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.		070396	1	44

HWYS. 82 & 167 (EL DORADO)(SEL. SECS.)(CABLE MEDIAN BARRIER)(S)

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

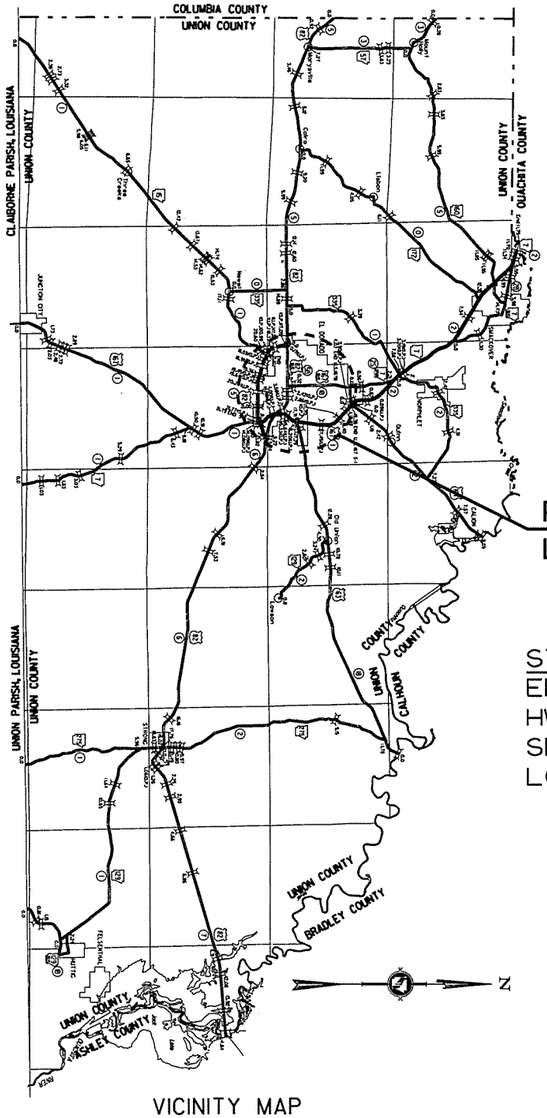
HWYS. 82 & 167 (EL DORADO) (SEL. SECS.) (CABLE MEDIAN BARRIER) (S)

UNION COUNTY

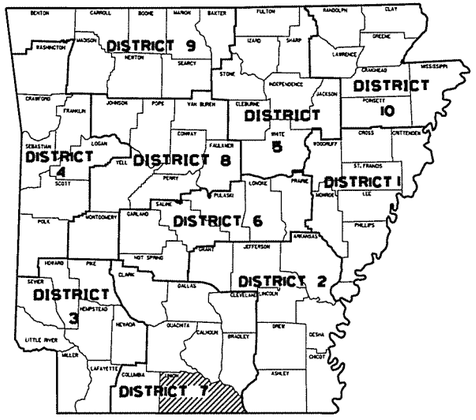
HIGHWAY 82 SECTIONS 5 & 6 AND HIGHWAY 167 SECTION 1

JOB 070396

FED. AID PROJ. HSIP-0070(35)

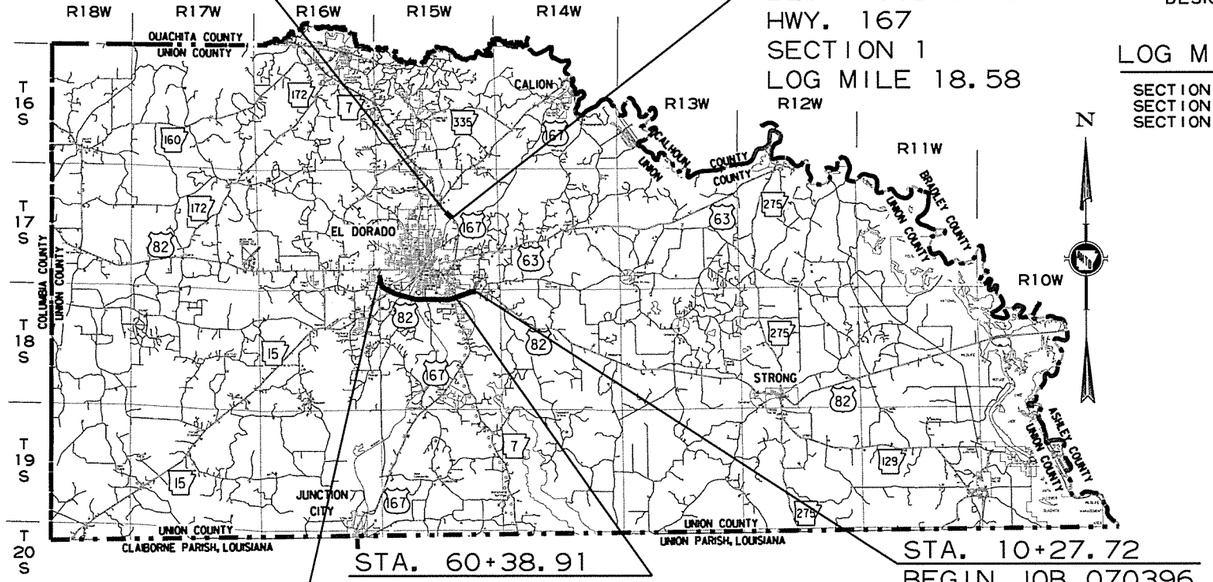


VICINITY MAP



ARK. HWY. DIST. NO. 7

0 4 8 MILE



STA. 223+03.83
END JOB 070396
HWY. 167
SECTION 1
LOG MILE 18.35

STA. 211+37.69
BEGIN JOB 070396
HWY. 167
SECTION 1
LOG MILE 18.58

STA. 294+63.08
END JOB 070396
HWY. 82
SECTION 5
LOG MILE 17.36

STA. 60+38.91
END SECTION 6
LOG MILE 0.00
BEGIN SECTION 5
LOG MILE 21.79

STA. 10+27.72
BEGIN JOB 070396
HWY. 82
SECTION 6
LOG MILE 0.95

• DESIGN TRAFFIC DATA •

	SECT. 5	SECT. 6	SECT. 1
DESIGN YEAR	2034	2034	2034
2014 ADT	7,800	6,600	8,900
2034 ADT	9,400	8,000	10,500
2034 DHV	1,034	880	1,155
TRUCKS	16%	15%	15%
DESIGN SPEED	65 MPH	65 MPH	65 MPH

LOG MILES

SECTION 5 17.36 TO 21.79 IN UNION COUNTY
SECTION 6 0.00 TO 0.95 IN UNION COUNTY
SECTION 1 18.35 TO 18.58 IN UNION COUNTY

EQUATIONS TO JOB 070396

STA.	16+34.60 (BK.)	- STA.	16+29.79 (AHD.)
STA.	73+15.22 (BK.)	- STA.	73+14.30 (AHD.)
STA.	124+89.40 (BK.)	- STA.	124+63.30 (AHD.)
STA.	177+82.87 (BK.)	- STA.	177+76.12 (AHD.)

EXCEPTIONS TO JOB 070396

STA.	16+58	- STA.	18+53	=	195'
STA.	58+98	- STA.	61+98	=	300'
STA.	171+11	- STA.	173+86	=	275'
STA.	180+62	- STA.	183+87	=	325'
STA.	219+20	- STA.	231+50	=	1230'
			TOTAL EXCEPTIONS	=	2325'

GROSS LENGTH OF PROJECT	29640.08	FEET OR	5.614	MILES
NET " " ROADWAY	27315.08	" "	5.173	"
NET " " BRIDGES	0.00	" "	0.00	"
NET " " PROJECT	27315.08	" "	5.173	"

BEGINNING OF PROJECT
LAT. = N 33°11'25.7"
LONG. = W 92°37'09.8"

MID-POINT OF PROJECT
LAT. = N 33°11'10.1"
LONG. = W 92°39'48.0"

END OF PROJECT
LAT. = N 33°12'18.1"
LONG. = W 92°42'01.1"

P.E. 070396
NON-PART.

CERTIFICATE OF AUTHORIZATION
ATKINS NORTH AMERICA, INC.
No. 502
ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
J. NELLE ROMERO
7/14/14

7/14/2014 1:36:32 PM

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STATE OF ARKANSAS
JENNELLE ROMERO
REGISTERED PROFESSIONAL ENGINEER
No. 12686
8/25/14

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.		070396	2	44

INDEX, GOV. SPECS., AND GENERAL NOTES

INDEX OF SHEETS

GOVERNING SPECIFICATIONS

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

TITLE	
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT-EQUAL EMPLOYMENT OPPORTUNITY-NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT-SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT-EQUAL EMPLOYMENT OPPORTUNITY-GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT-EQUAL EMPLOYMENT OPPORTUNITY-FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT-POSTERS AND NOTICES REQUIRED FOR FEDERAL AID PROJECTS
FHWA-1273	SUPPLEMENT-WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
620-1	MULCH COVER
JOB 070396	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 070396	CONCRETE DITCH PAVING
JOB 070396	FLEXIBLE BEGINNING OF WORK
JOB 070396	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 070396	MAINTENANCE OF TRAFFIC
JOB 070396	MANDATORY USE OF INTERNET BIDDING
JOB 070396	PARTNERING REQUIREMENTS
JOB 070396	REMOVAL AND DISPOSAL OF GUARDRAIL
JOB 070396	REMOVAL AND DISPOSAL OF IMPACT ATTENUATION BARRIERS
JOB 070396	SEQUENCE OF CONSTRUCTION
JOB 070396	SITE USE (A+C METHOD)
JOB 070396	STORM WATER POLLUTION PREVENTION PLAN
JOB 070396	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 070396	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 070396	UTILITY ADJUSTMENTS
JOB 070396	VALUE ENGINEERING
JOB 070396	WARM MIX ASPHALT
JOB 070396	WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS
JOB 070396	WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS
JOB 070396	WIRE ROPE SAFETY FENCE (POST REPAIR)
JOB 070396	WRSF TRAINING WORKSHOP

GENERAL NOTES

1. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
2. 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.
3. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
4. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO.210 - UNCLASSIFIED EXCAVATION.
5. 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.
6. WASTE MATERIAL SHALL BE DISPOSED OF AS APPROVED BY THE ENGINEER. ANY REQUIRED EROSION CONTROL MEASURES FROM WASTING MATERIAL SHALL BE AS APPROVED BY THE ENGINEER.
7. CONTRACTOR TO ADJUST POSTS IN THE FIELD SO THAT EXISTING DRAINAGE STRUCTURES ARE AVOIDED.

INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES

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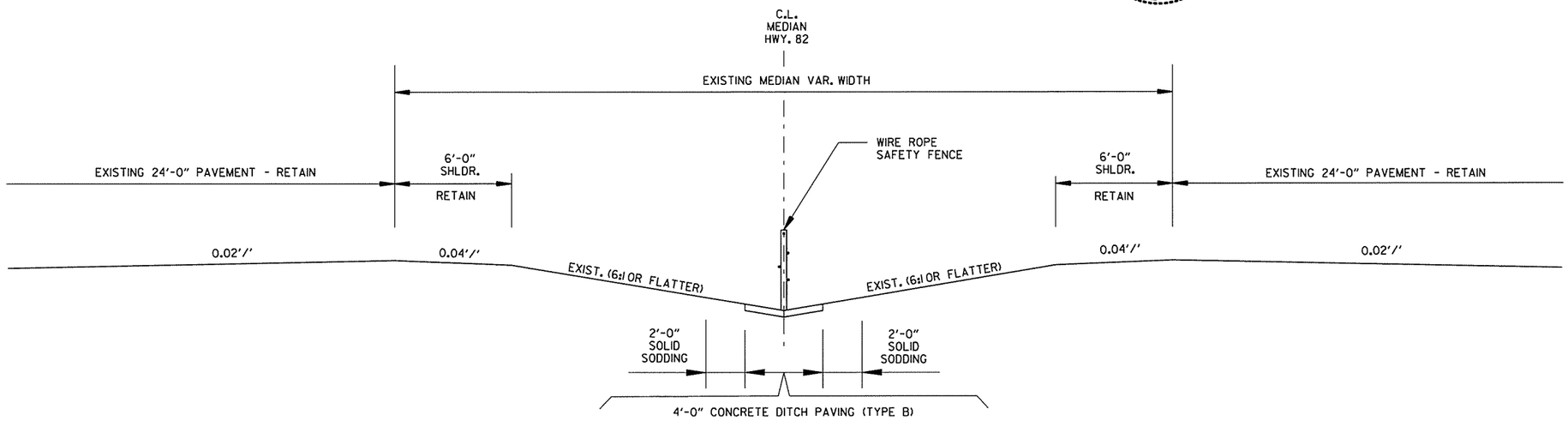
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO
7/11/14

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

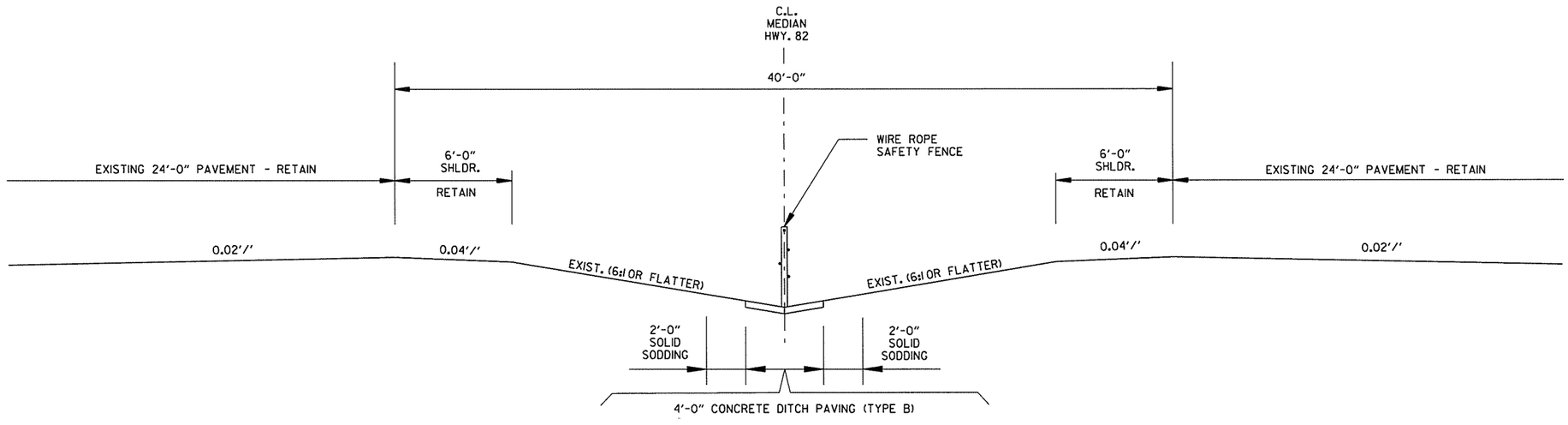
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	3	44

TYPICAL SECTIONS OF IMPROVEMENT



PROPOSED TYPICAL SECTION
WRSF IN BOTTOM OF DITCH

STA. 10+27.72 TO STA. 16+43.30
STA. 289+23.38 TO STA. 294+63.08



PROPOSED TYPICAL SECTION
WRSF IN BOTTOM OF DITCH

STA. 16+43.30 TO STA. 289+23.38

TYPICAL SECTIONS OF IMPROVEMENT

7/14/2014
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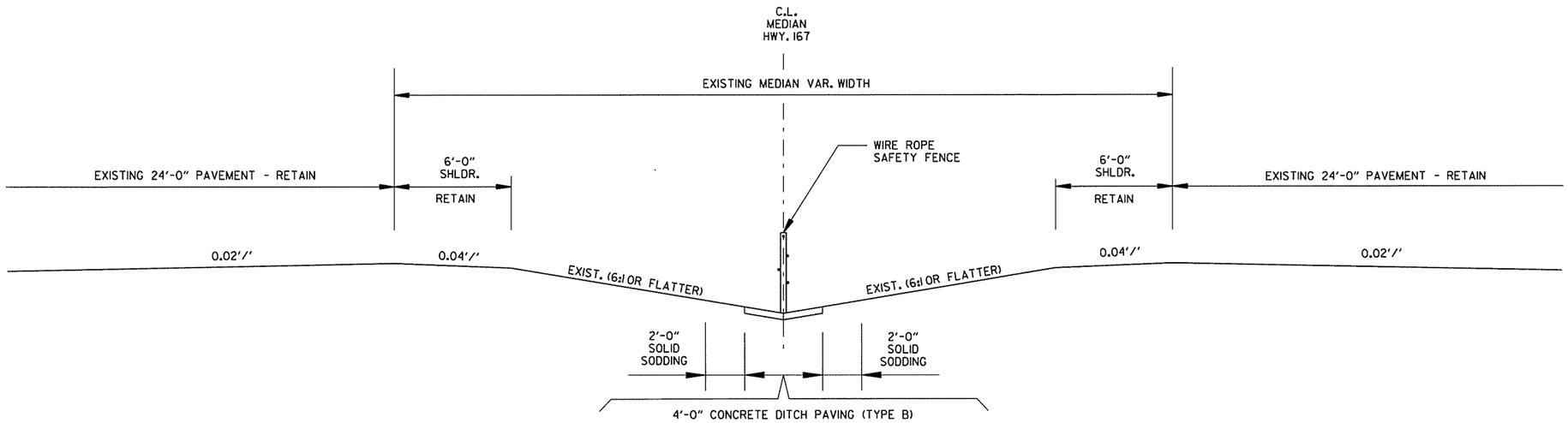
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO
7/11/14

