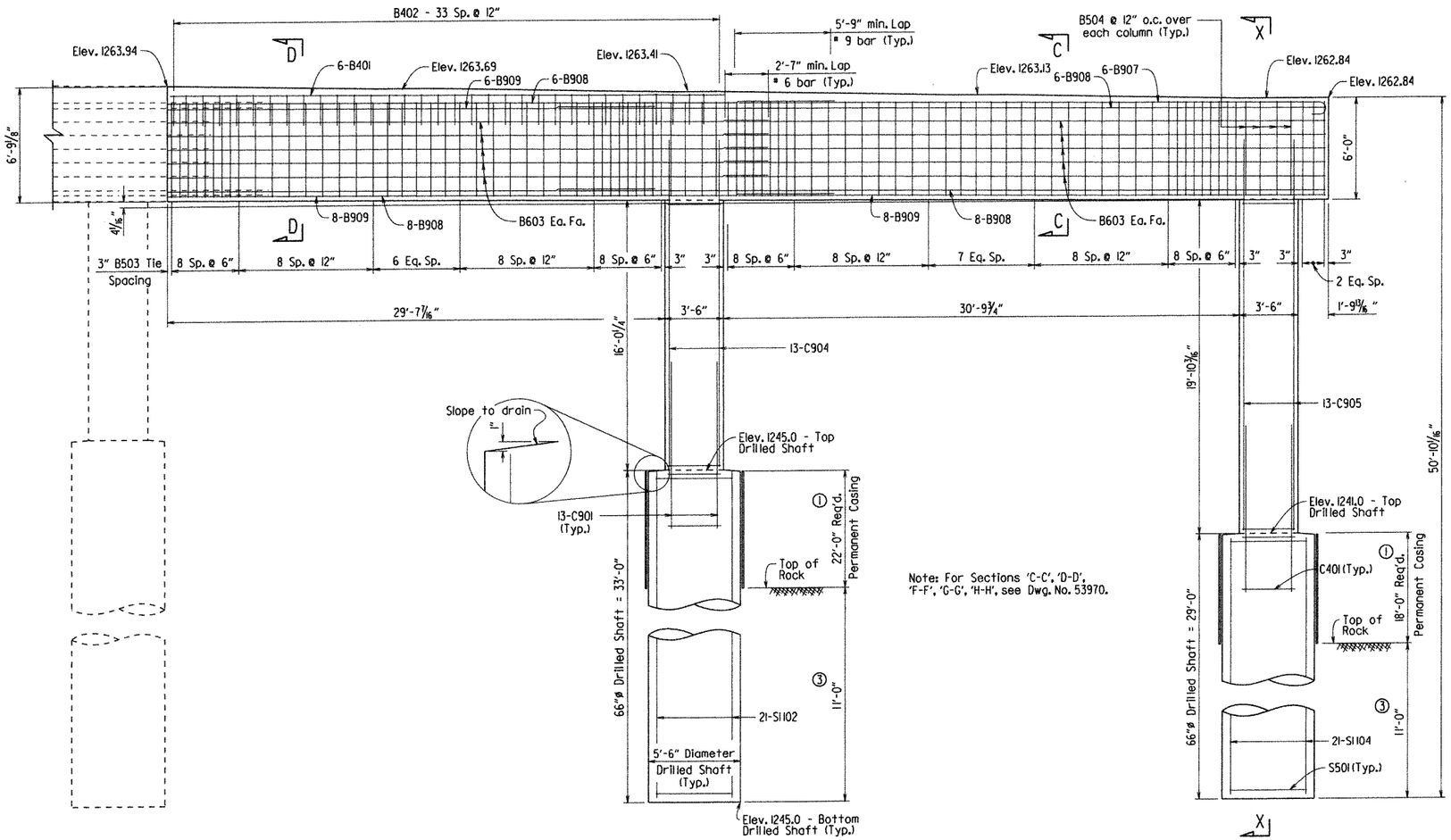
PRINT DATE: 5/17/2013

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.		040605	125	260
				①	07287 - INT. BENT DETAILS - 53969			



PLAN - STAGE 5 CONSTRUCTION

1/4" = 1'-0"



Note: For Sections 'C-C', 'D-D', 'F-F', 'G-G', 'H-H', see Dwg. No. 53970.

ELEVATION - STAGE 5 CONSTRUCTION

Looking Ahead
1/4" = 1'-0"

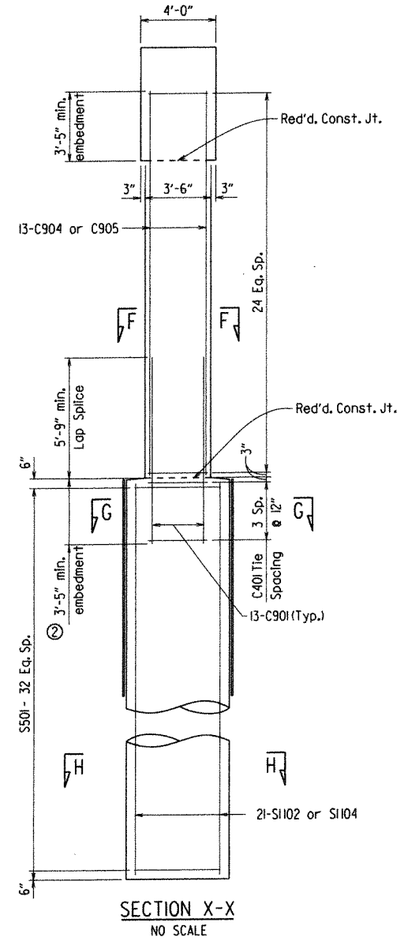
① Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field.

② The column reinforcing cage, consisting of bars C401 & C901, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

③ Minimum penetration into competent rock below bottom of casing shall not be less than 11 feet.

④ Risers shall be cast level at the elevations shown.

For General Notes see Dwg. No. 53970.



SECTION X-X

NO SCALE

STATE OF ARKANSAS
Carl J. Puseliер
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5-12-13
CARL J. PUSELIER

BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF BENT 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 3/14/2013 FILENAME: b040605_b31.dgn
CHECKED BY: CMJ DATE: 5/17/13 SCALE: As shown
DESIGNED BY: CMJ DATE: 3/13

BRIDGE NO. 07287 DRAWING NO. 53969

PRINT DATE: 5/17/2013

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.		040605	126	260
				(1)	07287 - INT. BENT DETAILS - 53970			

GENERAL NOTES

Concrete in the cap and column shall be Class S with a minimum 28 day compressive strength, f'c = 3500 psi., and shall be poured in the dry. Concrete in the drilled shaft shall be Class S as modified by SP Job 040605 "Drilled Shaft Foundations". All exposed corners to be chamfered ¾" unless otherwise noted.

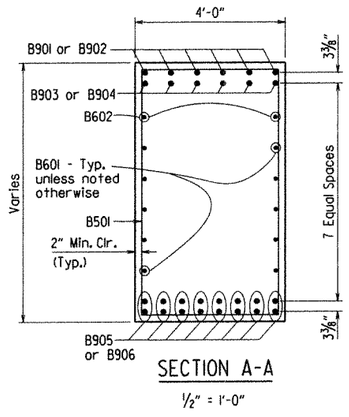
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

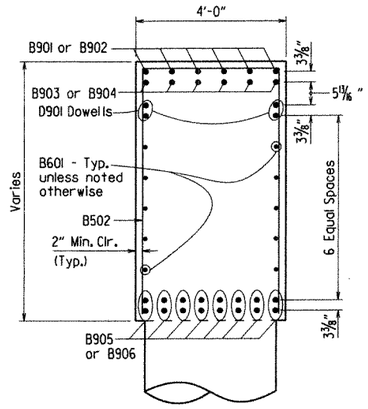
Drilled shafts shall conform to SP Job 040605 "Drilled Shaft Foundations" and shall be paid for at the unit bid price for "Drilled Shaft (66" Dia.)".

Class 3 Textured Coating Finish shall be applied to bent surfaces as specified in SP Job No. 040605 "Textured Coating Finish".



SECTION A-A

½" = 1'-0"



SECTION B-B

½" = 1'-0"

⑤ S501 and S1101 thru S1104 Bars are non-pay items and are subsidiary to SP Job 040605 "Drilled Shaft Foundations"

BAR LIST - STAGE 3 CONSTRUCTION

	MARK	NO. REQ'D.	LENGTH	"A"	P.D.
	B501	84	20'-6"	6'-4"	2½"
	B502	12	16'-2"	6'-4"	2½"
	B601	20	41'-4"	-	Str.
	B602	4	32'-0"	-	Str.
	B901	6	46'-10"	45'-6"	9"
	B902	6	35'-7"	34'-4"	9"
	B903	6	34'-4"	-	Str.
	B904	6	45'-6"	-	Str.
	B905	16	51'-6"	-	Str.
	B906	16	40'-5"	-	Str.
	C401	63	10'-9"	-	3"
	C901	39	9'-6"	-	Str.
	C902	39	16'-0"	-	Str.
	D901	24	14'-3"	-	Str.
⑤	S501	102	15'-6"	-	3¾"
⑤	S1101	21	33'-6"	-	Str.
⑤	S1102	42	32'-6"	-	Str.

BAR LIST - STAGE 4 CONSTRUCTION

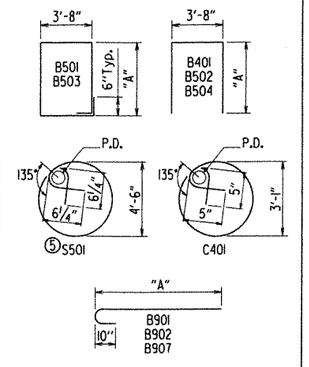
	MARK	NO. REQ'D.	LENGTH	"A"	P.D.
	B401	6	33'-2"	-	Str.
	B402	34	7'-6"	2'-0"	2"
	B503	82	19'-2"	5'-8"	2½"
	B504	8	14'-10"	5'-8"	2½"
	B603	20	35'-9"	-	Str.
	B907	6	33'-0"	31'-9"	9"
	B908	28	42'-11"	-	Str.
	B909	22	31'-9"	-	Str.
	C401	40	10'-9"	-	3"
	C901	26	9'-6"	-	Str.
	C903	26	14'-3"	-	Str.
⑤	S501	70	15'-6"	-	3¾"
⑤	S1103	42	34'-6"	-	Str.

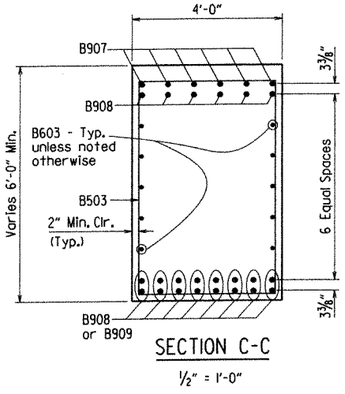
BAR LIST - STAGE 5 CONSTRUCTION

	MARK	NO. REQ'D.	LENGTH	"A"	P.D.
	B401	6	33'-2"	-	Str.
	B402	34	7'-6"	2'-0"	2"
	B503	82	19'-2"	5'-8"	2½"
	B504	8	14'-10"	5'-8"	2½"
	B603	20	35'-9"	-	Str.
	B907	6	33'-0"	31'-9"	9"
	B908	28	42'-11"	-	Str.
	B909	22	31'-9"	-	Str.
	C401	58	10'-9"	-	3"
	C901	26	9'-6"	-	Str.
	C904	13	19'-6"	-	Str.
	C905	13	23'-6"	-	Str.
⑤	S501	66	15'-6"	-	3¾"
⑤	S1102	21	32'-6"	-	Str.
⑤	S1104	21	28'-6"	-	Str.

BENDING DIAGRAMS

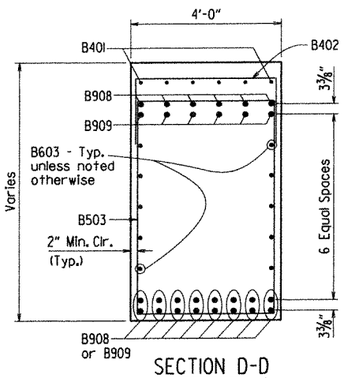
Dimensions are out to out of bars.





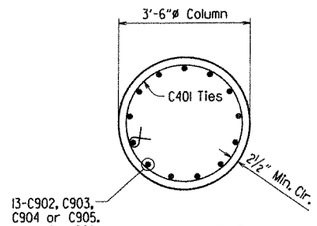
SECTION C-C

½" = 1'-0"



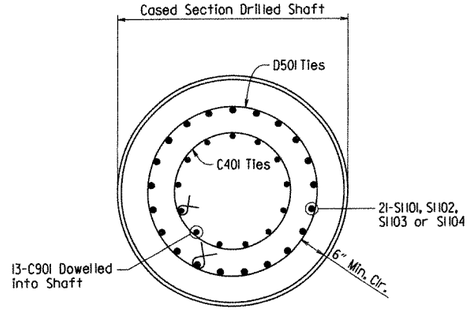
SECTION D-D

½" = 1'-0"



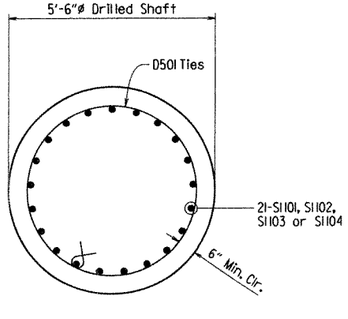
SECTION F-F

½" = 1'-0"



SECTION G-G

½" = 1'-0"



SECTION H-H

½" = 1'-0"

STATE OF ARKANSAS
Carl J. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSSELIER 5/21/13

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF BENT 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

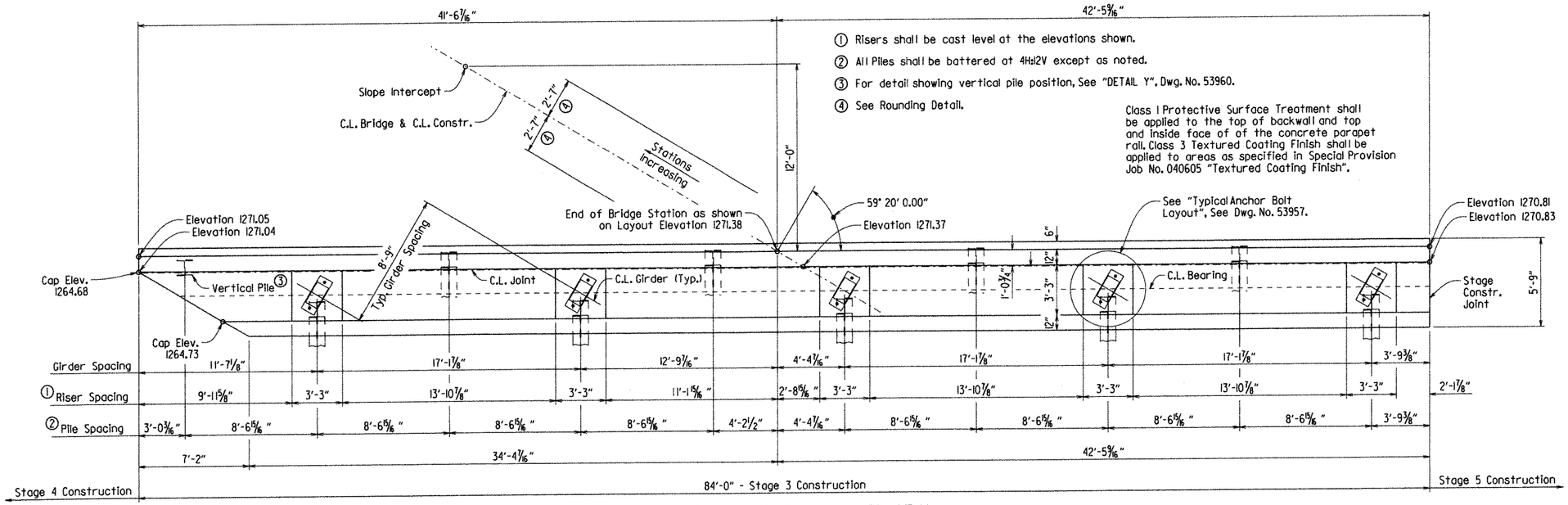
LITTLE ROCK, ARK.

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CHECKED BY: CMJ DATE: 5/17/13 SCALE: As shown
DESIGNED BY: CMJ DATE: 2/13

BRIDGE NO. 07287 DRAWING NO. 53970

PRINT DATE: 5/17/2013

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.		040605	127	260
				(1)	07287 - END BENT DETAILS - 53971			



① Risers shall be cast level at the elevations shown.

② All Piles shall be battered at 4H:12V except as noted.

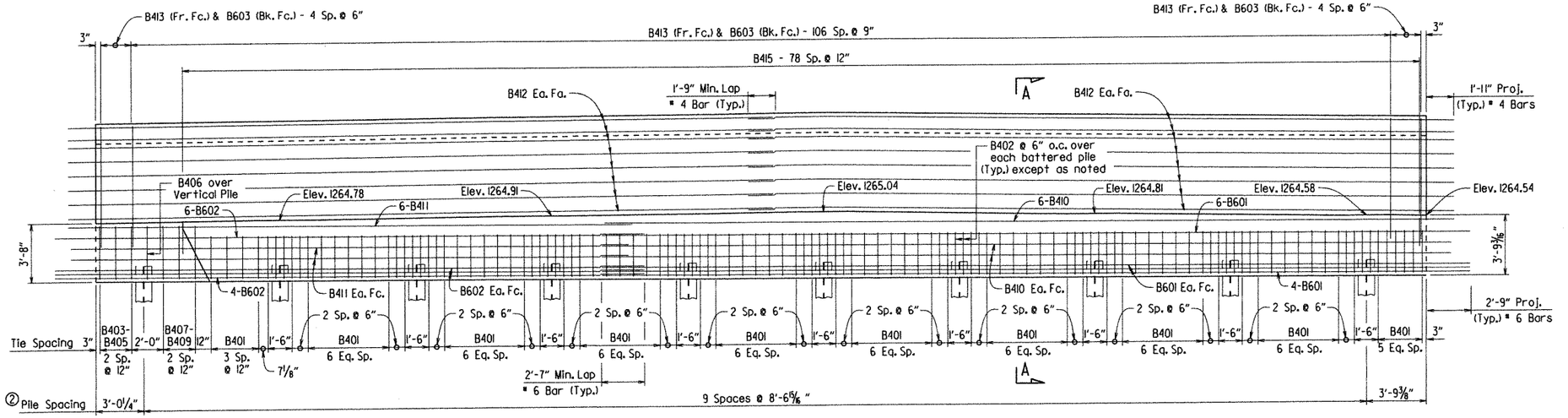
③ For detail showing vertical pile position, See "DETAIL Y", Dwg. No. 53960.

④ See Rounding Detail.

Class I Protective Surface Treatment shall be applied to the top of backwall and top and inside face of of the concrete parapet rail. Class 3 Textured Coating Finish shall be applied to areas as specified in Special Provision Job No. 040605 "Textured Coating Finish".

PLAN - STAGE 3 CONSTRUCTION

1/4" = 1'-0"



NOTES:

For "SECTION A-A", See Dwg. No. 53960.

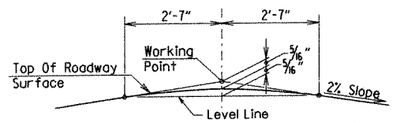
For "DETAIL OF WELD LOCATION FOR EXPANSION DEVICE", See Dwg. No. 53957.

For General Notes, See Dwg. No. 53960.

ELEVATION - STAGE 3 CONSTRUCTION

Looking Back

1/4" = 1'-0"



Working Point Matches Theoretical Roadway Grade.

ROUNDING DETAIL

NO SCALE

STATE OF ARKANSAS
Carl J. Puseliier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. PUSELIER

BRIDGE ENGINEER

SHEET 1 OF 3

DETAILS OF BENT 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 3/30/2013 FILENAME: b040605.b41.dgn

CHECKED BY: DHP DATE: 5-17-13 SCALE: As shown

DESIGNED BY: DHP DATE: 3-26-13

BRIDGE NO. 07287 DRAWING NO. 53971

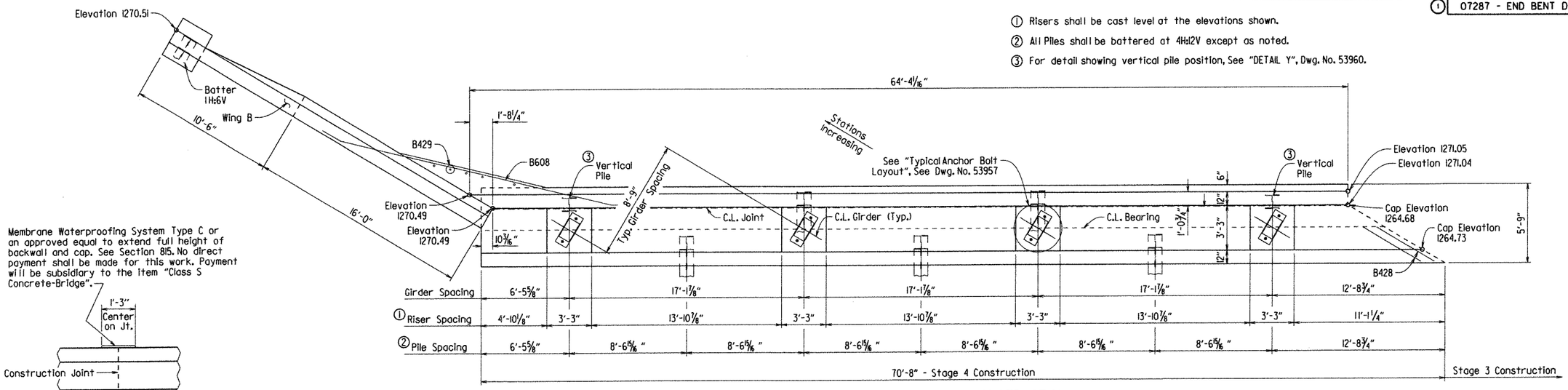
PRINT DATE: 5/17/2013

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.		040605	128	260
				①	07287 - END BENT DETAILS - 53972			

① Risers shall be cast level at the elevations shown.

② All Piles shall be battered at 4H:12V except as noted.

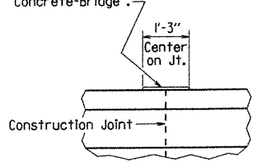
③ For detail showing vertical pile position, See "DETAIL Y", Dwg. No. 53960.



PLAN - STAGE 4 CONSTRUCTION

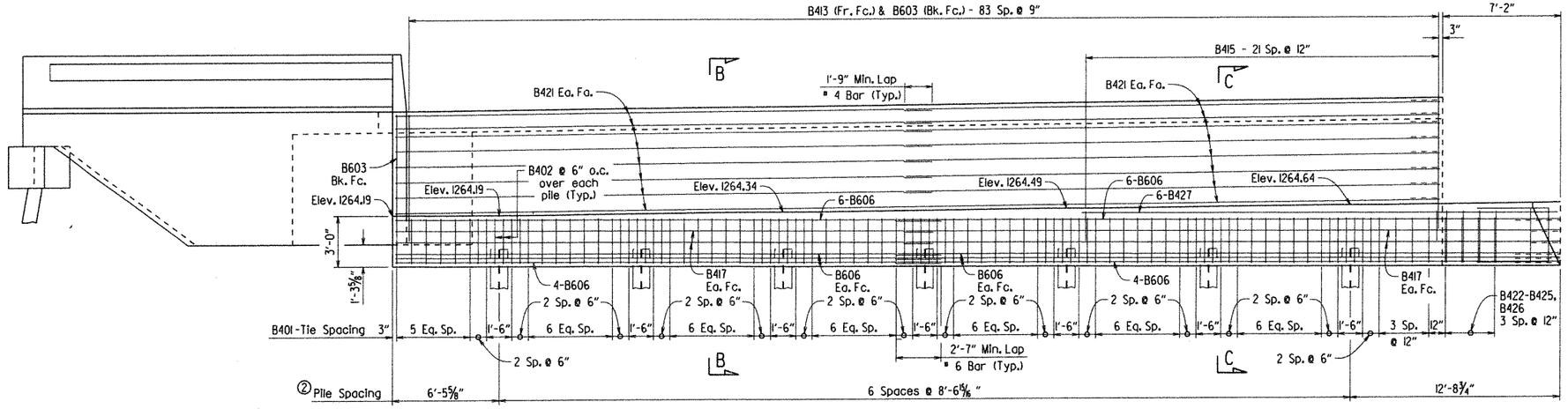
1/4" = 1'-0"

Membrane Waterproofing System Type C or an approved equal to extend full height of backwall and cap. See Section 815. No direct payment shall be made for this work. Payment will be subsidiary to the item "Class S Concrete-Bridge".



CONSTRUCTION JOINT DETAIL

NO SCALE



ELEVATION - STAGE 4 CONSTRUCTION

Looking Ahead

1/4" = 1'-0"

NOTES:

For Details of Wing and Rail, See Dwg. Nos. 53961 and 53962.

For "SECTION B-B" and "Section C-C", See Dwg. No. 53960.

For "DETAIL OF WELD LOCATION FOR EXPANSION DEVICE", See Dwg. No. 53957.

For General Notes, See Dwg. No. 53960.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 3

DETAILS OF BENT 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 3/30/2013 FILENAME: b040605.b41.dgn

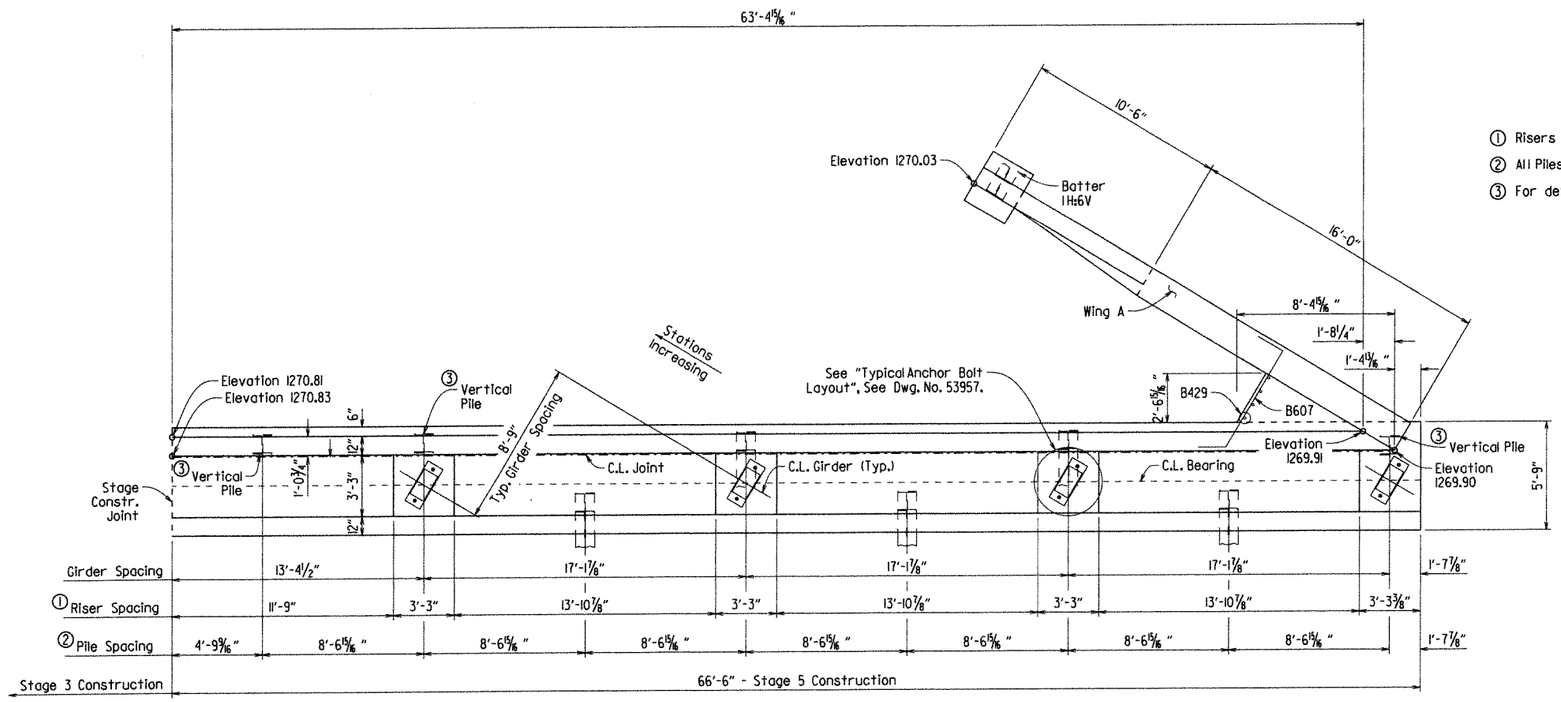
CHECKED BY: DHP DATE: 5-17-13 SCALE: As shown

DESIGNED BY: DHP DATE: 5-20-13

BRIDGE NO. 07287 DRAWING NO. 53972

PRINT DATE: 5/17/2013

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.		040605	129	260
				①	07287 - END BENT DETAILS - 53973			



PLAN - STAGE 5 CONSTRUCTION

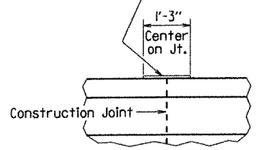
1/4" = 1'-0"

① Risers shall be cast level at the elevations shown.

② All Piles shall be battered at 4H:12V except as noted.

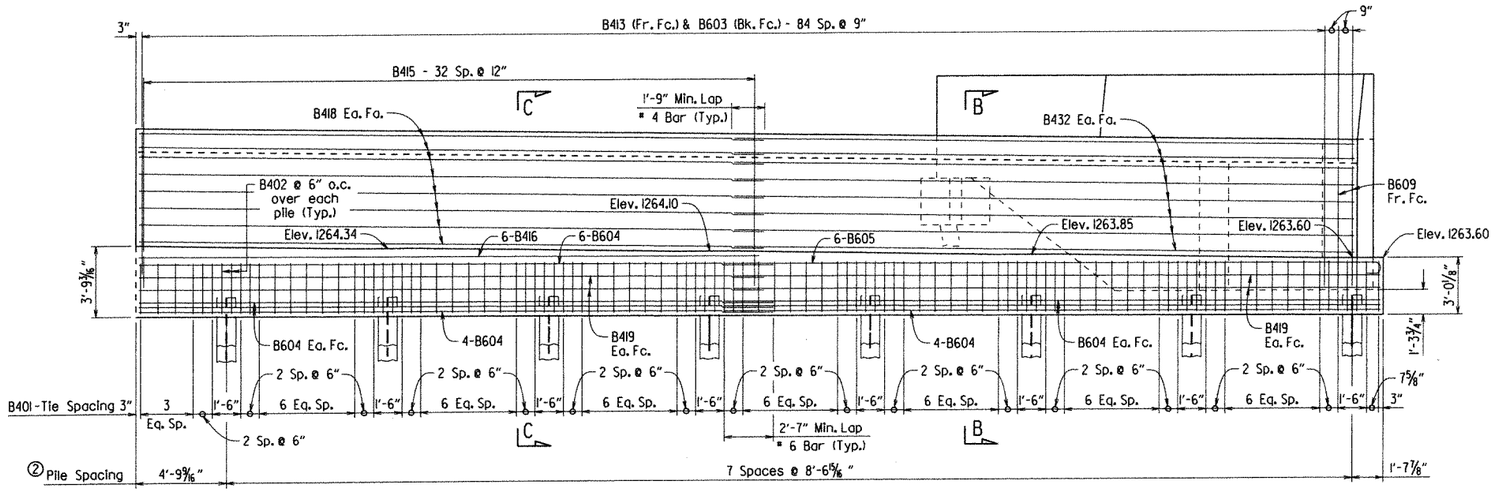
③ For detail showing vertical pile position, See "DETAIL Y", Dwg. No. 53960.

Membrane Waterproofing System Type C or an approved equal to extend full height of backwall and cap. See Section 815. No direct payment shall be made for this work. Payment will be subsidiary to the item "Class S Concrete-Bridge".



CONSTRUCTION JOINT DETAIL

NO SCALE



ELEVATION - STAGE 5 CONSTRUCTION

Looking Ahead

1/4" = 1'-0"

NOTES:

For Details of Wing and Rail, See Dwg. Nos. 53961 and 53962.

For "SECTION B-B" and "Section C-C", See Dwg. No. 53960.

For "DETAIL OF WELD LOCATION FOR EXPANSION DEVICE", See Dwg. No. 53957.

For General Notes, See Dwg. No. 53960.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
5/21/13

BRIDGE ENGINEER

SHEET 3 OF 3

DETAILS OF BENT 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 3/30/2013 FILENAME: b040605_b41.dgn

CHECKED BY: DHP DATE: 5-17-13 SCALE: As shown

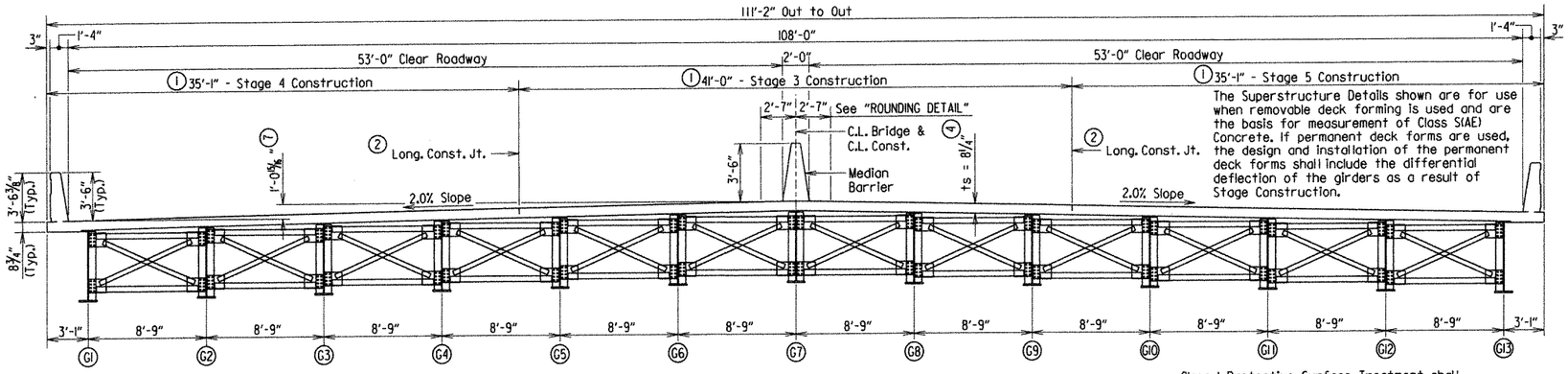
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BRIDGE NO. 07287 DRAWING NO. 53973

PRINT DATE: 5/17/2013

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.		040605	130	260

(1) 07287 - SPAN DETAILS - 53974



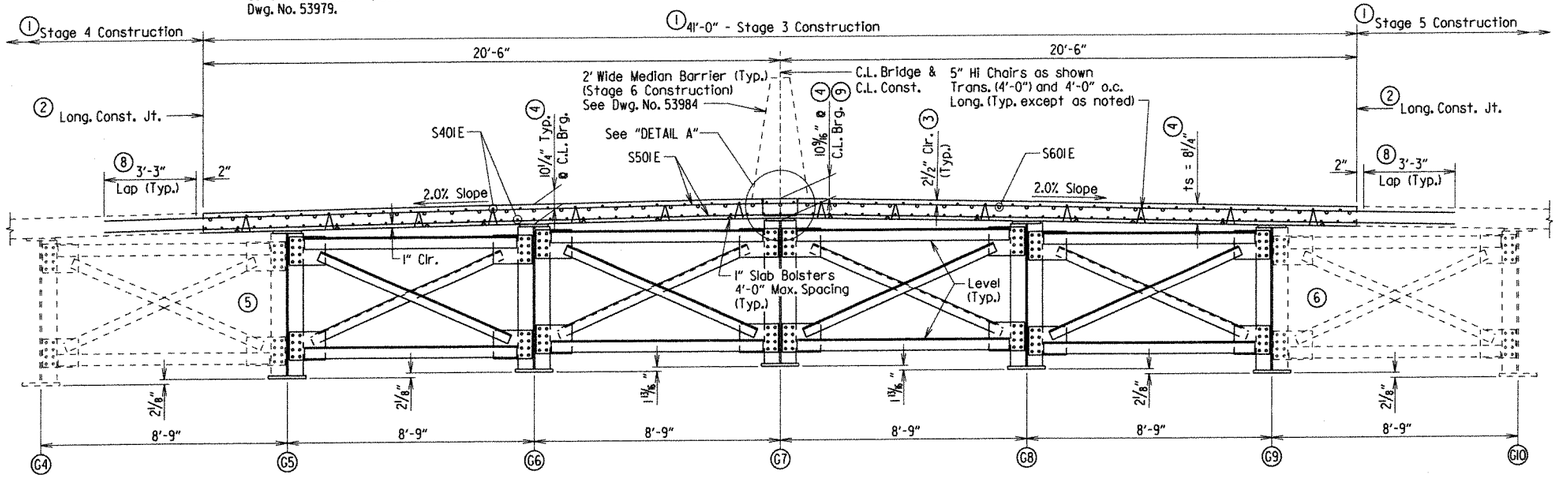
TYPICAL ROADWAY SECTION - FINAL CONDITION

(Looking Forward)
Scale: ⅜" = 1'-0"

(1) For Stage Construction Details, see Dwg. Nos. 53954 - 53956.

(2) For details of Longitudinal Construction Joint, see Dwg. No. 53979.

Class I Protective Surface Treatment shall be applied to the Roadway Surface, Median Barrier and top and inside face of parapet rail. Class 3 Textured Coating Finish shall be applied to areas as specified in Special Provision Job No. 040605 "Textured Coating Finish".

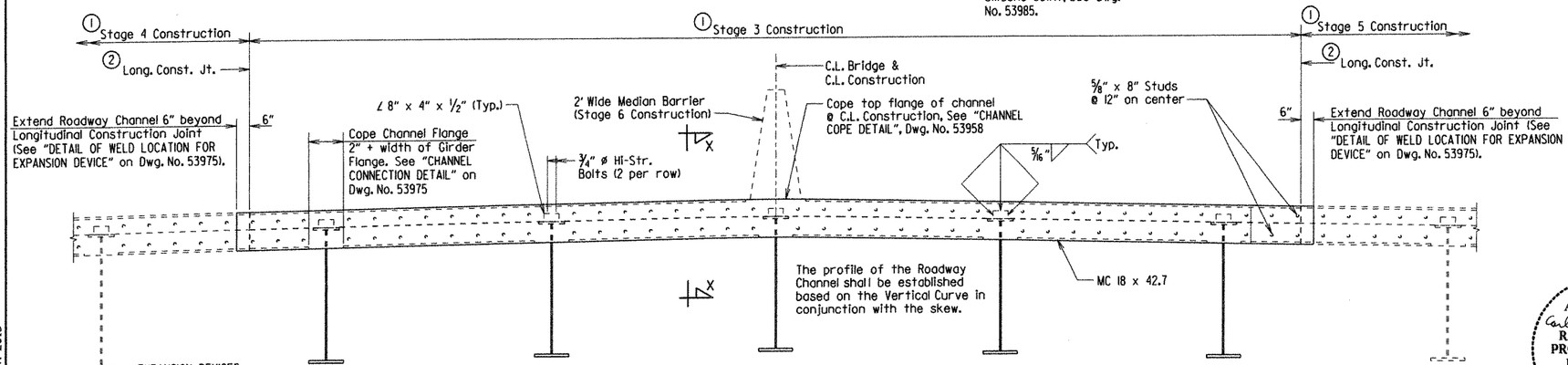


For Crossframe Details see Dwg. No. 53978.

TYPICAL ROADWAY SECTION

(Looking Forward - Stage 3 Construction)
Scale: ⅜" = 1'-0"

For details of Poured Silicone Joint, see Dwg. No. 53985.

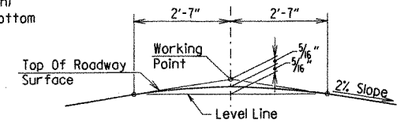


EXPANSION DEVICES:
Rdwy. Channel - MC 18 x 42.7
Conn. Angle - ∠ 8 x 4" x ½"
Detail Device ⅛" high & provide ¼" Shims using 1 - ⅛" PL & 2 - 1/16" PLs.

VIEW @ C.L. JOINT

(Looking Forward - Stage 3 Construction)
Scale: ⅜" = 1'-0"

SLAB REINFORCING: (Stage 3 Construction)
Transverse: S50IE @ 6" O.C. in Top & Bottom
Longitudinal: S40IE (Placed as shown) Top & Bottom
S60IE (Placed as shown over Int. Supports)



NOTE: Working Point Matches Theoretical Roadway Grade.

ROUNDING DETAIL
No Scale

(3) TOLERANCE:
Minus = ¼" Plus = Equal to amount of Slab Thickening used to meet Slab Thickness Tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED" on Dwg. No. 53975.

(4) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED" on Dwg. No. 53975.

(5) The Contractor shall loosely install as many bolts as possible in Cross-Frames between Girders 4 and 5 when Griders are erected in Stage 4. As an alternate, between Girders 4 and 5 only, the Contractor may eliminate holes in the connection plates in Girder 4 and field drill bolt holes after Stage 4 slab has been poured. All bolts shall be installed in their proper position and fully tightened immediately after placing the slab in Stage 4. The Contractor is responsible for maintaining proper Girder alignment until Cross-Frames are completely installed. At locations where all bolts cannot be loosely installed before Stage 4 slab has been poured or if the Contractor elects to field drill bolt holes, the Contractor may place temporary timber bracing (4"x4" Min.) wedged tight at bottom flange between Girders to aid in the installation of bolts in the Cross-Frames after Stage 4 slab has been poured. Any additional work required to properly install Cross-Frames will not be paid for directly.

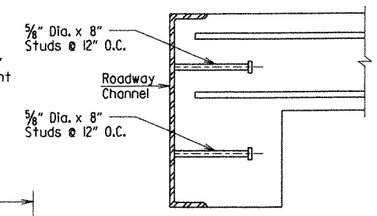
(6) The Contractor shall loosely install as many bolts as possible in Cross-Frames between Girders 9 and 10 when Griders are erected in Stage 5. As an alternate, between Girders 9 and 10 only, the Contractor may eliminate holes in the connection plates in Girder 10 and field drill bolt holes after Stage 5 slab has been poured. All bolts shall be installed in their proper position and fully tightened immediately after placing the slab in Stage 5. The Contractor is responsible for maintaining proper Girder alignment until Cross-Frames are completely installed. At locations where all bolts cannot be loosely installed before Stage 5 slab has been poured or if the Contractor elects to field drill bolt holes, the Contractor may place temporary timber bracing (4"x4" Min.) wedged tight at bottom flange between Girders to aid in the installation of bolts in the Cross-Frames after Stage 5 slab has been poured. Any additional work required to properly install Cross-Frames will not be paid for directly.

(7) Measured from Working Point to Gutterline.

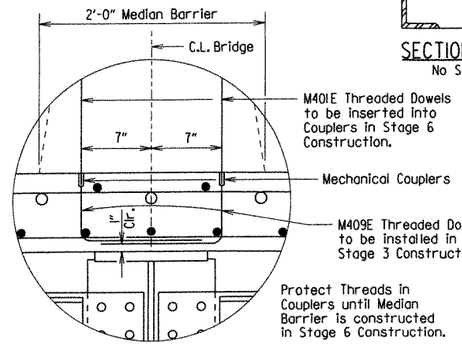
(8) Laps for Transverse Reinforcing between Stages of Construction shall not be tied.

(9) To Working Point at C.L. Brg. See "ROUNDING DETAIL".

As an alternate to ⅝" Dia. Studs, ½" Dia. x 8" Studs spaced @ 8" o.c. may be used. Use weight of ⅝" Dia. Stud as basis of measurement of Structural Steel in Anchors.



SECTION X-X
No Scale



DETAIL A
No Scale

STATE OF ARKANSAS
Carl J. Puseller
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13
CARL J. PUSELLER
BRIDGE ENGINEER

SHEET 1 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

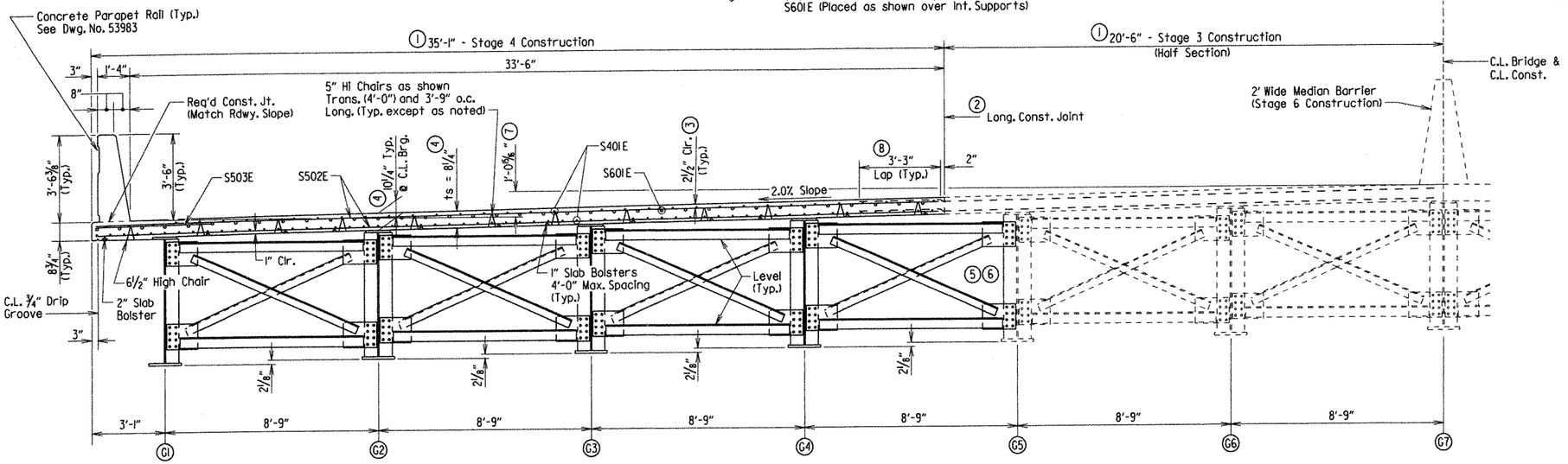
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CHECKED BY: CMW DATE: 6/7/13 SCALE: ⅜" = 1'-0" or as shown
DESIGNED BY: CMW DATE: 1/13

BRIDGE NO. 07287 DRAWING NO. 53974

PRINT DATE: 07-JUN-2013

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.		040605	131	260
				(1)		07287 - SPAN DETAILS - 53975		

SLAB REINFORCING: (Stage 4 and 5 Construction)
Transverse: S502E @ 6" O.C. in Top & Bottom
S503E Bundled in Top of Slab @ Gutterline
Longitudinal: S401E (Placed as shown) Top & Bottom
S601E (Placed as shown over Int. Supports)

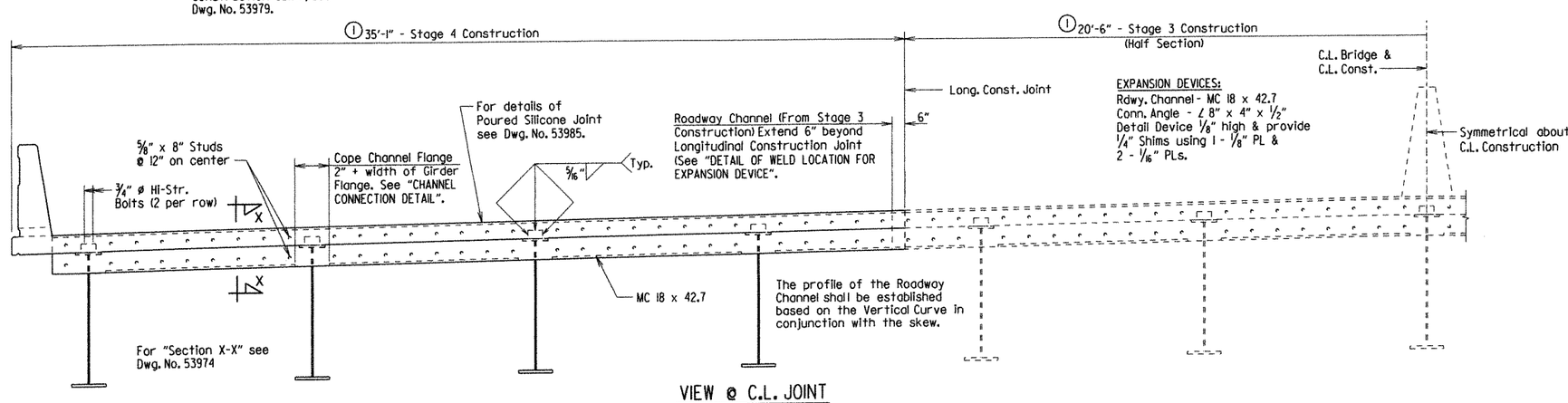


(1) For Stage Construction Details, see Dwg. Nos. 53954 - 53956.

(2) For details of Longitudinal Construction Joint, see Dwg. No. 53979.

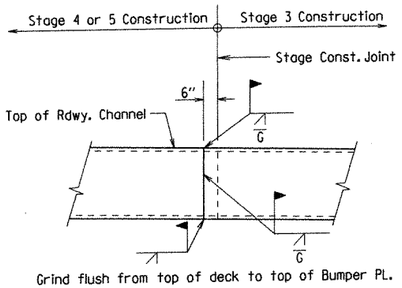
TYPICAL ROADWAY SECTION

(Looking Forward - Stage 4 Construction, Stage 5 Construction Similar by orientation)
Scale: 3/8" = 1'-0"



VIEW @ C.L. JOINT

(Looking Forward showing Stage 4 Construction, Stage 5 similar by orientation)
Scale: 3/8" = 1'-0"



DETAIL OF WELD LOCATION FOR EXPANSION DEVICE

Looking Ahead
No Scale

(3) TOLERANCE:
Minus = 1/4" Plus = Equal to amount of Slab Thickening used to meet Slab Thickness Tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(4) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

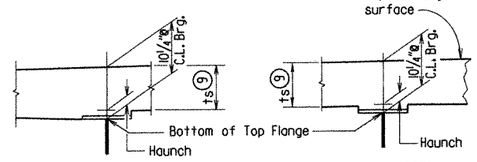
(5) The Contractor shall loosely install as many bolts as possible in Cross-Frames between Girders 4 and 5 when Griders are erected in Stage 4. As an alternate, between Girders 4 and 5 only, the Contractor may eliminate holes in the connection plates in Girder 4 and field drill bolt holes after Stage 4 slab has been poured. All bolts shall be installed in their proper position and fully tightened immediately after placing the slab in Stage 4. The Contractor is responsible for maintaining proper Girder alignment until Cross-Frames are completely installed. At locations where all bolts cannot be loosely installed before Stage 4 slab has been poured or if the Contractor elects to field drill bolt holes, the Contractor may place temporary timber bracing (4"x4" Min.) wedged tight at bottom flange between Girders to aid in the installation of bolts in the Cross-Frames after Stage 4 slab has been poured. Any additional work required to properly install Cross-Frames will not be paid for directly.

(6) The Contractor shall loosely install as many bolts as possible in Cross-Frames between Girders 9 and 10 when Griders are erected in Stage 5. As an alternate, between Girders 9 and 10 only, the Contractor may eliminate holes in the connection plates in Girder 10 and field drill bolt holes after Stage 5 slab has been poured. All bolts shall be installed in their proper position and fully tightened immediately after placing the slab in Stage 5. The Contractor is responsible for maintaining proper Girder alignment until Cross-Frames are completely installed. At locations where all bolts cannot be loosely installed before Stage 5 slab has been poured or if the Contractor elects to field drill bolt holes, the Contractor may place temporary timber bracing (4"x4" Min.) wedged tight at bottom flange between Girders to aid in the installation of bolts in the Cross-Frames after Stage 5 slab has been poured. Any additional work required to properly install Cross-Frames will not be paid for directly.

(7) Measured from Working Point to Gutterline.

(8) Laps for Transverse Reinforcing between Stages of Construction shall not be tied.

t_s = slab thickness as shown in "Typical Roadway Section"



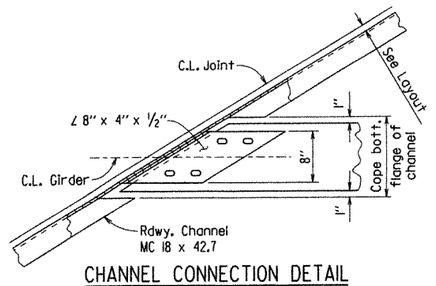
(9) Tolerance when removable deck forming is used is + 1/2", - 1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 1 3/4". 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 concrete shall be based on removable deck forming.

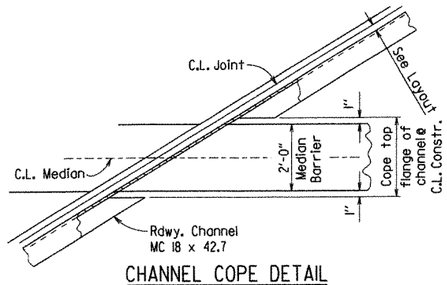
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

No Scale



CHANNEL CONNECTION DETAIL

No Scale



CHANNEL COPE DETAIL

No Scale

STATE OF ARKANSAS
CARL J. PUSELLER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/21/13

BRIDGE ENGINEER

SHEET 2 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE	DATE: 03/13/13	FILENAME: b040605_sl.dgn	
CHECKED BY: CMW	DATE: 6/7/13	SCALE: 3/8" = 1'-0" or as shown	
DESIGNED BY: CMW	DATE: 1/13		

BRIDGE NO. 07287 DRAWING NO. 53975

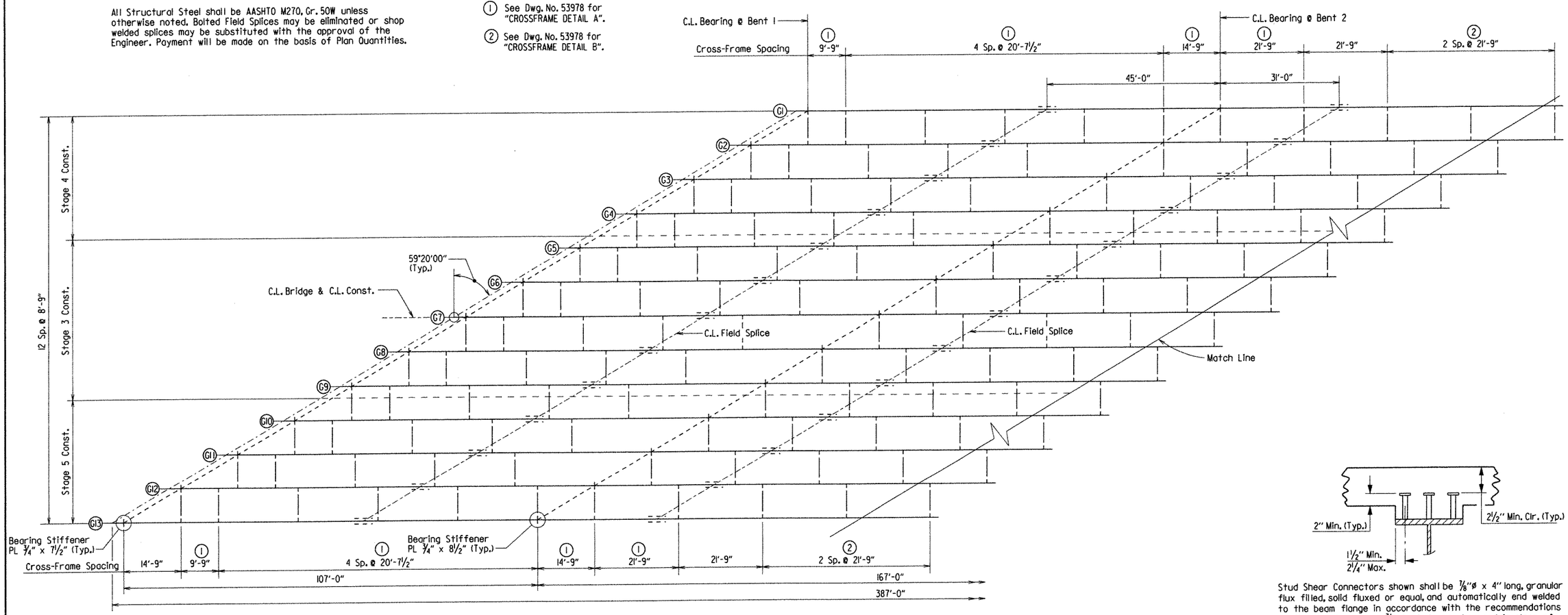
PRINT DATE: 07-JUN-2013

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.		040605	132	260
				(1)		07287 - SPAN DETAILS - 53976		

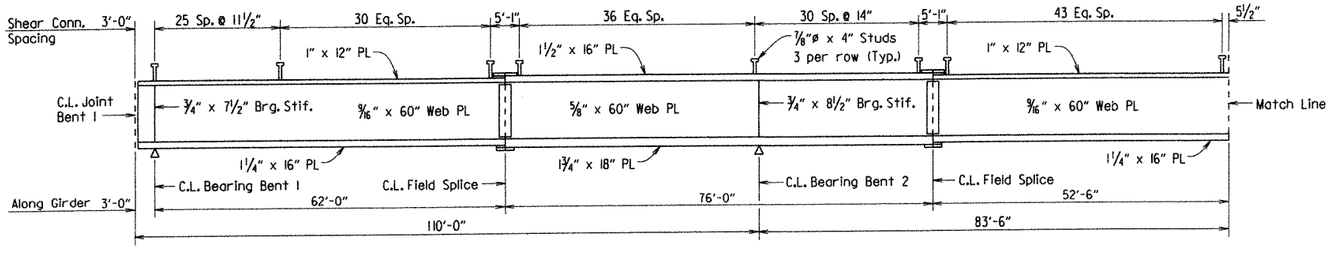
All Structural Steel shall be AASHTO M270, Gr. 50W unless otherwise noted. Bolted Field Splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of Plan Quantities.

(1) See Dwg. No. 53978 for "CROSSFRAME DETAIL A".

(2) See Dwg. No. 53978 for "CROSSFRAME DETAIL B".



FRAMING PLAN
No Scale



GIRDER ELEVATION
No Scale

For "FIELD SPLICE DETAILS" and "TABLE FOR WELDS" see Dwg. No. 53978.

Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. ¾" ø studs may be used in place of the ⅞" ø studs shown, at the ratio of 1.361-¾" ø studs in place of one ⅞" ø stud. ⅞" ø studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 24"

SHEAR CONNECTOR DETAIL
No Scale

STATE OF ARKANSAS
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5/21/13
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BRIDGE ENGINEER

SHEET 3 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

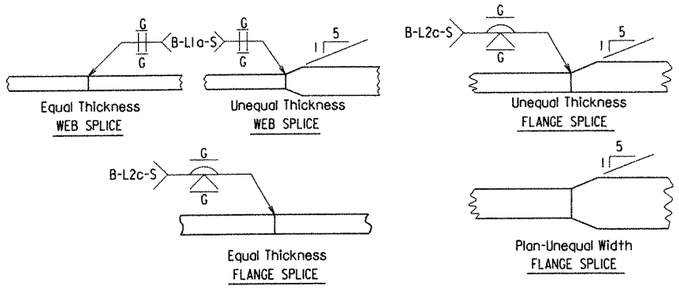
LITTLE ROCK, ARK.

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CHECKED BY: CMW DATE: 5/17/13 SCALE: No Scale
DESIGNED BY: CMW DATE: 1/13

BRIDGE NO. 07287 DRAWING NO. 53976

PRINT DATE: 5/17/2013

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.		040605	133	760
				(1)	07287 - SPAN DETAILS - 53977			

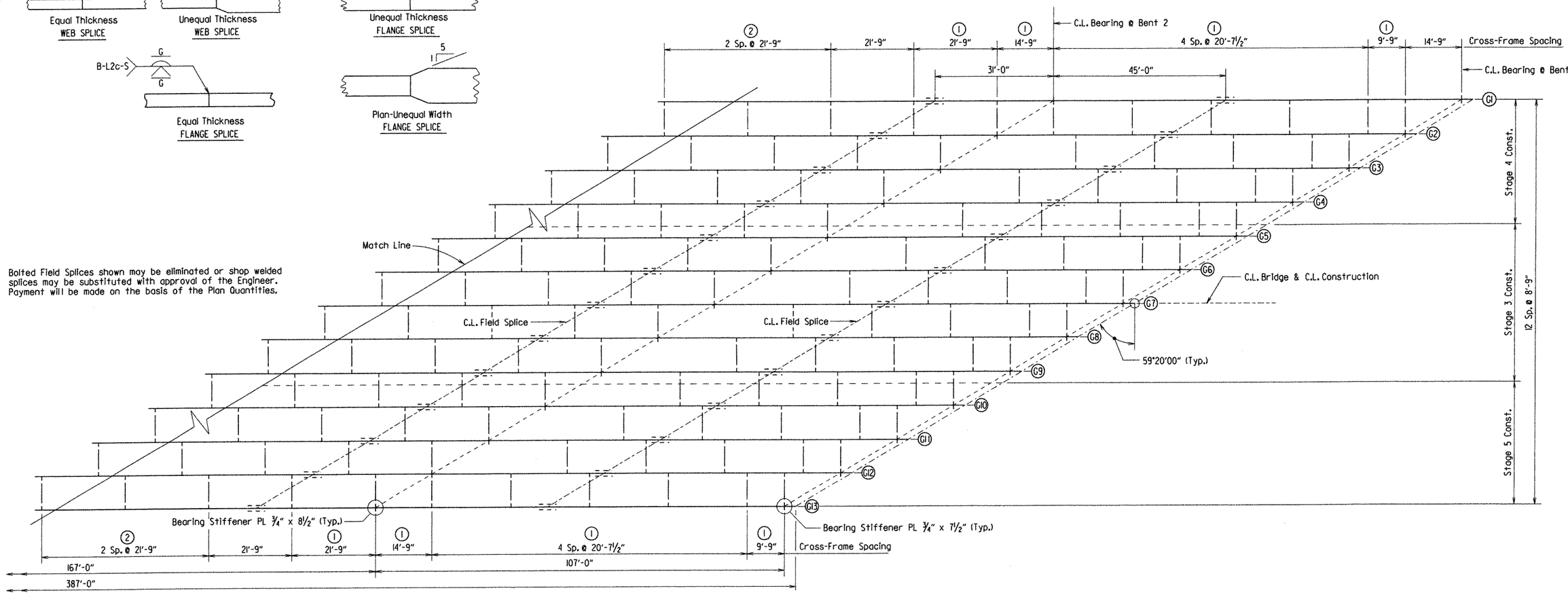


All Structural Steel shall be AASHTO M270, Gr. 50W unless otherwise noted. Bolted Field Splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of Plan Quantities.

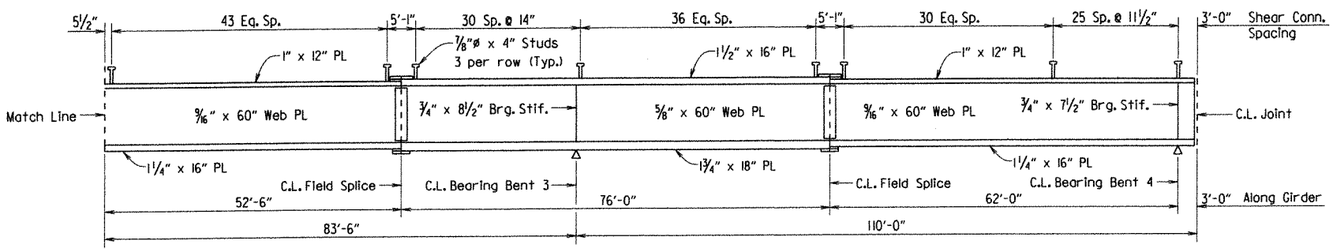
(1) See Dwg. No. 53978 for "CROSSFRAME DETAIL A".

(2) See Dwg. No. 53978 for "CROSSFRAME DETAIL B".

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.



FRAMING PLAN
No Scale



GIRDER ELEVATION
No Scale

For "FIELD SPLICE DETAILS" and "TABLE FOR WELDS" see Dwg. No. 53978.

STATE OF ARKANSAS
Carl L. Fusselier
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No. 7510
5/17/13
CARL L. FUSSELIER

BRIDGE ENGINEER

SHEET 4 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 03/21/13 FILENAME: b040605_sl.dgn

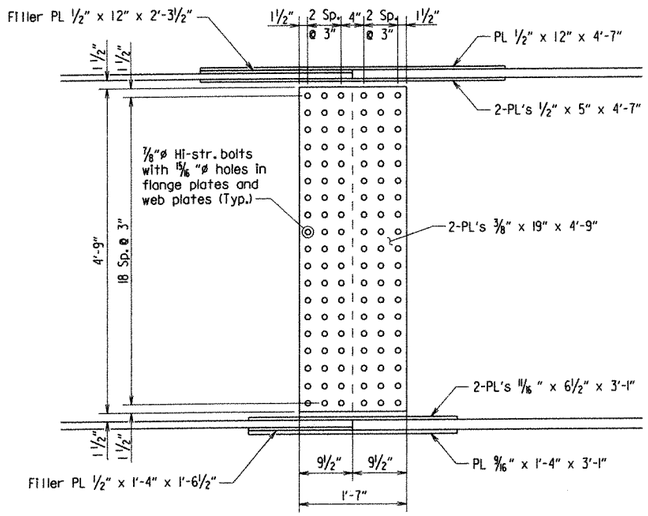
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DESIGNED BY: CMJ DATE: 1/13

BRIDGE NO. 07287 DRAWING NO. 53977

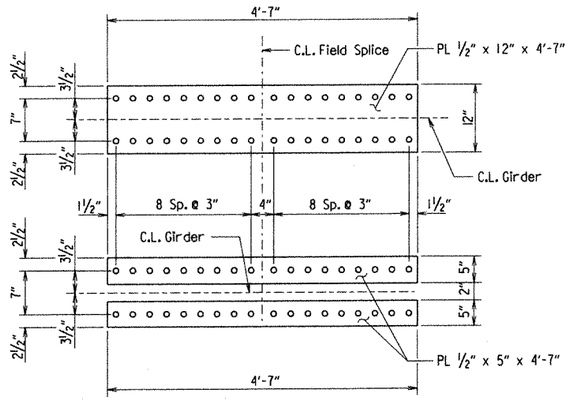
PRINT DATE: 5/17/2013

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				①	07287 - SPAN DETAILS - 53978			

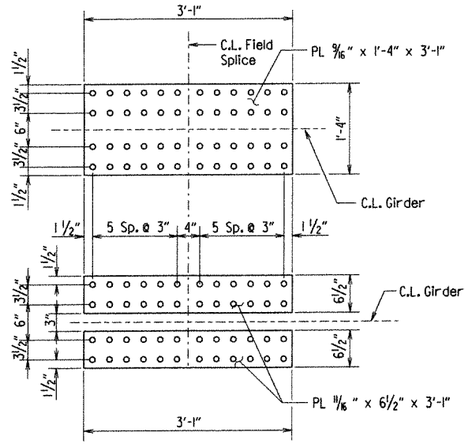


WEB SPLICE

All field splice bolts shall be ⅞"ø Hi-str. bolts.
All holes for splice bolts shall be 15/16 "ø.
All field splice plates shall be AASHTO M270 Gr. 50W steel.

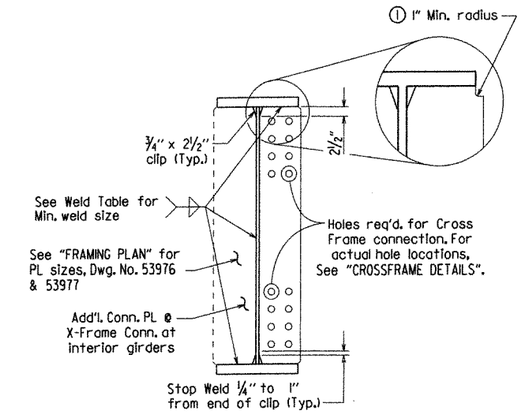


TOP FLANGE SPLICE PLATES

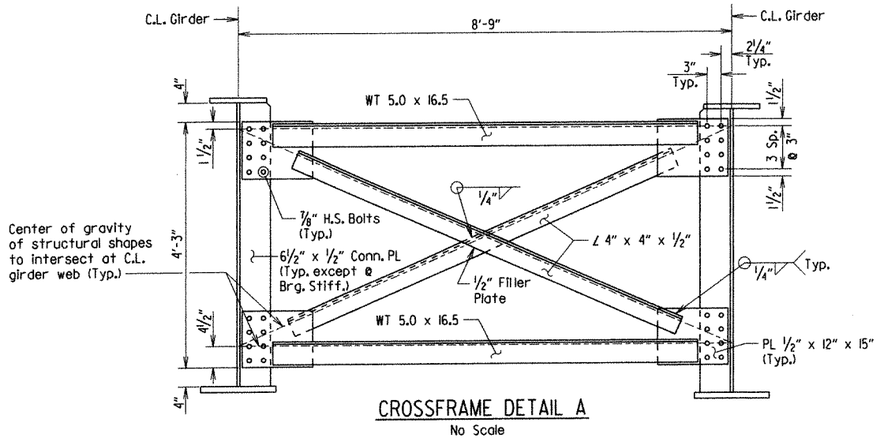


BOTTOM FLANGE SPLICE PLATES

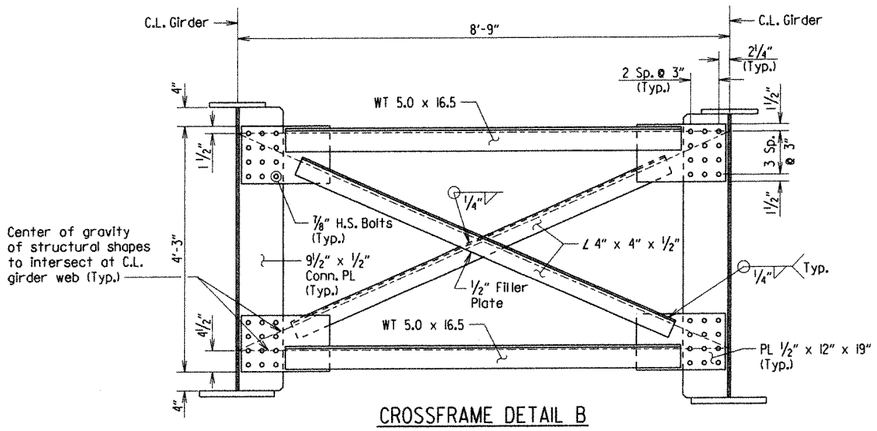
FIELD SPLICE DETAILS
No Scale



CONNECTION PLATE DETAIL
No Scale

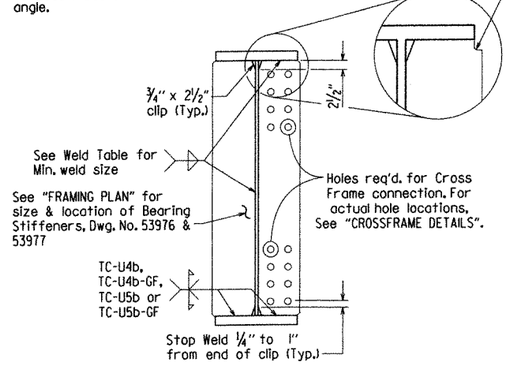


CROSSFRAME DETAIL A
No Scale



CROSSFRAME DETAIL B
No Scale

① If permanant deck forms are used, the fabricator shall clip the plate as necessary to accommodate the support angle.



BEARING STIFFENER DETAIL
No Scale

Bearing stiffeners to be fabricated so as to be vertical in their final position.

Bolts in Cross-Frame connections shall be properly installed and tightened is accordance with subsection 807.71.

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"	

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.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER 3/21/13

BRIDGE ENGINEER

SHEET 5 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

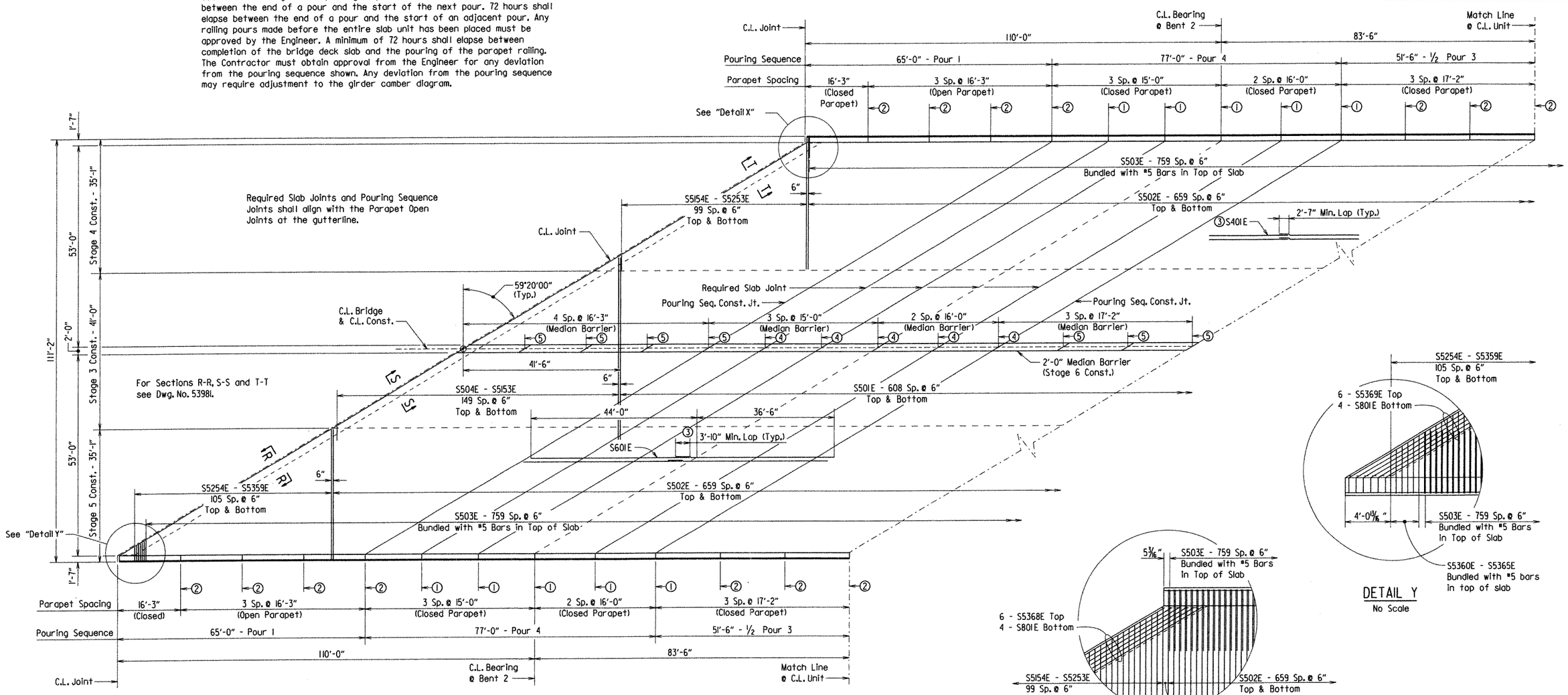
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DESIGNED BY: CMW DATE: 1/13

BRIDGE NO. 07287 DRAWING NO. 53978

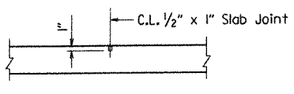
PRINT DATE: 5/17/2013

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.		040605	135	260
				(1)		07287 - SPAN DETAILS - 53979		

For each stage of construction the Contractor shall pour the slab in sections according to the pouring sequence shown. 48 hours shall elapse between 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. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the parapet railing. The Contractor must obtain approval from the Engineer for any deviation from the pouring sequence shown. Any deviation from the pouring sequence may require adjustment to the girder camber diagram.

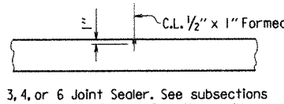


REINFORCING PLAN & DECK POURING SEQUENCE
No Scale



Use ½" x 1" Type 3, 4 or 6 Joint Sealer. See subsections 501.02(h) and 501.05(j). Backer rod will not be required. Joint Sealer shall be measured and 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 slab has sufficiently set to allow sawing of the joints without damaging the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations and shall align with stages of construction.

SLAB JOINT DETAIL
NO SCALE



Use Type 3, 4, or 6 Joint Sealer. See subsections 501.02 (h) and 501.05 (j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed.

LONGITUDINAL CONSTRUCTION JOINT DETAIL
NO SCALE

(1) C.L. Full-Depth Parapet Joint (¼" to 1" Max.) Stop 4" from top of slab.

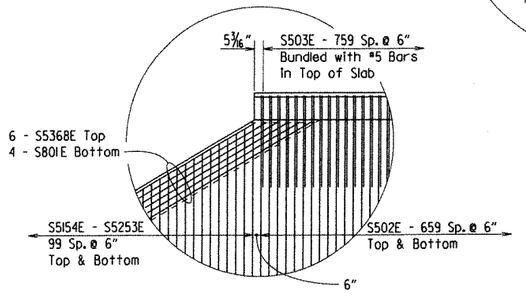
(2) C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) Stop 1'-6" from top of slab.

(3) Placed as shown in "TYPICAL ROADWAY SECTION", Dwg. No. 53974 & 53975.

(4) C.L. Full-Depth Median Barrier Joint (¼" to 1" Max.) Stop 4" from top of slab.

(5) C.L. Partial-Depth Median Barrier Joint (¼" to 1" Max.) Stop 1'-6" from top of slab.

DETAIL Y
No Scale



DETAIL X
No Scale

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
5/31/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 6 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 03/27/13 FILENAME: b040605_sl.dgn
CHECKED BY: CMW DATE: 5/17/13 SCALE: No Scale
DESIGNED BY: CMW DATE: 1/13

BRIDGE NO. 07287 DRAWING NO. 53979

PRINT DATE: 17-MAY-2013

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.		040605	136	260
				(1)	07287 - SPAN DETAILS - 53980			

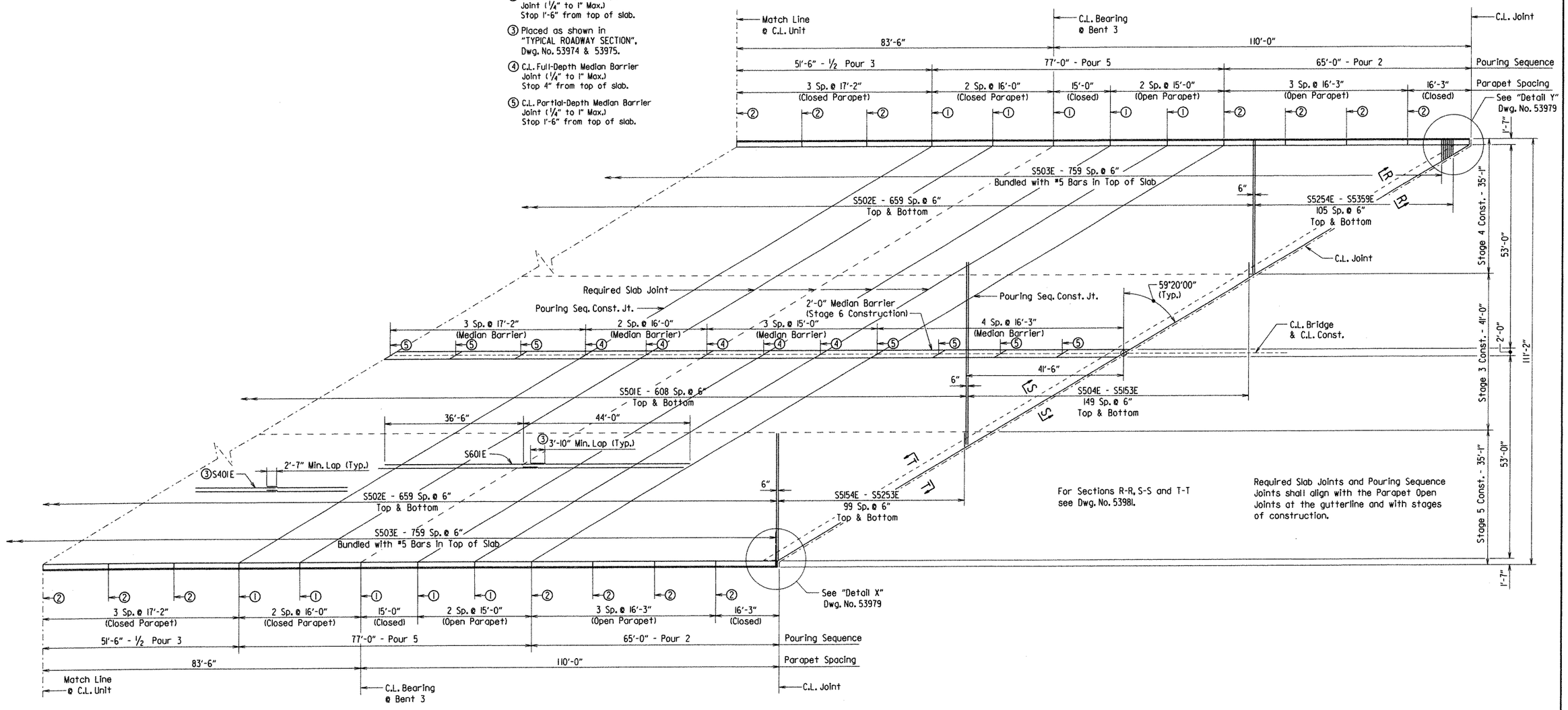
① C.L. Full-Depth Parapet Joint (¼" to 1" Max.) Stop 4" from top of slab.

② C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) Stop 1'-6" from top of slab.

③ Placed as shown in "TYPICAL ROADWAY SECTION", Dwg. No. 53974 & 53975.

④ C.L. Full-Depth Median Barrier Joint (¼" to 1" Max.) Stop 4" from top of slab.

⑤ C.L. Partial-Depth Median Barrier Joint (¼" to 1" Max.) Stop 1'-6" from top of slab.



REINFORCING PLAN & DECK POURING SEQUENCE

No Scale

STATE OF ARKANSAS
Carl S. Puseliер
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. PUSELIER 5/21/13

BRIDGE ENGINEER

SHEET 7 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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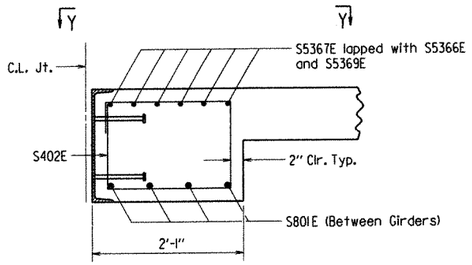
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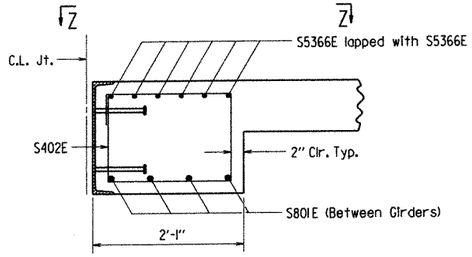
BRIDGE NO. 07287 DRAWING NO. 53980

PRINT DATE: 17-MAY-2013

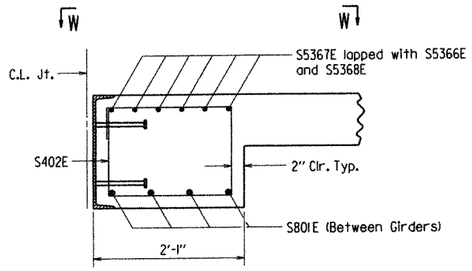
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				6	ARK.			
				JOB NO.		040605	137	260
				(1)		07287 - SPAN DETAILS - 53981		



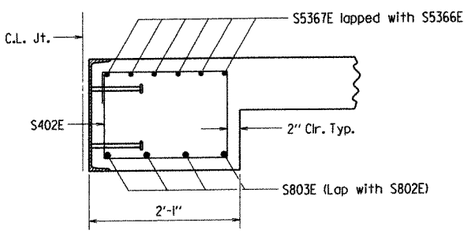
SECTION R-R
1" = 1'-0"



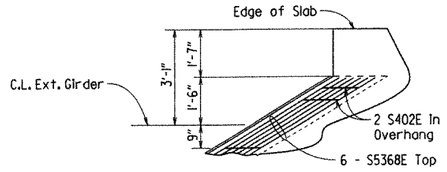
SECTION S-S
STAGE 3 CONSTRUCTION
1" = 1'-0"



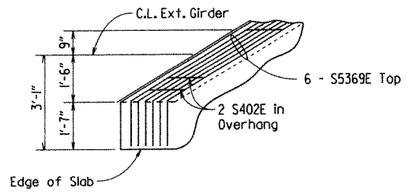
SECTION T-T
1" = 1'-0"



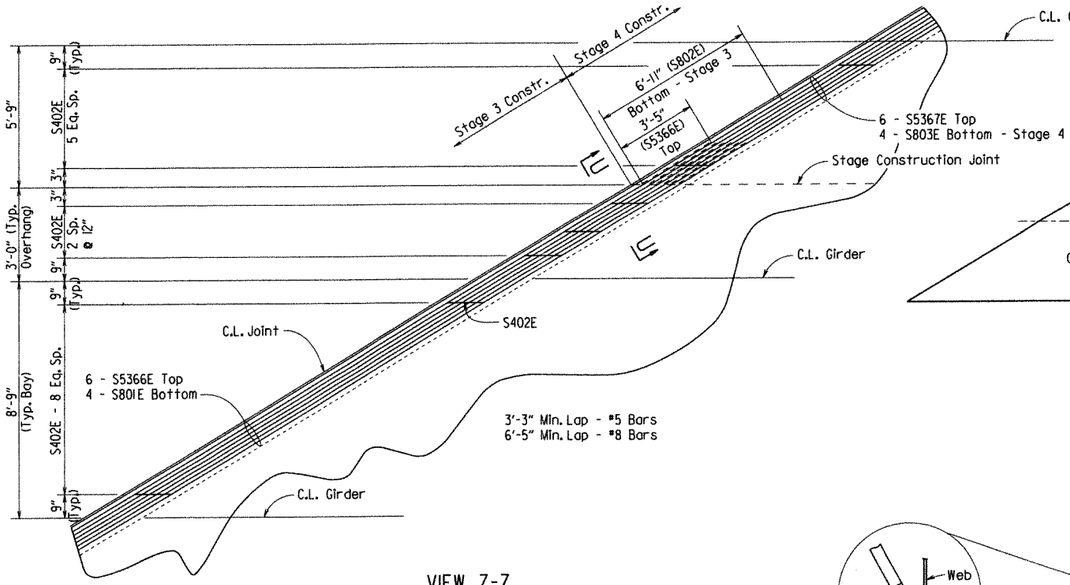
SECTION U-U
STAGE 4 and 5 CONSTRUCTION
1" = 1'-0"



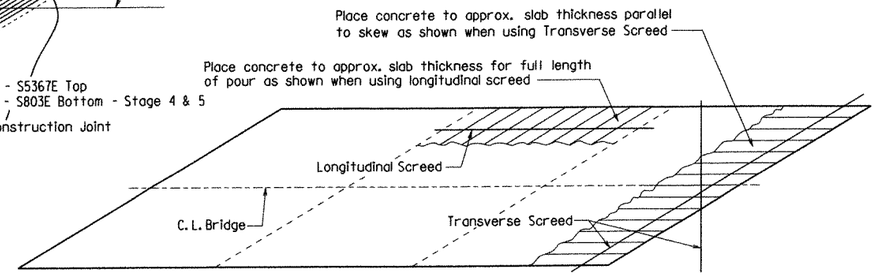
VIEW W-W
Stage 4 Const. shown.
Stage 5 Similar by Orientation
No Scale



VIEW Y-Y
Stage 5 Const. shown.
Stage 4 Similar by Orientation
No Scale

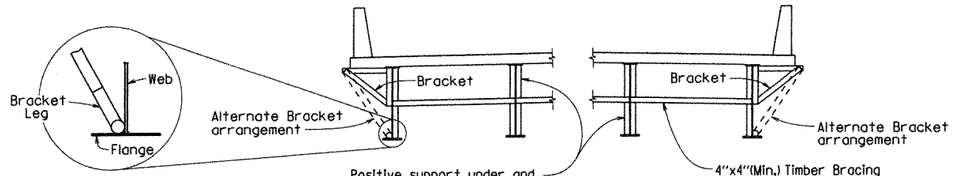


VIEW Z-Z
Stage 3 Const. shown.
Stage 4 and 5 Similar by Orientation
No Scale



CONCRETE PLACEMENT PROCEDURE
No Scale

NOTE: At the Contractor's Option, the Transverse Screed may be placed parallel to the skew or perpendicular to C.L. Bridge.

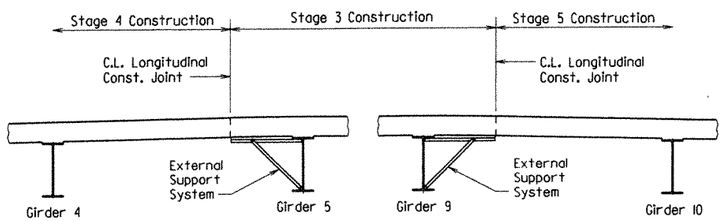


The brackets shall be installed in a manner that avoids any nicks or gouges in the flange, web, and weld.

Positive support under and above bracing to prevent bracing and wedge from falling or shifting vertically.

The rail for the transverse screed 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 6" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for crossframe connection plates shown on Drawing No. 53978. 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. 50W)."

SCREED RAIL SUPPORT
No Scale



Stage 3 external external supports at Girder 5 shall remain in place until after completion of the Stage 4 deck pours and Stage 3 external supports at Girder 9 shall remain in place until after completion of Stage 5 deck pours. See subsection 802.15 for additional information regarding their removal.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINTS
LOOKING AHEAD
No Scale

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
5-1-13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 8 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 04/03/13 FILENAME: b040605_sl.dgn
CHECKED BY: CMW DATE: 5/17/13 SCALE: As Shown
DESIGNED BY: CMW DATE: 1/13

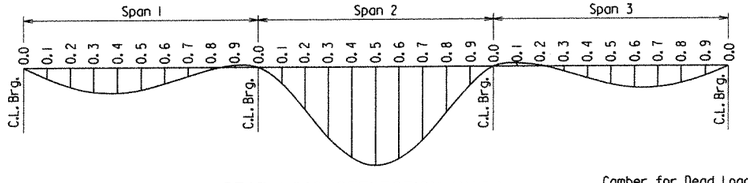
BRIDGE NO. 07287 DRAWING NO. 53981

PRINT DATE: 5/17/2013

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				6	ARK.			
				JOB NO.		040605	138	260
				①		07287 - SPAN DETAILS - 53982		

TABLE OF DEAD LOAD DEFLECTIONS-INCHES

SPAN	POINT OF DEFLECTION	GIRDERS 1 & 13			GIRDERS 2, 5, 6, 8, 9, & 12			GIRDERS 3, 4, 10 & 11			GIRDER 7		
		STRUCTURAL STEEL	STR. STEEL + SLAB	STR. STEEL + SLAB + PARAPET	STRUCTURAL STEEL	STR. STEEL + SLAB	STR. STEEL + SLAB + PARAPET	STRUCTURAL STEEL	STR. STEEL + SLAB	STR. STEEL + SLAB + PARAPET	STRUCTURAL STEEL	STR. STEEL + SLAB	STR. STEEL + SLAB + PARAPET
1	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.056	0.351	0.373	0.063	0.418	0.427	0.064	0.424	0.430	0.062	0.418	0.448
	0.2	0.098	0.631	0.670	0.112	0.762	0.778	0.115	0.775	0.785	0.111	0.763	0.817
	0.3	0.119	0.805	0.853	0.139	0.981	1.000	0.143	1.000	1.011	0.138	0.983	1.051
	0.4	0.117	0.844	0.891	0.139	1.043	1.060	0.144	1.065	1.075	0.138	1.045	1.114
	0.5	0.093	0.748	0.786	0.115	0.946	0.957	0.121	0.970	0.976	0.114	0.947	1.007
	0.6	0.054	0.549	0.571	0.074	0.726	0.728	0.080	0.750	0.749	0.073	0.726	0.768
	0.7	0.012	0.304	0.309	0.028	0.439	0.433	0.034	0.461	0.456	0.028	0.439	0.460
	0.8	-0.022	0.080	0.071	-0.010	0.165	0.153	-0.006	0.182	0.172	-0.011	0.163	0.165
	0.9	-0.031	-0.046	-0.059	-0.026	-0.017	-0.028	-0.024	-0.005	-0.014	-0.027	-0.017	-0.026
2	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.151	0.504	0.566	0.150	0.532	0.575	0.145	0.512	0.542	0.150	0.534	0.598
	0.2	0.378	1.349	1.506	0.376	1.434	1.536	0.367	1.398	1.470	0.377	1.440	1.600
	0.3	0.604	2.216	2.464	0.610	2.410	2.571	0.598	2.366	2.479	0.612	2.420	2.675
	0.4	0.775	2.898	3.214	0.781	3.147	3.351	0.768	3.099	3.243	0.783	3.161	3.484
	0.5	0.835	3.149	3.489	0.843	3.432	3.651	0.830	3.384	3.538	0.846	3.448	3.795
	0.6	0.777	2.941	3.257	0.783	3.199	3.403	0.770	3.153	3.296	0.786	3.214	3.537
	0.7	0.616	2.330	2.582	0.616	2.510	2.672	0.605	2.469	2.583	0.618	2.522	2.778
	0.8	0.384	1.443	1.602	0.382	1.541	1.644	0.373	1.509	1.582	0.383	1.550	1.711
	0.9	0.159	0.585	0.651	0.153	0.601	0.644	0.148	0.584	0.614	0.153	0.605	0.669
3	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	-0.034	-0.096	-0.110	-0.028	-0.077	-0.088	-0.025	-0.068	-0.076	-0.028	-0.078	-0.086
	0.2	-0.025	-0.017	-0.026	-0.012	0.037	0.025	-0.009	0.051	0.042	-0.013	0.036	0.038
	0.3	0.007	0.168	0.172	0.024	0.256	0.249	0.029	0.274	0.267	0.024	0.257	0.278
	0.4	0.048	0.397	0.419	0.071	0.525	0.528	0.076	0.544	0.544	0.071	0.527	0.569
	0.5	0.086	0.592	0.630	0.111	0.739	0.749	0.116	0.757	0.762	0.111	0.743	0.803
	0.6	0.111	0.701	0.748	0.137	0.856	0.874	0.141	0.873	0.883	0.137	0.862	0.932
	0.7	0.115	0.686	0.733	0.137	0.827	0.846	0.141	0.840	0.851	0.137	0.832	0.900
	0.8	0.094	0.547	0.586	0.111	0.654	0.670	0.113	0.663	0.673	0.111	0.659	0.713
	0.9	0.054	0.307	0.329	0.062	0.362	0.371	0.064	0.366	0.371	0.062	0.364	0.394
	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



DEAD LOAD DEFLECTION DIAGRAM

No Scale

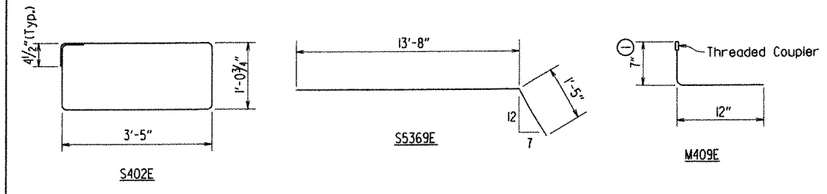
Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

BAR LIST

STAGE 3 CONSTRUCTION				STAGE 4 CONSTRUCTION				STAGE 5 CONSTRUCTION			
MARK	NO. REQ'D.	LENGTH	P.D.	MARK	NO. REQ'D.	LENGTH	P.D.	MARK	NO. REQ'D.	LENGTH	P.D.
S401E	1243	37'-5"	Str.	S401E	1056	37'-5"	Str.	S401E	1056	37'-5"	Str.
S402E	42	9'-4"	2"	S402E	35	9'-4"	2"	S402E	35	9'-4"	2"
S501E	1218	47'-10"	Str.	S502E	1320	34'-9"	Str.	S502E	1320	34'-9"	Str.
S504E-S5153E	4 Ea.	3'-9"-47'-10"	Str.	S503E	760	4'-10"	Str.	S503E	760	4'-10"	Str.
S5366E	24	45'-4"	Str.	S5154E-S5253E	2 Ea.	3'-7"-32'-11"	Str.	S5154E-S5253E	2 Ea.	3'-7"-32'-11"	Str.
S601E	172	42'-2"	Str.	S5254E-S5359E	2 Ea.	3'-6"-34'-7"	Str.	S5254E-S5359E	2 Ea.	3'-6"-34'-7"	Str.
S801E	32	16'-9"	Str.	S5360E-S5365E	1 Ea.	3'-6"-5'-0"	Str.	S5360E-S5365E	1 Ea.	3'-6"-5'-0"	Str.
S802E	16	12'-6"	Str.	S5367E	12	55'-0"	Str.	S5367E	12	55'-0"	Str.
				S5368E	6	13'-8"	Str.	S5368E	6	13'-8"	Str.
① M409E	1564	1'-6"	2"	S5369E	6	15'-1"	3"	S5369E	6	15'-1"	3"
				S601E	144	42'-2"	Str.	S601E	144	42'-2"	Str.
				S801E	24	16'-9"	Str.	S801E	24	16'-9"	Str.
				S803E	8	10'-9"	Str.	S803E	8	10'-9"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



Bar designations ending with "E" indicates Epoxy Coated Bars.

① One end threaded for Mechanical Couplers. Length of vertical legs includes the length of the Mechanical Coupler. The actual length of vertical leg engagement into the Mechanical Coupler shall be determined by the Mechanical Coupler Manufacturer. The length of the vertical legs shall be adjusted accordingly.

STATE OF ARKANSAS
Carl L. Puebler
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL L. PUEBLER 5/21/13

BRIDGE ENGINEER

SHEET 9 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 04/02/13 FILENAME: b040605_sl.dgn

CHECKED BY: CNW DATE: 5/17/13 SCALE: No Scale

DESIGNED BY: CMW DATE: 1/13

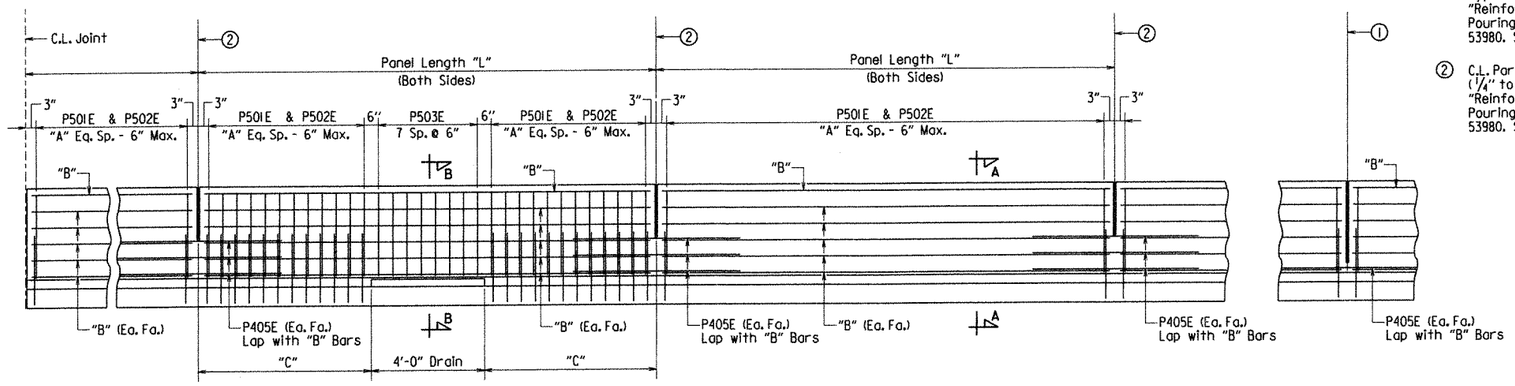
BRIDGE NO. 07287 DRAWING NO. 53982

PRINT DATE: 17-MAY-2013

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.		040605	139	260
				①	07287 - SPAN DETAILS - 53983			

① C.L. Full-Depth Parapet Joint (¼" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 53979 & 53980. Stop 4" from top of slab.

② C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 53979 & 53980. Stop 1'-6" from top of slab.



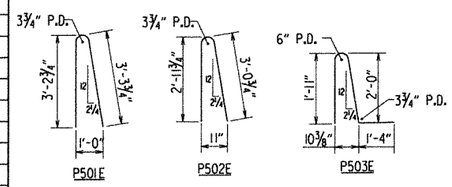
TYPICAL OPEN PANEL
⅛" = 1'-0"

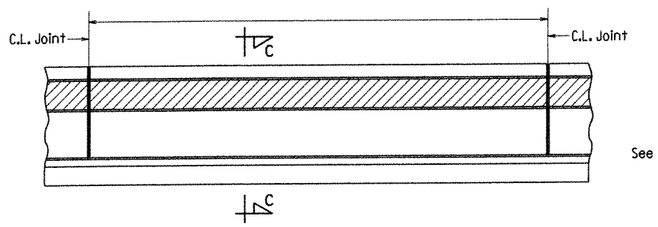
TYPICAL CLOSED PANEL
⅛" = 1'-0"

TYPICAL FULL DEPTH JOINT
⅛" = 1'-0"

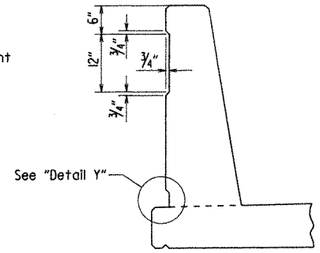
PARAPET BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
P401E	176	15'-11"	Str.	
P402E	132	14'-8"	Str.	
P403E	88	15'-8"	Str.	
P404E	132	16'-10"	Str.	
P405E	196	5'-6"	Str.	
P501E	1448	6'-8"	3¾"	
P502E	128	6'-2"	3¾"	
P503E	1448	5'-4"	3¾"	

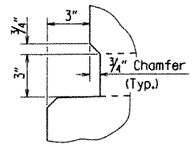




DETAILS OF PARAPET ENHANCEMENT
Outside Face Of Rail
NO SCALE

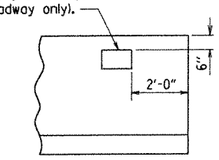


SECTION C-C
¼" = 1'-0"



DETAIL Y
NO SCALE

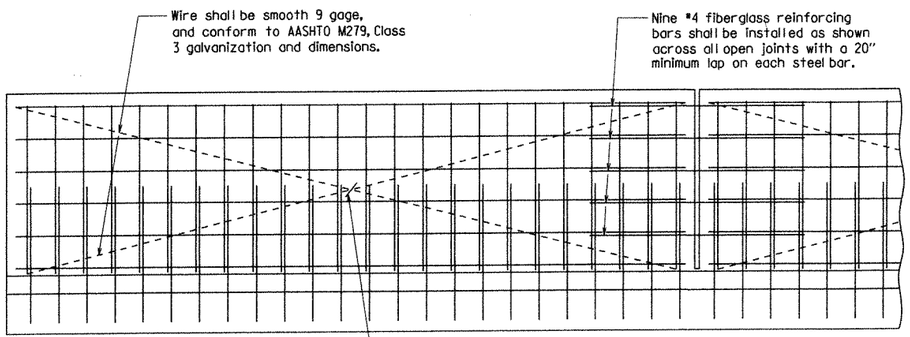
Place Type D Bridge Name Plate on front face of span rail approx. 2'-0" from beginning of bridge (Right side of roadway only).



NAME PLATE DETAIL
NO SCALE

TABLE OF VARIABLES

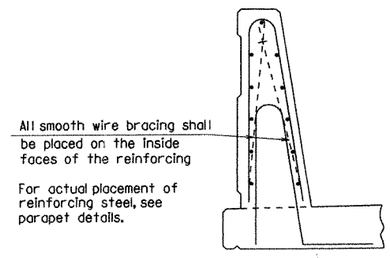
Panel Length "L"	Panel Type	"A"	"B"	"C"
16'-3"	Closed	32	P401E	-
16'-3"	Open	12	P401E	6'-1½"
15'-0"	Closed	29	P402E	-
15'-0"	Open	10	P402E	5'-6"
16'-0"	Closed	31	P403E	-
17'-2"	Closed	34	P404E	-

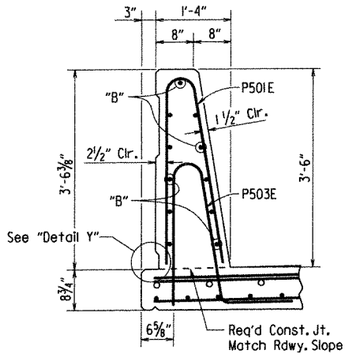


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

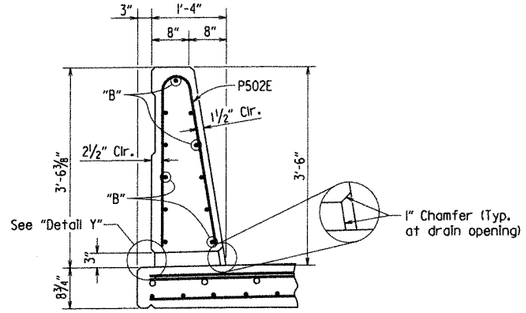
The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIP FORMING OF CONCRETE PARAPET RAIL
NO SCALE





SECTION A-A
¼" = 1'-0"



SECTION B-B
¼" = 1'-0"

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 10 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

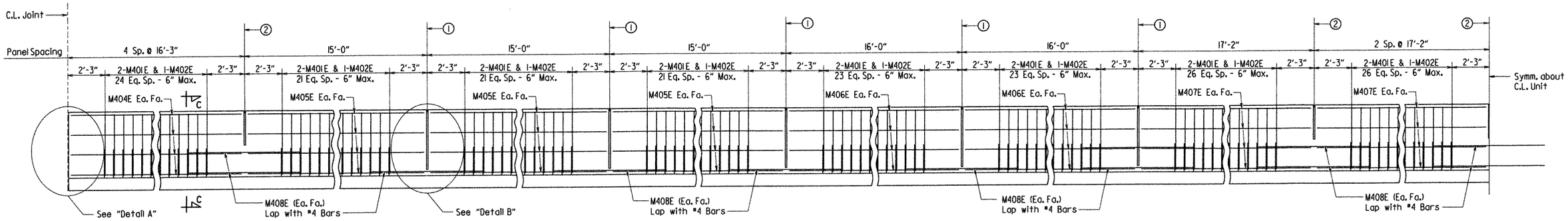
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 03/27/13 FILENAME: b040605_sl.dgn
CHECKED BY: CMU DATE: 5/13/13 SCALE: ⅛" = 1'-0" or as shown
DESIGNED BY: CMU DATE: 1/13

BRIDGE NO. 07287 DRAWING NO. 53983

PRINT DATE: 5/17/2013

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.		040605	140	260
				①		07287 - SPAN DETAILS - 53984		

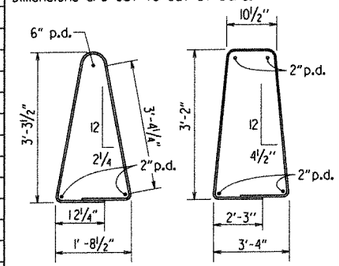


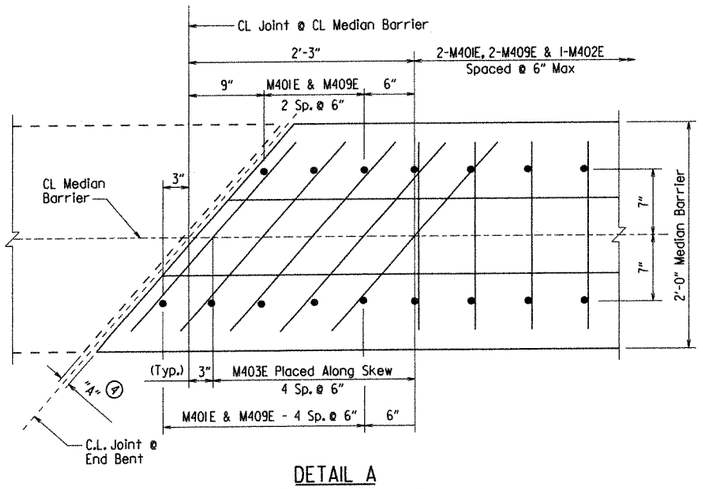
MEDIAN BARRIER ELEVATION

1/8" = 1'-0"

MEDIAN BARRIER BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
③ M401E	1564	1'-6"	Str.	
M402E	590	8'-11"	2"	
M403E	240	11'-10"	2"	
M404E	128	15'-11"	Str.	
M405E	96	14'-8"	Str.	
M406E	64	15'-8"	Str.	
M407E	96	16'-10"	Str.	
M408E	144	5'-6"	Str.	

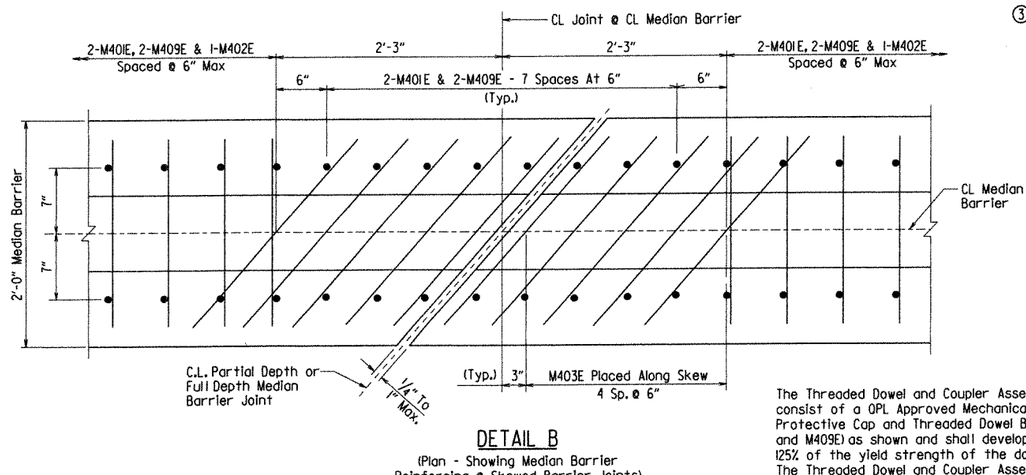




④ See Dwg. No. 53985 for Joint width opening.

DETAIL A

(Plan - Showing Median Barrier Reinforcing @ Skewed Exp. Joints Bent 1 Shown, Bent 4 Similar by oreintation
No Scale



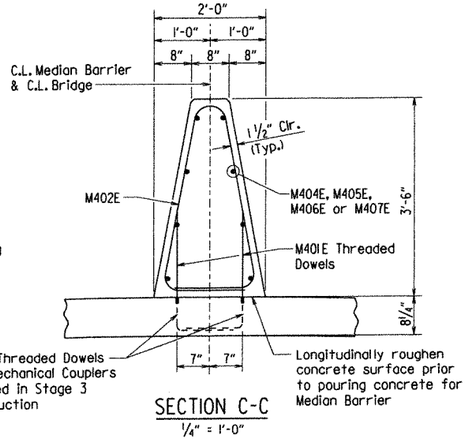
DETAIL B

(Plan - Showing Median Barrier Reinforcing @ Skewed Barrier Joints)
No Scale

The Threaded Dowel and Coupler Assembly shall consist of a OPL Approved Mechanical Splice with Protective Cap and Threaded Dowel Bars (M401E and M409E) as shown and shall develop at least 125% of the yield strength of the dowel bars. The Threaded Dowel and Coupler Assembly will not be paid for seperately but will be considered included in the unit bid price for "Reinforcing Steel - Bridge (Grade 60)".

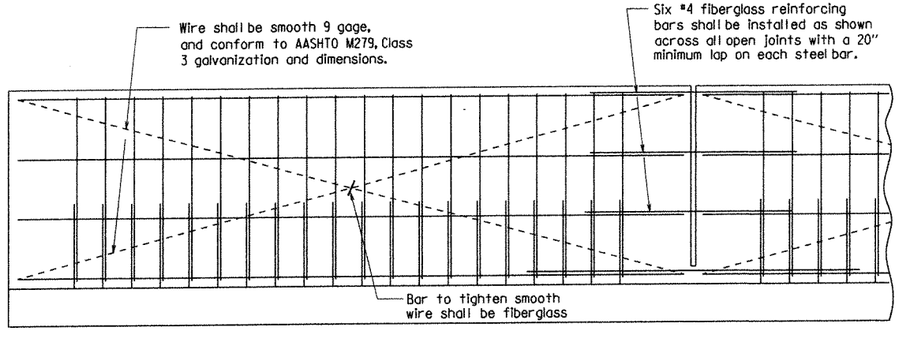
M401E and M409E Dowel Bars shall be a Minimum 60 ksi yield strength and threaded as required. Threaded Dowel and Coupler Assembly, except mating surfaces, shall be Epoxy Coated in accordance with the requirements of Section 804.

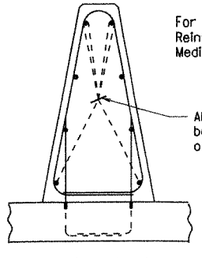
For "THREADED DOWEL AND COUPLER ASSMEBLY", See Dwg. No. 53989.



SECTION C-C

1/4" = 1'-0"





For actual placement of Reinforcing Steel, see Median Barrier Details.

③ One end threaded for Mechanical Coupler. Length of bar does not include any additional length for engagement into Mechanical Coupler. The actual length of bar engagement into the Mechanical Coupler shall be determined by the Mechanical Coupler Manufacturer, and the length of the bar shall be adjusted accordingly.

All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded Median Barrier shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIP FORMING OF CONCRETE MEDIAN RAIL

NO SCALE

① C.L. Full-Depth Parapet Joint parallel to skew (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 53979 & 53980. Stop 4" from top of slab.

② C.L. Partial-Depth Parapet Joint paral lel to skew (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 53979 & 53980. Stop 1'-6" from top of slab.

STATE OF ARKANSAS
Carl N. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL N. FUSSELIER
5/21/13

BRIDGE ENGINEER

SHEET 11 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE	DATE: 04/04/13	FILENAME: b040605.sl.dgn	
CHECKED BY: CNW	DATE: 5/17/13	SCALE: 1/8" = 1'-0"	or as shown
DESIGNED BY: CNW	DATE: 1/13		

BRIDGE NO. 07287 DRAWING NO. 53984

PRINT DATE: 5/17/2013

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.		040605	141	260
				①	07287 - SPAN DETAILS - 53985			

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 6th Edition (2012).

LIVE LOADING: HL-93

MATERIALS AND STRENGTHS:
Concrete: All concrete shall be Class S(AE) with a minimum 28 day strength f'c = 4,000 psi.

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

Structural Steel: Structural steel shall conform to AASHTO M270, Gr. 50W (Fy = 50,000 psi.) or AASHTO M270, Gr. 36 (Fy = 36,000 psi.).

STRUCTURAL STEEL:
All Structural Steel shall be AASHTO M270, Gr. 50W unless otherwise noted. All structural steel shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)". Structural Steel completely embedded in concrete may be AASHTO M270, Gr. 36 or Gr 50. All exposed surfaces shall be cleaned in accordance with subsection 807.84 unless noted otherwise.

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 the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Longitudinal Girders and all field 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 will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50W)"

Steel plates for main members 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.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted and approval secured before fabrication is begun. Girder webs may be made by shop splicing with minimum lengths of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with minimum lengths of 25'-0" for sections. Material specifications and location of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for welds for these splices will be made.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with the recommendations of the manufacturer.

All Girders shall be blocked in their true position 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 position and this information shall become part of the permanent record of this job. Match marks shall be placed on the component parts in this assembly and shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of ± 1/4" allowed for camber.

Field connections shall be bolted with high-strength bolts. Bolts shall be 3/4" diameter, except as noted, and open holes shall be 15/16", unless noted otherwise. Holes for 3/4" diameter bolts may be 15/16" diameter if a washer is supplied for use under both the nut and head of the bolt. Bolt spacing shall be 2 1/2" for 3/4" diameter bolts unless otherwise noted. For Field Splices bolts shall be 7/8" diameter bolts unless otherwise noted. Open holes shall be 15/16" unless noted otherwise. Bolt spacing shall be 3" for 7/8" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder web and on the bottom of the girder flanges.

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 permanent or temporary, 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.

Groove welds in main plate girder members 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 Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the contractor's expense.

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, expect as noted prior to pouring the concrete deck.

Elastomeric Bearings shall be seated in accordance with subsection 808.08. This work and material will not be paid for directly but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".

REINFORCING STEEL:
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports. The reinforcing steel shall 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 of "Epoxy Coated Reinforcing Steel (Grade 60)".

CONCRETE:
All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

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.

For Stages 3 and 4, a minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.

SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the Roadway Surface and Sidewalk Surface. Class 3 Textured Coating Finish shall be applied to areas as specified in Special Provision Job No. 040605 "Textured Coating Finish".

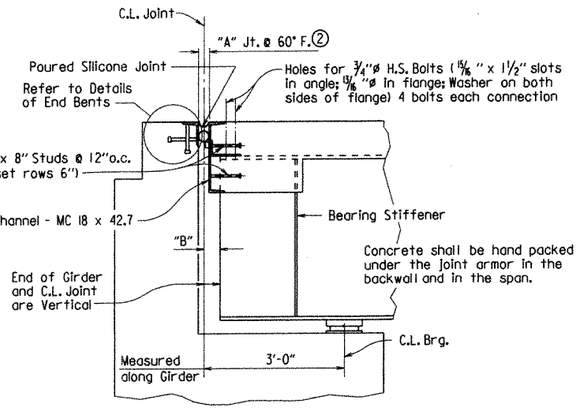
Load Distribution
Dead Load:

A. To Girder	Girder No.	
	1 & 13	769 plf + Wt. of Structural Steel
	7	902 plf + Wt. of Structural Steel
	2 thru 6 & 8 thru 12	902 plf + Wt. of Structural Steel
B. To Composite Girder	Girder No.	
	1 & 13	489 plf ①
	7	478 plf ①
	2 thru 6 & 8 thru 12	274 plf ①

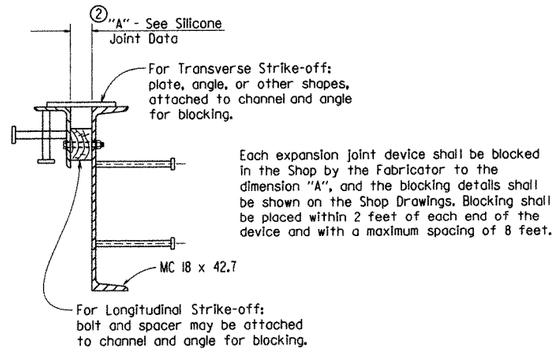
① Includes 197 plf future wearing surface.

SILICONE JOINT DATA

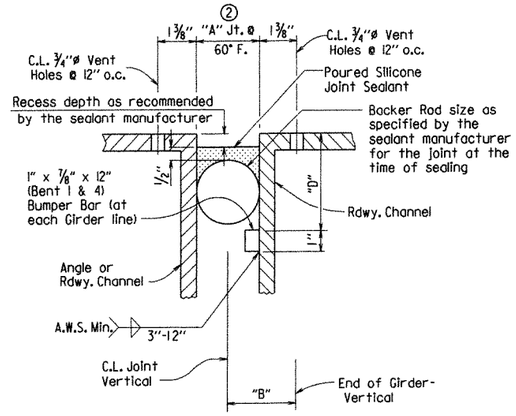
Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature ② Of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
1 & 4	1 5/8"	1 1/2"	1 3/8"	± 2 7/8"	1" x 7/8"	5"



SECTION THRU JOINT AT BENTS 1 & 4
NO SCALE



DETAILS FOR BLOCKING
EXPANSION JOINT DEVICE
NO SCALE



DETAIL OF POURED SILICONE JOINT SEAL
NO SCALE

② 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.

The temperature limitations recommended by the sealant manufacturer shall be observed.

The sealant shall be installed 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.

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.

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No. 7510
5/17/13
CARL J. PUSELLER
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SHEET 12 OF 12

DETAILS OF 387'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

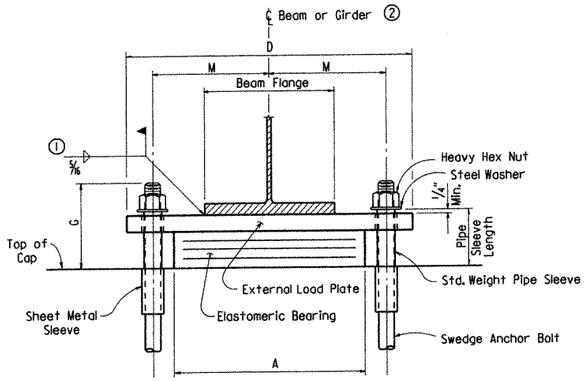
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BRIDGE NO. 07287 DRAWING NO. 53985

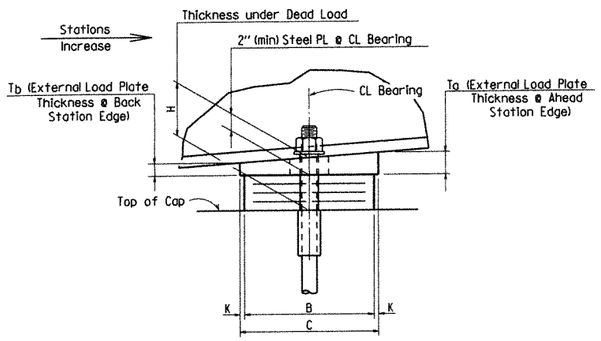
PRINT DATE: 5/17/2013

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.		040605	142	260

(1) 07287 - ELASTOMERIC BEARINGS - 53986



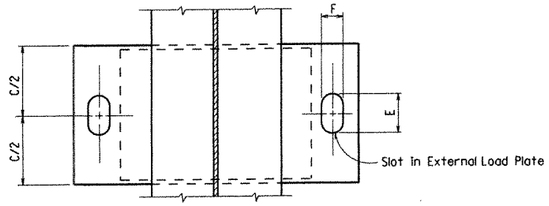
FRONT VIEW - AT BENT NOS. 1 & 4



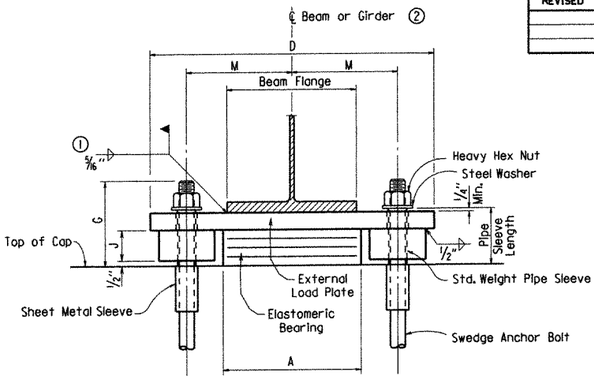
SIDE VIEW - AT BENT NOS. 1 & 4

(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

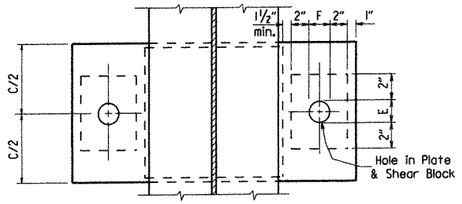
(2) Centerline Beam or Girder shall align with centerline bearing.



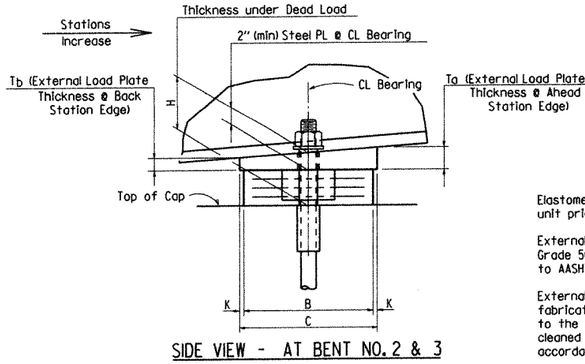
PLAN VIEW - AT BENT NOS. 1 & 4



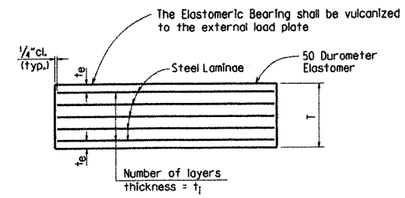
FRONT VIEW - AT BENT NO. 2 & 3



PLAN VIEW - AT BENT NO. 2 & 3



SIDE VIEW - AT BENT NO. 2 & 3

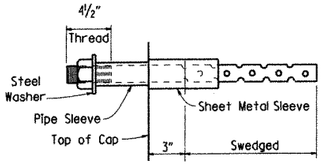


t_e = thickness of elastomer cover on top and bottom of pad

t_1 = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_1

ELASTOMERIC BEARING



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 (M 270, Gr. 50W)."

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates and shear blocks shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates and external load plates with shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. Surfaces in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be blast cleaned in accordance with subsection 807.84(e) for unpainted weathering steel.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07. 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.50W)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "Elastomeric Bearings".

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: UNIT	LOCATION: GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD: G	H	A	B	N	t_1	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	ANCHOR BOLT: GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
07287	1	387'	1 thru 13	Exp	13	183.00	7 1/2"	4 3/16"	18"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	29"	4 1/2"	2 5/8"	NA	1/2"	11 1/2"	2.07"	1.93"	1 3/4"ø x 27"	55	2"ø x 4 5/8"	4"ø x 6"	3 3/8"
	2	387'	1 thru 13	Fix	13	549.00	8 1/4"	4 3/8"	20"	18"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	19"	40 3/4"	3 3/4"	3 3/4"	1 1/2"	1/2"	15 1/2"	2.09"	1.91"	2 1/2"ø x 35"	55	3"ø x 4 5/8"	4"ø x 6"	4 1/2"
	3	387'	1 thru 13	Fix	13	549.00	8 1/4"	4 3/8"	20"	18"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	19"	40 3/4"	3 3/4"	3 3/4"	1 1/2"	1/2"	15 1/2"	2.06"	1.94"	2 1/2"ø x 35"	55	3"ø x 4 5/8"	4"ø x 6"	4 1/2"
	4	387'	1 thru 13	Exp	13	183.00	7 1/2"	4 3/8"	18"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	29"	4 1/2"	2 5/8"	NA	1/2"	11 1/2"	2.02"	1.98"	1 3/4"ø x 27"	55	2"ø x 4 5/8"	4"ø x 6"	3 3/8"

*Maximum Design Load = Service I Limit State

Tabular Data by : CMW Date: 4/4/13

Checked by : DHP Date: 5-17-13

Designed by : CMW Date: 1/13

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
5/21/13

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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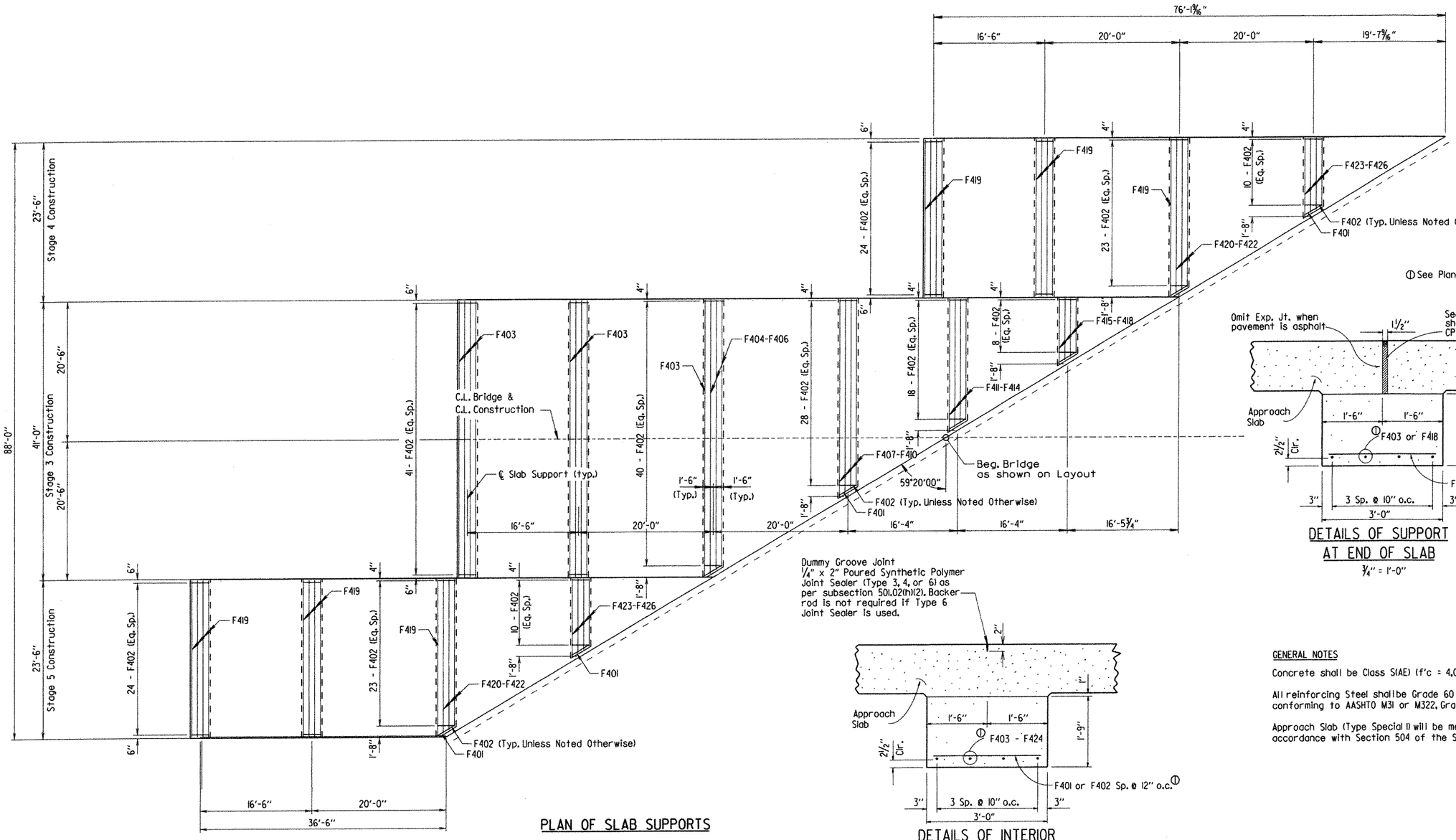
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DESIGNED BY: Std. DATE:

BRIDGE NO. 07287 DRAWING NO. 53986

PRINT DATE: 5/17/2013

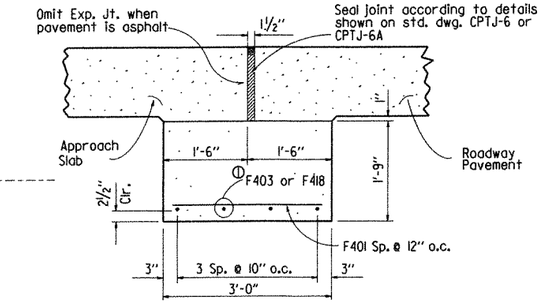
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				6	ARK.			
				JOB NO.		040605	143	260
				①	07287 - APPROACH SLAB - 53987			



PLAN OF SLAB SUPPORTS

(Begin Bridge Shown, End Bridge Similar)
Scale: 1/8" = 1'-0"

① See Plan for Location



DETAILS OF SUPPORT AT END OF SLAB

3/4" = 1'-0"

Dummy Groove Joint
1/4" x 2" Poured Synthetic Polymer Joint Sealer (Type 3, 4, or 6) as per subsection 501.02(h)(2). Backer rod is not required if Type 6 Joint Sealer is used.

DETAILS OF INTERIOR SUPPORT OF SLAB

3/4" = 1'-0"

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

All reinforcing Steel shallbe Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Grade A, with mill test reports.

Approach Slab (Type Special I) will be measured and paid for in accordance with Section 504 of the Standard Specifications.

STATE OF ARKANSAS
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SHEET 1 OF 3
DETAILS OF TYPE SPECIAL I APPROACH SLAB

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

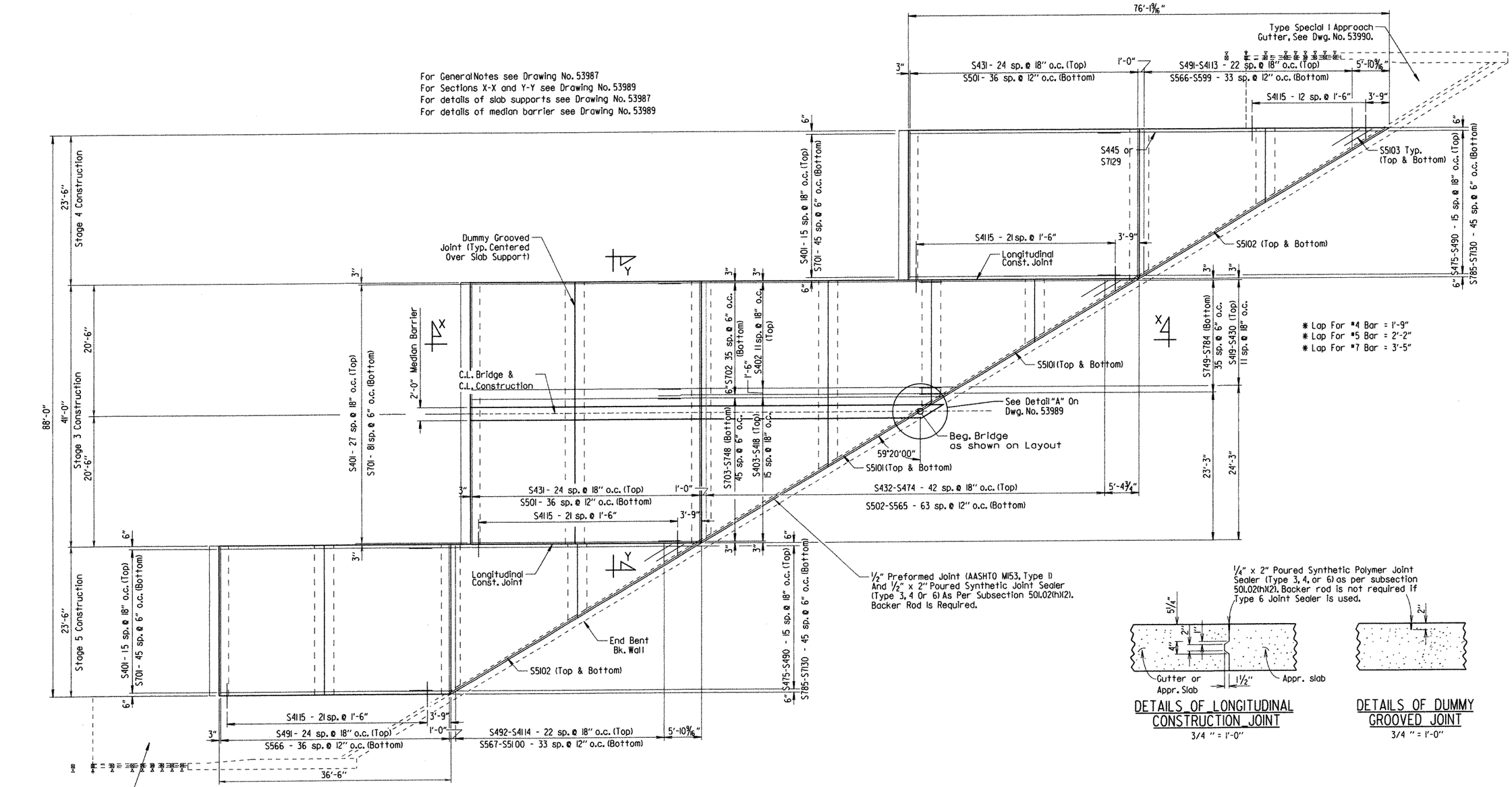
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DESIGNED BY: STD DATE:

BRIDGE NO. 07287 DRAWING NO. 53987

PRINT DATE: 5/17/2013

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.		040605	144	260
				①	07287 - APPROACH SLAB - 53988			

For General Notes see Drawing No. 53987
For Sections X-X and Y-Y see Drawing No. 53989
For details of slab supports see Drawing No. 53987
For details of median barrier see Drawing No. 53989



PLAN OF SLAB

Approach Slab (Type I Special)
(Begin Bridge Shown, End Bridge Similar)
Scale: ⅛" = 1'-0"

DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

3/4 " = 1'-0"

DETAILS OF DUMMY GROOVED JOINT

3/4 " = 1'-0"

STATE OF ARKANSAS
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SHEET 2 OF 3
DETAILS OF TYPE SPECIAL I APPROACH SLAB

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

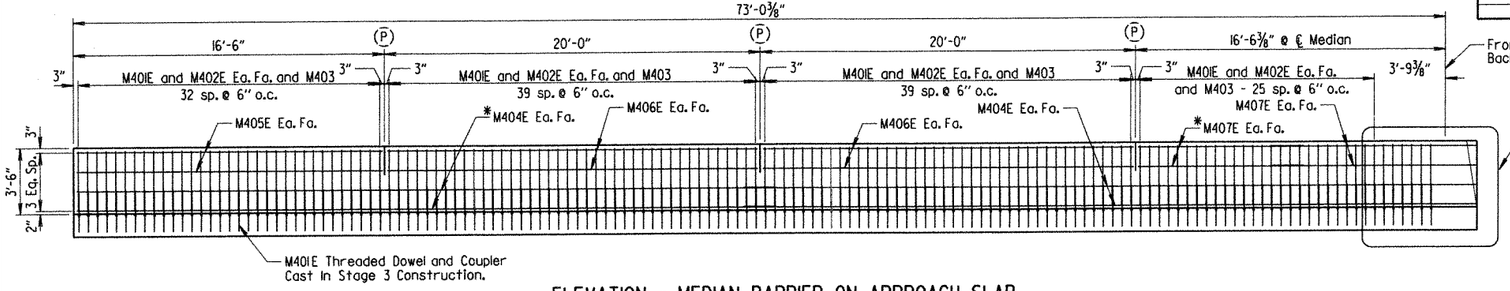
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DESIGNED BY: STD DATE:

BRIDGE NO. 07287 DRAWING NO. 53988

PRINT DATE: 5/17/2013

BAR LIST - APPROACH SLABS

MARK	NO. REQ'D.	LENGTH	P.D.
S401	60	33'-10"	Str.
S402	12	42'-4"	Str.
S403 To S418	1 Ea.	4'-4" To 42'-4"	Str.
S419 To S430	1 Ea.	4'-3" To 32'-1"	Str.
S431	25	40'-8"	Str.
S432 To S474	1 Ea.	2'-10" To 40'-2"	Str.
S475 To S490	2 Ea.	4'-9" To 42'-9"	Str.
S491	50	23'-2"	Str.
S492 To S4114	2 Ea.	3'-1" To 22'-8"	Str.
S4115	79	3'-0"	Str.
S501	37	40'-8"	Str.
S502 To S565	1 Ea.	2'-10" To 40'-2"	Str.
S566	74	23'-2"	Str.
S567 To S5100	2 Ea.	3'-1" To 22'-8"	Str.
S5101	4	41'-0"	Str.
S5102	4	45'-7"	Str.
S5103	6	5'-1"	Str.
S701	174	33'-10"	Str.
S702	36	44'-0"	Str.
S703 To S748	1 Ea.	6'-0" To 44'-0"	Str.
S749 To S784	1 Ea.	4'-3" To 32'-1"	Str.
S785 To S7130	2 Ea.	6'-5" To 44'-5"	Str.
F401	8	3'-0"	Str.
F402	338	2'-8"	Str.
F403	9	40'-8"	Str.
F404 to F406	1 Ea	40'-4" to 39'-4"	Str.
F407 to F410	1 Ea	28'-11" to 27'-5"	Str.
F411 to F414	1 Ea	19'-3" to 17'-9"	Str.
F415 to F418	1 Ea	9'-7" to 8'-1"	Str.
F419	18	23'-2"	Str.
F420 to F422	2 Ea	22'-10" to 21'-10"	Str.
F423 to F426	2 Ea	11'-5" to 9'-11"	Str.

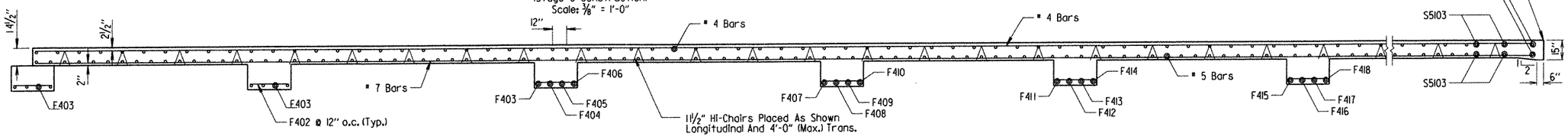


(P) Indicates Partial Depth Joint In Median Barrier Stopped 1'-6" From Top Of Approach Slab.

* Lap For #4 Bar = 1'-9"

ELEVATION - MEDIAN BARRIER ON APPROACH SLAB

(Stage 6 Construction)
Scale: 3/8" = 1'-0"



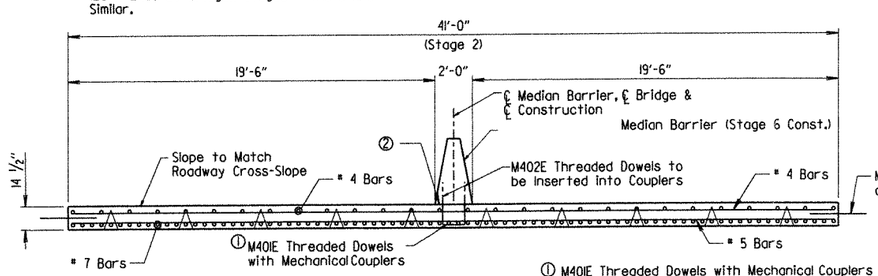
1/2" Preformed Joint (AASHTO M153, Type II) And 1/2" x 2" Poured Synthetic Polymer Joint Sealer (Type 3, 4 Or 6) As Per Subsection 501.02(h)(2). Backer Rod Is Required.

Sections X-X & Y-Y Shown For Stage 3 Construction. Stages 4 & 5 Are Similar But Do Not Include A Median Barrier Or Threaded Dowels.

SECTION X-X

Scale: 1/4" = 1'-0"

Bars Shown Are For Stage 3 Construction (Both Ends of Bridge). Stages 4 And 5 Are Similar.



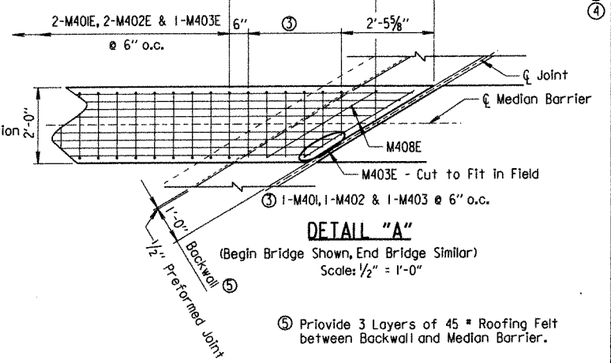
Protect Threads In Couplers (Installed In Stage 3 Construction) Until Median Barrier Is Constructed.

SECTION Y-Y

Scale: 1/4" = 1'-0"

① M401E Threaded Dowels with Mechanical Couplers installed in Stage 3 Construction

② Longitudinally Roughen Concrete Surface Prior To Pouring Concrete For Median Barrier



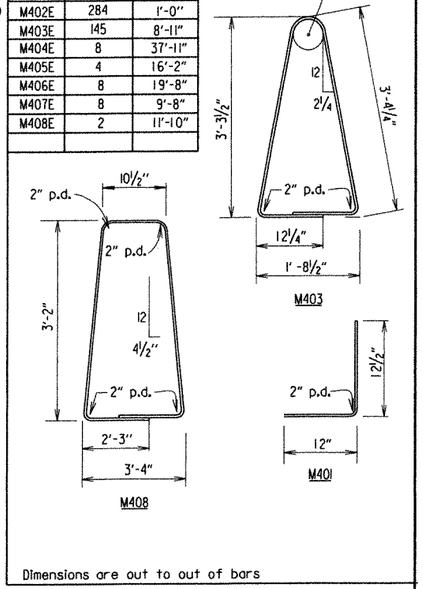
DETAIL "A"

(Begin Bridge Shown, End Bridge Similar)
Scale: 1/2" = 1'-0"

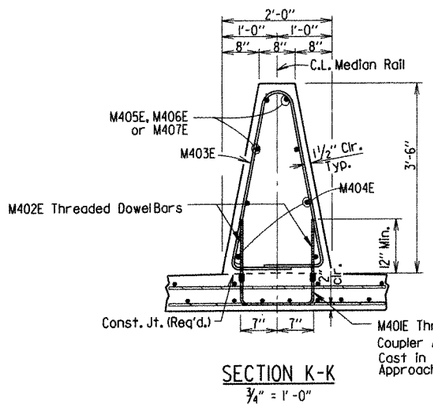
⑤ Priovide 3 Layers of 45 # Roofing Felt between Backwall and Median Barrier.

BAR LIST - MEDIAN BARRIER

	MARK	NO. REQ'D	LENGTH	BENDING DIAGRAMS
④	M401E	284	2'-0"	
④	M402E	284	1'-0"	
	M403E	145	8'-11"	
	M404E	8	37'-11"	
	M405E	4	16'-2"	
	M406E	8	19'-8"	
	M407E	8	9'-8"	
	M408E	2	11'-10"	



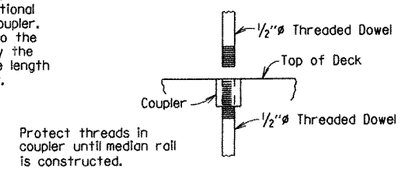
Dimensions are out to out of bars



SECTION K-K

3/4" = 1'-0"

④ One end threaded for Mechanical Coupler. Length of bar does not include any additional length for engagement into Mechanical Coupler. The actual length of bar engagement into the Mechanical Coupler shall be determined by the Mechanical Coupler Manufacturer, and the length of the bar shall be adjusted accordingly.



Protect threads in coupler until median rail is constructed.

THREADED DOWEL AND COUPLER ASSEMBLY

No Scale

The Threaded Dowel and Coupler Assembly shall consist of a QPL approved mechanical splice with protective cap and threaded dowel bars as shown and shall develope at least 125% of the yield strength of the dowel bars. The Threaded Dowel and Coupler Assembly will not be paid for seperatley but will be considered included in the unit bid price for "Reinforcing Steel - Bridge (Grade 60)".

Dowel bars shall be of minimum 60 ksi yield strength and threaded as required. Threaded Dowel and Coupler Assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.

TABLE OF QUANTITIES FOR APPROACH SLAB

Reinforcing Steel	Concrete (Cu. Yds.)
38430 lb.	330.8

STATE OF ARKANSAS
Carl S. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL S. FUSSELIER 5/21/13

BRIDGE ENGINEER

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.		040605	145	260

① 07287 - APPROACH SLAB - 53989

SHEET 3 OF 3
DETAILS OF TYPE SPECIAL 1 APPROACH SLAB

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

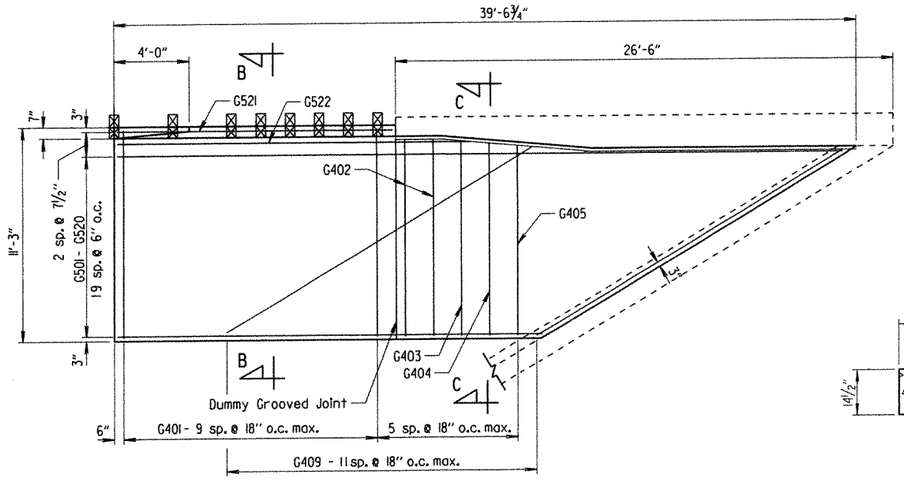
DRAWN BY: CSL DATE: 3/27/2013 FILENAME: b040605_as.dgn
CHECKED BY: DHP DATE: 5-17-13 SCALE: AS NOTED
DESIGNED BY: STD DATE:

BRIDGE NO. 07287 DRAWING NO. 53989

PRINT DATE: 5/17/2013

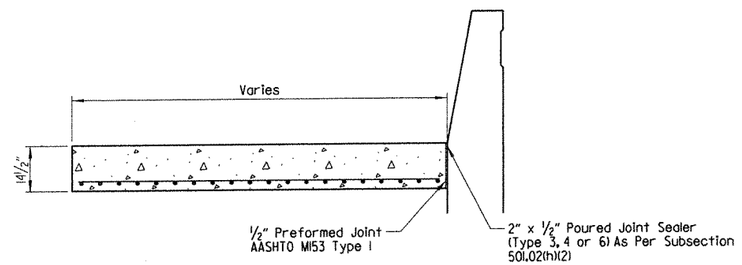
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040605	196	260
① 07287	APPROACH GUTTER		53990	



PLAN

(Begin Bridge, Stage 4 Construction Shown; End Bridge, Stage 5 Construction Similar)
Scale: ¼" = 1'-0"



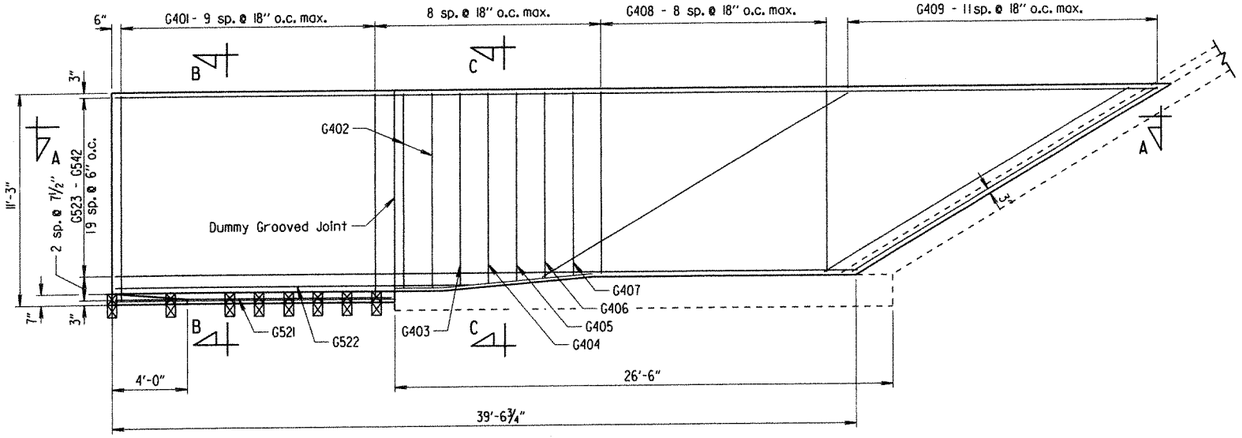
SECTION C-C

Scale: ½" = 1'-0"

BAR LIST - APPROACH GUTTERS			
MARK	NO. REQ'D.	LENGTH	P.D.
G401	20	10'-11"	Str.
G402	4	10'-4"	Str.
G403	2	10'-3"	Str.
G404	2	10'-2	Str.
G405	2	10-0	Str.
G406	1	9-10	Str.
G407	1	9'-9	Str.
G408	9	9'-8"	Str.
G409	24	18-11	Str.
G501 To G520	1 Ea.	22'-7" To 38'-8"	Str.
G521	2	14'-8"	Str.
G522	2	18'-10"	Str.
G523 To G542	1 Ea.	39'-6" To 55'-6"	Str.

NOTES:
Bars Shown Are For Stage 4 and 5 Construction Beginning or End of Bridge.

Dimensions Of Bars Are Out-To-Out.

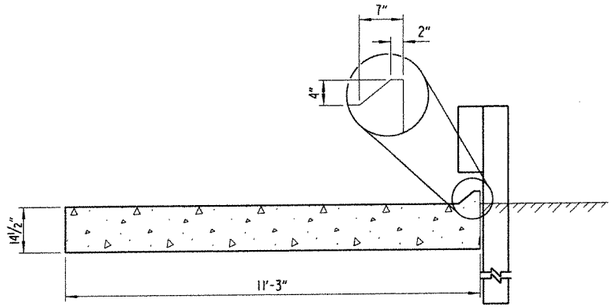


PLAN

(Begin Bridge, Stage 5 Construction Shown; End Bridge, Stage 4 Construction Similar)
Scale: ¼" = 1'-0"

TABLE OF QUANTITIES FOR APPROACH GUTTERS ON ONE END OF BRIDGE

Class S(AE) Concrete	Reinforcing Steel (Gr. 60)
37.5 Cu. Yds.	2,288 lb.



SECTION B-B

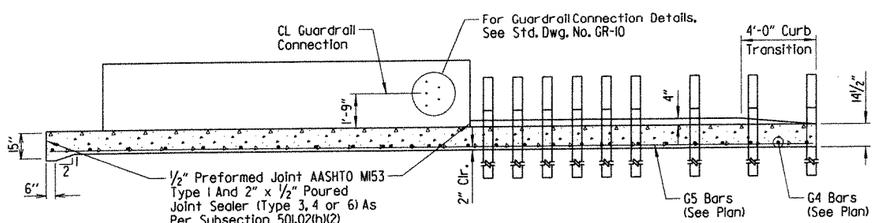
Scale: ½" = 1'-0"

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

All reinforcing Steel shallbe Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Grade A, with mill test reports.

Approach Gutter (Type Special I) will be measured and paid for in accordance with Section 504 of the Standard Specifications.



SECTION A-A

(Begin Bridge, Stage 5 Construction Shown; Other Locations Similar)
Scale: ¼" = 1'-0"

STATE OF ARKANSAS
Carl L. Pusellier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL L. PUSELLIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL I APPROACH GUTTER

ROUTE 540 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

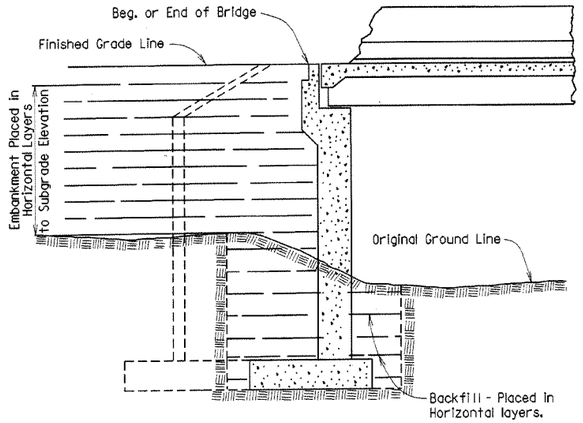
LITTLE ROCK, ARK.

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CHECKED BY: DHP DATE: 5-17-13 SCALE: AS NOTED
DESIGNED BY: STD DATE:

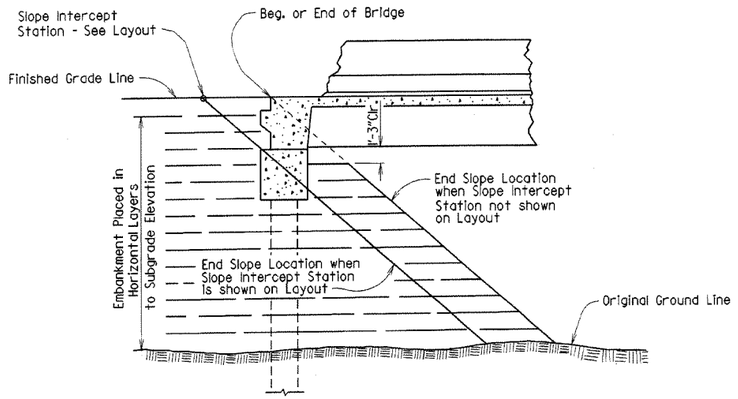
BRIDGE NO. 07287 DRAWING NO. 53990

PRINT DATE: 5/17/2013

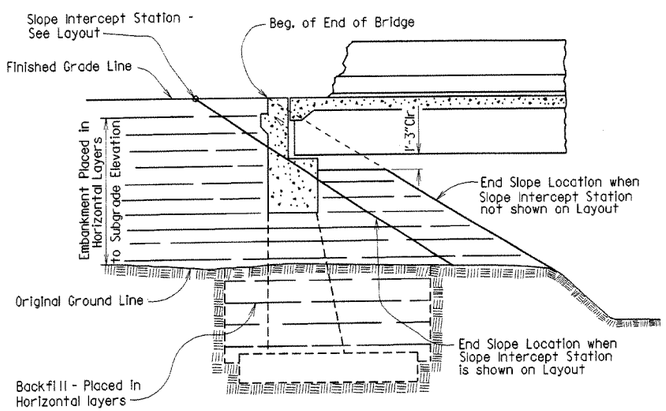
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		147	
				JOB NO.				
				①	EMBANKMENT & BACKFILL		1888A	



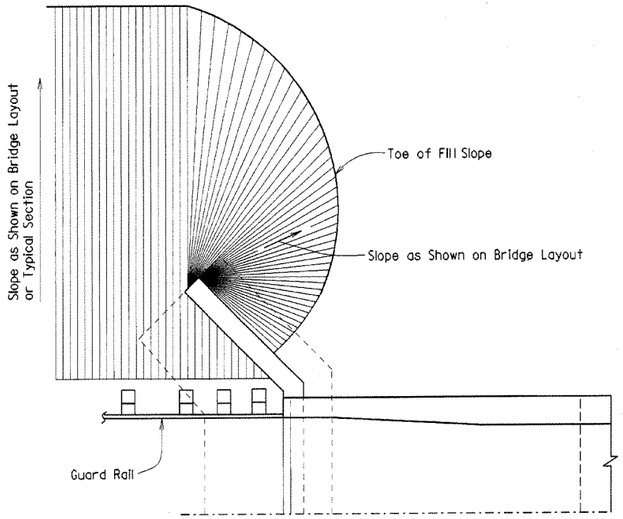
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



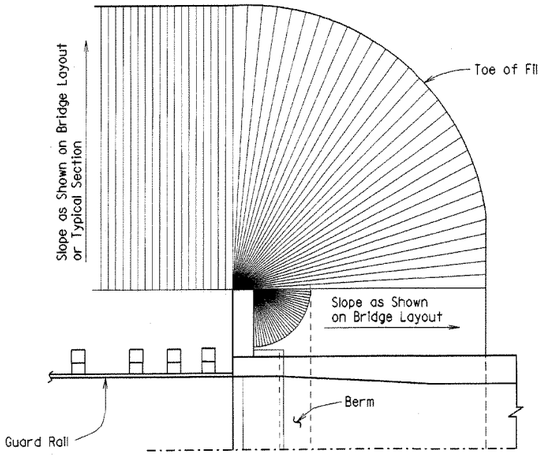
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



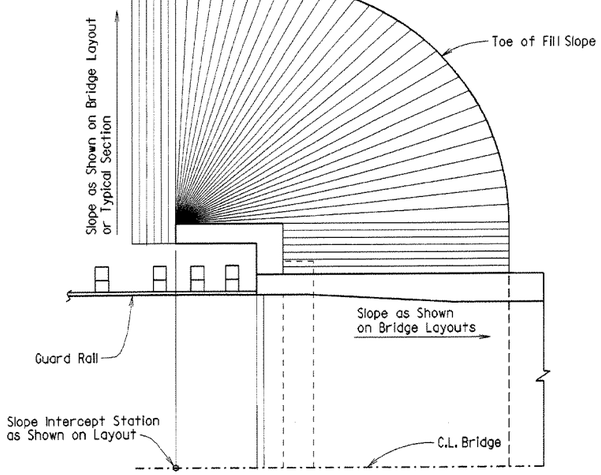
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



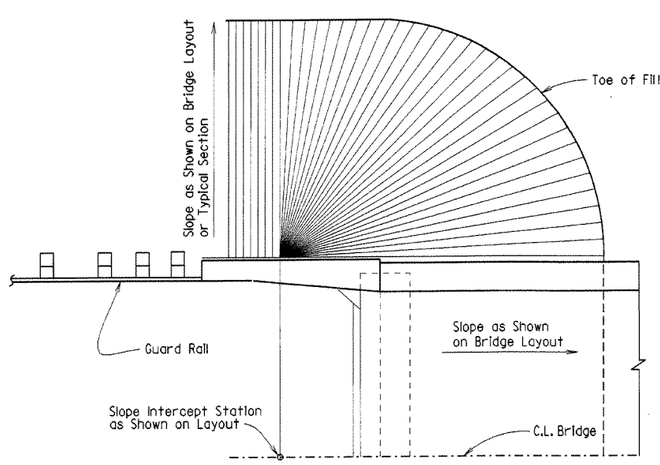
VERTICAL WALL ABUTMENTS



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. 4337
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: —

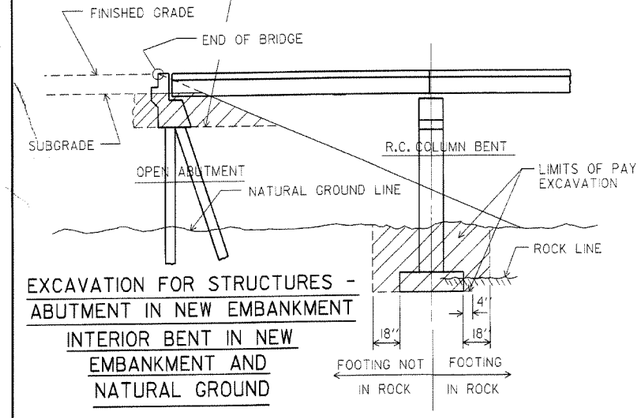
BRIDGE NO. DRAWING NO. 1888A

BI888A.STD

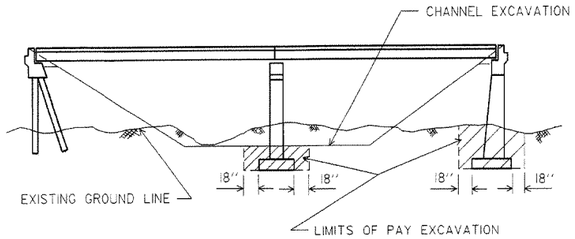
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		148	
				JOB NO.				

① RIP. & EXCAV. 1891F

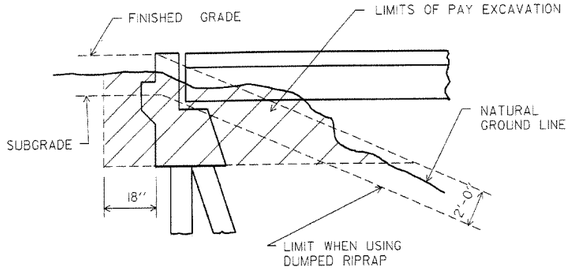
EMBANKMENT MUST BE PLACED TO ELEVATION OF BOTTOM OF CAP BEFORE BEGINNING CONSTRUCTION OF OPEN ABUTMENT. NO PAYMENT WILL BE MADE FOR EXCAVATION IN NEW EMBANKMENT.



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

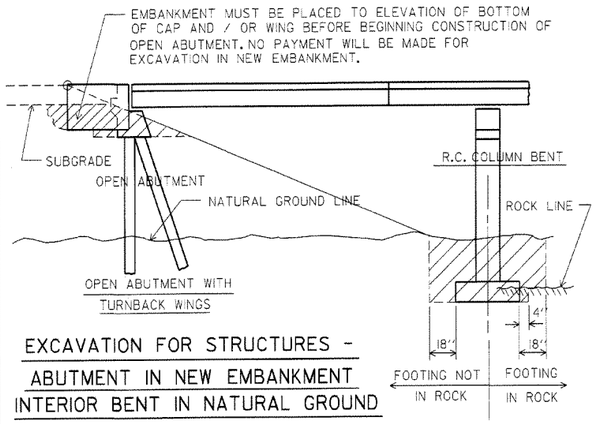


EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE

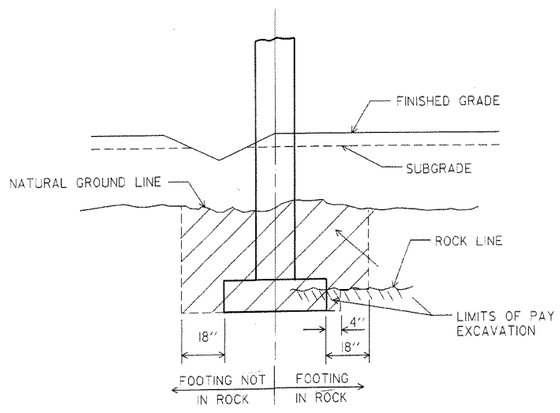


EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND

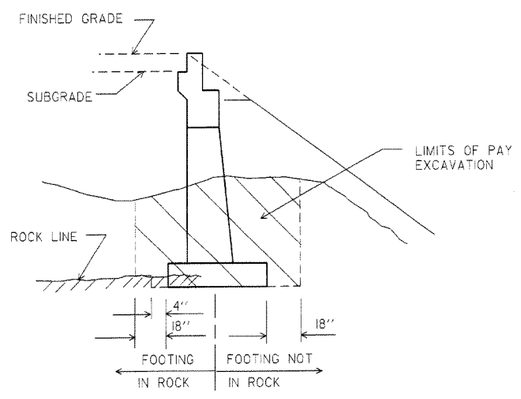
EMBANKMENT MUST BE PLACED TO ELEVATION OF BOTTOM OF CAP AND / OR WING BEFORE BEGINNING CONSTRUCTION OF OPEN ABUTMENT. NO PAYMENT WILL BE MADE FOR EXCAVATION IN NEW EMBANKMENT.



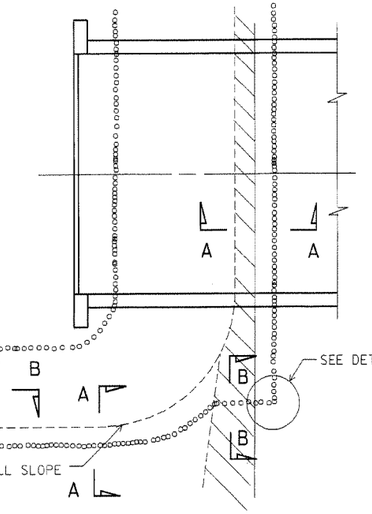
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



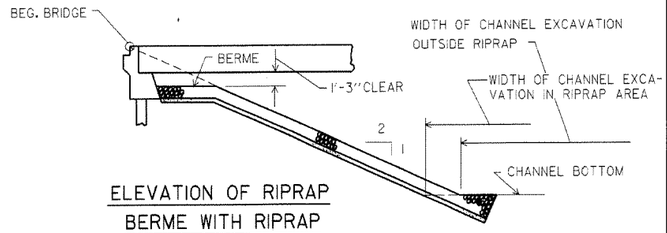
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



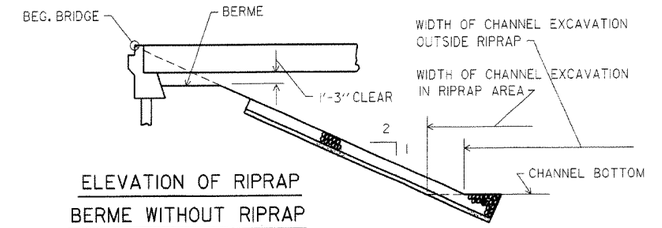
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



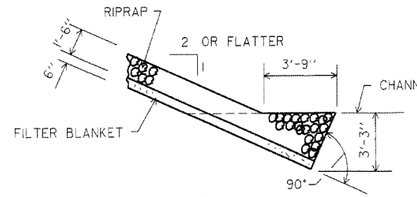
PLAN OF DUMPED RIPRAP



ELEVATION OF RIPRAP BERME WITH RIPRAP



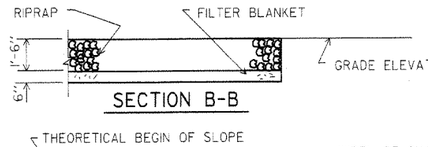
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



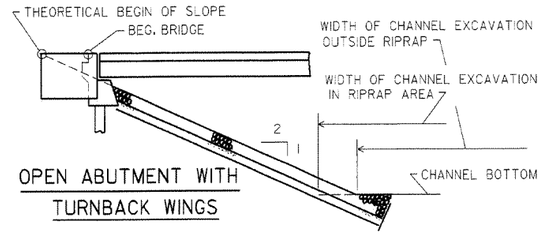
SECTION A-A

(TOE EXCAVATION IN SOIL)

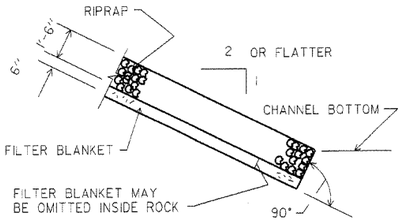
EXCAVATION FOR TOES IS NOT A PAY ITEM



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



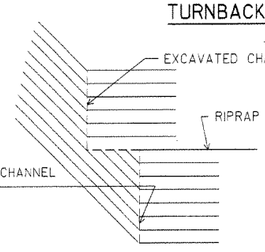
SECTION A-A

(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.



DETAIL C

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
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: B1891F.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

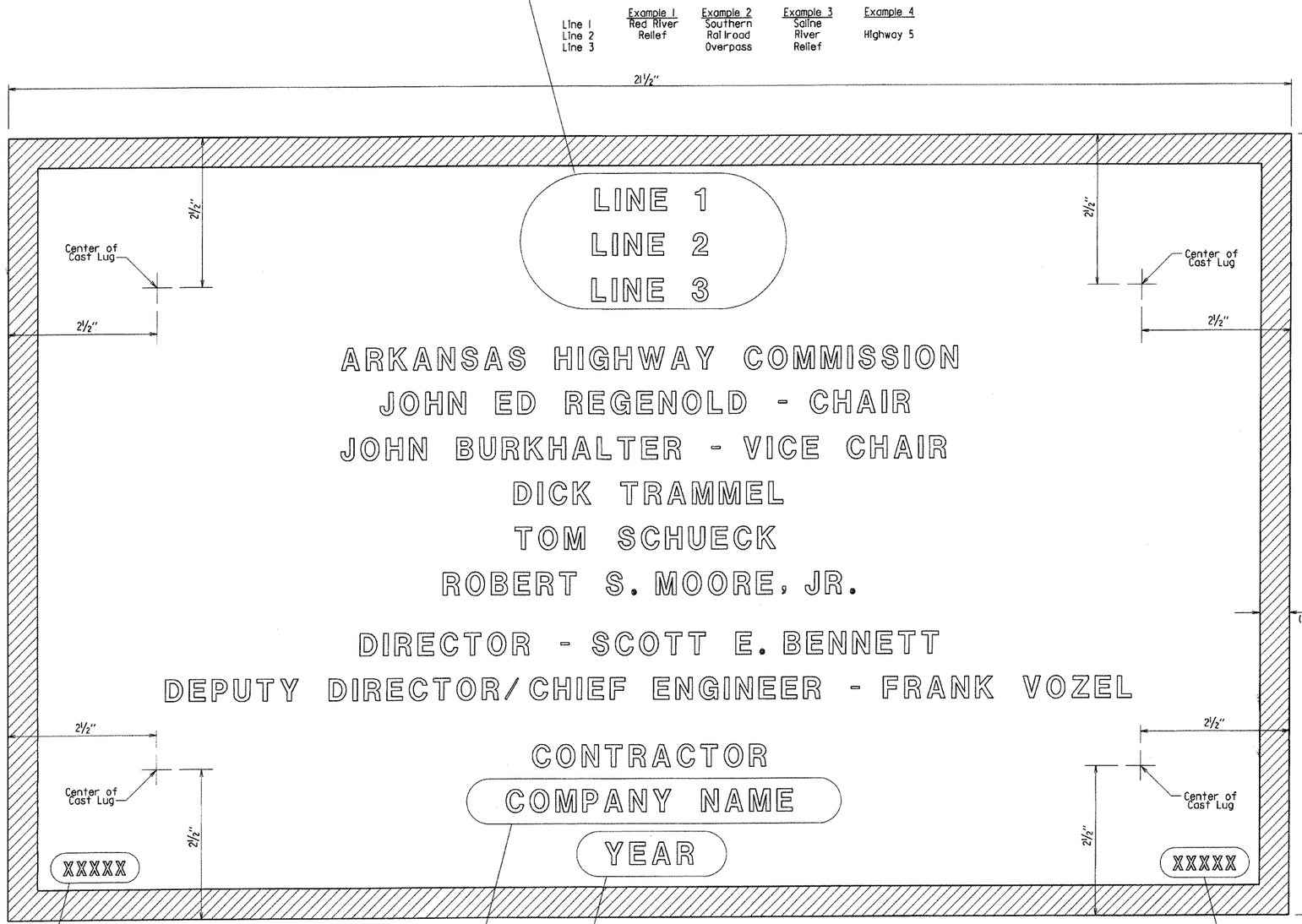
BRIDGE NO. DRAWING NO. 1891F

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.		149	
1-3-13				JOB NO.				
1-10-13								

(1) 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	



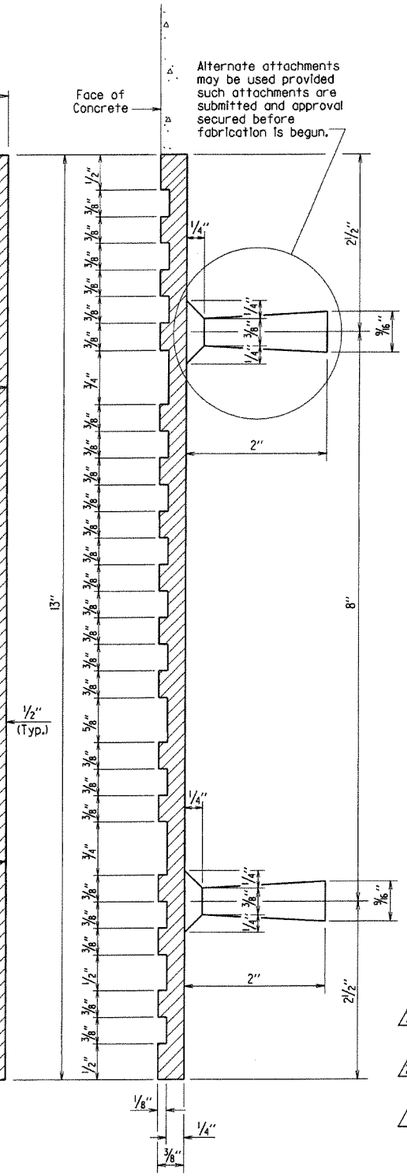
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : AI234
05432

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 1/4" thick and shall include four tapering cone lugs 3/8" to 9/16" x 2" long. The border and all lettering shall be raised 1/8" 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. FUSELIER
BRIDGE ENGINEER

DETAILS OF STANDARD TYPE D BRIDGE NAME PLATE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

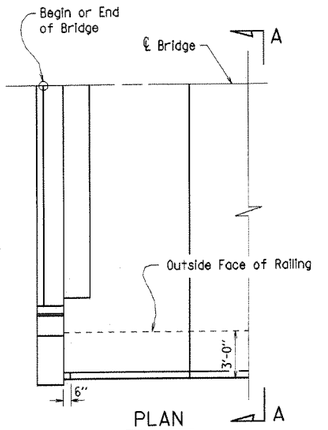
DRAWN BY: KDH DATE: 9-8-11 FILENAME: b2387_std.dgn
CHECKED BY: CRE DATE: 9-8-11 SCALE: 1'-0" = 1'-0"
DESIGNED BY: STD. DATE: — OR AS NOTED

BRIDGE NO. DRAWING NO. 2387

PRINT DATE: 1/18/2013

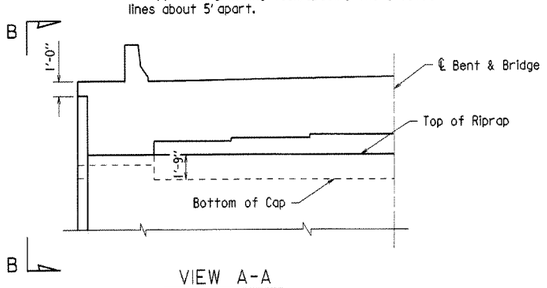
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		150	
				JOB NO.				
				RIPRAP & PILE - 14995A				

1

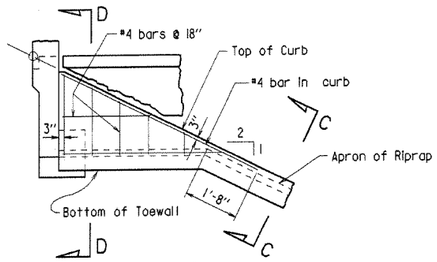


PLAN

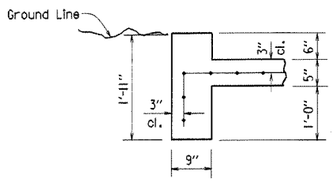
Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



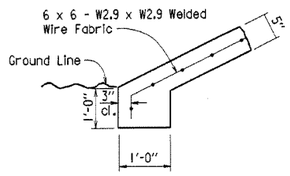
VIEW A-A



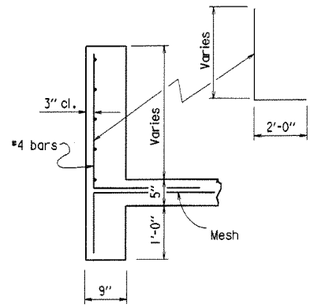
VIEW B-B



SECTION C-C

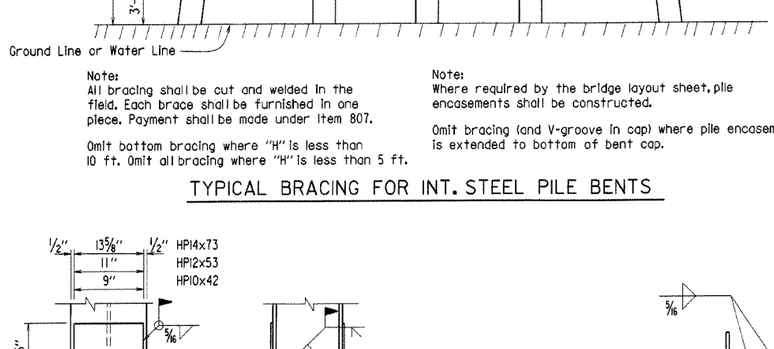


TOE WALL



SECTION D-D

DETAILS OF CONCRETE RIPRAP



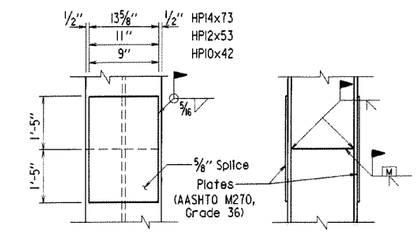
Note:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

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.