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.		070396	4	44

TYPICAL SECTIONS OF IMPROVEMENT



PROPOSED TYPICAL SECTION
WRSF IN BOTTOM OF DITCH
STA. 211+37.69 TO STA. 223+03.83

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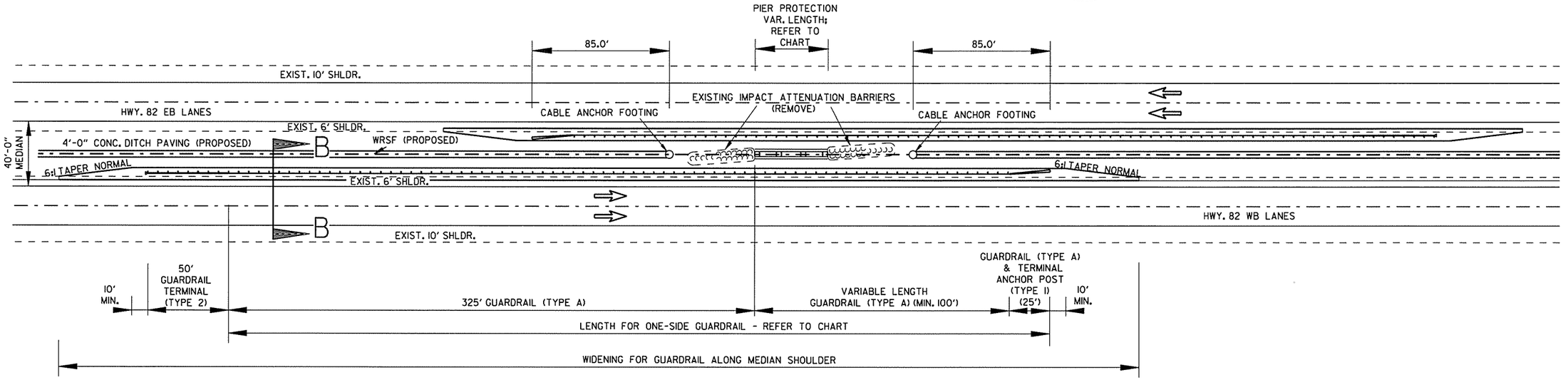
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070396	5	44

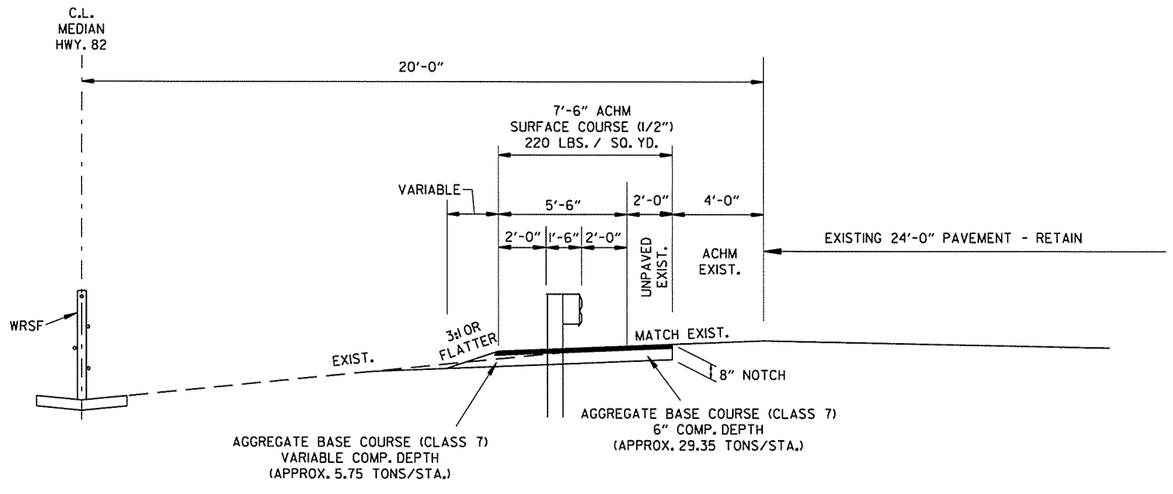
SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO
7/14/14



DETAIL AT OVERPASSES

DIMENSIONS ARE TYPICAL BOTH DIRECTIONS



SECTION B-B

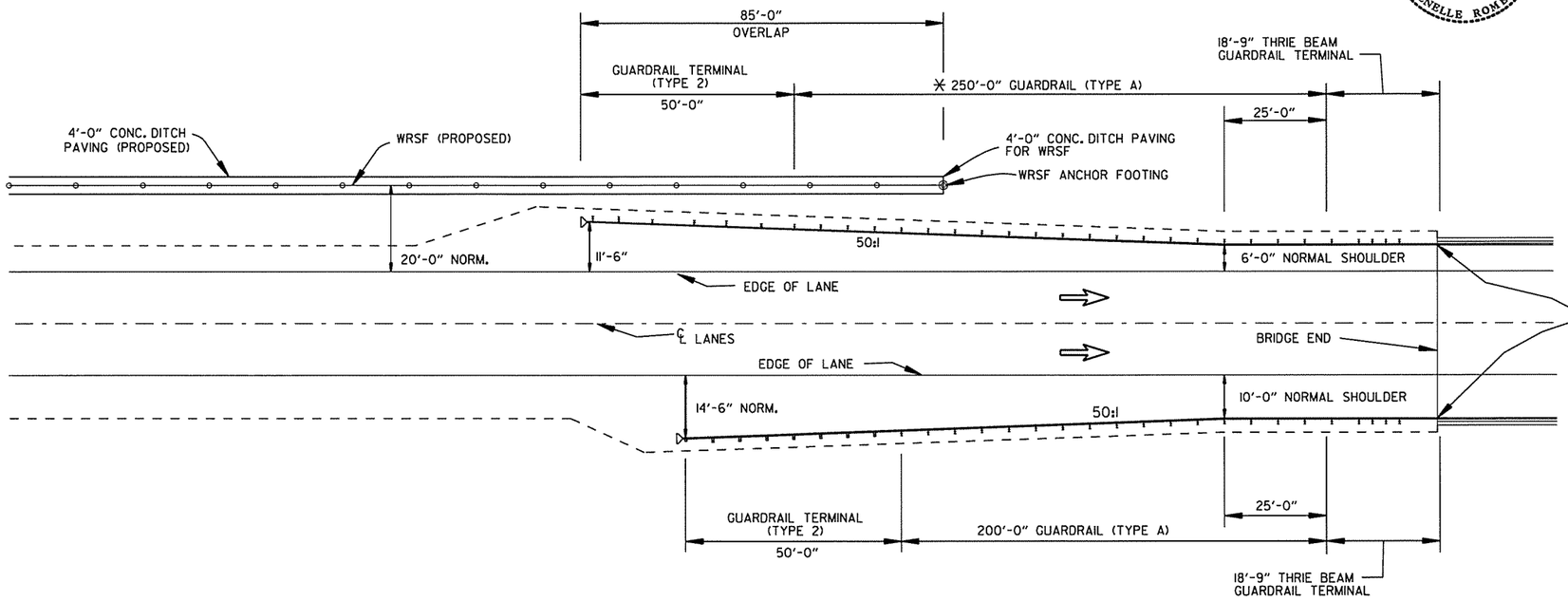
STATION	CROSSING ROAD NAME	PIER PROTECTION LENGTH	LENGTH FOR ONE SIDE GUARDRAIL •
140+56	S. JACKSON AVE.	41.9'	500'
210+07	HINSON RD.	42.1'	500'
242+93	HWY. 15	53.7'	525'
272+50	PARNELL RD.	42.0'	500'

• GUARDRAIL LENGTH IS ROUNDED UP BASED ON GUARDRAIL STOCK LENGTH OF 25.0'.

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.		070396	6	44

SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO
7/14/14

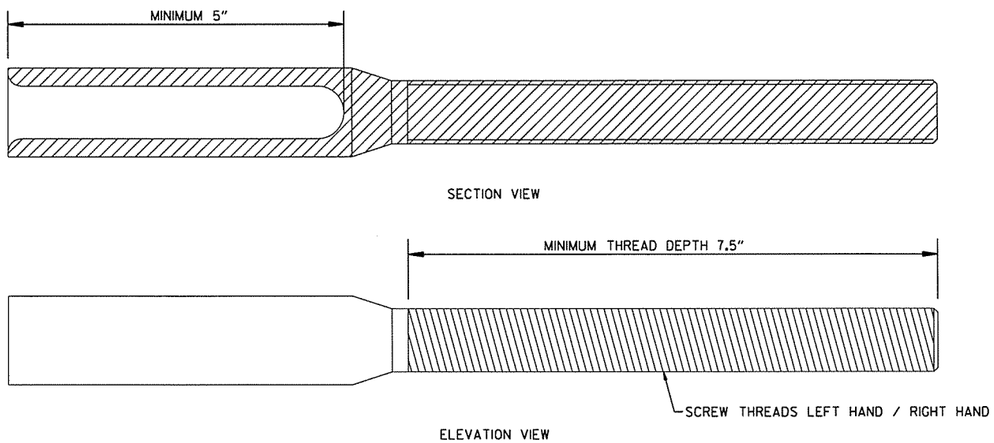


* GUARDRAIL LENGTH EXTENDED TO 300' AT C.R.I.&P. RR OVERPASS STA 177+22 (BK) TO STA 180+15 (AHD) LEFT OF WB LANES

THRIE BEAM GUARDRAIL CONNECTION AT APPROACH GUTTER END. SEE STD. DWG. GR-10.

REPLACE EXISTING APPROACH GUTTERS WITH TYPE 'PT' APPROACH GUTTERS.

DETAIL OF WIRE ROPE SAFETY FENCE AND TYPICAL LAYOUT OF PROPOSED GUARDRAIL AT BRIDGE ENDS



NOTE:

REFER TO "WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS" SPECIAL PROVISION FOR ADDITIONAL REQUIREMENTS.

THREADED TERMINAL DETAIL

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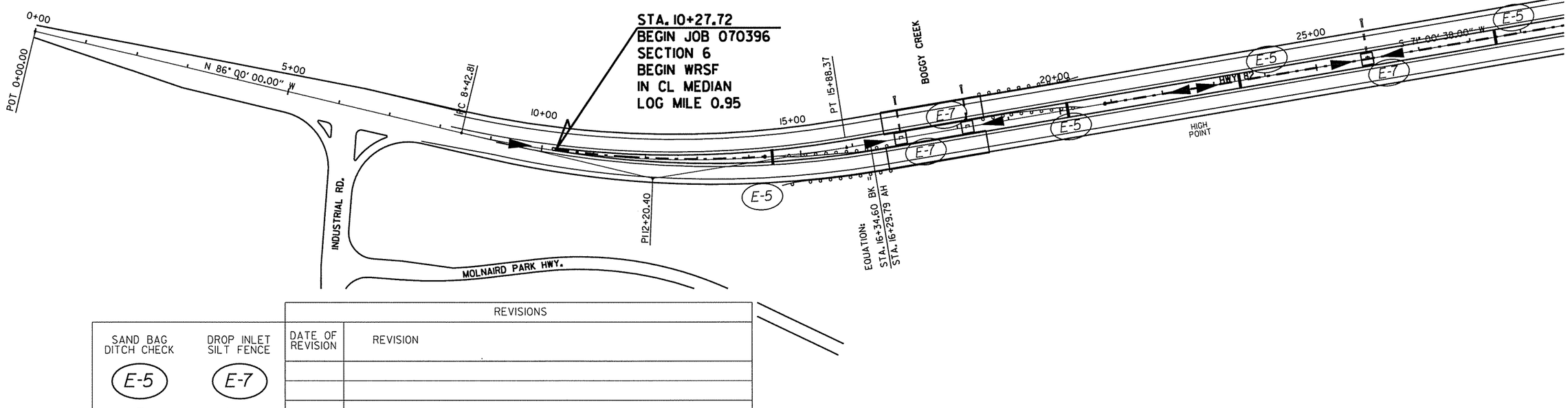
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	7	44

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
7/14/14
No. 15180
AARON M. SMITH

P.I. = 12+20.40
Δ = 22° 22' 00.00" (LT)
D = 2° 59' 59.94"
T = 377.59
L = 745.56
R = 1,909.87



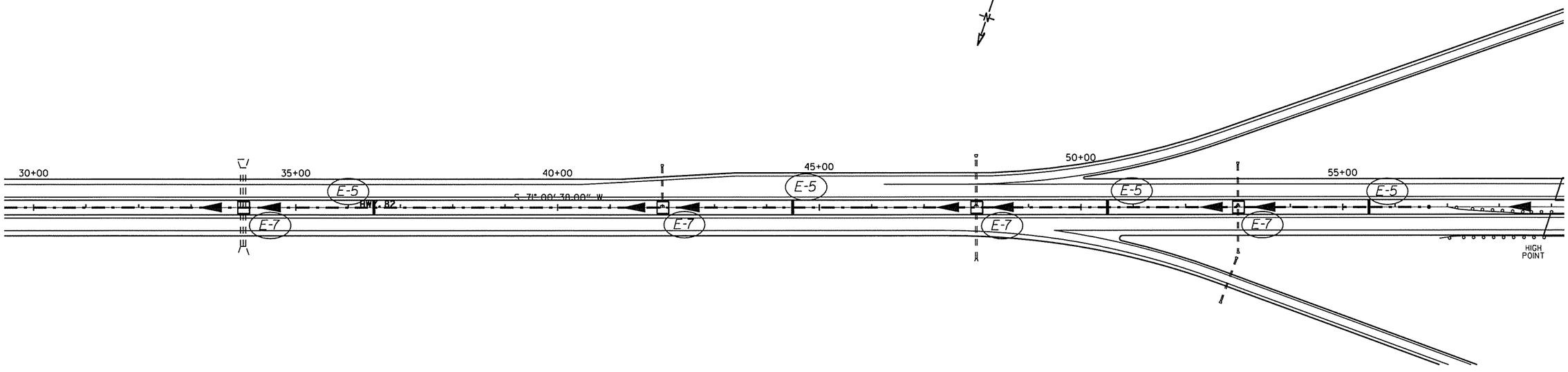
REVISIONS	
DATE OF REVISION	REVISION

SAND BAG DITCH CHECK — E-5

DROP INLET SILT FENCE — E-7

LEGEND

INDICATES DIRECTION OF MEDIAN DRAINAGE



TEMPORARY EROSION CONTROL DETAILS
STA. 0+00 - STA. 59+00

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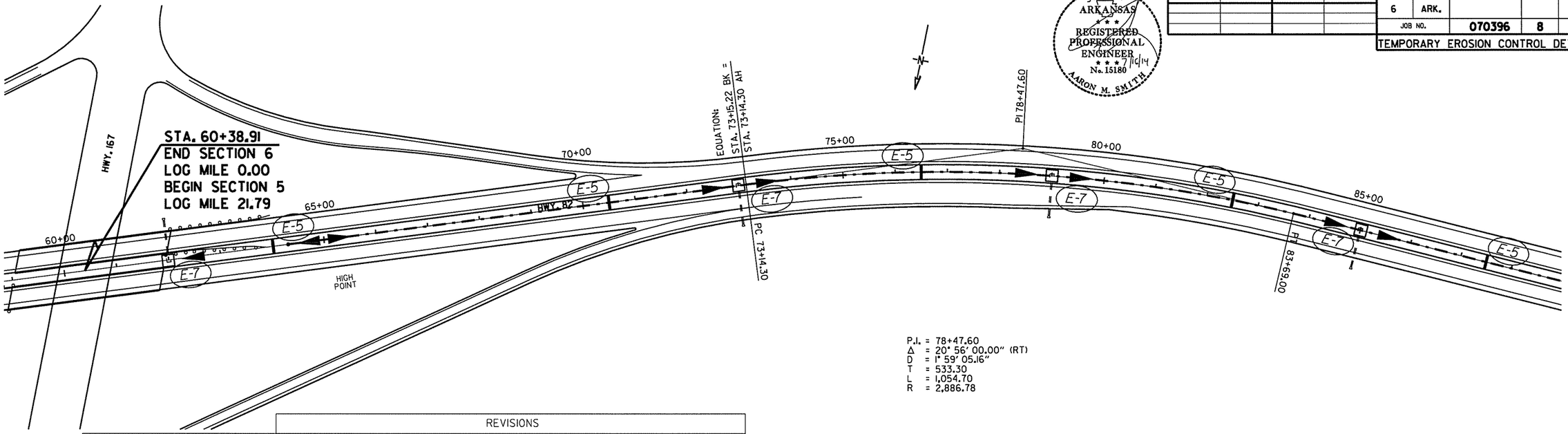
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070396	8	44

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/14/14
AARON M. SMITH



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L = 1,054.70
R = 2,886.78

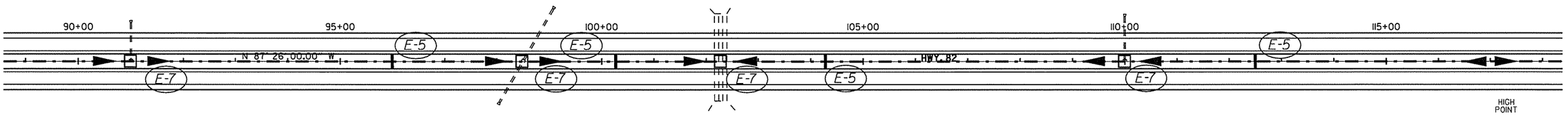
REVISIONS	
DATE OF REVISION	REVISION

SAND BAG DITCH CHECK — E-5

DROP INLET SILT FENCE — E-7

LEGEND

INDICATES DIRECTION OF MEDIAN DRAINAGE



TEMPORARY EROSION CONTROL DETAILS
STA. 59+00 - STA. 118+00

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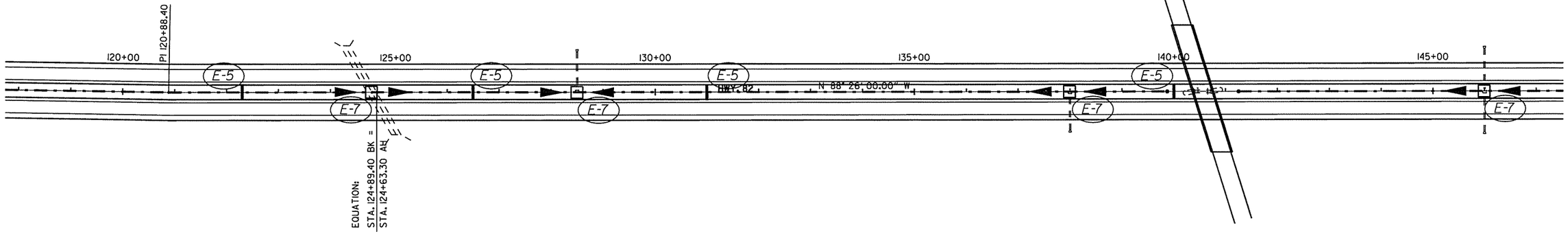
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	9	44

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
7/c/14
No. 15180
AARON M. SMITH



REVISIONS	
DATE OF REVISION	REVISION

SAND BAG DITCH CHECK — E-5

DROP INLET SILT FENCE — E-7

LEGEND

INDICATES DIRECTION OF MEDIAN DRAINAGE

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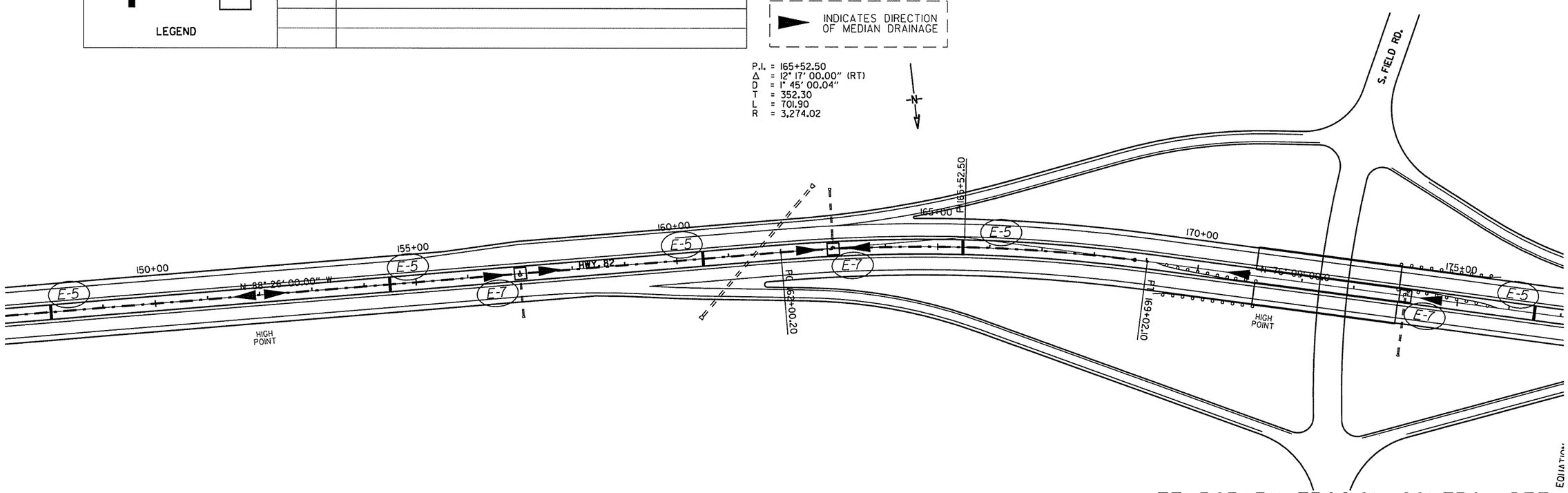

TEMPORARY EROSION CONTROL DETAILS
STA. 118+00 - STA. 177+00

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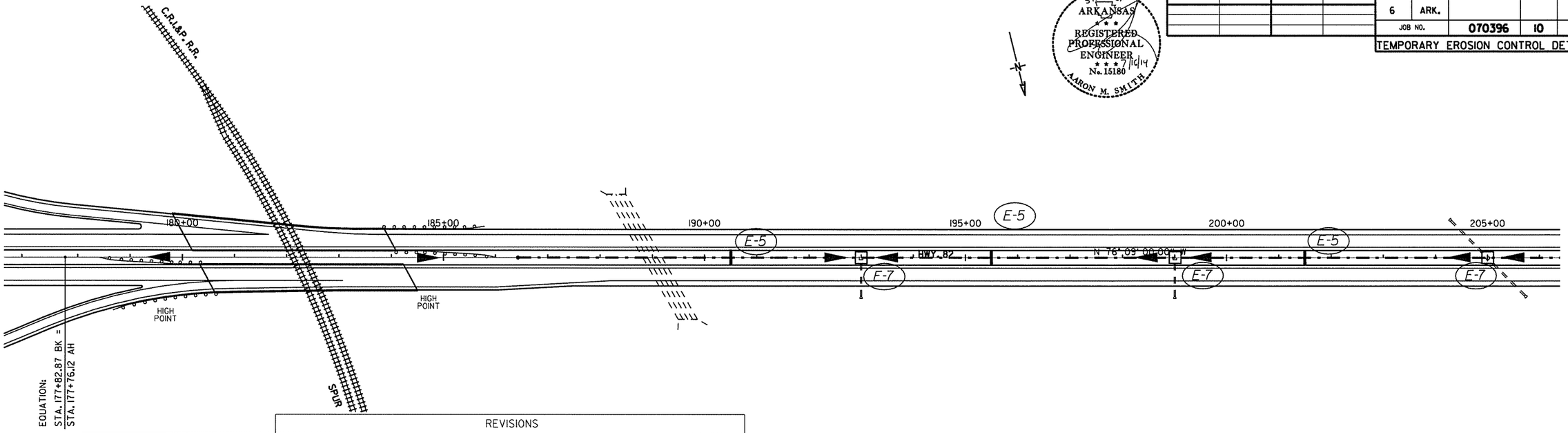
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	10	44

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
7/14
No. 15180
AARON M. SMITH



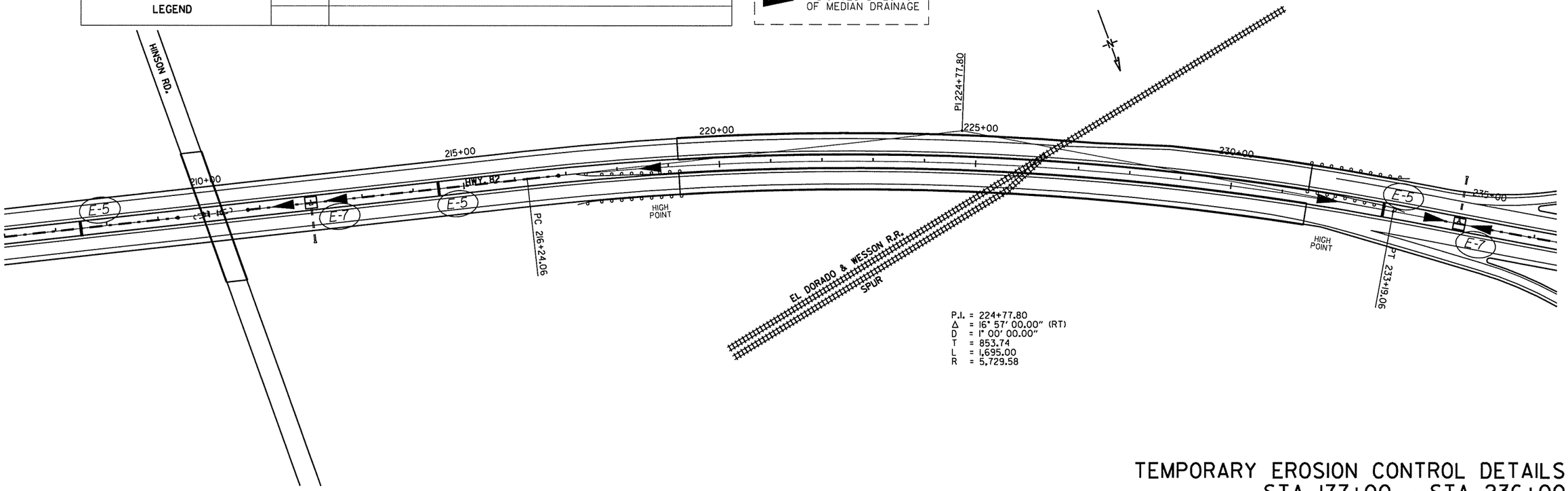
REVISIONS	
DATE OF REVISION	REVISION

SAND BAG DITCH CHECK — E-5

DROP INLET SILT FENCE — E-7

LEGEND

INDICATES DIRECTION OF MEDIAN DRAINAGE



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R = 5,729.58

TEMPORARY EROSION CONTROL DETAILS
STA. 177+00 - STA. 236+00

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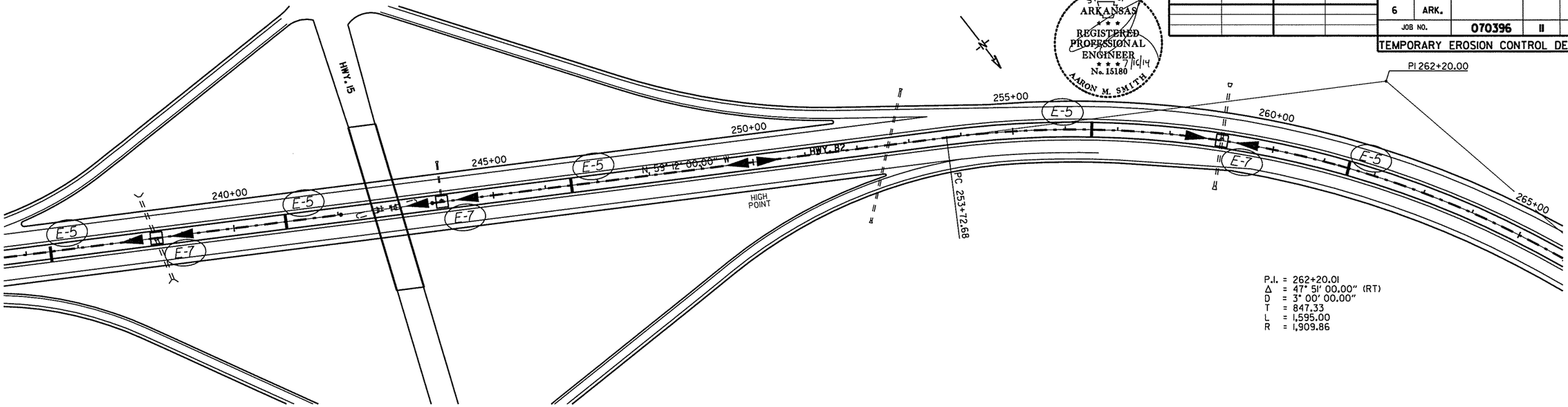
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	II	44

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/14
AARON M. SMITH



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R = 1,909.86

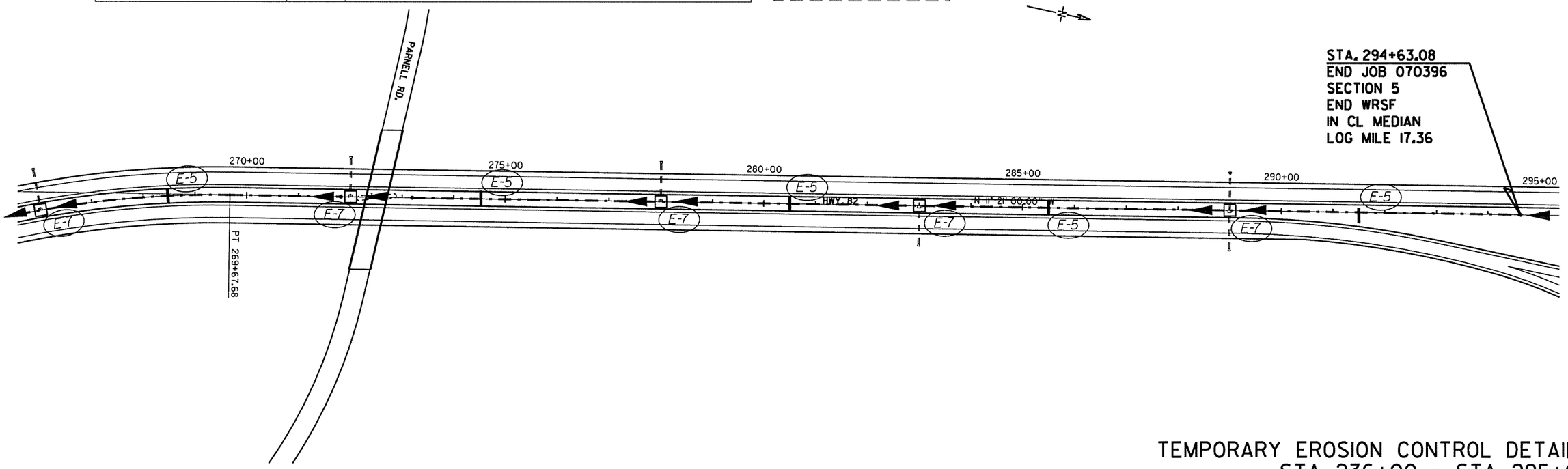
REVISIONS	
DATE OF REVISION	REVISION

SAND BAG DITCH CHECK — E-5

DROP INLET SILT FENCE — E-7

LEGEND

INDICATES DIRECTION OF MEDIAN DRAINAGE



STA. 294+63.08
END JOB 070396
SECTION 5
END WRSF
IN CL MEDIAN
LOG MILE 17.36

TEMPORARY EROSION CONTROL DETAILS
STA. 236+00 - STA. 295+00

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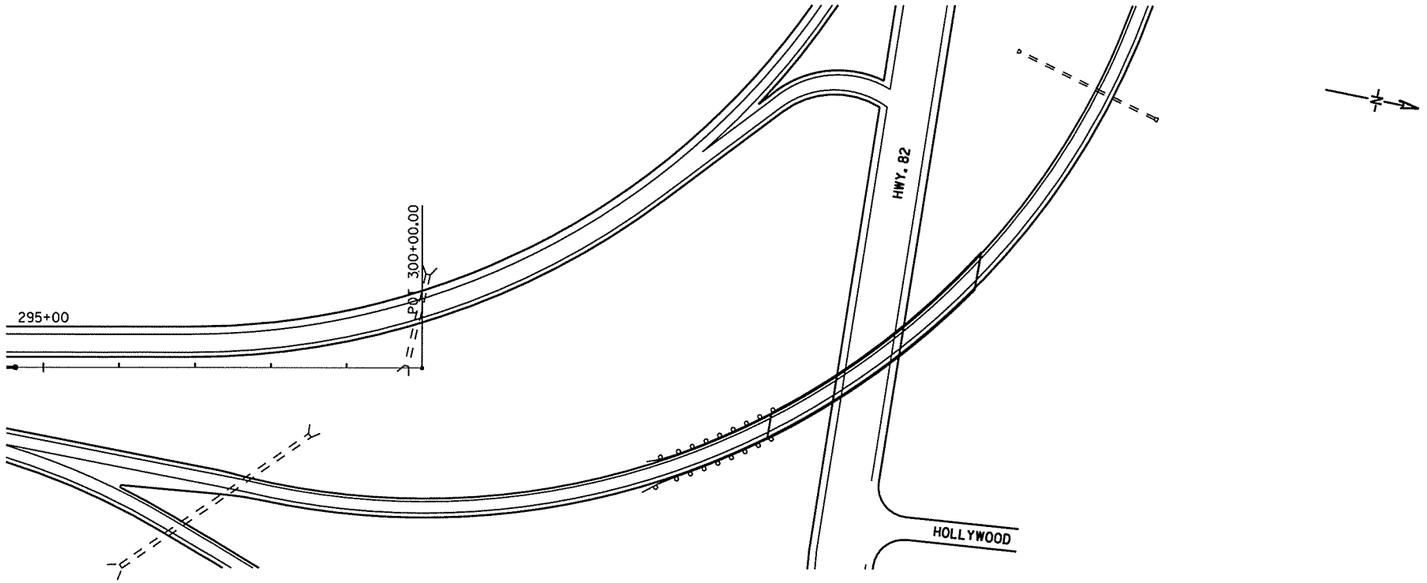
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	12	44