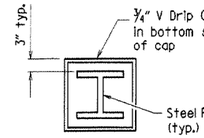
TYPICAL BRACING FOR INT. STEEL PILE BENTS



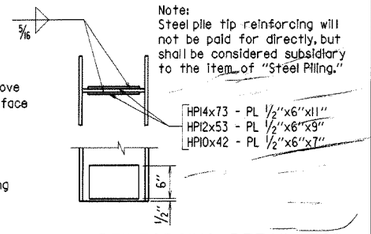
Note:
The contractor may for his own convenience and at this own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft.

PILE SPLICE DETAIL

Scale : 1" = 1'-0"



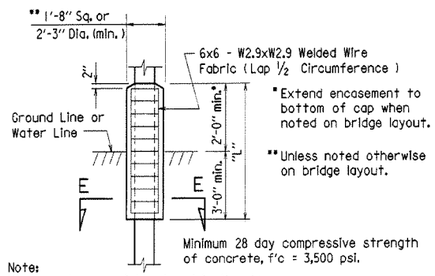
VIEW X-X



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

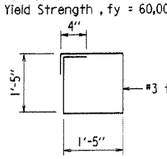
Scale : 1" = 1'-0"

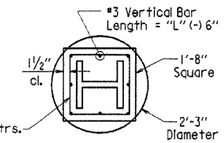


Note:
If concrete cannot be placed in the dry, seal concrete may be deposited under water. Concrete & welded wire fabric or reinforcing in encasements shall be paid for at the contract unit price per linear foot bid for "Pile Encasement."

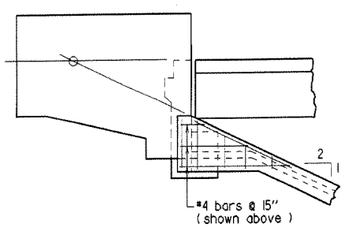
PILE ENCASEMENT DETAIL

Reinforcing Alternate
#3 Vertical - 8 per encasement
#3 ties @ 12" ctrs.
Yield Strength , fy = 60,000 psi.

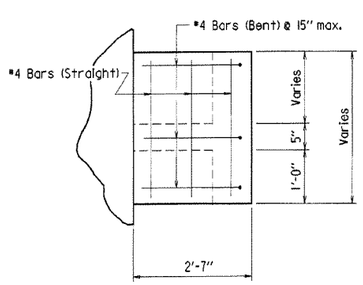




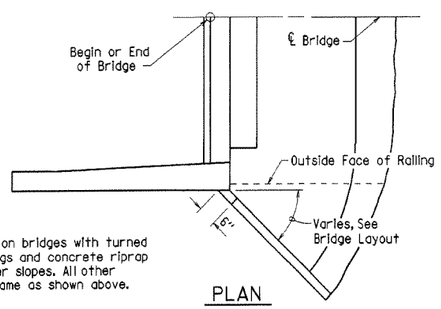
SECTION E-E
REINF. ALTERNATE



ELEVATION

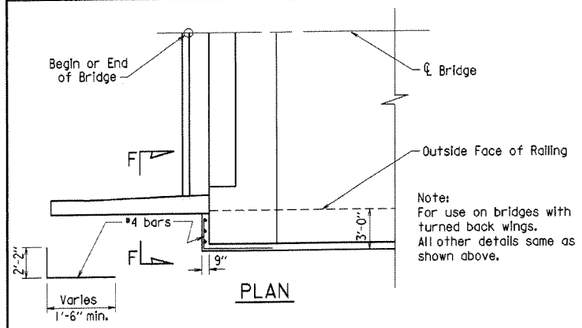


SECTION F-F



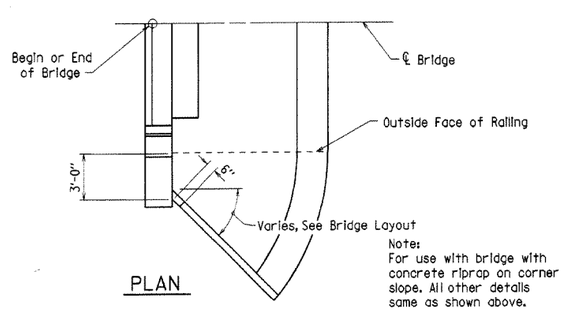
Note:
For use on bridges with turned back wings and concrete riprap on corner slopes. All other details same as shown above.

PLAN



PLAN

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.

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

DETAILS OF CONCRETE RIPRAP
AND MISC. DETAILS OF STEEL PILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

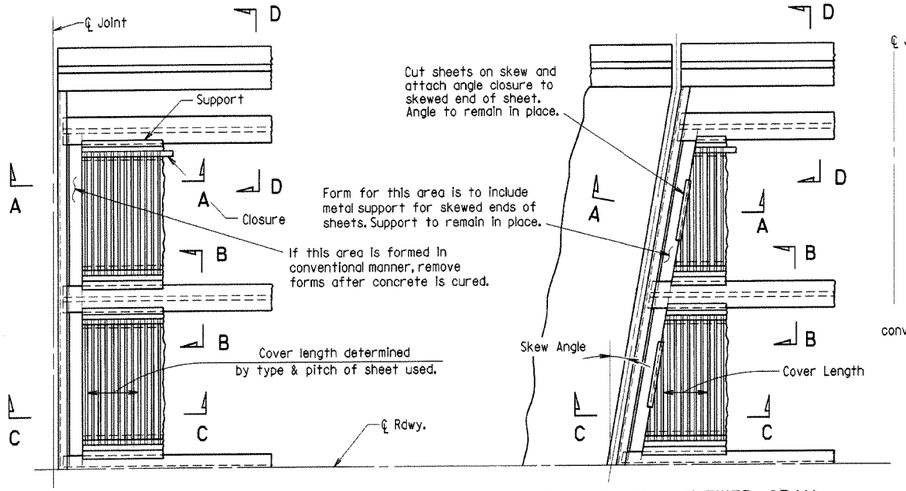
BRIDGE ENGINEER

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DESIGNED BY: STD. DATE: —

BRIDGE NO. DRAWING NO. 14995A

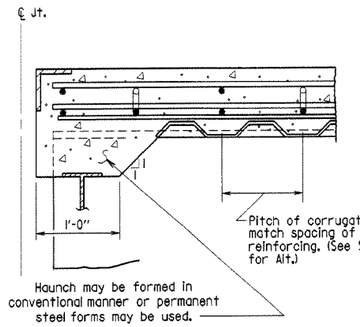
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
1-27-96						6	ARK.		151	
04-10-2003						JOB NO.				

① BR. DECK FORMS 14991

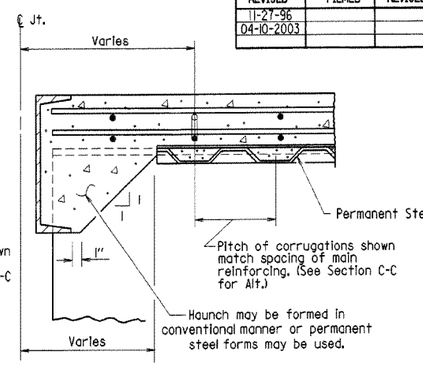


PART PLAN - SQUARE SPAN
3/8" = 1'-0"

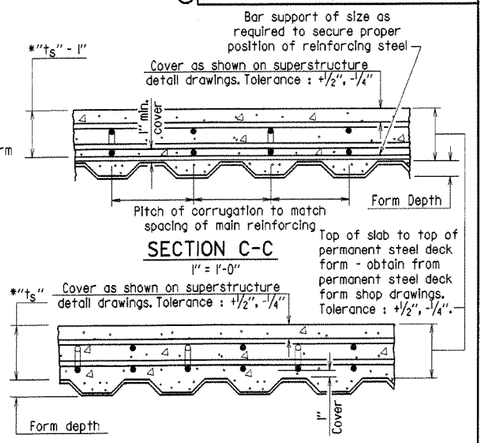
PART PLAN - SKEWED SPAN
3/8" = 1'-0"



SECTION A-A
N.T.S.
(Angle at end of span)



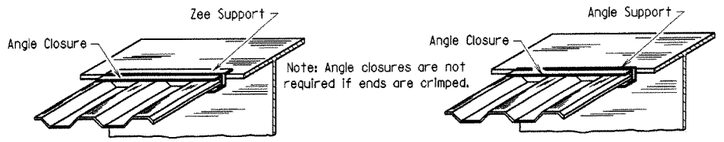
SECTION A-A
N.T.S.
(Channel at end of span)



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

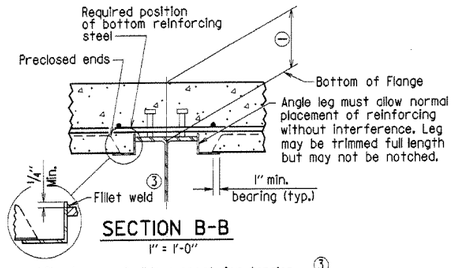
Top of slab to top of permanent steel deck form - obtain from permanent steel deck form shop drawings. Tolerance : +1/2", -1/4".

SECTION C-C - ALTERNATE
1" = 1'-0"
(Applicable when corrugations do not match spacing of main reinforcement)



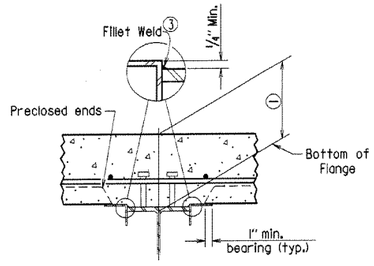
SKETCH OF PERMISSIBLE SUPPORTS
N.T.S.

*t_s = slab thickness as shown on superstructure detail drawings.

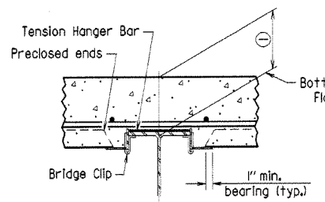


SECTION B-B
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

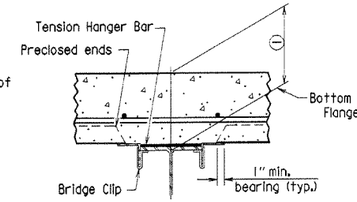
③ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



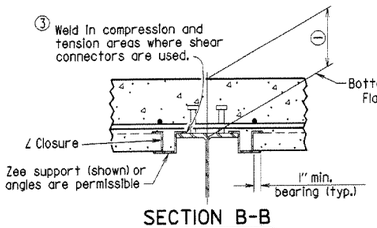
SECTION B-B
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



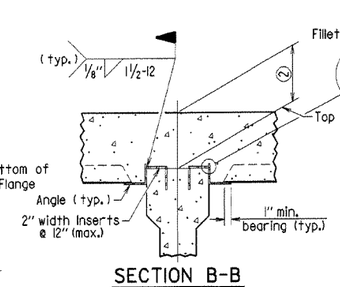
SECTION B-B
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(Showing permissible support for tension flange where shear connectors are not used)



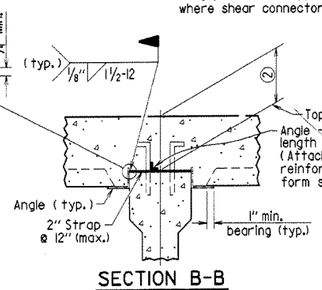
SECTION B-B
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



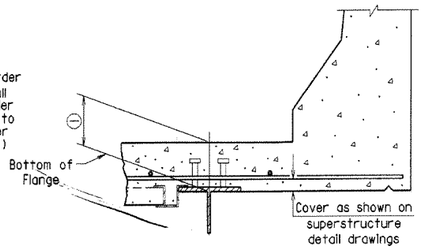
SECTION B-B
1" = 1'-0"
(Showing ∠ Closure)



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 3/4" + 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.

⚠2 Revised for 2003 AHTD Construction Specifications and CPB Seal. MJT 04-10-2003
Chk'd. By: CPB 04-10-2003

⚠1 Redrawn and revised 11/27/96; MJT

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.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4537
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

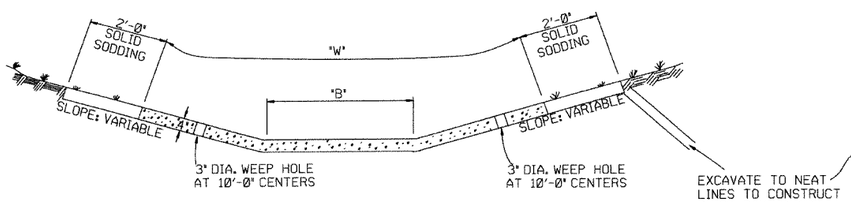
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10-17-96
CHECKED BY: CPB DATE: 10-17-96 SCALE: as noted
DESIGNED BY: STD. DATE: —

BRIDGE NO. DRAWING NO. 14991

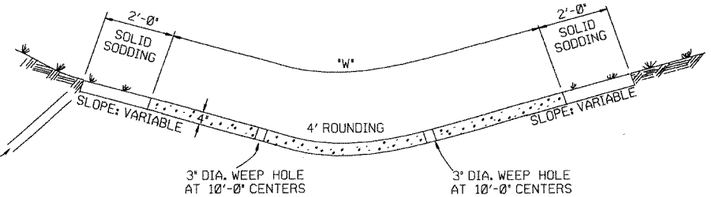
BI4991.STD

REFER TO TABULATION OF QUANTITIES
FOR "W" & "B" DIMENSIONS



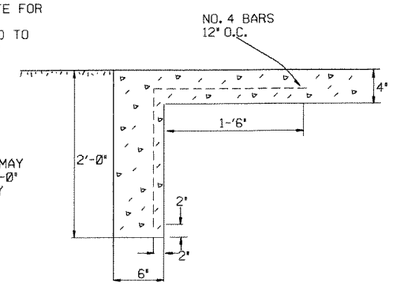
TYPE A

REFER TO TABULATION OF QUANTITIES
FOR "W" DIMENSIONS



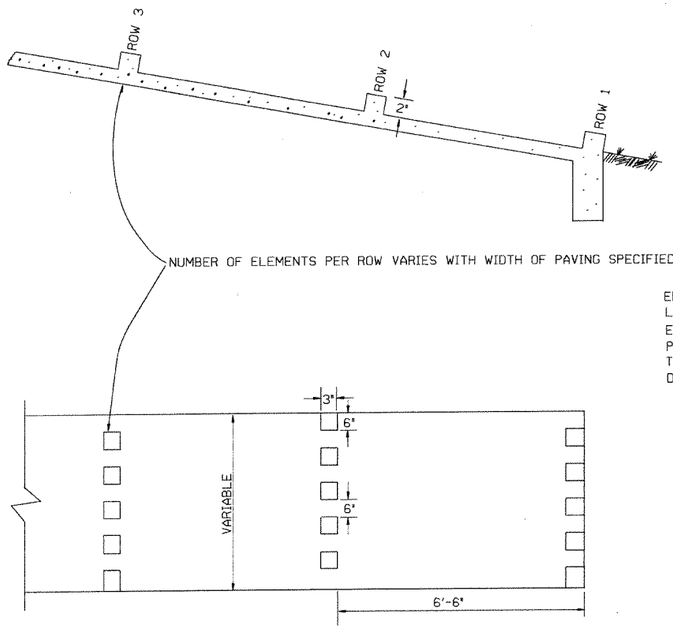
TYPE B

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.

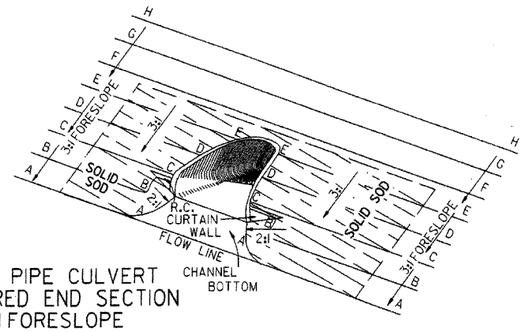
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

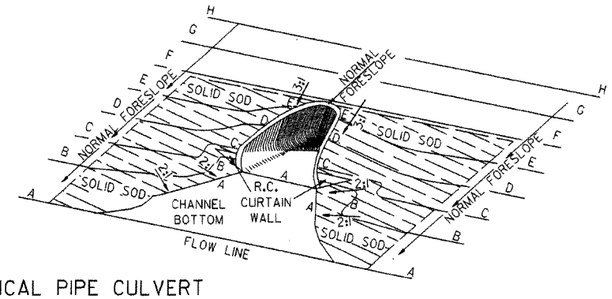
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

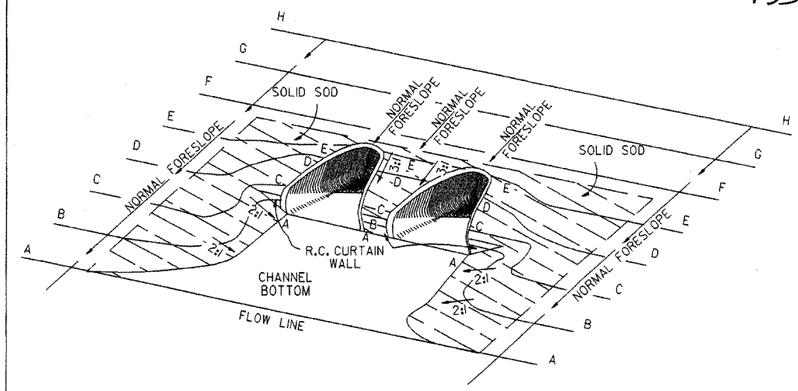
STANDARD DRAWING CDP-1



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



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. 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.

REINFORCING STEEL SCHEDULE

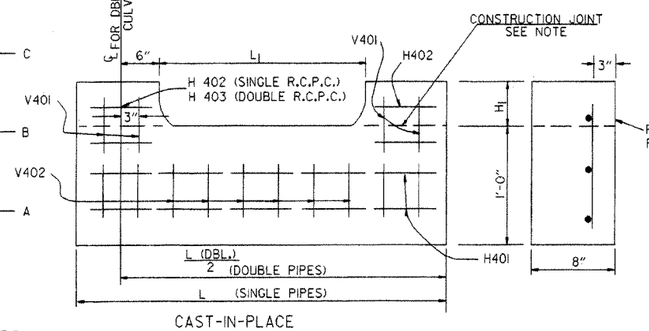
PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	V401 L	NO.	V402 L	NO.	DOUBLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	H403 L	NO.	V401 L	NO.	V402 L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	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.

PLAN VIEW
3:1 FORESLOPES

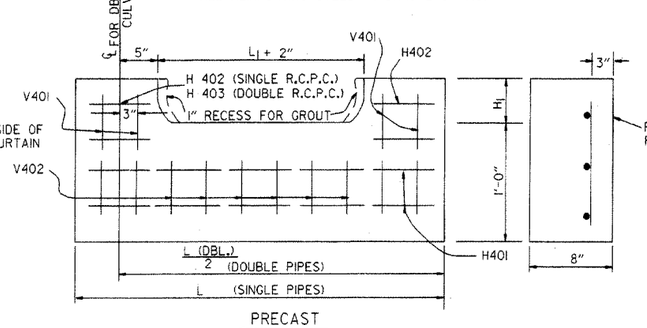
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

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.

END VIEW

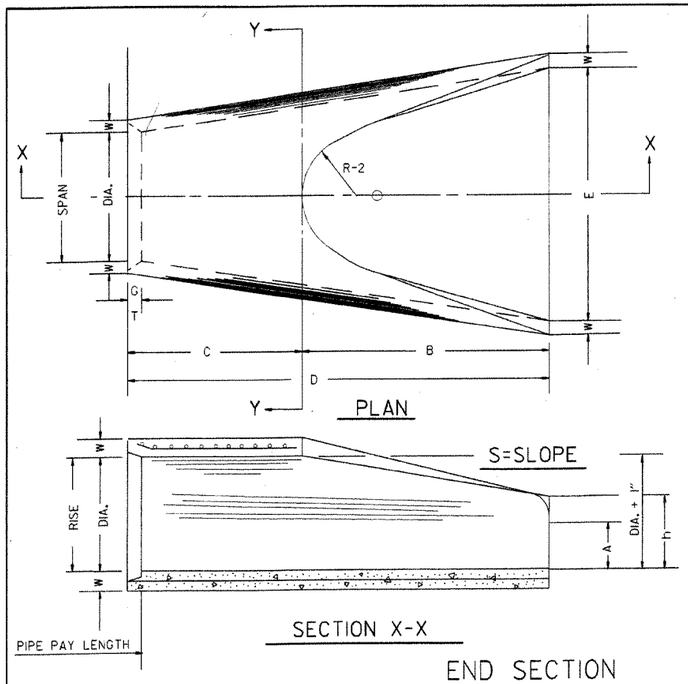
SECTIONAL VIEW "X-X"

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

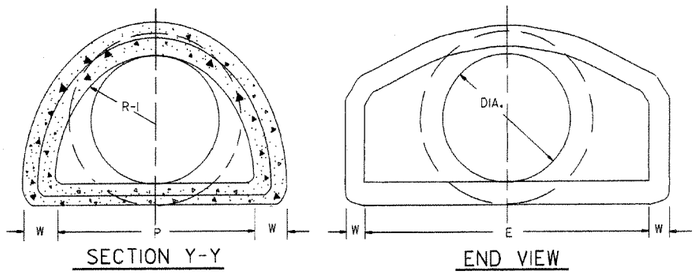
STANDARD DRAWING FES-1



END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33⅜"	16⅛"	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'-4⅜"
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"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	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"

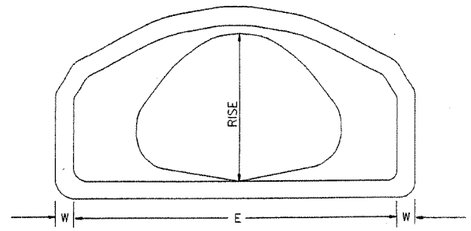


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

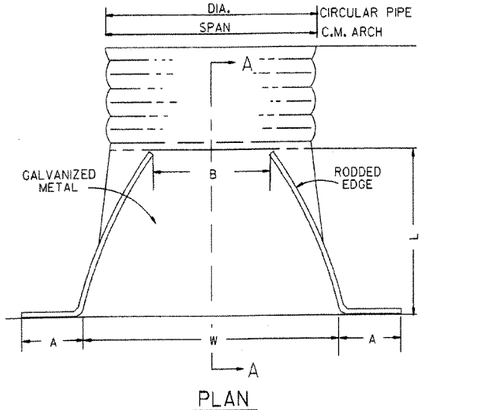
ARCH PIPE

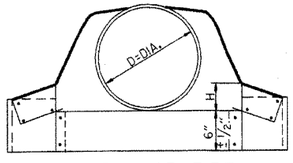
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	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'-1½"	6'-1½"	6'-6"	54⅞"	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"	77⅛"	24"	5"	2¼:1

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

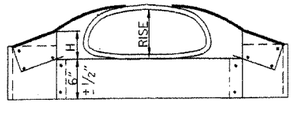


END VIEW
CONCRETE ARCH PIPE





CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

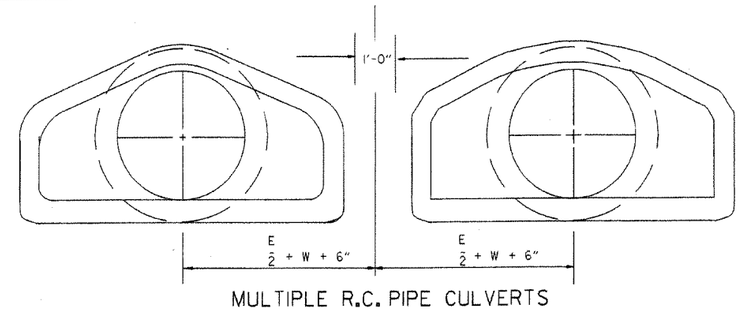
D. DIA.	GAUGE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

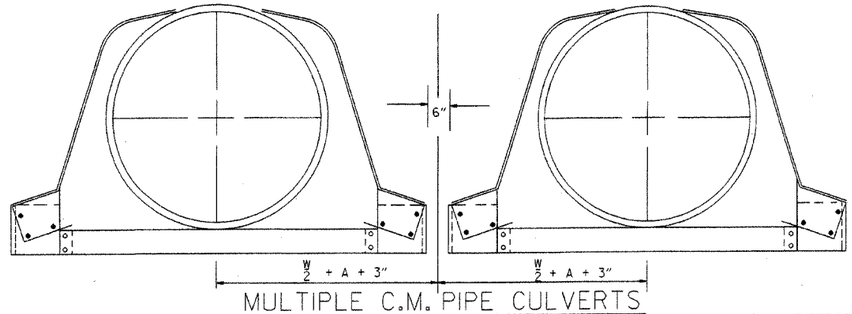
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12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

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

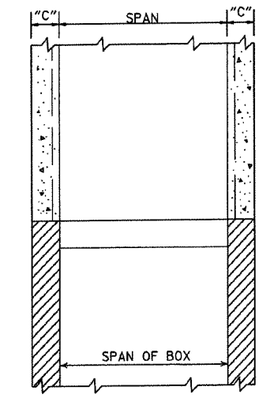
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74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

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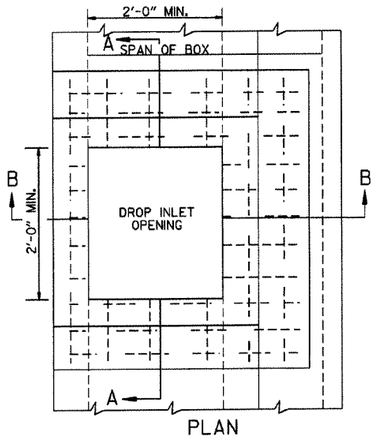
FLARED END SECTION

STANDARD DRAWING FES-2

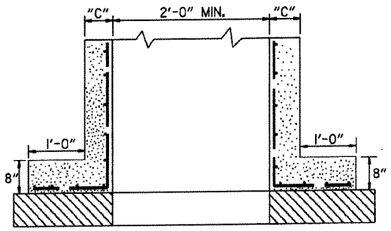
stdfes2.dgn



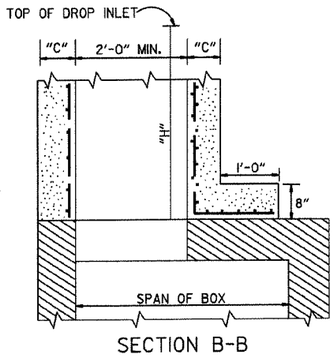
SECTION B-B



PLAN

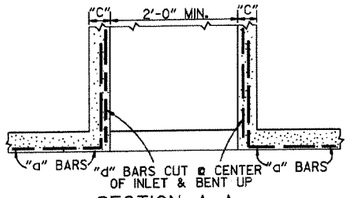


SECTION A-A

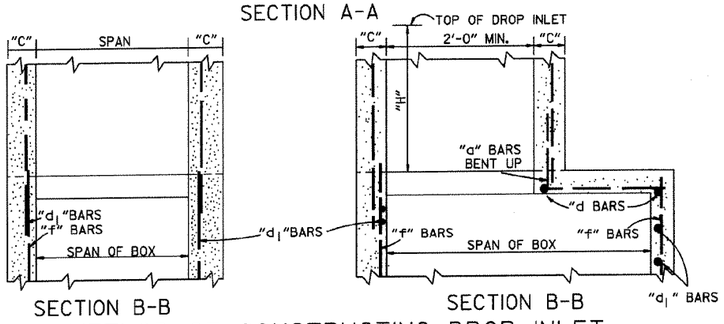


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



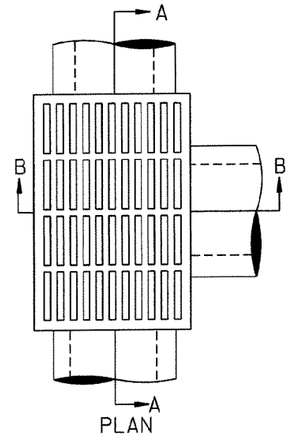
SECTION A-A



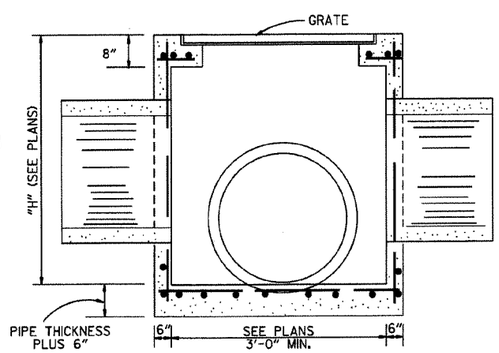
SECTION B-B SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

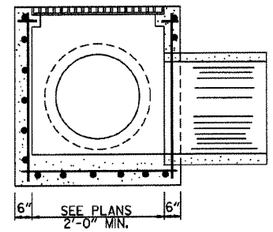


PLAN



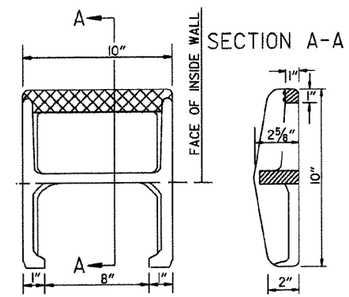
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)

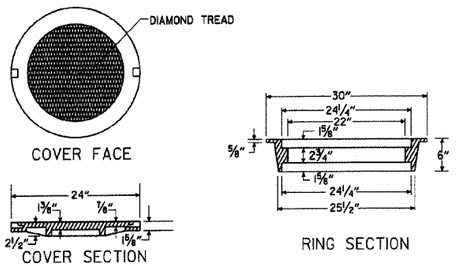


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

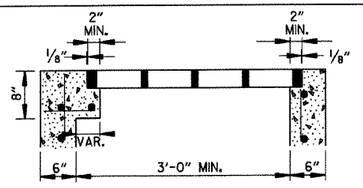
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

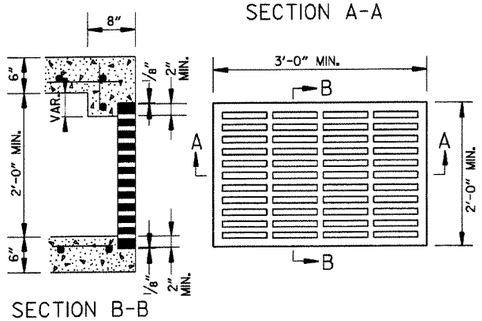


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



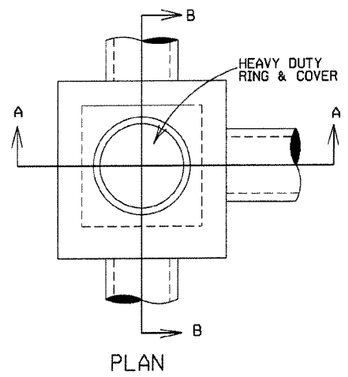
SECTION A-A



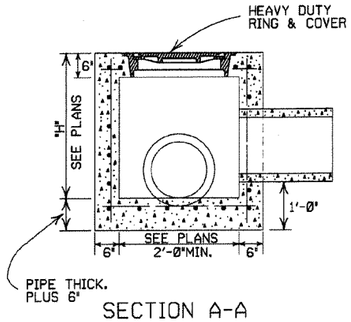
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

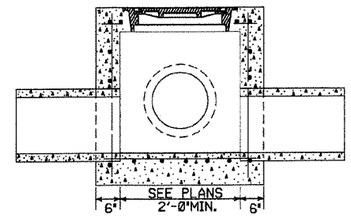


PLAN



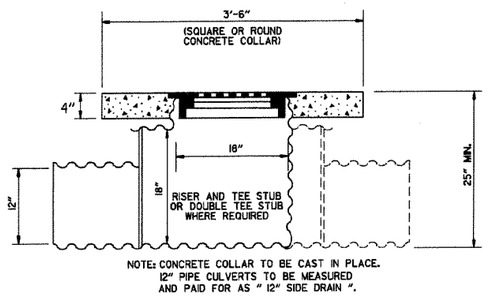
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

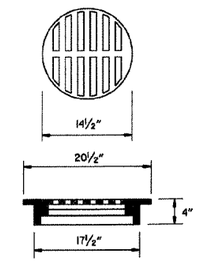


SECTION B-B

JUNCTION BOX (TYPE E)



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

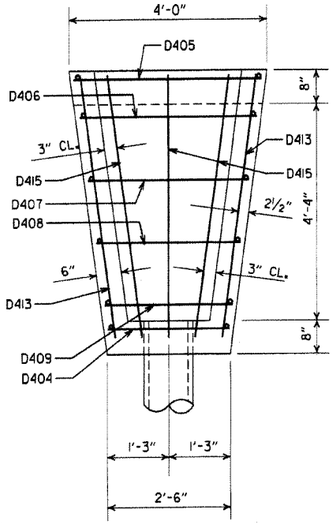
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL, DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

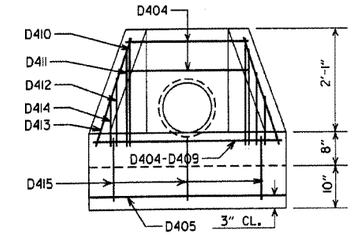
STANDARD DRAWING FPC-9



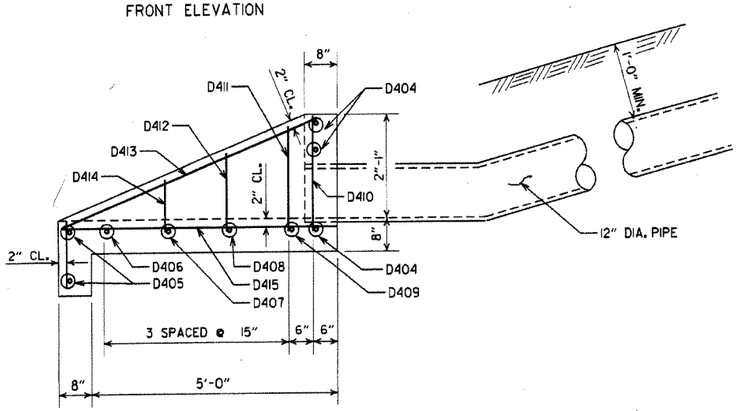
PLAN

BAR LIST (CONCRETE SPILLWAY)

MARK	NO. REQ'D.	LENGTH	BENDING DIAGRAM
D404	3	2'-2"	
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"	5'-4", 1'-2", 2" P.D., D415

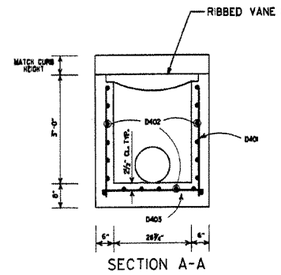


FRONT ELEVATION



SIDE ELEVATION
CONCRETE SPILLWAY

DETAILS OF CONCRETE SPILLWAY (TYPE A)

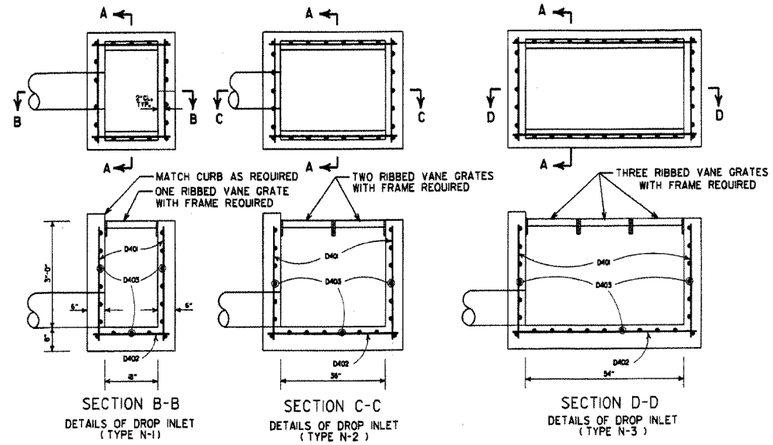


SECTION A-A

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)

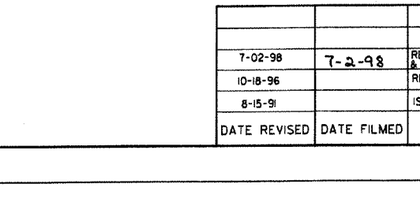
SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

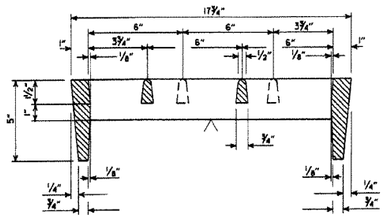
DETAILS OF DROP INLET

GENERAL NOTES (GRATE & FRAME)

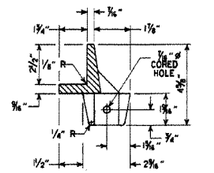
1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED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

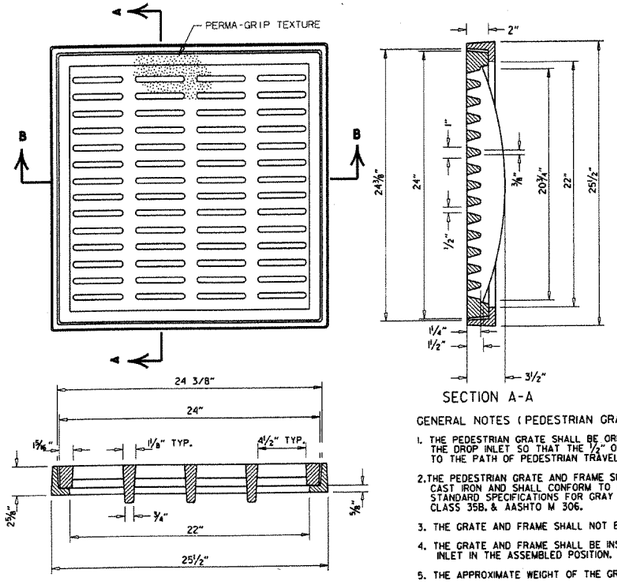
DATE REVISED	DATE FILMED	DESCRIPTION
7-02-98	7-2-98	REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1, REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
8-15-91		ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS AND SPILLWAY OUTLET

STANDARD DRAWING FPC-9N

STDfpc9N.DGN



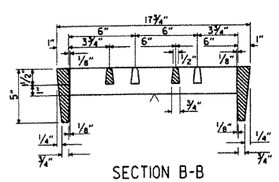
SECTION B-B

SECTION A-A

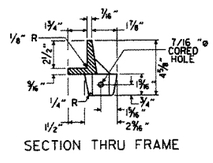
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

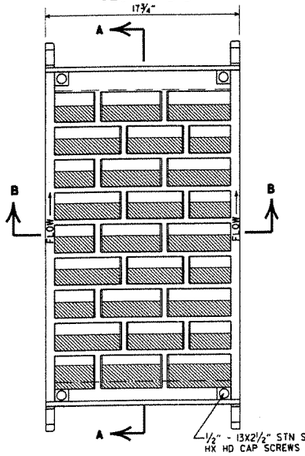
DETAILS OF PEDESTRIAN GRATE AND FRAME

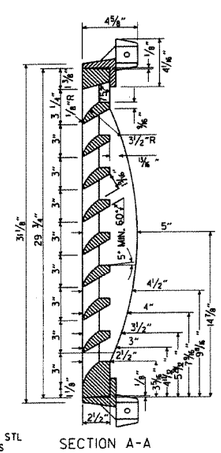


SECTION B-B



SECTION THRU FRAME



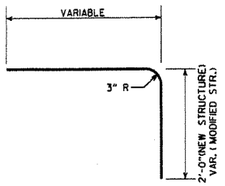


SECTION A-A

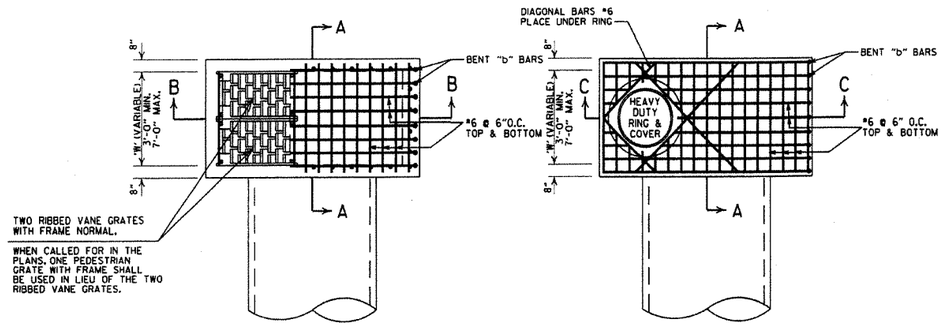
DETAILS OF RIBBED VANE GRATE AND FRAME

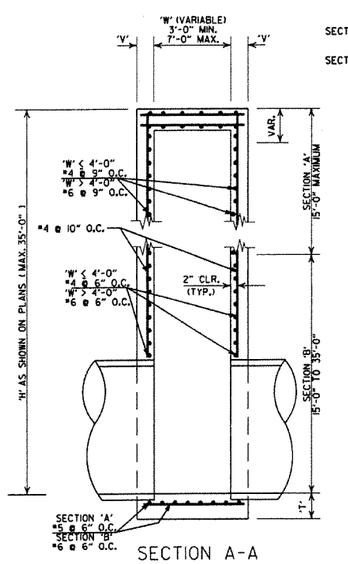
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

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



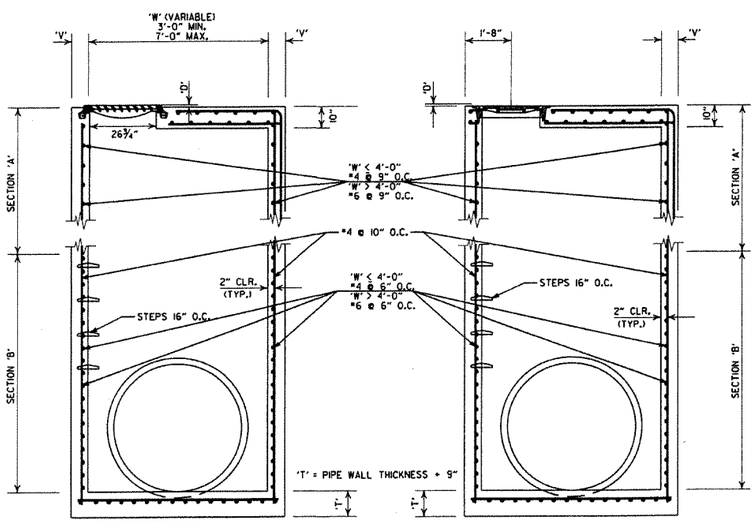
DETAIL OF BENT "b" BAR





SECTION A-A

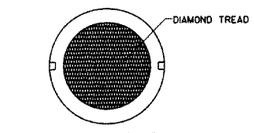
SECTION 'A' 'V' = 8"
SECTION 'B' (W≤4'-0") 'V' = 8"
SECTION 'B' (W>4'-0") 'V' = 10"



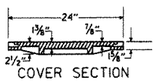
SECTION B-B

SECTION C-C

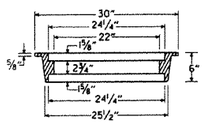
DETAILS OF DROP INLET (TYPE ST)



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

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

GENERAL NOTES (HEAVY DUTY RING & COVER):

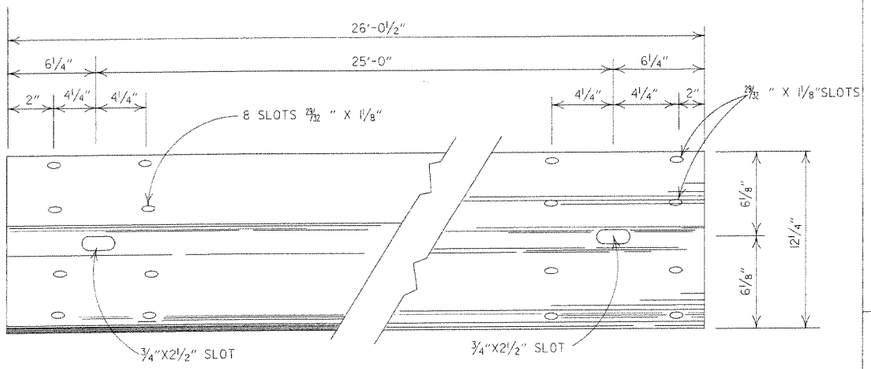
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE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

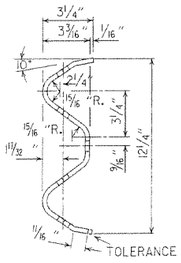
DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

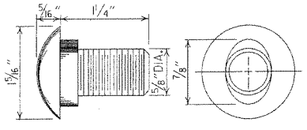
STANDARD DRAWING FPC-9S



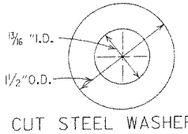


DETAILS OF W-BEAM GUARD RAIL

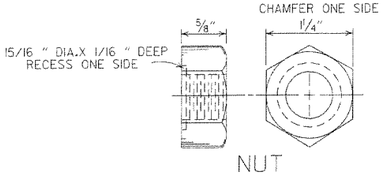
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



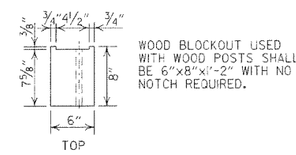
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

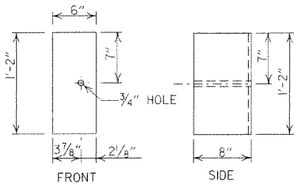


NUT

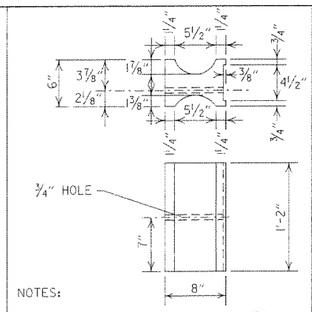


WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

TOP



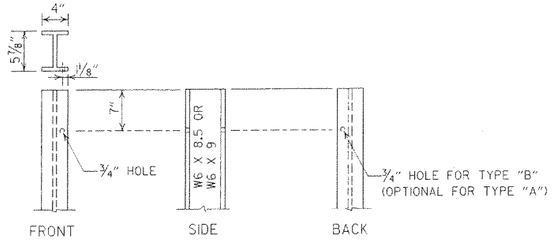
WOOD BLOCKOUT (W-BEAM)



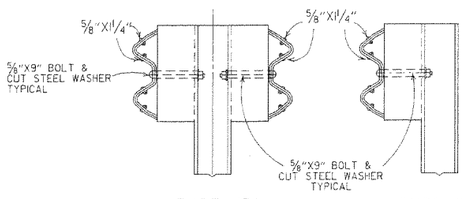
NOTES:

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)

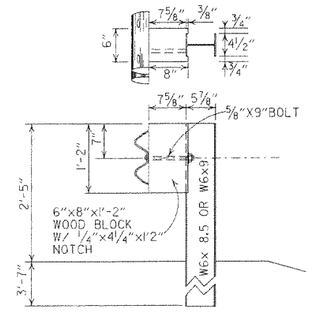


STEEL POST

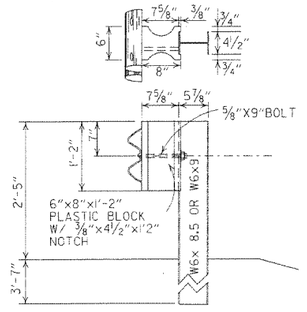


DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.



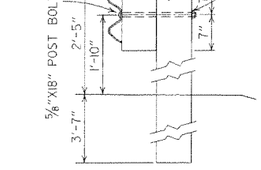
WOOD BLOCKOUT CONNECTIONS



PLASTIC BLOCKOUT CONNECTIONS

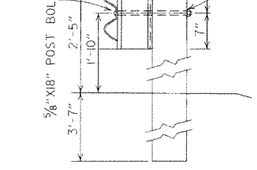
DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

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.

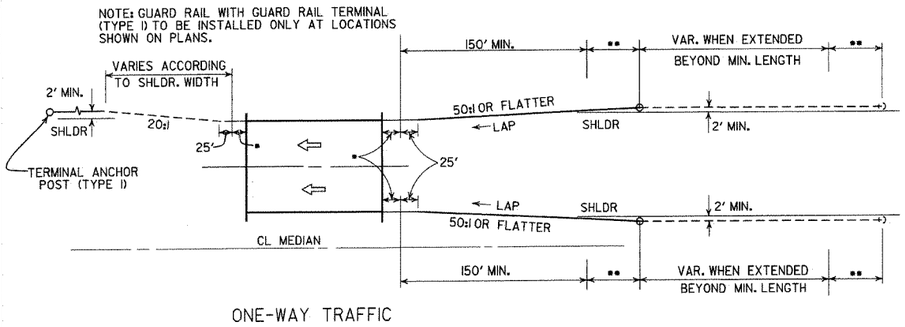
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

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

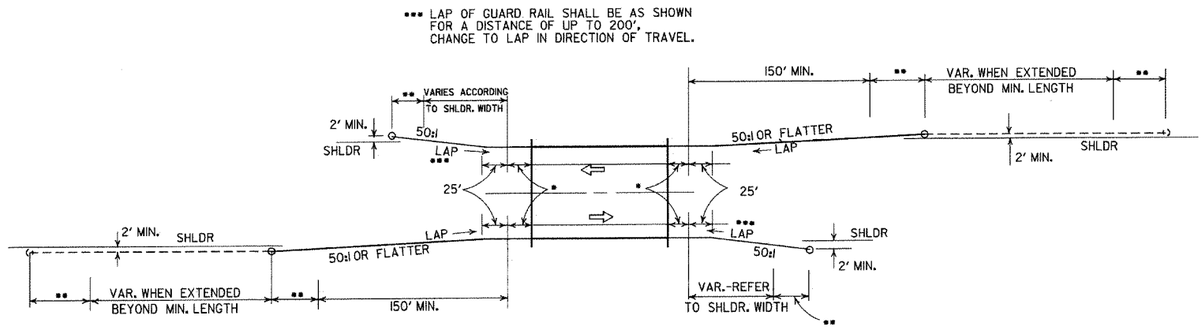
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8



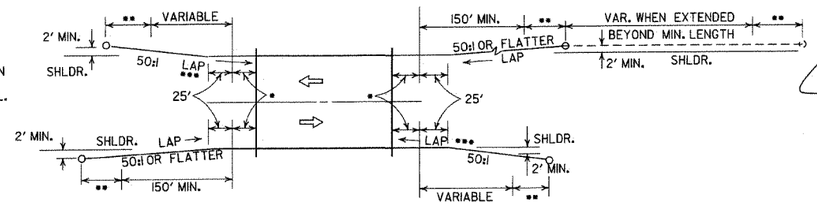
ONE-WAY TRAFFIC



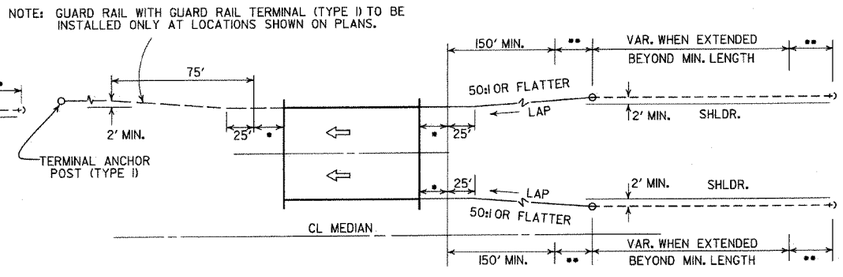
TWO-WAY TRAFFIC

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

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



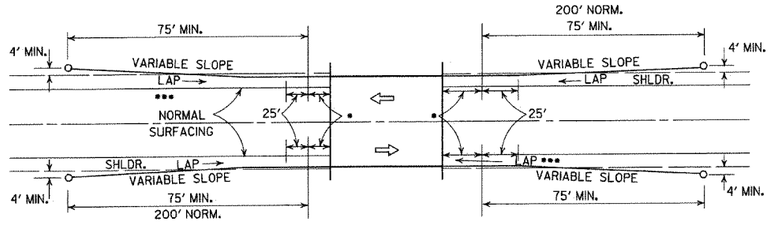
TWO-WAY TRAFFIC



ONE-WAY TRAFFIC

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

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



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

LEGEND

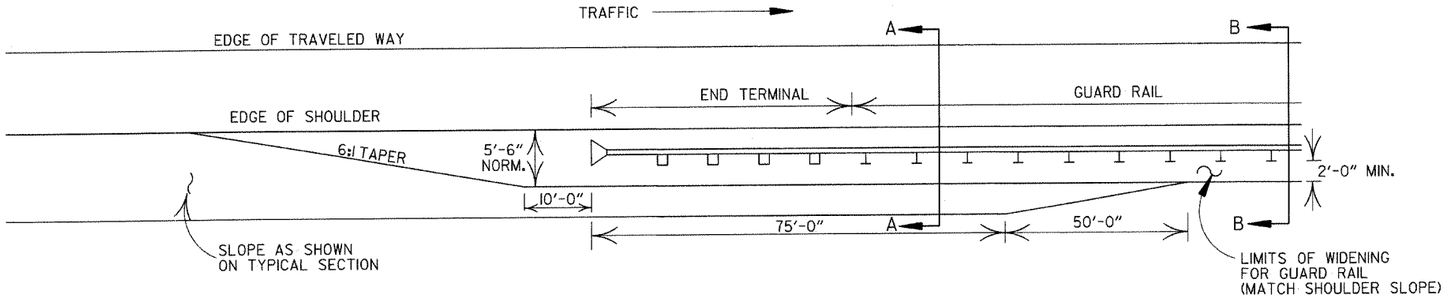
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

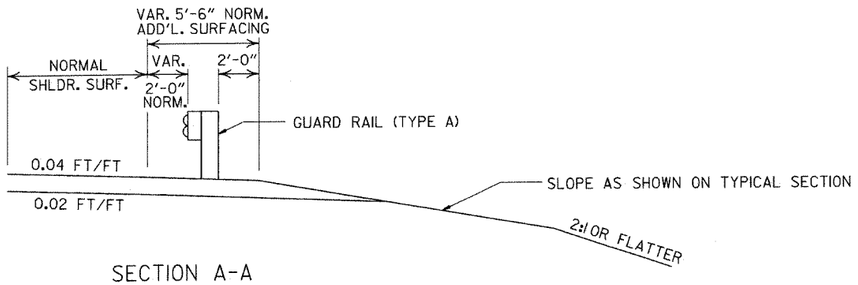
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87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

ARKANSAS STATE HIGHWAY COMMISSION

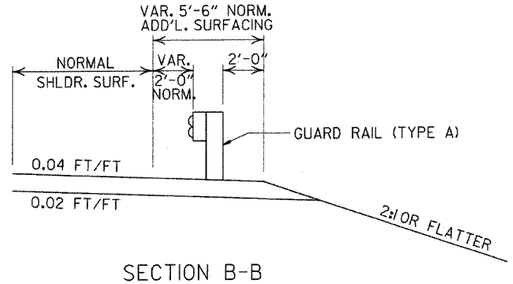
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





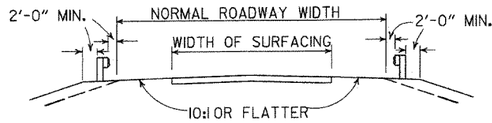
SECTION A-A



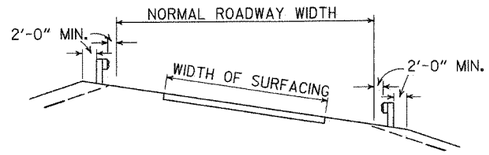
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

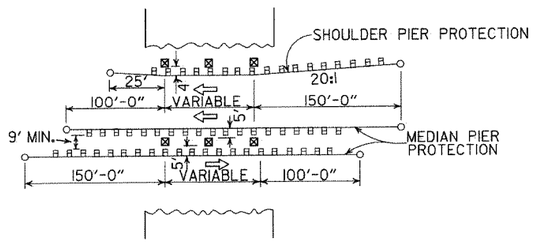


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



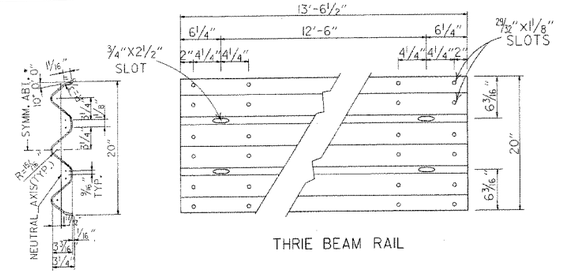
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

ARKANSAS STATE HIGHWAY COMMISSION

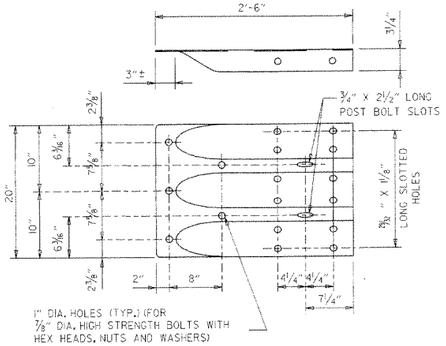
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

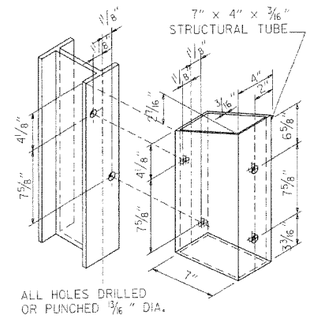


SECTION THRU THRIE BEAM RAIL

THRIE BEAM RAIL

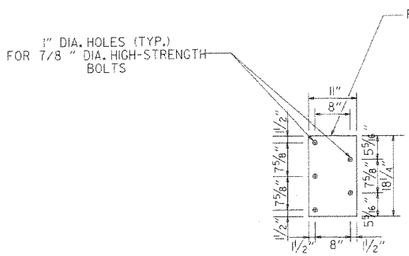


SPECIAL END SHOE



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

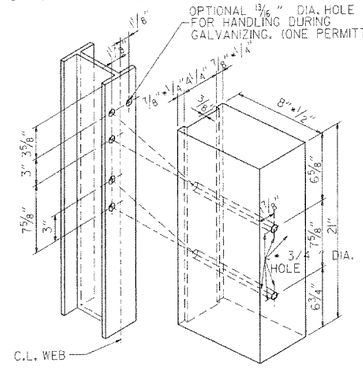
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



CONNECTOR PLATE

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

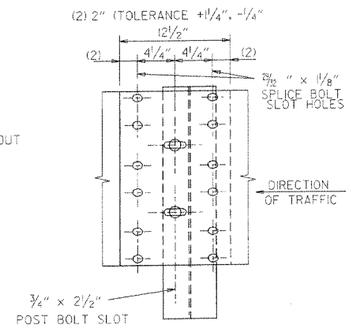
NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.



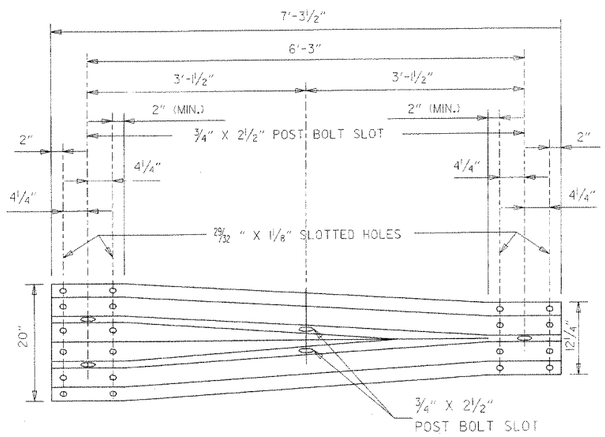
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

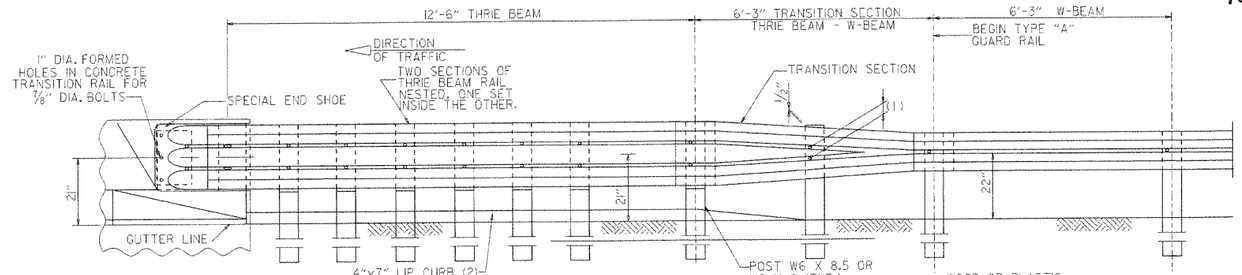
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



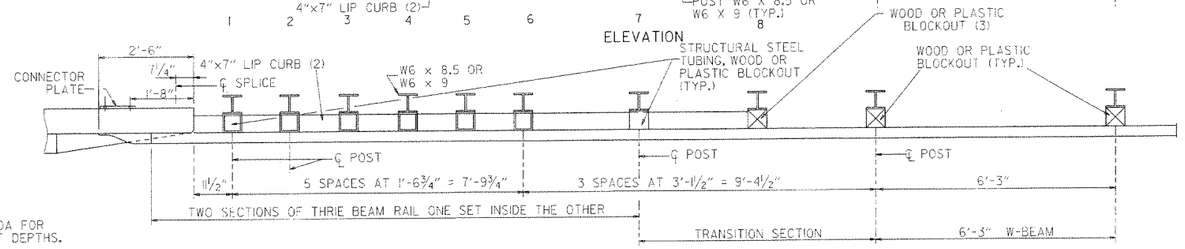
THRIE BEAM RAIL SPLICE AT POST



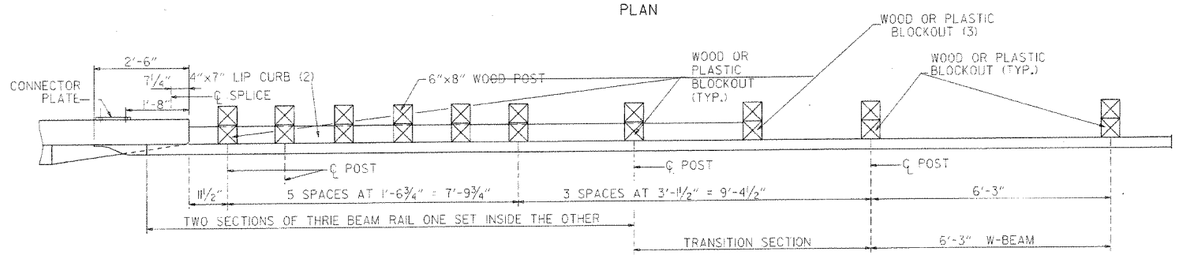
TRANSITION SECTION



ELEVATION



PLAN



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 f) OR NO. 1 1350 f SOUTHERN PINE.

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

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

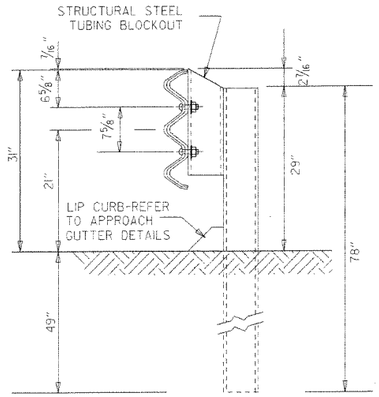
THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

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

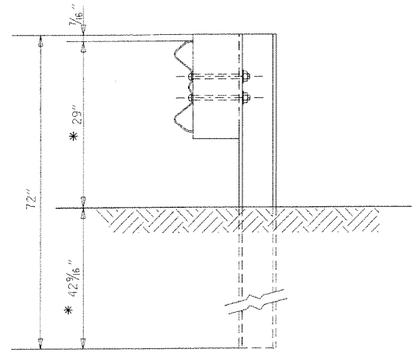
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10

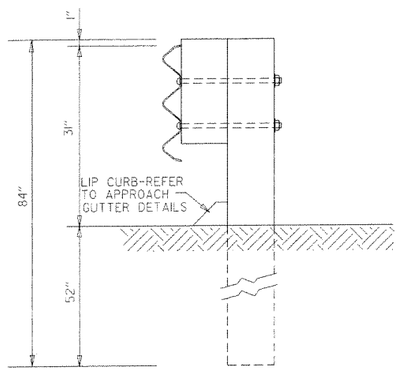


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

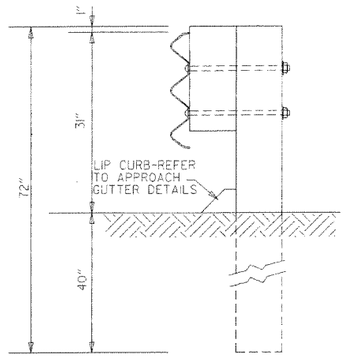


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

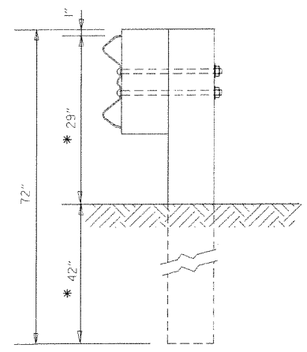
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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



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



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

GENERAL NOTES:

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

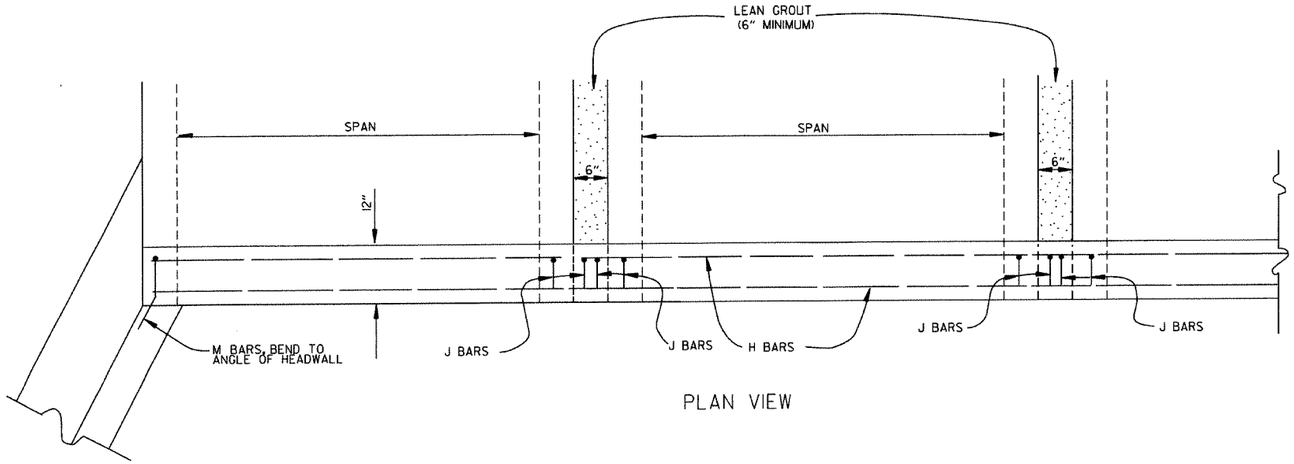
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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

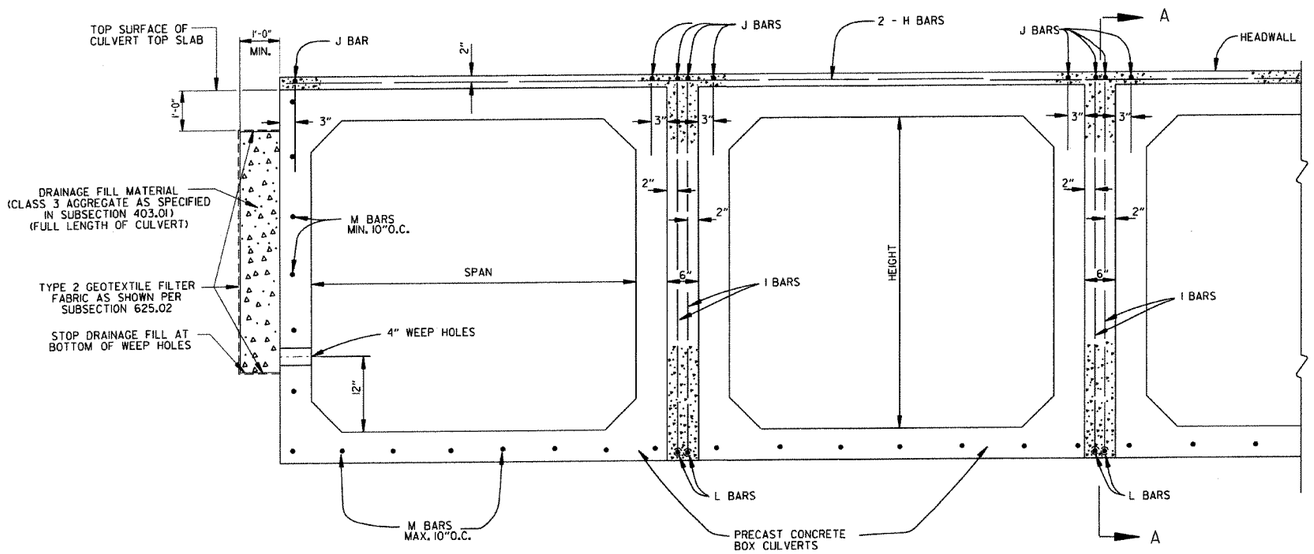
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10A



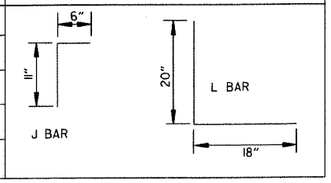
PLAN VIEW



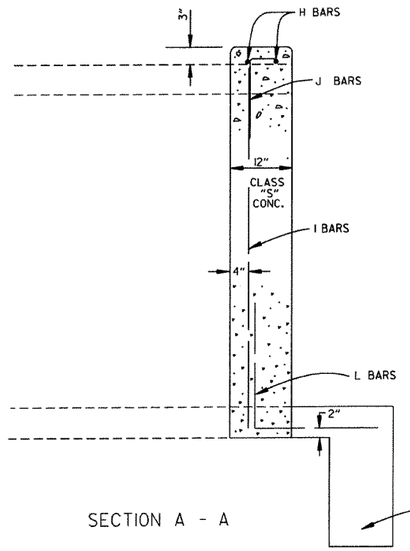
END VIEW

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



SECTION A - A

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.

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		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)(1).

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

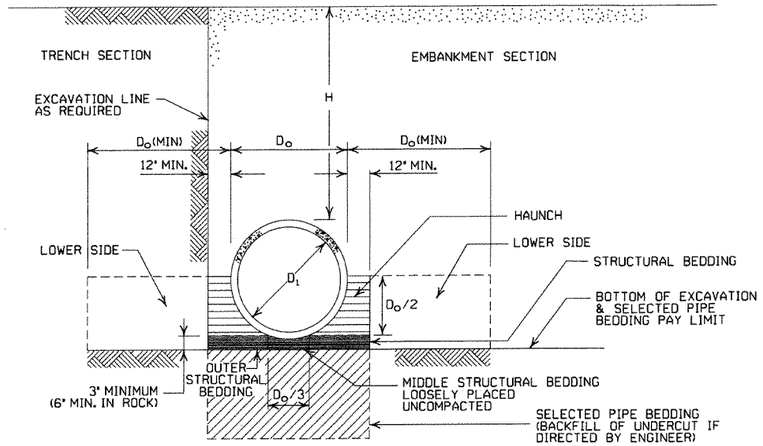
- LEGEND -

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

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

*SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (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	

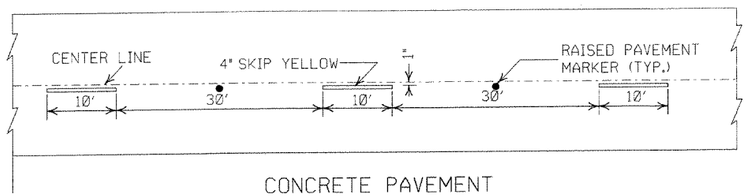
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

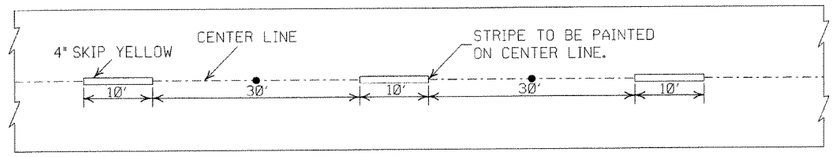
STANDARD DRAWING PCC-1

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.

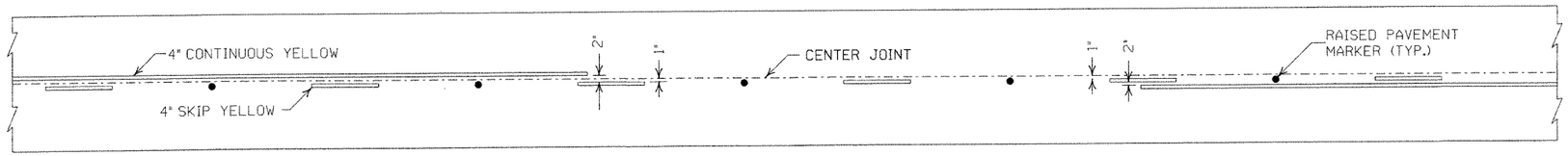


CONCRETE PAVEMENT

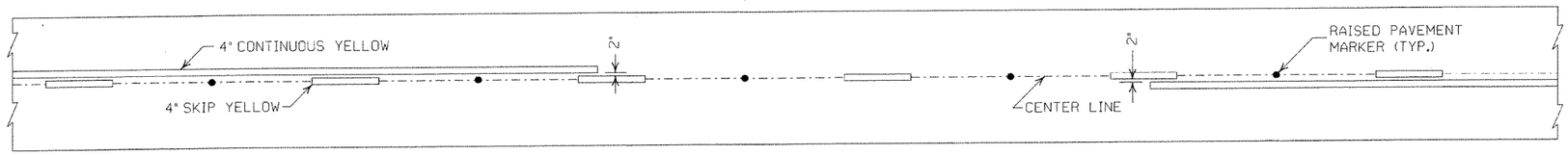


ASPHALT PAVEMENT

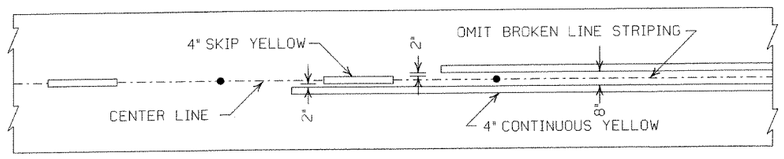
BROKEN LINE STRIPING



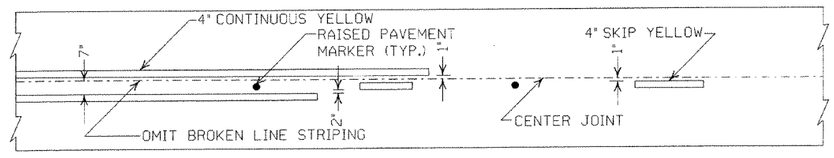
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

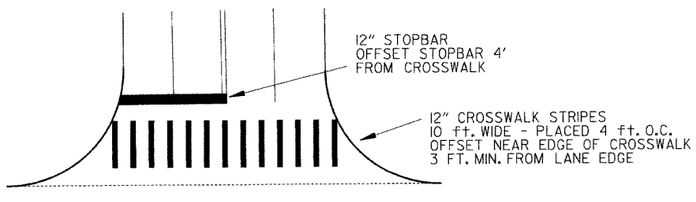


ASPHALT PAVEMENT

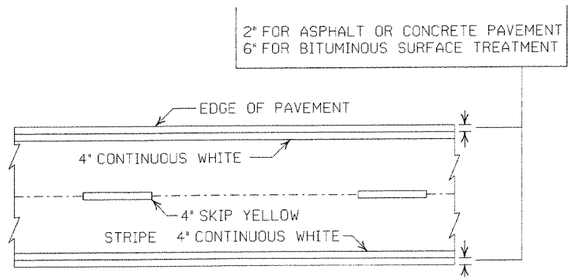


CONCRETE PAVEMENT

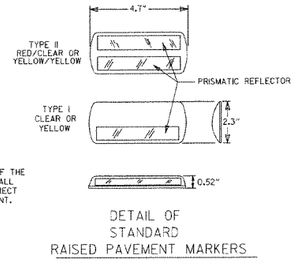
STRIPING AT ADJACENT NO PASSING LANES



CROSSWALK AND STOPBAR DETAILS



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.

DATE	REVISION	FILMED
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

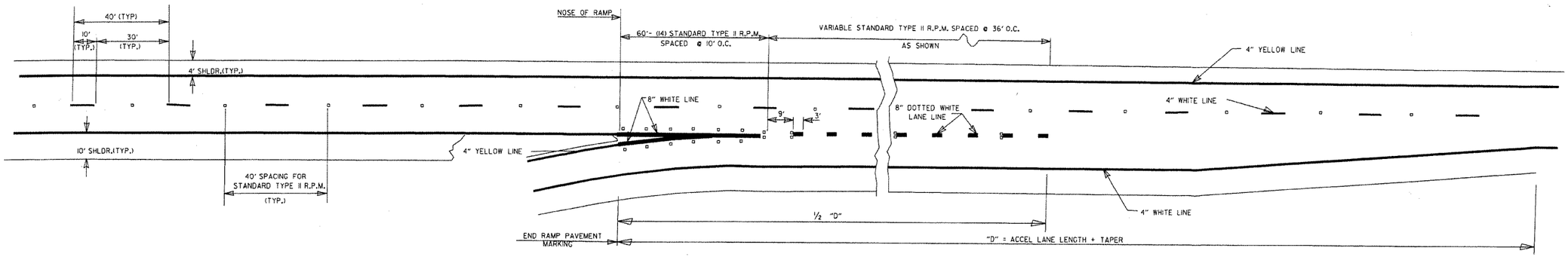
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

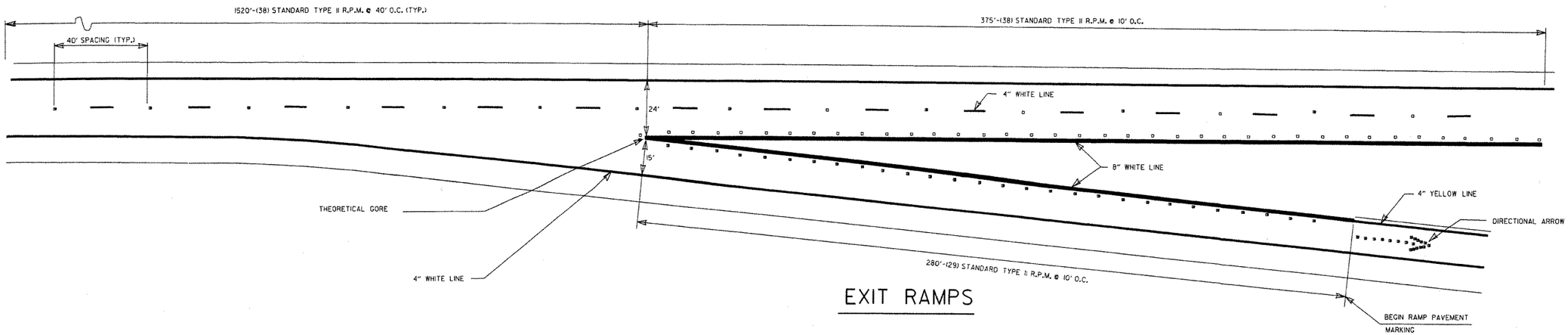
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

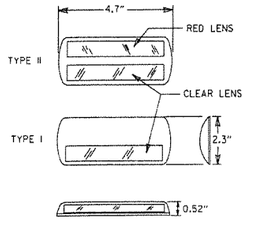
4" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

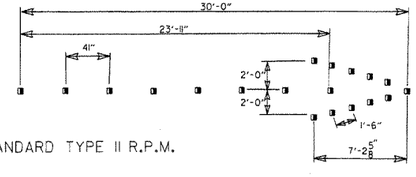


EXIT RAMPS



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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



(19) STANDARD TYPE II R.P.M.

DIRECTIONAL ARROWS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND 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.