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/14/14
AARON M. SMITH



REVISIONS	
DATE OF REVISION	REVISION

SAND BAG DITCH CHECK — E-5

DROP INLET SILT FENCE — E-7

LEGEND

INDICATES DIRECTION OF MEDIAN DRAINAGE

TEMPORARY EROSION CONTROL DETAILS
STA. 295+00 - STA. 300+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

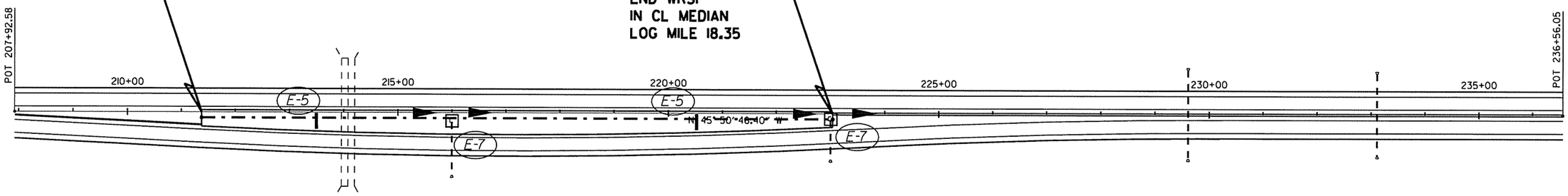
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	13	44

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/14/14
AARON M. SMITH

STA. 211+37.69
BEGIN JOB 070396
SECTION 1
BEGIN WRSF
IN CL MEDIAN
LOG MILE 18.58

STA. 223+03.83
END JOB 070396
SECTION 1
END WRSF
IN CL MEDIAN
LOG MILE 18.35



REVISIONS	
DATE OF REVISION	REVISION

SAND BAG DITCH CHECK — E-5

DROP INLET SILT FENCE — E-7

LEGEND

INDICATES DIRECTION OF MEDIAN DRAINAGE

TEMPORARY EROSION CONTROL DETAILS
STA. 207+92.58 - STA. 236+56.05

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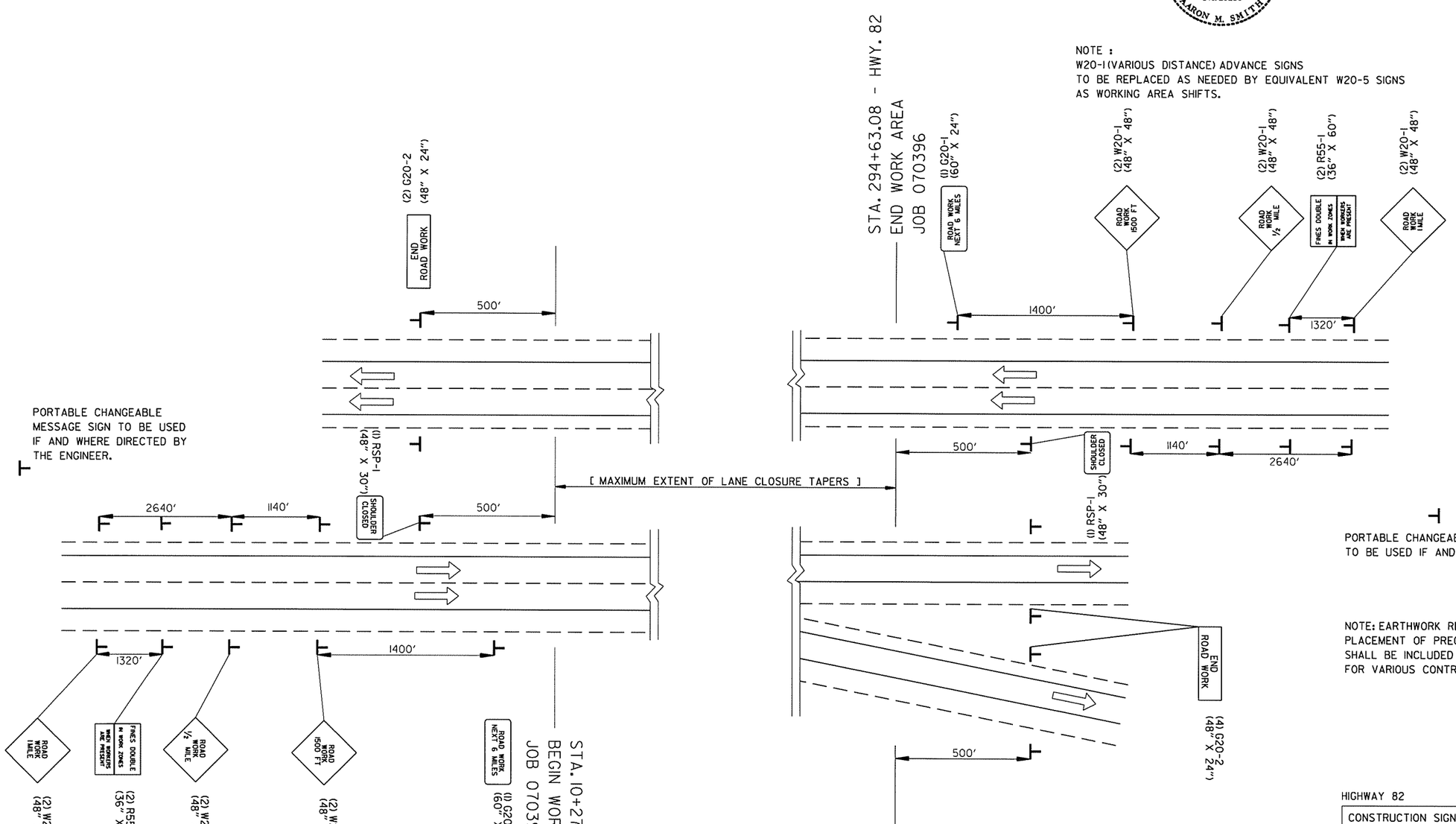
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	14	44

MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/10/14
AARON M. SMITH



ADVANCE SIGNS AT BEGINNING AND END OF JOB
ALL STAGES

PORTABLE CHANGEABLE MESSAGE SIGN
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTE: EARTHWORK REQUIRED FOR PLACEMENT OF PRECAST BARRIER SHALL BE INCLUDED IN PRICE BID FOR VARIOUS CONTRACT ITEMS.

HIGHWAY 82

CONSTRUCTION SIGNS FOR ENTRANCE RAMPS	
ROAD WORK AHEAD (W20-1)	6

ROAD WORK AHEAD
(6) W20-1 (48" X 48") ON ENTRANCE RAMPS

MAINTENANCE OF TRAFFIC
ADVANCE SIGNS AT JOB ENDS
(HWY. 82)

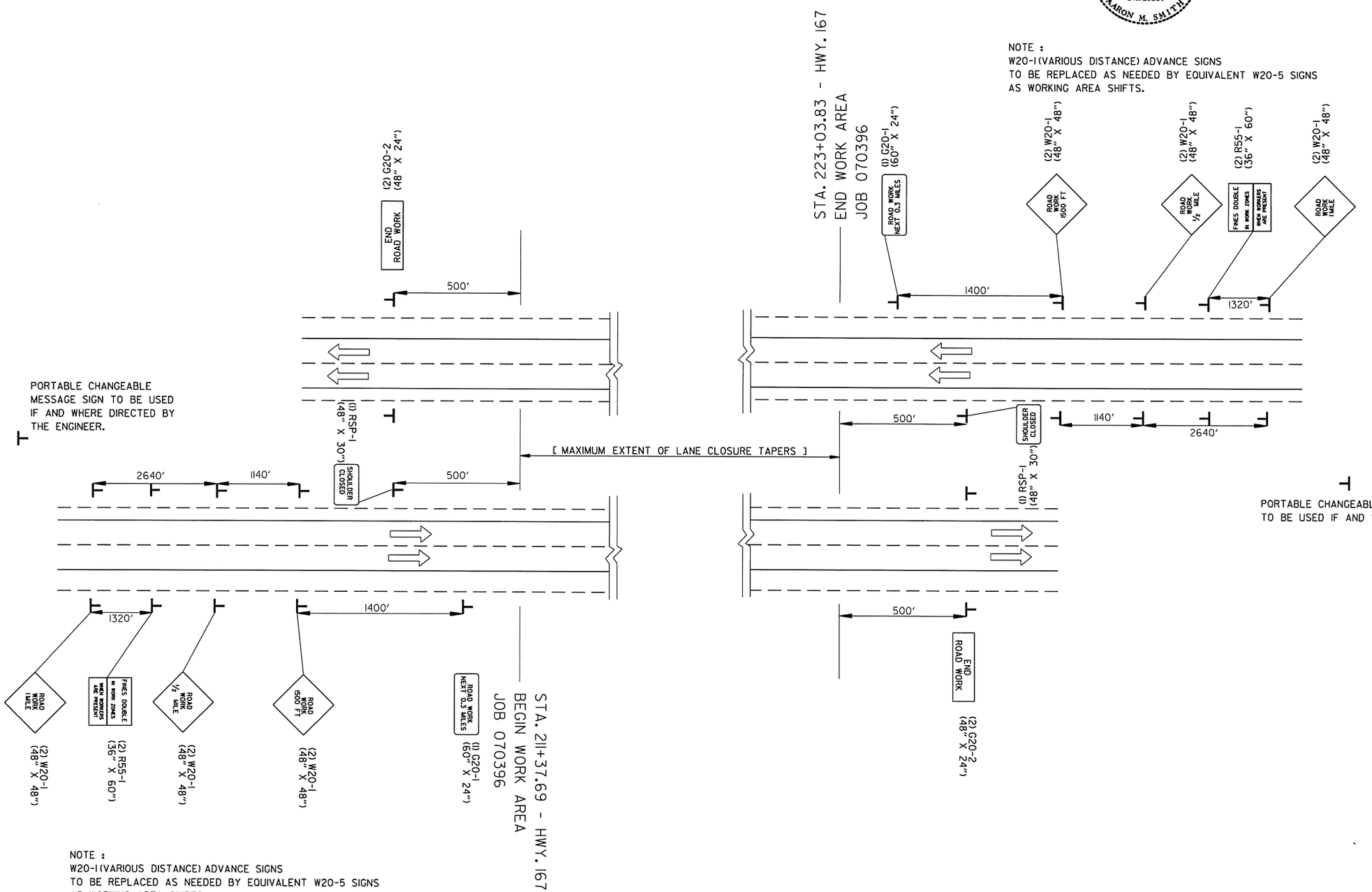
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	15	44

MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/14/14
AARON M. SMITH

NOTE :
W20-1 (VARIOUS DISTANCE) ADVANCE SIGNS
TO BE REPLACED AS NEEDED BY EQUIVALENT W20-5 SIGNS
AS WORKING AREA SHIFTS.



NOTE :
W20-1 (VARIOUS DISTANCE) ADVANCE SIGNS
TO BE REPLACED AS NEEDED BY EQUIVALENT W20-5 SIGNS
AS WORKING AREA SHIFTS.

ADVANCE SIGNS AT BEGINNING AND END OF JOB ALL STAGES

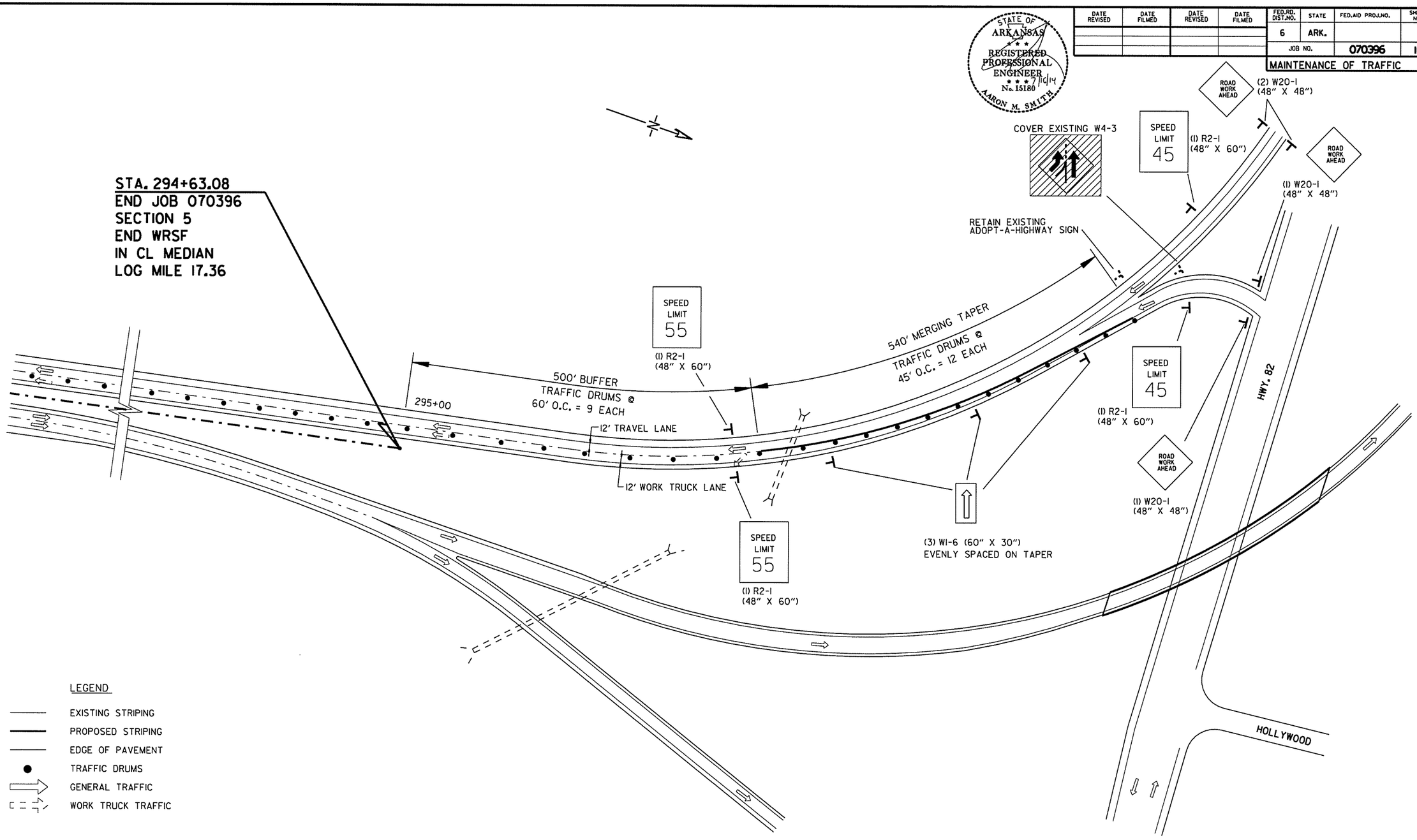
MAINTENANCE OF TRAFFIC ADVANCE SIGNS AT JOB ENDS (HWY. 167)

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.		070396	16	44

MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/14/14
AARON M. SMITH



LEGEND

- EXISTING STRIPING
- PROPOSED STRIPING
- EDGE OF PAVEMENT
- TRAFFIC DRUMS
- GENERAL TRAFFIC
- WORK TRUCK TRAFFIC

NOTE: REFER TO SP-MAINTENANCE OF TRAFFIC FOR LANE CLOSURE LIMITATIONS AND RESTRICTIONS. QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS THE MAXIMUM NUMBER REQUIRED FOR ONE LANE CLOSURE.