DATE	REVISION	FILMED
7/26/12	REVISED RPM NOTATION	
12-15-11	REVISED RPMs ACCORDING TO LATEST POLICY	
11-17-10	REMOVED PLOWABLE PAVEMENT MARKERS	
6-3-10	REVISED PER 2009 MUTCD	
11-18-04	REVISED NOTES	
8-22-02	ADDED & REVISED NOTES; REV. ENTRANCE & EXIT RAMPS	
5-18-00	REMOVED HASHMARKS	
7-02-98	CHANGED TYPES TO ROMAN NUMERALS	
4-26-96	ADDED DIMENSIONS & QUANTITIES; REVISED LANE WIDTH ON EXIT RAMP	
2-2-95	PLACED IN USE	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

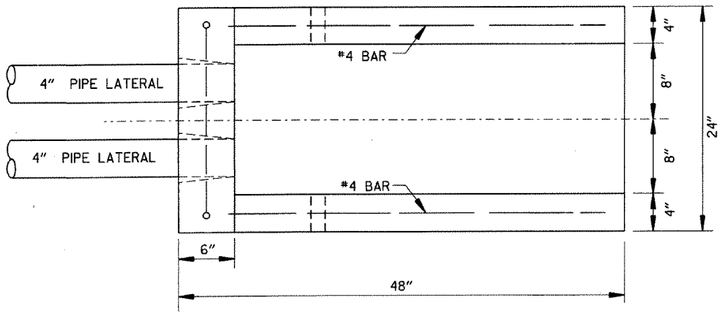
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

STANDARD DRAWING PM-2

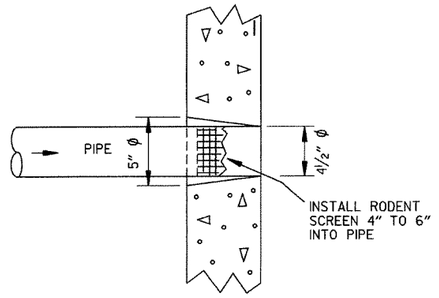
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

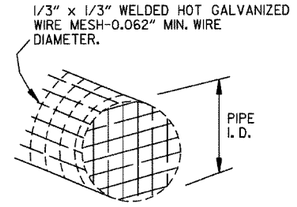
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



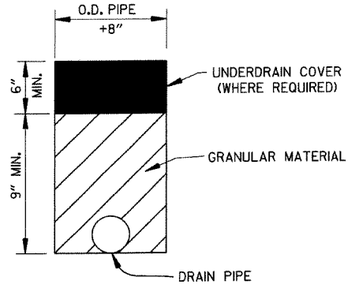
PLAN VIEW

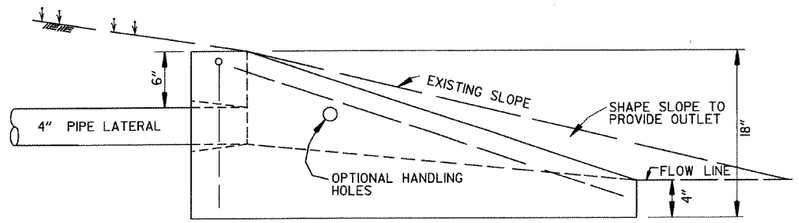


DETAIL OF HOLE FOR 4" PIPE

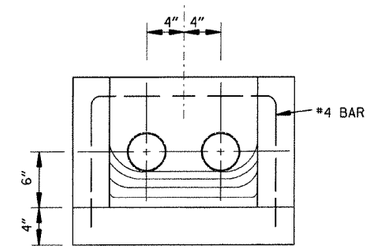


DETAIL OF RODENT SCREEN

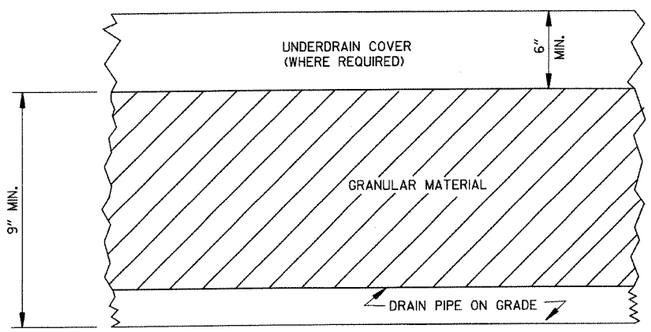




SIDE VIEW

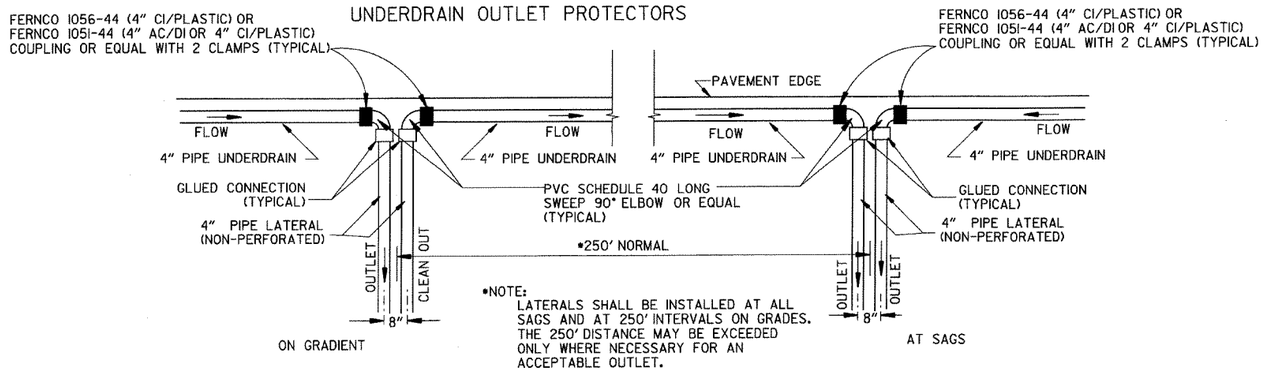


FRONT VIEW



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

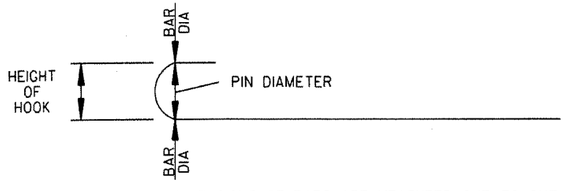
STANDARD DRAWING PU-1

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

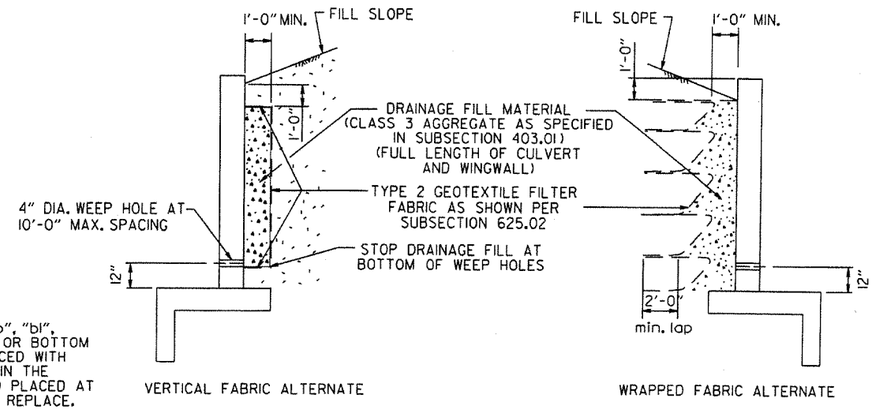
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

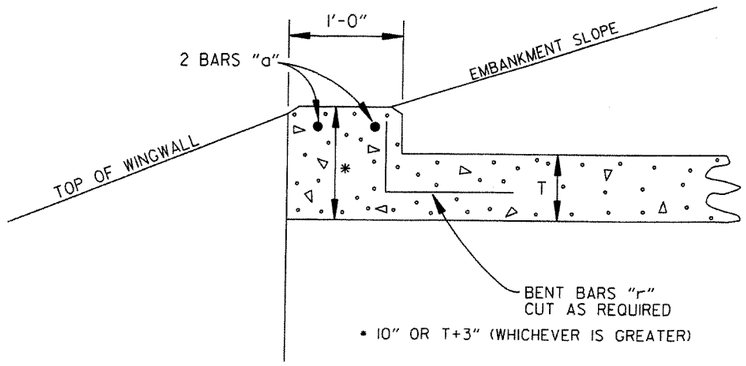
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

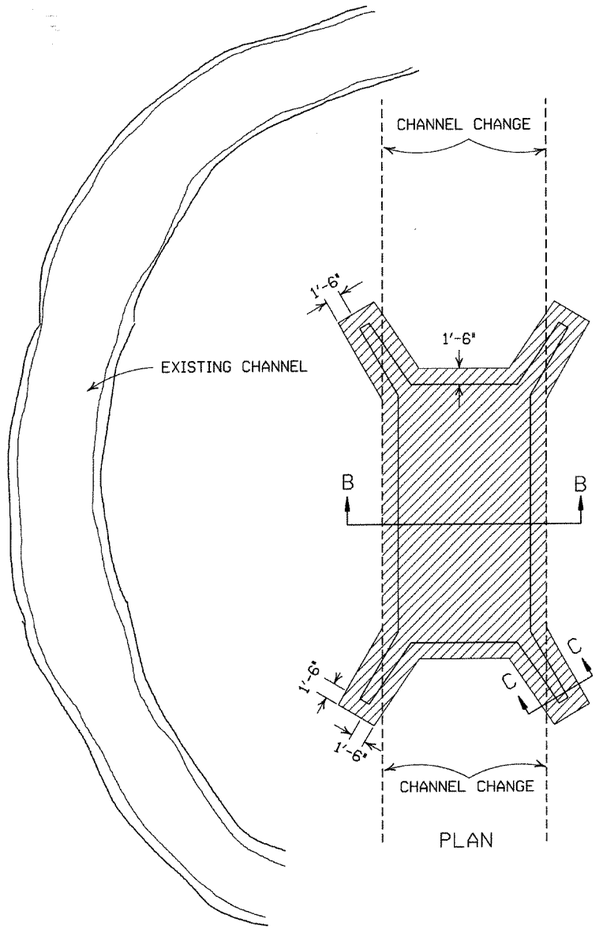
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

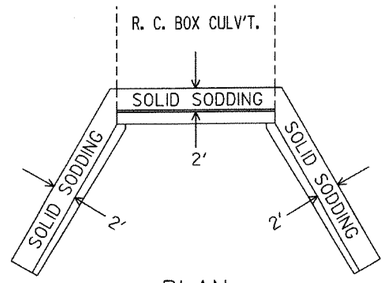
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

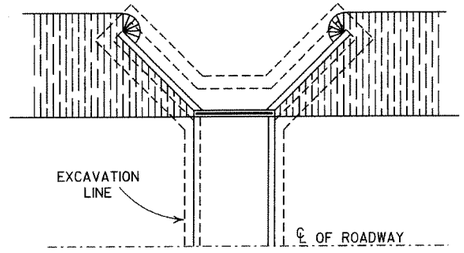
SOLID SODDING



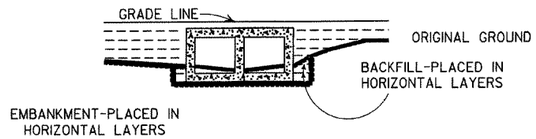
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

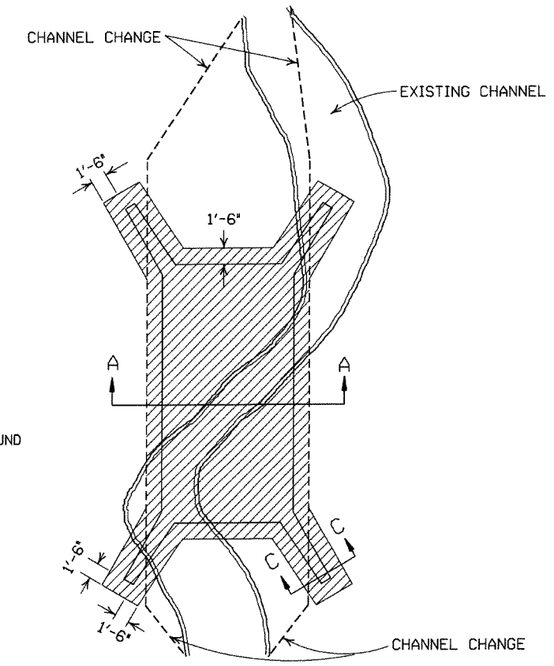


PLAN

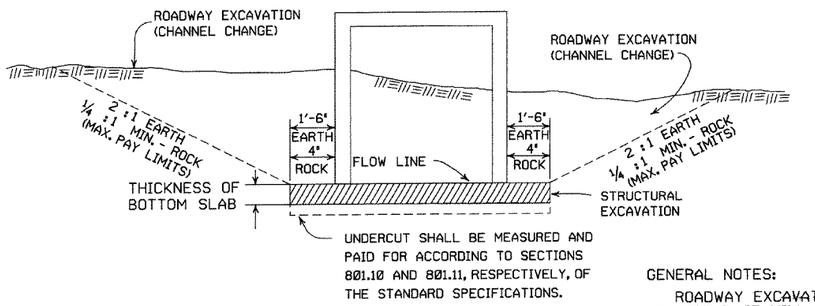


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

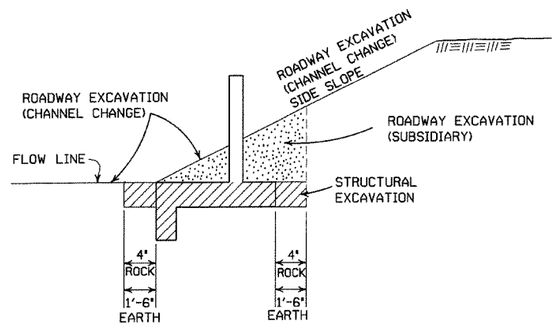


PLAN

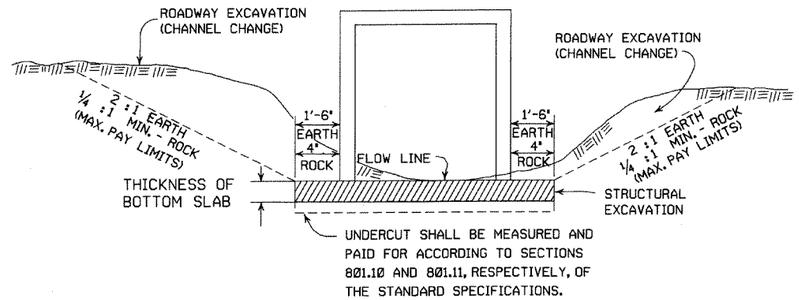


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

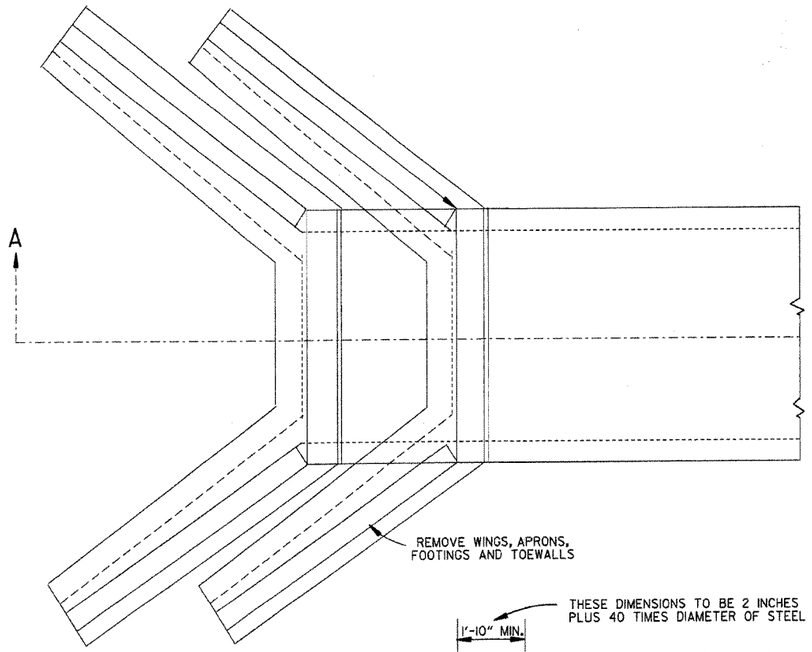
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

ARKANSAS STATE HIGHWAY COMMISSION

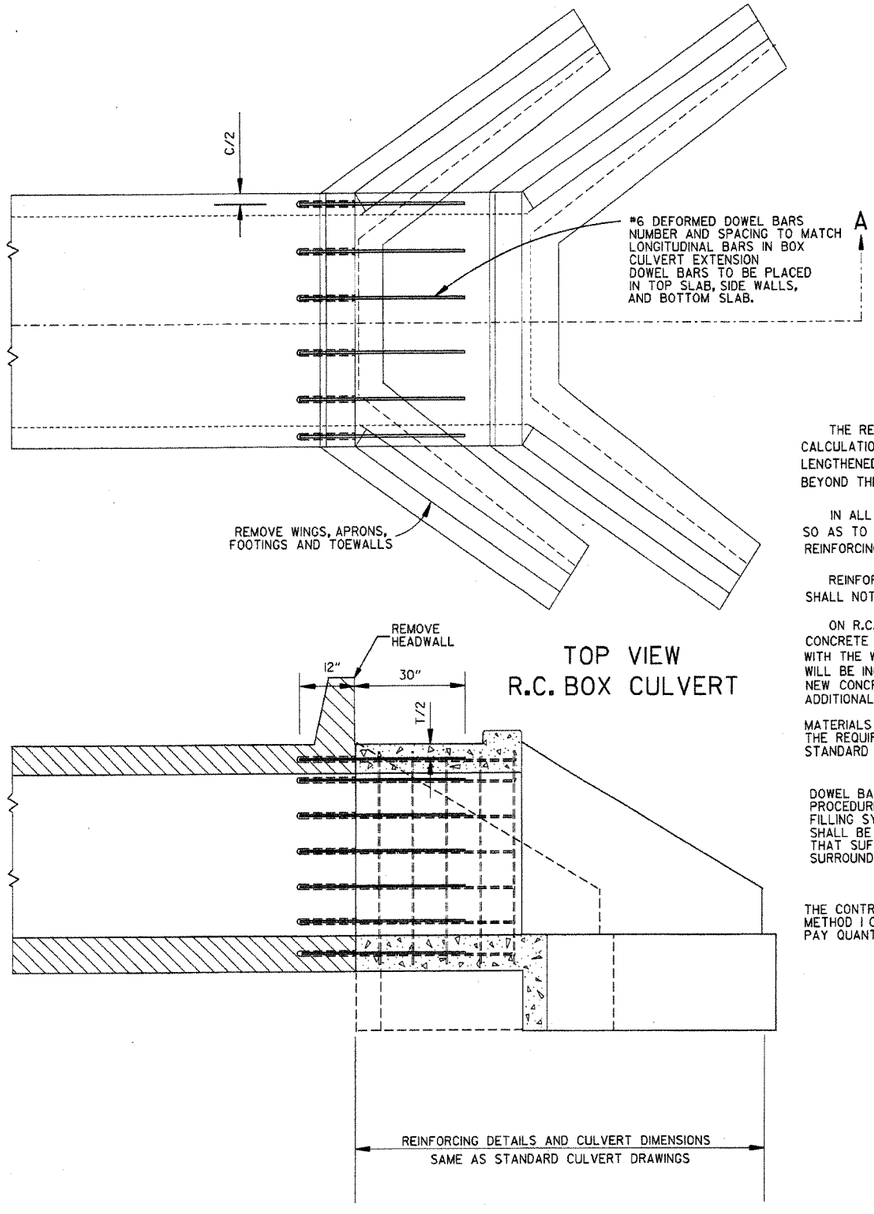
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A
METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A
METHOD 2

GENERAL NOTES

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING
EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

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.			N.C.			N.C.			N.C.			N.C.		
0° 45′	N.C.			N.C.			R.C.			0.022			0.023			0.025			0.028		
1° 00′	N.C.			N.C.			0.021			0.026			0.030			0.033			0.037		
1° 15′	N.C.			R.C.			0.026			0.032			0.037			0.041			0.046		
1° 30′	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.048	250		0.054	275	
1° 45′	N.C.			0.025	175		0.036			0.043			0.049			0.055			0.062		
2° 00′	R.C.			0.028			0.040		300	0.048			0.055			0.062			0.070		
2° 15′	R.C.			0.031			0.045			0.053			0.061			0.069	265		0.078	300	
2° 30′	0.021			0.034			0.049			0.058			0.067			0.075	280		0.085	315	400
2° 45′	0.023			0.037		250	0.053			0.063			0.072			0.081	300		0.091	335	
3° 00′	0.025			0.040			0.057			0.067	230		0.077	260		0.087	315		0.096	350	
3° 15′	0.027	150		0.043			0.061			0.072	245		0.082	275		0.090	325	400	0.098	360	450
3° 30′	0.029			0.046			0.065	205		0.076	255		0.086	285		0.095	340		0.100	360	
3° 45′	0.031		250	0.049			0.069	215		0.080	265		0.090	295		0.097	345				
4° 00′	0.033			0.051			0.072	225		0.083	270		0.093	305	400	0.099	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	400	0.098	320							
5° 30′	0.043			0.066	185		0.088	250		0.094	300										
6° 00′	0.046			0.070	190		0.092	270		0.096	305										
6° 30′	0.050			0.074	200		0.095	280	350	0.100	315										
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′

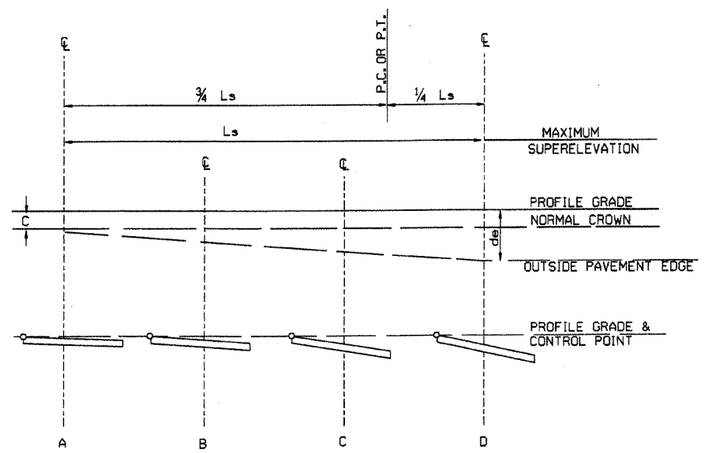
GENERAL NOTES

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%

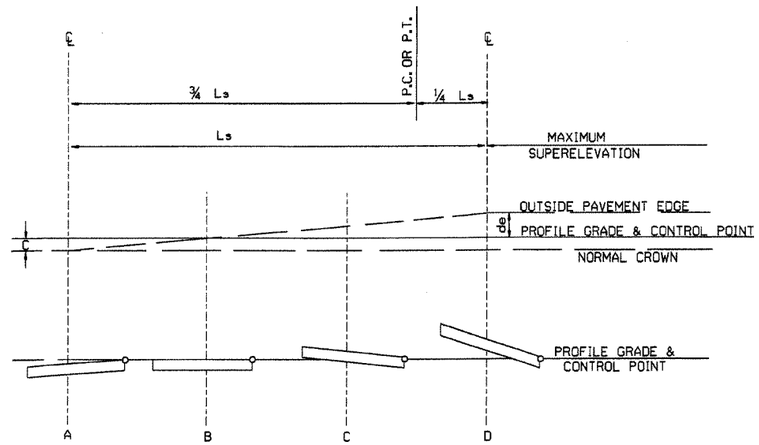
ABBREVIATIONS

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.)



ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$



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

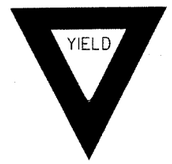
STANDARD DRAWING SE-1

R1-1



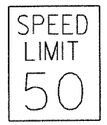
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

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



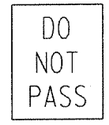
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

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



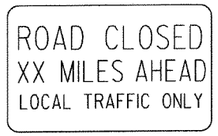
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



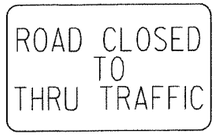
48"X30"

R11-3A



60"X30"

R11-4



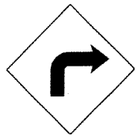
60"X30"

RSP-1



48"X30"

W1-1



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

W1-2



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

W1-3



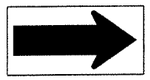
STD. 48"X48"

W1-4



STD. 48"X48"

W1-6



STD. 48"X24"
SPECIAL 60"X30"

W1-8



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

W3-1



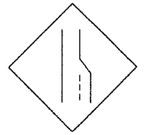
STD. 36"X36"
SPECIAL 48"X48"

W3-2



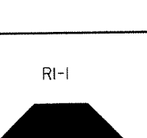
STD. 36"X36"
SPECIAL 48"X48"

W4-2



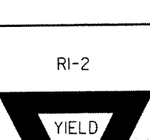
STD. 36"X36"
FWY. 48"X48"

W5-1



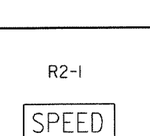
STD. 36"X36"
SPECIAL 48"X48"

W6-3



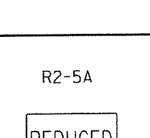
EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



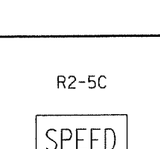
EXPWY. 36"X36"
FWY. 48"X48"

W9-2



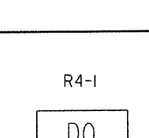
STD. 36"X36"
FWY. 48"X48"

W13-1



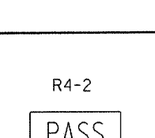
STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3

STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



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

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



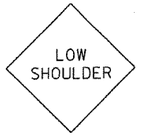
STD. 18"X18"

W8-11



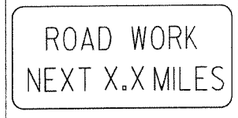
STD. 36"X36"
FWY. 48"X48"

W8-9



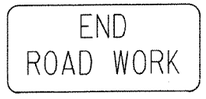
STD. 36"X36"
FWY. 48"X48"

G20-1



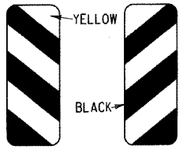
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



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

M4-10



48"X18"

R55-1

FINES DOUBLE
IN WORK ZONES *

WHEN WORKERS
ARE PRESENT **

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.

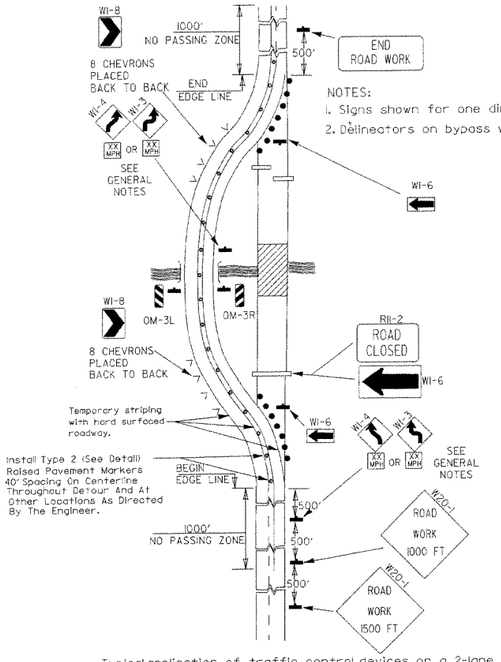
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

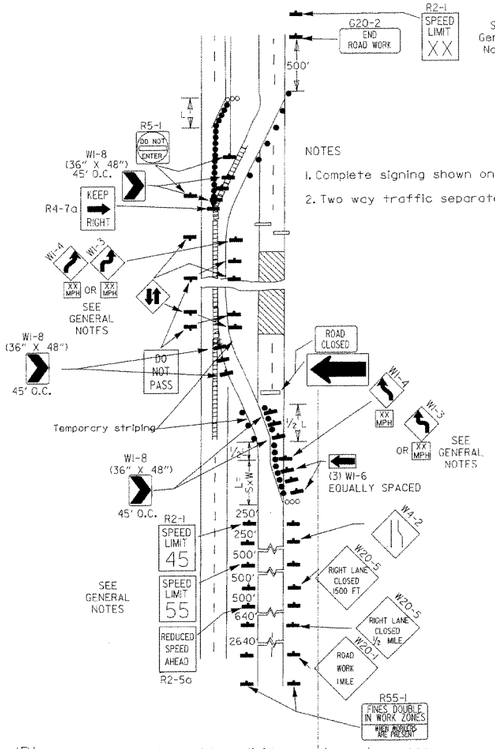
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

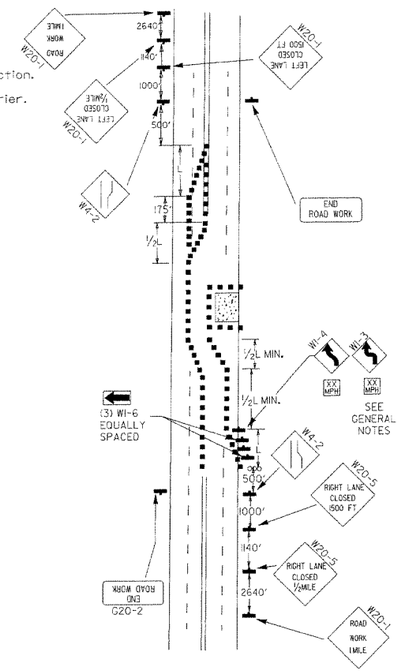
STANDARD DRAWING TC-1



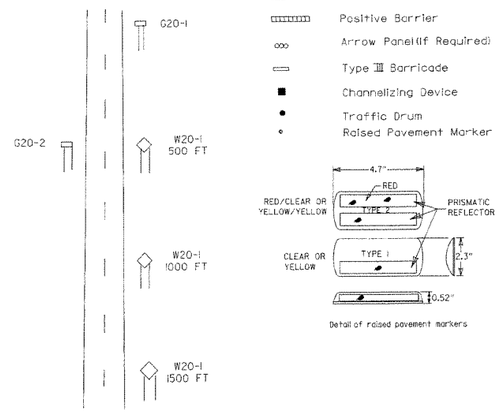
(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.



(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.



Typical advance warning sign placement

KEY:
- Flagger
- Positive Barrier
- Arrow Panel(If Required)
- Type III Barricade
- Channelizing Device
- Traffic Drum
- Raised Pavement Marker

Detail of raised pavement markers

Taper formulae:

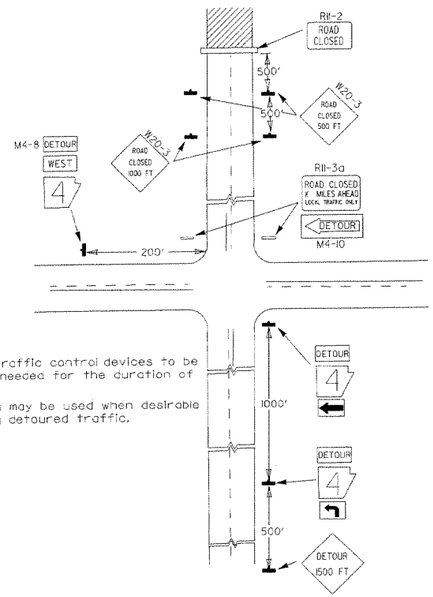
L=SxW for speeds of 45mph or more.

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

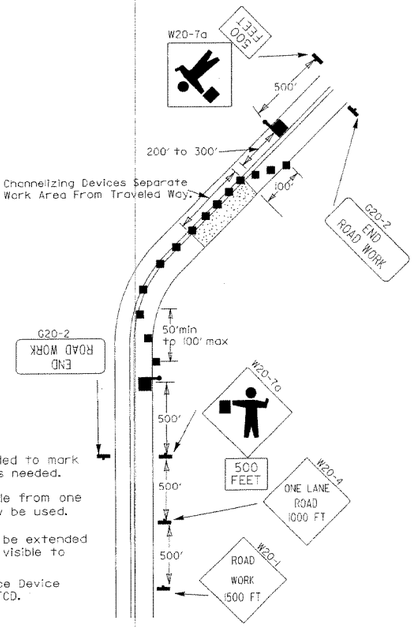
Where:
L= Minimum length of taper.
S= Numerical value of posted speed limit prior to work or 85th percentile speed.
W= Width of offset.

GENERAL NOTES:

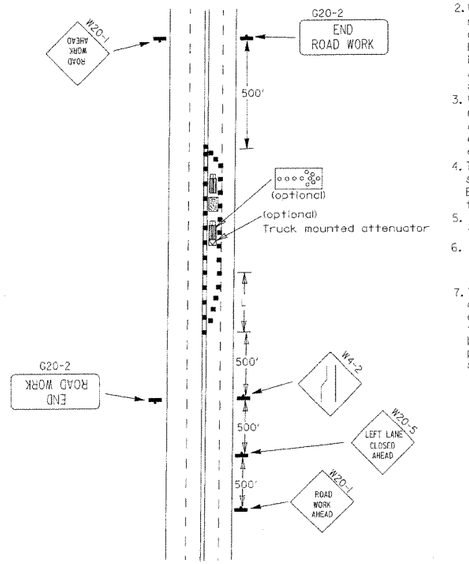
1. Advisory speed posted on W1-3 or W1-4 curve warning signs to be determined at site. Use W1-4 when speed is greater than 30mph and W1-3 when 30mph or less.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed 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.



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



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



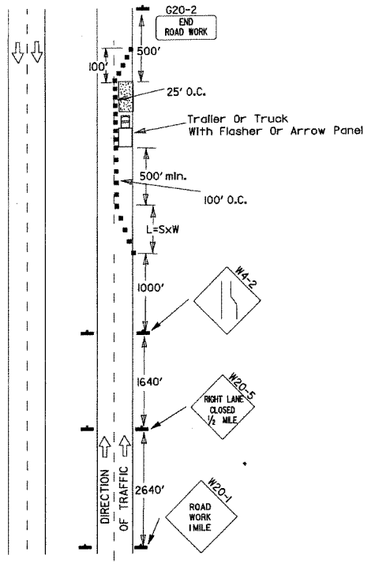
(F) Typical application - 4-lane undivided roadway with inside lane closed.

3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (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	
DATE	REVISION	FILMED

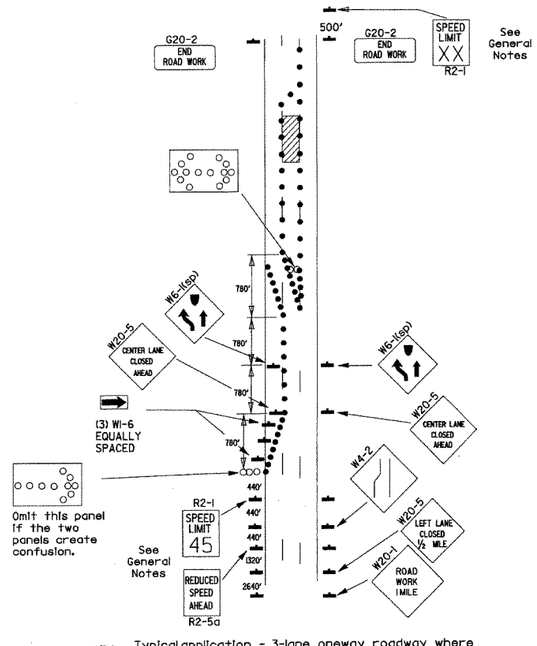
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

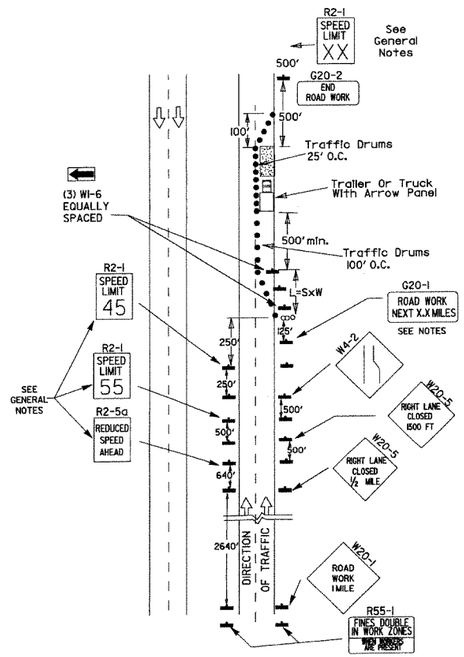
STANDARD DRAWING TC-2



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



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



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

KEY:

○○○ Arrow Panel (If Required)

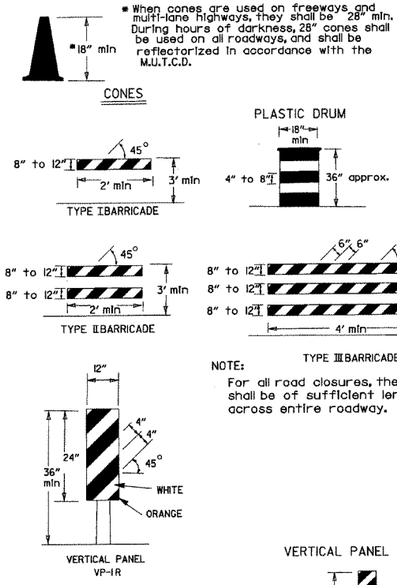
■ Channelizing Device

● 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.

Channelizing devices



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

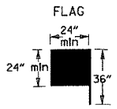
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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

* When shown on the plans concrete barrier will be used.

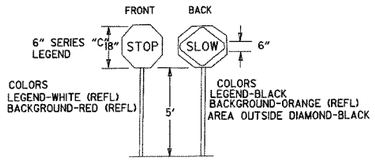
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

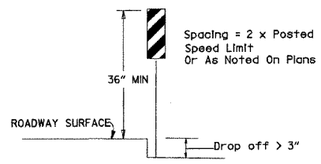


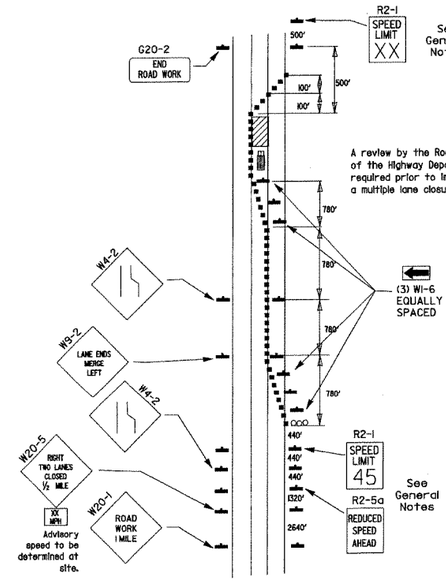
Flag shall be of good grade red material

STOP SLOW PADDLE



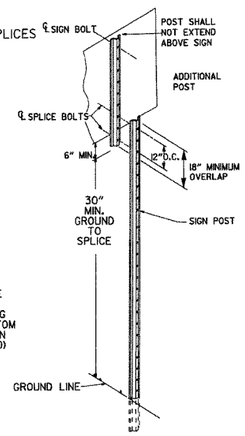
VERTICAL PANEL PLACEMENT





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

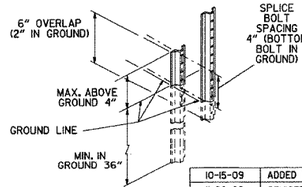
DETAIL OF SPLICES



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	

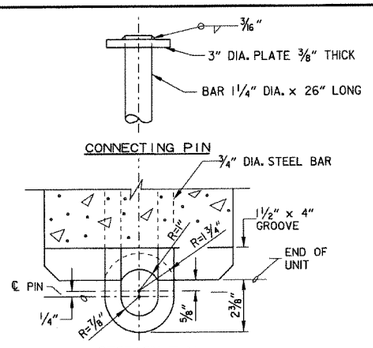
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

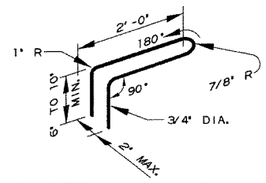
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

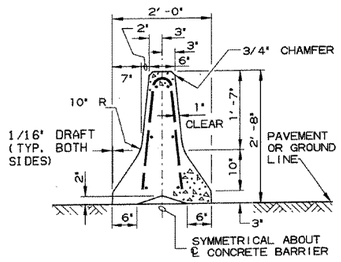
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1" MIN. CLEAR TO BAR, 1'-6", 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 1'-2", 2'-1 3/8", 4 3/8"



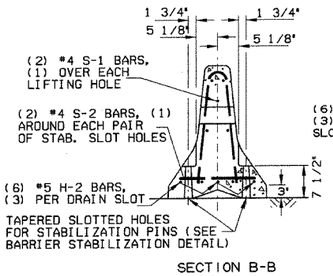
CONNECTION DETAILS



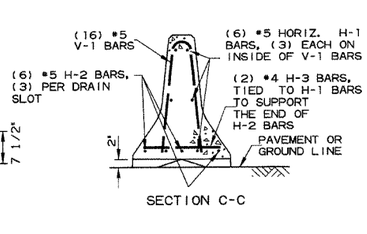
CONNECTION LOOP



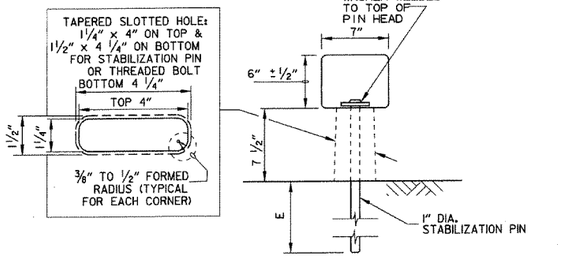
SECTION A-A



SECTION B-B



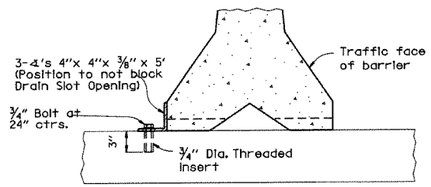
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

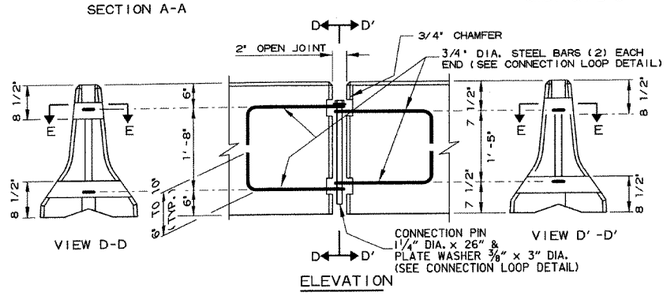
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks 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

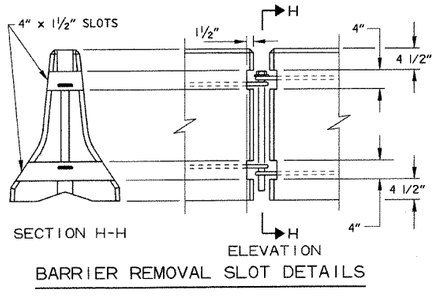
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

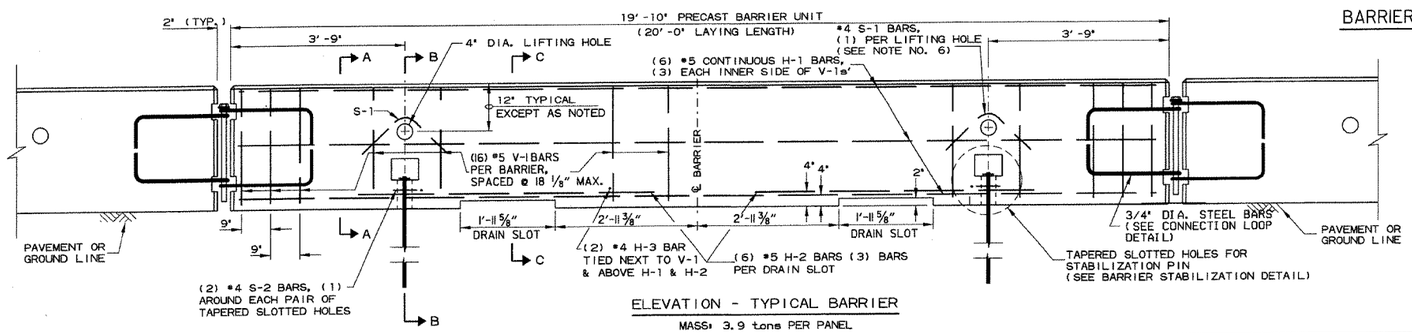
ELEVATION



SECTION H-H

ELEVATION

BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

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

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

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

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

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

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

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

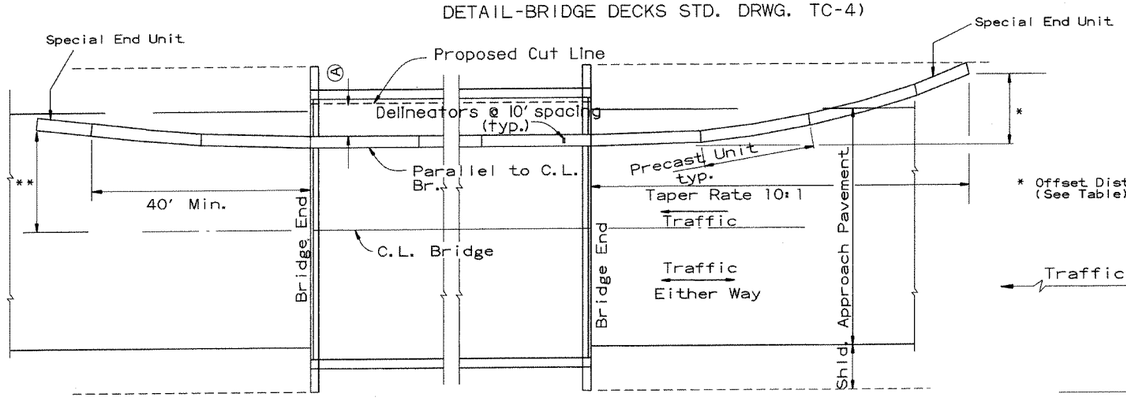
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

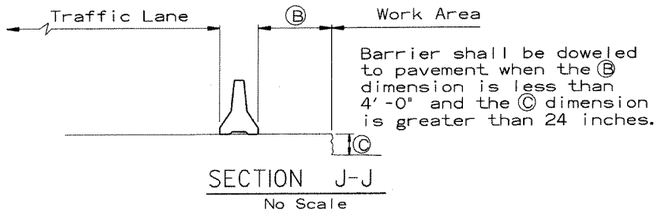
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

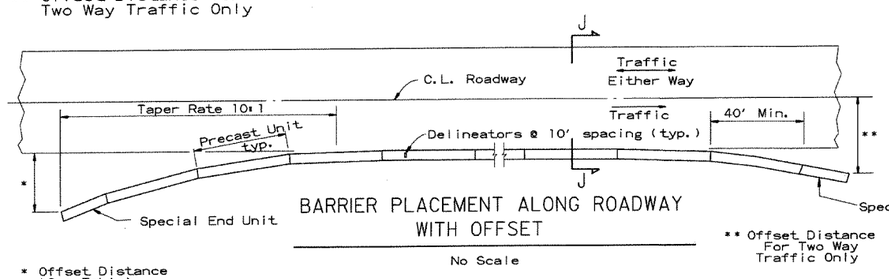


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

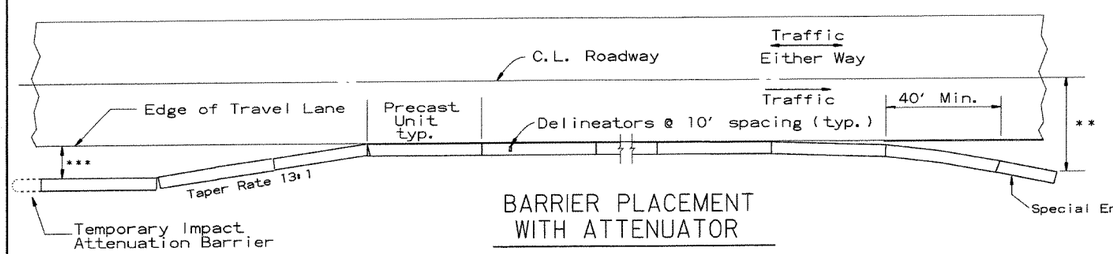
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

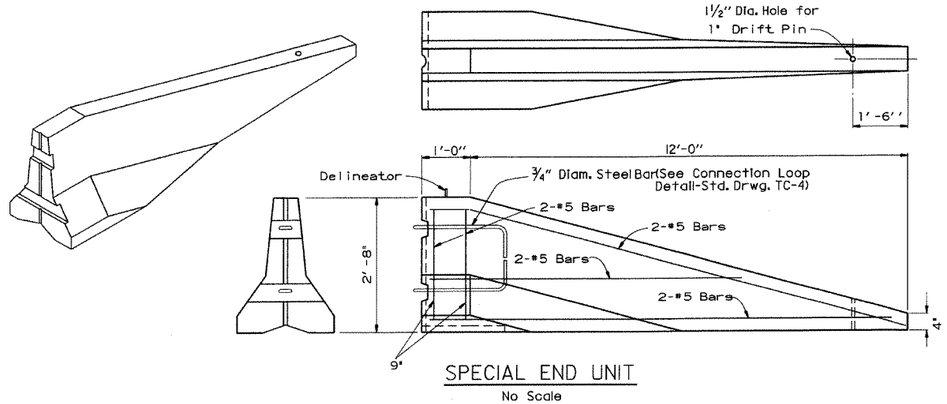


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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



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	

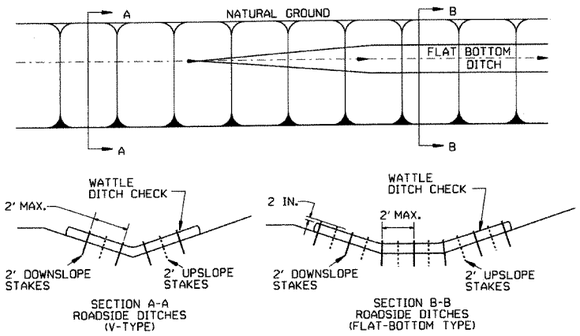
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

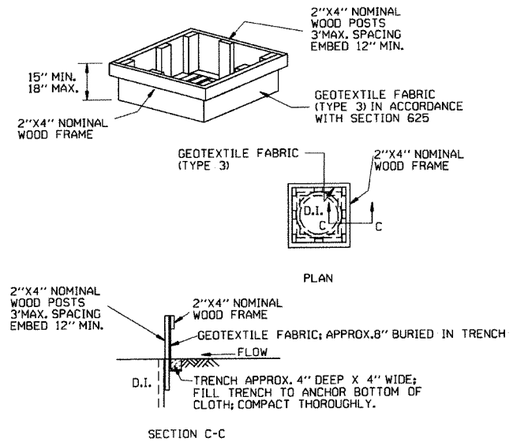
STANDARD DRAWING TC-5

GENERAL NOTES

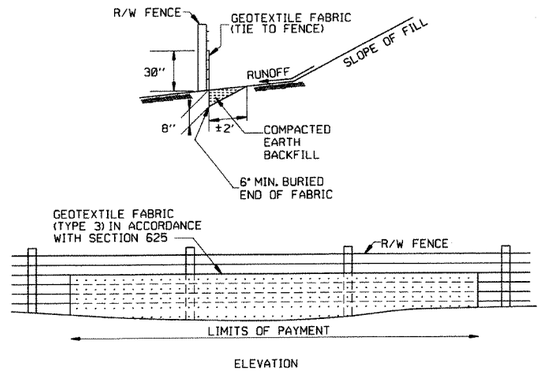
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

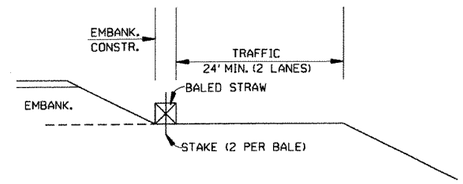
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

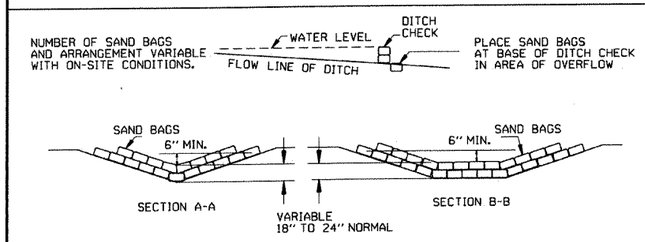
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

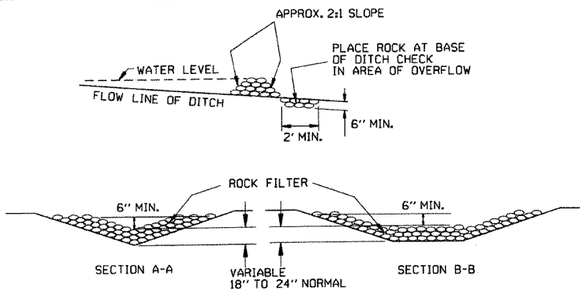
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



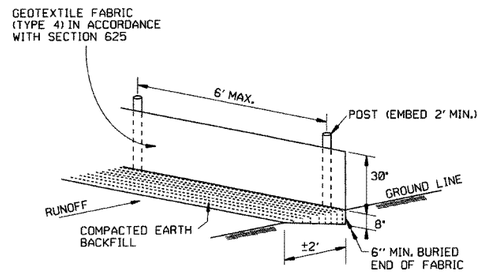
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

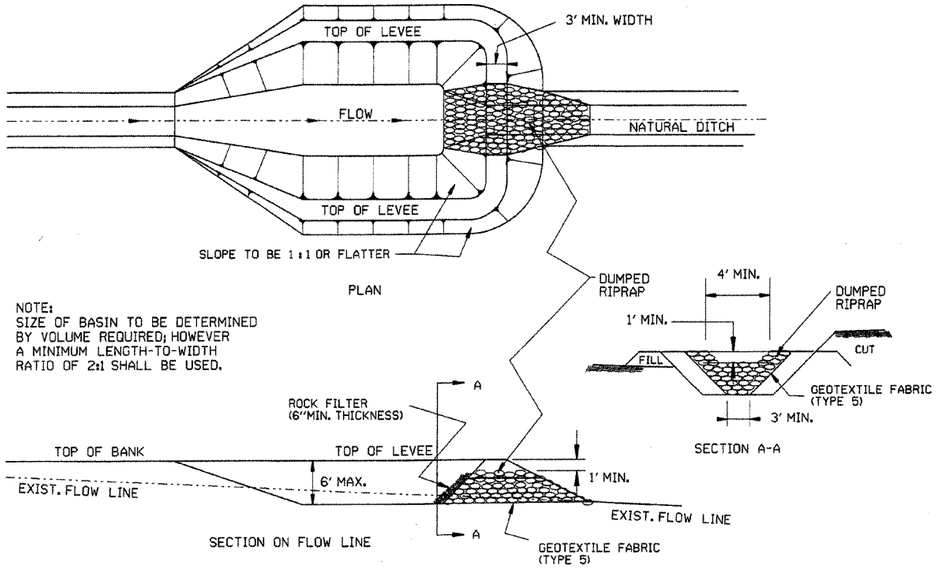
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

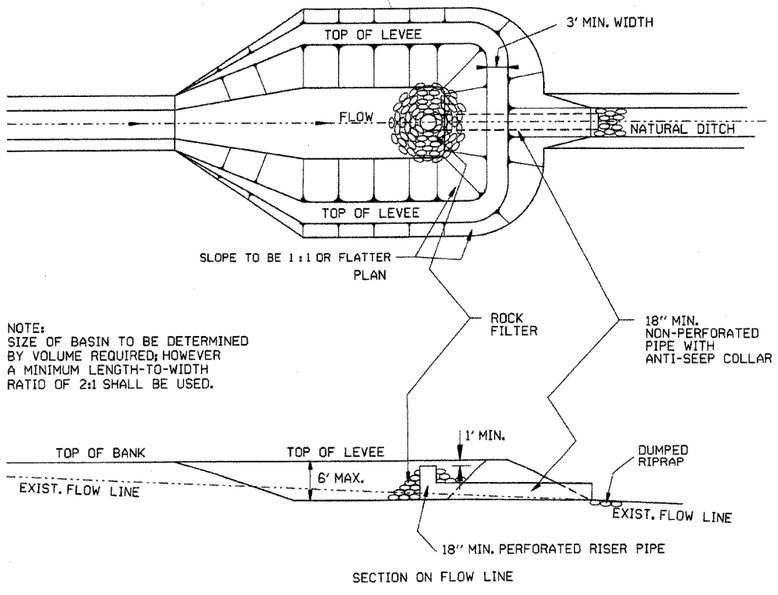
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

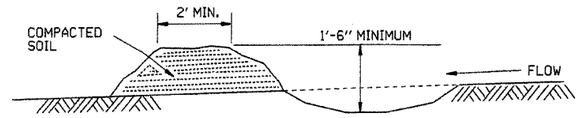
STANDARD DRAWING TEC-1



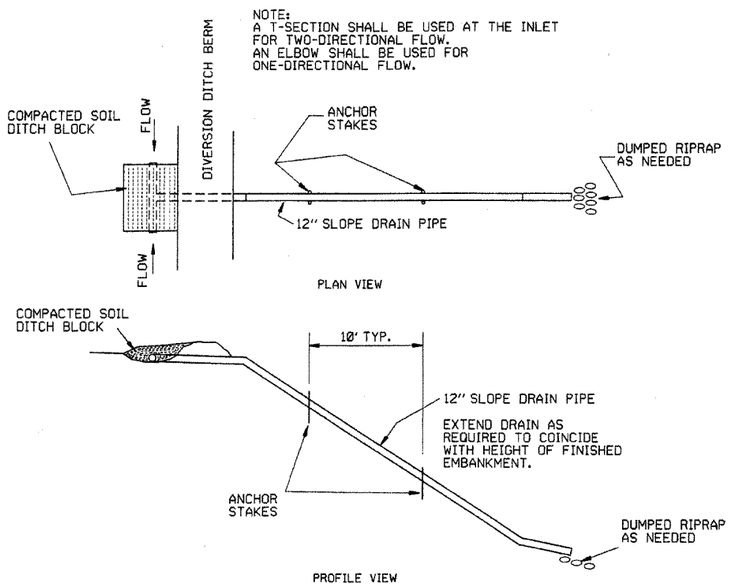
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



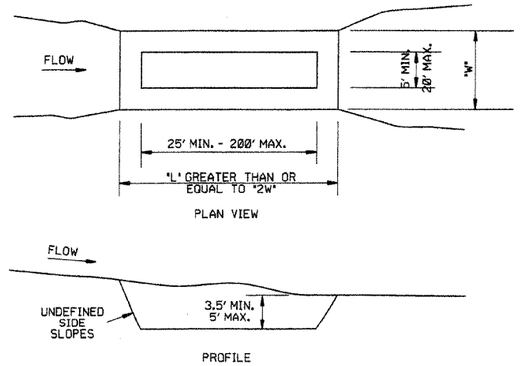
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

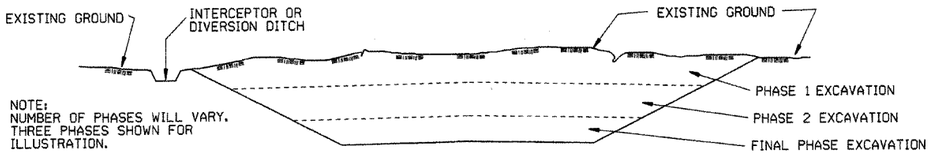
STANDARD DRAWING TEC-2

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



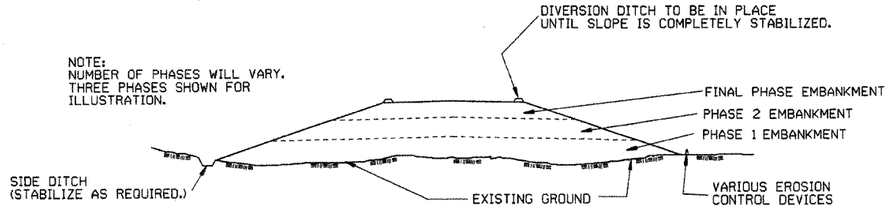
GENERAL NOTE

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

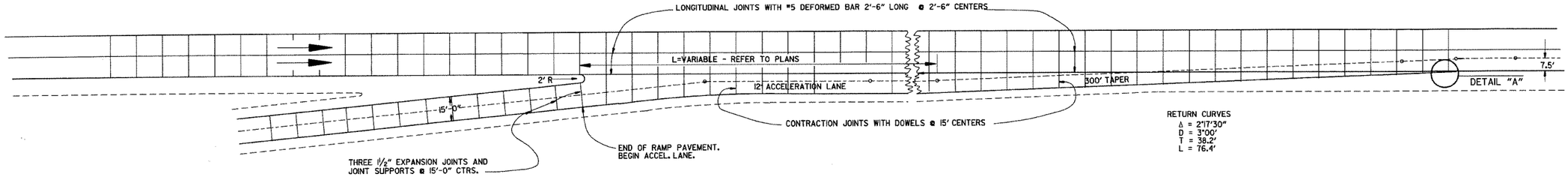
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

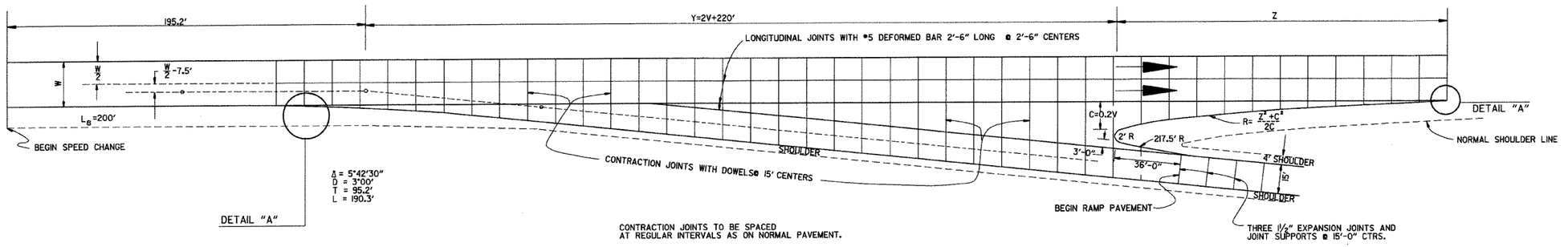
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



ENTRANCE RAMP

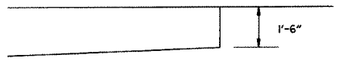
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



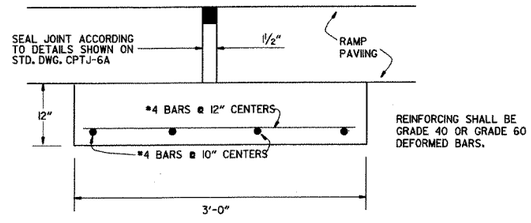
EXIT RAMP

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	687.29
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

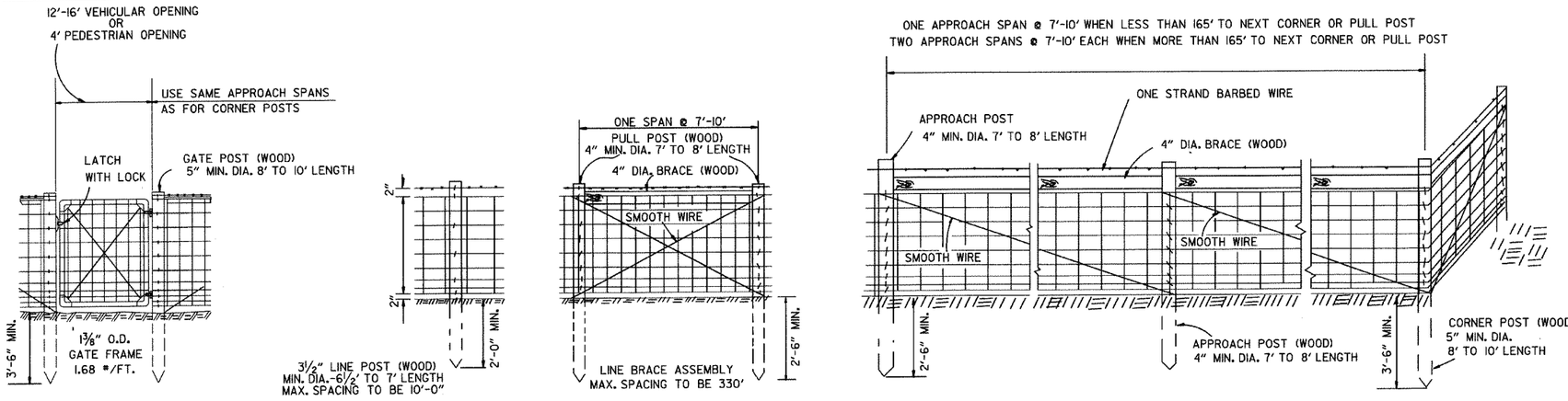
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE 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	CONFORM'D TO 1988 SPECIFICATIONS	65C-7-15-88
3-2-81	ISSUED	511-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

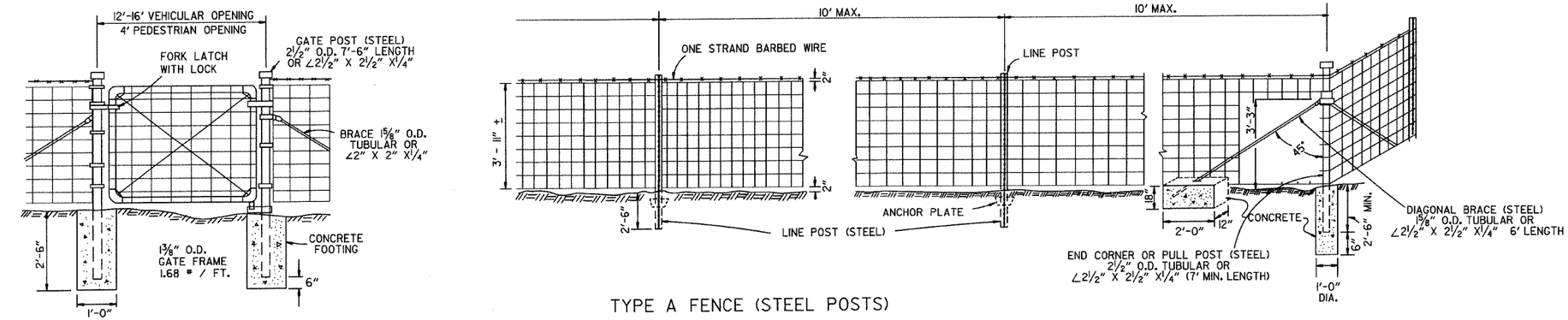
DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A

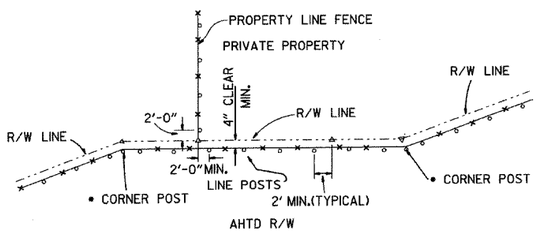


NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)



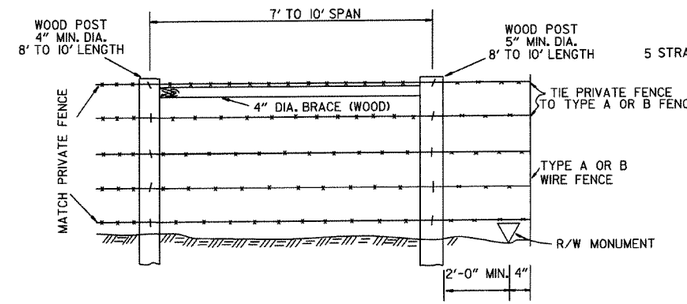
TYPE A FENCE (STEEL POSTS)



•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.

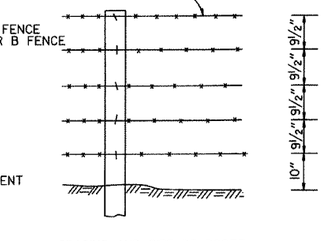
△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



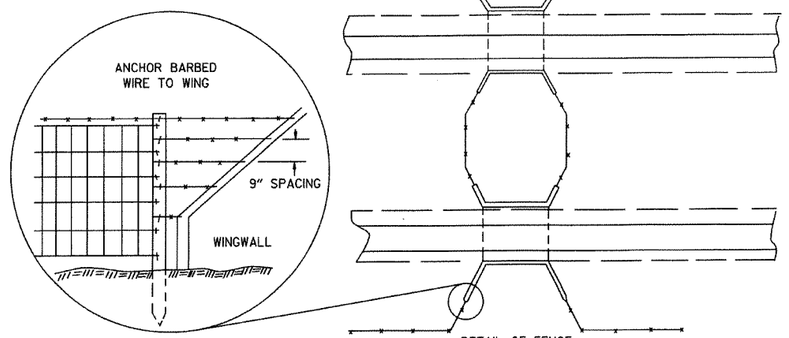
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

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)

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.

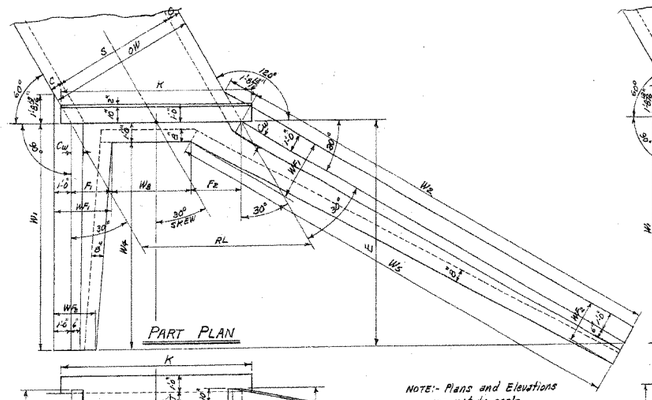
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.	
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

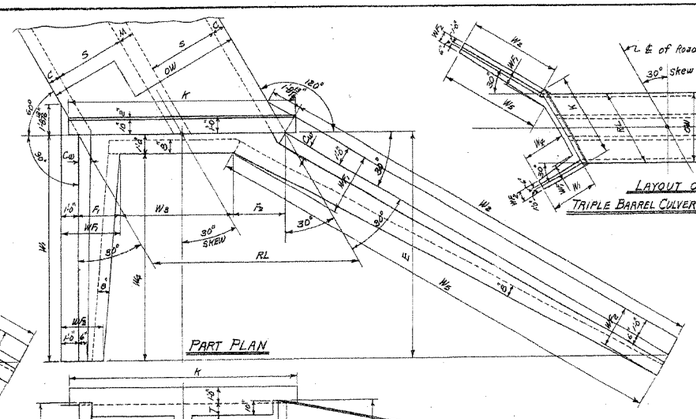
STANDARD DRAWING WF-1

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			182	
JOB No.					



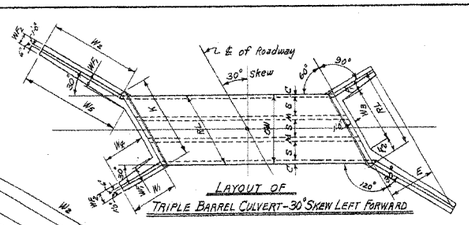
SINGLE BARREL CULVERT-30°SKEW RIGHT FORWARD

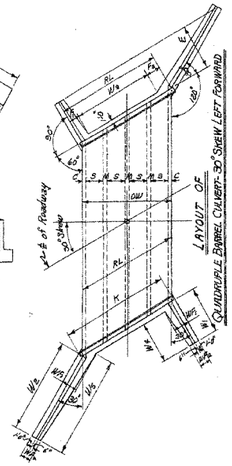
Details of Culvert with 30°Skew Left Forward is reversed, see Layout below.



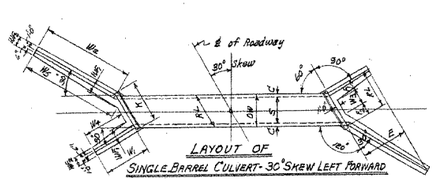
DOUBLE BARREL CULVERT-30°SKEW RIGHT FORWARD

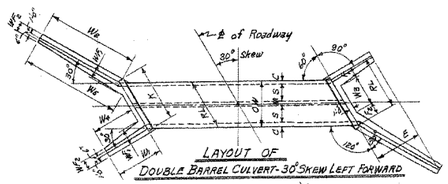
Details of Culvert with 30°Skew Left Forward is reversed, see Layout below.

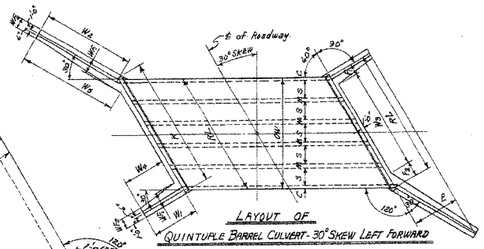


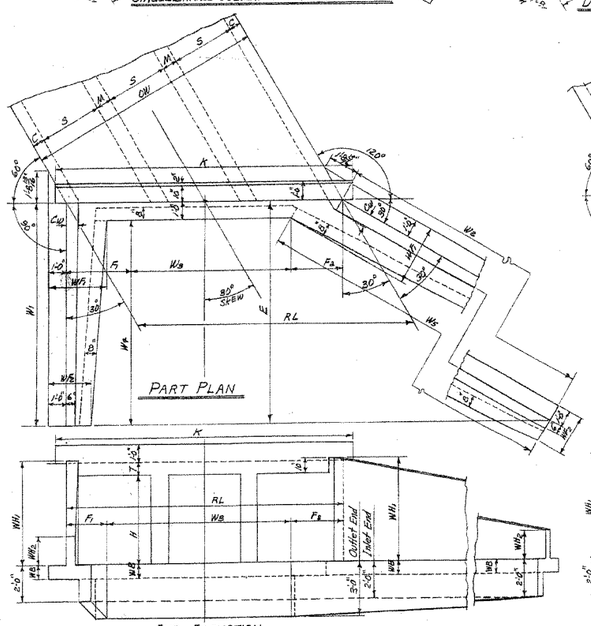


NOTE:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.



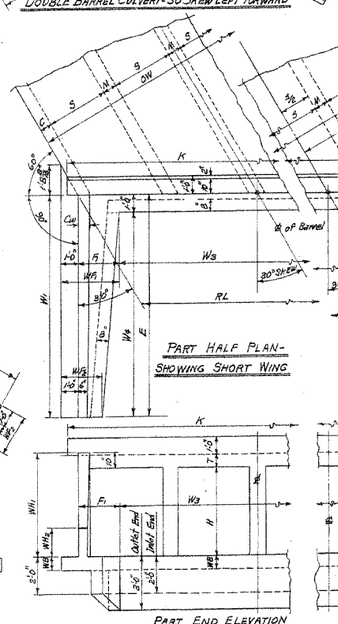






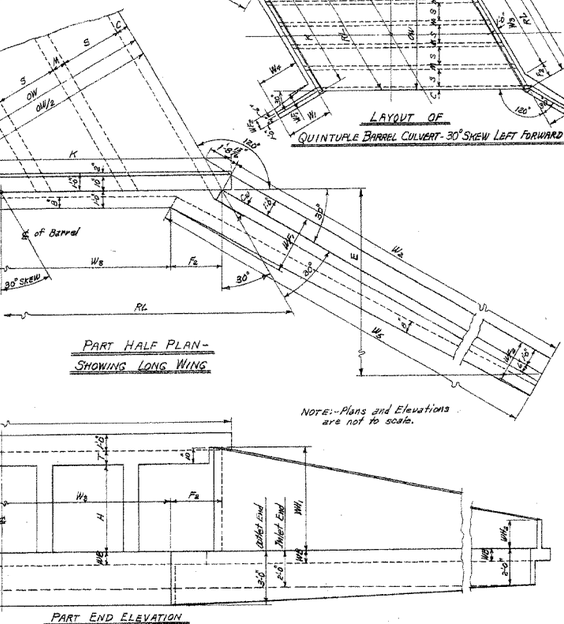
TRIPLE BARREL CULVERT-30°SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Layout at top center of sheet.



QUADRUPLE BARREL CULVERT-30°SKEW RT. FWD.

Details of Culvert with 30° Skew Left Forward is reversed, see Layout at above center.



QUINTUPLE BARREL CULVERT-30°SKEW RT. FWD.

Details of Culvert with 30° Skew Left Forward is reversed, see Layout above.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = OW x 1.1547 — K = RL + (1'-1⅞") — $W_3 = RL - (F_1 + F_2)$

USE WITH DRAWING No.	CLEAR COVER	SUM OF FOOTING DIMENSIONS	SINGLE BARREL CULVERT				DOUBLE BARREL CULVERT				TRIPLE BARREL CULVERT				QUADRUPLE BARREL CULVERT				QUINTUPLE BARREL CULVERT			
	S	H	F_1 & F_2	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3
W-X302-1, W-X303-1 or W-X304-1. (FOR H=8'0" OR LESS)	4"	2'	8'-3½"	5'-0"	5'-0⅝"	6'-1⅛"	3'-6"	9'-8"	11'-2"	12'-3⅜"	8'-10½"	14'-6"	16'-6⅜"	17'-8⅛"	14'-3⅝"	19'-6"	21'-11⅝"	23'-1"	19'-3"	23'-8"	27'-4"	28'-5⅝"	25'-0⅜"
		3'	8'-3½"	5'-0"	"	"	2'-6"	9'-8"	"	"	7'-10⅜"	14'-9"	"	"	13'-3⅝"	19'-0"	"	"	18'-8"	23'-8"	"	"	24'-0⅜"
		4'	9'-3½"	5'-0"	"	"	1'-6"	9'-8"	"	"	6'-10⅜"	14'-9"	"	"	12'-8⅜"	19'-0"	"	"	17'-8"	23'-8"	"	"	23'-0⅜"
		5'	5'-3½"	5'-0"	5'-9⅜"	6'-11⅝"	0'-6"	9'-8"	11'-2"	12'-3⅜"	5'-10⅜"	14'-6"	16'-6⅜"	17'-8⅛"	11'-3⅝"	19'-6"	21'-11⅝"	23'-1"	16'-8"	23'-8"	27'-4"	28'-5⅝"	22'-0⅜"
		6'	6'-3½"	5'-2"	5'-11⅝"	7'-1⅝"	Ⓐ 0"	9'-11"	11'-5¾"	12'-7⅝"	5'-2⅜"	14'-8"	16'-11⅝"	18'-1"	10'-8"	19'-5"	22'-5"	23'-7"	16'-1⅜"	24'-2"	27'-10⅜"	29'-0⅝"	21'-7⅜"
	5"	3'	3'-3½"	6'-0"	6'-11⅛"	8'-1"	3'-7⅜"	11'-8"	13'-5⅝"	14'-7⅛"	10'-2⅝"	17'-4"	20'-0⅛"	21'-2"	16'-9"	23'-0"	26'-6⅜"	27'-8⅝"	23'-3⅝"	28'-8"	33'-1⅛"	34'-3"	29'-10"
		4'	4'-3½"	6'-0"	"	"	2'-7⅜"	11'-8"	"	"	9'-2⅝"	17'-4"	"	"	15'-0"	23'-0"	"	"	22'-3⅝"	28'-8"	"	"	28'-11"
		5'	5'-3½"	6'-0"	6'-11⅛"	8'-1"	1'-7⅜"	11'-8"	13'-5⅝"	14'-7⅛"	8'-2⅝"	17'-4"	20'-0⅛"	21'-2"	14'-3"	23'-0"	26'-6⅜"	27'-8⅝"	21'-3⅝"	28'-8"	33'-1⅛"	34'-3"	27'-11"
		6'	6'-3½"	6'-2"	7'-1⅛"	8'-3⅝"	0'-10⅜"	11'-11"	13'-9⅜"	14'-11"	7'-5⅜"	17'-8"	20'-4⅝"	21'-6⅜"	14'-11⅝"	23'-5"	27'-0⅛"	28'-2⅜"	20'-3⅜"	29'-2"	33'-8½"	34'-10"	27'-5"
		7'	7'-3½"	6'-3"	7'-2⅝"	8'-4⅝"	Ⓐ 0"	12'-1"	13'-11⅝"	15'-1⅛"	6'-2⅝"	17'-11"	20'-8⅛"	21'-10"	18'-11"	23'-9"	27'-5⅛"	28'-7"	19'-2"	29'-7"	34'-2"	35'-3⅜"	26'-9⅜"
	6"	3'	3'-3½"	7'-0"	8'-1"	9'-2⅛"	4'-9⅜"	13'-8"	15'-9⅜"	16'-11⅛"	12'-6⅜"	20'-4"	23'-5⅛"	24'-7⅛"	20'-2"	27'-0"	31'-2⅛"	32'-4"	27'-1"	33'-8"	38'-11⅝"	40'-0⅛"	35'-2⅝"
		4'	4'-3½"	7'-0"	"	"	3'-9⅜"	13'-8"	"	"	11'-4⅝"	20'-4"	"	"	19'-2⅜"	27'-0"	"	"	26'-1"	33'-8"	"	"	34'-7½"
		5'	5'-3½"	7'-0"	8'-1"	9'-2⅛"	2'-9⅜"	13'-8"	15'-9⅜"	16'-11⅛"	10'-4⅝"	20'-4"	23'-5⅛"	24'-7⅛"	18'-3⅜"	27'-0"	31'-2⅛"	32'-4"	25'-1"	33'-8"	38'-11⅝"	40'-0⅛"	33'-7⅛"
		6'	6'-3½"	7'-2"	8'-3⅝"	9'-5⅜"	2'-0"	13'-11"	16'-1⅝"	17'-2⅜"	9'-9⅝"	20'-8"	23'-10⅜"	25'-0⅛"	17'-2⅝"	27'-5"	31'-7⅜"	32'-9⅝"	25'-0⅛"	34'-2"	39'-5⅝"	40'-7⅛"	33'-1½"
		7'	7'-3½"	7'-3"	8'-4⅝"	9'-6⅜"	0'-7⅛"	14'-1"	16'-3⅜"	17'-5"	8'-6"	20'-11"	24'-1⅛"	25'-3⅜"	16'-4⅜"	27'-7"	32'-0⅛"	33'-2⅜"	24'-3⅜"	34'-7"	39'-11"	41'-1"	32'-2"
		8'	9'-3½"	7'-4"	8'-5⅝"	9'-7½"	Ⓐ 0"	14'-2"	16'-5⅝"	17'-6⅝"	7'-1"	21'-0"	24'-3"	25'-5"	15'-5⅝"	27'-10"	32'-3⅛"	33'-5⅜"	22'-10⅝"	34'-10"	40'-2⅜"	41'-4⅝"	30'-3⅝"
	7"	4'	4'-3½"	8'-0"	9'-2⅛"	10'-4⅝"	4'-11⅜"	15'-8"	18'-1⅛"	19'-3"	13'-0⅜"	23'-4"	26'-11⅜"	28'-1⅝"	22'-1"	31'-0"	35'-9½"	36'-11⅝"	31'-1⅝"	38'-6"	44'-0⅜"	45'-3⅝"	40'-0⅝"
		5'	5'-3½"	8'-0"	9'-2⅛"	10'-4⅝"	3'-11⅜"	15'-8"	18'-1⅛"	19'-3"	12'-3⅜"	23'-4"	26'-11⅜"	28'-1⅝"	21'-8"	31'-0"	35'-9½"	36'-11⅝"	30'-6⅜"	38'-6"	44'-0⅜"	45'-3⅝"	39'-4½"
		6'	6'-3½"	8'-2"	9'-3⅝"	10'-5⅝"	3'-1⅜"	15'-11"	18'-3⅝"	19'-5⅝"	11'-7⅛"	23'-8"	27'-1⅝"	28'-3⅝"	21'-3⅝"	31'-5"	36'-1⅜"	37'-3⅝"	29'-11⅝"	38'-10½"	44'-6⅝"	45'-9⅜"	39'-0⅛"
		7'	7'-3½"	8'-3"	9'-4⅝"	10'-6⅜"	1'-9"	16'-1"	18'-5⅝"	19'-8"	10'-9⅜"	23'-11"	27'-3⅜"	28'-5⅝"	20'-11"	31'-8"	36'-3⅝"	37'-6"	29'-5"	39'-2"	44'-10⅜"	46'-1⅝"	38'-11⅜"
		8'	9'-3½"	8'-4"	9'-5⅞"	10'-7⅝"	0'-7½"	16'-2"	18'-6"	19'-8"	9'-8½"	24'-0"	27'-5½"	28'-8"	18'-5⅝"	31'-10"	36'-5⅜"	37'-7⅝"	27'-6"	39'-6"	45'-2⅜"	46'-5⅝"	38'-6½"
	8"	4'	4'-3½"	9'-0"	10'-2⅝"	11'-6½"	6'-1⅛"	17'-6"	20'-0⅝"	21'-2⅝"	16'-1⅝"	26'-0"	30'-0⅝"	31'-6⅝"	26'-1⅜"	35'-0"	40'-0⅝"	41'-3⅛"	36'-1⅜"	43'-8"	50'-0⅝"	51'-3"	44'-1⅜"
		5'	5'-3½"	9'-0"	10'-2⅝"	11'-6½"	5'-1⅜"	17'-11"	20'-1⅝"	21'-3⅝"	15'-1⅝"	26'-2"	30'-3⅛"	31'-11⅜"	25'-6⅝"	35'-5"	40'-10⅝"	42'-0⅛"	35'-7½"	44'-2"	51'-0"	52'-1⅝"	45'-1⅜"
		6'	6'-3½"	9'-2"	10'-3⅞"	11'-8⅝"	4'-3⅜"	17'-11"	20'-1⅝"	21'-3⅝"	14'-5"	26'-2"	30'-3⅛"	31'-11⅜"	24'-6⅝"	35'-5"	40'-10⅝"	42'-0⅛"	34'-7½"	44'-2"	51'-0"	52'-1⅝"	44'-1⅜"
		7'	7'-3½"	9'-3"	10'-4⅝"	11'-10⅜"	2'-11"	18'-1"	20'-3⅝"	22'-0⅛"	13'-1⅛"	26'-11"	31'-1"	32'-2⅝"	23'-3⅝"	35'-8"	41'-3⅝"	42'-5⅝"	33'-6⅛"	44'-7"	51'-5⅝"	52'-7½"	43'-3⅝"
		8'	9'-3½"	9'-4"	10'-5⅝"	11'-11⅝"	1'-6⅝"	18'-2"	20'-4⅛"	22'-1⅛"	11'-8⅝"	27'-0"	31'-2⅝"	32'-4"	21'-11"	35'-10"	41'-5⅝"	42'-8⅛"	32'-1⅝"	44'-8"	51'-7"	52'-8⅝"	42'-3⅜"
	9"	5'	5'-3½"	10'-2"	11'-8½"	13'-0⅝"	6'-5⅜"	19'-11"	23'-0"	24'-2⅝"	17'-8⅝"	29'-8"	34'-3⅜"	35'-5"	28'-1⅝"	39'-5"	45'-6⅜"	46'-8"	40'-3"	49'-2"	56'-9⅜"	57'-11⅝"	51'-6"
		6'	6'-3½"	10'-3"	11'-9⅝"	13'-1⅝"	5'-6⅝"	20'-1"	23'-2⅛"	24'-4⅝"	16'-11"	29'-11"	34'-6⅝"	35'-8⅝"	26'-9⅝"	39'-9"	45'-10⅝"	47'-0⅛"	38'-5⅛"	49'-7"	57'-3"	58'-5"	50'-11⅜"
		7'	7'-3½"	10'-3"	11'-10"	13'-2"	4'-10⅜"	20'-1"	23'-2⅝"	24'-4⅝"	15'-5"	29'-11"	34'-6⅝"	35'-8⅝"	25'-4⅜"	39'-9"	45'-10⅝"	47'-0⅛"	36'-1⅝"	49'-7"	57'-3"	58'-5"	49'-5⅜"
		8'	9'-3½"	10'-4"	11'-10⅝"	13'-2⅝"	4'-0⅜"	20'-2"	23'-3⅛"	24'-5⅛"	14'-0⅝"	30'-0"	34'-7⅜"	35'-9⅜"	25'-4⅜"	39'-10"	46'-0"	47'-1⅛"	36'-3⅝"	49'-8"	57'-4"	58'-6"	49'-6"
	10"	5'	5'-3½"	11'-2"	12'-10⅜"	14'-3⅛"	7'-0⅜"	21'-10"	25'-3⅜"	26'-5⅝"	20'-0⅛"	32'-6"	37'-5⅜"	38'-10⅝"	32'-5⅛"	43'-5"	50'-1⅜"	51'-3⅝"	44'-10⅛"	54'-2"	62'-6⅛"	63'-10⅝"	57'-3½"
		6'	6'-3½"	11'-3"	12'-11⅜"	14'-3⅞"	6'-8⅜"	22'-1"	25'-4"	26'-7⅜"	19'-2⅜"	32'-11"	38'-0⅛"	39'-3"	32'-2"	43'-9"	50'-6⅛"	51'-8"	44'-3"	54'-7"	63'-0⅛"	64'-2⅝"	56'-9"
		7'	7'-3½"	11'-3"	12'-11⅝"	14'-3⅞"	5'-11⅜"	22'-1"	25'-4"	26'-7⅜"	17'-10⅜"	32'-11"	38'-0⅛"	39'-3"	30'-3"	43'-9"	50'-6⅛"	51'-8"	42'-9"	54'-7"	63'-0⅛"	64'-2⅝"	55'-8"
		8'	9'-3½"	11'-4"	12'-1"	13'-3"	3'-9⅜"	22'-2"	25'-5⅛"	26'-8"	16'-4"	33'-0"	38'-1⅛"	39'-3"	28'-10"	43'-10"	50'-7⅛"	51'-9⅝"	41'-4⅝"	54'-8"	63'-1⅛"	64'-3⅝"	53'-10⅛"
	11"	6'	6'-3½"	12'-4"	14'-2⅝"	15'-6⅛"	7'-11⅝"	24'-2"	27'-10⅜"	29'-0⅝"	21'-7⅜"	36'-0"	41'-6⅜"	42'-8⅝"	35'-3⅝"	47'-10"	55'-2⅜"	56'-4⅝"	49'-0⅛"	—	—	—	—
		7'	7'-3½"	12'-5"	"	"	6'-5⅝"	24'-3"	"	"	20'-1⅝"	36'-0"	"	"	33'-9½"	47'-10"	"	"	47'-2⅝"	—	—	—	—
		8'	9'-3½"	12'-6"	"	"	4'-11⅝"	24'-3"	"	"	18'-7⅜"	36'-0"	"	"	32'-3⅜"	47'-10"	"	"	45'-8⅝"	—	—	—	—
	12"	6'	6'-3½"	13'-4"	15'-4⅝"	16'-10⅛"	9'-1⅞"	26'-4"	30'-2⅝"	31'-6⅝"	23'-1⅜"	39'-1"	44'-5⅜"	46'-2⅝"	38'-9⅝"	51'-10"	59'-1⅝"	61'-0"	53'-7"	—	—	—	—
		7'	7'-3½"	13'-5"	"	"	7'-7⅝"	26'-5"	"	"	22'-5⅛"	39'-1"	"	"	37'-3⅜"	51'-10"	"	"	52'-1⅜"	—	—	—	—
		8'	9'-3½"	13'-6"	"	"	6'-1⅞"	26'-6"	"	"	20'-11⅛"	39'-1"	"	"	35'-9⅜"	51'-10"	"	"	50'-7"	—	—	—	—
W-X302-2, W-X303-2 OR W-X304-2 (FOR H=9'0" & OVER)	7"	9'	10'-9⅜"	8'-6"	9'-9⅜"	10'-11⅜"	Ⓐ 0"	16'-5"	18'-11⅛"	20'-1⅛"	6'-2⅜"	28'-6"	28'-1⅞"	29'-3"	12'-9"	32'-3"	37'-2⅜"	38'-5⅛"	26'-5⅜"	40'-2"	46'-8⅜"	47'-11⅝"	35'-7⅛"
	8"	9'	10'-9⅜"	9'-6"	10'-11⅝"	12'-1½"	0'-2⅜"	18'-5"	21'-3½"	22'-5"	10'-6"	27'-9"	31'-11⅝"	32'-8⅝"	20'-3½"	34'-3"	41'-10⅝"	43'-0⅛"	31'-1"	45'-2"	52'-1⅝"	53'-3⅝"	41'-9⅝"
		10'	12'-3⅜"	9'-8"	11'-2"	12'-3⅝"	Ⓐ 0"	18'-8"	21'-6⅝"	22'-8⅝"	9'-3⅜"	27'-8"	31'-11⅝"	33'-1⅛"	19'-6⅜"	34'-6"	42'-1⅝"	43'-4"	30'-0⅜"	45'-5"	52'-6⅝"	53'-10⅝"	40'-5½"
	9"	9'	10'-9⅜"	10'-6"	12'-1½"	13'-3⅜"	1'-4⅝"	20'-5"	23'-6⅜"	24'-8⅜"	12'-9⅜"	30'-9"	35'-4⅜"	36'-6⅜"	23'-1⅜"	40'-3"	46'-11⅜"	48'-2⅝"	35'-8⅜"	50'-8"	57'-11⅝"	59'-1"	47'-2"
		10'	12'-3⅜"	10'-8"	12'-3⅜"	13'-5⅜"	0'-0⅝"	20'-8"	23'-10⅜"	25'-0⅝"	11'-7⅜"	30'-11"	35'-6⅜"	36'-9"	21'-10"	40'-6"	47'-1⅜"	48'-3⅝"	34'-10⅜"	50'-8"	58'-1⅜"	59'-3"	46'-2⅜"
		11'	13'-3⅜"	10'-10"	12'-6⅝"	13'-8"	Ⓐ 0"	20'-10"	24'-0⅛"	25'-2⅝"	10'-3⅝"	30'-10"	35'-7⅜"	36'-9"	21'-10"	40'-6"	47'-1⅜"	48'-3⅝"	33'-9⅝"	50'-10"	58'-3⅜"	59'-10⅝"	44'-11⅝"
	10"	9'	10'-9⅜"	11'-6"	13'-1⅝"	14'-5⅜"	2'-6⅜"	22'-5"	25'-10⅜"	27'-0⅛"	15'-3⅜"	33'-4"	38'-5⅝"	39'-8⅜"	27'-3⅜"	44'-3"	51'-1⅛"	52'-3"	40'-1"	55'-2"	63'-8⅛"	64'-10⅝"	52'-11⅛"
		10'	12'-3⅜"	11'-8"	13'-5⅝"	14'-7⅞"	1'-2⅜"	22'-9"	26'-2⅛"	27'-4"	13'-10⅜"	33'-10"	39'-0⅝"	40'-2⅝"	25'-5⅜"	44'-10"	51'-9⅝"	52'-11"	38'-0"	55'-10"	64'-5⅝"	65'-7½"	50'-8½"
		11'	13'-3⅜"	11'-10"	13'-8"	14'-10⅜"	Ⓐ 0"	22'-10"	26'-3⅛"	27'-6"	12'-10⅜"	33'-10"	39'-0⅝"	40'-2⅝"	25'-5⅜"	44'-10"	51'-9⅝"	52'-11"	36'-0"	55'-10"	64'-5⅝"	65'-7½"	50'-8½"
		12'	15'-3⅜"	12'-0"	13'-10⅝"	15'-0⅛"	Ⓐ 0"	23'-0"	26'-4⅝"	27'-8⅛"	11'-3⅜"	34'-0"	39'-3⅝"	40'-5"	28'-0"	45'-0"	51'-11⅝"	53'-1⅛"	36'-8⅝"	56'-0"	64'-8"	65'-9⅜"	49'-7⅝"
	11"	9'	10'-9⅜"	12'-6"	14'-5⅛"	15'-7⅜"	3'-8"	24'-5"	28'-2⅝"	29'-4⅜"	17'-5"	36'-4"	41'-6⅜"	43'-1⅛"	31'-2⅜"	48'-3"	55'-5⅜"	56'-10⅛"	44'-1⅛"	—	—	—	—
		10'	12'-3⅜"	12'-8"	14'-7⅛"	15'-9⅝"	2'-4⅜"	24'-8"	28'-5⅛"	29'-7⅝"	16'-2⅝"	36'-8"	42'-0⅛"	43'-6"	30'-0⅝"	48'-8"	56'-0⅝"	57'-6⅛"	43'-1⅛"	—	—	—	—
		11'	13'-3⅜"	12'-10"	14'-9⅜"	15'-11⅝"	1'-0⅜"	24'-10"	28'-8⅛"	29'-10"	14'-11"	36'-10"	42'-2⅝"	43'-8⅝"	28'-10⅝"	48'-10"	56'-2⅝"	57'-8⅛"	42'-1⅝"	—	—	—	—
		12'	15'-3⅜"	13'-0"	15'-0⅛"	16'-2"	Ⓐ 0"	25'-0"	28'-10⅜"	30'-0⅛"	13'-7⅜"	37'-0"	42'-5⅜"	43'-10⅝"	27'-7⅜"	49'-0"	56'-5"	57'-9⅝"	41'-3⅜"	—	—	—	—
	12"	9'	10'-9⅜"	13'-6"	15'-5⅛"	16'-7⅜"	4'-9⅜"	26'-5"	30'-5"	31'-8"	19'-8⅝"	39'-1"	44'-5"	46'-0"	34'-1⅝"	52'-3"	60'-0"	61'-5⅝"	49'-1⅝"	—	—	—	—
		10'	12'-3⅜"	13'-8"	15'-9⅝"	16'-11⅝"	3'-6⅜"	26'-8"	30'-9⅛"	31'-11⅝"	18'-6⅝"	39'-8"	45'-3⅝"	46'-11⅝"	33'-6⅛"	52'-8"	60'-3⅝"	61'-11⅝"	48'-6⅛"	—	—	—	—
		11'	13'-3⅜"	13'-10"	15'-11⅝"	17'-1⅛"	2'-2⅝"	26'-10"	30'-11⅝"	32'-1⅝"	17'-5⅝"	39'-10"	46'-0"	47'-6"	32'-12⅝"	52'-10"	61'-0⅝"	62'-2"	47'-12⅝"	—	—	—	—
		12'	15'-3⅜"	14'-0"	16'-1⅜"	17'-3⅝"	0'-10⅝"	27'-0"	31'-1⅜"	32'-3⅝"	15'-11"	40'-0"	46'-2⅝"	47'-8"	30'-11"	53'-0"	61'-2⅝"	62'-4⅝"	45'-11⅝"	—	—	—	—

Ⓐ Special case for these boxes, See Detail 'A' and Table 'A' for revised values of F_1, F_2, W_3 and W_5, when apron width is more than 1'-0" and W_3=0".
For Details 'A' and Tables 'A' for each slope, see Drawing Nos. W-X302-1, W-X302-2, or W-X303-1, W-X303-2, or W-X304-1, W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Wing Drawings for 30°Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X302-1 or W-X302-2	W-X303-1 or W-X303-2	W-X304-1 or W-X304-2.