NOTE: CONTRACTOR MUST UTILIZE ENTRY/EXIT LOCATION AS SHOWN ON THE PLANS.

MAINTENANCE OF TRAFFIC ADVANCE SIGNS AT JOB END HWY. 82

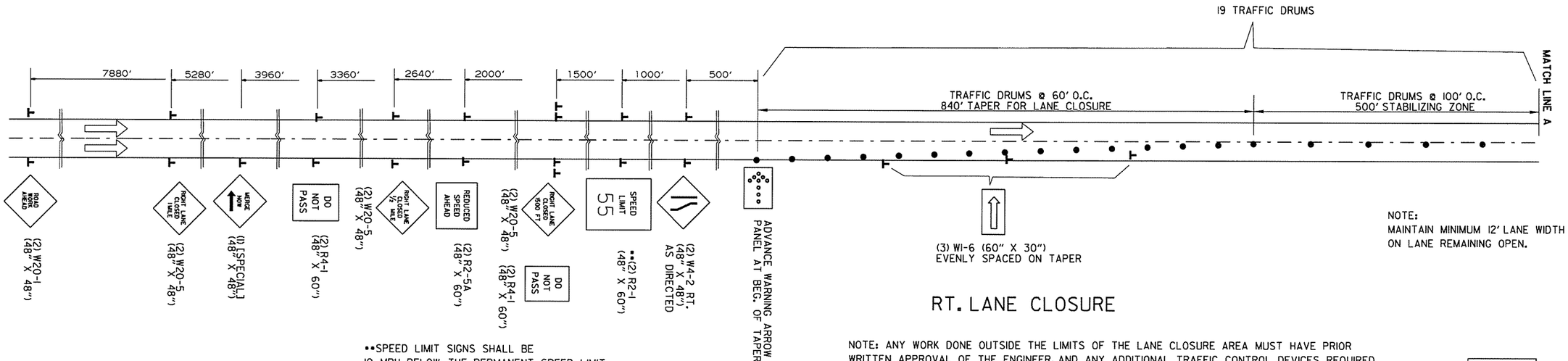
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	17	44

MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/10/14
AARON M. SMITH

PORTABLE CHANGEABLE MESSAGE SIGN
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

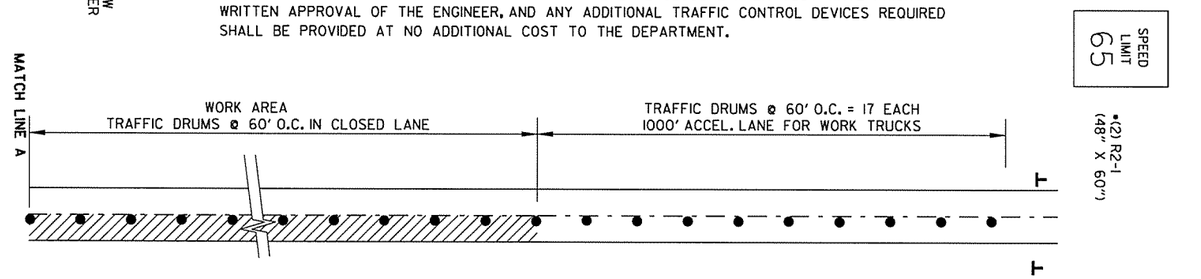


RT. LANE CLOSURE

••SPEED LIMIT SIGNS SHALL BE 10 MPH BELOW THE PERMANENT SPEED LIMIT.

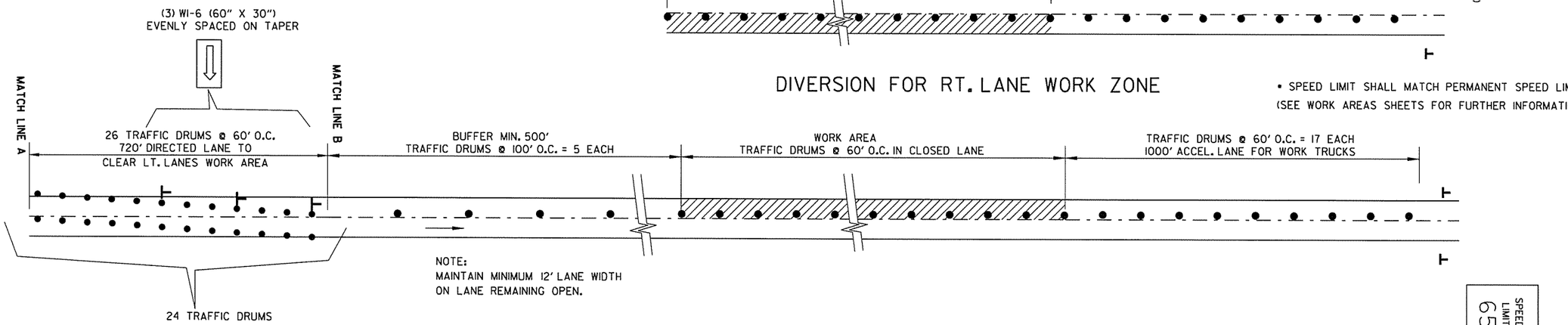
SPEED LIMIT SIGNS ARE ALSO PROVIDED FOR PLACEMENT PAST ENTRANCE RAMPS WITHIN THE WORK ZONE.

NOTE: ANY WORK DONE OUTSIDE THE LIMITS OF THE LANE CLOSURE AREA MUST HAVE PRIOR WRITTEN APPROVAL OF THE ENGINEER, AND ANY ADDITIONAL TRAFFIC CONTROL DEVICES REQUIRED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE DEPARTMENT.



DIVERSION FOR RT. LANE WORK ZONE

• SPEED LIMIT SHALL MATCH PERMANENT SPEED LIMIT. (SEE WORK AREAS SHEETS FOR FURTHER INFORMATION)



DIVERSION FOR LT. LANE WORK ZONE

NOTE: DIVERSION FOR LT. LANE WORK ZONE DOES NOT APPLY AT BEGIN PROJECT LOCATION FOR HWY. 82.

NOTE: REFER TO SP-MAINTENANCE OF TRAFFIC FOR LANE CLOSURE LIMITATIONS AND RESTRICTIONS. QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS THE MAXIMUM NUMBER REQUIRED FOR ONE LANE CLOSURE.

NOTE: AT HWY. 82 BEGIN PROJECT, INSIDE LANES TO REMAIN CLOSED WITHIN TRANSITION AREA FROM FOUR LANE DIVIDED HWY. 82 TO TWO LANE UNDIVIDED HWY. 82.

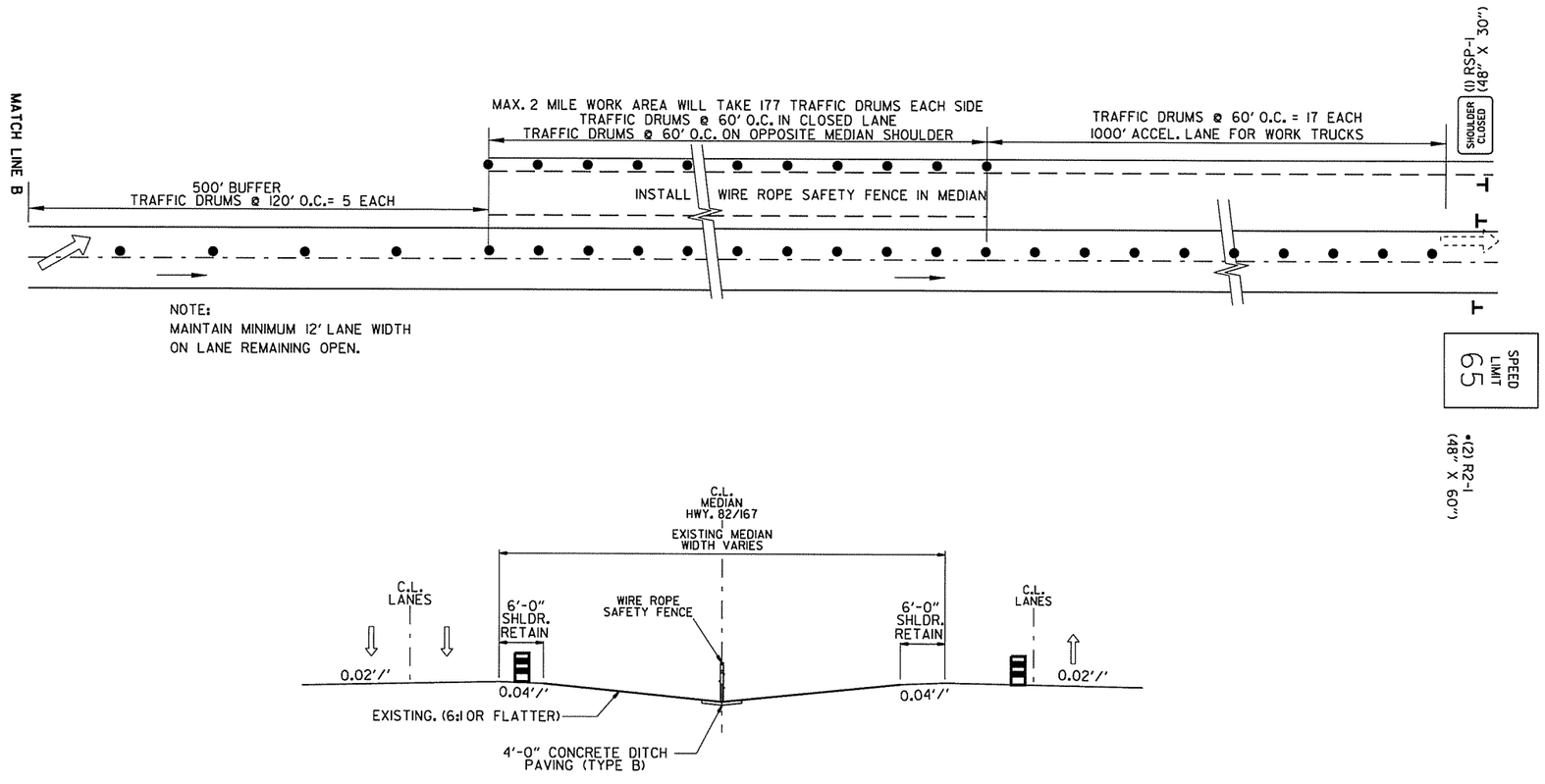
MAINTENANCE OF TRAFFIC LANE CLOSURES

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.		070396	18	44

MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/10/14
AARON M. SMITH



MOVABLE WORK ZONE FOR WRSF INSTALLATION

WORK VEHICLE ENTRY LOCATION

WORK VEHICLE EXIT LOCATION

•SPEED LIMIT SHALL MATCH PERMANENT SPEED LIMIT.

NOTE: TRUCKS TO UTILIZE MEDIAN SHOULDER FOR ACCESS POINT AT BEGIN PROJECT HWY. 82.

NOTE: CONTRACTOR MUST UTILIZE ENTRY/EXIT LOCATION AS SHOWN ON THE PLANS.

NOTE: REFER TO SP-MAINTENANCE OF TRAFFIC FOR LANE CLOSURE LIMITATIONS AND RESTRICTIONS. QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS THE MAXIMUM NUMBER REQUIRED FOR ONE LANE CLOSURE.

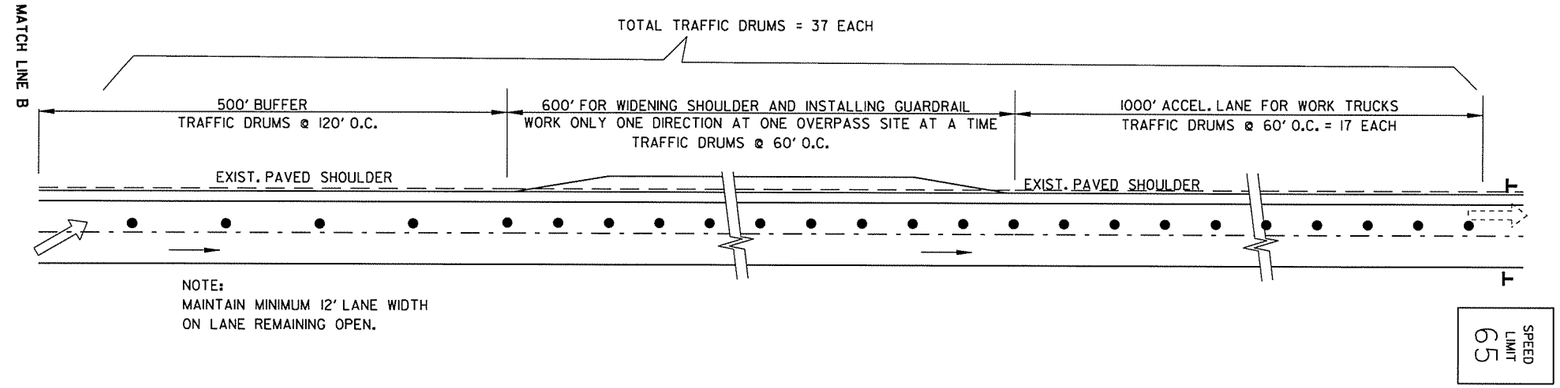
MAINTENANCE OF TRAFFIC
WORK AREAS

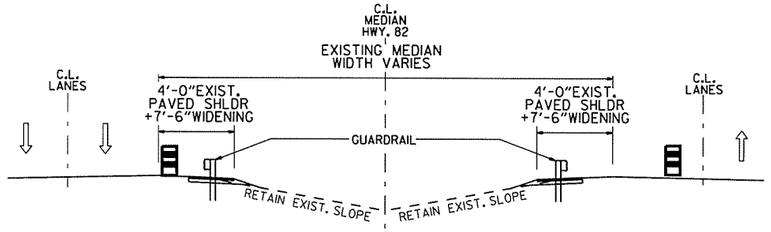
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	19	44

MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/16/14
AARON M. SMITH





MOVABLE WORK ZONE FOR GUARDRAIL INSTALLATION

WORK VEHICLE ENTRY LOCATION

WORK VEHICLE EXIT LOCATION

•SPEED LIMIT SHALL MATCH PERMANENT SPEED LIMIT.

NOTE: TRUCKS TO UTILIZE MEDIAN SHOULDER FOR ACCESS POINT AT BEGIN PROJECT HWY. 82.

NOTE: CONTRACTOR MUST UTILIZE ENTRY/EXIT LOCATION AS SHOWN ON THE PLANS.

NOTE: REFER TO SP-MAINTENANCE OF TRAFFIC FOR LANE CLOSURE LIMITATIONS AND RESTRICTIONS. QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS THE MAXIMUM NUMBER REQUIRED FOR ONE LANE CLOSURE.