NOTE:-
This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.:-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

CLASS S CONCRETE

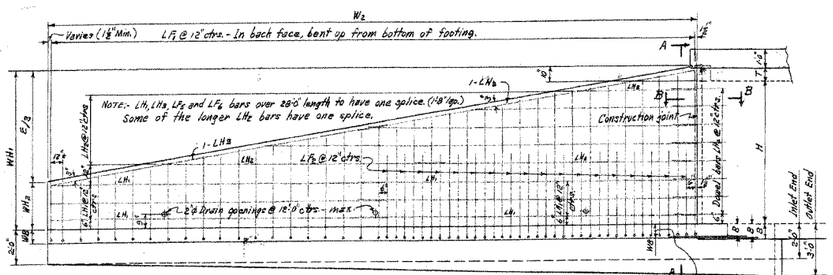
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
30° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER H=2', 3', 4', 5', 6', 7', 8', 9', 10', 11' & 12'.

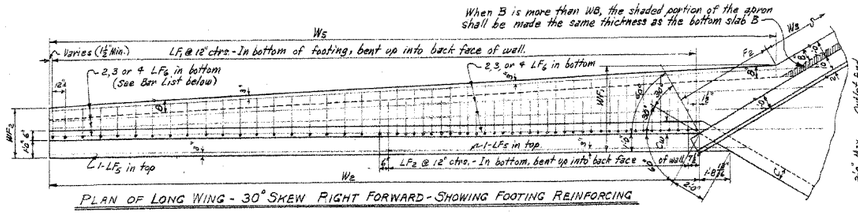
STANDARD DRAWING NO. W-X30

Designed by:- W.C.H. 5-16-63 Checked by:- JBMS - 8-21-63
Drawn by:- W.C.H. 7-15-63 Checked by:-
Quantities by:- Checked by:-

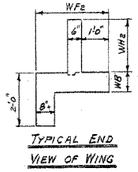
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			193	
JOB No.					



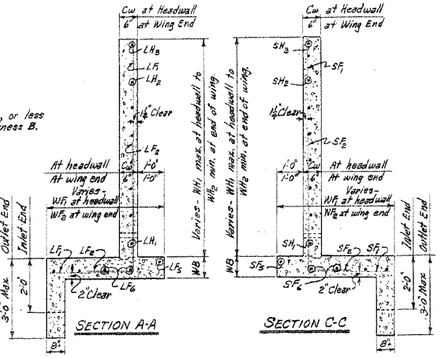
REAR ELEVATION OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING



PLAN OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING FOOTING REINFORCING



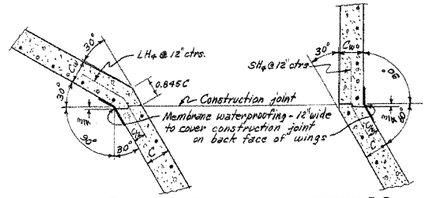
TYPICAL END VIEW OF WING



SECTION A-A

SECTION C-C

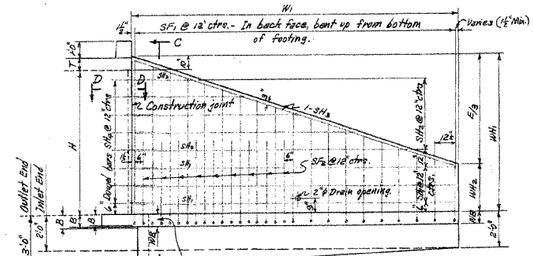
NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



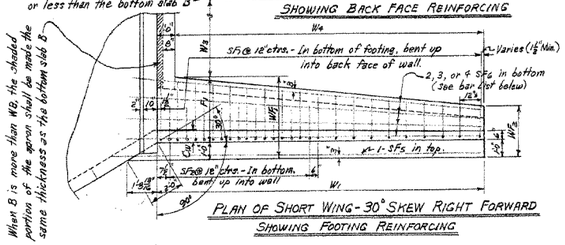
SECTION B-B

SECTION D-D

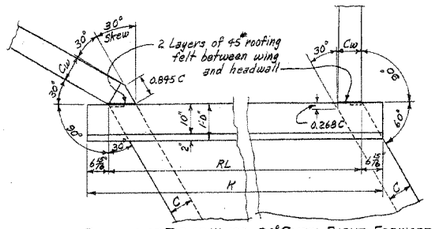
SECTIONS THRU CONSTRUCTION JOINTS



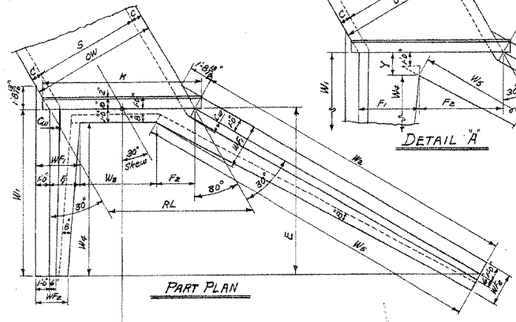
REAR ELEVATION OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING BACK FACE REINFORCING



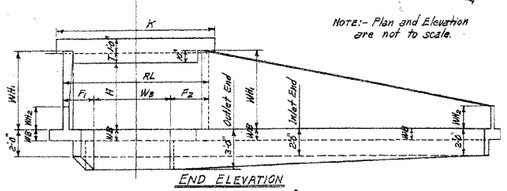
PLAN OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING FOOTING REINFORCING



DETAILS AT TOP OF WINGS - 30° SKEW RIGHT FORWARD



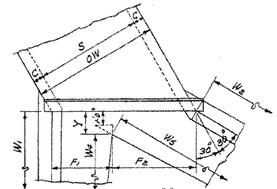
PART PLAN



END ELEVATION

SINGLE BARREL CULVERT - 30° SKEW RIGHT FORWARD
Details of Culvert with 30° Skew Left Forward is reversed, see Drawing No. W-X.30.

TYPICAL WING DETAILS



DETAIL "A"

NOTE:- Plan and Elevation are not to scale.

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X.30. For values of RL, K and W3 for each box, see above Std. also.

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints of wings.

REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEAD'L.	WINGWALL HEIGHTS		WIDTHS OF WING FOOTINGS		FOOTING PARALLEL WITH HEADWALL		PERPENDICULAR DIST. FROM WING TO END OF WING	LENGTHS OF WINGWALLS		INSIDE FOOTING DIMENSION		* QUANTITY PER WING CLASS S CONCRETE			
			AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING	SHORT WING	LONG WING		SHORT WING	LONG WING	SHORT WING	LONG WING	INLET END SHORT WING	INLET END LONG WING	OUTLET END SHORT WING	OUTLET END LONG WING
H	WB	Cw	WH1	WH2	WF1	WF2	F1	F2	E	W1	W2	W4	W5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-6"	2'-0"	1'-6"	0'-11½"	6'-6"	6'-6"	13'-0"	5'-6"	19'-3⅜"	0.752	1.599	0.836	1.717
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-8"	1'-7½"	8'-6"	8'-6"	17'-0"	7'-6"	17'-10⅝"	1.130	2.340	1.239	2.545
4'	7"	6"	4'-10"	1'-6"	3'-0"	2'-3"	2'-0"	2'-3⅜"	10'-6"	10'-6"	21'-0"	9'-6"	22'-5½"	1.577	3.270	1.711	3.552
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-6"	2'-11⅛"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0½"	2.093	4.341	2.252	4.680
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-6"	2'-11⅛"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0½"	2.179	4.529	2.337	4.862
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.908	6.024	3.092	6.419
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.966	6.147	3.150	6.593
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7⅛"	3.025	6.272	3.208	6.667
7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-7⅛"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.811	7.895	4.019	8.350
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-7⅛"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.887	8.057	4.095	8.512
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	5'-7⅛"	18'-6"	18'-6"	37'-0"	17'-6"	41'-4⅝"	4.879	10.097	5.107	10.612

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.
○ See Table 'A' for special values of F1 & F2 and W4 & W5 for Single 9'6, 5'x7' and 6'x8' Box Culverts.

TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F1	F2	W3	Y	W4	W5
4'	6'	2'-7⅞"	3'-3⅝"	0"	1'-1⅞"	13'-9⅛"	31'-3½"
5'	7'	3'-3⅝"	4'-1"	0"	1'-3⅜"	15'-2⅝"	35'-10⅝"
6'	8'	3'-7⅛"	4'-10⅝"	0"	1'-4⅝"	17'-1⅛"	40'-6"

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING @ STEEL - LBS. FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS				
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	141	5.80	6.90	8.01	9.12	10.23
	3'	6"	7"	218	8.09	9.18	10.29	11.40	12.51
	4'	6"	7"	327	10.78	11.88	12.99	14.10	15.21
	5'	6"	7"	460	13.90	15.00	16.11	17.22	18.32
	6'	7"	8"	762	18.85	19.99	21.13	22.27	23.41
5'	3'	6"	7"	218	8.33	9.67	11.01	12.36	13.70
	4'	6"	7"	327	11.03	12.36	13.71	15.06	16.40
	5'	6"	7"	460	14.14	15.98	16.83	18.17	19.52
	6'	7"	8"	762	18.11	20.48	21.86	23.24	24.62
	7'	7½"	8½"	1474	24.51	25.84	27.35	28.75	30.16
6'	3'	6"	7"	218	8.57	10.17	11.73	13.33	14.92
	4'	6"	7"	327	11.27	12.86	14.93	16.09	17.62
	5'	6"	7"	460	14.38	15.98	17.55	19.15	20.73
	6'	7"	8"	762	19.35	20.98	22.59	24.21	25.83
	7'	7½"	8½"	1474	24.79	26.44	28.08	29.73	31.38
	8'	8"	9"	1870	31.15	32.87	34.51	36.17	37.83
7'	4'	6"	7"	327	11.58	13.37	15.19	17.05	18.85
	5'	6"	7"	460	14.63	16.49	18.31	20.16	21.97
	6'	7"	8"	762	19.61	21.98	23.82	25.20	27.04
	7'	7½"	8½"	1474	25.05	26.94	28.82	30.71	32.59
	8'	8"	9"	1870	31.47	33.37	35.25	37.16	39.05
8'	4'	6"	7"	327	11.77	13.89	15.97	18.09	20.12
	5'	7"	7"	460	15.56	17.60	19.70	21.83	23.89
	6'	7"	8"	762	19.86	21.98	24.05	26.17	28.20
	7'	7½"	8½"	1474	25.30	27.06	29.58	31.78	33.81
	8'	8"	9"	1870	31.72	33.88	36.00	38.16	40.27
9'	5'	7"	7"	460	15.72	18.13	20.47	22.87	25.15
	6'	7½"	8"	762	20.50	22.93	25.29	27.71	30.01
	7'	7½"	8½"	1474	25.55	27.98	30.34	32.76	35.07
	8'	8"	9"	1870	31.97	34.39	36.76	39.18	41.49
10'	5'	7"	7"	460	15.98	18.65	21.25	23.80	26.42
	6'	7½"	8"	762	20.74	23.65	26.07	28.69	31.28
	7'	7½"	8½"	1474	25.81	28.50	31.12	33.70	36.34
	8'	8"	9"	1870	32.22	34.91	37.54	40.12	42.76
11'	6'	8"	8"	762	21.39	24.98	27.25	30.11	———
	7'	8"	8½"	1474	26.55	29.53	32.41	35.27	———
	8'	8"	9"	1870	32.97	35.95	38.83	41.19	———
12'	6'	8"	8"	762	21.66	24.93	28.05	31.20	———
	7'	8"	8½"	1474	26.81	30.08	33.21	36.36	———
	8'	8"	9"	1870	32.73	35.99	39.13	42.28	———

⊛ For reinforcing steel in Headwalls and Aprons, see Drawing Nos. of Barrel Sections listed below.

GENERAL NOTES:-
CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.
CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable special Provisions.
UNIT STRESSES:-
Class S Concrete (n=10) 1200#/in²
Reinforcing Steel 20,000#/in²

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.:-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT	WING LOCATION	SF1 & LF1 BENT: In bottom of footing, bent up into back face of wing. One bar (or two bars) of each length							SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.					SF3 & LF3 STRAIGHT: Longitudinal in top of wing footing heel.			SF4 & LF4 STRAIGHT: Longitudinal in bottom of wing footing toe.			SH1 & LH1 STRAIGHT: Horizontal in back face of wing.			SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length. *					SH3 & LH3 STRAIGHT: In back face of wing at top - on slope.			SH4 & LH4 BENT: Dowels thru construction joint at headwall.					BAR BENDING DIAGRAM	QUANTITY: REINFORCING STEEL PER WING - LBS.	
		SIZE	SPACING	NO. REQD	LENGTHS VARY MIN.	MAX.	X MIN.	MAX.	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTHS VARY MAX.	MIN.	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X		SF1 & SF2 LF1 & LF2 c/c 3" Pin; SH4 & LH4; NOTE:- Dimensions are to bar centers.	SHORT WING	LONG WING
H	SHORT LONG																																						
2'	Short	#3	12"	7	1'-7"	3'-11"	0'-8"	1'-0"	1'-0"	3'-0"	———	———	———	———	#3	1	9'-0"	#3	2	8'-6"	#3	12"	1	6'-3"	#3	12"	1	3'-3"	#3	1	6'-7"	#3	12"	2	2'-8"	1'-9"		24.7	45.6
	Long	#3	12"	19	1'-5"	3'-11"	0'-8"	1'-0"	0'-10"	3'-0"	———	———	———	———	#3	1	15'-6"	#3	2	15'-6"	#3	12"	1	12'-8"	#3	12"	1	6'-4"	#3	1	12'-11"	#3	12"	2	"	"			
3'	Short	#3	12"	9	2'-1"	5'-3"	0'-10"	1'-6"	1'-0"	4'-0"	———	———	———	———	#3	1	11'-0"	#3	2	10'-0"	#3	12"	1	8'-3"	#3	12"	2	6'-8"	#3	1	9'-3"	#3	12"	3	"	"		37.0	63.5
	Long	#3	12"	18	1'-11"	5'-3"	0'-10"	1'-8"	1'-2"	4'-0"	———	———	———	———	#3	2	19'-6"	#3	2	20'-0"	#3	12"	1	16'-8"	#3	12"	2	12'-6"	#3	1	14'-11"	#3	12"	3	"	"			
4'	Short	#3	12"	11	2'-6"	6'-7"	0'-11"	1'-8"	1'-0"	5'-0"	———	———	———	———	#3	1	13'-0"	#3	3	15'-0"	#3	12"	1	10'-3"	#3	12"	3	9'-8"	#3	1	10'-9"	#3	12"	4	"	"		56.2	107.2
	Long	#3	12"	22	2'-4"	6'-6"	0'-11"	1'-7"	1'-8"	6'-0"	———	———	———	———	#3	1	23'-6"	#3	3	24'-0"	#3	12"	1	20'-8"	#3	12"	3	18'-6"	#3	1	21'-0"	#3	12"	4	"	"			
5'	Short	#3	12"	13	2'-11"	7'-11"	1'-0"	2'-0"	2'-0"	6'-0"	#3	12"	3	3'-6"	1'-1"	2'-6"	#3	1	27'-6"	#3	6	15'-7"	#3	12"	2	14'-3"	#3	12"	3	13'-4"	#3	1	12'-11"	#3	12"	5	"	"		78.0	152.2
	Long	#3	12"	26	2'-9"	7'-10"	1'-0"	1'-11"	1'-10"	6'-0"	#3	12"	6	3'-6"	1'-1"	2'-6"	#3	1	27'-6"	#3	6	15'-7"	#3	12"	2	24'-3"	#3	12"	3	18'-6"	#3	12"	5	"	"			
6'	Short	#3	12"	15	3'-6"	9'-6"	1'-2"	2'-0"	2'-0"	7'-0"	#3	12"	6	4'-2"	1'-4"	3'-0"	#3	2	16'-8"	#3	6	18'-0"	#3	12"	4	15'-2"	#3	12"	4	24'-6"	6'-6"	#3	2	15'-5"	#3	12"	6	2'-8"	1'-9"		127.8	253.1
	Long	#3	12"	30	3'-4"	9'-5"	1'-2"	2'-0"	2'-0"	7'-1"	#3	12"	6	4'-2"	1'-4"	3'-0"	#3	2	19'-10"	#4	4	18'-0"	#4	12"	5	16'-3"	#4	12"	5	12'-3"	5'-5"	#4	1	17'-1"	#4	12"	7	3'-6"	1'-9"			
7'	Short	#4	12"	17	3'-11"	10'-10"	1'-3"	2'-0"	2'-0"	8'-1"	#4	12"	6	5'-6"	1'-7"	4'-0"	#4	2	18'-8"	#4	8	20'-6"	#4	12"	5	17'-2"	#4	12"	5	30'-6"	6'-6"	#4	2	17'-5"	#4	12"	7	"	"		267.0	489.8
	Long	#4	12"	34	3'-9"	10'-8"	1'-3"	2'-0"	2'-0"	8'-1"	#4	12"	12	5'-6"	1'-7"	4'-0"	#4	1	21'-0"	#4	4	20'-0"	#4	12"	5	18'-3"	#4	12"	5	15'-5"	3'-3"	#4	1	19'-5"	#4	12"	8	"	"			
8'	Short	#4	12"	19	4'-6"	12'-5"	1'-5"	2'-0"	2'-0"	9'-2"	#4	12"	9	6'-6"	1'-10"	4'-9"	#4	2	20'-8"	#4	8	22'-9"	#4	12"	6	19'-2"	#4	12"	5	30'-6"	6'-6"	#4	2	19'-6"	#4	12"	8	3'-6"	1'-9"		312.9	622.3
	Long	#4	12"	38	4'-6"	12'-3"	1'-5"	2'-0"	2'-0"	9'-2"	#4	12"	18	6'-6"	1'-10"	4'-9"	#4	2	20'-8"	#4	8	22'-9"	#4	12"	6	19'-2"	#4	12"	5	12'-3"	5'-5"	#4	1	19'-5"	#4	12"	8	"	"			

NOTE:- Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

* Length without splice. Bars over 28'-0" length may be spliced. (1'-8" lap)

REVISIONS:- Membrane Added. 5-10-66 W.C.H.

Designed By:- W.C.H. 5-13-63 Checked By:- 8-13-63
Drawn By:- W.C.H. 7-26-63 Checked By:- 12-19-63
Quantities By:- W.C.H. 1-7-64 Checked By:- DART 7-15-64

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
30° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES.
3:1 SLOPES.
ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X303-1

CLASS S CONCRETE

(53)

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			184	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH - TWO 30° SKEWED ENDS.

NOTE:- For Details of Standard Wings and bar lists, see Drawing No. W-X.302-1 or W-X.302-2; W-X.303-1 or W-X.303-2, and W-X.304-1 or W-X.304-2. Also W-X.30.

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	'a' bars STRAIGHT In Top and Bottom Slabs of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH	'a1' bars STRAIGHT In Top and Bottom Slab of Barrel- (Four of each Length) SIZE	SPACING	NO. REQ'D	LENGTH
0'-0" TO 5'-0" MAXIMUM	4'	2'			108	4'-9"			4	2'-1"
		3'			108	4'-9"			4	"
		4'			108	4'-9"			4	"
		5'			108	4'-9"			4	"
		6'			108	4'-9"			4	"
	5'	3'			108	5'-9"			4	2'-11"
		4'			108	5'-9"			4	"
		5'			108	5'-9"			4	"
		6'			108	5'-9"			4	"
		7'			108	5'-11"			4	4'-1"
		8'			108	6'-0"			4	4'-2"
	6'	4'			114	6'-9"			8	5'-0"
		5'			114	6'-9"			8	"
		6'			114	6'-9"			8	"
		7'			114	7'-0"			8	"
		8'			114	7'-1"			8	"
	7'	4'			124	7'-9"			12	6'-2"
		5'			124	7'-9"			12	"
		6'			124	7'-11"			12	6'-4"
		7'			124	8'-0"			12	6'-5"
		8'			124	8'-1"			12	6'-6"
		9'			124	8'-3"			12	6'-8"
	8'	4'			112	8'-9"			12	7'-0"
		5'			112	8'-11"			12	7'-2"
		6'			112	8'-11"			12	"
		7'	#7	12"	112	9'-0"	#6	12"	12	7'-5"
		8'			112	9'-1"			12	7'-6"
		9'			112	9'-3"			12	7'-8"
		10'			112	9'-5"			16	7'-8"
	9'	5'			122	9'-11"			16	8'-4"
		6'			122	10'-0"			16	9'-5"
		7'			122	10'-1"			16	9'-6"
		8'	#7	11"	122	10'-2"	#6	11"	16	9'-7"
		9'			122	10'-3"			16	9'-8"
		10'			122	10'-4"			16	9'-9"
		11'			122	10'-5"			16	9'-10"
	10'	5'			110	10'-6"			20	9'-6"
		6'			122	9'-11"			20	11'-0"
		7'			122	10'-0"			20	11'-1"
		8'	#7	11"	122	10'-1"	#6	11"	20	11'-1"
		9'			120	10'-3"			20	11'-4"
		10'			120	10'-3"			20	11'-5"
		11'			120	10'-5"			20	11'-6"
		12'			120	10'-7"			20	11'-8"
	11'	5'			110	10'-11"			20	12'-2"
		6'			110	11'-0"			20	12'-3"
		7'			110	11'-0"			20	12'-5"
		8'	#7	11"	110	11'-1"	#6	11"	20	12'-6"
		9'			110	11'-3"			20	12'-8"
		10'			110	11'-5"			20	12'-9"
		11'			110	11'-7"			20	12'-11"
		12'			110	11'-9"			20	13'-0"
	12'	6'			118	12'-1"			24	12'-10"
		7'			118	12'-1"			24	"
		8'			118	12'-1"			24	"
		9'	#7	11"	118	12'-2"	#6	11"	24	12'-3"
		10'			118	12'-3"			24	12'-4"
		11'			118	12'-4"			24	12'-5"
		12'			118	12'-5"			24	12'-7"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	'b' bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel- Hooked Alternate with 'a' bars SIZE	SPACING	NO. REQ'D	X	In Top and Bottom Slabs of Barrel- one end hooked (Four of each Length) Alternate with 'a' bars. SIZE	SPACING	NO. REQ'D	LENGTH MAX.	LENGTH MIN.	X MAX.	X MIN.
0'-0" TO 5'-0" MAXIMUM	4'	2'	#6	18"	108	4'-8"	#6	18"	6	4'-5"	—	3'-10"	—
		3'			108	5'-10"			6	"	—	"	—
		4'			108	5'-10"			6	"	—	"	—
		5'			108	5'-10"			4	"	—	"	—
		6'			108	6'-0"	4'-10"		8	4'-9"	2'-8"	4'-0"	2'-1"
	5'	3'	#6	18"	106	6'-10"	5'-8"		8	5'-5"	3'-6"	4'-10"	2'-11"
		4'			106	6'-10"	"		8	"	"	"	"
		5'			106	7'-0"	5'-10"		8	5'-7"	3'-8"	5'-0"	3'-1"
		6'			106	7'-1"	5'-11"		8	5'-8"	3'-8"	5'-1"	3'-2"
		7'			106	7'-3"	5'-11"		8	5'-9"	3'-9"	5'-2"	3'-2"
	6'	4'			114	7'-10"	6'-8"		12	6'-5"	2'-11"	5'-10"	2'-9"
		5'			114	7'-10"	"		12	"	"	"	"
		6'			114	7'-10"	"		12	6'-7"	3'-1"	6'-0"	2'-6"
		7'			114	8'-0"	6'-10"		12	6'-8"	3'-2"	6'-1"	2'-7"
		8'			114	8'-1"	6'-11"		12	6'-9"	3'-3"	6'-2"	2'-8"
	7'	4'			122	8'-10"	7'-8"		12	7'-6"	3'-6"	6'-11"	3'-3"
		5'			122	8'-10"	"		12	"	"	"	"
		6'			122	9'-0"	7'-10"		16	7'-8"	2'-11"	7'-1"	2'-9"
		7'			122	9'-1"	7'-11"		16	7'-9"	3'-0"	7'-2"	2'-10"
		8'			122	9'-2"	8'-0"		16	7'-10"	3'-1"	7'-3"	2'-11"
		9'			122	9'-3"	8'-2"		16	8'-0"	3'-3"	7'-5"	2'-11"
	8'	4'			112	9'-10"	8'-8"		16	8'-2"	3'-5"	7'-10"	2'-10"
		5'			112	10'-0"	8'-10"		16	8'-3"	3'-6"	8'-0"	2'-9"
		6'			112	10'-0"	"		16	"	"	"	"
		7'	#7	12"	112	10'-1"	#6	12"	16	8'-8"	3'-5"	8'-1"	2'-10"
		8'			112	10'-2"	9'-0"		16	8'-9"	3'-6"	8'-2"	2'-11"
		9'			112	10'-4"	9'-2"		16	8'-11"	3'-8"	8'-3"	3'-1"
		10'			110	10'-6"	9'-4"		16	9'-1"	3'-10"	8'-6"	3'-2"
	9'	5'			120	11'-0"	9'-10"		20	9'-8"	3'-4"	9'-1"	2'-9"
		6'			120	11'-1"	9'-11"		20	9'-9"	3'-5"	9'-2"	2'-10"
		7'			120	11'-1"	9'-11"		20	9'-10"	3'-6"	9'-3"	2'-11"
		8'	#7	11"	120	11'-2"	10'-0"	#6	11"	20	9'-10"	3'-6"	9'-3"	2'-11"
		9'			120	11'-4"	10'-2"		20	10'-0"	3'-8"	9'-5"	3'-0"
		10'			120	11'-5"	10'-3"		20	10'-1"	3'-9"	9'-6"	3'-1"
		11'			120	11'-7"	10'-5"		20	10'-2"	4'-0"	9'-8"	3'-2"
		12'			120	11'-8"	10'-6"		20	10'-4"	4'-0"	9'-9"	3'-5"
	10'	5'			110	12'-2"	10'-10"		20	10'-8"	3'-6"	10'-0"	3'-0"
		6'			110	12'-3"	10'-11"		20	10'-9"	3'-9"	10'-1"	3'-1"
		7'			110	12'-5"	"		20	"	"	"	"
		8'	#7	11"	110	12'-6"	11'-0"	#6	11"	20	10'-10"	3'-10"	10'-2"	3'-2"
		9'			108	12'-8"	11'-2"		20	11'-0"	4'-0"	10'-4"	3'-4"
		10'			108	12'-10"	11'-3"		20	11'-2"	4'-1"	10'-5"	3'-5"
		11'			108	13'-0"	11'-5"		20	11'-4"	4'-2"	10'-7"	3'-6"
		12'			108	13'-0"	11'-8"		20	11'-6"	4'-3"	10'-8"	3'-8"
	11'	6'			118	13'-4"	12'-0"		24	11'-11"	4'-0"	11'-3"	3'-4"
		7'			118	13'-4"	"		24	"	"	"	"
		8'			118	13'-4"	"		24	"	"	"	"
		9'	#7	11"	118	13'-6"	12'-2"	#6	11"	24	12'-1"	4'-2"	11'-5"	3'-6"
		10'			116	13'-8"	12'-4"		24	12'-3"	4'-4"	11'-7"	3'-8"
		11'			116	13'-10"	12'-5"		24	12'-5"	4'-6"	11'-9"	3'-10"
		12'			116	14'-0"	12'-8"		24	12'-7"	4'-8"	11'-11"	4'-0"
	12'	6'			106	14'-4"	13'-0"		24	12'-10"	4'-5"	12'-2"	3'-5"
		7'			106	14'-4"	"		24	"	"	"	"
		8'			106	14'-4"	"		24	"	"	"	"
		9'	#7	11"	106	14'-6"	13'-2"	#6	11"	24	12'-8"	4'-7"	12'-0"	3'-7"
		10'			106	14'-8"	13'-4"		24	12'-10"	4'-8"	12'-2"	3'-8"
		11'			106	14'-10"	13'-6"		24	13'-0"	4'-9"	12'-3"	3'-9"
		12'			106	15'-0"	13'-8"		24	13'-2"	4'-10"	12'-5"	4'-1"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	'd' bars STRAIGHT Longitudinal in Top Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH	'd1' bars STRAIGHT Longitudinal in Sidewalls. SIZE	SPACING	NO. REQ'D	LENGTH	'e' bars STRAIGHT Longitudinal in Bottom Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH
0'-0" TO 5'-0" MAXIMUM	4'	2'	#4	12"	6		#4	12"	6		#4	12"	5	
		3'			6				6				5	
		4'			6				6				5	
		5'			6				10				5	
		6'			6				12				5	
	5'	3'	#5	10½"	6		#4	12"	6		#4	12"	6	
		4'			6				8				6	
		5'			6				10				6	
		6'			6				12				6	
		7'			6				14				6	
	6'	4'	#5	10½"	7		#4	12"	7		#4	12"	7	
		5'			7				8				7	
		6'			7				10				7	
		7'			7				12				7	
		8'			7				14				7	
	7'	4'	#5	10½"	8		#4	12"	8		#4	12"	8	
		5'			8				8				8	
		6'			8				10				8	
		7'			8				12				8	
		8'			8				14				8	
		9'			8				16				8	
	8'	4'	#5	10½"	9		#4	12"	8		#4	12"	8	
		5'			9				8				8	
		6'			9				10				8	
		7'			9				12				8	
		8'			9				14				8	
		9'			9				16				8	
		10'			9				18				8	
	9'	5'	#5	10"	10		#4	12"	8		#4	12"	9	
		6'			10				10				9	
		7'			10				12				9	
		8'			10				14				9	
		9'			10				16				9	
		10'			10				18				9	
		11'			10				20				9	
	10'	5'	#5	10"	11		#4	12"	9		#4	12"	10	
		6'			11				11				10	
		7'			11				13				10	
		8'			11				15				10	
		9'			11				17				10	
		10'			11				19				10	
		11'			11				21				10	
		12'			11				23				10	
	11'	6'	#5	10"	12		#4	12"	10		#4	12"	11	
		7'			12				12				11	
		8'			12				14				11	
		9'			12				16				11	
		10'			12				18				11	
		11'			12				20				11	
		12'			12				22				11	
	12'	6'	#5	10"	13		#4	12"	11		#4	12"	12	
		7'			13				13				12	
		8'			13				15				12	
		9'			13				17				12	
		10'			13				19				12	
		11'			13				22				12	
		12'			13				24				12	

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	'f' bars STRAIGHT Verticals in Sidewalls. SIZE	SPACING	NO. REQ'D	LENGTH	'h' bars STRAIGHT In Bottom of Headwall SIZE	NO. REQ'D	LENGTH	K_2 bars In Top of Headwall and Apron (2 Each) SIZE	NO. REQ'D	LENGTH
0'-0" TO 5'-0" MAXIMUM	4'	2'	#4	12"	120	2'-11"	#5	6	5'-6"	#5	8	6'-8"
		3'			120	3'-11"		6	"		8	"
		4'			120	4'-11"		6	"		8	"
		5'			120	5'-11"		6	"		8	"
		6'			120	6'-11"		6	5'-8"		8	6'-10"
	5'	3'	#4	12"	120	4'-0"	#5	6	6'-8"	#5	8	7'-10"
		4'			120	5'-0"		6	"		8	"
		5'			120	6'-0"		6	"		8	"
		6'			120	7'-0"		6	6'-10"		8	8'-0"
		7'			120	8'-0"		6	6'-11"		8	8'-1"
	6'	4'	#4	12"	120	4'-1"	#5	6	7'-10"	#5	8	9'-0"
		5'			120	5'-1"		6	"		8	"
		6'			120	6'-1"		6	8'-0"		8	9'-2"
		7'			120	7'-1"		6	8'-1"		8	9'-3"
		8'			120	8'-1"		6	8'-2"		8	9'-4"
	7'	4'	#4	12"	120	5'-2"	#5	6	8'-10"	#5	8	10'-2"
		5'			120	6'-2"		6	"		8	"
		6'			120	7'-2"		6	9'-2"		8	10'-4"
		7'			120	8'-2"		6	9'-3"		8	10'-5"
		8'			120	9'-2"		6	9'-4"		8	10'-6"
		9'			120	10'-2"		6	9'-6"		8	10'-8"
	8'	4'	#5	12"	120	5'-4"	#5	6	10'-1"	#5	8	11'-5"
		5'			120	6'-4"		6	10'-4"		8	11'-6"
		6'			120	7'-4"		6	"		8	"
		7'			120	8'-4"		6	10'-5"		8	11'-7"
		8'			120	9'-4"		6	10'-6"		8	11'-8"
		9'			120	10'-4"		6	10'-8"		8	11'-10"
		10'			120	11'-4"		6	10'-11"		8	12'-0"
	9'	5'			120	6'-5"		6	11'-5"		8	12'-7"
		6'			120	7'-5"		6	11'-7"		8	12'-9"
		7'			120	8'-5"		6	"		8	"
		8'	#7	12"	120	9'-5"	#7	6	11'-8"	#7	8	12'-10"
		9'			120	10'-5"		6	11'-10"		8	13'-0"
		10'			120	11'-5"		6	12'-1"		8	13'-2"
		11'			120	12'-5"		6	12'-3"		8	13'-5"
	10'	5'			120	6'-6"		6	12'-7"		8	13'-9"
		6'			120	7'-6"		6	12'-8"		8	13'-10"
		7'			120	8'-6"		6	"		8	"
		8'	#7	12"	120	9'-6"	#7	6	12'-10"	#7	8	14'-0"
		9'			120	10'-6"		6	13'-0"		8	14'-2"
		10'			120	11'-6"		6	13'-2"		8	14'-4"
		11'			120	12'-6"		6	13'-5"		8	14'-6"
		12'			120	13'-6"		6	13'-7"		8	14'-9"
	11'	6'			120	7'-7"		6	14'-0"		8	15'-1"
		7'			120	8'-7"		6	"		8	"
		8'			120	9'-7"		6	"		8	"
		9'	#7	12"	120	10'-7"	#7	6	14'-2"	#7	8	15'-4"
		10'			120	11'-7"		6	14'-4"		8	15'-6"
		11'			132	11'-7"		6	14'-7"		8	15'-8"
		12'			144	12'-7"		6	14'-9"		8	15'-11"
	12'	6'			120	7'-9"		6	15'-1"		8	16'-3"
		7'			120	8'-9"		6	"		8	"
		8'			120	9'-9"		6	"		8	"
		9'	#7	12"	120	10'-9"	#8	6	15'-5"	#8	8	16'-6"
		10'			132	11'-9"		6	15'-6"		8	16'-8"
		11'			144	12'-9"		6	15'-8"		8	16'-10"
		12'			120	13'-9"		6	15'-11"		8	17'-0"

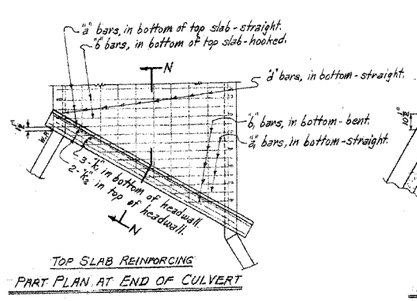
These bars are in the skewed portion of barrel only. The length of 'a' bars and overall length X of 'b' bars vary by 1'-11" for 13" spacing, 1'-9" for 12" spacing and 1'-7" for 11" spacing.

BAR SIZE	PIN DIAM.	K	ADD FOR HOOKS	BENDING DIAGRAMS FOR BARS 'b' & 'b1'
#6	3"	5"	1'-2"	2 HOOKS
#7	3½"	5⅝"	1'-4"	
#6	3"	5"	0'-7"	1 Hook
#7	3½"	5⅝"	0'-8"	

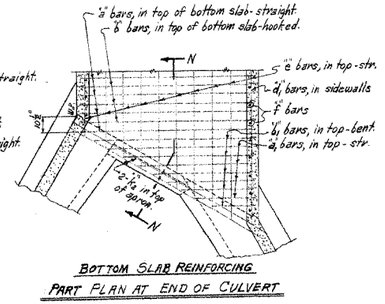
NOTE:- Dimensions are to centers of bars. ('b' and 'b1')

DOWEL BARS FOR TWO HEADWALLS

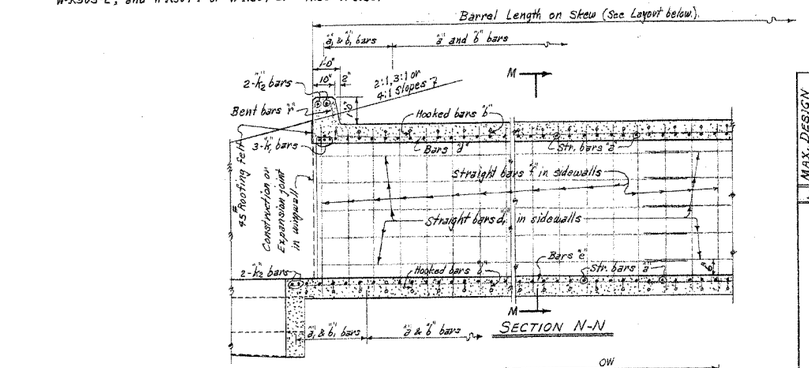
SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X	Dowel bars 'r' in Two Headwalls.
4'	#4	12"c	12	2'-6"	1'-3"	
5'	#4	12"c	16	2'-7"	1'-3½"	
6'	#4	12"c	18	2'-8"	1'-4"	
7'	#4	12"c	20	2'-9"	1'-4½"	
8'	#4	12"c	22	2'-11"	1'-5½"	
9'	#5	12"c	26	3'-0"	1'-6"	
10'	#5	12"c	28	3'-1"	1'-6½"	
11'	#5	12"c	30	3'-2"	1'-7"	
12'	#5	12"c	32	3'-3"	1'-7½"	



TOP SLAB REINFORCING
PART PLAN AT END OF CULVERT

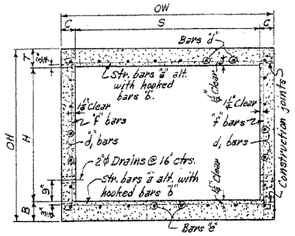


BOTTOM SLAB REINFORCING
PART PLAN AT END OF CULVERT

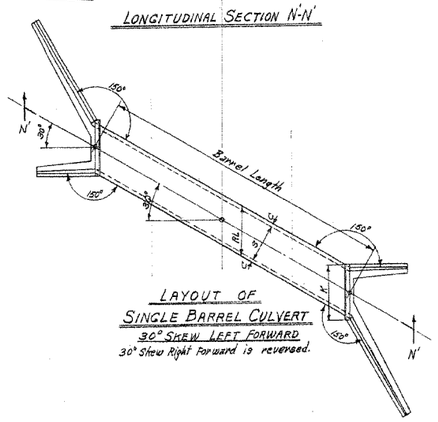


SECTION N-N

LONGITUDINAL SECTION N'-N'



TYPICAL SECTION M-M



LAYOUT OF
SINGLE BARREL CULVERT
30° SKEW LEFT FORWARD
30° Skew Right Forward is reversed.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

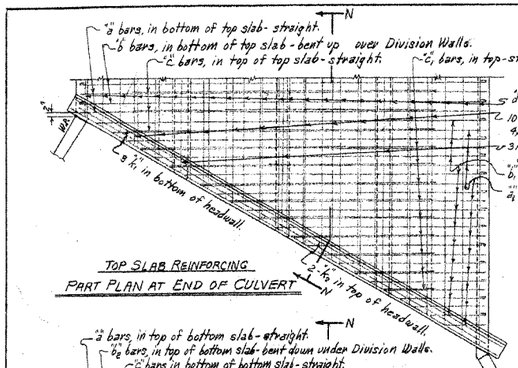
NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X.302-1 or W-X.302-2, W-X.303-1 or W-X.303-2, and W-X.304-1 or W-X.304-2. Also W-X.30.

GENERAL NOTES

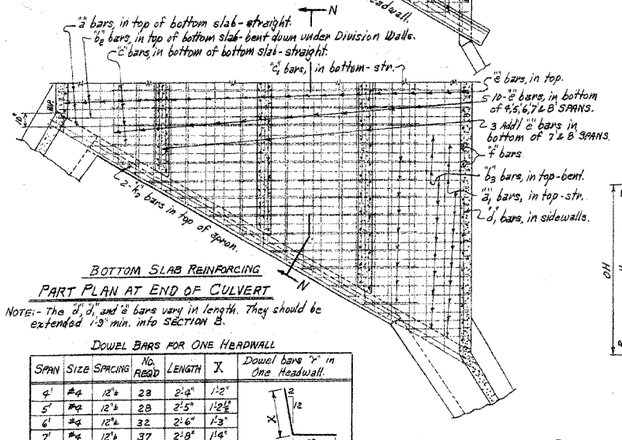
CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters min.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

MAX. DESIGN DEPTH OF COVER D	BARREL DIMENSIONS CLEAR SPANS S	CLEAR HEIGHT H	SQ.FT. OPENING A	OVERALL WIDTH OW	THICKNESS OF TOP SLAB T	THICKNESS OF SIDEWALLS C	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH	ROADWAY LENGTH RL	LENGTH OF HEADWALLS K	* QUANTITIES REINFORCING STEEL CLASS S CONC. OF BARREL	TOTAL FOR 60'-0" LENGTH OF BARREL	PER LIN. FT. OF BARREL	ADDITIONAL PER LAP
											CU.YD.	LB.	LB.	LB.
5'-0"	4'	2'	8	5'-0"	6"	6"	6½"	3'-1⅛"	5'-9⅛"	6'-11⅛"	0.282	2622	41.99	17.35
		3'	12	5'-0"		6"		3'-7⅛"	"	"	0.319	2786	44.16	19.62
		4'	16	5'-0"	7"	6"	6½"	4'-1⅛"	"	"	0.354	2946	46.83	21.29
		5'	20	5'-0"		6"		4'-7⅛"	"	"	0.394	3107	49.50	22.94
		6'	24	5'-0"		7"		5'-1⅛"	5'-11⅝"	7'-1⅝"	0.478	3335	52.96	24.63
	5'	3'	15	6'-0"		6"		4'-2⅛"	6'-11⅛"	8'-1⅛"	0.380	3541	55.55	22.19
		4'	20	6'-0"		6"		5'-2⅛"	"	"	0.417	3703	58.23	23.94
		5'	25	6'-0"	7½"	6"	7"	6'-2⅛"	"	"	0.459	3865	60.90	25.53
		6'	30	6'-2"		7"		7'-2⅛"	7'-1⅝"	8'-3⅝"	0.535	4091	64.99	27.20
		7'	35	6'-3"		7½"		8'-2⅛"	7'-2⅝"	8'-4⅝"	0.604	4283	67.65	28.87
	6'	3'	18	7'-0"		6"		4'-3⅛"	8'-1"	9'-2⅝"	0.446	4221	66.29	26.76
		4'	24	7'-0"		6"		5'-3⅛"	"	"	0.483	4383	68.96	26.43
		5'	30	7'-0"		6"		6'-3⅛"	"	"	0.520	4595	71.64	28.10
		6'	36	7'-2"		7"		7'-3⅛"	8'-3⅝"	9'-5⅛"	0.602	4772	75.91	29.77
		7'	42	7'-3"		7½"		8'-3⅛"	8'-4⅝"	9'-6⅝"	0.671	4966	78.98	31.44
		8'	48	7'-4"		8"		9'-3⅛"	9'-5⅝"	9'-7⅝"	0.746	5170	88.97	33.11
	7'	4'	28	8'-0"		6"		5'-5"	9'-2⅝"	10'-9⅝"	0.568	5146	81.32	29.01
		5'	35	8'-0"		6"		6'-5"	"	"	0.605	5307	84.00	30.68
		6'	42	8'-2"		7"		7'-5"	9'-5⅛"	10'-7"	0.688	5558	87.76	32.35
		7'	49	8'-3"	8½"	7½"	8½"	8'-5"	9'-6⅛"	10'-8⅛"	0.767	5755	90.96	34.02
		8'	56	8'-4"		8"		9'-5"	9'-7⅛"	10'-9⅛"	0.832	6000	96.65	35.69
		9'	63	8'-6"		9"		10'-5"	9'-9⅛"	10'-11⅛"	0.946	6699	105.59	37.36
	8'	4'	32	9'-0"		6"		5'-7"	10'-2⅝"	11'-4⅝"	0.676	6118	95.24	33.32
		5'	40	9'-2"		7"		6'-7"	10'-3"	11'-5⅜"	0.759	6357	99.12	34.99
		6'	48	9'-2"		7"		7'-7"	"	"	0.797	6518	101.79	36.66
		7'	56	9'-3"	9½"	7½"	9½"	8'-7"	10'-3⅝"	11'-4⅝"	0.867	6720	105.05	38.33
		8'	64	9'-4"		8"		9'-7"	10'-3⅝"	11'-4⅝"	0.992	7070	110.81	40.00
		9'	72	9'-6"		9"		10'-7"	10'-4⅛"	12'-1⅝"	1.057	7627	119.92	41.67
		10'	80	9'-8"		10"		11'-7"	11'-2"	12'-3⅜"	1.184	8043	126.67	43.34
	9'	5'	45	10'-2"		7"		6'-8"	11'-8⅜"	12'-10⅜"	0.844	7356	114.72	37.66
		6'	54	10'-3"		7½"		7'-8"	11'-10"	13'-0"	0.910	7567	118.04	39.23
		7'	63	10'-3"		7½"		8'-8"	"	"	0.957	7725	120.71	40.90
		8'	72	10'-4"	10"	8"	10"	9'-8"	11'-11⅝"	13'-1⅝"	1.033	8081	126.54

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			185	
JOB No.					



TOP SLAB REINFORCING
PART PLAN AT END OF CULVERT



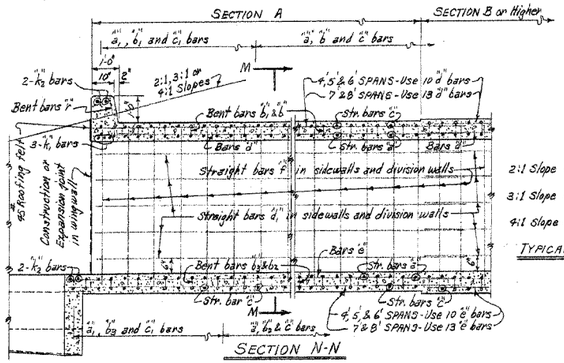
BOTTOM SLAB REINFORCING
PART PLAN AT END OF CULVERT

NOTE:- The "d", "d1" and "d2" bars vary in length. They should be extended 1'-9" min. into SECTION B.

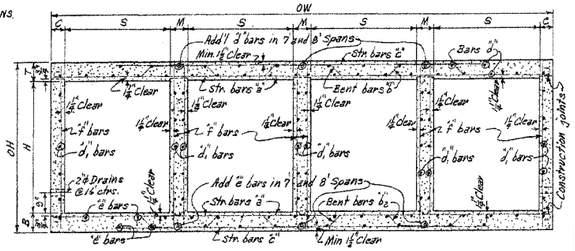
DOWEL BARS FOR ONE HEADWALL

Span	Size	Spacing	No. Reqd	Length	X	Dowel bend "Y" in One Headwall.
4'	#4	12"c	28	2'-4"	1'-2"	
5'	#4	12"c	28	2'-5"	1'-2½"	
6'	#4	12"c	32	2'-6"	1'-3"	
7'	#4	12"c	37	2'-8"	1'-4"	
8'	#4	12"c	41	2'-10"	1'-5"	

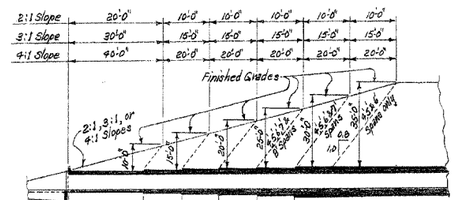
NOTE:- For Details of Standard Wings and Bar lists, see Drawing No W-X.302-1 or W-X.302-2; W-X.303-1 or W-X.303-2, and W-X.304-1 or W-X.304-2. Also W-X.30.



SECTION N-N



TYPICAL SECTION M-M



℄ LENGTHS OF SECTIONS ON 30° SKEW

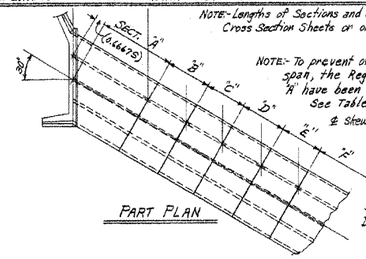
SLOPE		2:1		3:1		4:1	
SECTIONS		A	B,C,D & E	A	B,C,D & E	A	B,C,D & E
SPANS	4'	11'-2⅝"	6'-11⅝"	22'-8⅜"	12'-8⅜"	34'-3⅝"	18'-5⅜"
	5'	10'-6⅝"	"	22'-0⅜"	"	33'-7⅝"	"
	6'	9'-10⅝"	"	21'-4⅜"	"	32'-11⅝"	"
	7'	9'-2⅝"	"	20'-8⅜"	"	32'-3⅝"	"
	8'	———	"	20'-0⅜"	"	31'-7⅝"	"

NOTE:- Minimum ℄ Length of SECTION "A" on 30° Skew = (0.288675 OW ± 2').

Slope =	SECTIONS	A = 18'-6	B = 6'-0	C = 6'-0	D = 6'-6	E = 6'-0	MID-SECTION F. Varies
	Bar Group	A	B	C	D	E	F
3:1 Slope =	SECTIONS	A = 22'-6	B = 11'-0	C = 11'-0	D = 11'-0	E = 11'-0	MID-SECTION F-Varies
	Bar Group	A	B	C	D	E	F
4:1 Slope =	SECTIONS	A = 32'-6	B = 14'-0	C = 16'-0	D = 16'-0	E = 14'-0	MID-SECTION F-Varies
	Bar Group	A	B	C	D	E	F

These lengths are perpendicular to ℄ of roadway, ⊥ to ℄ of Division Wall on long side. See Table of Skewed lengths above.

TYPICAL LONGITUDINAL SECTION - SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER



PART PLAN

NOTE:- To prevent over loading of the (inside) side span, the Regular Skewed ℄ Length of Section "A" have been shortened by two thirds "S". See Table above.

℄ Skewed Length of "A" = "A" x 1.1547 - ⅔ "S".

NOTE:- For Details and Bar Lists for Sections B thru F, see Barrel Drawing Nos. R-400X-X.1 & R-400X-X.2.

SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS A	B	C	D	E	MID-SECTION BAR GROUP
5.0' to 9.5'	A					A
10.0' to 19.5'	A	B				B
16.0' to 19.5'	A	B				C
20.0' to 29.5'	A	B	C			D
25.0' to 29.5'	A	B	C	D		E
30.0' to 35.0'	A	B	C	D	E	F

OR ALT.

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS A	B	C	D	E	MID-SECTION AND BAR GROUP
5.0' to 9.5'	A					A
10.0' to 14.5'	A					B
15.0' to 19.5'	A	B				C
20.0' to 29.5'	A	2@C				D
25.0 to 29.5	A	B	2@D			E
30.0 to 35.0	A	2@C		2@E		F

BARREL DIMENSIONS & QUANTITIES - ONE SECTION "A"

MAX. DESIGN DEPTH OF COVER		CLEAR SPANS		SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF DIVISION WALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	ROADWAY LENGTH	LENGTH OF HEADWALL	CLASS S CONCRETE BARREL ONLY			REINFORCING STEEL BARREL, APRON AND HEADWALL		
													2:1	3:1	4:1	2:1	3:1	4:1
D	S	H	A	OW	T	C	M	B	OH	RL	K		Cu.Yd.	Cu.Yd.	Cu.Yd.	Lb.	Lb.	Lb.
4'@4	4	2'	32	19'-0"	6"	8"			3'-0"	21'-11½"	23'-1"		10.36	21.05	31.75	1851	3928	5940
		3'	48	19'-0"		8"			4'-0"	"	"		11.60	23.57	35.54	1981	3681	5920
		4'	64	19'-0"		8"			5'-0"	"	"		12.84	26.09	39.37	2111	3935	5801
		5'	80	19'-0"		8"			6'-0"	"	"		14.09	28.62	43.17	2241	4188	6181
		6'	96	19'-5"		9"			7'-0"	22'-5"	23'-7"		16.54	33.59	50.68	2401	4489	6625
5'@4	5	3'	60	23'-0"	6½"	8"			4'-1"	26'-0⅝"	27'-2⅝"		13.21	27.71	42.23	2385	4592	6795
		4'	80	23'-0"		8"			5'-1"	"	"		14.38	30.14	45.97	2506	4787	7166
		5'	100	23'-0"		8"			6'-1"	"	"		15.55	32.61	49.70	2627	5081	7538
		6'	120	23'-5"		9"			7'-1"	22'-10½"	23'-2⅝"		17.87	37.48	57.13	2859	5494	8126
		7'	140	23'-9"		9½"			8'-1"	23'-5⅝"	23'-7"		20.25	42.47	64.73	3129	6122	9213
6'@4	6	3'	72	27'-0"	7"	8"			4'-2⅝"	31'-2⅝"	32'-4"		14.99	32.54	50.13	2895	5776	8793
		4'	96	27'-0"		8"			5'-2⅝"	"	"		16.48	34.92	53.79	3010	6014	9161
		5'	120	27'-0"		8"			6'-2⅝"	"	"		17.18	37.29	57.45	3116	6252	9529
		6'	144	27'-5"		9"			7'-2⅝"	31'-7⅛"	32'-9⅜"		19.36	42.06	64.76	3288	6569	9879
		7'	168	27'-9"		9½"			8'-2⅝"	32'-0⅝"	33'-2⅝"		21.61	46.92	72.28	3675	7371	11,110
		8'	192	27'-10"		10"			9'-2⅝"	32'-1⅝"	33'-3⅝"		23.26	50.63	77.78	3903	7835	11817
7'@4	7	4'	112	31'-0"	7½"	8"			5'-4"	35'-9⅜"	36'-11⅝"		18.15	40.94	63.78	3776	7512	11,408
		5'	140	31'-0"		8"			6'-4"	"	"		19.17	43.24	67.86	3885	7744	11,769
		6'	168	31'-5"		9"			7'-4"	36'-2⅜"	37'-5⅝"		21.23	47.91	74.63	4001	7997	12,304
		7'	196	31'-9"		9½"			8'-4"	36'-6⅜"	37'-9⅝"		23.34	52.65	82.02	4383	8755	13,447
		8'	224	31'-10"		10"			9'-4"	36'-7⅜"	37'-11⅝"		24.88	56.18	87.45	4559	9169	14,105
		9'	252	32'-3"		10½"			10'-4"	37'-2⅜"	38'-6⅝"		27.45	62.37	97.17	4898	9788	14,875
8'@4	8	4'	128	35'-0"	8"	8"			5'-5⅜"	40'-5"	41'-8⅛"			67.89	104.70		8595	12,993
		5'	160	35'-5"		9"			6'-5⅜"	40'-10⅜"	42'-1⅝"			51.62	81.37		8690	13,474
		6'	192	35'-5"		9"			7'-5⅜"	"	"			54.17	85.39		8903	13,830
		7'	224	35'-9"		9½"			8'-5⅜"	41'-3⅜"	42'-5⅝"			58.80	92.69		9388	14,566
		8'	256	35'-10"		10"			9'-5⅜"	41'-4⅜"	42'-6⅝"			62.17	98.01		10,008	15,454
		9'	288	36'-3"		10½"			10'-5⅜"	41'-10⅜"	43'-1⅝"			68.27	107.62		10,554	16,287
		10'	320	36'-8"		11"			11'-5⅜"	42'-3⅜"	43'-6"			74.97	118.18		11,453	17,998

* For remainder of quantities see Std. Wing and Barrel Drawings listed below. Total steel quantities listed above include one lap of longitudinal bars, plus an add'l lap for 4:1 slopes.

GENERAL NOTES

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls, division walls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X302-1 or W-X302-2, W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.
For Barrels of 4,5 & 6' Spans, see Drawing No. R-400X-X.1.
For Barrels of 7' & 8' Spans, see Drawing No. R-400X-X.2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS
30° SKEW — SECTIONS "A" ONLY

4', 5', 6', 7' AND 8' SPANS — QUADRUPLES
2:1, 3:1 OR 4:1 SLOPES OVER 5'-0" COVER

STANDARD DRAWING NO. R-430X-1

BAR LIST FOR SECTION "A" ON 30° SKEW - ONE END ONLY.

SECTION & BAR GROUP "A"	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT
		D	S	H
SECTION "A" & BAR GROUP "A"	Lengths vary with Clear Span S" per Slope, see Table of upper right.	0'-0" TO 10'-0" MAXIMUM		

"a" bars — STRAIGHT — In Top and Bottom Slab of Barrel.

Size	Spacing	No. Reqd 2:1	No. Reqd 3:1	No. Reqd 4:1	Length
#4	12"c	19	37	59	18'-9"
		18	37	59	"
		18	37	59	"
		18	37	59	"
		18	37	59	19'-2"
#5	11"c	24	48	76	23'-9"
		24	"	"	"
		24	"	"	"
		24	"	"	23'-2"
		24	"	"	23'-6"
		24	"	"	23'-10"
#6	13"c	24	48	76	24'-5"
		24	"	"	"
		24	"	"	"
		24	"	"	24'-0"
		24	"	"	24'-4"
		24	"	"	24'-8"

"a1" bars — STRAIGHT — In Top and Bottom Slab of Barrel - (Two of each Length)

Size	Spacing	No. Reqd	Length Max.	Length Min.
#4	12"c	18	17'-0"	3'-0"
		18	"	"
		18	"	"
		18	"	"
		18	17'-5"	3'-5"
#5	11"c	24	21'-2"	3'-9"
		24	"	"
		24	"	"
		24	21'-7"	2'-7"
		24	21'-11"	2'-11"
#6	13"c	24	24'-11"	4'-5"
		24	"	"
		24	"	"
		24	"	"
		24	"	"
		24	"	"

"b" bars — BENT - See Diagrams below. — In Bottom of Top Slab bent up over Division Walls - hooked. Alternate with "a" and "c" bars.

Size	Spacing	No. Reqd 2:1	No. Reqd 3:1	No. Reqd 4:1	Length	X	Y	Z
#4	12"c	6	17	29	20'-1"	0'-2⅜"	2'-2⅜"	3'-1½"
		6	17	29	"	"	"	"
		6	17	29	"	"	"	"
		6	17	29	"	"	"	"
		6	17	29	20'-6"	0'-2⅜"	2'-3⅜"	3'-2⅝"
#5	11"c	4	17	29	20'-5"	0'-3⅛"	2'-7¼"	4'-1⅛"
		4	17	29	"	"	"	"
		4	17	29	"	"	"	"
		4	17	29	21'-0"	0'-3⅛"	2'-8⅝"	4'-2⅛"
		4	16	29	21'-1"	0'-3⅛"	2'-9⅛"	4'-2⅛"
#6	13"c	2	12	23	22'-8"	0'-3⅝"	3'-1"	4'-10⅝"
		2	12	23	"	"	"	"
		2	12	23	23'-0"	"	3'-2"	4'-11⅛"
		2	12	23	23'-1"	0'-3⅝"	3'-5"	5'-0⅛"

"b1" bars — BENT - See Diagrams below. — In Top of Bottom Slab bent down under Division Walls - hooked. Alternate with "a" and "c" bars.

Size	Spacing	No. Reqd 2:1	No. Reqd 3:1	No. Reqd 4:1	Length	X	Y	Z
#4	12"c	7	18	30	20'-1"	0'-2⅜"	2'-2⅜"	3'-1½"
		7	18	30	"	"	"	"
		7	18	30	"	"	"	"
		7	18	30	"	"	"	"
		7	18	30	20'-6"	0'-2⅜"	2'-3⅜"	3'-2⅝"
#5	11"c	5	18	30	24'-2"	0'-3⅛"	2'-7¼"	4'-1⅛"
		5	18	30	"	"	"	"
		5	18	30	"	"	"	"
		5	18	30	24'-7"	"	2'-8⅝"	4'-2⅛"
		5	17	30	24'-11"	0'-3⅛"	2'-9⅛"	4'-2⅛"
#6	13"c	3	18	29	28'-4"	0'-3⅝"	3'-1"	4'-10⅝"
		3	13	24	"	"	"	"
		3	19	24	"	"	"	"
		3	13	24	28'-9"	"	3'-2"	4'-11⅛"
		3	13	24	29'-1"	"	3'-5"	5'-0⅛"
		3	13	24	29'-5"	0'-3⅝"	3'-2⅛"	5'-0⅛"

"b2" bars — BENT - See Diagrams below. — In Top of Bottom Slab of Barrel. Alternate with "b" bars. (Two of each Length)

Size	Spacing	No. Reqd	Length Max.	Length Min.	Length Max.	Length Min.
#4	12"c	9	18'-9"	4'-8"	17'-10"	3'-10"
		9	"	"	"	"
		9	"	"	"	"
		9	"	"	"	"
		10	19'-2"	2'-11"	18'-3"	2'-6"
#5	11"c	13	22'-11"	3'-8"	21'-11"	2'-9"
		13	"	"	"	"
		13	"	"	"	"
		13	23'-4"	3'-7"	22'-4"	3'-2"
		13	23'-8"	3'-11"	22'-8"	3'-6"
#6	13"c	13	25'-11"	3'-10"	25'-10"	3'-4"
		13	"	"	"	"
		13	"	"	"	"
		13	26'-4"	4'-8"	26'-3"	3'-9"
		13	26'-8"	4'-7"	26'-7"	4'-1"
		13	26'-8"	4'-9"	26'-8"	4'-2"

"c" bars — STRAIGHT — In Top and Bottom Slab of Barrel.

Size	Spacing	No. Reqd 2:1	No. Reqd 3:1	No. Reqd 4:1	Length
#4	12"c	15	39	61	14'-0"
		15	39	61	"
		15	39	61	"
		15	39	61	"
		15	39	61	14'-3"
#5	11"c	20	39	63	17'-0"
		20	"	"	"
		20	"	"	"
		20	17'-4"	3'-1"	"
		20	17'-8"	3'-5"	"
#6	13"c	20	39	63	17'-0"
		20	"	"	"
		20	"	"	"
		20	17'-4"	3'-1"	"
		20	17'-8"	3'-5"	"

"c1" bars — STRAIGHT — In Top and Bottom Slab of Barrel. Alt. with "b" & "b2" bars. (Two of each Length)

Size	Spacing	No. Reqd	Length Max.	Length Min.
#4	12"c	14	12'-11"	2'-5"
		14	"	"
		14	"	"
		14	13'-3"	2'-9"
#5	11"c	20	16'-9"	2'-6"
		20	"	"
		20	"	"
		20	17'-1"	2'-10"
		20	17'-5"	3'-1"
#6	13"c	20	19'-8"	2'-10"
		20	"	"
		20	"	"
		20	20'-0"	3'-2"
		20	20'-4"	3'-5"
		20	20'-8"	3'-9"

"d" bars — STRAIGHT — Longitudinal in Top slab of Barrel.

Size	Spacing	No. Reqd	Length
#4	12"c	30	
		30	
		30	
		30	
		30	
#5	12"c	34	
		34	
		34	
		34	
		34	
#6	12"c	38	
		38	
		38	
		38	
		38	

"d1" bars — STRAIGHT — Longitudinal in Sidewalls and Division Walls.

Size	Spacing	No. Reqd 2:1	No. Reqd 3:1	No. Reqd 4:1	Length
#4	12"c	16	32	48	
		16	32	48	
		16	32	48	
		16	32	48	
		16	32	48	
#5	12"c	24	40	56	
		24	40	56	
		24	40	56	
		24	40	56	
		24	40	56	
#6	12"c	24	40	56	
		24	40	56	
		24	40	56	
		24	40	56	
		24	40	56	

Lengths vary with Clear Span S" skew and slope, see Table for ave. Lengths.

"d2" bars — STRAIGHT — Longitudinal in Bottom Slab of Barrel.

Size	Spacing	No. Reqd	Length
#4	12"c	30	
		30	
		30	
		30	
		30	
#5	12"c	34	
		34	
		34	
		34	
		34	
#6	12"c	38	
		38	
		38	
		38	
		38	

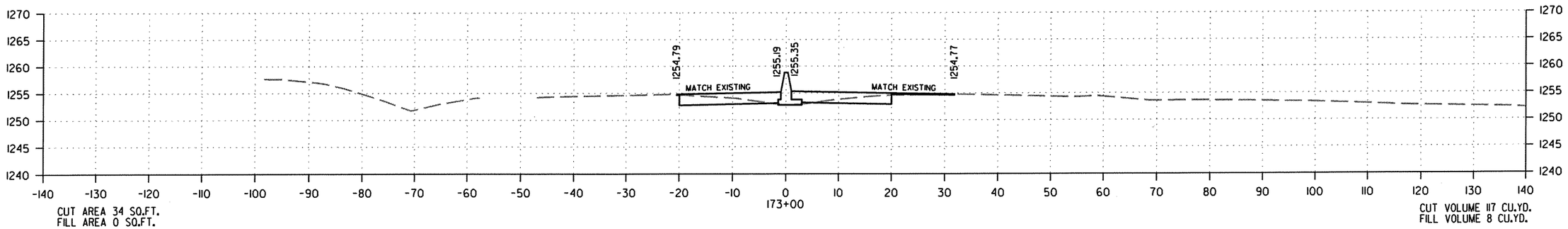
Lengths vary with Clear Span S" skew and slope, see Table for ave. Lengths.

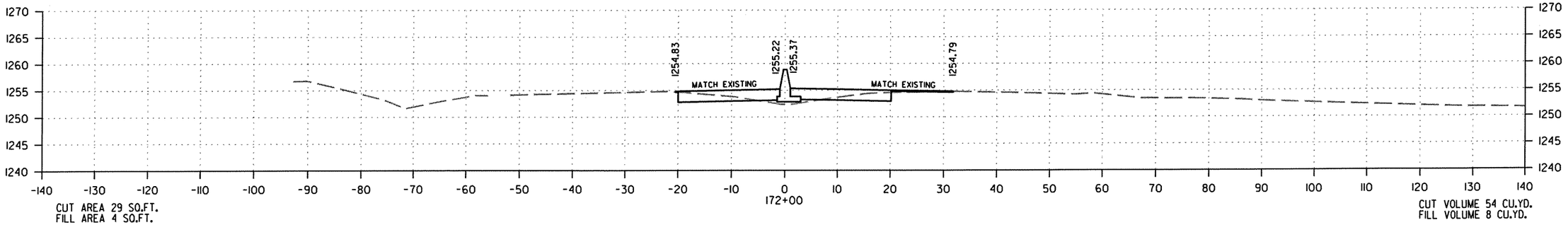
"e" bars — STRAIGHT — Vertical in Sidewalls and Division Walls.

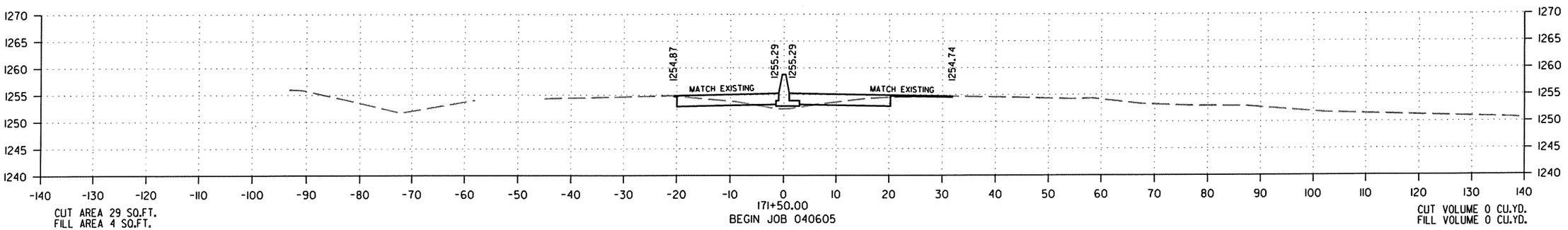
Size	Spacing	No. Reqd 2:1	No. Reqd 3:1	No. Reqd 4:1	Length
#4	12"c	92	184	272	2'-9"
		92	184	272	3'-9"
		92	184	272	4'-9"
		92	184	272	5'-9"
		92	184	272	6'-9"
#5	12"c	84	176	264	3'-10"
		84	176	264	4'-10"
		84	176	264	5'-10"
		84	176	264	6'-10"
		84	176	264	7'-10"
#6	12"c	80	172	264	5'-11"
		80	172	264	6'-11"
		80	172	264	7'-11"
		80	172	264	8'-11"
	11"c	88	188	288	8'-11"
#6	12"c	76	168	260	5'-1"
		76	168	260	6'-1"
		76	168	260	7'-1"
	12"c	76	168	260	8'-1"
	11"c	84	184	284	9'-1"
	10"c	92	200	308	10'-1"
#6	12"c	—	160	256	5'-3"

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.		040605	186	260

(2) CROSS SECTIONS - I-540







CROSS SECTION STA.171+50 TO STA.173+00

6/13/2013

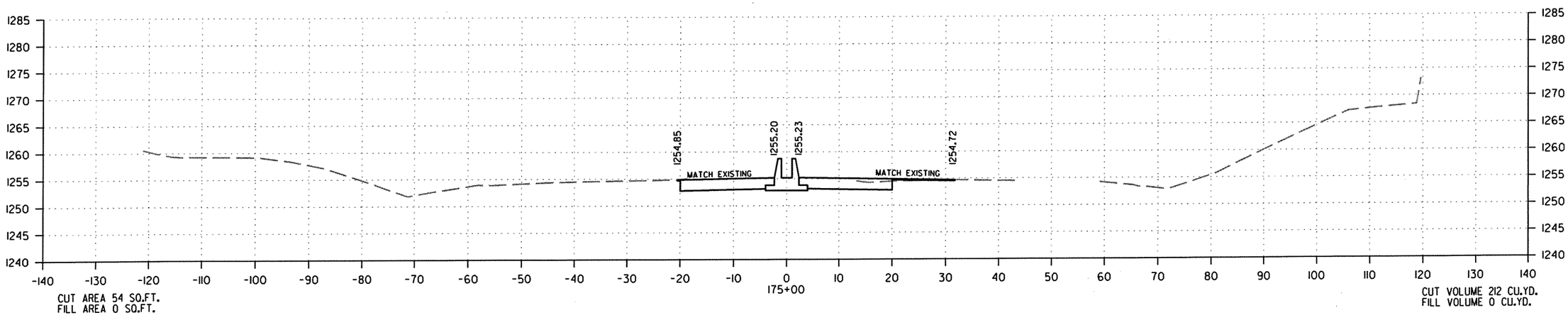
R040605.DGN

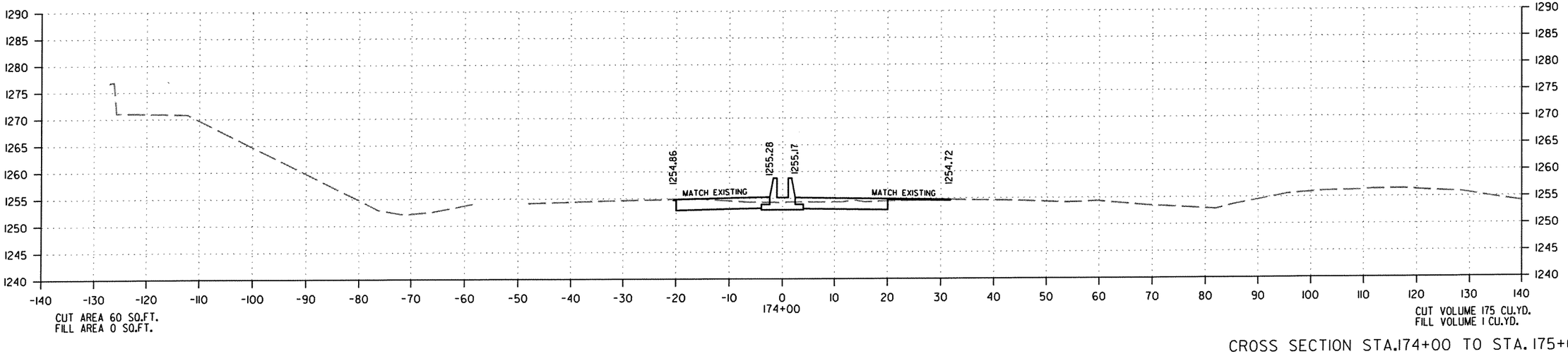
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	187	260

(2) CROSS SECTIONS - I-540

CONCRETE MEDIAN BARRIER

TYPE C STA. 171+50.00 TO STA. 173+25.25
TYPE SPECIAL STA. 173+25.25 TO STA. 175+70.25
TYPE C STA. 175+70.25 TO STA. 239+77.13





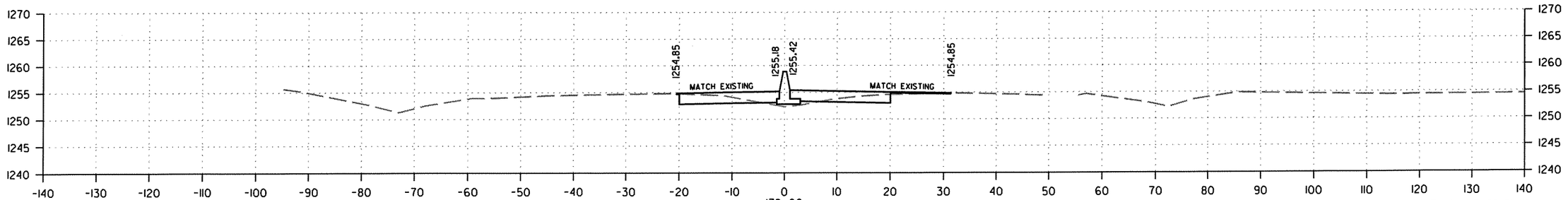
CROSS SECTION STA.174+00 TO STA. 175+00

6/13/2013

R040605.DGN

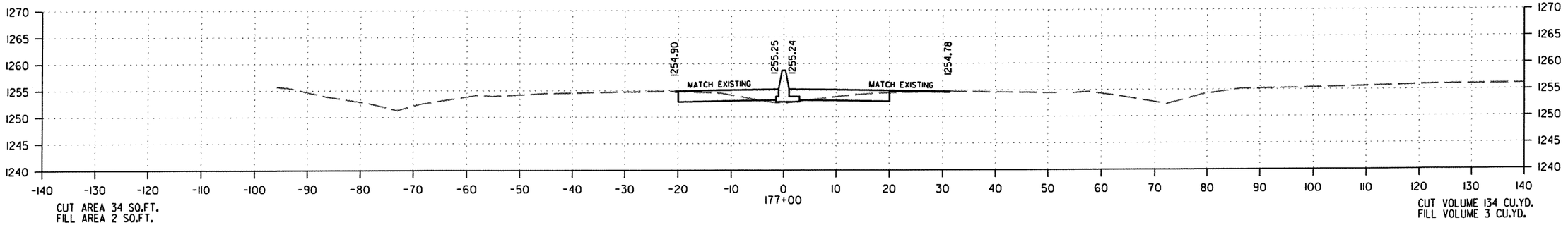
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	188	260

(2) CROSS SECTIONS - I-540



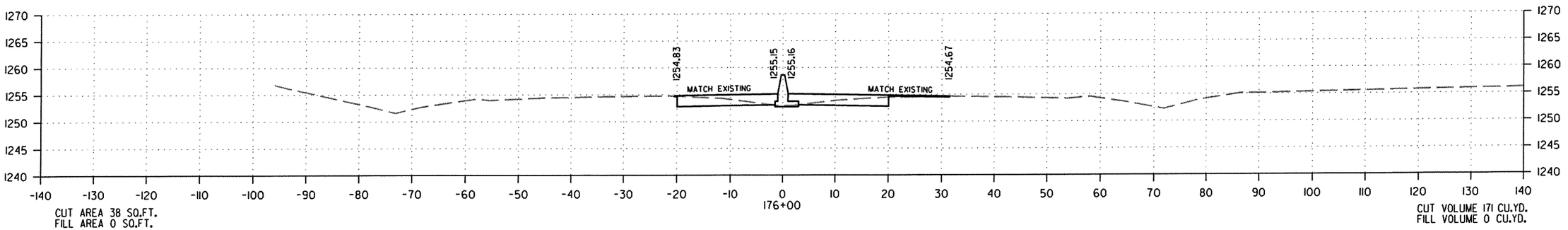
CUT AREA 32 SQ.FT.
FILL AREA 4 SQ.FT.

CUT VOLUME 122 CU.YD.
FILL VOLUME 9 CU.YD.



CUT AREA 34 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 134 CU.YD.
FILL VOLUME 3 CU.YD.



CUT AREA 38 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 171 CU.YD.
FILL VOLUME 0 CU.YD.

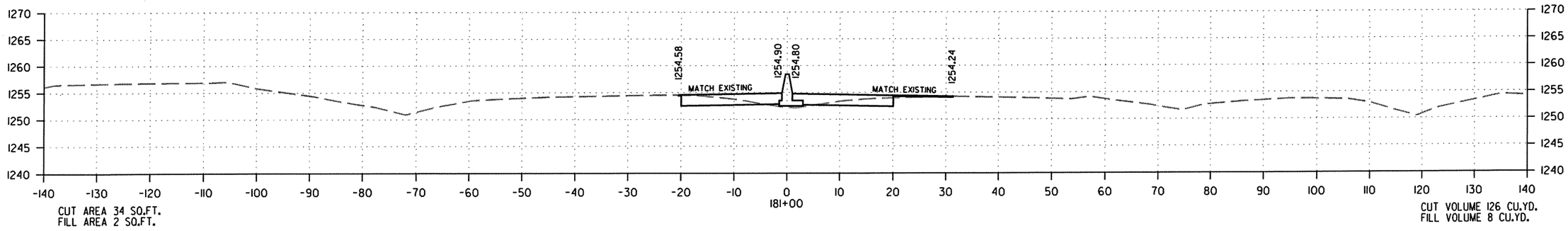
CROSS SECTION STA.176+00 TO STA.178+00

6/13/2013

R040605.DGN

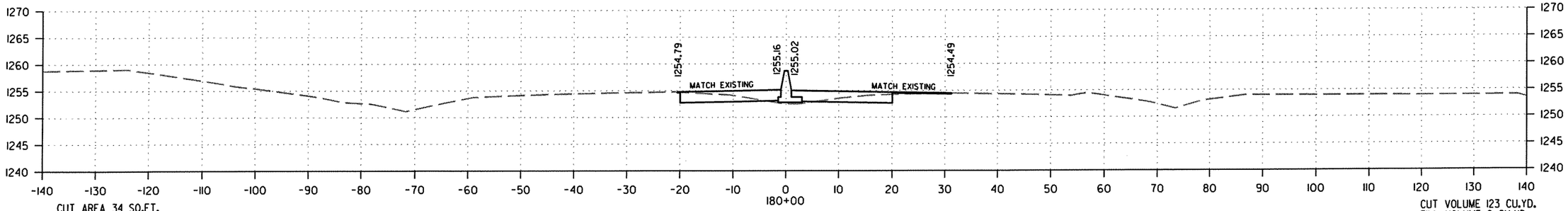
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	189	260

(2) CROSS SECTIONS - I-540



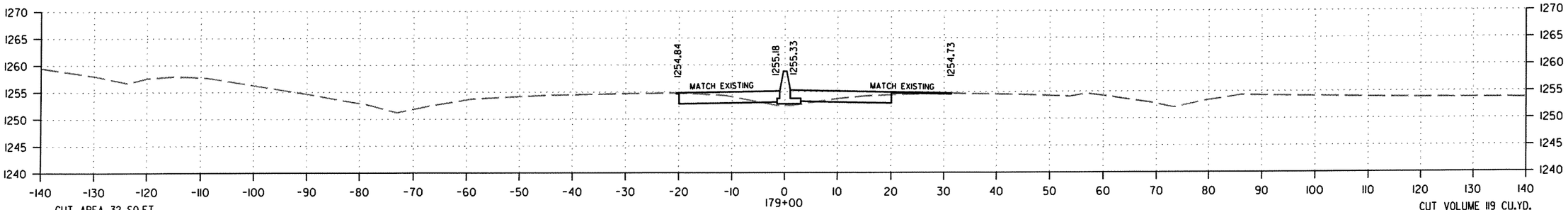
CUT AREA 34 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 126 CU.YD.
FILL VOLUME 8 CU.YD.



CUT AREA 34 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 123 CU.YD.
FILL VOLUME 9 CU.YD.



CUT AREA 32 SQ.FT.
FILL AREA 3 SQ.FT.

CUT VOLUME 119 CU.YD.
FILL VOLUME 12 CU.YD.

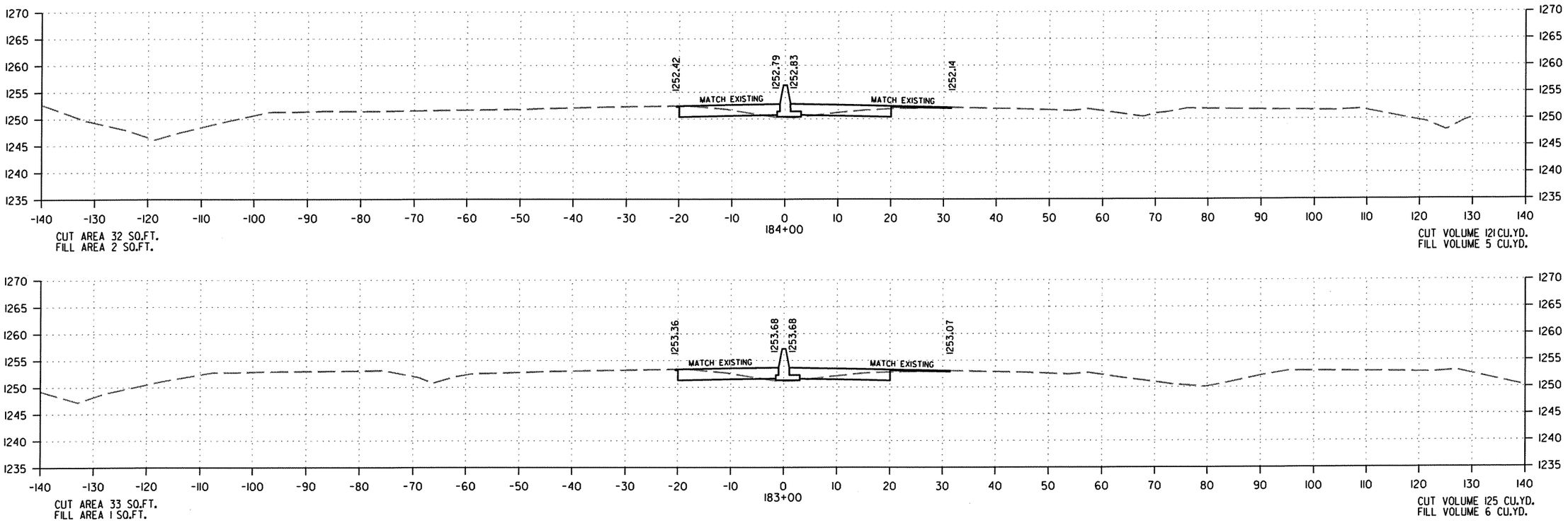
CROSS SECTION STA.179+00 TO STA. 181+00

6/13/2013

R040605.DGN

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.		040605	190	260

(2) CROSS SECTIONS - I-540



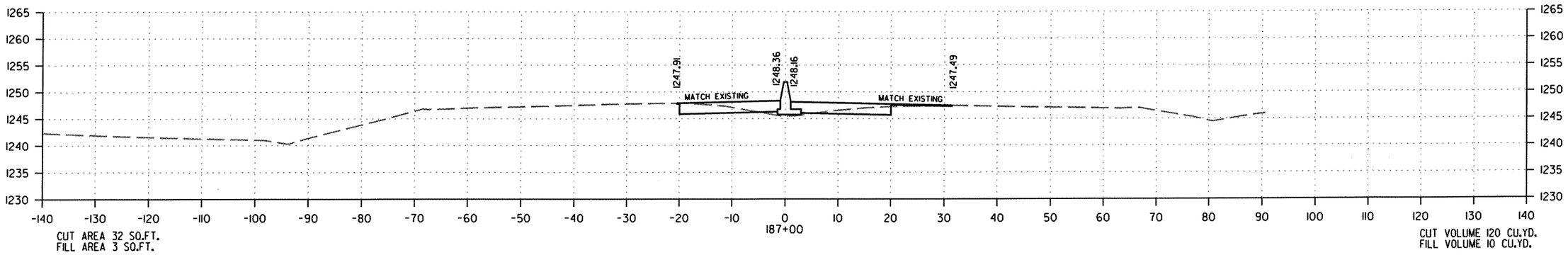
CROSS SECTION STA.182+00 TO STA.184+00

6/13/2013

R040605.DGN

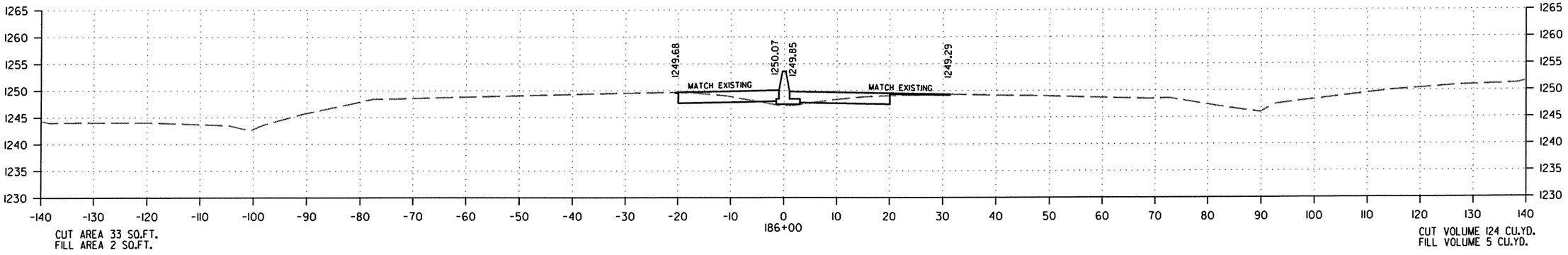
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	191	260

(2) CROSS SECTIONS - I-540



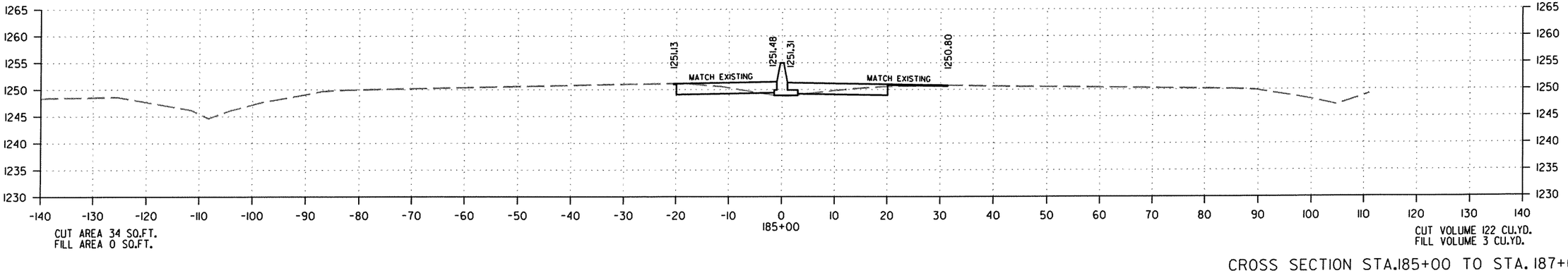
CUT AREA 32 SQ.FT.
FILL AREA 3 SQ.FT.