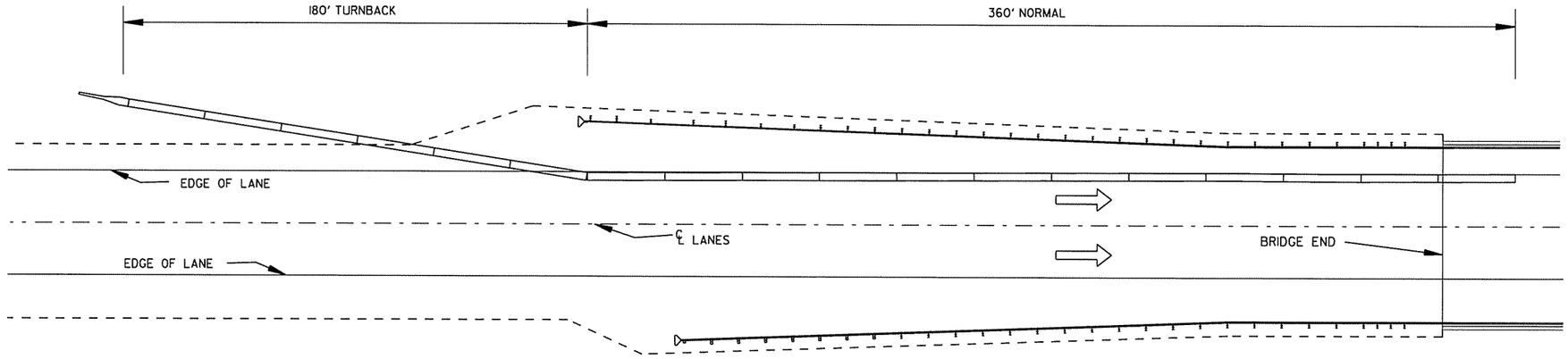
MAINTENANCE OF TRAFFIC
WORK AREAS
HWY. 82

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.		070396	20	44
MAINTENANCE OF TRAFFIC				

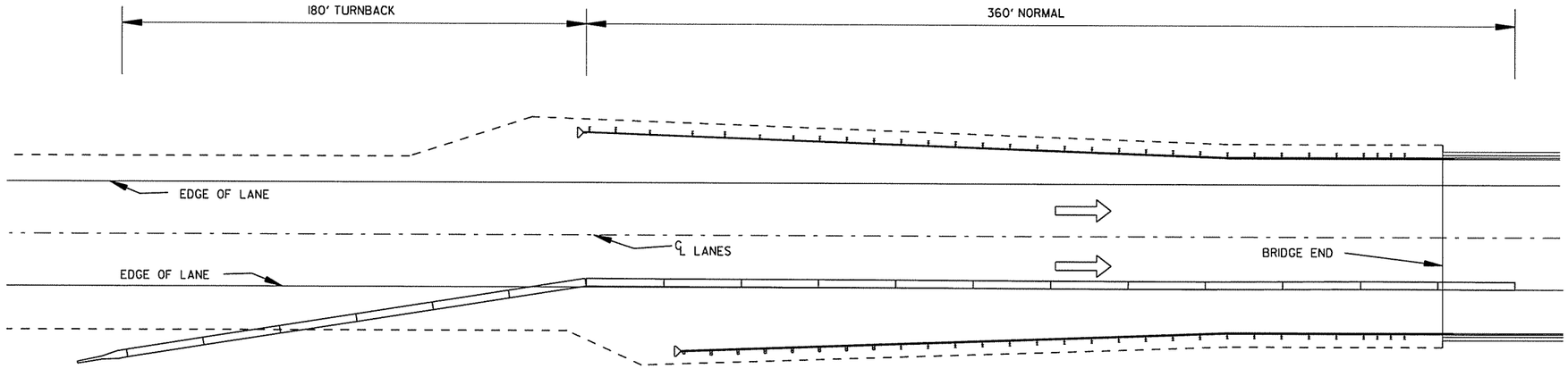
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/10/14
AARON M. SMITH

PRECAST CONCRETE BARRIER WALL (20 LOCATIONS)
(5) FURNISH AND INSTALL = 2765 LIN. FT. (553 LIN. FT. PER INSTALLATION)
(15) RELOCATE = 8295 LIN. FT. (553 LIN. FT. PER INSTALLATION)



LAYOUT OF PRECAST CONCRETE BARRIER FOR LEFT APPROACH GUTTER

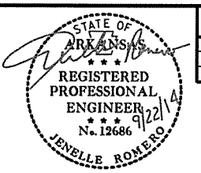
NOTE: ONLY ONE SIDE OF ROADWAY AT BRIDGE LOCATION SHALL BE UNDER CONSTRUCTION AT A TIME. PCB SHALL REMAIN IN PLACE FOR THE REMOVAL AND CONSTRUCTION OF APPROACH GUTTERS AND GUARDRAIL INSTALLATION.



LAYOUT OF PRECAST CONCRETE BARRIER FOR RIGHT APPROACH GUTTER

TYPICAL LAYOUT OF PRECAST BARRIER FOR APPROACH GUTTER RECONSTRUCTION

RESPONSIBLE FOR QUANTITIES IN EROSION CONTROL AND ADVANCE WARNING SIGNS AND DEVICES TABLES



RESPONSIBLE FOR ALL OTHER 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.		070396	21	44

QUANTITIES

EROSION CONTROL

LOCATION	TEMPORARY EROSION CONTROL						PERMANENT EROSION CONTROL				
	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	DROP INLET SILT FENCE (E-7)	SEDIMENT REMOVAL AND DISPOSAL	SEEDING	LIME	MULCH COVER	SECOND SEEDING APPLICATION	WATER
	ACRE	ACRE	M.GAL.	BAG	LIN.FT.	C.Y.	ACRE	TON	ACRE	ACRE	M.GAL.
ENTIRE JOB	8.73	8.73	178.1	880	1110	85	8.73	17.47	8.73	8.73	890.5
*ENTIRE PROJECT IF AND WHERE DIRECTED BY THE ENGINEER				20	30						
TOTALS:	8.73	8.73	178.1	900	1140	85	8.73	17.47	8.73	8.73	890.5

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
DROP INLET SILT FENCES.....30 LIN.FT./LOCATION
SAND BAG DITCH CHECKS.....20 BAGS/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 OF U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

*QUANTITIES ARE ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	FURNISHING & INSTALLING PRECAST CONCRETE BARRIER	RELOCATING PRECAST CONCRETE BARRIER	ADVANCE WARNING ARROW PANEL	PORTABLE CHANGEABLE MESSAGE SIGN
			SQ.FT-LIN.FT.-EA	NO.	SQ.FT.	EACH	LF	LF	DAY	WEEK
W20-1	ROAD WORK 1 MILE	48"X48"	16	8	128					
W20-1	ROAD WORK 1/2 MILE	48"X48"	16	8	128					
W20-1	ROAD WORK 1500 FT.	48"X48"	16	8	128					
W20-1	ROAD WORK AHEAD	48"X48"	16	12	192					
G20-1	ROAD WORK NEXT xx MILES	60"X24"	6	4	24					
G20-2	END ROAD WORK	48"X24"	8	10	80					
SPECIAL 1	MERGE NOW + ARROW	48"X48"	16	1	16					
W20-5	RIGHT LANE CLOSED 1 MILE	48"X48"	16	2	32					
W20-5	RIGHT LANE CLOSED 1/2 MILE	48"X48"	16	2	32					
W20-5	RIGHT LANE CLOSED 1500 FT.	48"X48"	16	2	32					
W4-2R	RIGHT LANE CLOSING GRAPHIC	48"X48"	16	2	32					
W1-6	LARGER ARROW	60"X30"	12.5	6	75					
R4-1	DO NOT PASS	48"X60"	20	4	80					
R55-1	FINES DOUBLE IN WORK ZONES	36"X60"	15	8	120					
R2-5A	REDUCED SPEED AHEAD	48"X60"	20	2	40					
R2-1	SPEED LIMIT 45 MPH	48"X60"	20	2	40					
R2-1	SPEED LIMIT 55 MPH	48"X60"	20	4	80					
R2-1	SPEED LIMIT 65 MPH	48"X60"	20	2	40					
RSP-1	SHOULDER CLOSED	48"X30"	10	5	50					
	PRECAST CONCRETE BARRIERS						2765	8295		
	SPECIAL END PORTABLE CONCRETE BARRIER UNITS									
	TRAFFIC DRUMS		421			421				
	ADVANCE WARNING ARROW PANEL		1						55	
	PORTABLE CHANGEABLE MESSAGE SIGN		2							48
TOTALS:					1349	421	2765	8295	55	48

NOTE: THIS IS A HIGH VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

REMOVAL AND DISPOSAL ITEMS

STATION	DESCRIPTION	IMPACT ATTENUATION BARRIER	GUARDRAIL	APPROACH GUTTERS
		EACH	LF	EA
14+68	INSIDE SHLDR. OF WB LANES AT BOGGY CREEK		200	1
14+68	OUTSIDE SHLDR. OF WB LANES AT BOGGY CREEK		200	1
18+53	INSIDE SHLDR. OF EB LANES AT BOGGY CREEK		200	1
18+53	OUTSIDE SHLDR. OF EB LANES AT BOGGY CREEK		200	1
56+98	INSIDE SHLDR. OF WB LANES AT HWY. 167		200	1
56+85	OUTSIDE SHLDR. OF WB LANES AT HWY. 167		200	1
61+98	INSIDE SHLDR. OF EB LANES AT HWY. 167		200	1
62+11	OUTSIDE SHLDR. OF EB LANES AT HWY. 167		200	1
140+56	ON CENTERLINE OF MEDIAN AT S. JACKSON AVE.	2		
169+15	INSIDE SHLDR. OF WB LANES AT S. FIELD RD.		200	1
169+15	OUTSIDE SHLDR. OF WB LANES AT S. FIELD RD.		200	1
173+86	INSIDE SHLDR. OF EB LANES AT S. FIELD RD.		200	1
173+86	OUTSIDE SHLDR. OF EB LANES AT S. FIELD RD.		200	1
178+40	INSIDE SHLDR. OF WB LANES AT C.R.I.&P. R.R.		200	1
178+70	OUTSIDE SHLDR. OF WB ON-RAMP AT C.R.I.&P. R.R.		200	1
184+08	INSIDE SHLDR. OF EB LANES AT C.R.I.&P. R.R.		200	1
183+86	OUTSIDE SHLDR. OF EB LANES AT C.R.I.&P. R.R.		200	1
210+07	ON CENTERLINE OF MEDIAN AT HINSON RD.	2		
217+20	INSIDE SHLDR. OF WB LANES AT EL DORADO & WESSON R.R.		200	1
217+20	OUTSIDE SHLDR. OF WB LANES AT EL DORADO & WESSON R.R.		200	1
231+50	INSIDE SHLDR. OF EB LANES AT EL DORADO & WESSON R.R.		200	1
231+50	OUTSIDE SHLDR. OF EB LANES AT EL DORADO & WESSON R.R.		200	1
242+94	ON CENTERLINE OF MEDIAN AT HWY. 15	2		
272+50	ON CENTERLINE OF MEDIAN AT PARNELL RD.	2		
TOTALS:		8	4000	20

NOTE: PAYMENT FOR REMOVAL AND DISPOSAL OF GUARDRAIL INCLUDES THE REMOVAL AND DISPOSAL OF ANY TERMINAL ANCHOR POSTS.

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.		070396	22	44

QUANTITIES

CONCRETE DITCH PAVING

STATION	STATION	STATION EQUATION	LOCATION	LENGTH	WIDTH	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
				FEET	FEET	SQ.YD.		M.GAL.
10+27.72	14+31.00		CL MEDIAN OF HWY. 82	403	4	179	179	2.3
20+87.00	56+65.00		CL MEDIAN OF HWY. 82	3578	4	1590	1590	20.0
64+31.00	73+15.22	BK.	CL MEDIAN OF HWY. 82	884	4	393	393	5.0
73+14.30	124+89.40	AHD./BK.	CL MEDIAN OF HWY. 82	5175	4	2300	2300	29.0
124+63.30	139+87.00	AHD.	CL MEDIAN OF HWY. 82	1524	4	677	677	8.5
141+25.00	168+78.00		CL MEDIAN OF HWY. 82	2753	4	1224	1224	15.4
186+43.00	209+38.00		CL MEDIAN OF HWY. 82	2295	4	1020	1020	12.9
210+76.00	216+86.00		CL MEDIAN OF HWY. 82	610	4	271	271	3.4
233+83.00	242+05.00		CL MEDIAN OF HWY. 82	822	4	365	365	4.6
243+82.00	271+81.00		CL MEDIAN OF HWY. 82	2799	4	1244	1244	15.7
273+19.00	294+63.08		CL MEDIAN OF HWY. 82	2144	4	953	953	12.0
211+37.69	223+03.83		CL MEDIAN OF HWY. 167	1166	4	518	518	6.5
TOTALS:						10734	10734	135.3

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

WIRE ROPE SAFETY FENCE

	STATION	STATION	STATION EQUATION	LOCATION	WIRE ROPE SAFETY FENCE	◇ WRSF ANCHOR	WRSF MAINTENANCE MATERIALS	WRSF POST REPAIR
					LIN. FT.	EACH	LUMP SUM	EACH
	10+27.72	14+31.00		CL MEDIAN OF HWY. 82	403	2		
	20+87.00	56+65.00		CL MEDIAN OF HWY. 82	3578	2		
	64+31.00	73+15.22	BK.	CL MEDIAN OF HWY. 82	884	1		
	73+14.30	124+89.40	AHD./BK.	CL MEDIAN OF HWY. 82	5175	0		
	124+63.30	139+87.00	AHD.	CL MEDIAN OF HWY. 82	1524	1		
	141+25.00	168+78.00		CL MEDIAN OF HWY. 82	2753	2		
	186+43.00	209+38.00		CL MEDIAN OF HWY. 82	2295	2		
	210+76.00	216+86.00		CL MEDIAN OF HWY. 82	610	2		
	233+83.00	242+05.00		CL MEDIAN OF HWY. 82	822	2		
	243+82.00	271+81.00		CL MEDIAN OF HWY. 82	2799	2		
	273+19.00	294+63.08		CL MEDIAN OF HWY. 82	2144	2		
	211+37.69	223+03.83		CL MEDIAN OF HWY. 167	1166	2		
*	ENTIRE PROJECT							50
	ENTIRE PROJECT						1.00	
	TOTALS:				24153	20	1.00	50

◇ THIS ITEM SHOWN FOR INFORMATION ONLY.

* QUANTITY IS ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

QUANTITIES

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GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	TERMINAL ANCHOR POST (TYPE 1)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
			LIN.FT.	EACH		
13+44.00 (BK.)	16+40.00 (AHD.)	INSIDE SHLDR. OF WB LANES AT BOGGY CREEK	250		1	1
13+94.00 (BK.)	16+40.00 (AHD.)	OUTSIDE SHLDR. OF WB LANES AT BOGGY CREEK	200		1	1
18+72.00	21+72.00	INSIDE SHLDR. OF EB LANES AT BOGGY CREEK	250		1	1
18+72.00	21+22.00	OUTSIDE SHLDR. OF EB LANES AT BOGGY CREEK	200		1	1
55+80.00	58+80.00	INSIDE SHLDR. OF WB LANES AT HWY. 167	250		1	1
56+16.00	58+66.00	OUTSIDE SHLDR. OF WB LANES AT HWY. 167	200		1	1
62+17.00	65+17.00	INSIDE SHLDR. OF EB LANES AT HWY. 167	250		1	1
62+30.00	64+80.00	OUTSIDE SHLDR. OF EB LANES AT HWY. 167	200		1	1
136+60.00	142+10.00	RT. SHLDR. AT S. JACKSON AVE. OVERPASS	500	1	1	
139+02.00	144+52.00	LT. SHLDR. AT S. JACKSON AVE. OVERPASS	500	1	1	
167+93.00	170+93.00	INSIDE SHLDR. OF WB LANES AT S. FIELD RD.	250		1	1
168+43.00	170+93.00	OUTSIDE SHLDR. OF WB LANES AT S. FIELD RD.	200		1	1
174+05.00	177+05.00	INSIDE SHLDR. OF EB LANES AT S. FIELD RD.	250		1	1
174+05.00	176+55.00	OUTSIDE SHLDR. OF EB LANES AT S. FIELD RD.	200		1	1
176+72 (BK.)	180+15 (AHD.)	INSIDE SHLDR. OF WB LANES AT C.R.I.&P. R.R.	300		1	1
177+93.00	180+43.00	OUTSIDE SHLDR. OF WB ON-RAMP AT C.R.I.&P. R.R.	200		1	1
184+27.00	187+27.00	INSIDE SHLDR. OF EB LANES AT C.R.I.&P. R.R.	250		1	1
184+05.00	186+55.00	OUTSIDE SHLDR. OF EB LANES AT C.R.I.&P. R.R.	200		1	1
206+11.00	211+61.00	RT. SHLDR. AT HINSON RD. OVERPASS	500	1	1	
208+53.00	214+03.00	LT. SHLDR. AT HINSON RD. OVERPASS	500	1	1	
216+01.00	219+01.00	INSIDE SHLDR. OF WB LANES AT EL DORADO & WESSON R.R.	250		1	1
216+51.00	219+01.00	OUTSIDE SHLDR. OF WB LANES AT EL DORADO & WESSON R.R.	200		1	1
231+69.00	234+69.00	INSIDE SHLDR. OF EB LANES AT EL DORADO & WESSON R.R.	250		1	1
231+69.00	234+19.00	OUTSIDE SHLDR. OF EB LANES AT EL DORADO & WESSON R.R.	200		1	1
238+92.00	244+67.00	RT. SHLDR. AT HWY. 15 OVERPASS	525	1	1	
241+20.00	246+95.00	LT. SHLDR. AT HWY. 15 OVERPASS	525	1	1	
268+54.00	274+04.00	RT. SHLDR. AT PARNELL RD. OVERPASS	500	1	1	
270+96.00	276+46.00	LT. SHLDR. AT PARNELL RD. OVERPASS	500	1	1	
TOTALS:			8600	8	28	20