CUT VOLUME 120 CU.YD.
FILL VOLUME 10 CU.YD.



CUT AREA 33 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 124 CU.YD.
FILL VOLUME 5 CU.YD.



CUT AREA 34 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 122 CU.YD.
FILL VOLUME 3 CU.YD.

CROSS SECTION STA.185+00 TO STA. 187+00

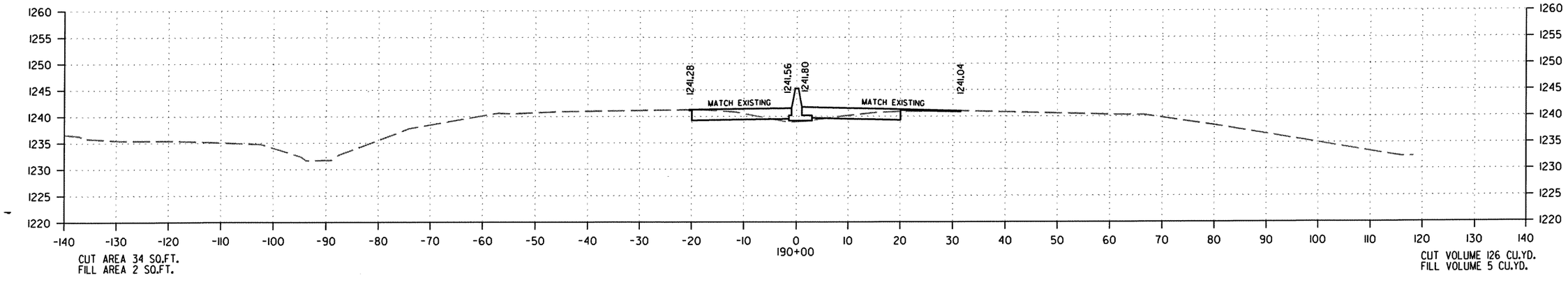
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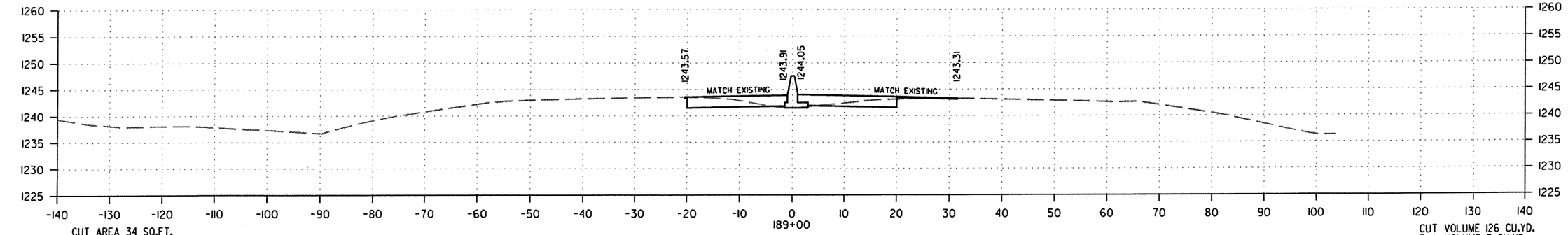
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040605	192	260

(2) CROSS SECTIONS - I-540



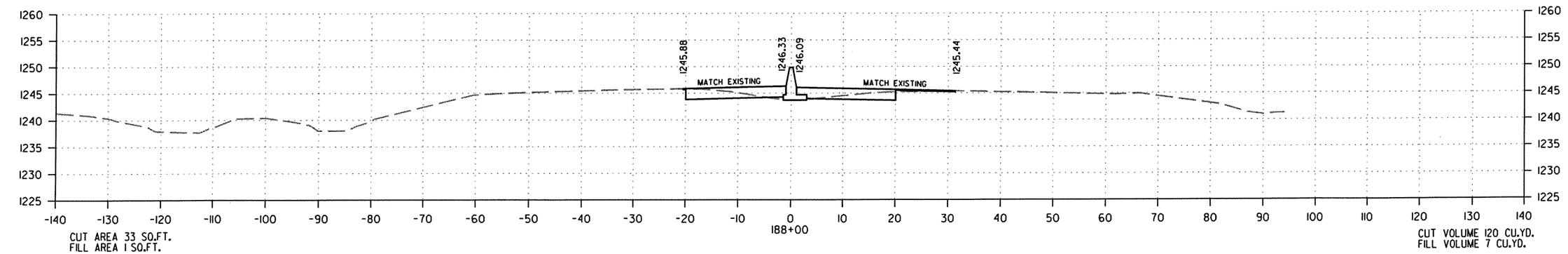
CUT AREA 34 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 126 CU.YD.
FILL VOLUME 5 CU.YD.



CUT AREA 34 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 126 CU.YD.
FILL VOLUME 3 CU.YD.



CUT AREA 33 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 120 CU.YD.
FILL VOLUME 7 CU.YD.

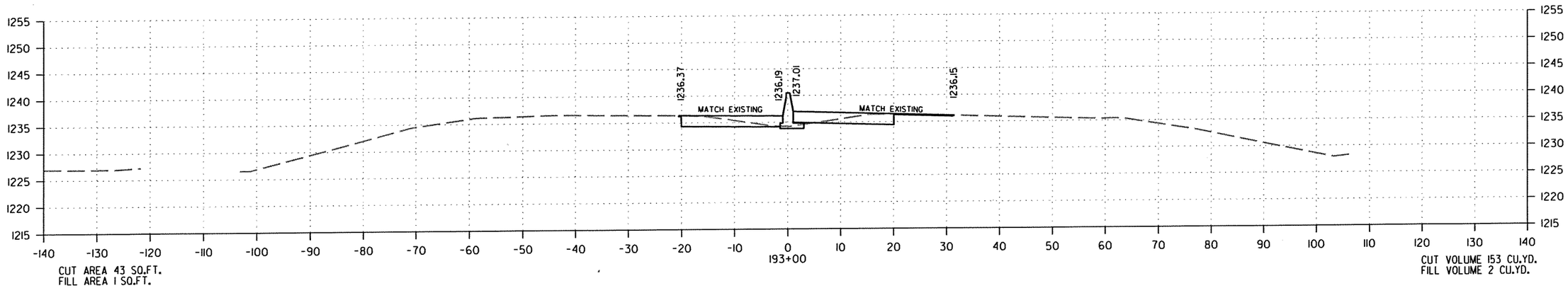
CROSS SECTION STA.188+00 TO STA.190+00

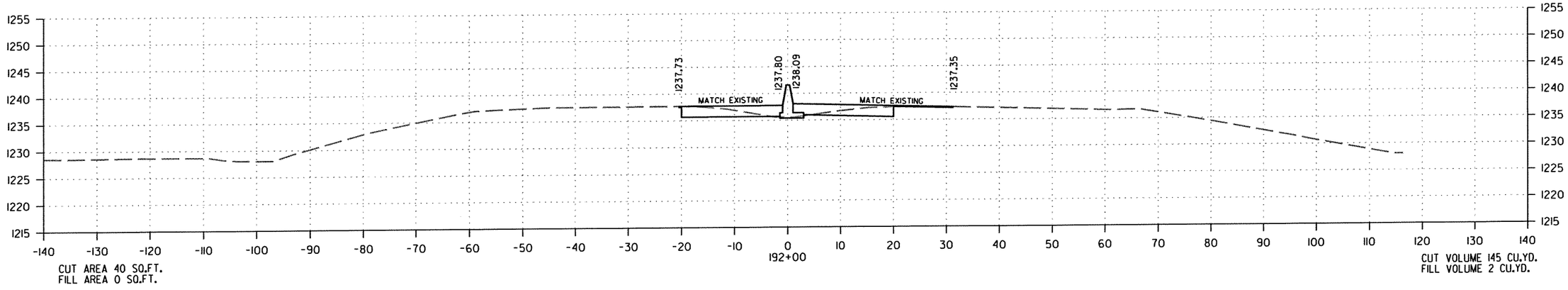
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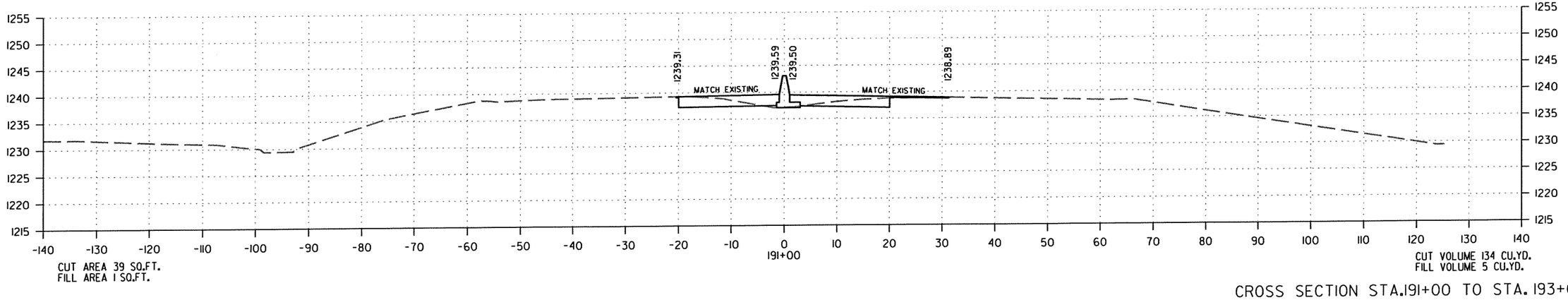
R040605.DGN

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.		040605	193	260

(2) CROSS SECTIONS - I-540







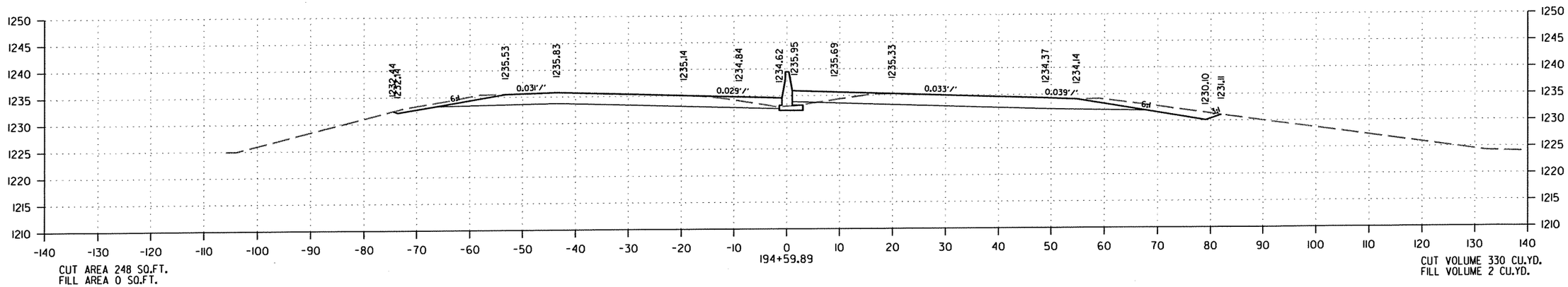
CROSS SECTION STA.191+00 TO STA.193+00

6/13/2013

R040605.DGN

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.		040605	194	260

(2) CROSS SECTIONS - I-540



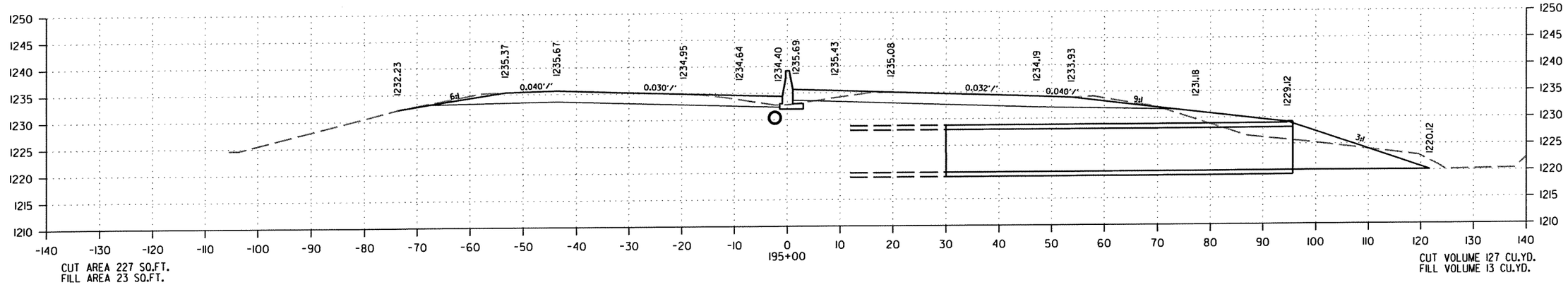
CROSS SECTION STA.194+00 TO STA.194+59.89

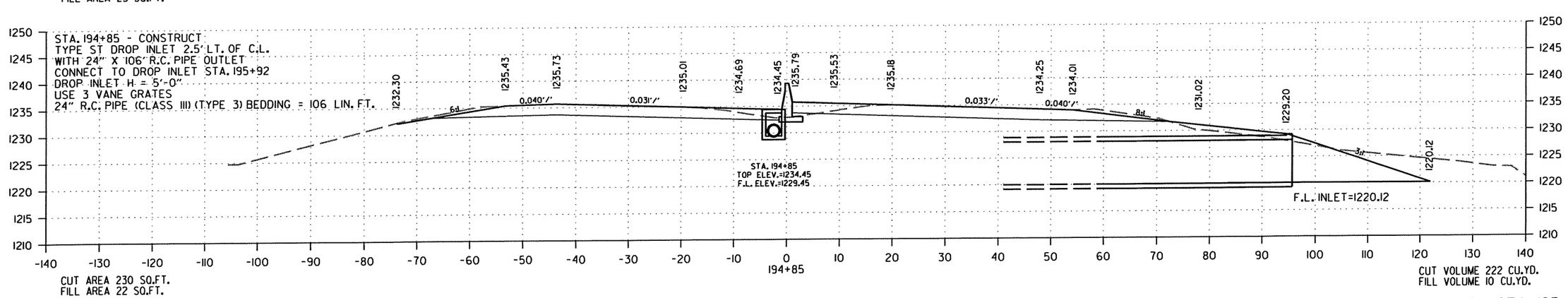
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R040605.DGN

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.		040605	195	260

(2) CROSS SECTIONS - I-540





CROSS SECTION STA.194+85 TO STA. 195+00

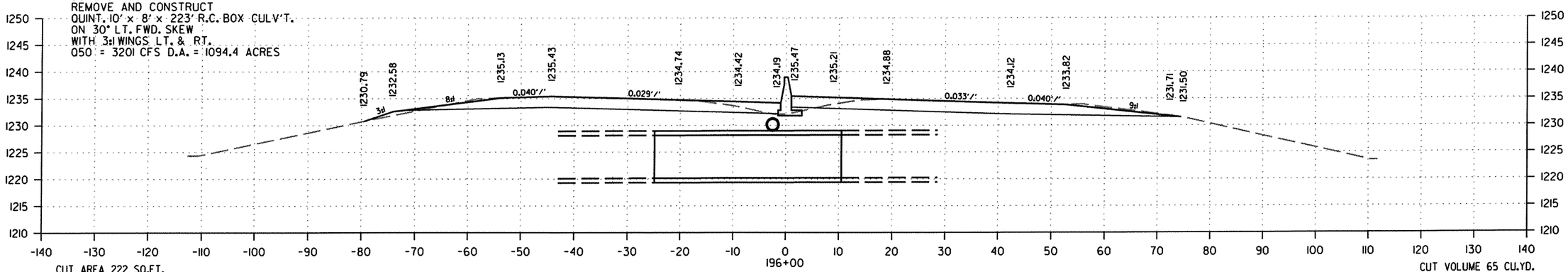
6/13/2013

R040605.DGN

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.		040605	196	260

(2) CROSS SECTIONS - I-540

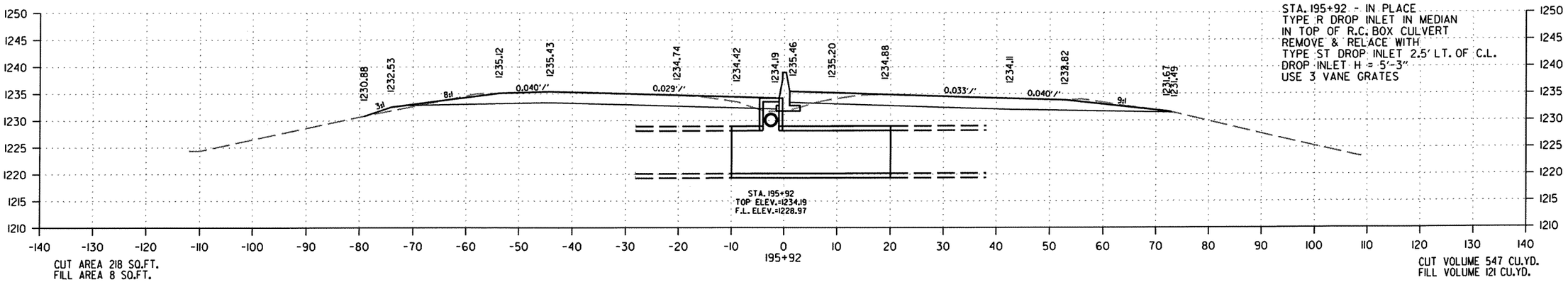
STA. 196+00 - IN PLACE
DBL. 10' x 8' x 180' R.C. BOX CULV'T.
30° LT. FWD. SKEW
REMOVE AND CONSTRUCT
QUINT. 10' x 8' x 223' R.C. BOX CULV'T.
ON 30° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
050 = 3201 CFS D.A. = 1094.4 ACRES



CUT AREA 222 SQ.FT.
FILL AREA 6 SQ.FT.

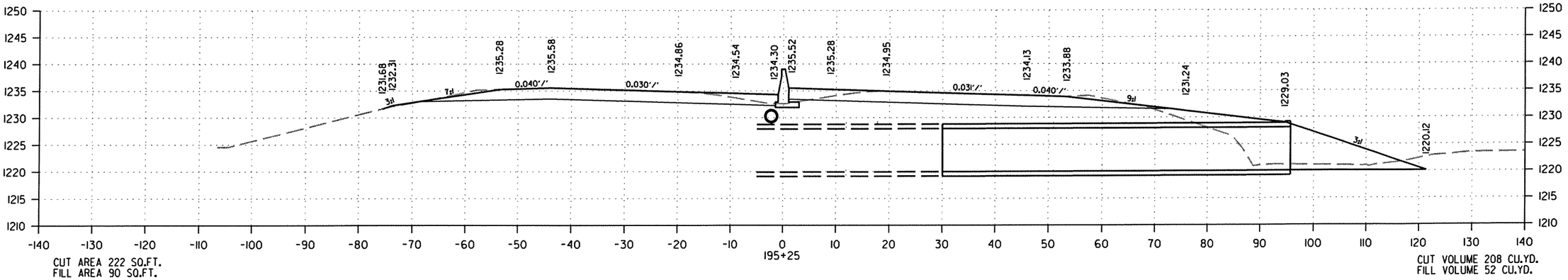
CUT VOLUME 65 CU.YD.
FILL VOLUME 2 CU.YD.

STA. 195+92 - IN PLACE
TYPE R DROP INLET IN MEDIAN
IN TOP OF R.C. BOX CULVERT
REMOVE & RELACE WITH
TYPE ST DROP INLET 2.5' LT. OF C.L.
DROP INLET H = 5'-3"
USE 3 VANE GRATES



CUT AREA 218 SQ.FT.
FILL AREA 8 SQ.FT.

CUT VOLUME 547 CU.YD.
FILL VOLUME 121 CU.YD.



CUT AREA 222 SQ.FT.
FILL AREA 90 SQ.FT.

CUT VOLUME 208 CU.YD.
FILL VOLUME 52 CU.YD.

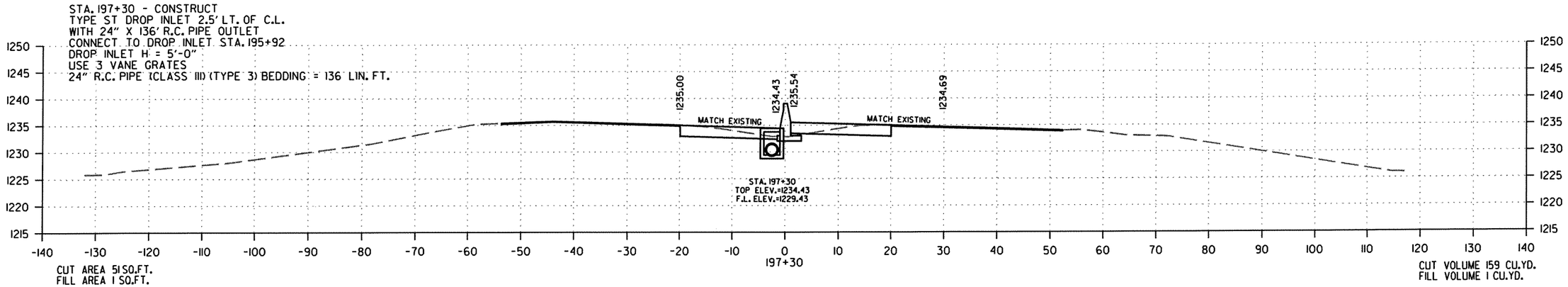
CROSS SECTION STA.195+25 TO STA.196+00

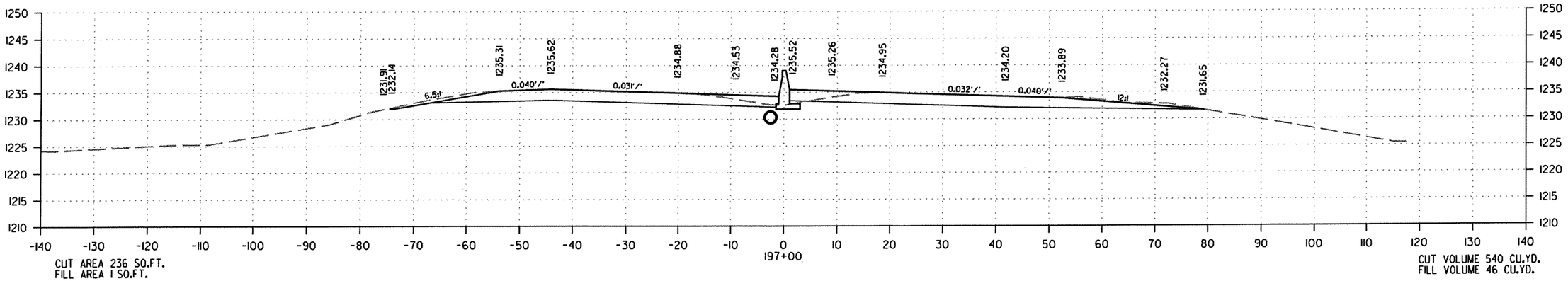
6/13/2013

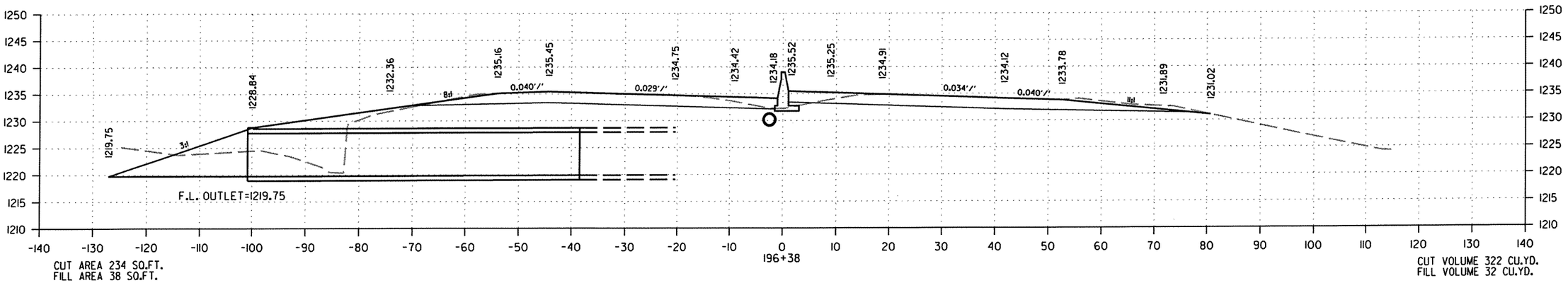
R040605.DGN

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.		040605	197	260

(2) CROSS SECTIONS - I-540







CROSS SECTION STA.196+38 TO STA. 197+30

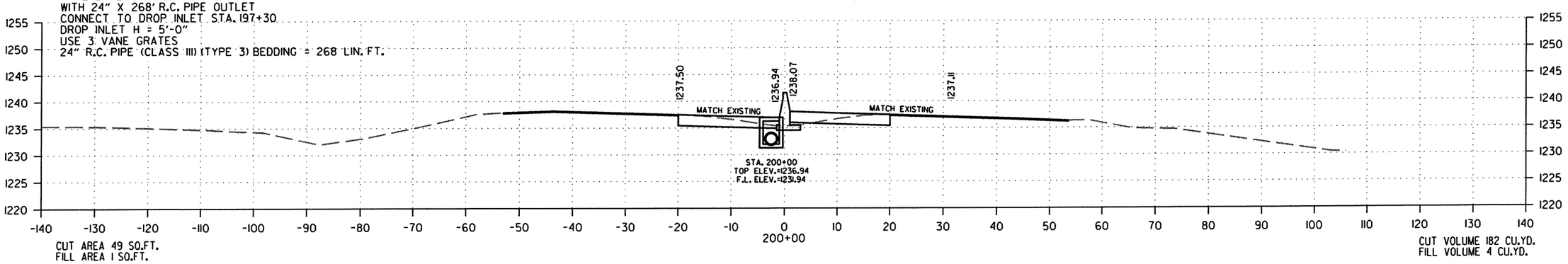
6/13/2013

R040605.DGN

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.		040605	198	260

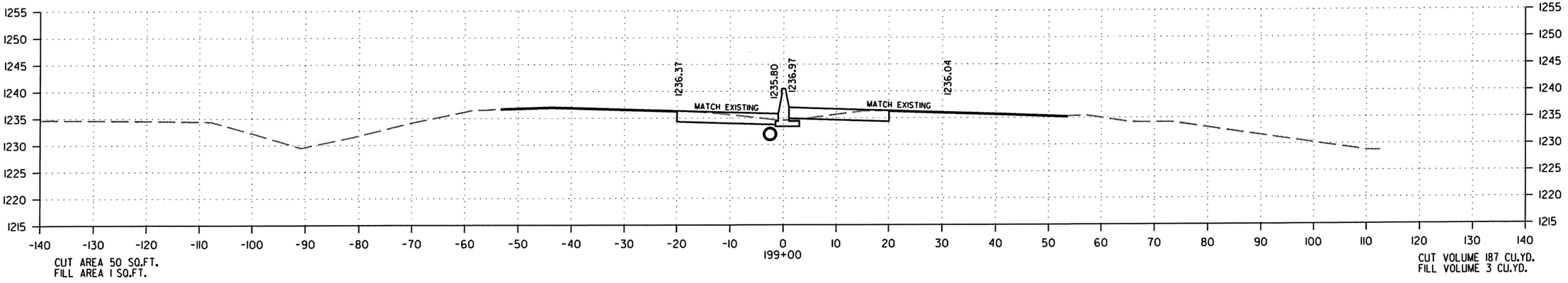
(2) CROSS SECTIONS - I-540

STA. 200+00 - CONSTRUCT
TYPE ST DROP INLET 2.5' LT. OF C.L.
WITH 24" X 268' R.C. PIPE OUTLET
CONNECT TO DROP INLET STA. 197+30
DROP INLET H = 5'-0"
USE 3 VANE GRATES
24" R.C. PIPE (CLASS III) (TYPE 3) BEDDING = 268 LIN. FT.



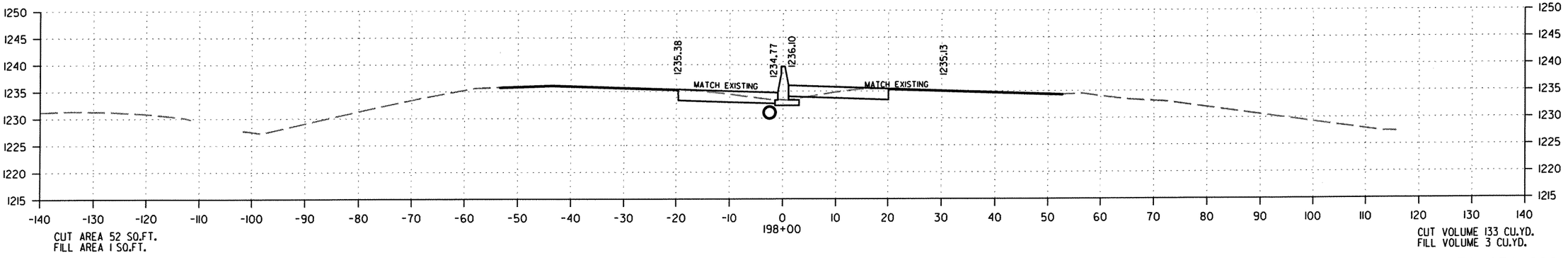
CUT AREA 49 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 182 CU.YD.
FILL VOLUME 4 CU.YD.



CUT AREA 50 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 187 CU.YD.
FILL VOLUME 3 CU.YD.



CUT AREA 52 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 133 CU.YD.
FILL VOLUME 3 CU.YD.

CROSS SECTION STA.198+00 TO STA. 200+00

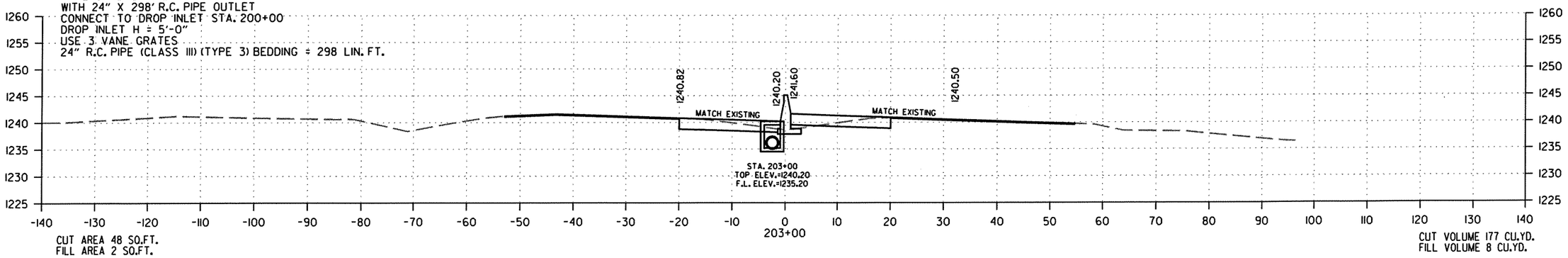
6/13/2013

R040605.DGN

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.		040605	199	260

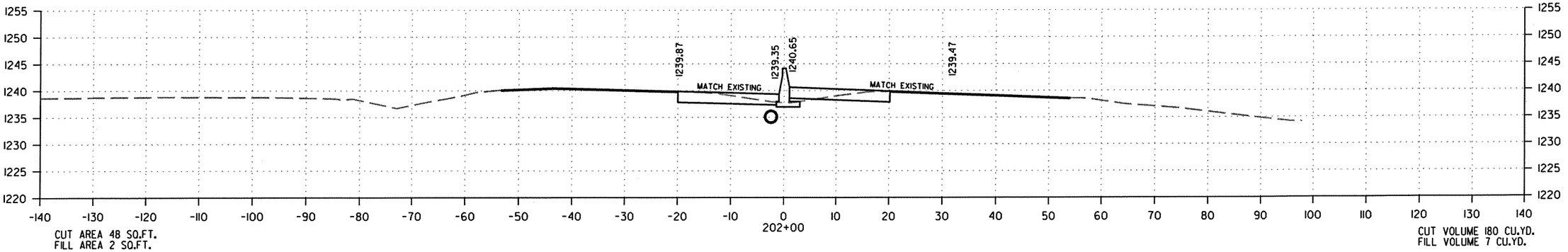
(2) CROSS SECTIONS - I-540

STA. 203+00 - CONSTRUCT
TYPE ST DROP INLET 2.5' LT. OF C.L.
WITH 24" X 298' R.C. PIPE OUTLET
CONNECT TO DROP INLET STA. 200+00
DROP INLET H = 5'-0"
USE 3 VANE GRATES
24" R.C. PIPE (CLASS III) (TYPE 3) BEDDING = 298 LIN. FT.



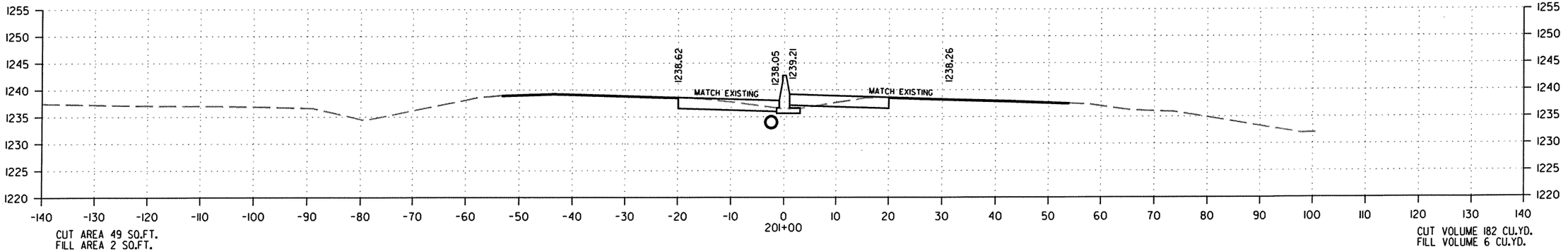
CUT AREA 48 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 177 CU.YD.
FILL VOLUME 8 CU.YD.



CUT AREA 48 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 180 CU.YD.
FILL VOLUME 7 CU.YD.



CUT AREA 49 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 182 CU.YD.
FILL VOLUME 6 CU.YD.

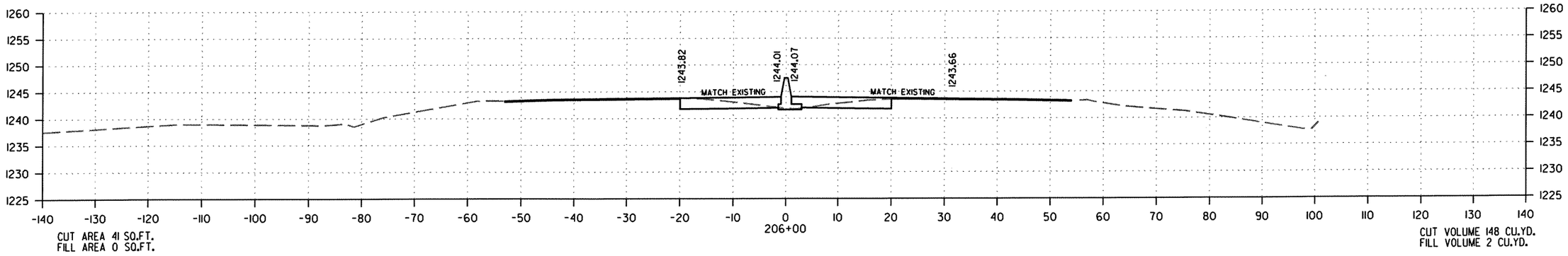
CROSS SECTION STA.201+00 TO STA. 203+00

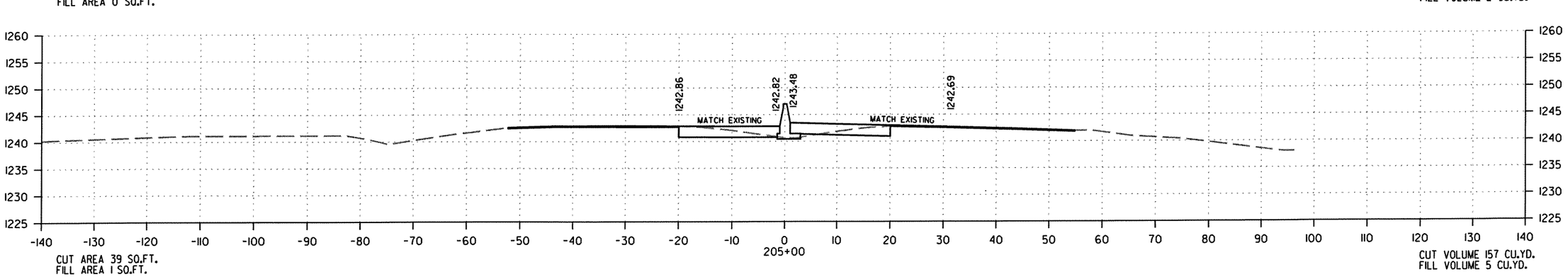
6/13/2013

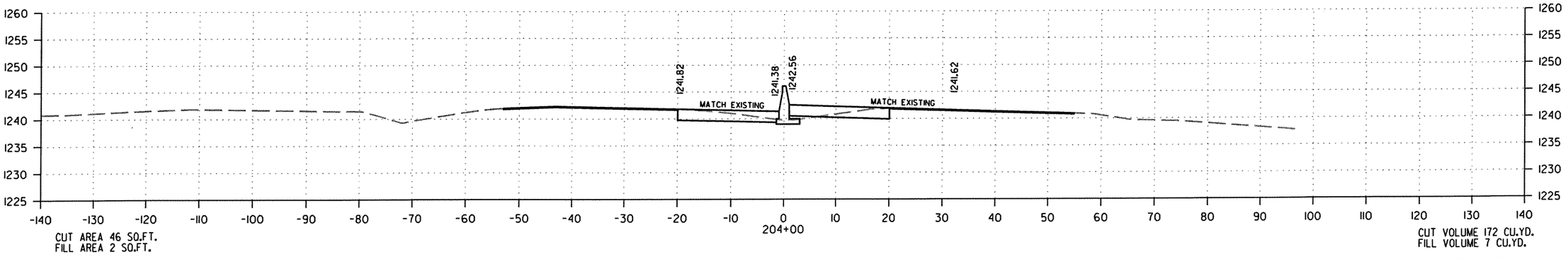
R040605.DGN

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.		040605	200	260

(2) CROSS SECTIONS - I-540







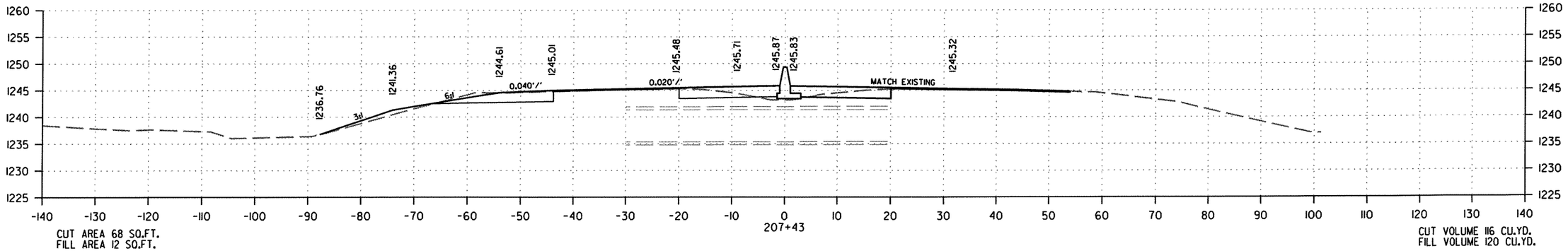
CROSS SECTION STA.204+00 TO STA. 206+00

6/13/2013

R040605.DGN

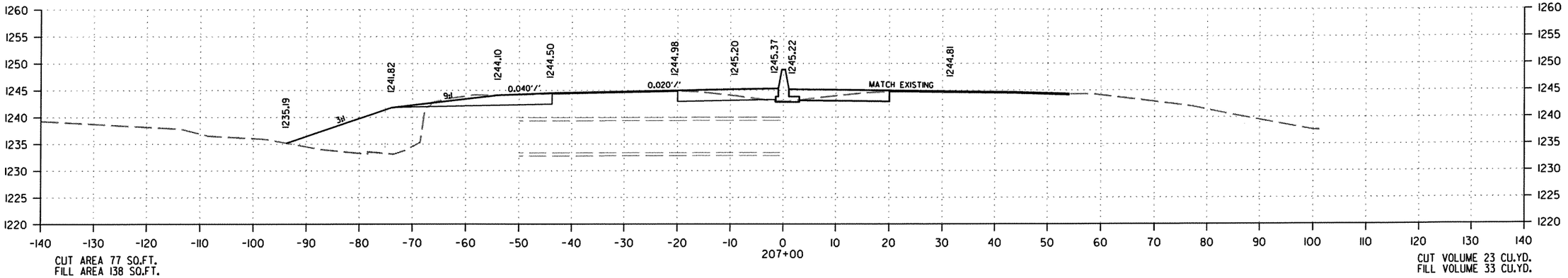
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	201	260

(2) CROSS SECTIONS - I-540



CUT AREA 68 SQ.FT.
FILL AREA 12 SQ.FT.

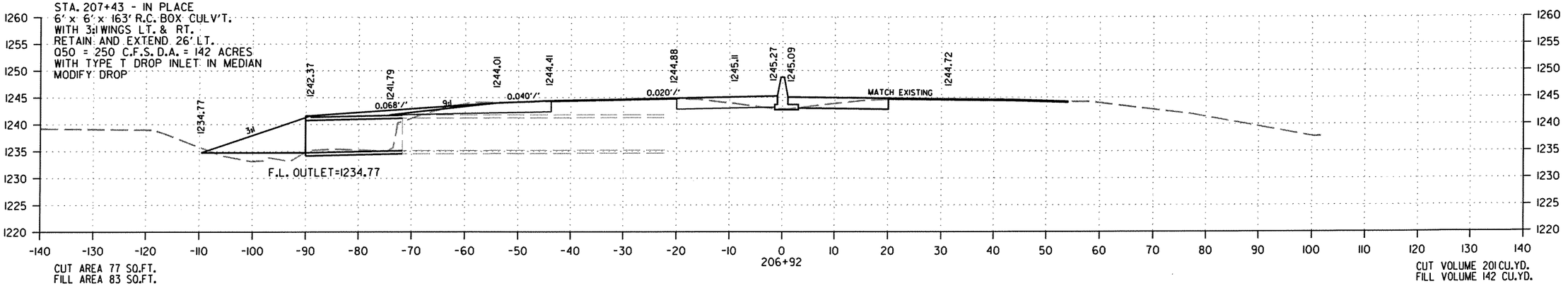
CUT VOLUME 116 CU.YD.
FILL VOLUME 120 CU.YD.



CUT AREA 77 SQ.FT.
FILL AREA 138 SQ.FT.

CUT VOLUME 23 CU.YD.
FILL VOLUME 33 CU.YD.

STA. 207+43 - IN PLACE
6' x 6' x 163' R.C. BOX CULV'T.
WITH 3:1 WINGS LT. & RT.
RETAIN AND EXTEND 26' LT.
Q50 = 250 C.F.S. D.A. = 142 ACRES
WITH TYPE T DROP INLET IN MEDIAN
MODIFY DROP



CUT AREA 77 SQ.FT.
FILL AREA 83 SQ.FT.

CUT VOLUME 201 CU.YD.
FILL VOLUME 142 CU.YD.

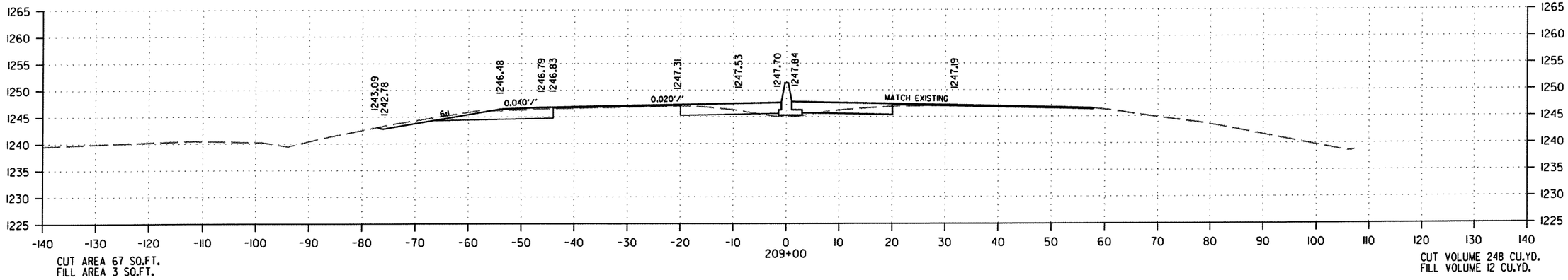
CROSS SECTION STA.206+92 TO STA. 207+43

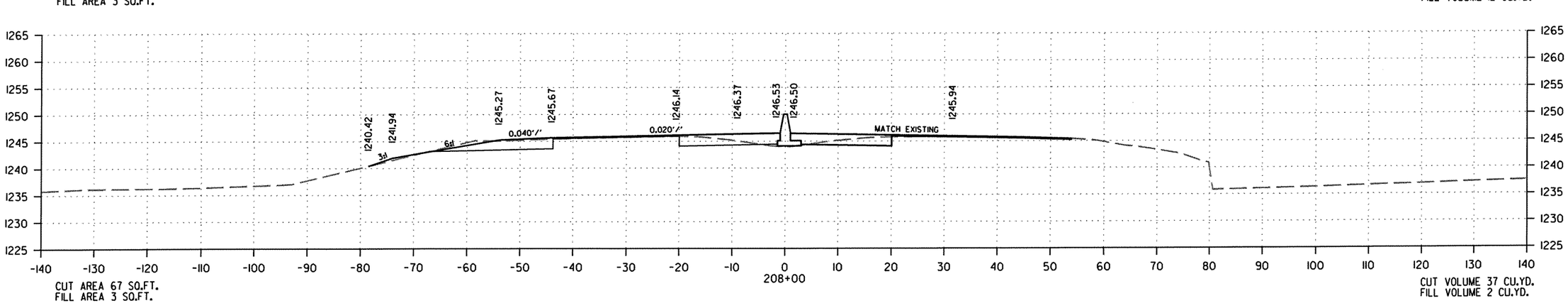
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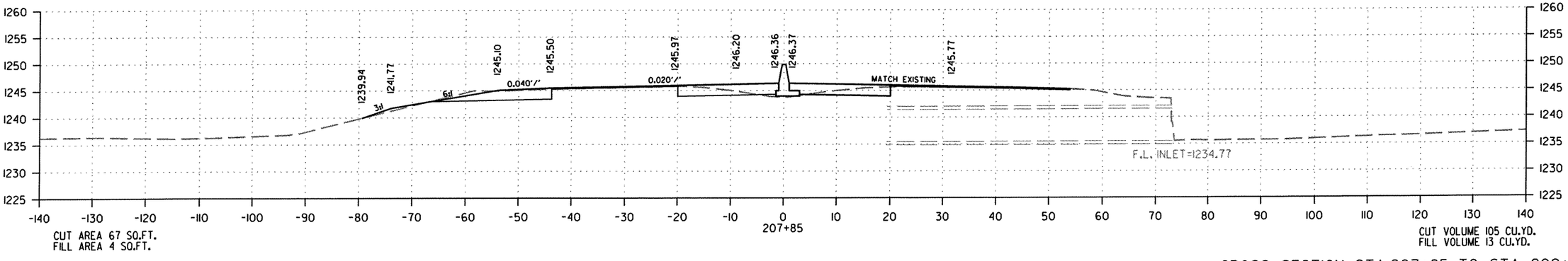
R040605.DGN

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.		040605	202	260

(2) CROSS SECTIONS - I-540







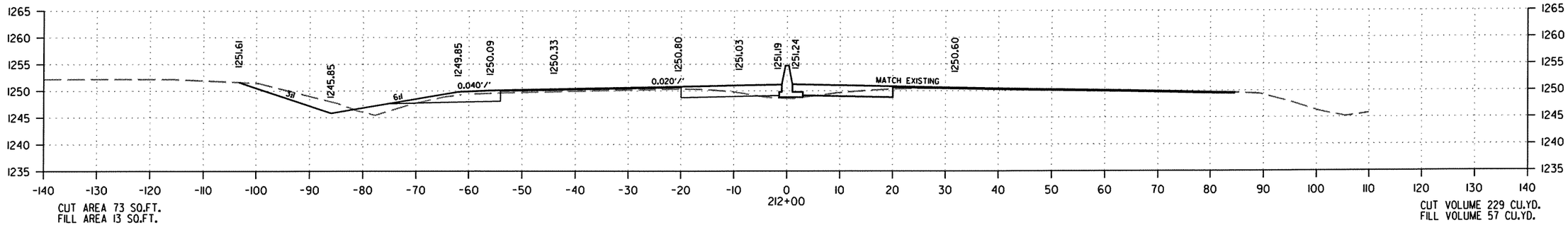
CROSS SECTION STA.207+85 TO STA. 209+00

6/13/2013

R040605.DGN

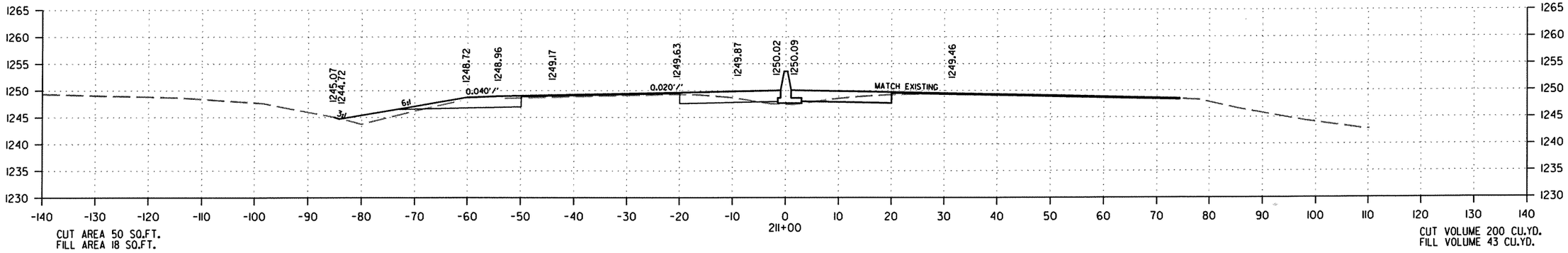
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	203	260

(2) CROSS SECTIONS - I-540



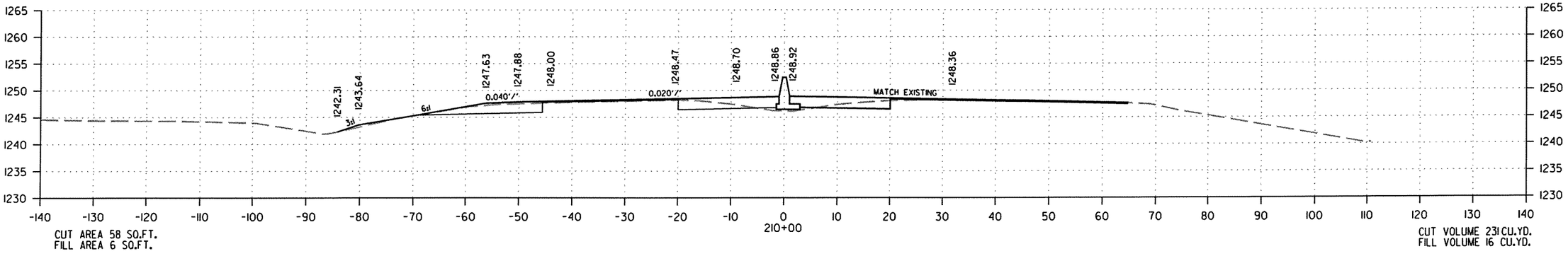
CUT AREA 73 SQ.FT.
FILL AREA 13 SQ.FT.

CUT VOLUME 229 CU.YD.
FILL VOLUME 57 CU.YD.



CUT AREA 50 SQ.FT.
FILL AREA 18 SQ.FT.

CUT VOLUME 200 CU.YD.
FILL VOLUME 43 CU.YD.



CUT AREA 58 SQ.FT.
FILL AREA 6 SQ.FT.

CUT VOLUME 231 CU.YD.
FILL VOLUME 16 CU.YD.

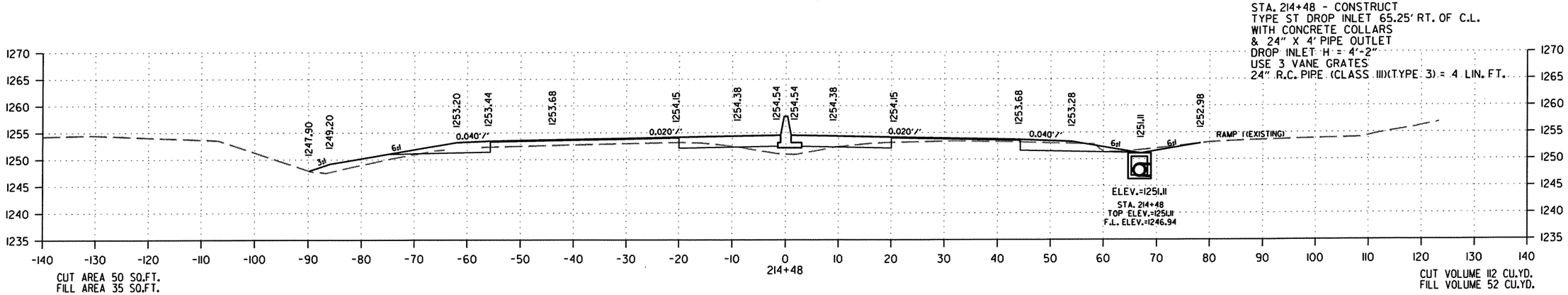
CROSS SECTION STA.210+00 TO STA. 212+00

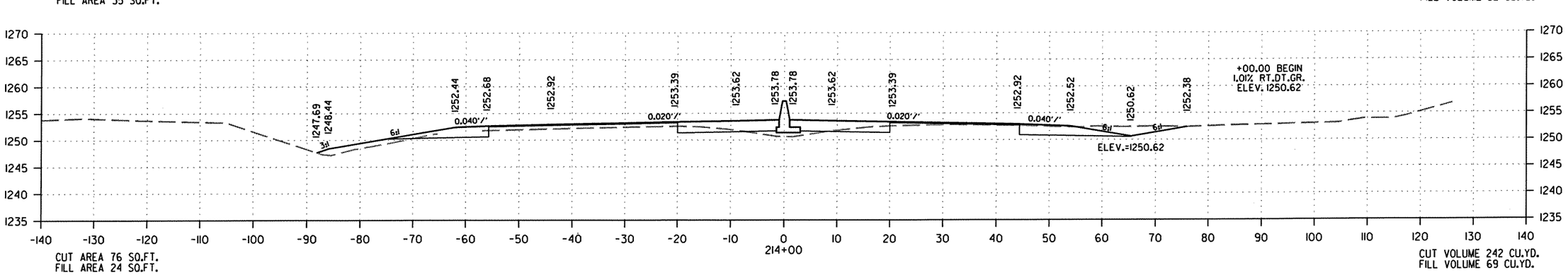
6/13/2013

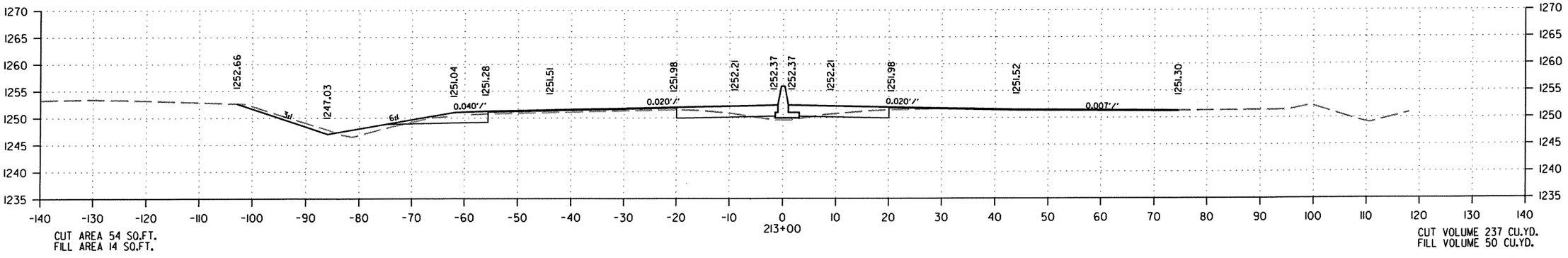
R040605.DGN

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.		040605	204	260

(2) CROSS SECTIONS - I-540







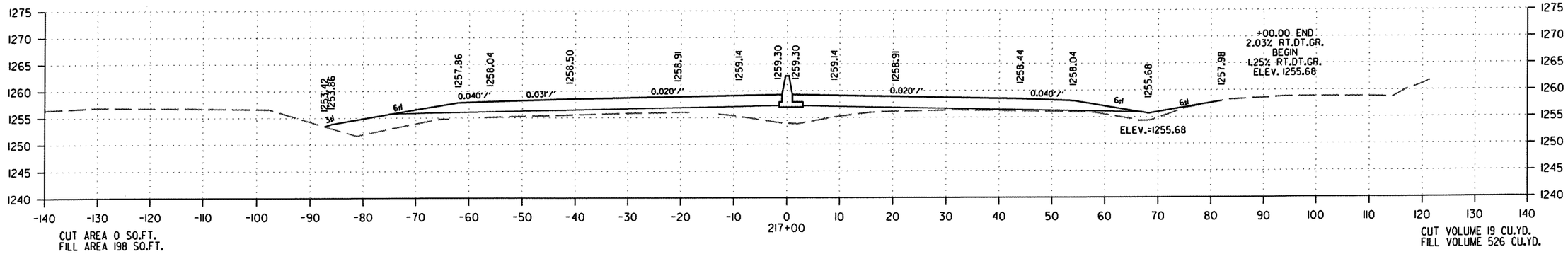
CROSS SECTION STA.213+00 TO STA. 214+48

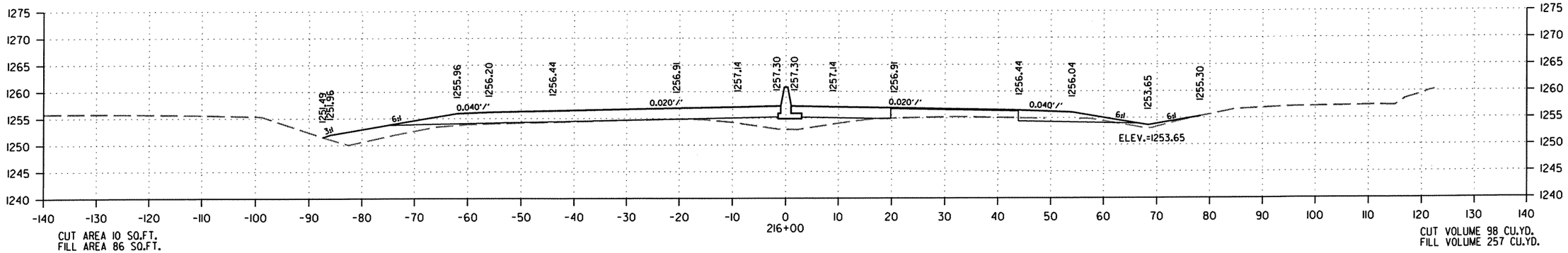
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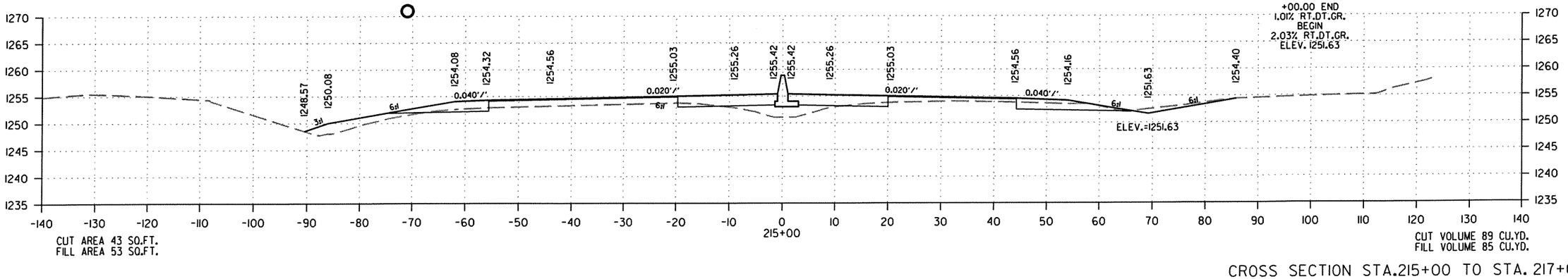
R040605.DGN

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.		040605	205	260

(2) CROSS SECTIONS - I-540







CROSS SECTION STA.215+00 TO STA. 217+00

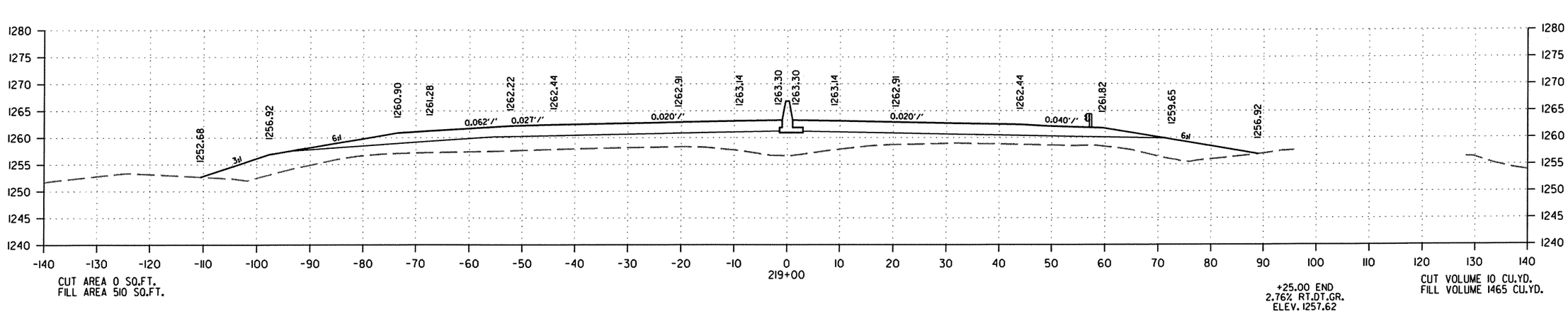
6/13/2013

R040605.DGN

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.		040605	206	260

(2) CROSS SECTIONS - I-540



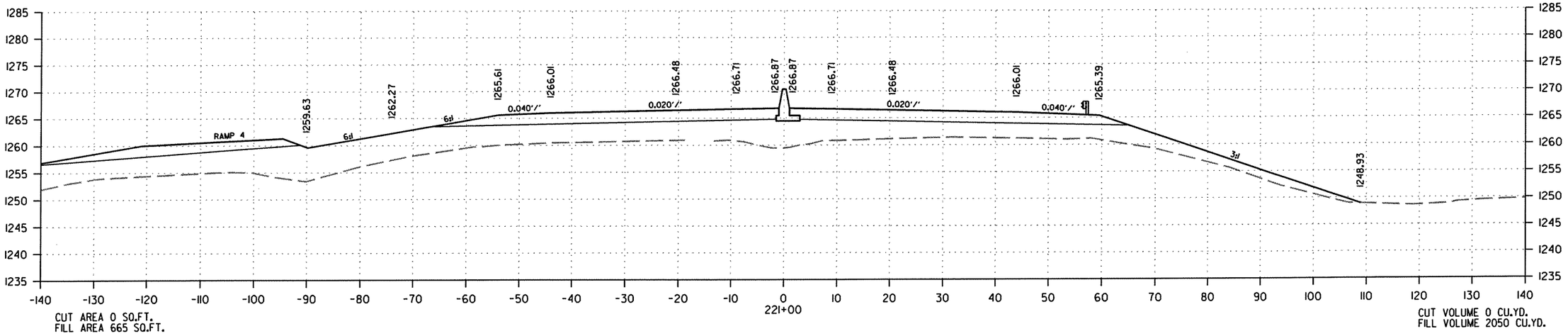
CROSS SECTION STA.218+00 TO STA. 219+00

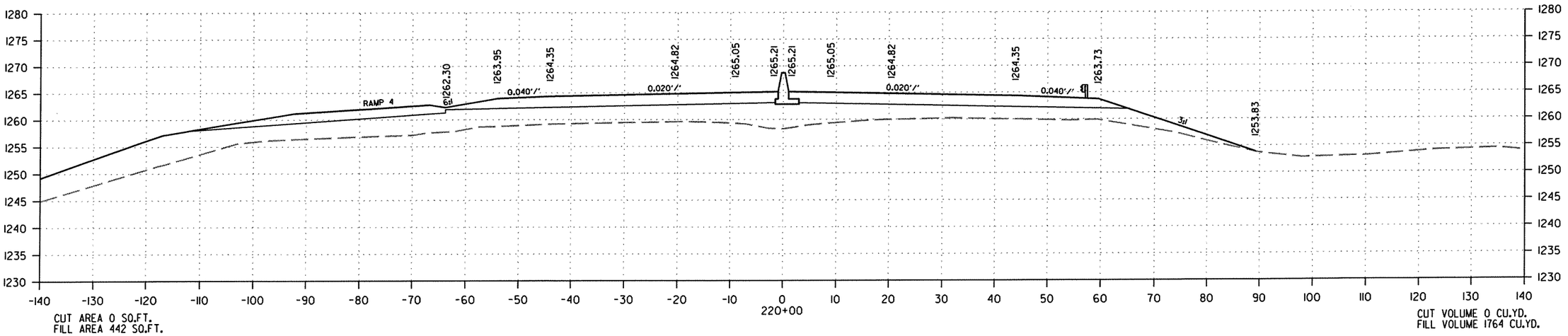
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R040605.DGN

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.		040605	207	260

(2) CROSS SECTIONS - I-540





CROSS SECTION STA.220+00 TO STA. 221+00

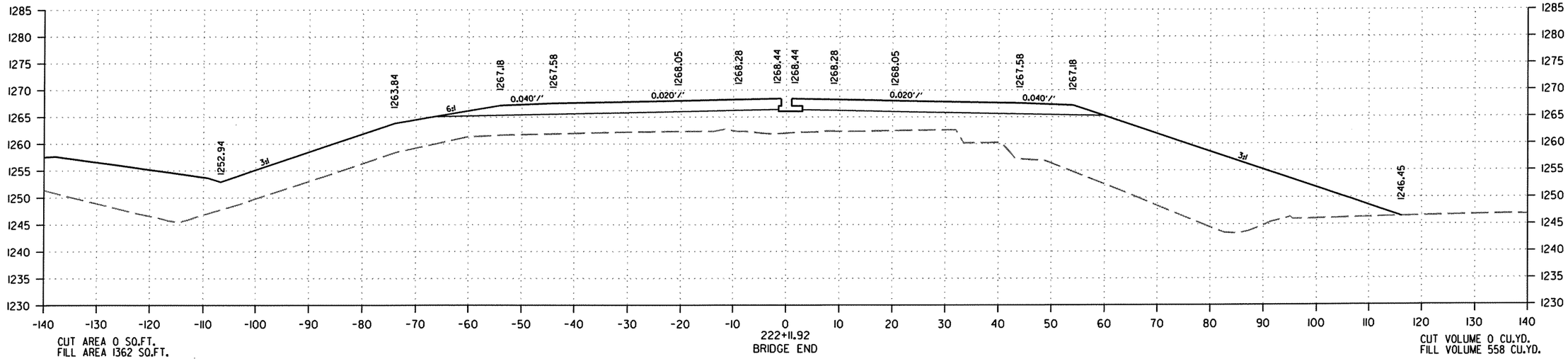
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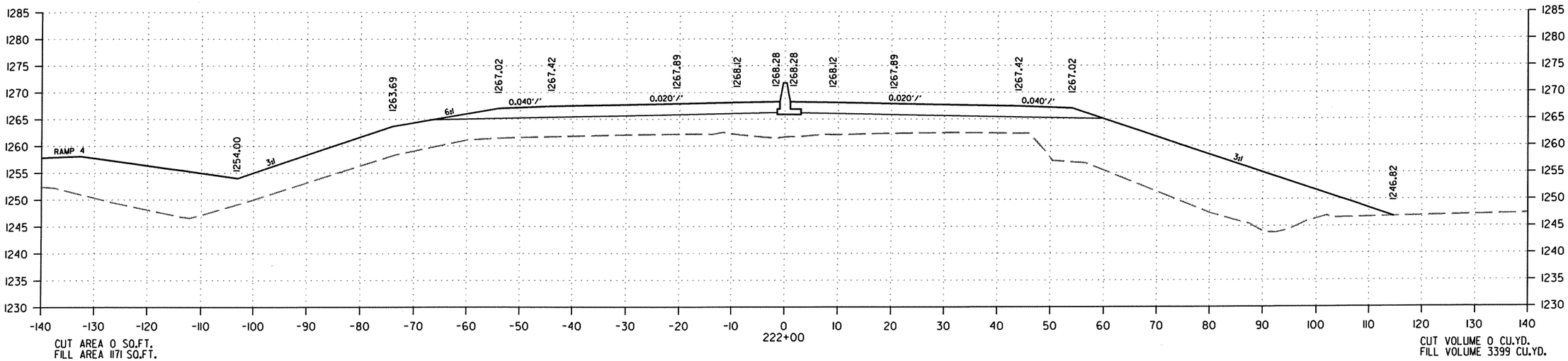
R040605.DGN

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.		040605	208	260

(2) CROSS SECTIONS - I-540

STA.	STA.	MAIN LANES	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
218+24.17	220+92.92	RT.	RT.	200'	1	1
227+22.08	230+90.83	LT.	LT.	300'	1	1





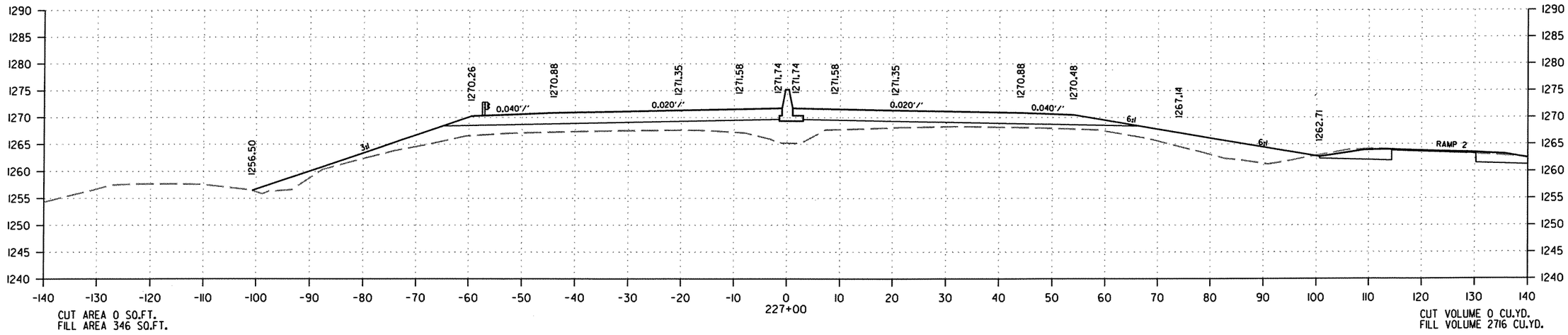
CROSS SECTION STA.222+00 TO STA. 222+12

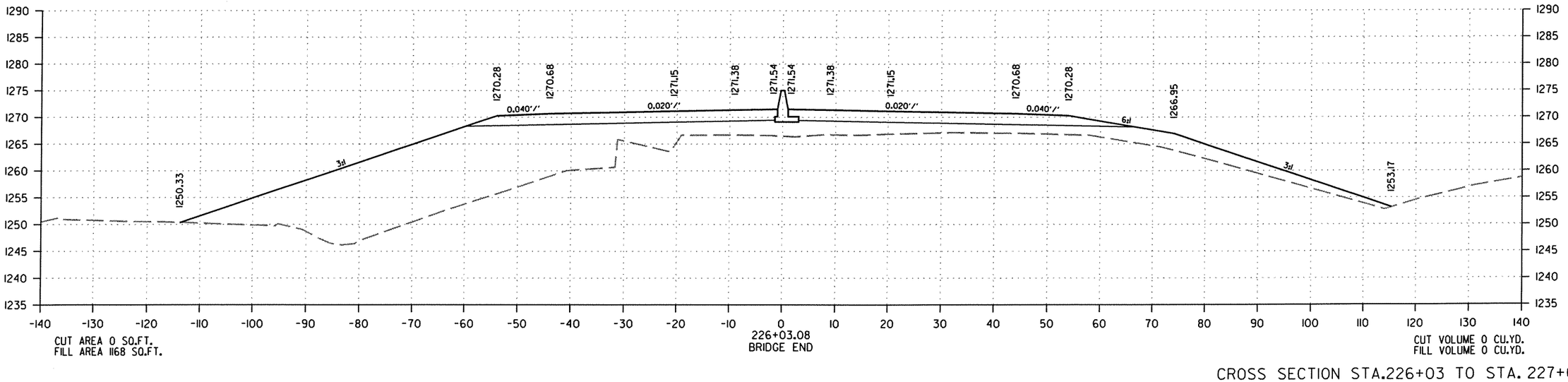
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R040605.DGN

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.		040605	209	260

(2) CROSS SECTIONS - I-540





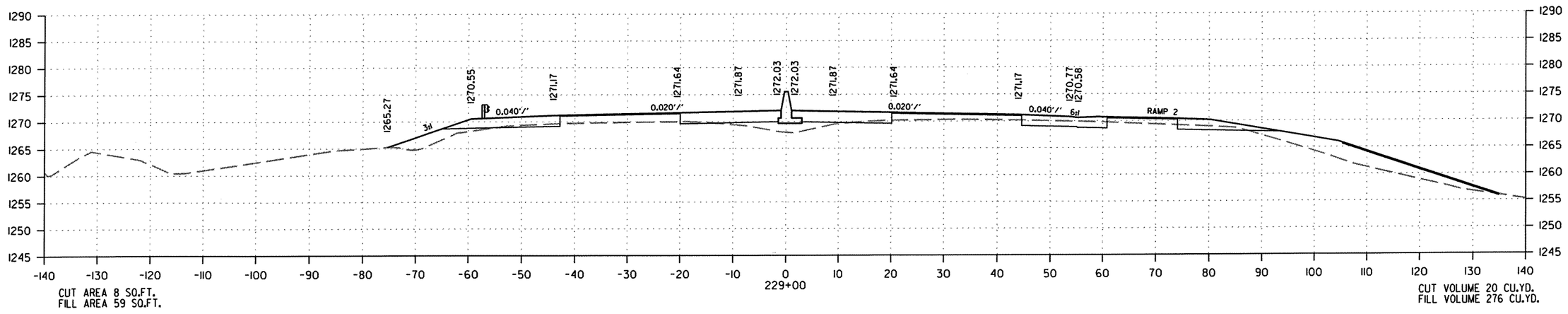
CROSS SECTION STA.226+03 TO STA. 227+00

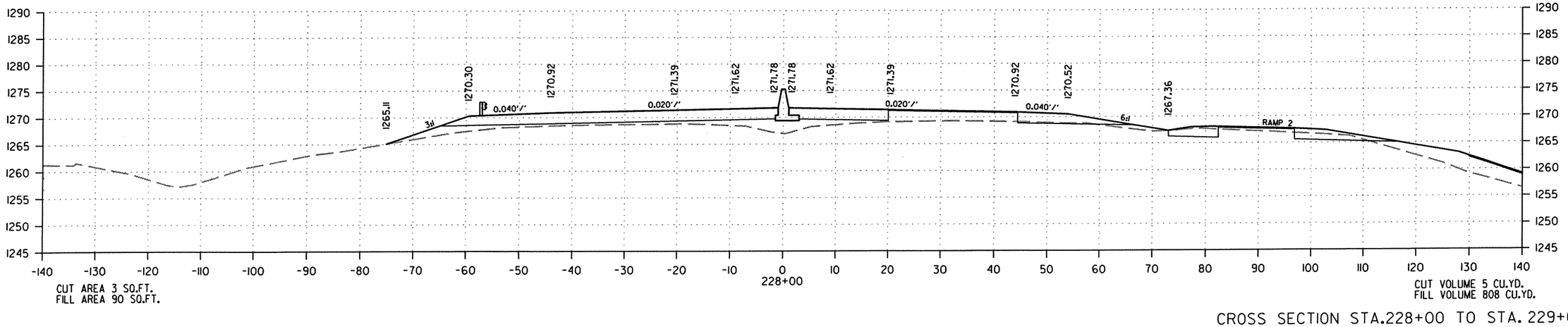
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R040605.DGN

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.		040605	210	260

(2) CROSS SECTIONS - I-540





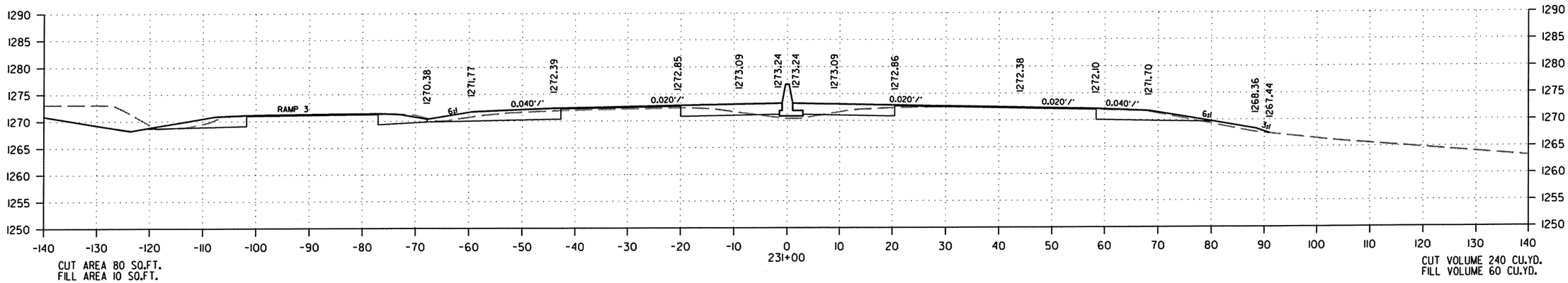
CROSS SECTION STA.228+00 TO STA. 229+00

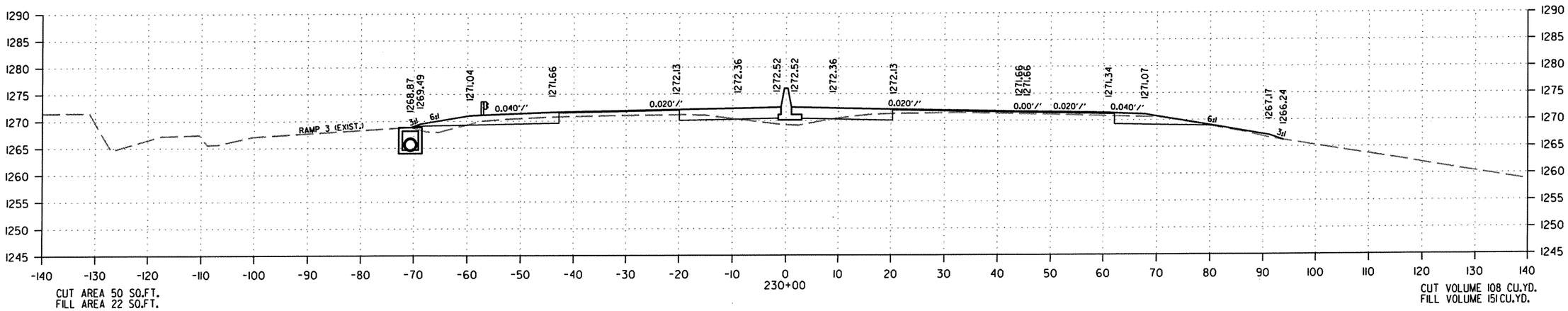
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R040605.DGN

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.		040605	211	260

(2) CROSS SECTIONS - I-540





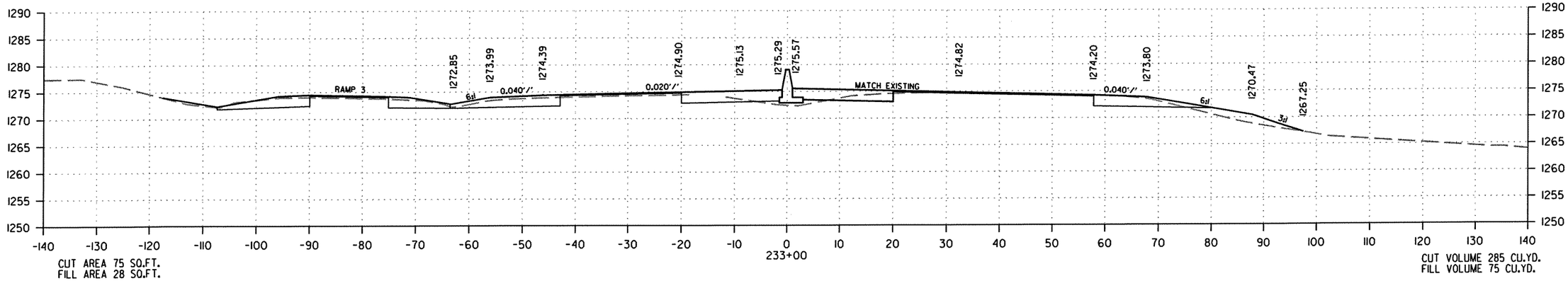
CROSS SECTION STA.230+00 TO STA. 231+00

6/13/2013

R040605.DGN

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.		040605	212	260

(2) CROSS SECTIONS - I-540



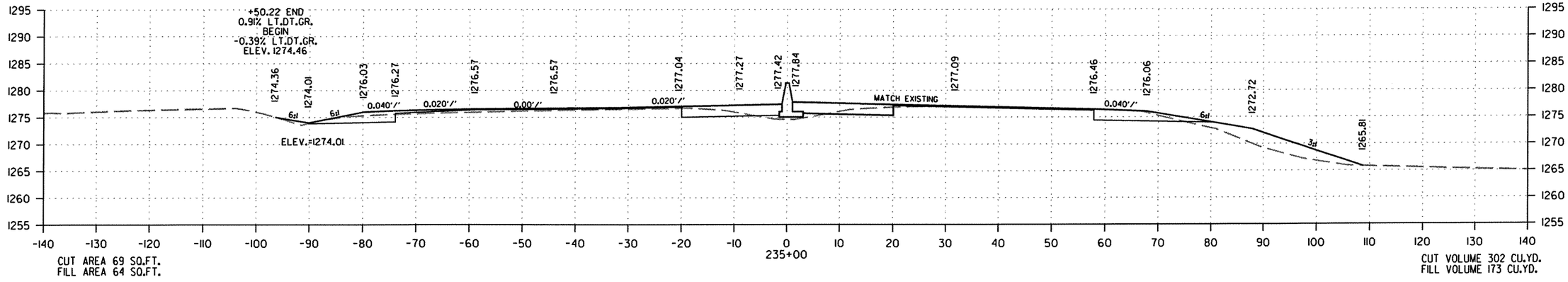
CROSS SECTION STA.232+00 TO STA. 233+00

6/13/2013

R040605.DGN

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.		040605	213	260

(2) CROSS SECTIONS - I-540



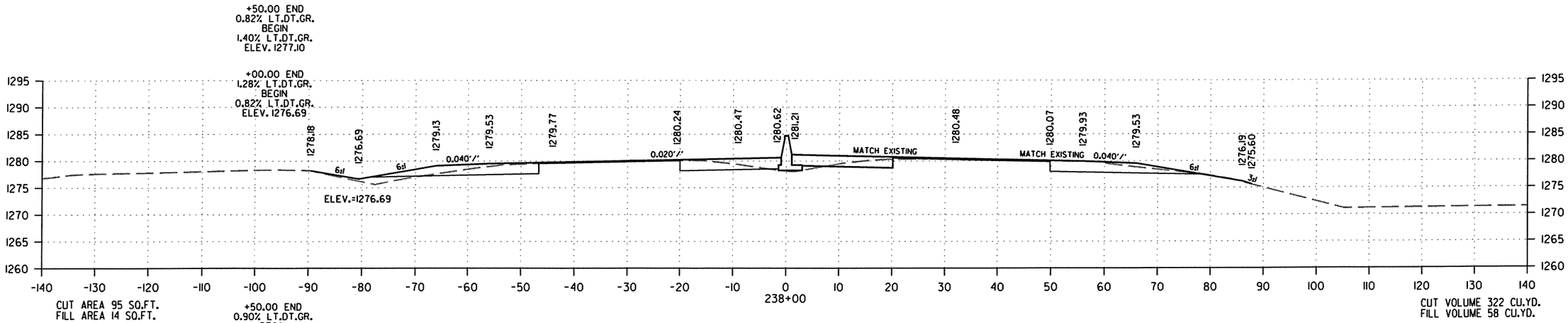
CROSS SECTION STA.234+00 TO STA. 235+00

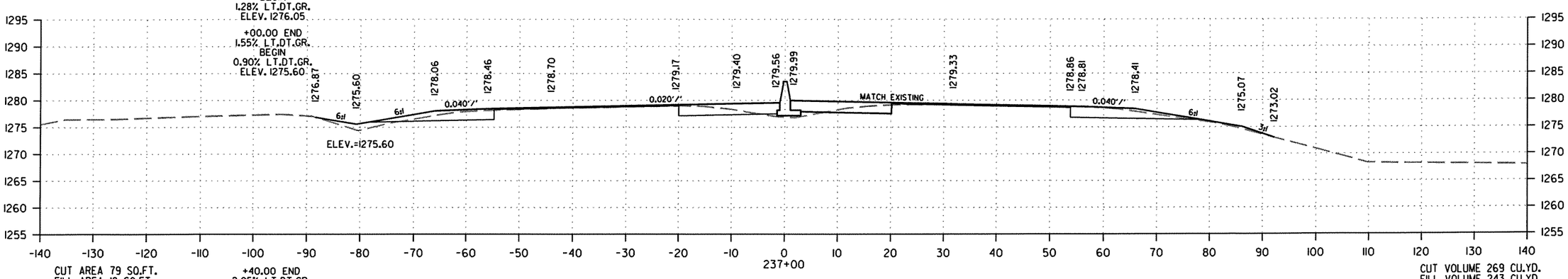
6/13/2013

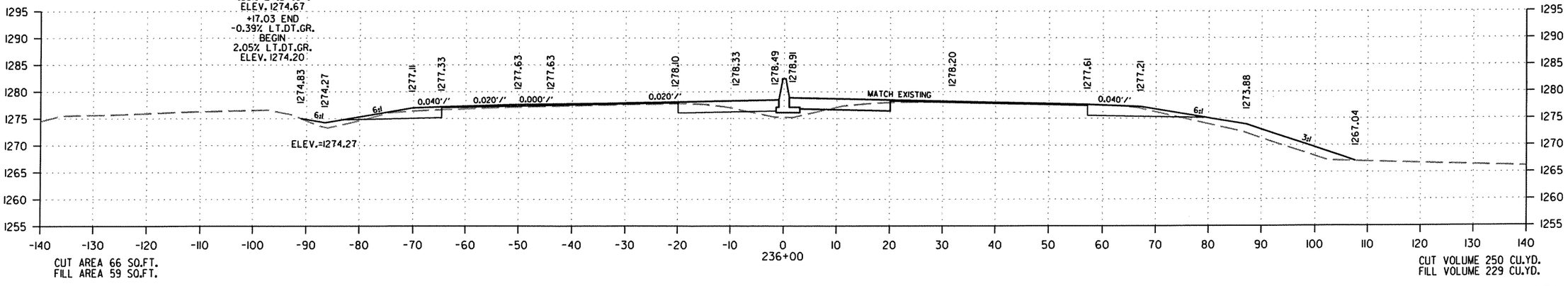
R040605.DGN

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.		040605	214	260

(2) CROSS SECTIONS - I-540







CROSS SECTION STA.236+00 TO STA. 238+00

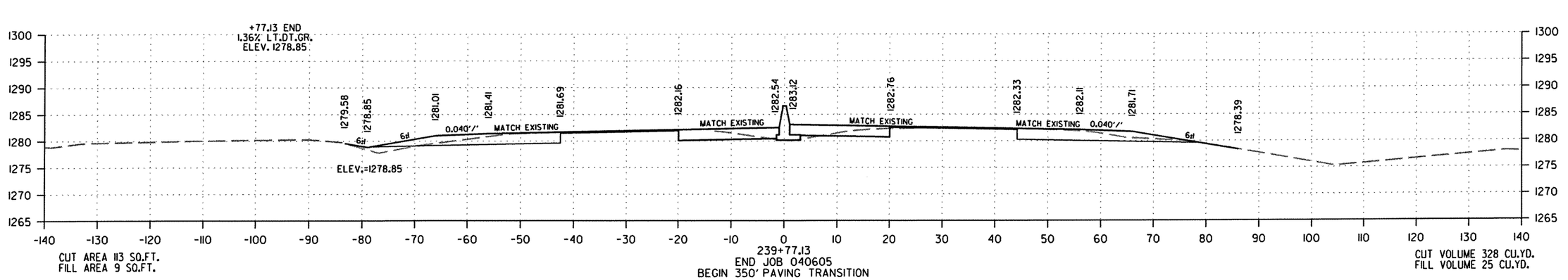
6/13/2013

R040605.DGN

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.		040605	215	260

(2) CROSS SECTIONS - I-540

363+27.13
END 350' PAVING TRANSITION



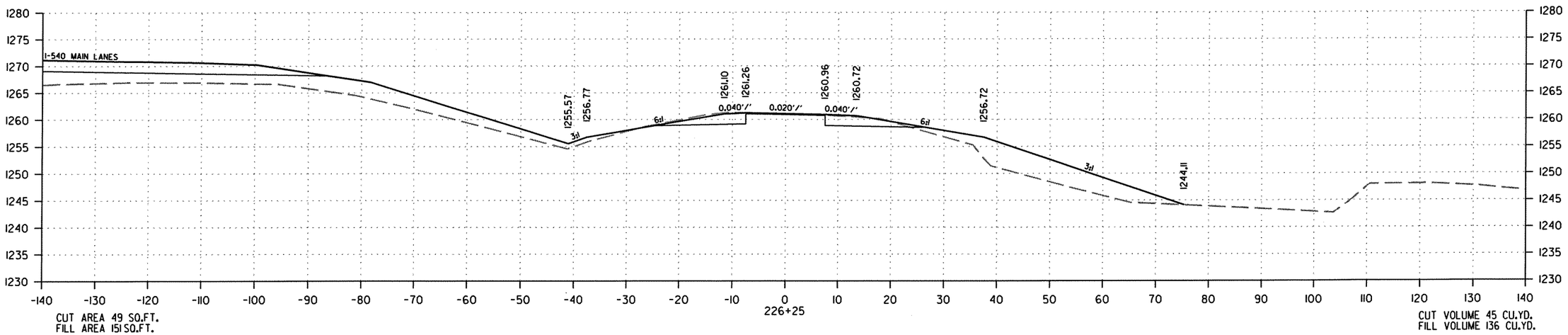
CROSS SECTION STA.239+00 TO STA. 239+77

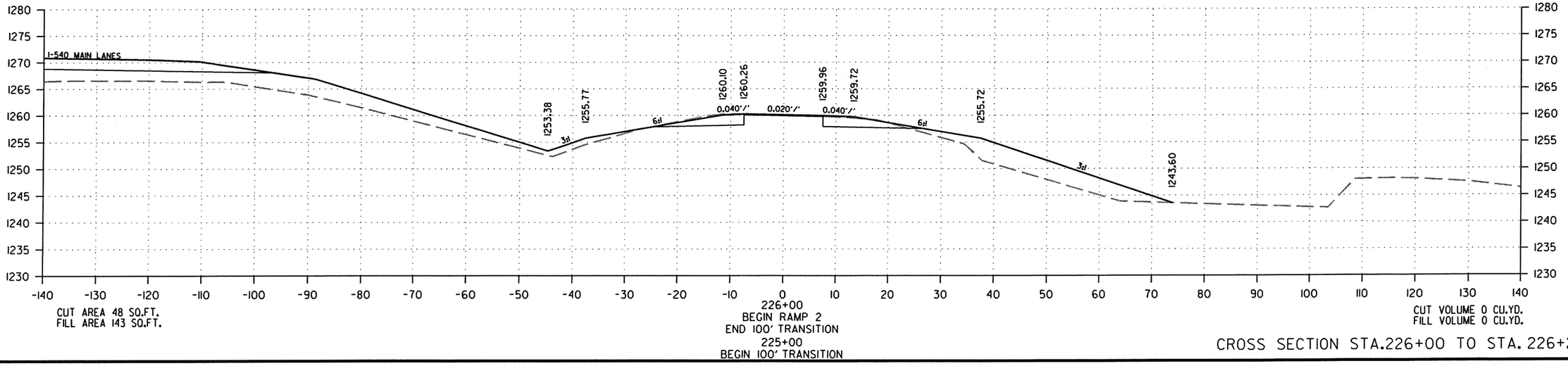
6/13/2013

R040605.DGN

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.		040605	216	260

(2) CROSS SECTIONS - RAMP 2 (PORTER ROAD)





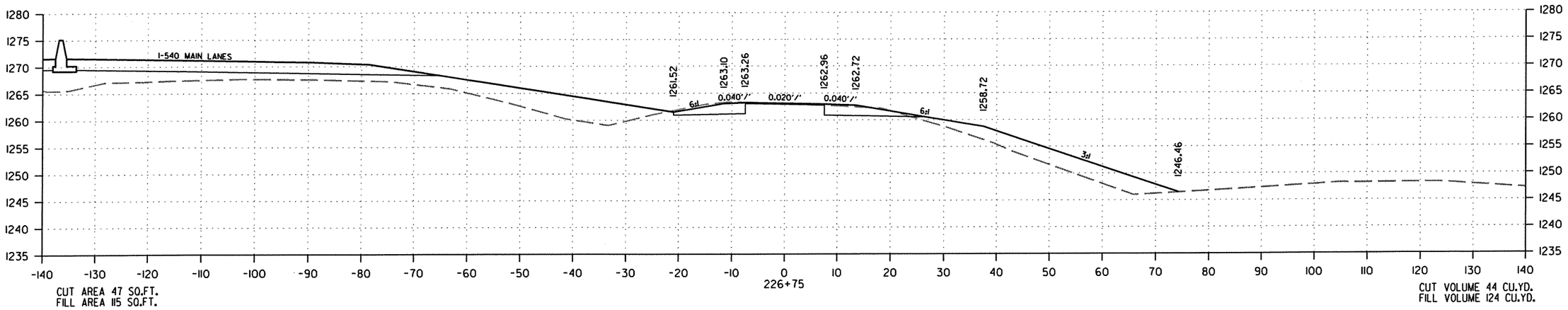
CROSS SECTION STA.226+00 TO STA. 226+25

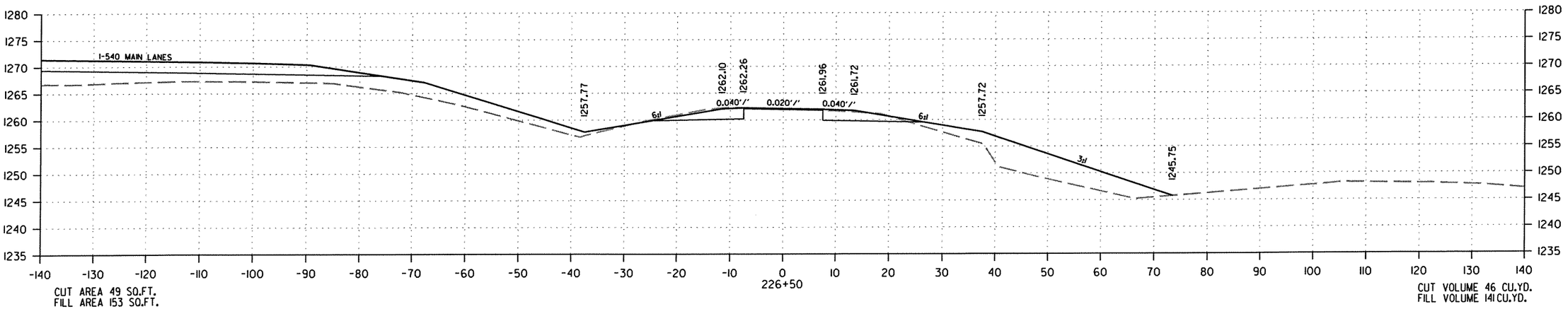
6/13/2013

R040605.DGN

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.		040605	217	260

(2) CROSS SECTIONS - RAMP 2 (PORTER ROAD)





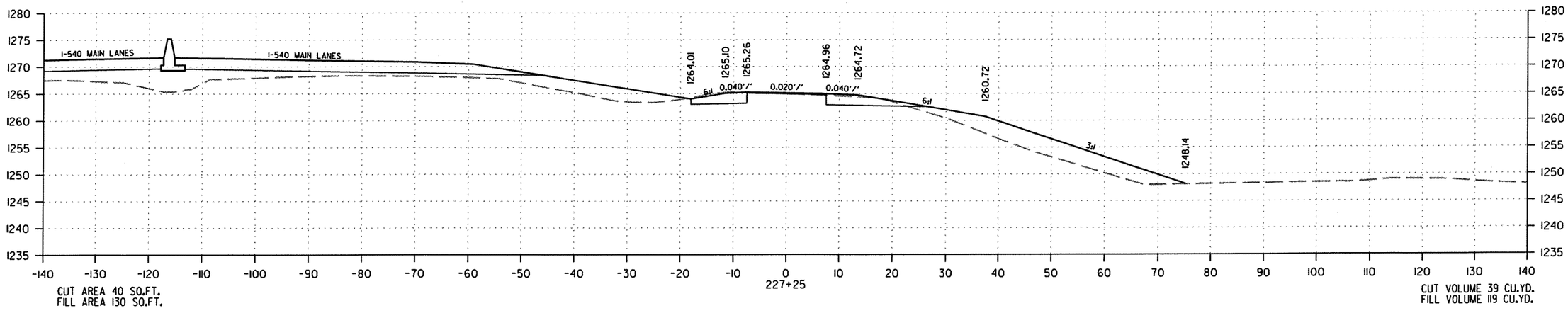
CROSS SECTION STA.226+50 TO STA. 226+75

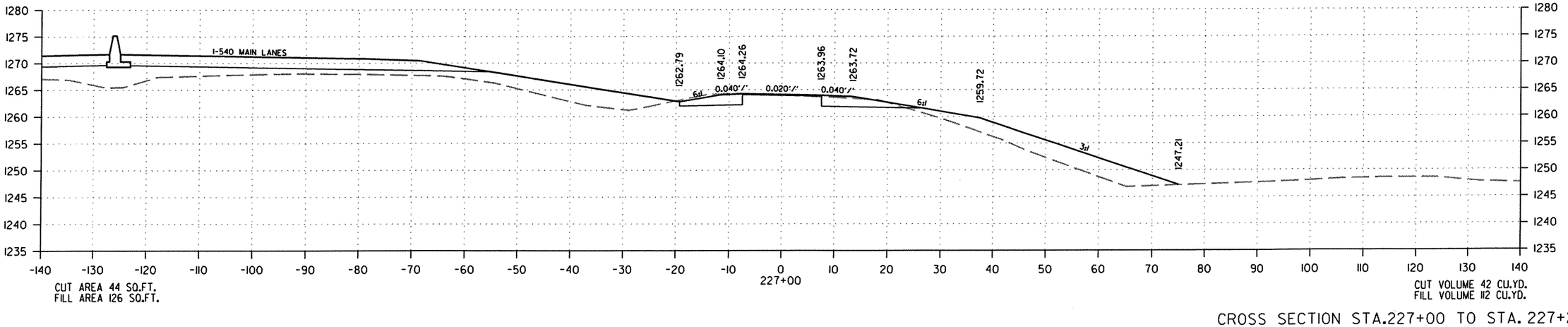
6/13/2013

R040605.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	218	260

(2) CROSS SECTIONS - RAMP 2 (PORTER ROAD)





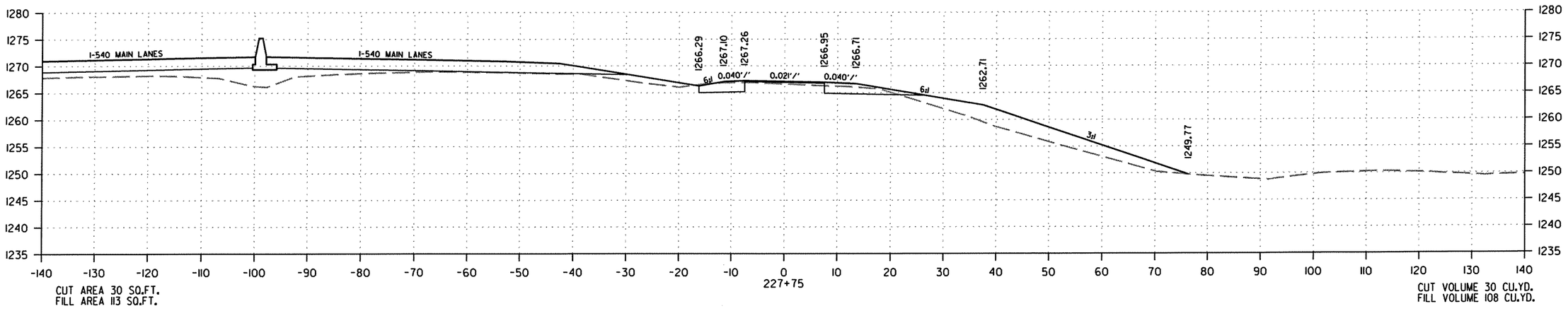
CROSS SECTION STA.227+00 TO STA. 227+25

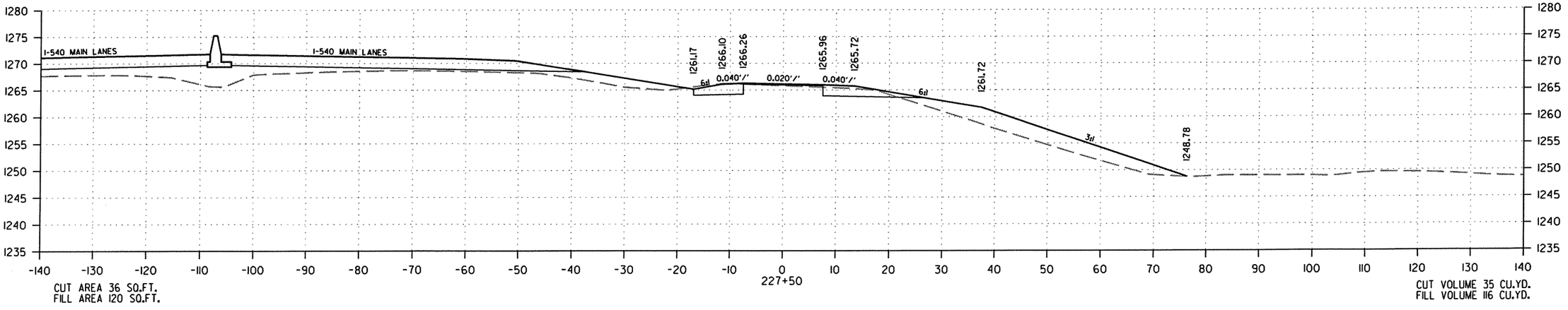
6/13/2013

RD40605.DGN

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.		040605	219	260

(2) CROSS SECTIONS - RAMP 2 (PORTER ROAD)





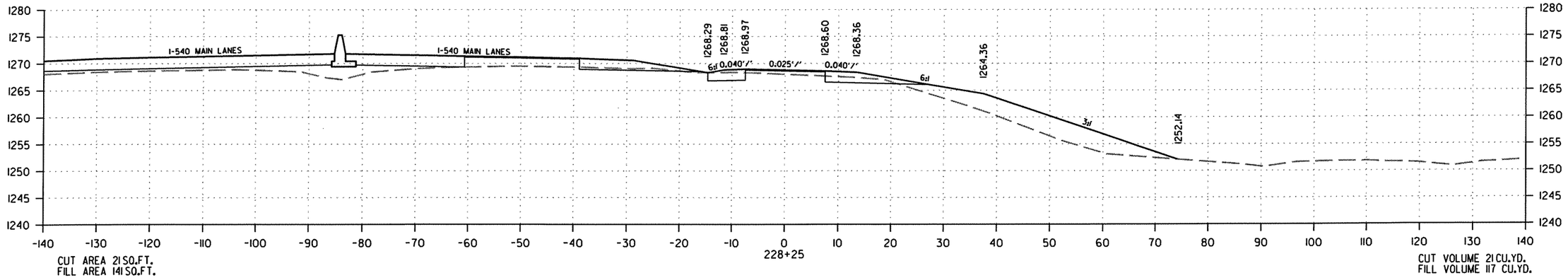
CROSS SECTION STA.227+50 TO STA. 227+75

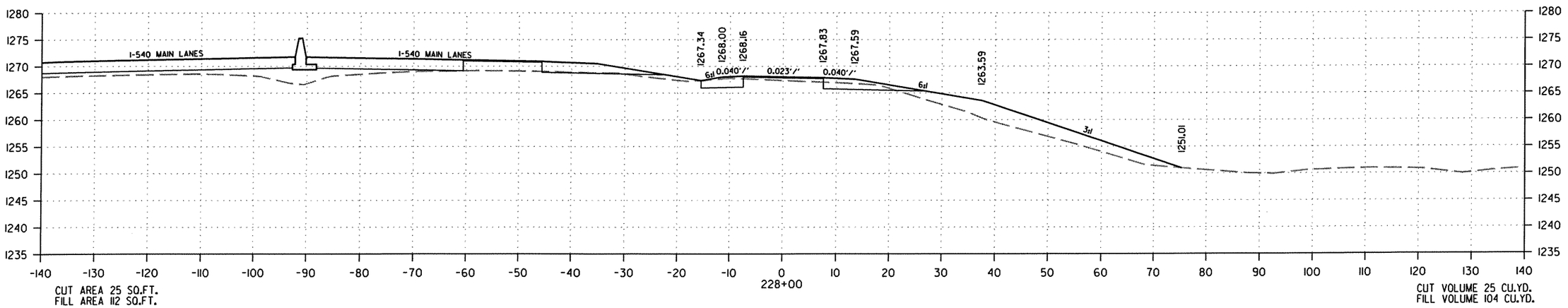
6/13/2013

R040605.DGN

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.		040605	220	260

(2) CROSS SECTIONS - RAMP 2 (PORTER ROAD)





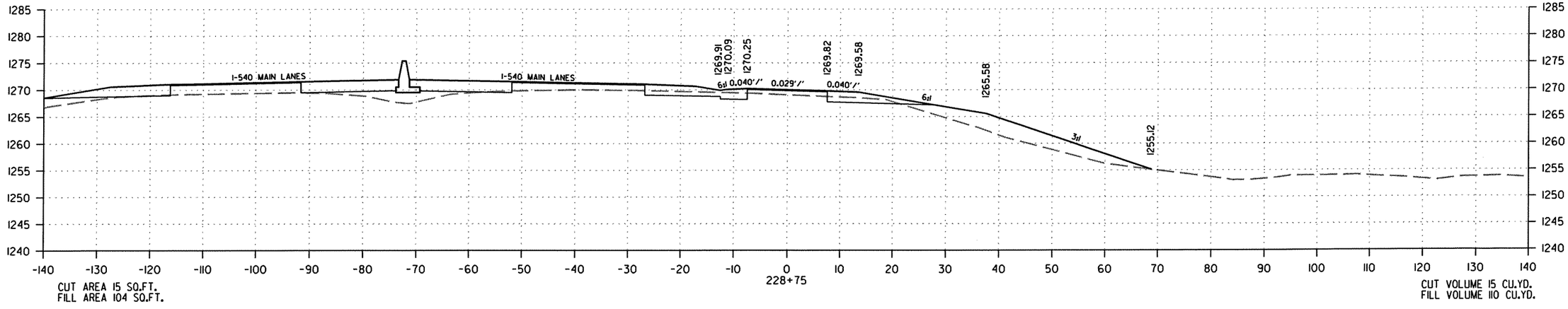
CROSS SECTION STA.228+00 TO STA. 228+25

6/13/2013

R040605.DGN

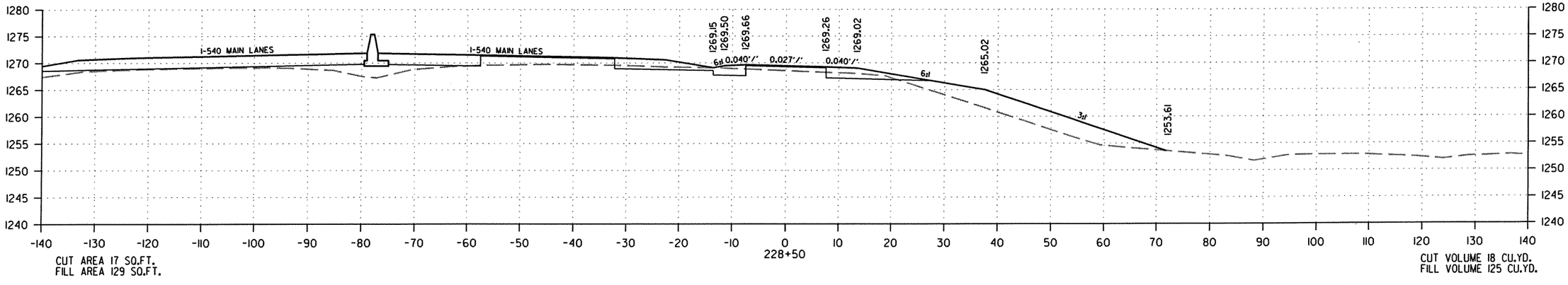
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	221	260

(2) CROSS SECTIONS - RAMP 2 (PORTER ROAD)



CUT AREA 15 SQ.FT.
FILL AREA 104 SQ.FT.

CUT VOLUME 15 CU.YD.
FILL VOLUME 110 CU.YD.



CUT AREA 17 SQ.FT.
FILL AREA 129 SQ.FT.

CUT VOLUME 18 CU.YD.
FILL VOLUME 125 CU.YD.

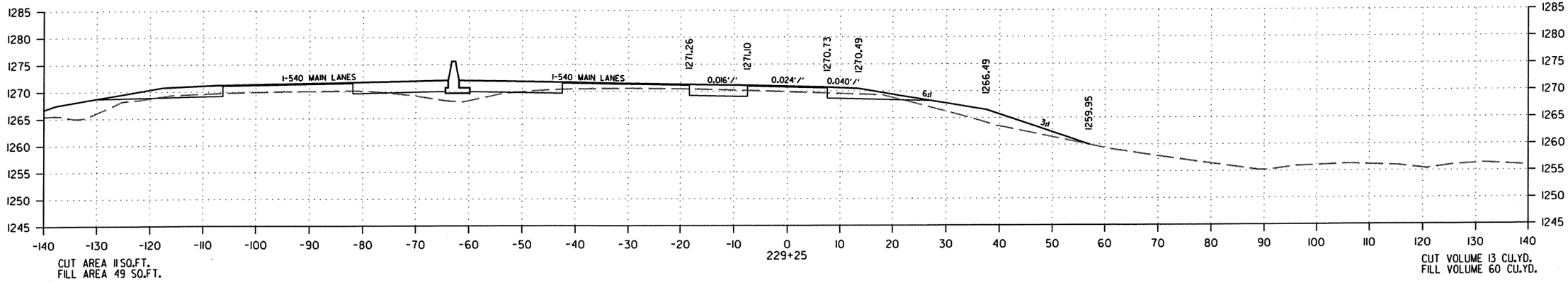
CROSS SECTION STA.228+50 TO STA. 228+75

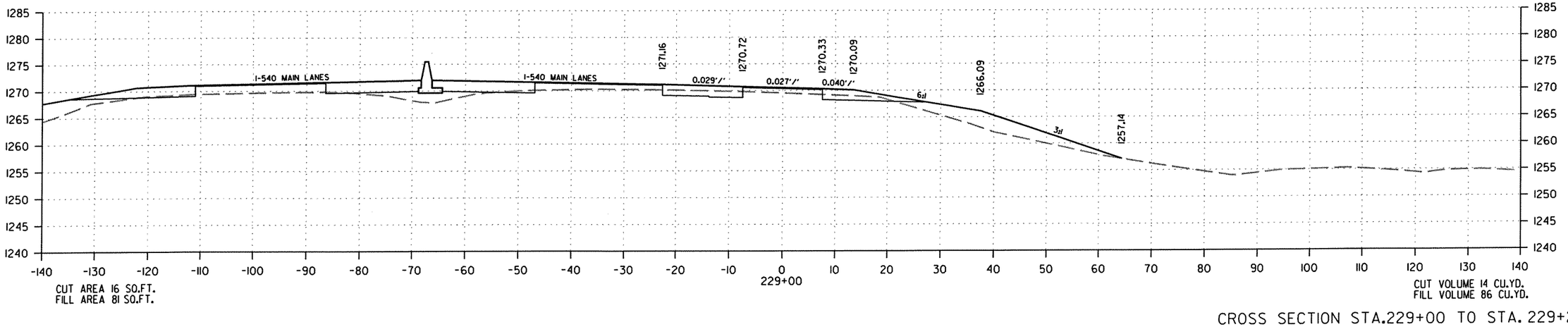
6/13/2013

R040605.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	222	260

(2) CROSS SECTIONS - RAMP 2 (PORTER ROAD)





CROSS SECTION STA.229+00 TO STA. 229+25

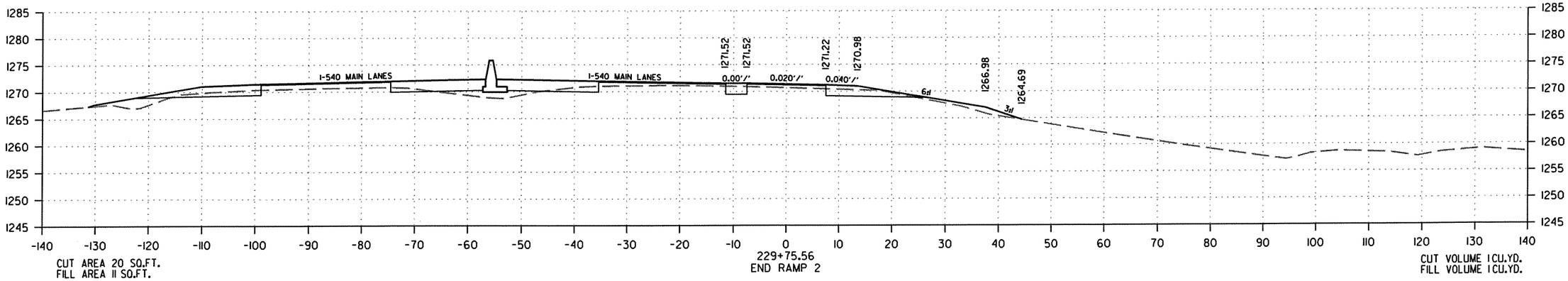
6/13/2013

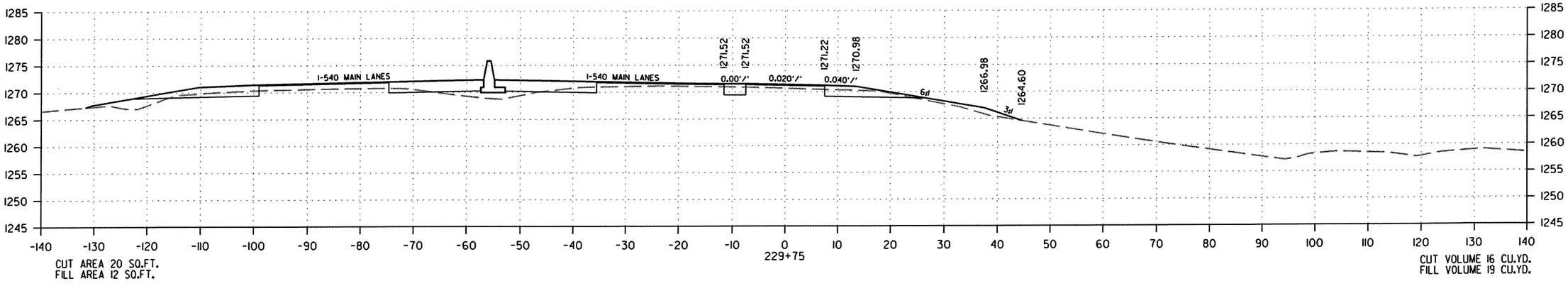
R040605.DGN

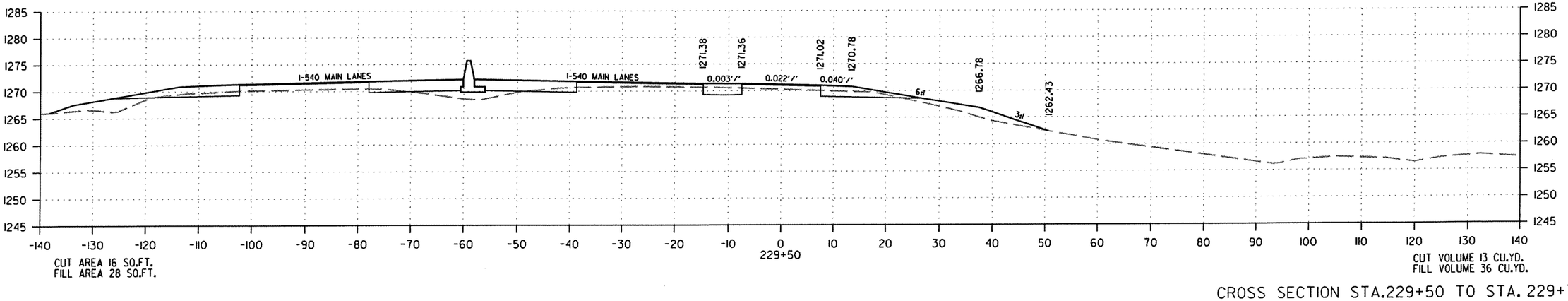
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040605	223	260

(2) CROSS SECTIONS - RAMP 2 (PORTER ROAD)







CROSS SECTION STA.229+50 TO STA. 229+76

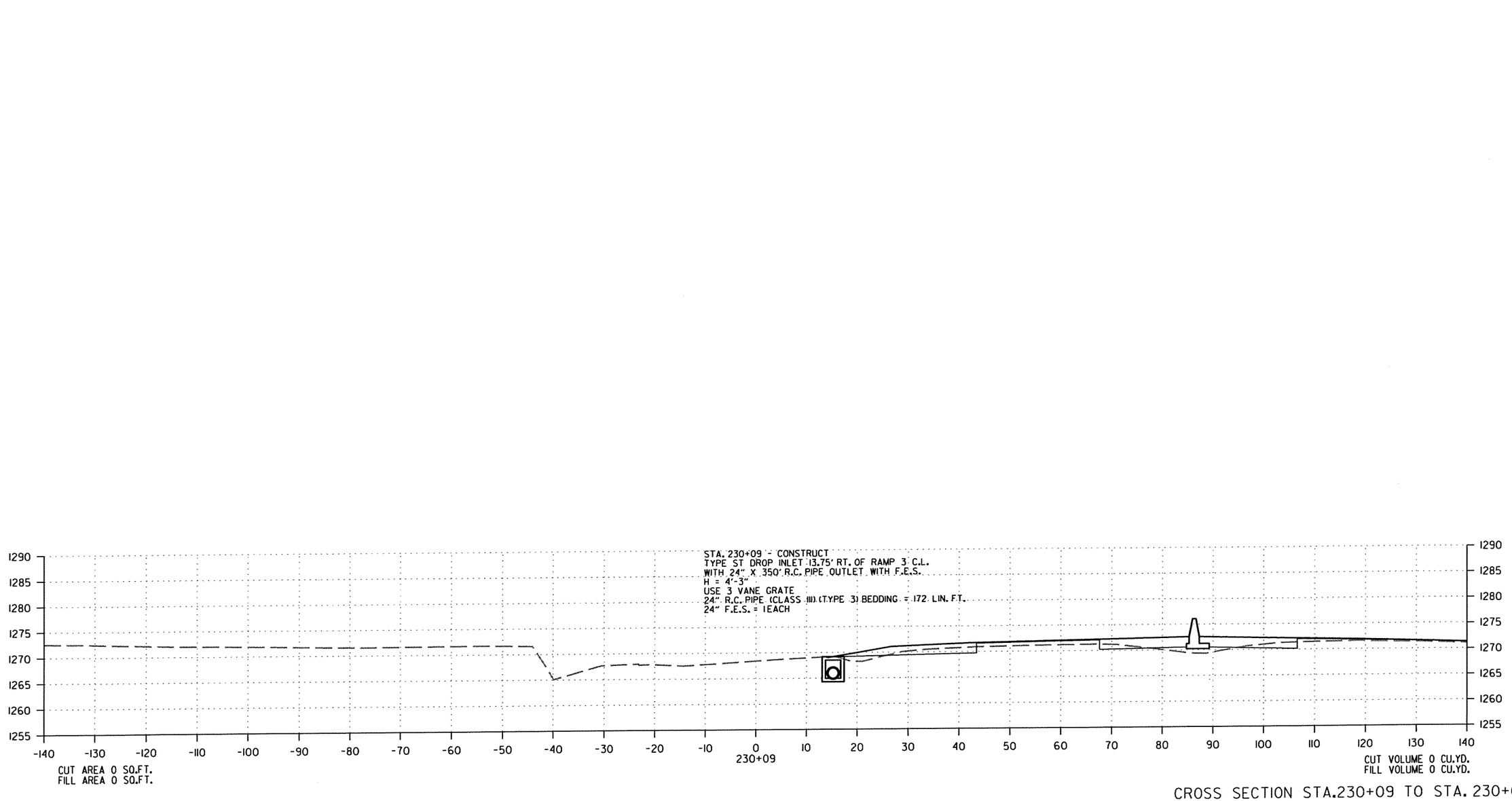
6/13/2013

R040605.DGN

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.		040605	224	260

(2) CROSS SECTIONS - RAMP 3 (PORTER ROAD)



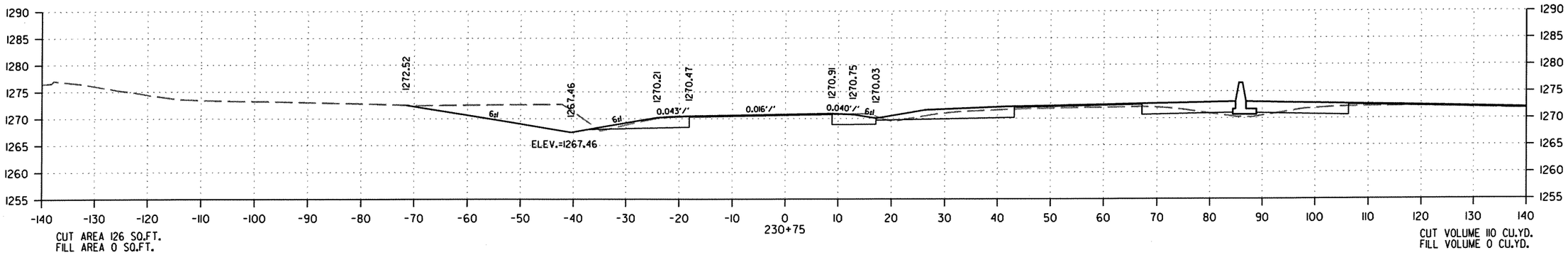
CROSS SECTION STA.230+09 TO STA. 230+09

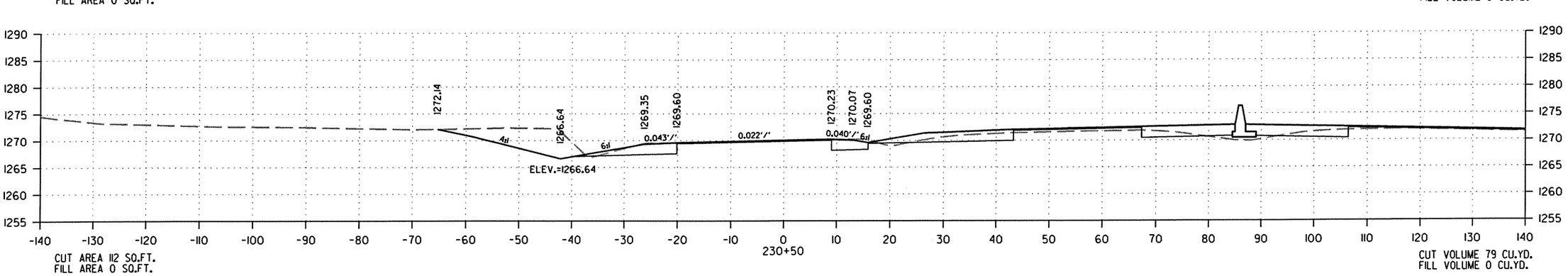
6/13/2013

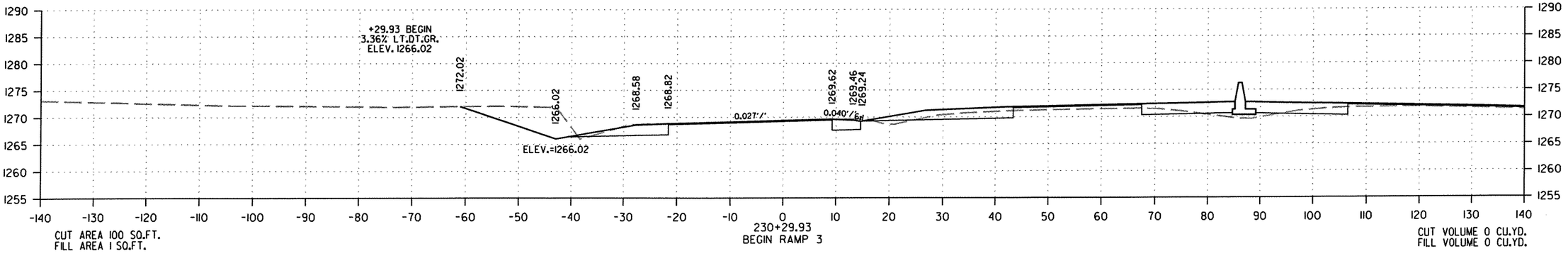
R040605.DGN

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.		040605	225	260

(2) CROSS SECTIONS - RAMP 3 (PORTER ROAD)







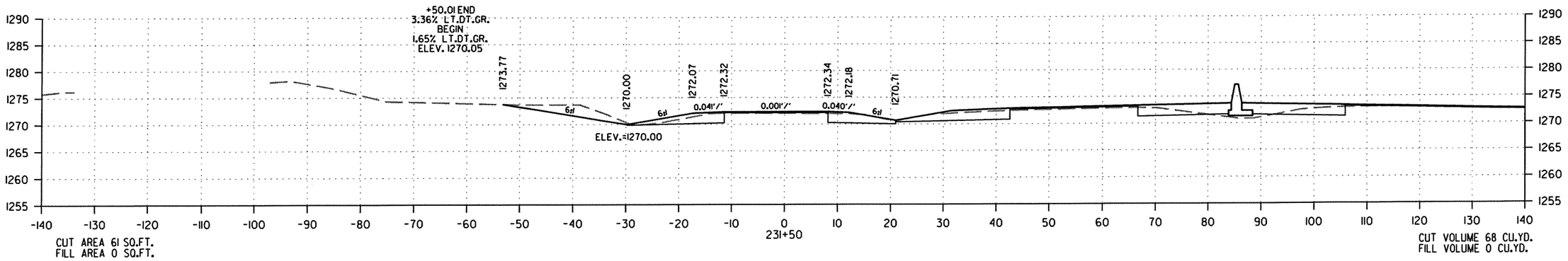
CROSS SECTION STA.230+30 TO STA. 230+75

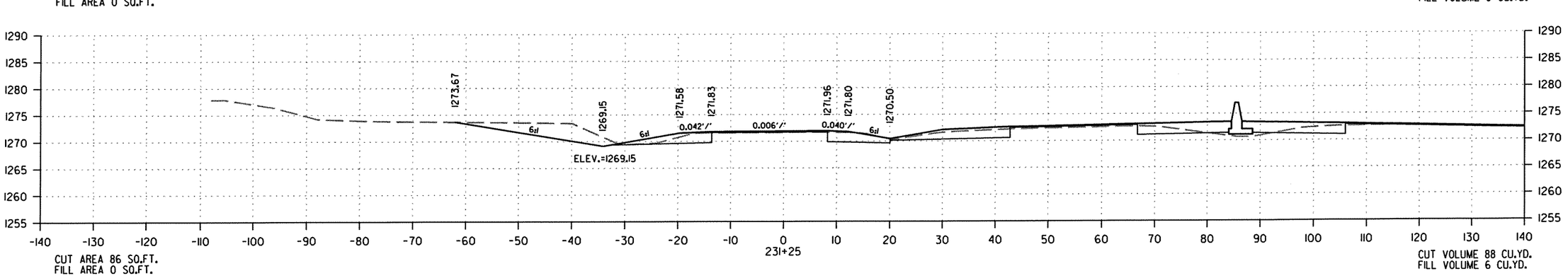
6/13/2013

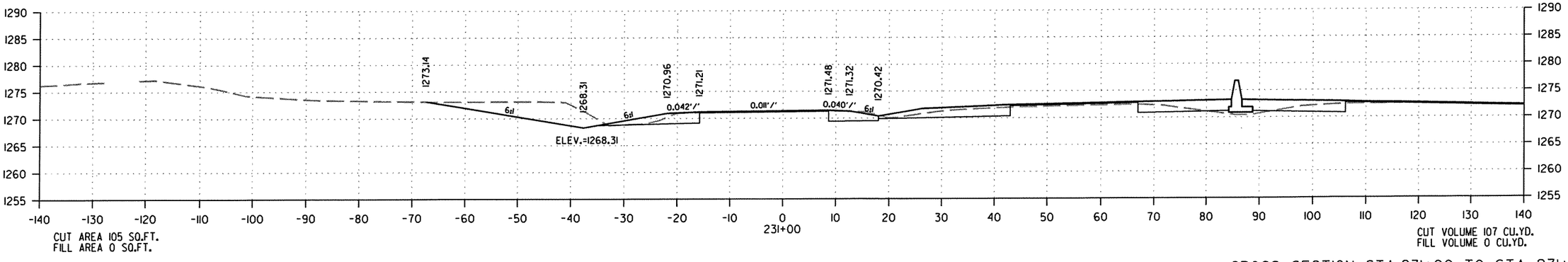
R040605.DGN

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.		040605	226	260

(2) CROSS SECTIONS - RAMP 3 (PORTER ROAD)







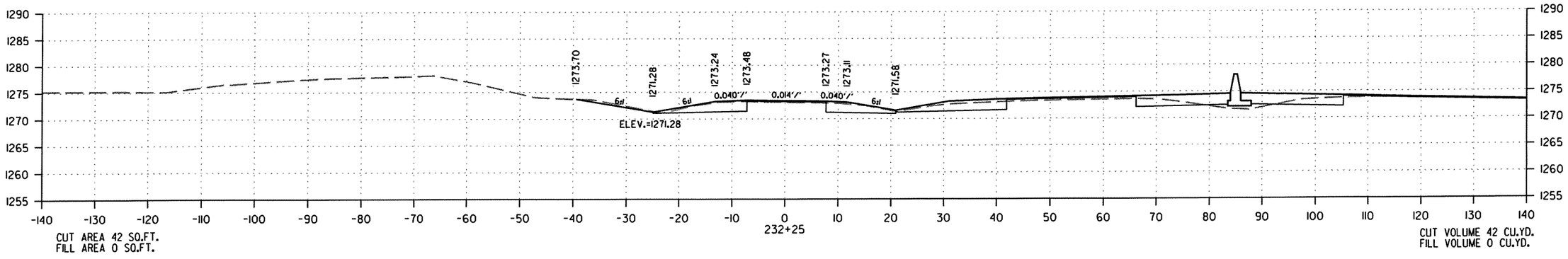
CROSS SECTION STA.231+00 TO STA. 231+50

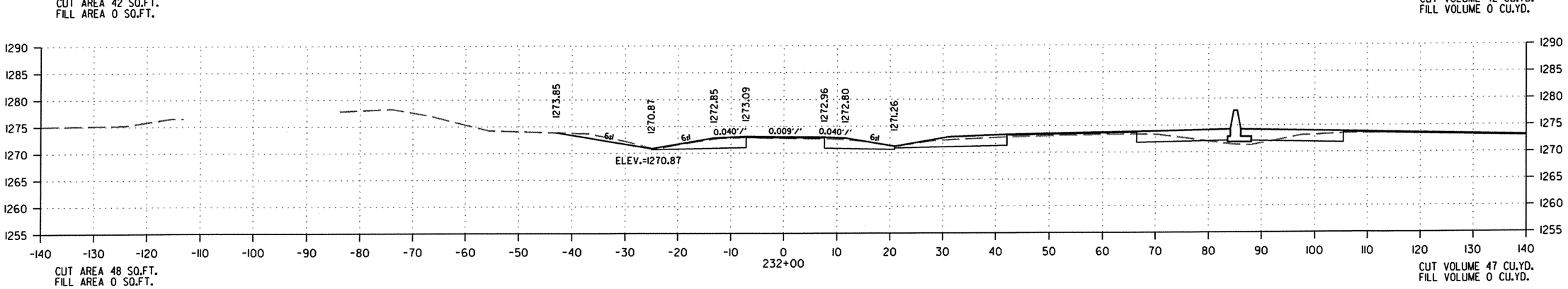
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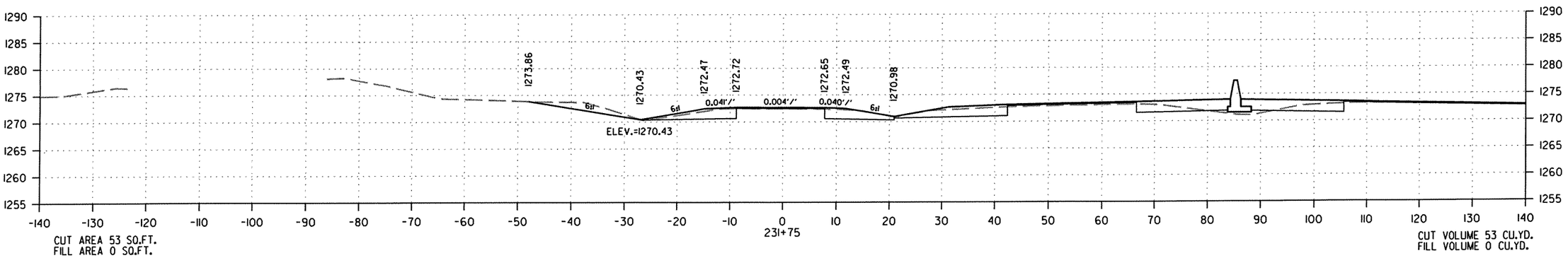
R040605.DGN

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.		040605	227	260

(2) CROSS SECTIONS - RAMP 3 (PORTER ROAD)







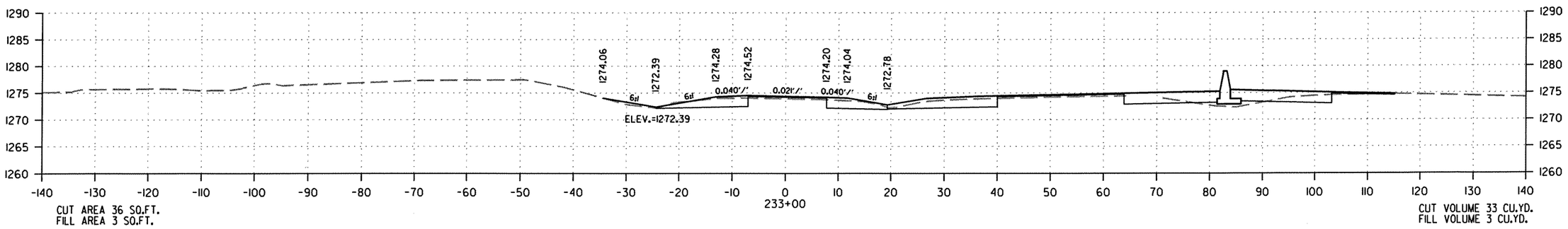
CROSS SECTION STA.231+75 TO STA. 232+25

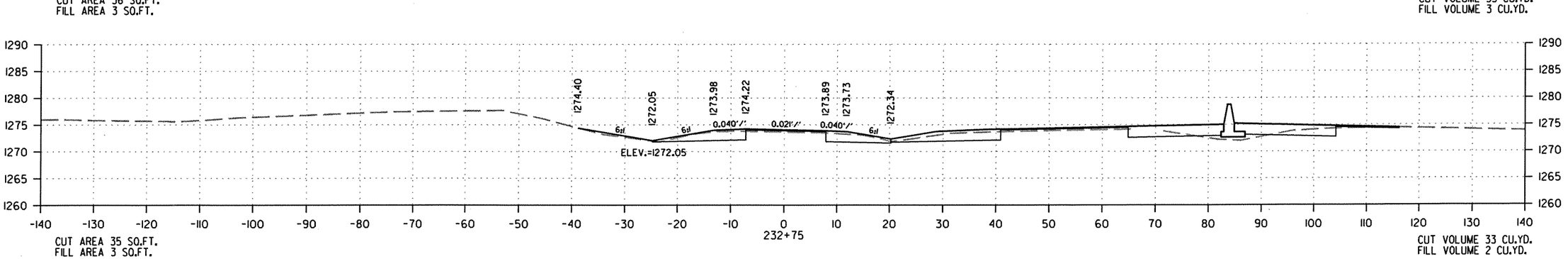
6/13/2013

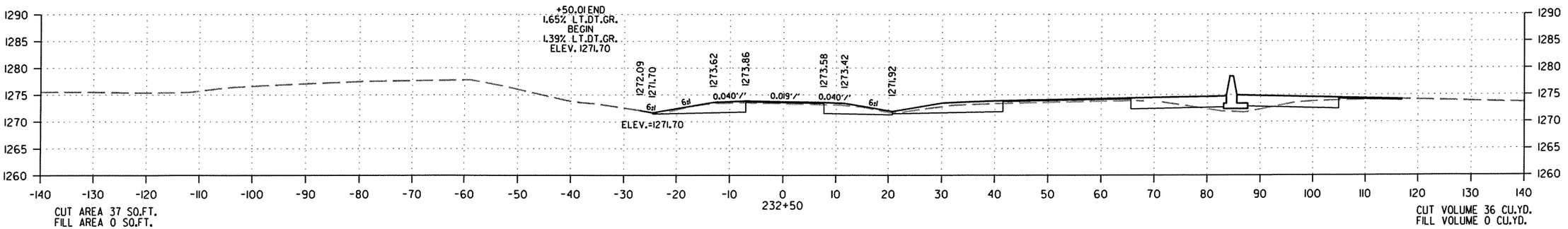
R040605.DGN

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.		040605	228	260

(2) CROSS SECTIONS - RAMP 3 (PORTER ROAD)







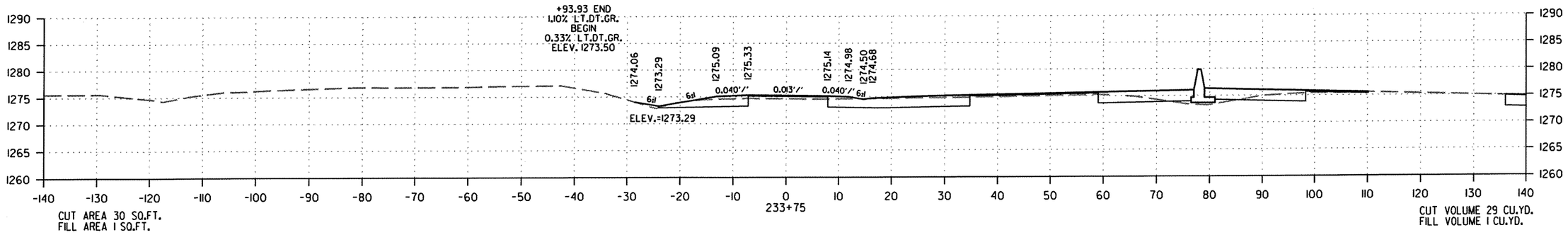
CROSS SECTION STA.232+50 TO STA. 233+00

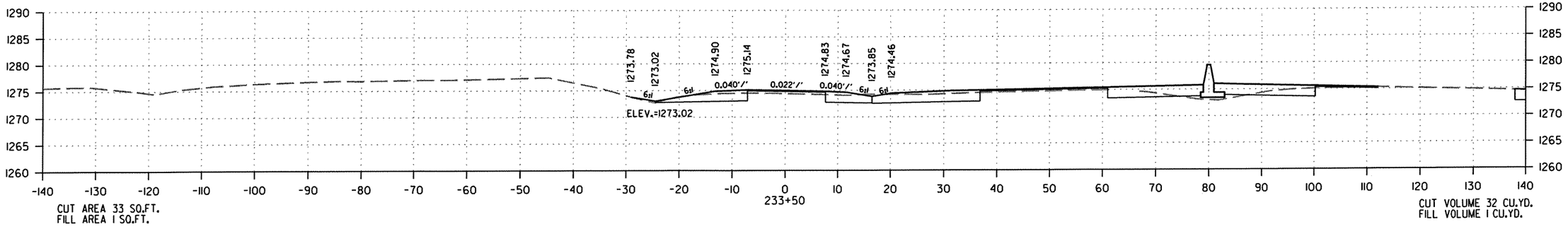
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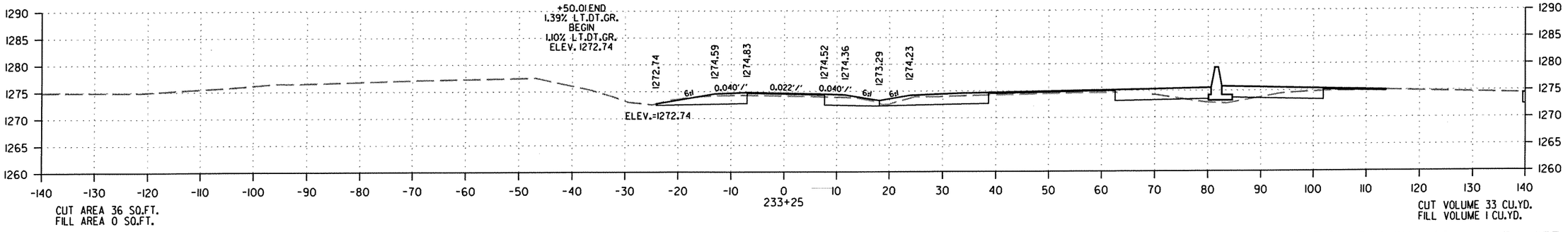
R040605.DGN

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.		040605	229	260

(2) CROSS SECTIONS - RAMP 3 (PORTER ROAD)







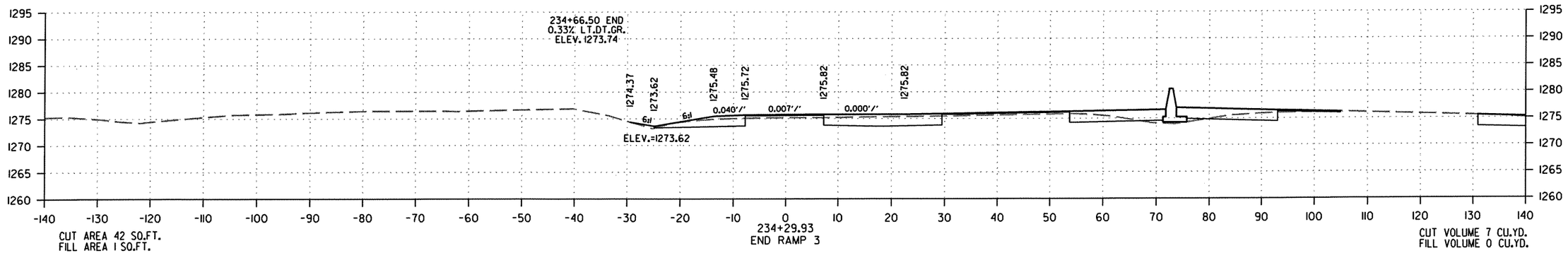
CROSS SECTION STA.233+25 TO STA. 233+75

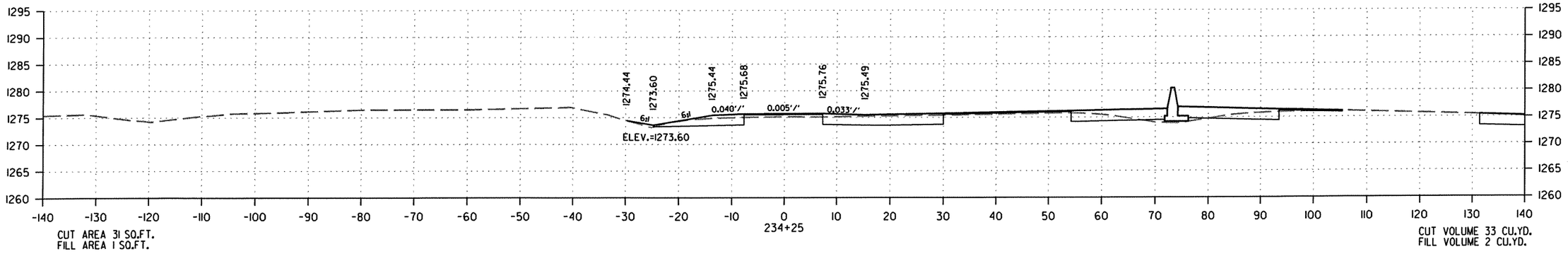
6/13/2013

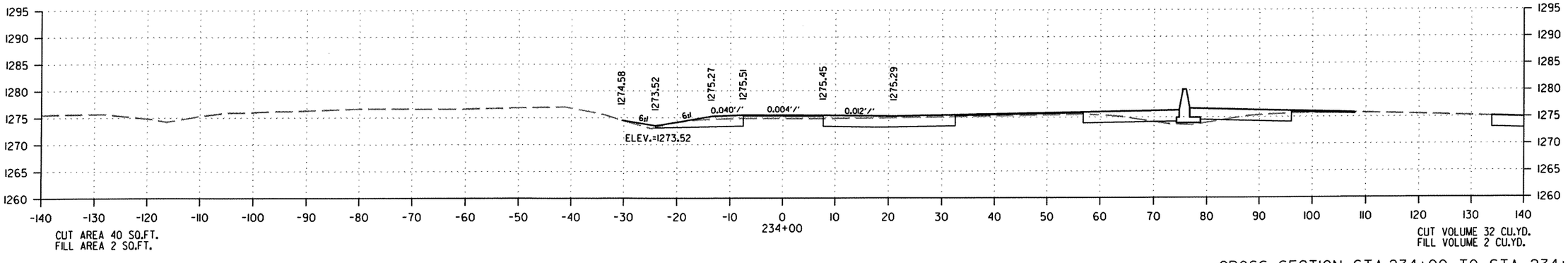
R040605.DGN

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.		040605	230	260

(2) CROSS SECTIONS - RAMP 3 (PORTER ROAD)







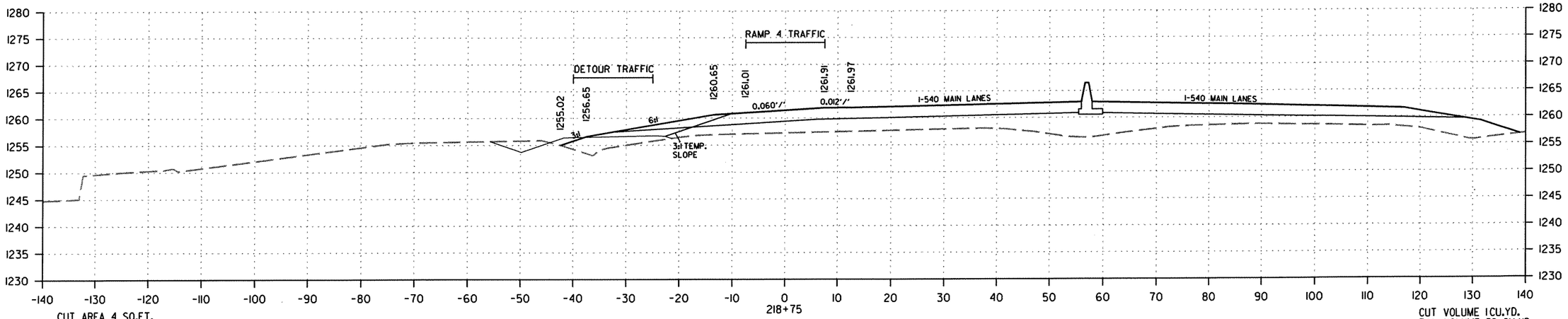
CROSS SECTION STA.234+00 TO STA. 234+30

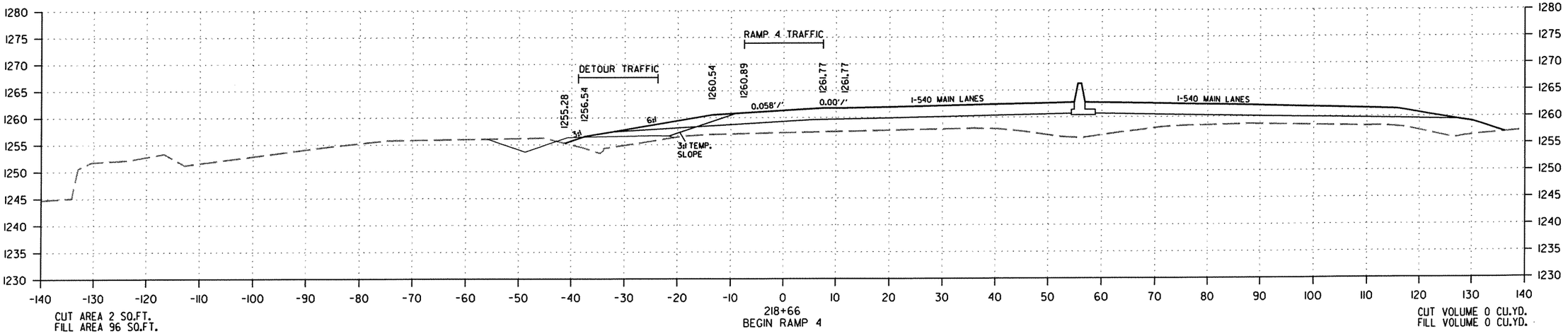
6/13/2013

R040605.DGN

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.		040605	231	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





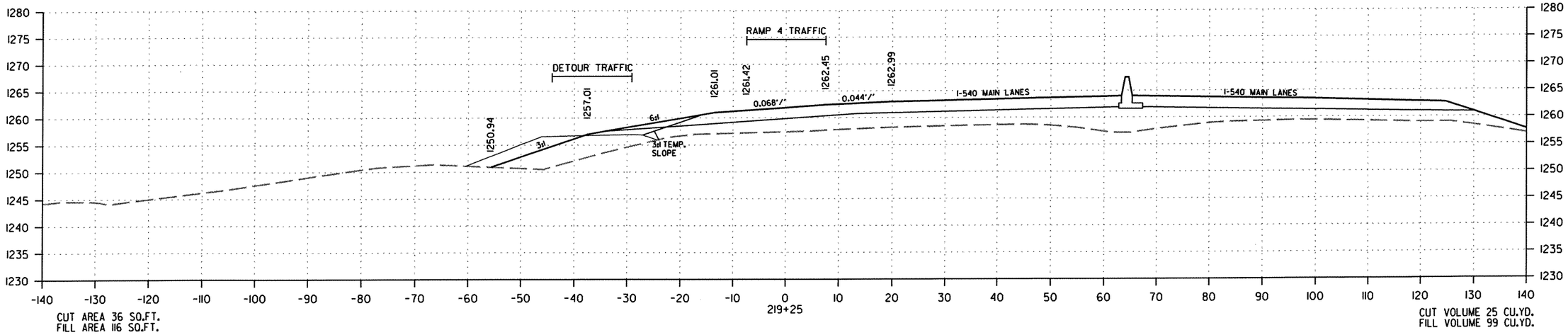
CROSS SECTION STA.218+66 TO STA. 218+75

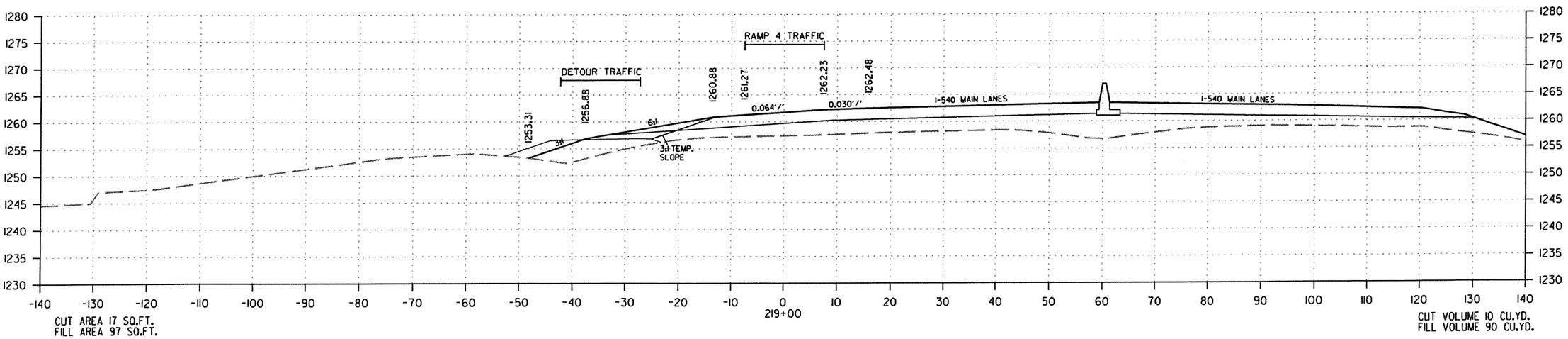
6/13/2013

R040605.DGN

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.		040605	232	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





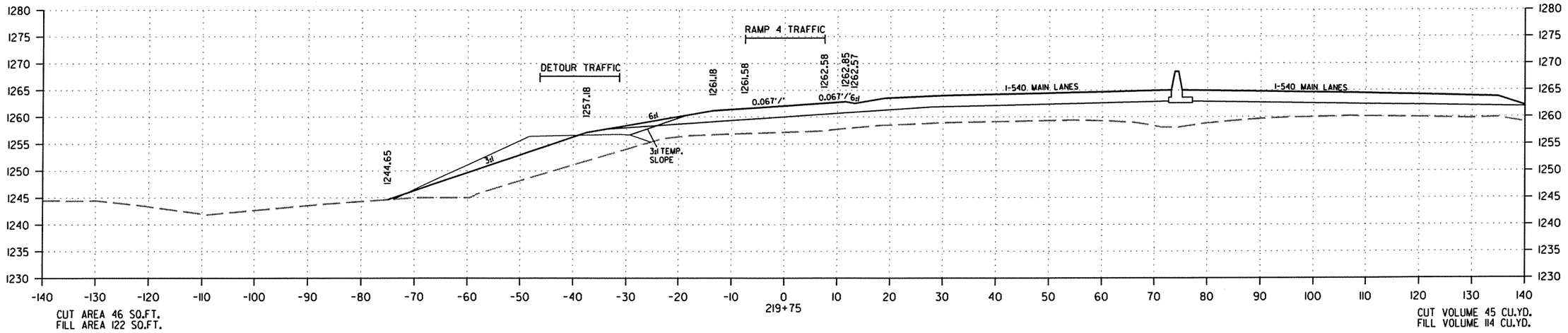
CROSS SECTION STA.219+00 TO STA. 219+25

6/13/2013

R040605.DGN

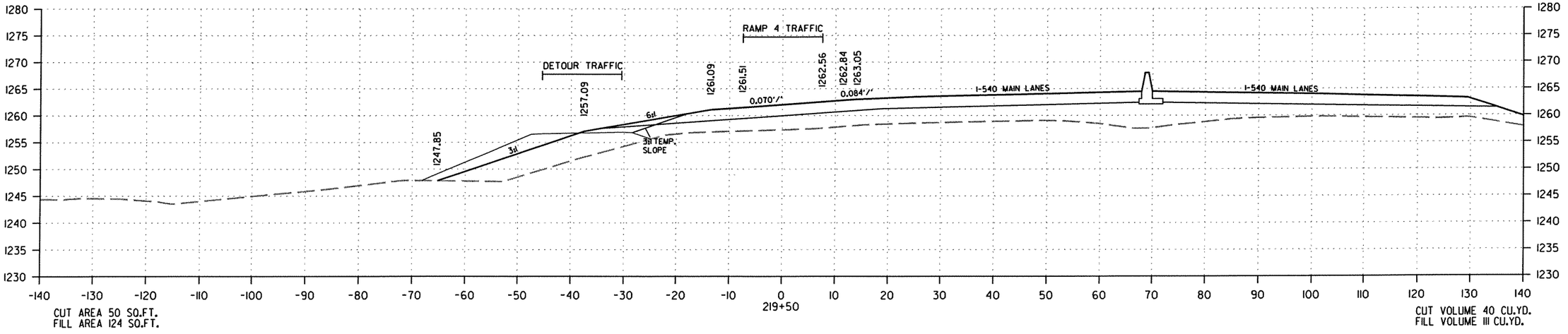
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	233	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)



CUT AREA 46 SQ.FT.
FILL AREA 122 SQ.FT.

CUT VOLUME 45 CU.YD.
FILL VOLUME 114 CU.YD.



CUT AREA 50 SQ.FT.
FILL AREA 124 SQ.FT.

CUT VOLUME 40 CU.YD.
FILL VOLUME 111 CU.YD.

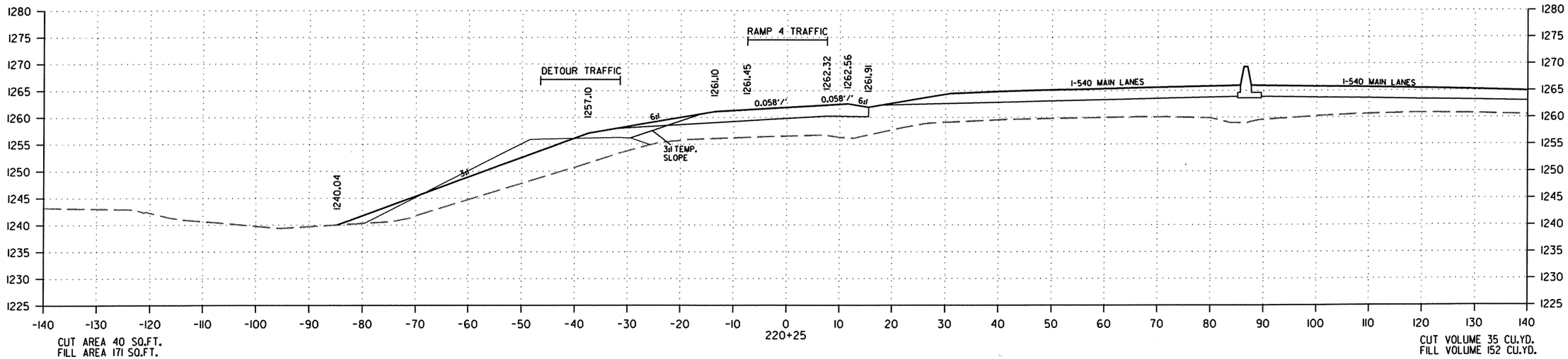
CROSS SECTION STA.219+50 TO STA. 219+75

6/13/2013

R040605.DGN

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.		040605	234	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)



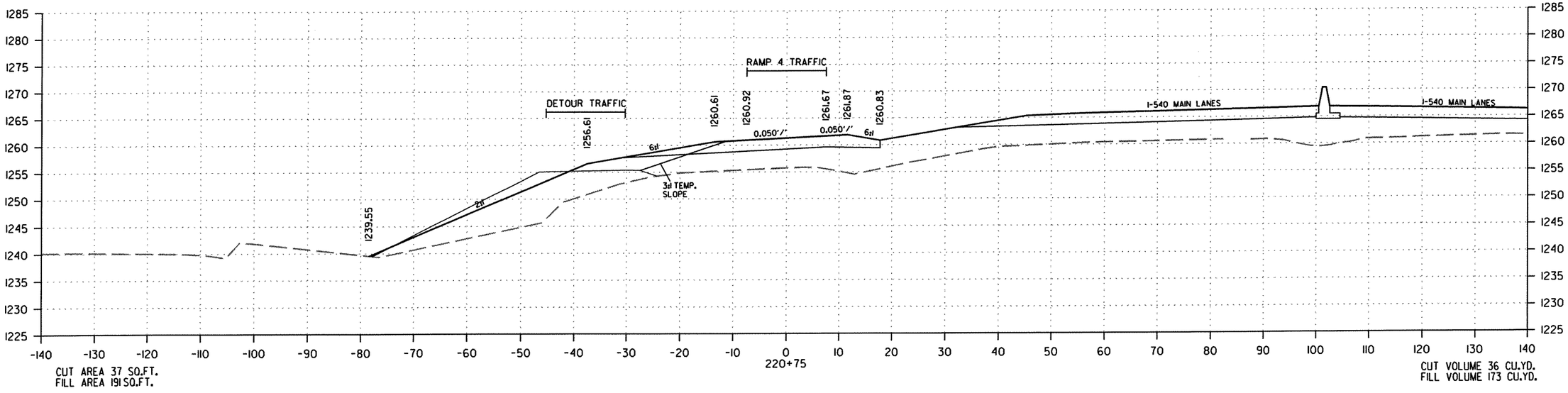
CROSS SECTION STA.220+00 TO STA. 220+25

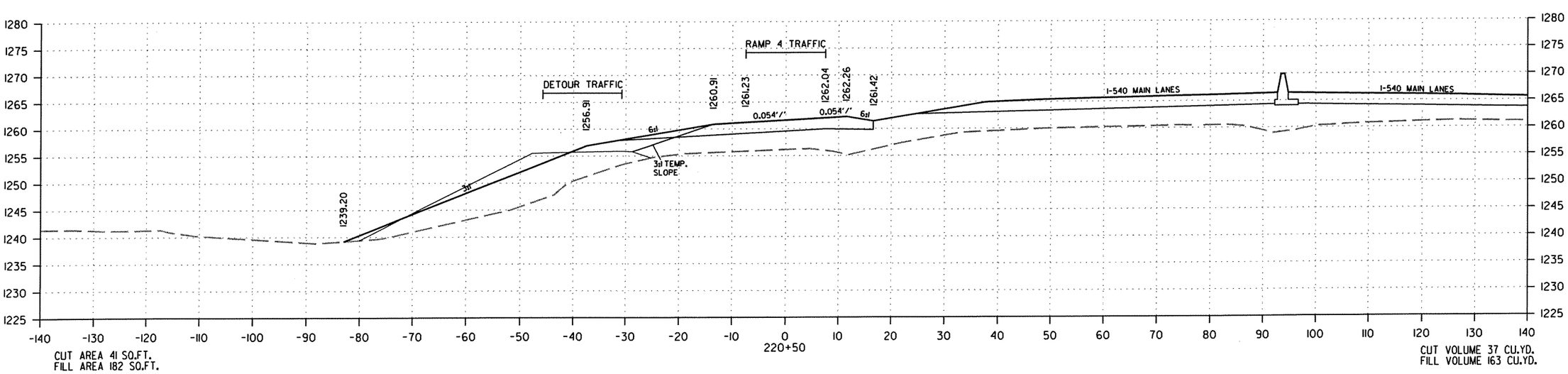
6/13/2013

R040605.DGN

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.		040605	235	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





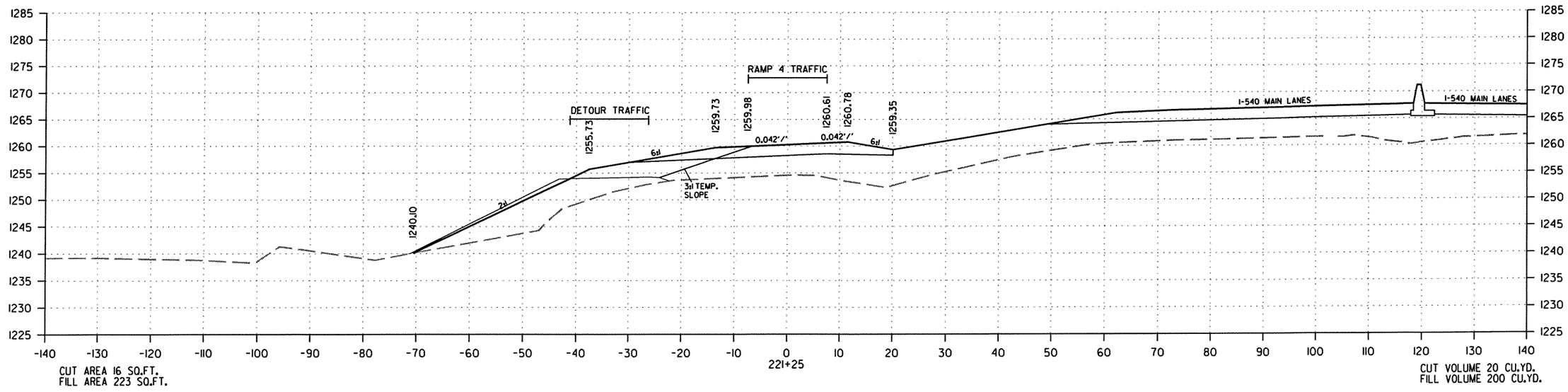
CROSS SECTION STA.220+50 TO STA. 220+75

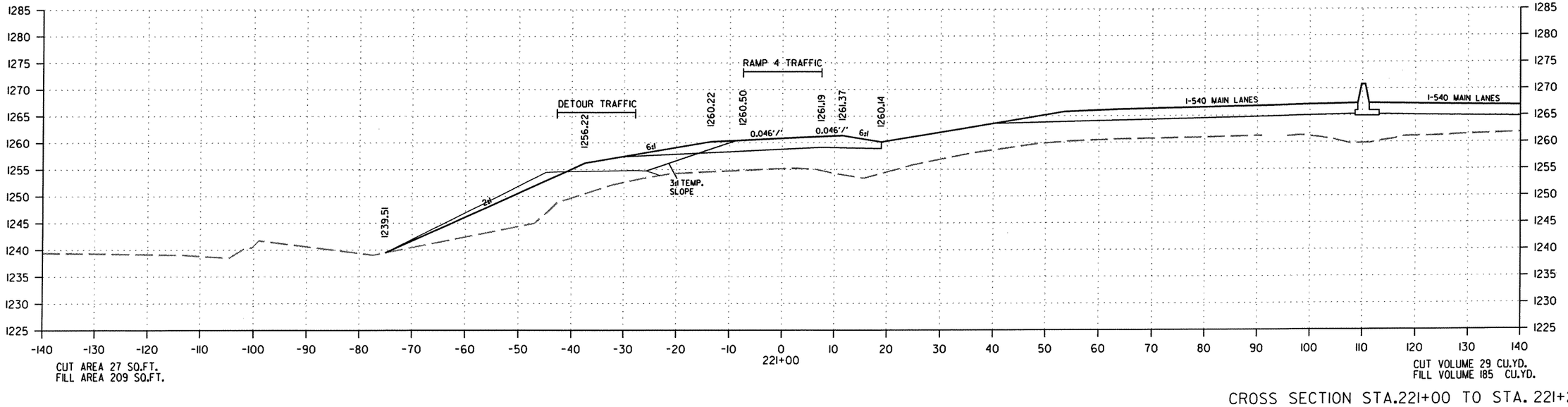
6/13/2013

R040605.DGN

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.		040605	236	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





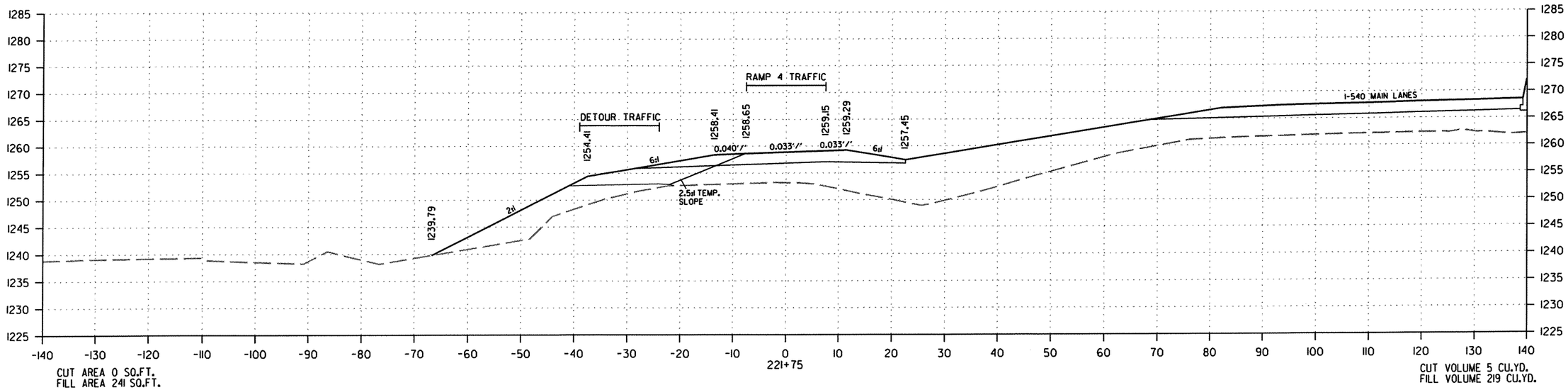
CROSS SECTION STA.221+00 TO STA. 221+25

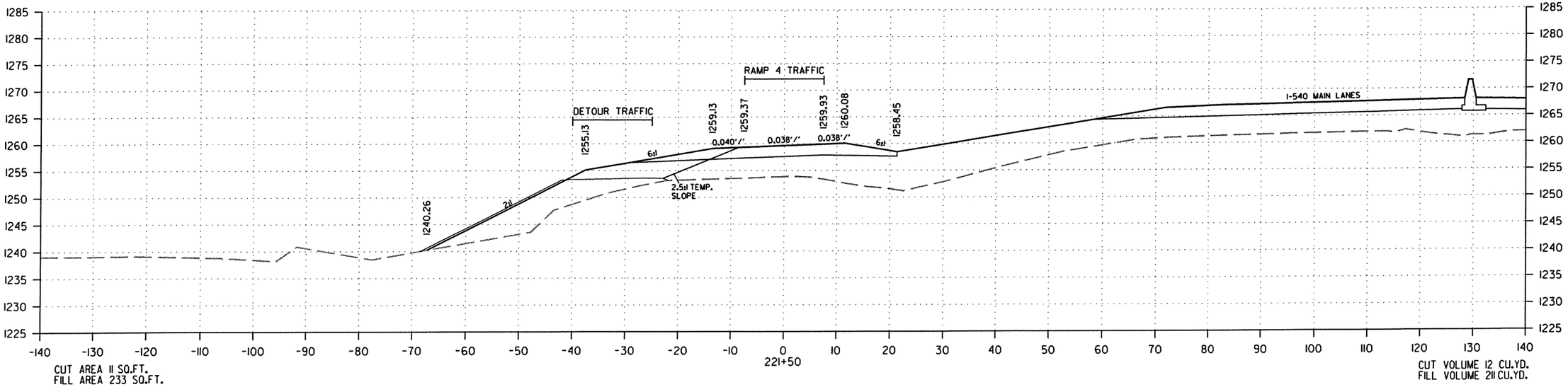
6/13/2013

R040605.DGN

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.		040605	237	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





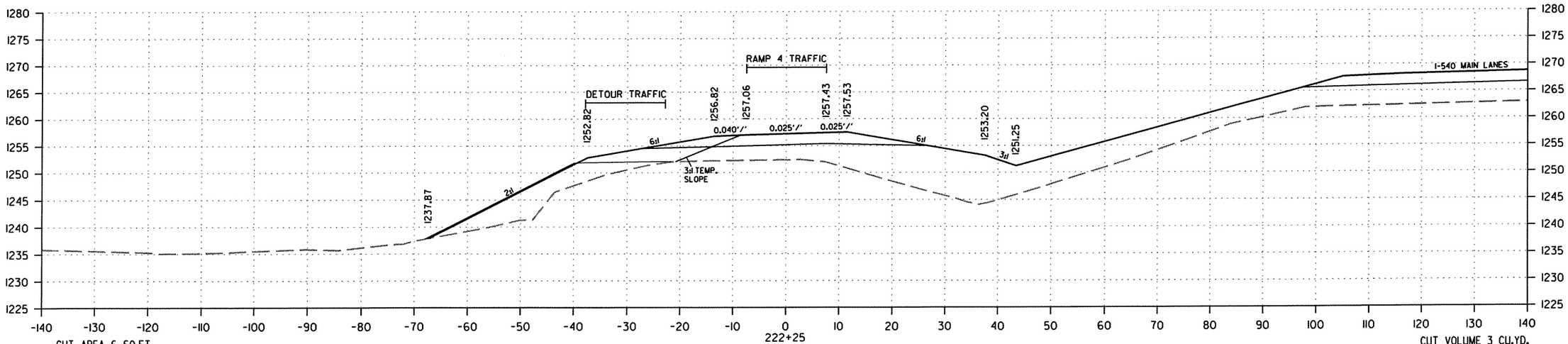
CROSS SECTION STA.221+50 TO STA. 221+75

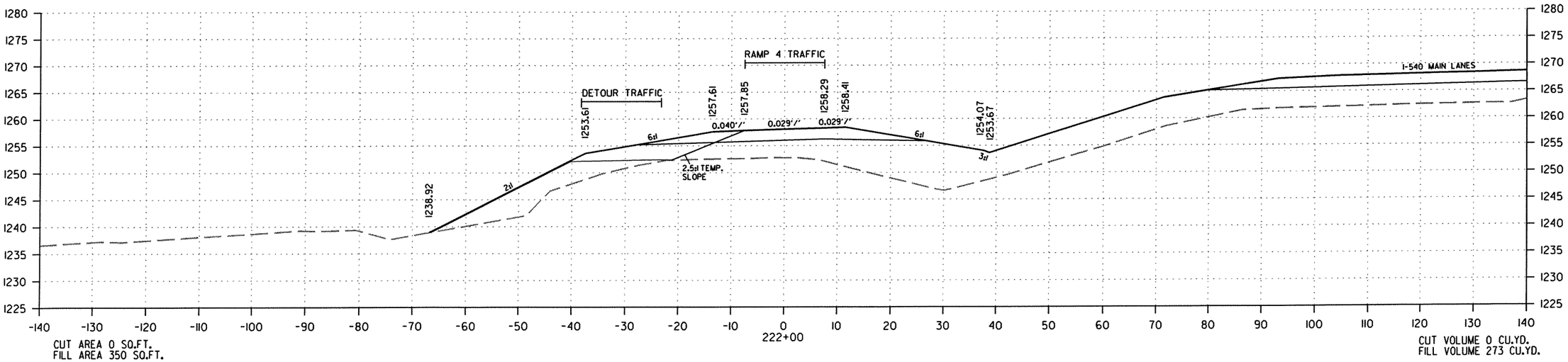
6/13/2013

R040605.DGN

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.		040605	238	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