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		ACHM SURFACE COURSE (1/2")(PG 64-22)			
				TON / STATION	TON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	TON
			FEET			FEET			
12+84.00 (BK.)	16+58.00 (AHD.)	INSIDE SHLDR. OF WB LANES AT BOGGY CREEK	396.00	44.75	177.21	9.55	420.40	220.00	46.24
13+18.00 (BK.)	16+58.00 (AHD.)	OUTSIDE SHLDR. OF WB LANES AT BOGGY CREEK	340.00	44.75	152.15	9.04	341.60	220.00	37.58
18+53.00	22+49.00	INSIDE SHLDR. OF EB LANES AT BOGGY CREEK	396.00	44.75	177.21	9.55	420.40	220.00	46.24
18+53.00	21+93.00	OUTSIDE SHLDR. OF EB LANES AT BOGGY CREEK	340.00	44.75	152.15	9.04	341.60	220.00	37.58
55+03.00	58+98.00	INSIDE SHLDR. OF WB LANES AT HWY. 167	396.00	44.75	177.21	9.55	420.40	220.00	46.24
55+44.00	58+85.00	OUTSIDE SHLDR. OF WB LANES AT HWY. 167	340.00	44.75	152.15	9.04	341.60	220.00	37.58
61+98.00	65+94.00	INSIDE SHLDR. OF EB LANES AT HWY. 167	396.00	44.75	177.21	9.55	420.40	220.00	46.24
62+11.00	65+52.00	OUTSIDE SHLDR. OF EB LANES AT HWY. 167	340.00	44.75	152.15	9.04	341.60	220.00	37.58
136+17.00	142+53.00	RT. SHLDR. AT S. JACKSON AVE. OVERPASS	636.00	35.10	223.24	7.21	509.80	220.00	56.08
138+59.00	144+95.00	LT. SHLDR. AT S. JACKSON AVE. OVERPASS	636.00	35.10	223.24	7.21	509.80	220.00	56.08
167+16.00	171+11.00	INSIDE SHLDR. OF WB LANES AT S. FIELD RD.	396.00	44.75	177.21	9.55	420.40	220.00	46.24
167+78.00	171+11.00	OUTSIDE SHLDR. OF WB LANES AT S. FIELD RD.	340.00	44.75	152.15	9.04	341.60	220.00	37.58
173+86.00	177+82.00	INSIDE SHLDR. OF EB LANES AT S. FIELD RD.	396.00	44.75	177.21	9.55	420.40	220.00	46.24
173+86.00	177+27.00	OUTSIDE SHLDR. OF EB LANES AT S. FIELD RD.	340.00	44.75	152.15	9.04	341.60	220.00	37.58
175+79.00 (BK.)	180+34.00 (AHD.)	INSIDE SHLDR. OF WB LANES AT C.R.I.&P. R.R.	462.00	44.75	206.75	10.74	551.40	220.00	60.65
177+40.00 (BK.)	180+62.00 (AHD.)	OUTSIDE SHLDR. OF WB ON-RAMP AT C.R.I.&P. R.R.	340.00	44.75	152.15	9.04	341.60	220.00	37.58
184+08.00	188+05.00	INSIDE SHLDR. OF EB LANES AT C.R.I.&P. R.R.	396.00	44.75	177.21	9.55	420.40	220.00	46.24
183+87.00	187+25.00	OUTSIDE SHLDR. OF EB LANES AT C.R.I.&P. R.R.	340.00	44.75	152.15	9.04	341.60	220.00	37.58
205+68.00	212+04.00	RT. SHLDR. AT HINSON RD. OVERPASS	636.00	35.10	223.24	7.21	509.80	220.00	56.08
208+10.00	214+46.00	LT. SHLDR. AT HINSON RD. OVERPASS	636.00	35.10	223.24	7.21	509.80	220.00	56.08
215+23.00	219+20.00	INSIDE SHLDR. OF WB LANES AT EL DORADO & WESSON R.R.	396.00	44.75	177.21	9.55	420.40	220.00	46.24
215+77.00	219+20.00	OUTSIDE SHLDR. OF WB LANES AT EL DORADO & WESSON R.R.	340.00	44.75	152.15	9.04	341.60	220.00	37.58
231+50.00	235+46.00	INSIDE SHLDR. OF EB LANES AT EL DORADO & WESSON R.R.	396.00	44.75	177.21	9.55	420.40	220.00	46.24
231+50.00	234+82.00	OUTSIDE SHLDR. OF EB LANES AT EL DORADO & WESSON R.R.	340.00	44.75	152.15	9.04	341.60	220.00	37.58
238+49.00	245+10.00	RT. SHLDR. AT HWY. 15 OVERPASS	661.00	35.10	232.01	7.23	530.70	220.00	58.38
240+77.00	247+38.00	LT. SHLDR. AT HWY. 15 OVERPASS	661.00	35.10	232.01	7.23	530.70	220.00	58.38
268+10.00	274+47.00	RT. SHLDR. AT PARNELL RD. OVERPASS	637.00	35.10	223.59	7.20	509.80	220.00	56.08
270+53.00	276+89.00	LT. SHLDR. AT PARNELL RD. OVERPASS	636.00	35.10	223.24	7.21	509.80	220.00	56.08
TOTALS:					5126.95		11871.20		1305.85

BASIS OF ESTIMATE:
110 LBS. PER SQ. YD. PER INCH DEPTH
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO
7/16/14

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.		070396	23	44
QUANTITIES				

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QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO
7/16/14

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.		070396	24	44

QUANTITIES

EARTHWORK

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
12+84 (BK.)	16+58 (AHD.)	INSIDE SHLDR. OF WB LANES AT BOGGY CREEK	51	11
13+18 (BK.)	16+58 (AHD.)	OUTSIDE SHLDR. OF WB LANES AT BOGGY CREEK	44	9
18+53	22+49	INSIDE SHLDR. OF EB LANES AT BOGGY CREEK	51	11
18+53	21+93	OUTSIDE SHLDR. OF EB LANES AT BOGGY CREEK	44	9
55+03	58+98	INSIDE SHLDR. OF WB LANES AT HWY. 167	51	11
55+44	58+85	OUTSIDE SHLDR. OF WB LANES AT HWY. 167	44	9
61+98	65+94	INSIDE SHLDR. OF EB LANES AT HWY. 167	51	11
62+11	65+52	OUTSIDE SHLDR. OF EB LANES AT HWY. 167	44	9
136+17	142+53	RT. SHLDR. AT S. JACKSON AVE. OVERPASS	82	17
138+59	144+95	LT. SHLDR. AT S. JACKSON AVE. OVERPASS	82	17
167+16	171+11	INSIDE SHLDR. OF WB LANES AT S. FIELD RD.	51	11
167+78	171+11	OUTSIDE SHLDR. OF WB LANES AT S. FIELD RD.	44	9
173+86	177+82	INSIDE SHLDR. OF EB LANES AT S. FIELD RD.	51	11
173+86	177+27	OUTSIDE SHLDR. OF EB LANES AT S. FIELD RD.	44	9
175+79 (BK.)	180+34 (AHD.)	INSIDE SHLDR. OF WB LANES AT C.R.I.&P. R.R.	60	12
177+40 (BK.)	180+62 (AHD.)	OUTSIDE SHLDR. OF WB ON-RAMP AT C.R.I.&P. R.R.	44	9
184+08	188+05	INSIDE SHLDR. OF EB LANES AT C.R.I.&P. R.R.	51	11
183+87	187+25	OUTSIDE SHLDR. OF EB LANES AT C.R.I.&P. R.R.	44	9
205+68	212+04	RT. SHLDR. AT HINSON RD. OVERPASS	82	17
208+10	214+46	LT. SHLDR. AT HINSON RD. OVERPASS	82	17
215+23	219+20	INSIDE SHLDR. OF WB LANES AT EL DORADO & WESSON R.R.	51	11
215+77	219+20	OUTSIDE SHLDR. OF WB LANES AT EL DORADO & WESSON R.R.	44	9
231+50	235+46	INSIDE SHLDR. OF EB LANES AT EL DORADO & WESSON R.R.	51	11
231+50	234+82	OUTSIDE SHLDR. OF EB LANES AT EL DORADO & WESSON R.R.	44	9
238+49	245+10	RT. SHLDR. AT HWY. 15 OVERPASS	86	17
240+77	247+38	LT. SHLDR. AT HWY. 15 OVERPASS	86	17
268+10	274+47	RT. SHLDR. AT PARNELL RD. OVERPASS	83	17
270+53	276+89	LT. SHLDR. AT PARNELL RD. OVERPASS	82	17
TOTALS:			1624	337

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

QUANTITIES ARE ESTIMATED FOR SLOPE MODIFICATION.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

APPROACH GUTTERS

STATION	LOCATION	APPROACH GUTTERS (TYPE 'PT')	REINFORCING STEEL - RDWY. (GRADE 60)
		CU. YD.	LB.
16+58	WB LANES AT BOGGY CREEK (OUTSIDE SHLDR.)	20.07	1815
16+58	WB LANES AT BOGGY CREEK (INSIDE SHLDR.)	13.34	1296
18+53	EB LANES AT BOGGY CREEK (INSIDE SHLDR.)	13.34	1296
18+53	EB LANES AT BOGGY CREEK (OUTSIDE SHLDR.)	20.07	1815
58+84	WB LANES AT HWY. 167 (OUTSIDE SHLDR.)	20.07	1815
58+98	WB LANES AT HWY. 167 (INSIDE SHLDR.)	13.34	1296
61+97	EB LANES AT HWY. 167 (INSIDE SHLDR.)	13.34	1296
62+11	EB LANES AT HWY. 167 (OUTSIDE SHLDR.)	20.07	1815
171+11	WB LANES AT S. FIELD RD. (OUTSIDE SHLDR.)	20.07	1815
171+11	WB LANES AT S. FIELD RD.(INSIDE SHLDR.)	13.34	1296
173+86	EB LANES AT S. FIELD RD. (INSIDE SHLDR.)	13.34	1296
173+86	EB LANES AT S. FIELD RD. (OUTSIDE SHLDR.)	20.07	1815
180+63	WB LANES AT C.R.I.&P. R.R. (OUTSIDE SHLDR.)	13.34	1296
180+33	WB LANES AT C.R.I.&P. R.R. (INSIDE SHLDR.)	13.34	1296
184+09	EB LANES AT C.R.I.&P. R.R. (INSIDE SHLDR.)	13.34	1296
183+86	EB LANES AT C.R.I.&P. R.R. (OUTSIDE SHLDR.)	20.07	1815
219+20	WB LANES AT EL DORADO & WESSON R.R. (OUTSIDE SHLDR.)	20.07	1815
219+20	WB LANES AT EL DORADO & WESSON R.R. (INSIDE SHLDR.)	13.34	1296
231+50	EB LANES AT EL DORADO & WESSON R.R. (INSIDE SHLDR.)	13.34	1296
231+50	EB LANES AT EL DORADO & WESSON R.R. (OUTSIDE SHLDR.)	20.07	1815
TOTALS:		327.37	30591

QUANTITIES

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15180
7/10/14
AARON M. SMITH

RESPONSIBLE FOR QUANTITIES IN EROSION CONTROL AND ADVANCE WARNING SIGNS AND DEVICES TABLES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
9/22/14
JENELLE ROMERO

RESPONSIBLE FOR ALL OTHER 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.		070396	25	44

SUMMARY OF QUANTITIES AND REVISIONS

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP	REMOVAL AND DISPOSAL OF IMPACT ATTENUATION BARRIER	8	EACH
SP & 202	REMOVAL AND DISPOSAL OF GUARDRAIL	4000	LIN.FT.
202	REMOVAL AND DISPOSAL OF APPROACH GUTTERS	20	EACH
210	UNCLASSIFIED EXCAVATION	1624	CU.YD.
210	COMPACTED EMBANKMENT	337	CU. YD.
303	AGGREGATE BASE COURSE (CLASS 7)	5127	TON
SP, SS & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	1235	TON
SP, SS & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	71	TON
504	APPROACH GUTTERS	327.37	CU. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	TRAFFIC CONTROL SUPERVISOR	1.00	LUMP SUM
604	SIGNS	1349	SQ.FT.
604	TRAFFIC DRUMS	421	EACH
604	ADVANCE WARNING ARROW PANEL	55	DAY
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN	48	WEEK
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	2765	LIN.FT.
604	RELOCATING PRECAST CONCRETE BARRIER	8295	LIN.FT.
SP & 605	CONCRETE DITCH PAVING (TYPE B)	10734	SQ.YD.
617	GUARDRAIL (TYPE A)	8600	LIN.FT.
617	TERMINAL ANCHOR POSTS (TYPE 1)	8	EACH
617	GUARDRAIL TERMINAL (TYPE 2)	28	EACH
617	THRIE BEAM GUARDRAIL TERMINAL	20	EACH
620	SEEDING	8.73	ACRE
620	LIME	17	TON
SS & 620	MULCH COVER	17.46	ACRE
620	WATER	1203.9	M.GAL.
621	TEMPORARY SEEDING	8.73	ACRE
621	SAND BAG DITCH CHECKS	900	BAG
621	DROP INLET SILT FENCE	1140	LIN.FT.
621	SEDIMENT REMOVAL AND DISPOSAL	85	CU. YD.
623	SECOND SEEDING APPLICATION	8.73	ACRE
624	SOLID SODDING	10734	SQ.YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
804	REINFORCING STEEL - ROADWAY (GRADE 60)	30591	LB.
SP	WIRE ROPE SAFETY FENCE	24153	LIN.FT.
SP	WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS	1.00	LUMP SUM
SP	WIRE ROPE SAFETY FENCE (POST REPAIR)	50	EACH

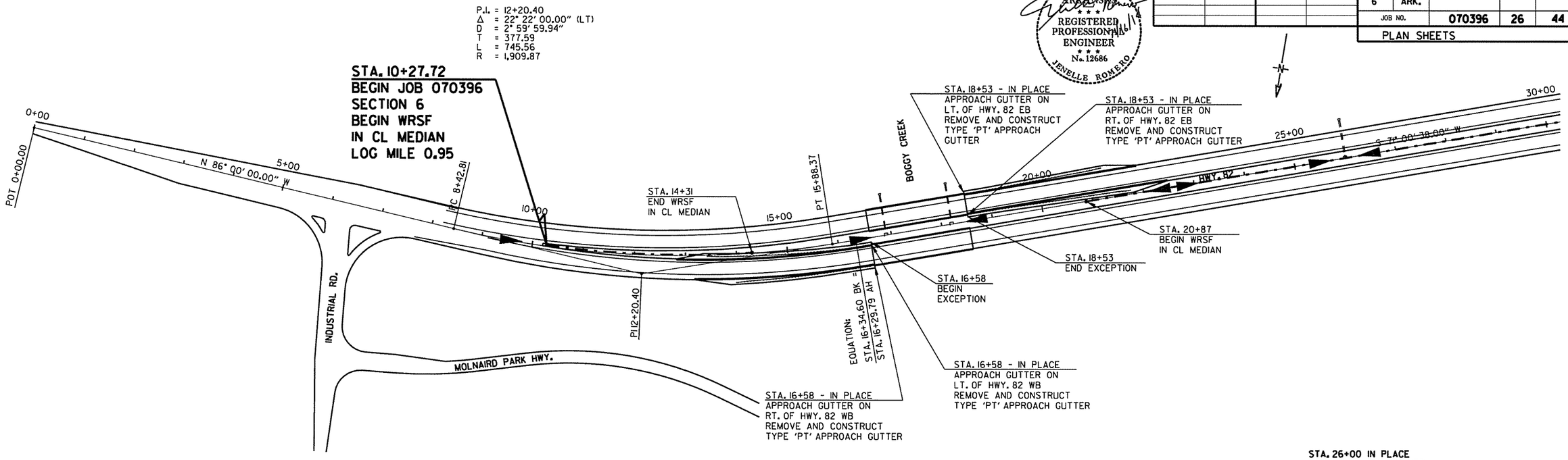
REVISIONS

DATE	REVISION	SHEET NUMBER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	26	44
PLAN SHEETS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO

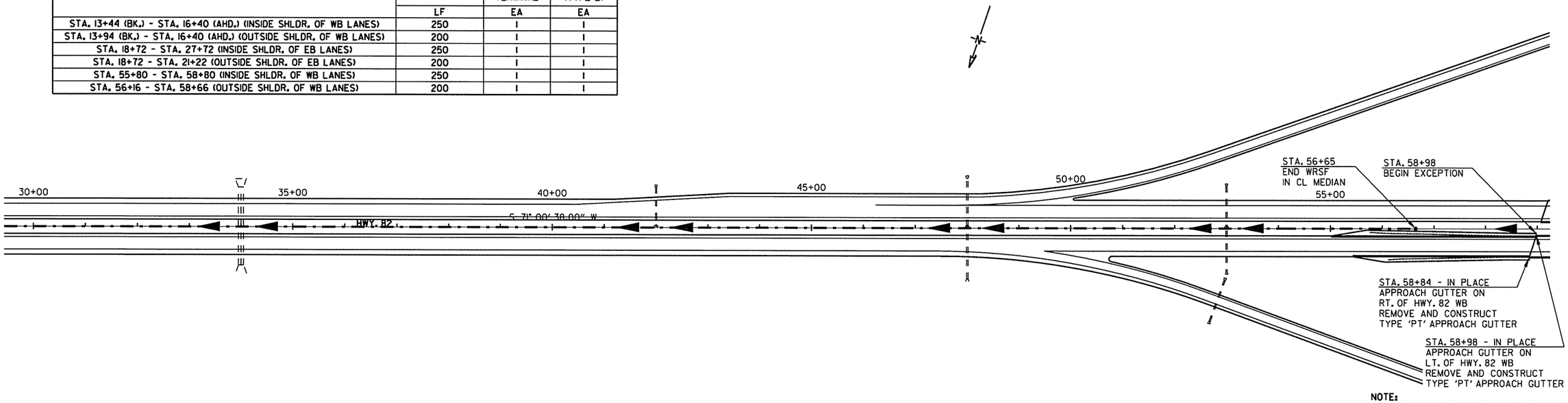


STA. 16+90 IN PLACE
24"X74' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 18+20 IN PLACE
24"X74' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 26+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

GUARDRAIL	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
	LF	EA	EA
STA. 13+44 (BK.) - STA. 16+40 (AHD.) (INSIDE SHLDR. OF WB LANES)	250	1	1
STA. 13+94 (BK.) - STA. 16+40 (AHD.) (OUTSIDE SHLDR. OF WB LANES)	200	1	1
STA. 18+72 - STA. 27+72 (INSIDE SHLDR. OF EB LANES)	250	1	1
STA. 18+72 - STA. 21+22 (OUTSIDE SHLDR. OF EB LANES)	200	1	1
STA. 55+80 - STA. 58+80 (INSIDE SHLDR. OF WB LANES)	250	1	1
STA. 56+16 - STA. 58+66 (OUTSIDE SHLDR. OF WB LANES)	200	1	1



STA. 34+00 IN PLACE
DBL. 5'X4'X150' RC BOX CULVERT
TYPE TM DROP INLET IN MED.
RETAIN

STA. 42+00 IN PLACE
24"X74' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 48+00 IN PLACE
36"X92' RC PIPE INLET
36"X94' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 53+00 IN PLACE
30"X78' RC PIPE INLET
30"X80' RC PIPE OUTLET
30° RT. FWD. SKEW
TYPE RM DROP INLET IN MED.
RETAIN

NOTE:
CONTRACTOR TO VERIFY EXISTING CROSSING UTILITIES PRIOR TO CONSTRUCTION. EXERCISE CARE AND PRECAUTION WHILE WORKING IN THESE AREAS.