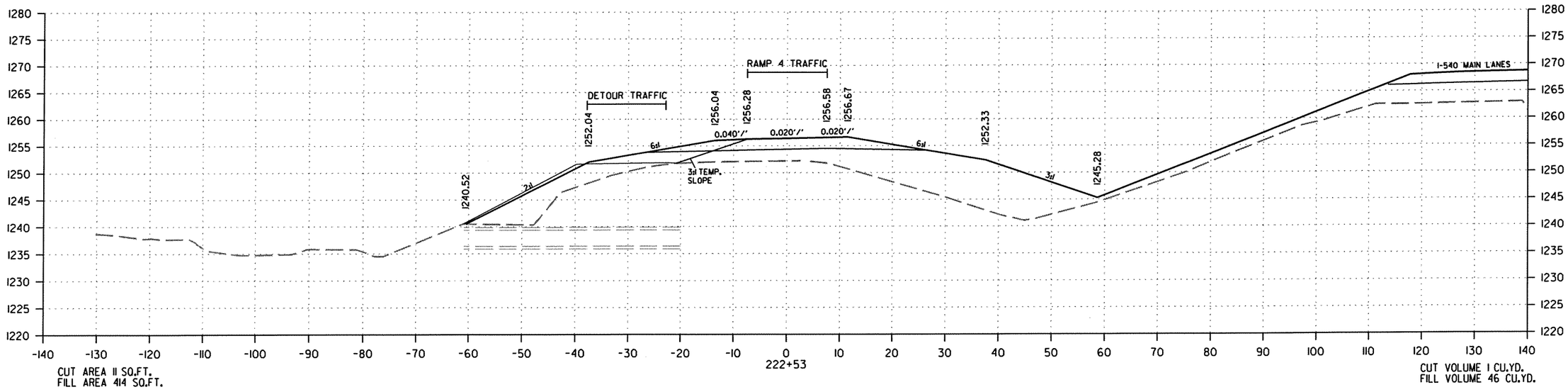
CROSS SECTION STA.222+00 TO STA. 222+25

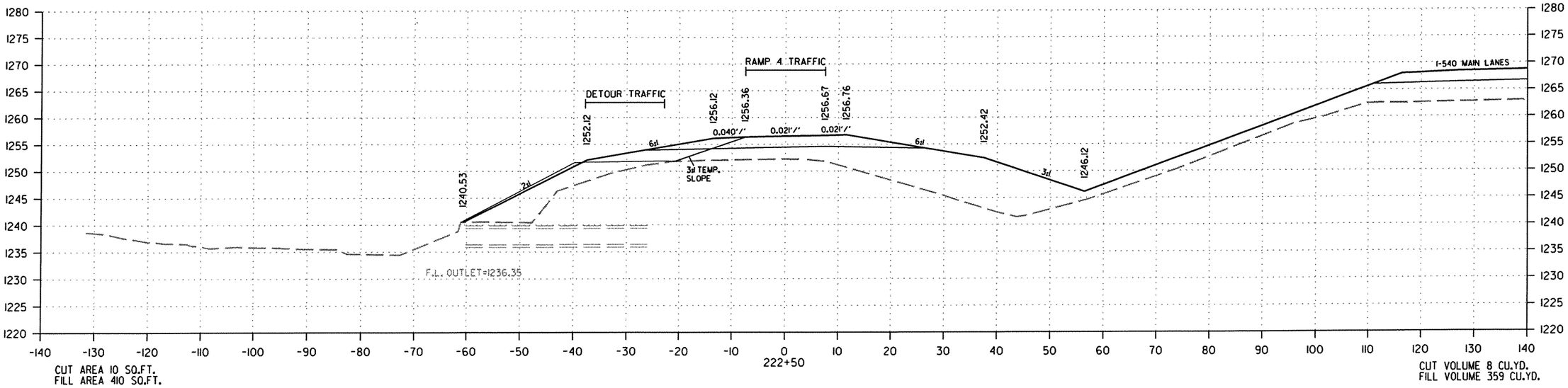
6/13/2013

R040605.DGN

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.		040605	239	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





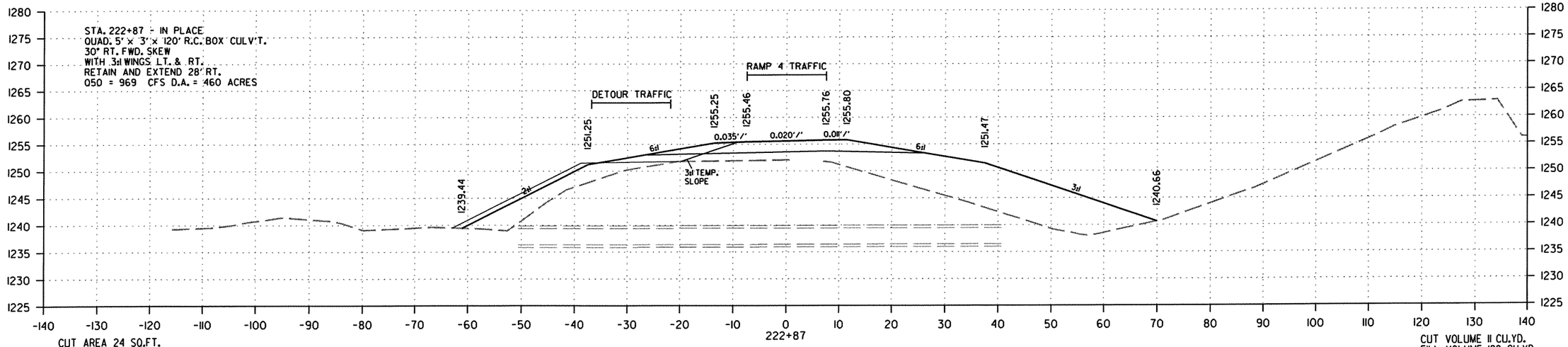
CROSS SECTION STA.222+50 TO STA. 222+53

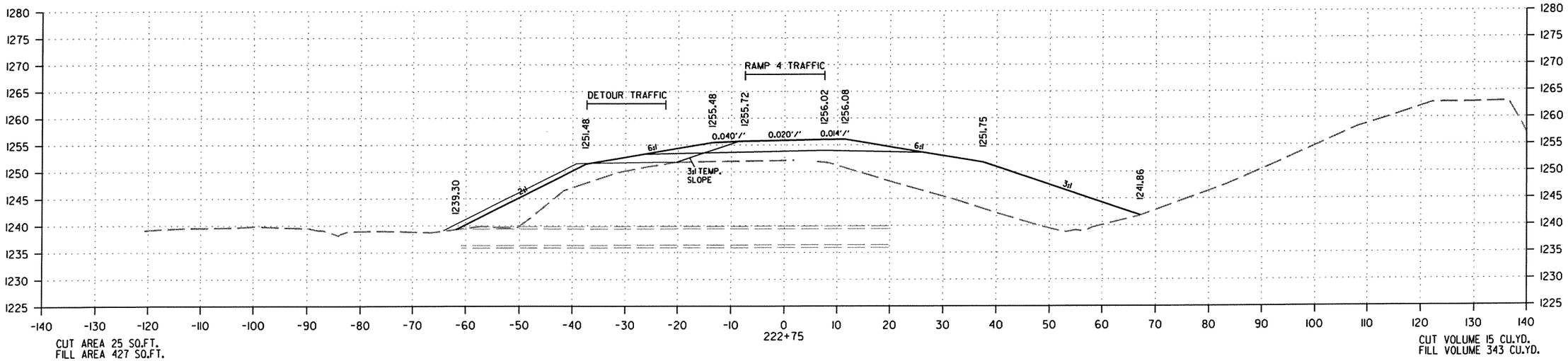
6/13/2013

RO40605.DGN

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.		040605	240	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





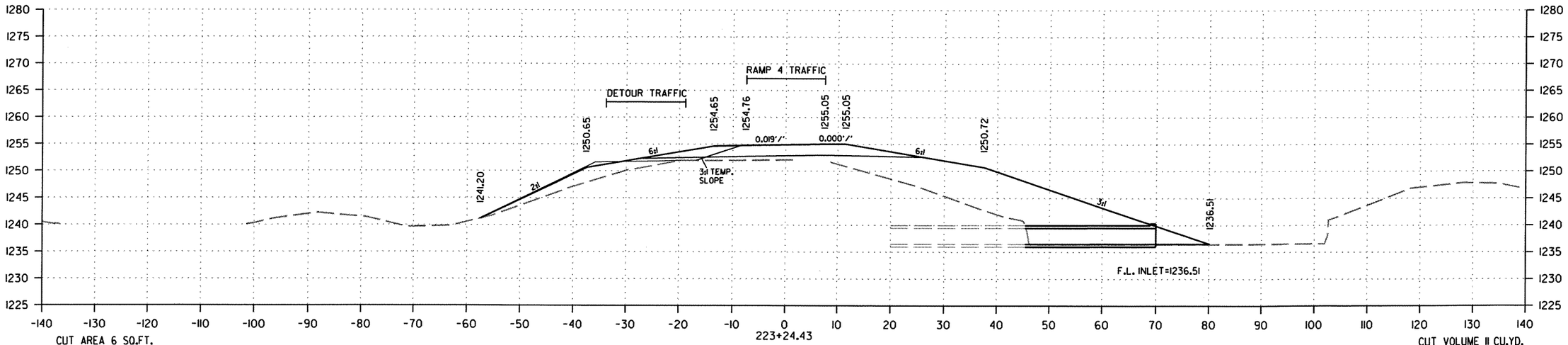
CROSS SECTION STA.222+75 TO STA. 222+87

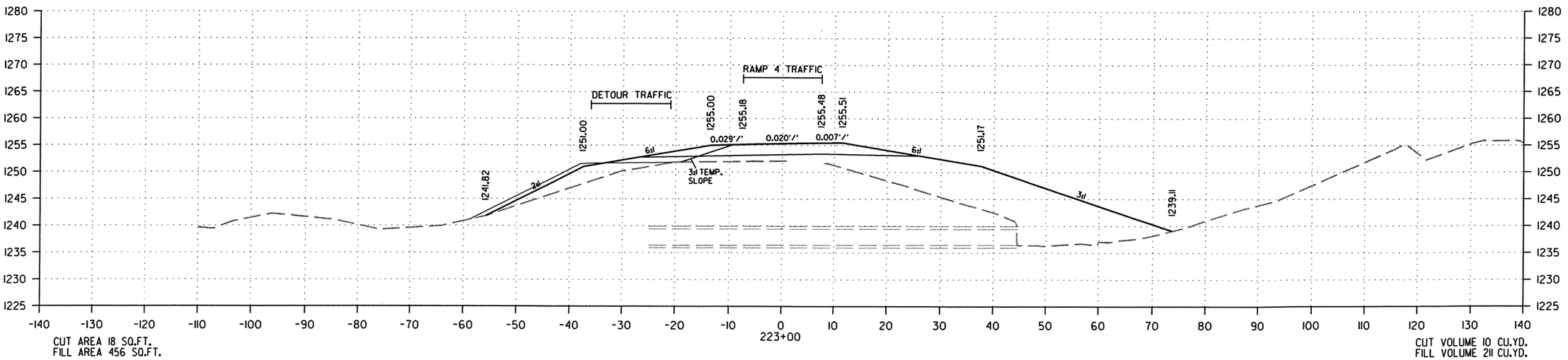
6/13/2013

R040605.DGN

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.		040605	241	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





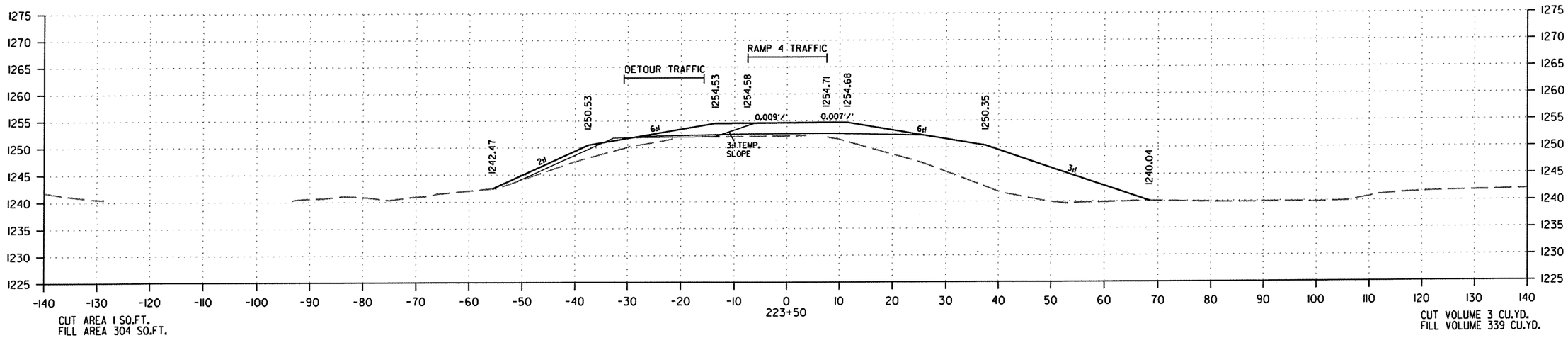
CROSS SECTION STA.223+00 TO STA. 223+24.43

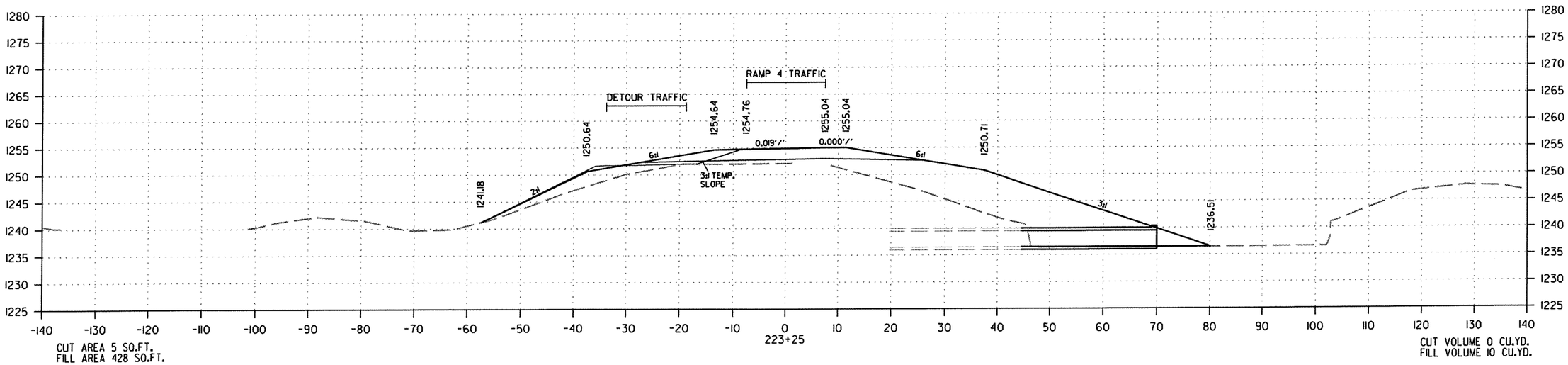
6/13/2013

R040605.DGN

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.		040605	242	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)





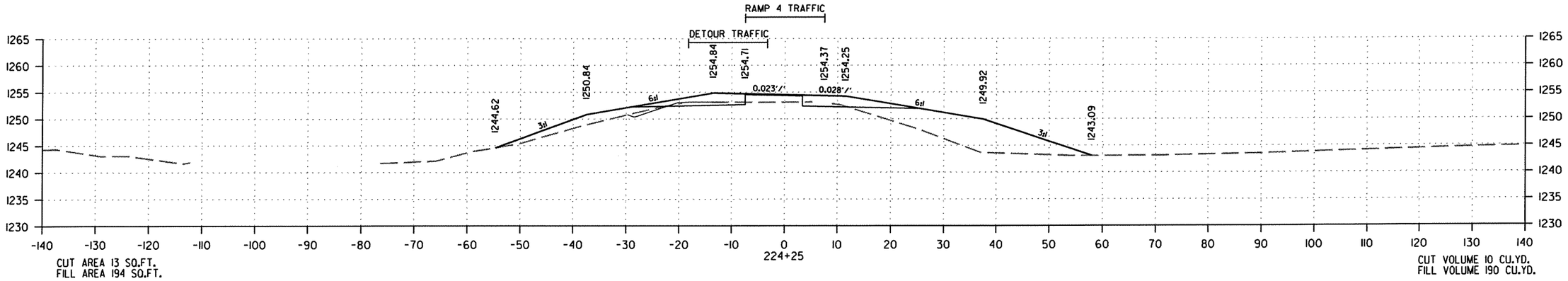
CROSS SECTION STA.223+25 TO STA. 223+50

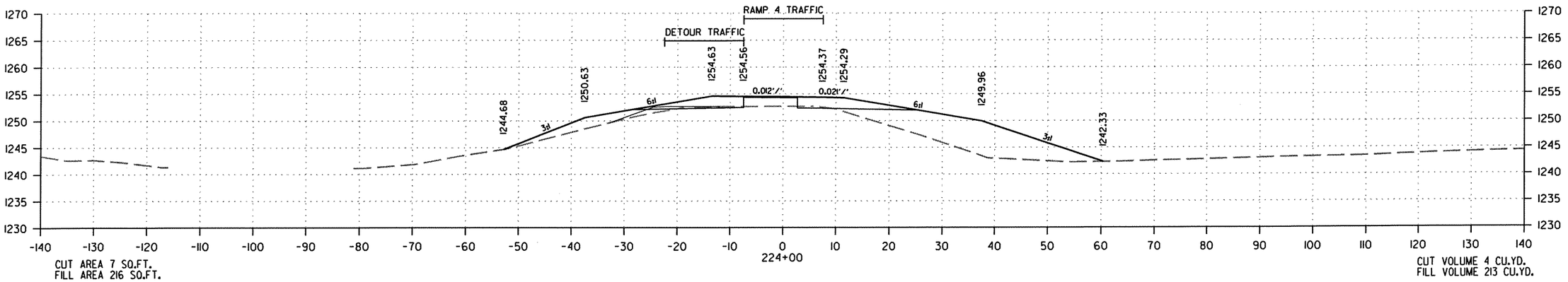
6/13/2013

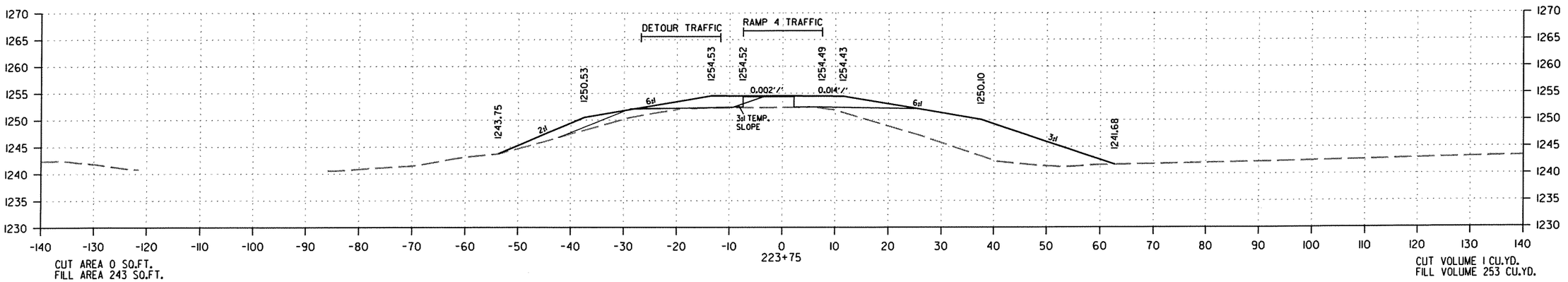
R040605.DGN

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.		040605	243	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)







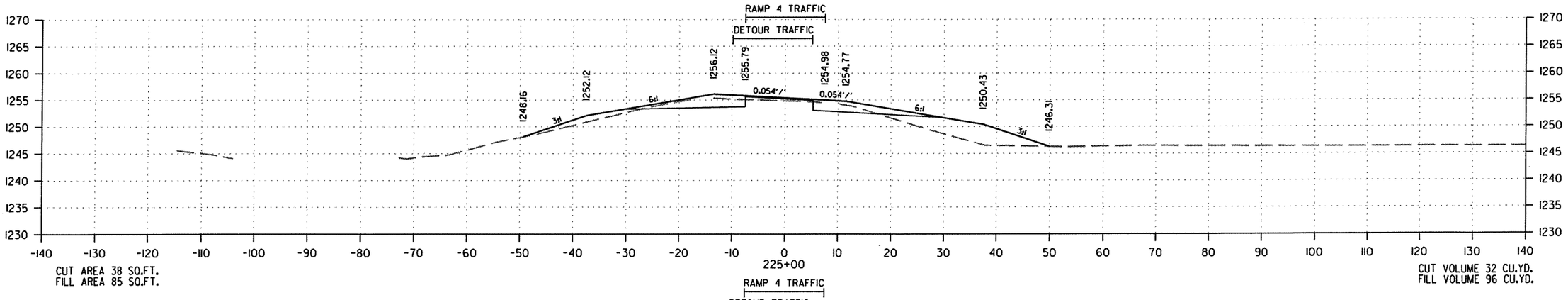
CROSS SECTION STA.223+75 TO STA. 224+25

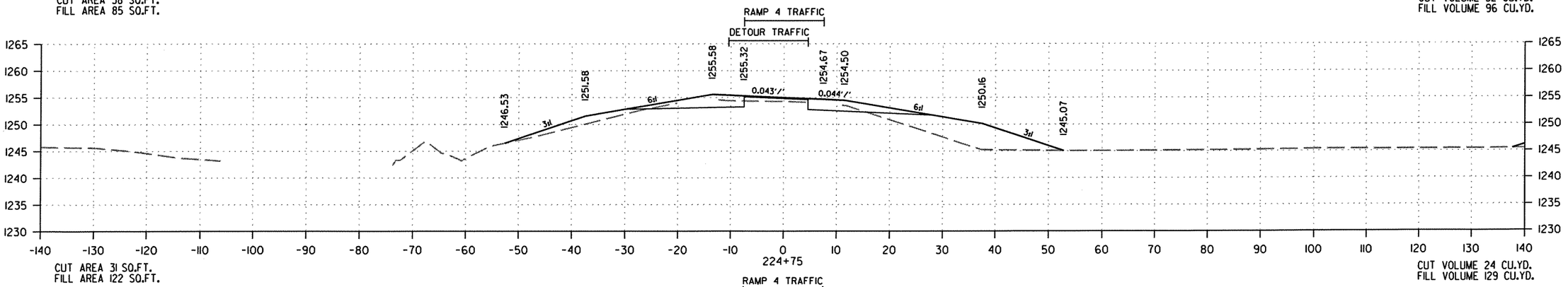
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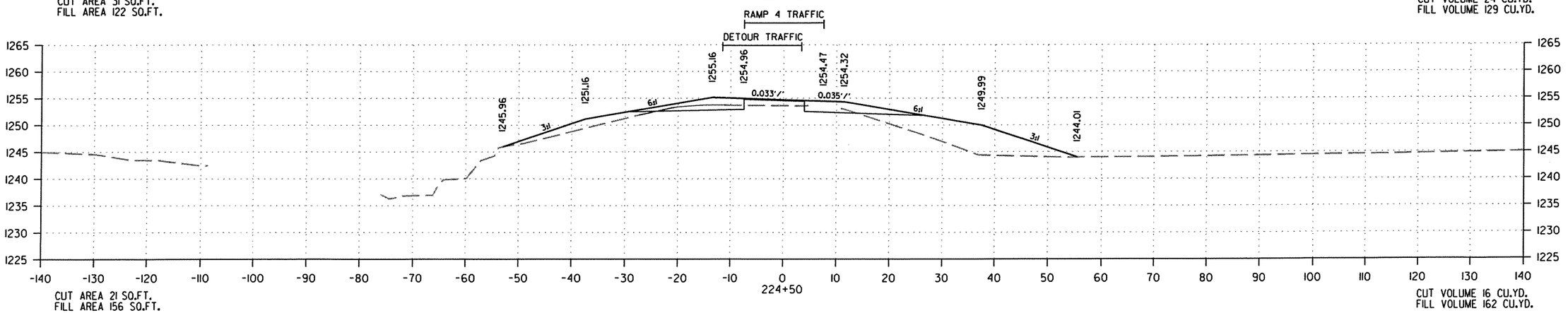
R040605.DGN

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.		040605	244	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)







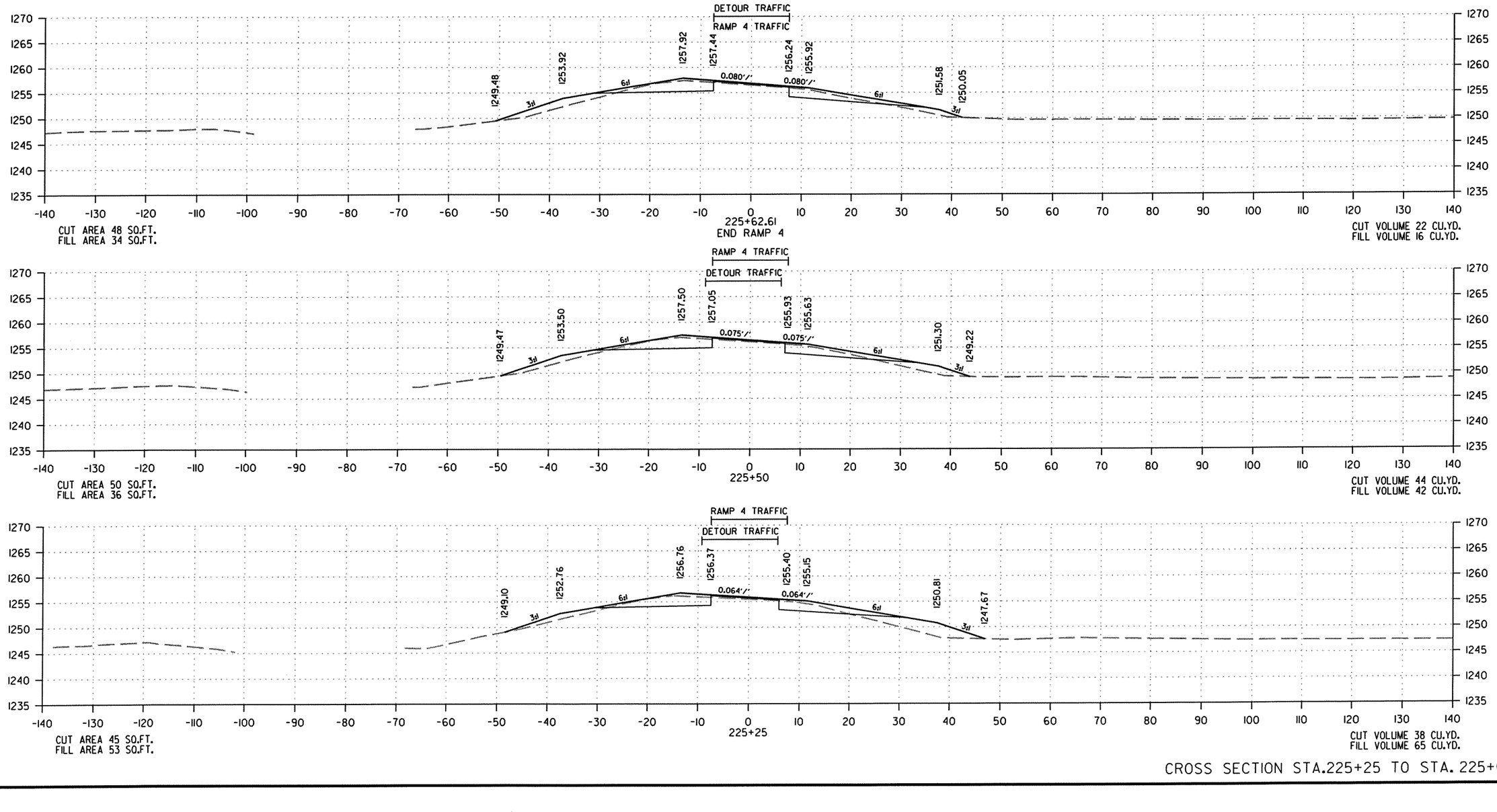
CROSS SECTION STA.224+50 TO STA. 225+00

6/13/2013

R040605.DGN

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.		040605	245	260

(2) CROSS SECTIONS - RAMP 4 (PORTER ROAD)



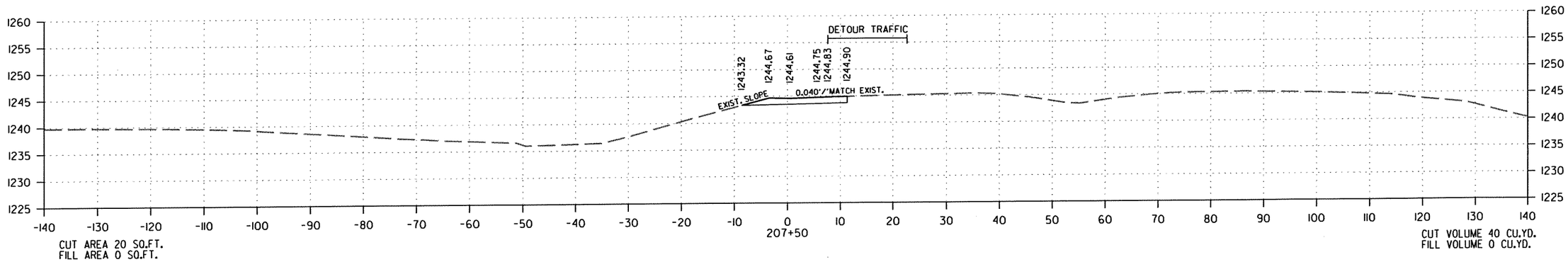
CROSS SECTION STA.225+25 TO STA. 225+63

6/13/2013

R040605.DGN

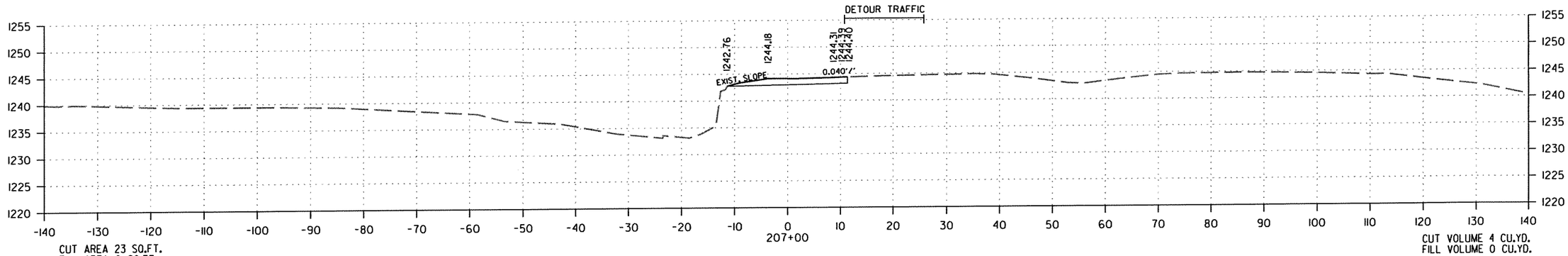
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	246	260

(2) CROSS SECTIONS - RAMP 4 DETOUR



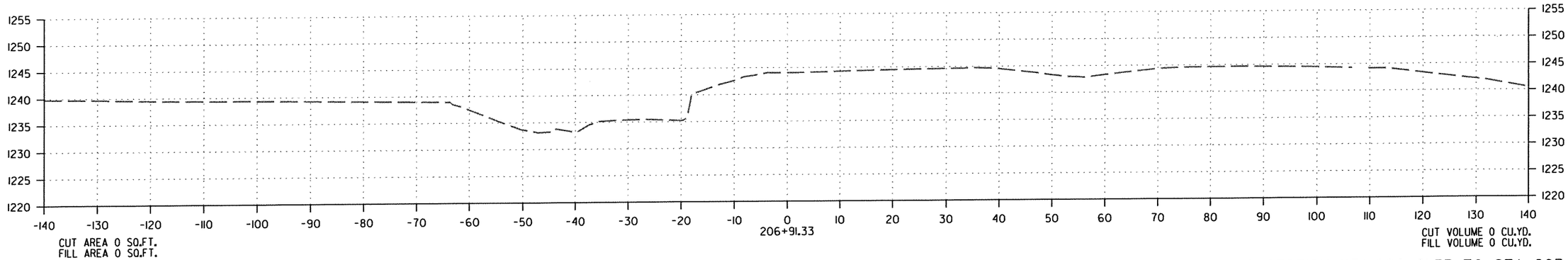
CUT AREA 20 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 40 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 23 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 4 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CROSS SECTION STA.206+91.33 TO STA. 207+50

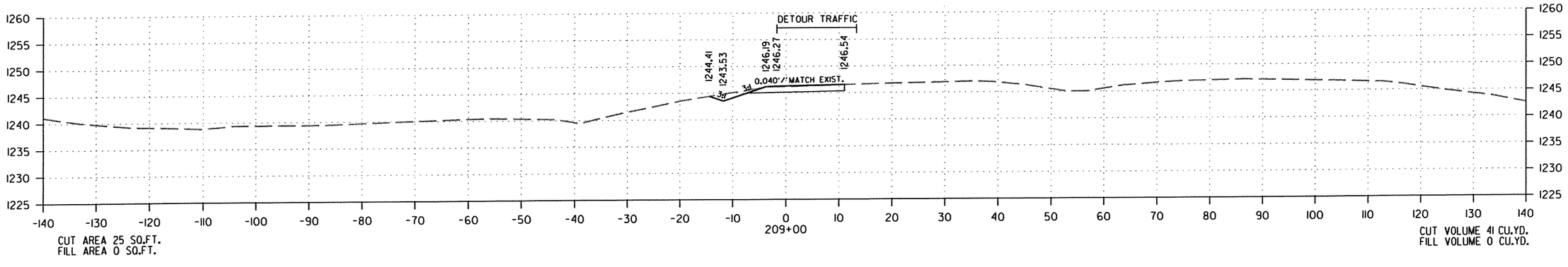
6/13/2013

R040605.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

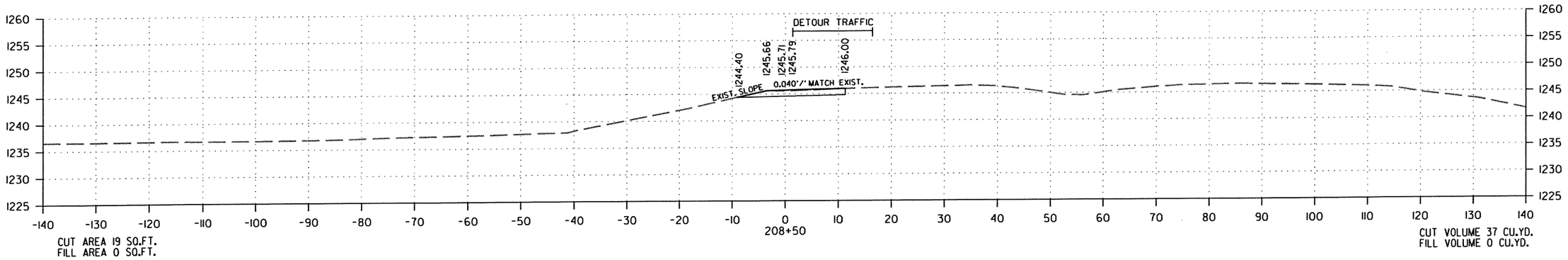
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040605	247	260

(2) CROSS SECTIONS - RAMP 4 DETOUR



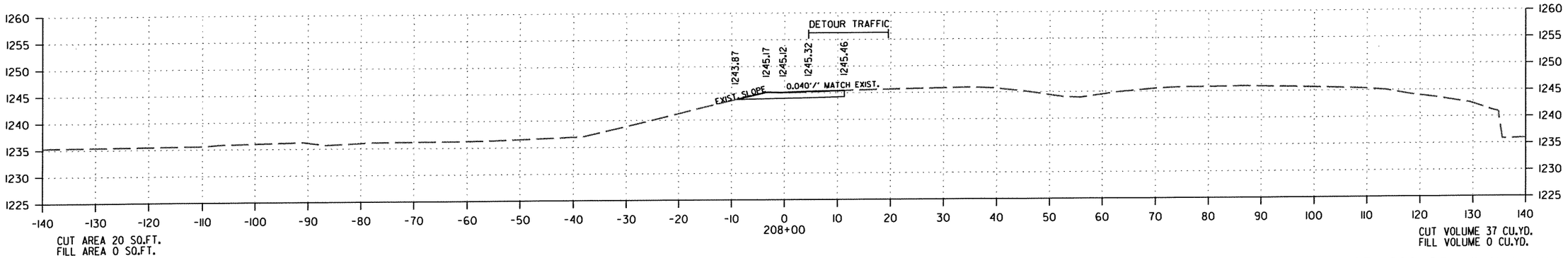
CUT AREA 25 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 41 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 19 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 37 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 20 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 37 CU.YD.
FILL VOLUME 0 CU.YD.

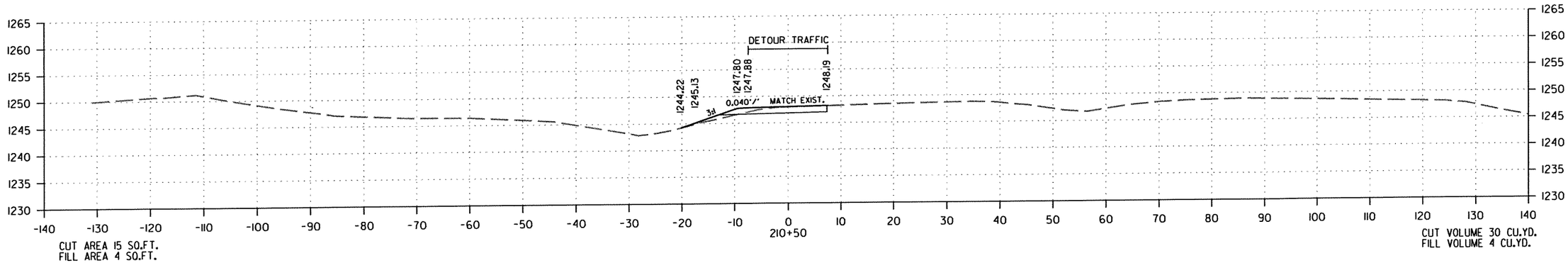
CROSS SECTION STA.208+00 TO STA. 209+00

6/13/2013

R040605.DGN

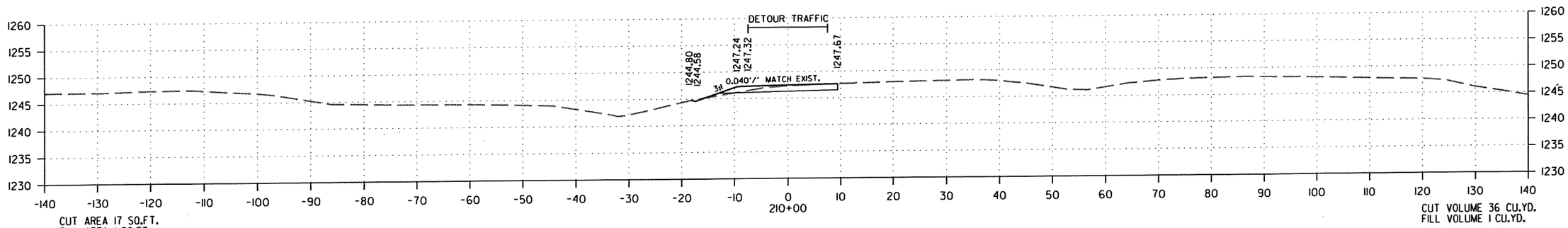
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	248	260

(2) CROSS SECTIONS - RAMP 4 DETOUR



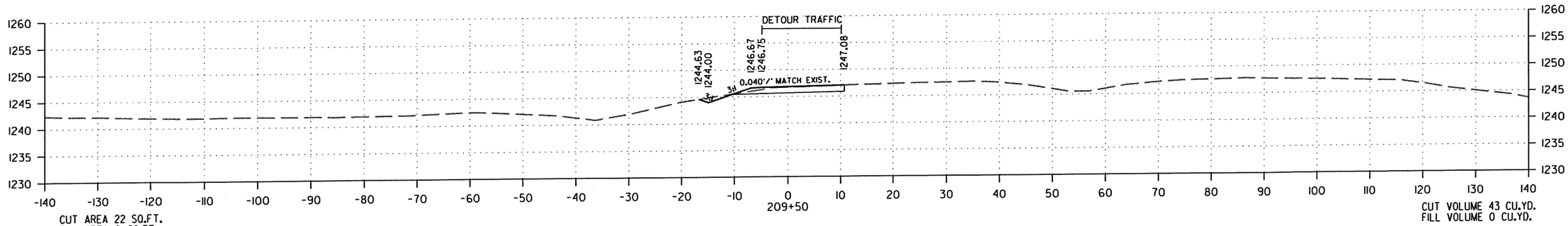
CUT AREA 15 SQ.FT.
FILL AREA 4 SQ.FT.

CUT VOLUME 30 CU.YD.
FILL VOLUME 4 CU.YD.



CUT AREA 17 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 36 CU.YD.
FILL VOLUME 1 CU.YD.



CUT AREA 22 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 43 CU.YD.
FILL VOLUME 0 CU.YD.

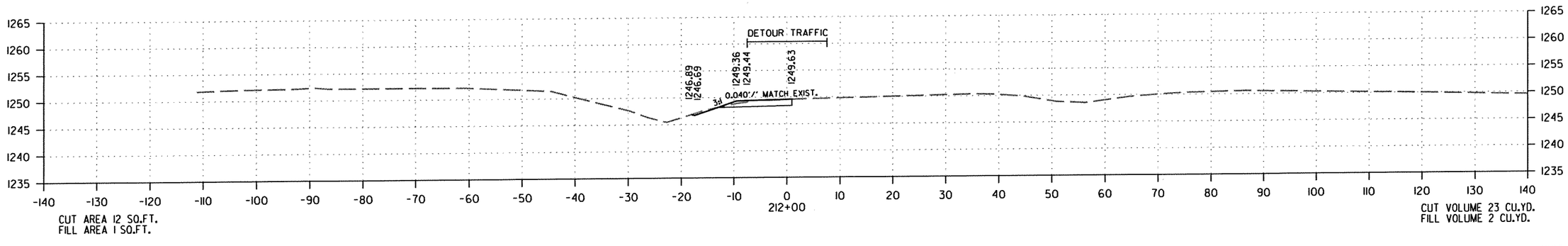
CROSS SECTION STA.209+50 TO STA. 210+50

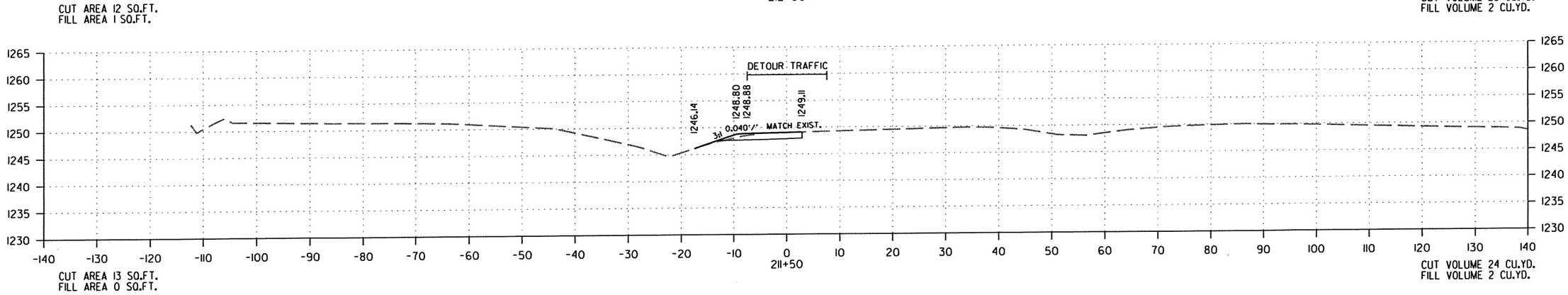
6/13/2013

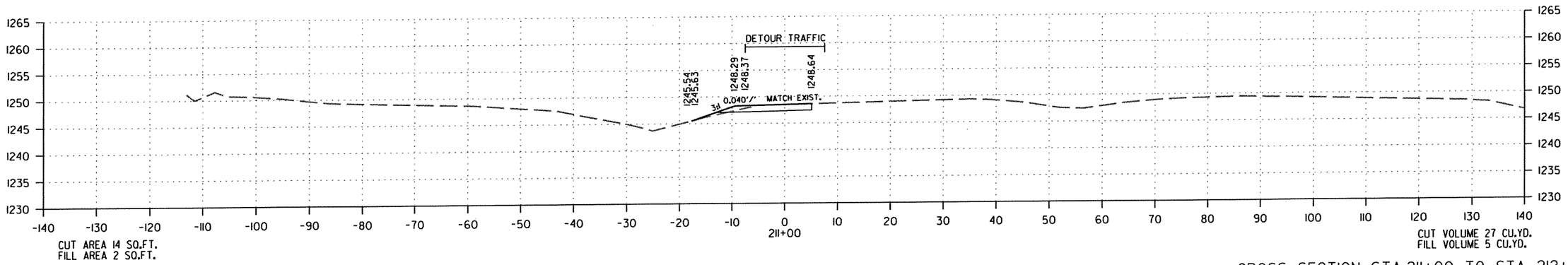
R040605.DGN

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.		040605	249	260

(2) CROSS SECTIONS - RAMP 4 DETOUR







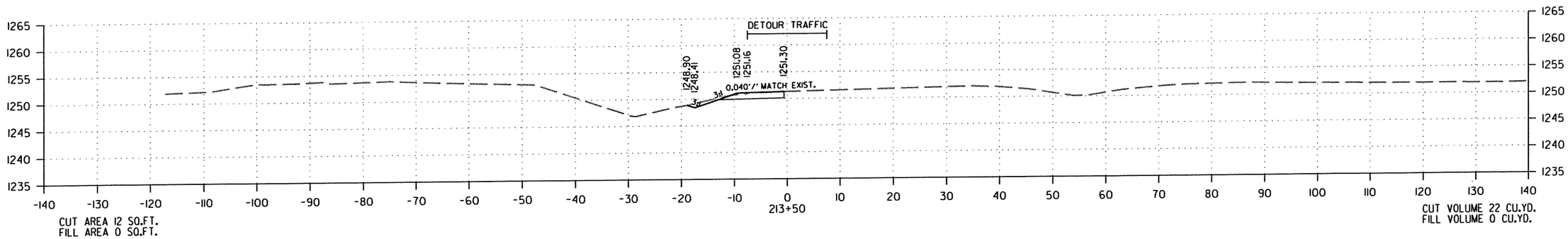
CROSS SECTION STA.211+00 TO STA. 212+00

6/13/2013

R040605.DGN

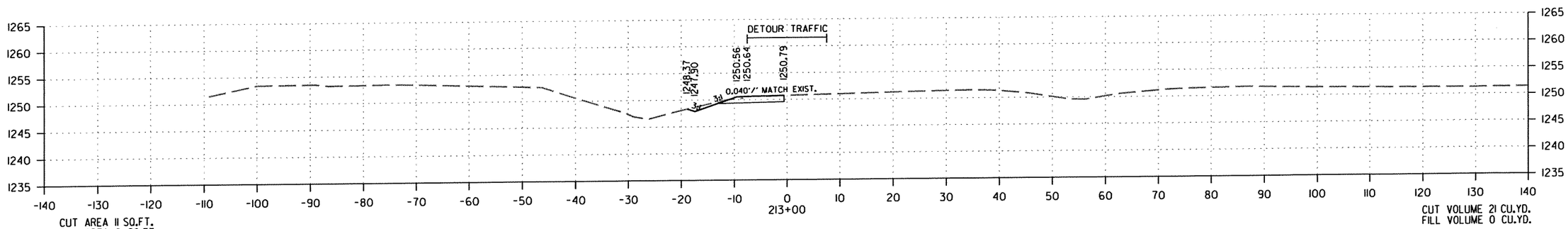
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	250	260

(2) CROSS SECTIONS - RAMP 4 DETOUR



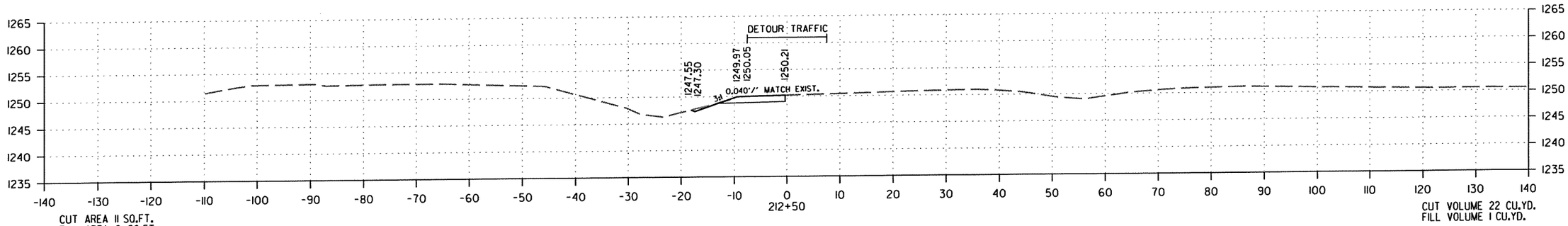
CUT AREA 12 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 22 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 11 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 21 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 11 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 22 CU.YD.
FILL VOLUME 1 CU.YD.

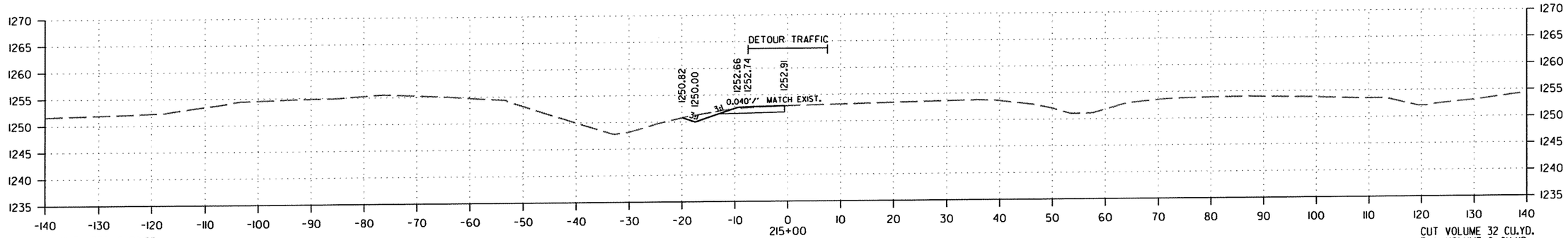
CROSS SECTION STA.212+50 TO STA. 213+50

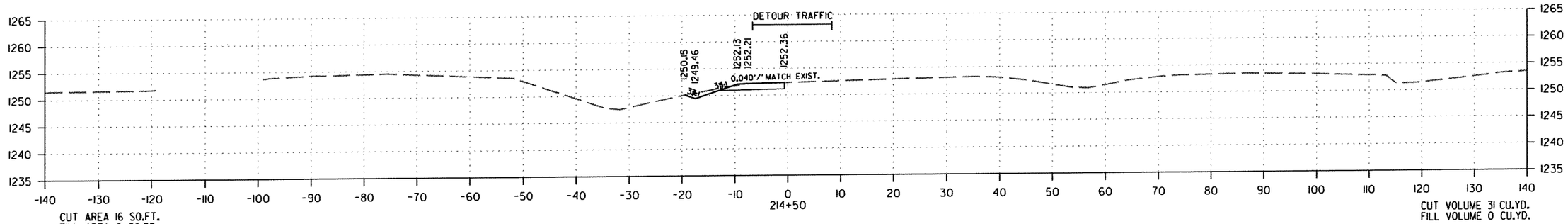
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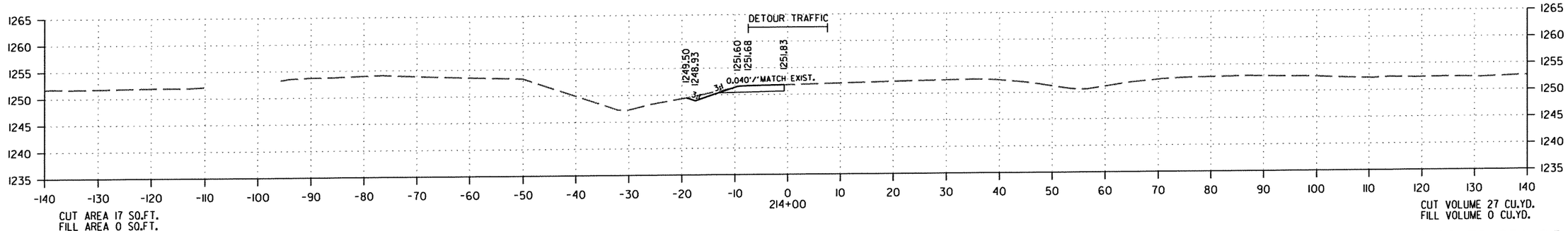
R040605.DGN

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.		040605	251	260

(2) CROSS SECTIONS - RAMP 4 DETOUR







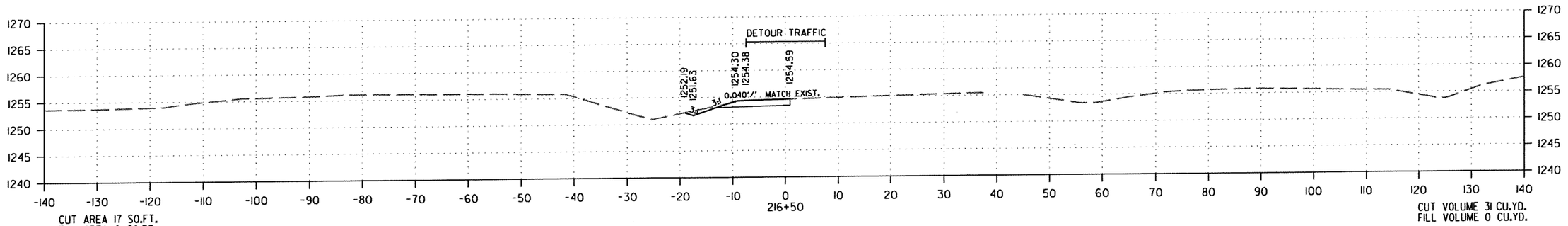
CROSS SECTION STA.214+00 TO STA. 215+00

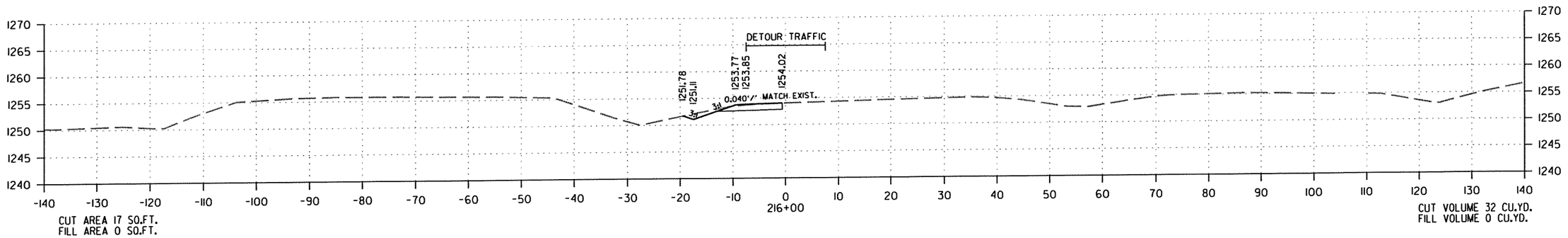
6/13/2013

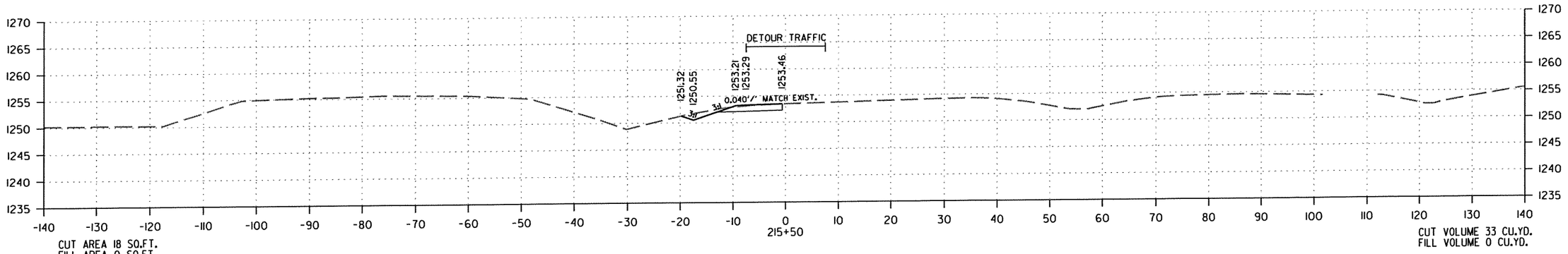
R040605.DGN

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.		040605	252	260

(2) CROSS SECTIONS - RAMP 4 DETOUR







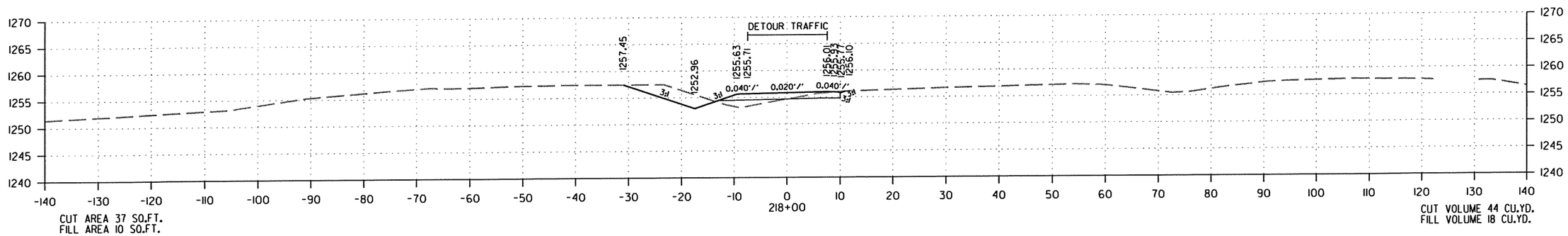
CROSS SECTION STA.215+50 TO STA. 216+50

6/13/2013

R040605.DGN

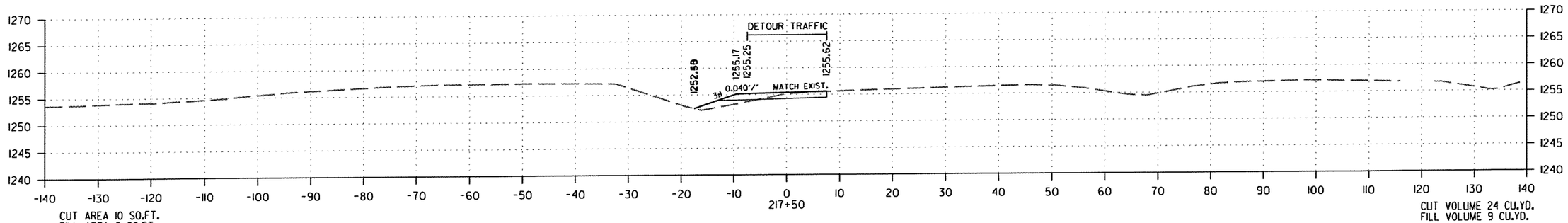
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	253	260

(2) CROSS SECTIONS - RAMP 4 DETOUR



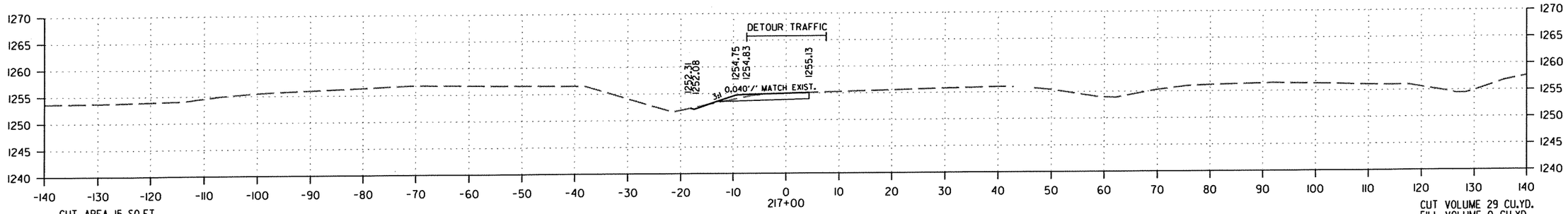
CUT AREA 37 SQ.FT.
FILL AREA 10 SQ.FT.

CUT VOLUME 44 CU.YD.
FILL VOLUME 18 CU.YD.



CUT AREA 10 SQ.FT.
FILL AREA 9 SQ.FT.

CUT VOLUME 24 CU.YD.
FILL VOLUME 9 CU.YD.



CUT AREA 15 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 29 CU.YD.
FILL VOLUME 0 CU.YD.

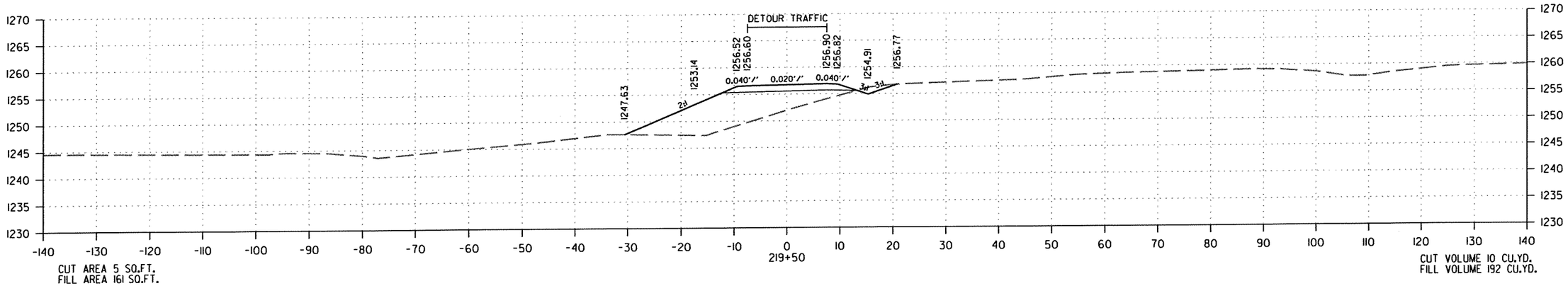
CROSS SECTION STA.217+00 TO STA. 218+00

6/13/2013

R040605.DGN

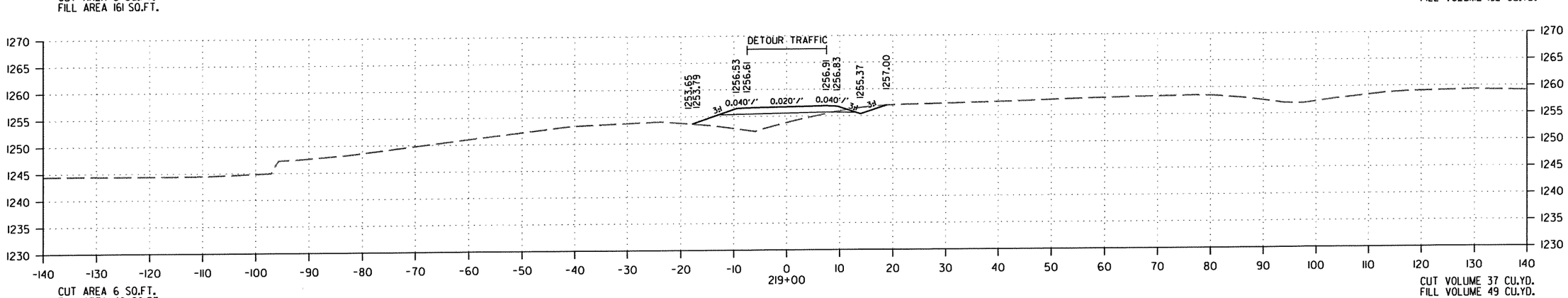
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040605	254	260

(2) CROSS SECTIONS - RAMP 4 DETOUR



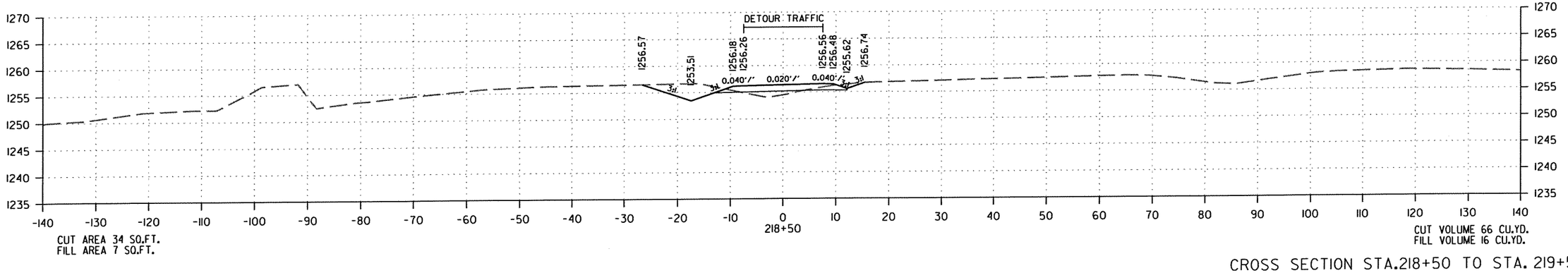
CUT AREA 5 SQ.FT.
FILL AREA 161 SQ.FT.

CUT VOLUME 10 CU.YD.
FILL VOLUME 192 CU.YD.



CUT AREA 6 SQ.FT.
FILL AREA 46 SQ.FT.

CUT VOLUME 37 CU.YD.
FILL VOLUME 49 CU.YD.



CUT AREA 34 SQ.FT.
FILL AREA 7 SQ.FT.

CUT VOLUME 66 CU.YD.
FILL VOLUME 16 CU.YD.

CROSS SECTION STA.218+50 TO STA. 219+50

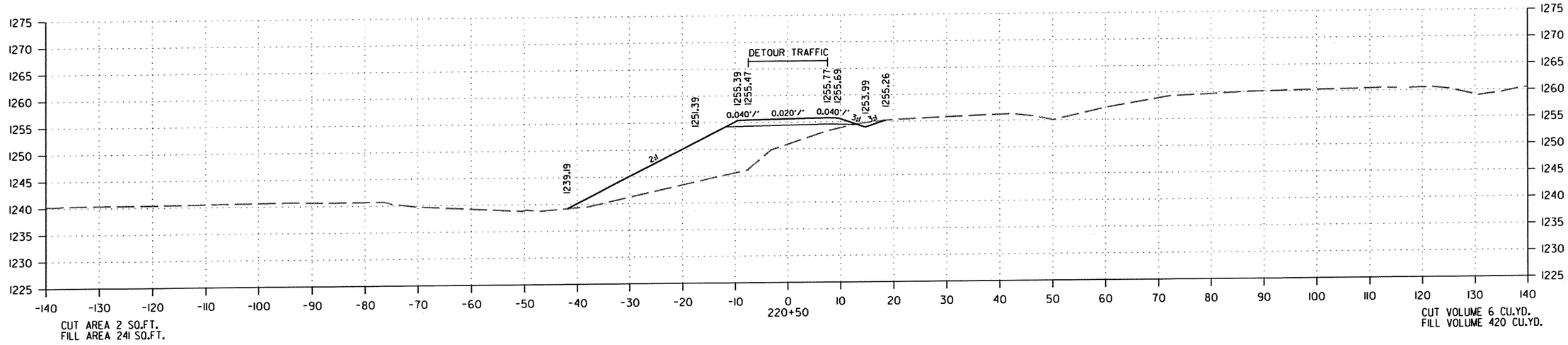
6/13/2013

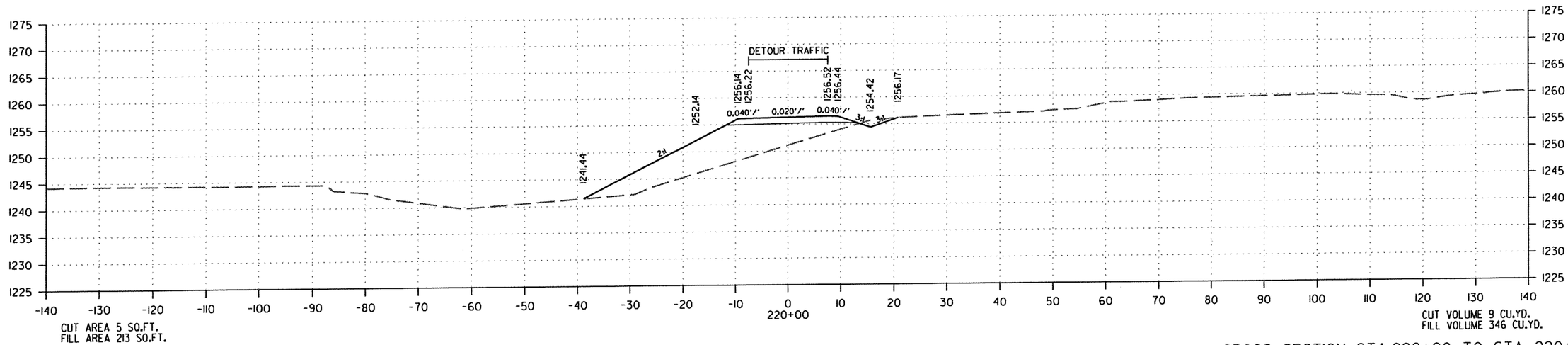
R040605.DGN

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.		040605	255	260

(2) CROSS SECTIONS - RAMP 4 DETOUR





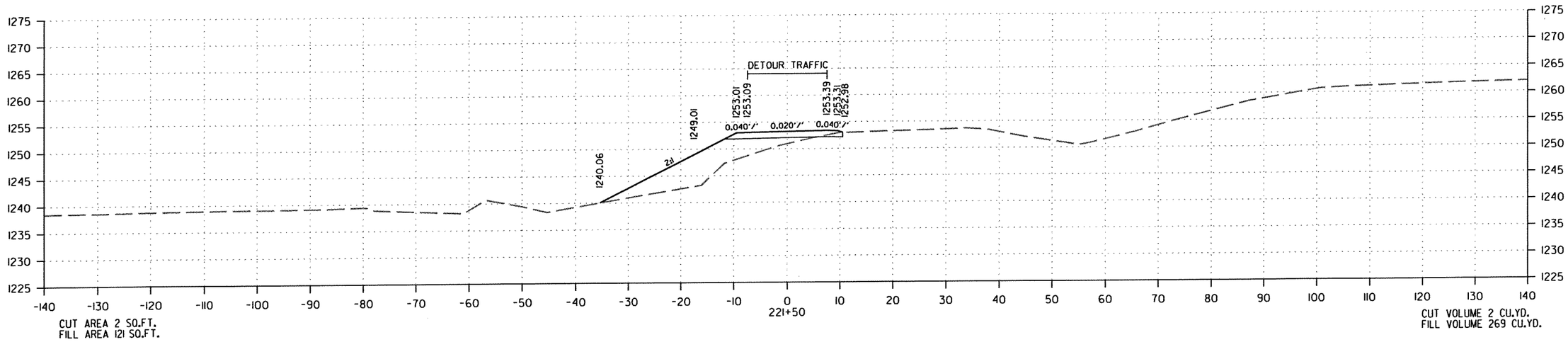
CROSS SECTION STA.220+00 TO STA. 220+50

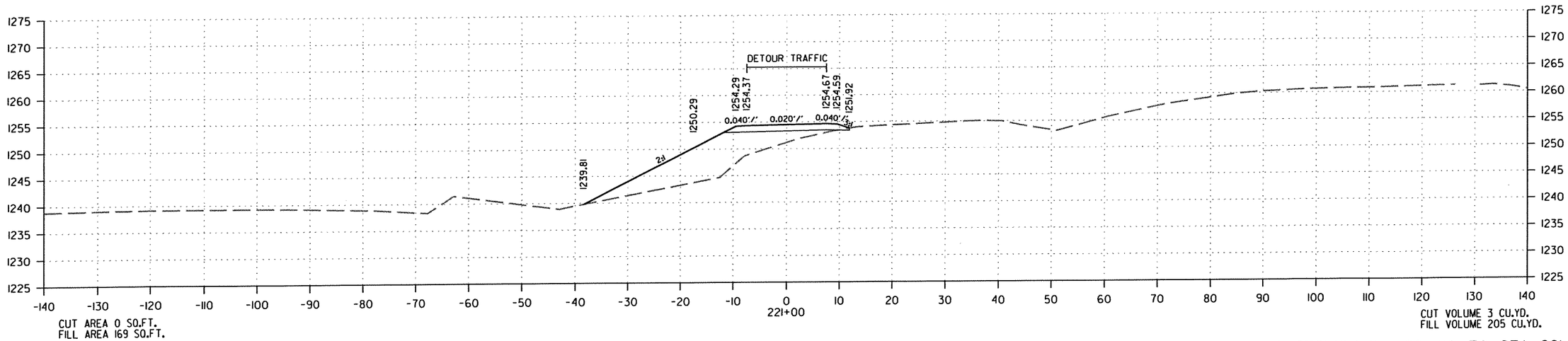
6/13/2013

R040605.DGN

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.		040605	256	260

(2) CROSS SECTIONS - RAMP 4 DETOUR





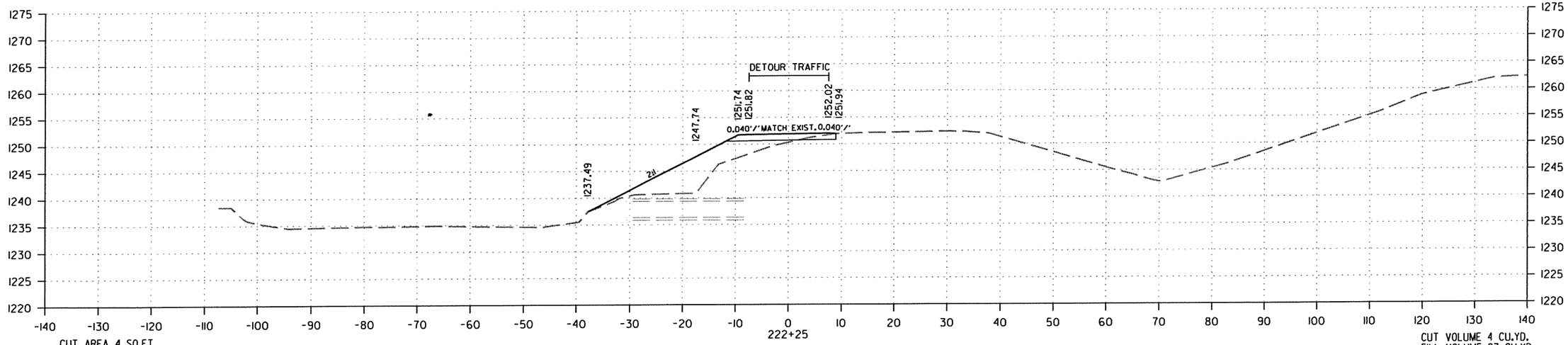
CROSS SECTION STA.221+00 TO STA. 221+50

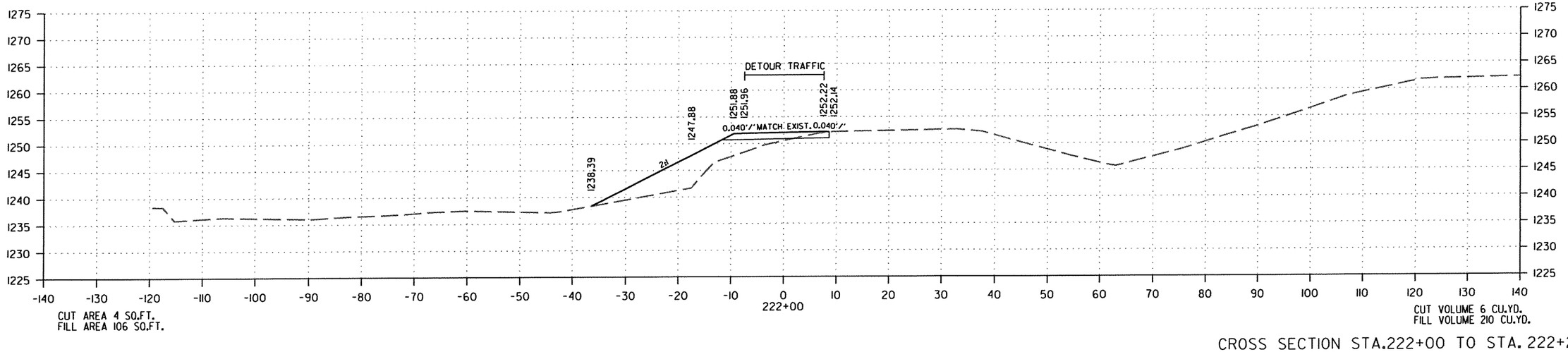
6/13/2013

R040605.DGN

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.		040605	257	260

(2) CROSS SECTIONS - RAMP 4 DETOUR





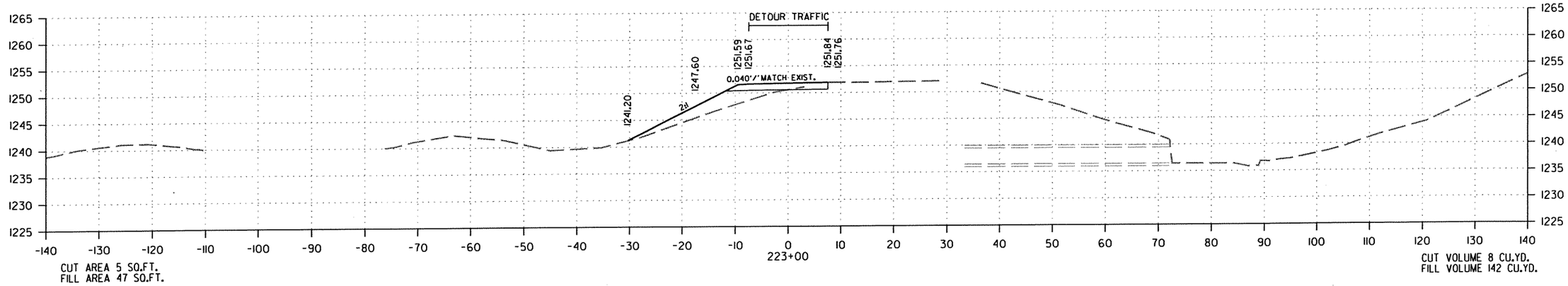
CROSS SECTION STA.222+00 TO STA. 222+25

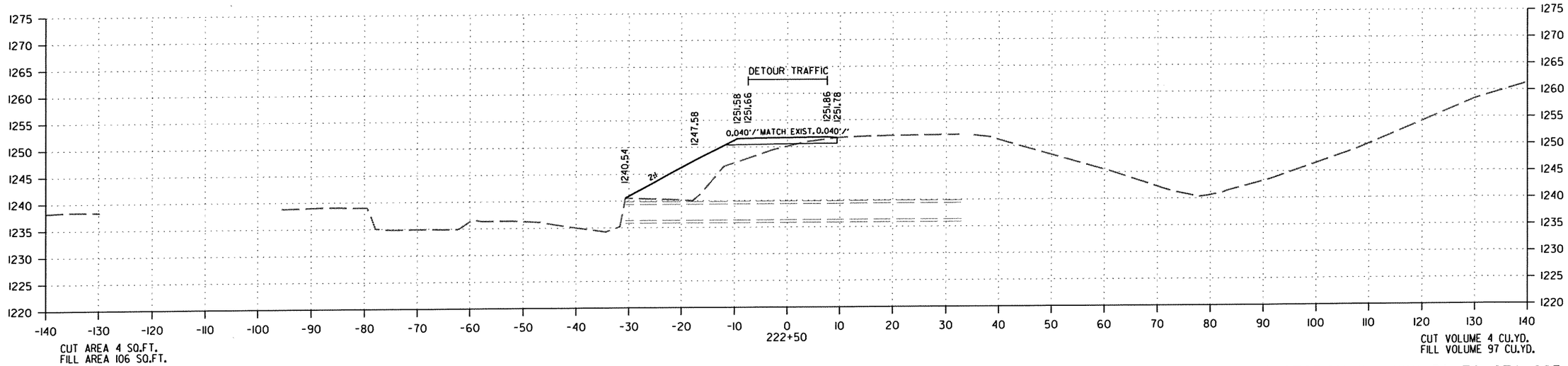
6/13/2013

R040605.DGN

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.		040605	258	260

(2) CROSS SECTIONS - RAMP 4 DETOUR





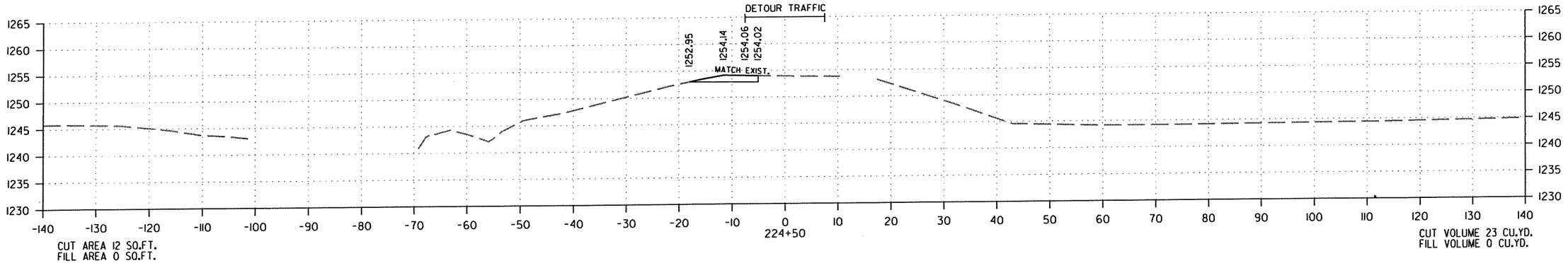
CROSS SECTION STA.222+50 TO STA. 223+00

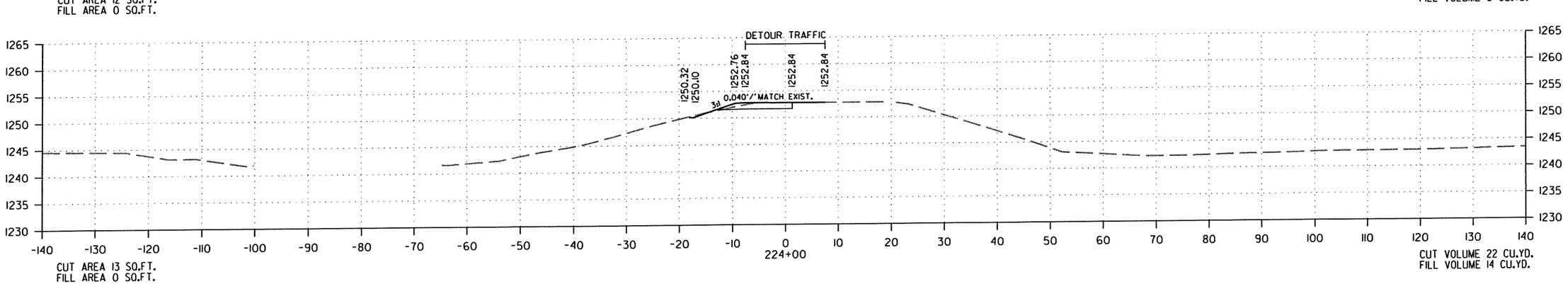
6/13/2013

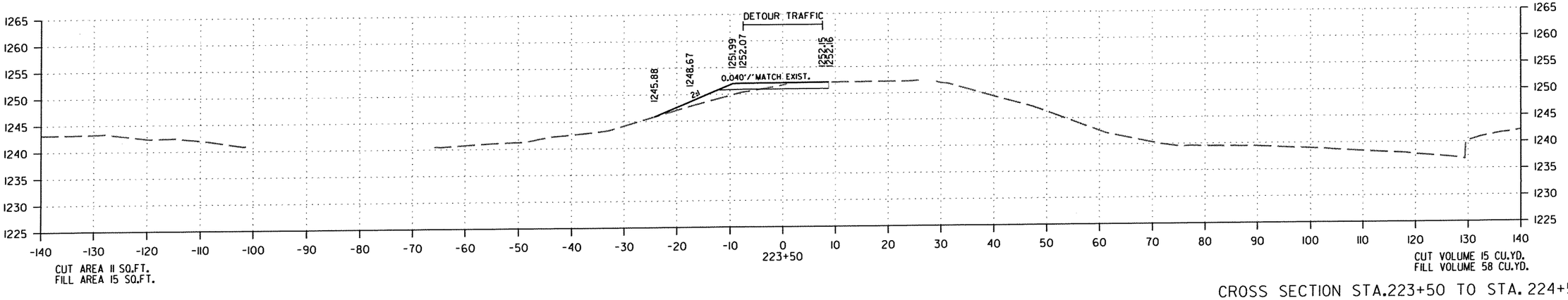
R040605.DGN

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.		040605	259	260

(2) CROSS SECTIONS - RAMP 4 DETOUR







CROSS SECTION STA.223+50 TO STA. 224+50

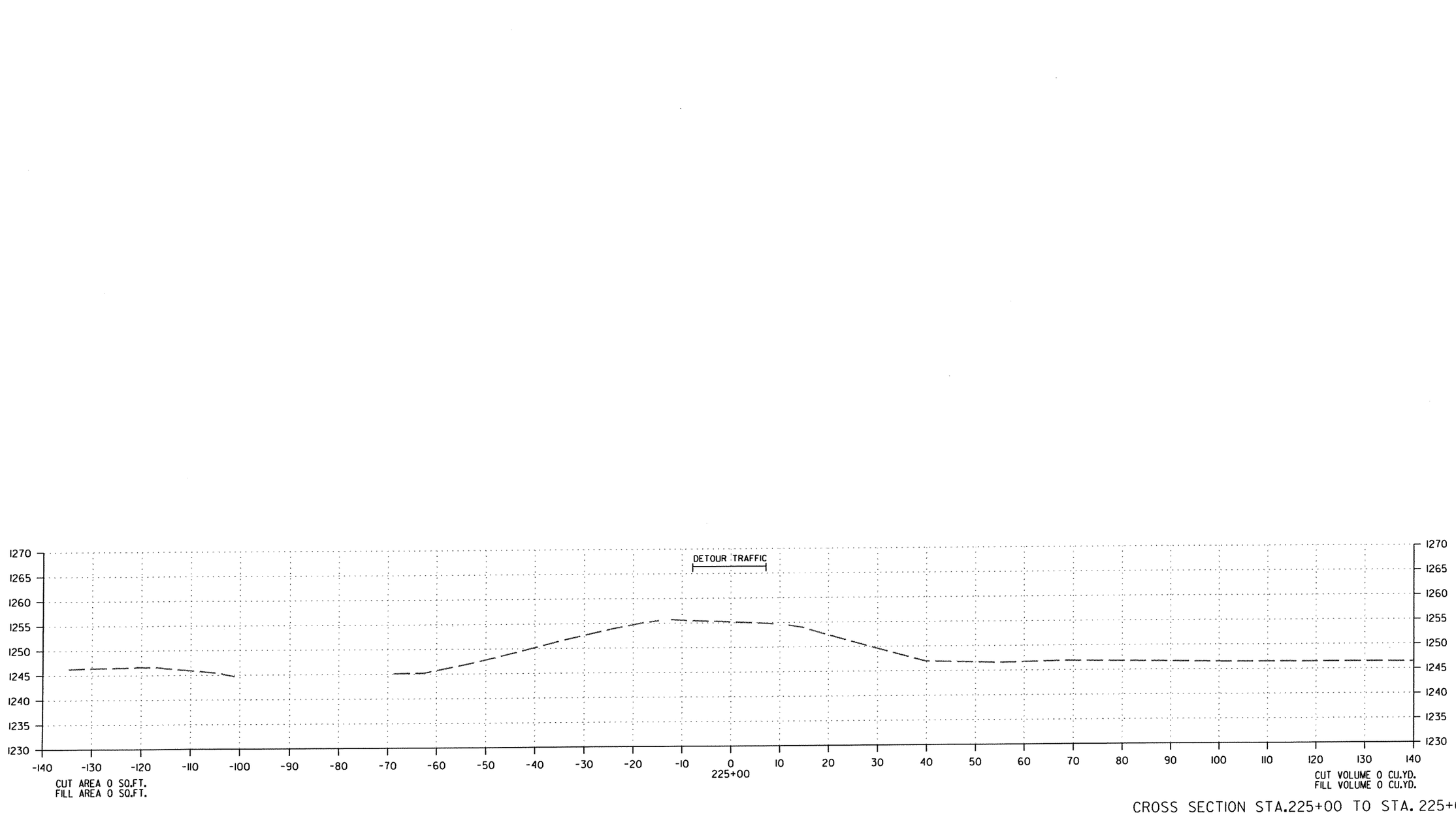
6/13/2013

R040605.DGN

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.		040605	260	260

(2) CROSS SECTIONS - RAMP 4 DETOUR



CROSS SECTION STA.225+00 TO STA. 225+00

6/13/2013

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