PLAN SHEETS
STA. 0+00 - STA. 59+00

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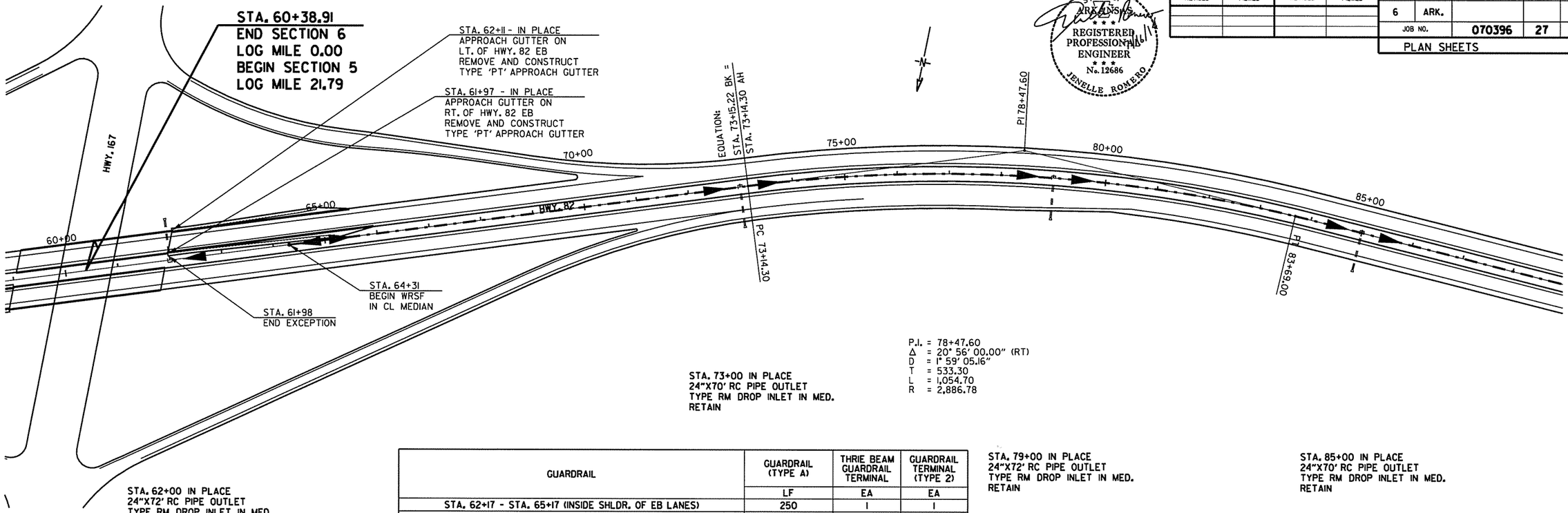
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	27	44
PLAN SHEETS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO



STA. 62+00 IN PLACE
24"X72' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

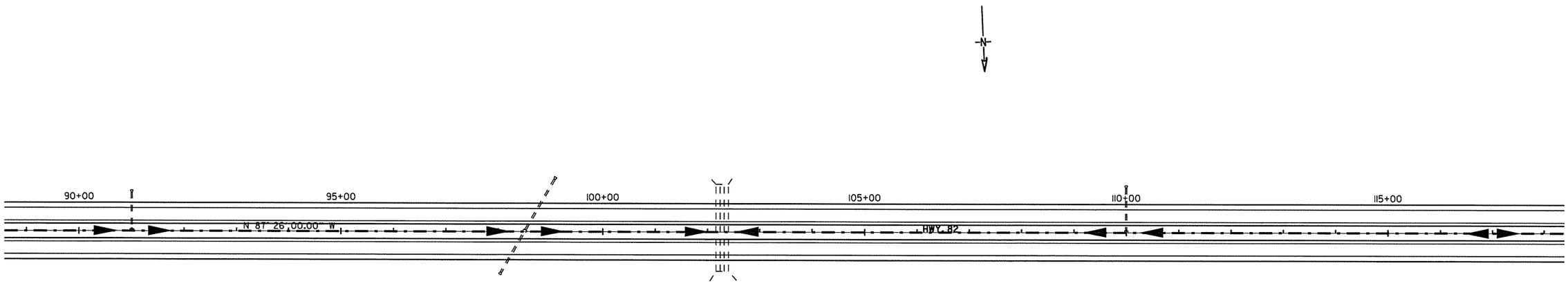
STA. 73+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

P.I. = 78+47.60
Δ = 20° 56' 00.00" (RT)
D = 1° 59' 05.16"
T = 533.30
L = 1,054.70
R = 2,886.78

GUARDRAIL	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
	LF	EA	EA
STA. 62+17 - STA. 65+17 (INSIDE SHLDR. OF EB LANES)	250	1	1
STA. 62+30 - STA. 64+80 (OUTSIDE SHLDR. OF EB LANES)	200	1	1

STA. 79+00 IN PLACE
24"X72' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 85+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN



STA. 91+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 98+50 IN PLACE
36"X116' RC PIPE INLET
36"X90' RC PIPE OUTLET
30° LT. FWD. SKEW
TYPE RM DROP INLET IN MED.
RETAIN

STA. 102+28 IN PLACE
TRIPLE 8'X5'X166' RC BOX CULVERT
30° LT. FWD. SKEW
TYPE TM DROP INLET IN MED.
RETAIN

STA. 110+00 IN PLACE
24"X82' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

NOTE:
CONTRACTOR TO VERIFY EXISTING CROSSING UTILITIES PRIOR TO CONSTRUCTION. EXERCISE CARE AND PRECAUTION WHILE WORKING IN THESE AREAS.

PLAN SHEETS
STA. 59+00 - STA. 118+00

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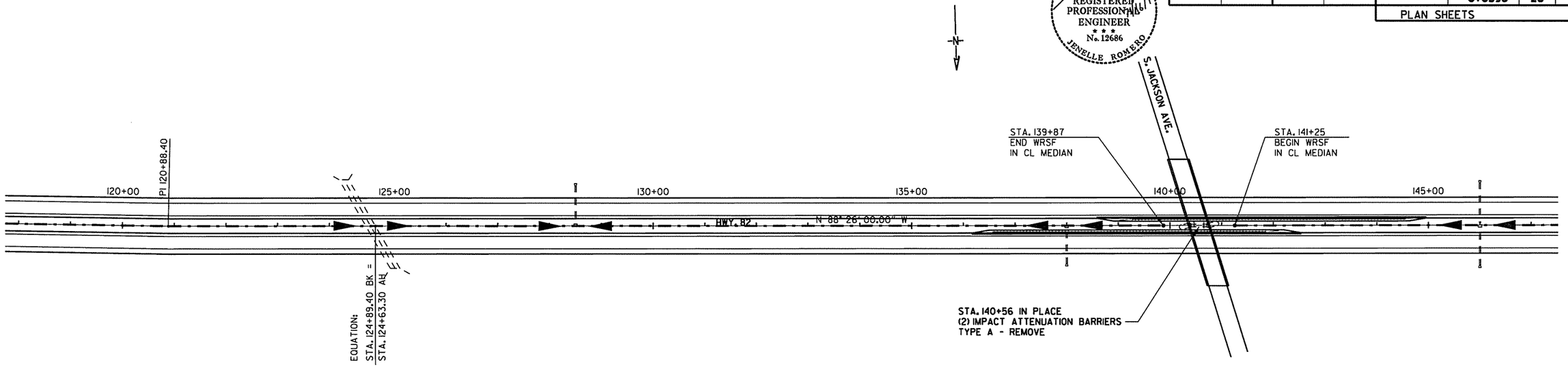
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	28	44
PLAN SHEETS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO



STA. 124+80 IN PLACE
DBL. 8'X5'X198' RC BOX CULVERT
30° RT. FWD. SKEW
TYPE TM DROP INLET IN MED.
RETAIN

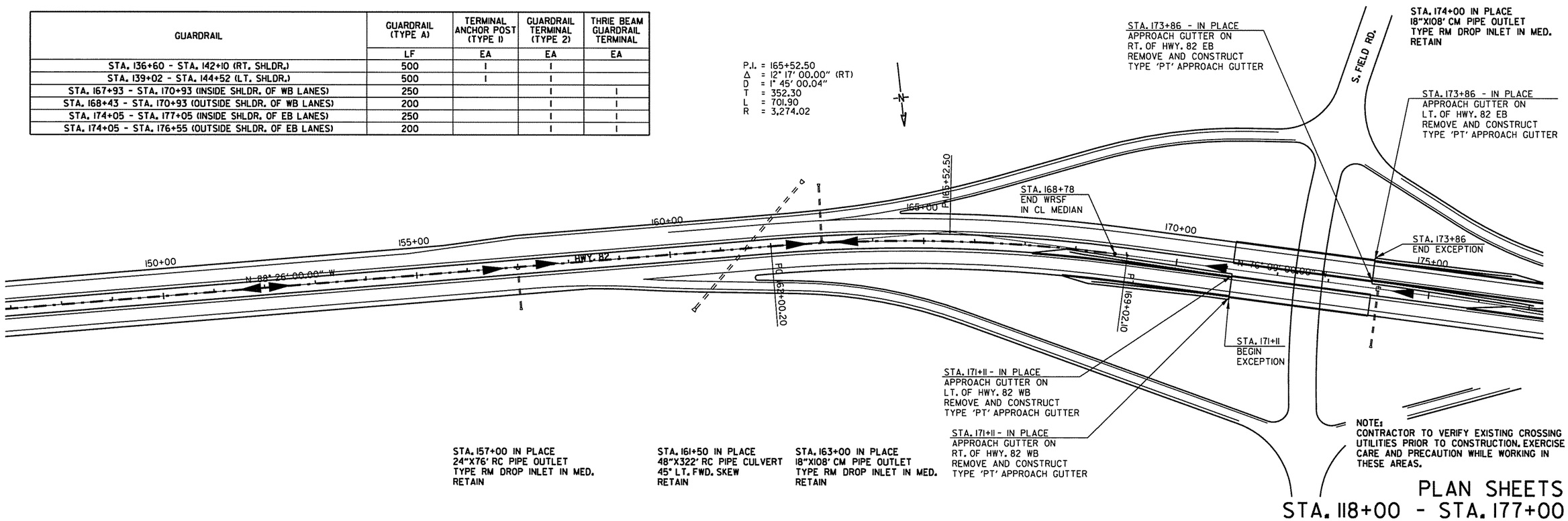
STA. 128+50 IN PLACE
24"X74' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 138+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 146+00 IN PLACE
36"X74' RC PIPE INLET
36"X78' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

GUARDRAIL	GUARDRAIL (TYPE A)	TERMINAL ANCHOR POST (TYPE I)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
	LF	EA	EA	EA
STA. 136+60 - STA. 142+10 (RT. SHLDR.)	500	1	1	
STA. 139+02 - STA. 144+52 (LT. SHLDR.)	500	1	1	
STA. 167+93 - STA. 170+93 (INSIDE SHLDR. OF WB LANES)	250		1	1
STA. 168+43 - STA. 170+93 (OUTSIDE SHLDR. OF WB LANES)	200		1	1
STA. 174+05 - STA. 177+05 (INSIDE SHLDR. OF EB LANES)	250		1	1
STA. 174+05 - STA. 176+55 (OUTSIDE SHLDR. OF EB LANES)	200		1	1

P.I. = 165+52.50
Δ = 12° 17' 00.00" (RT)
D = 1° 45' 00.04"
T = 352.30
L = 701.90
R = 3,274.02



STA. 157+00 IN PLACE
24"X76' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 161+50 IN PLACE
48"X322' RC PIPE CULVERT
45° LT. FWD. SKEW
RETAIN

STA. 163+00 IN PLACE
18"X108' CM PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

NOTE:
CONTRACTOR TO VERIFY EXISTING CROSSING UTILITIES PRIOR TO CONSTRUCTION. EXERCISE CARE AND PRECAUTION WHILE WORKING IN THESE AREAS.

PLAN SHEETS
STA. 118+00 - STA. 177+00

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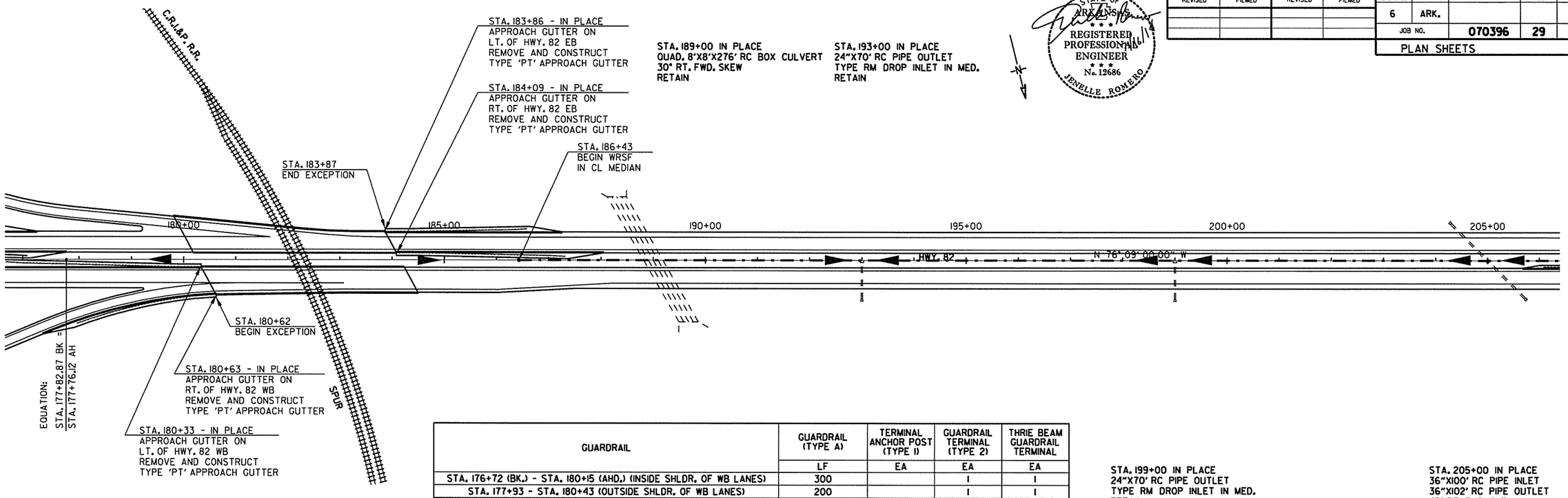
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	29	44

PLAN SHEETS

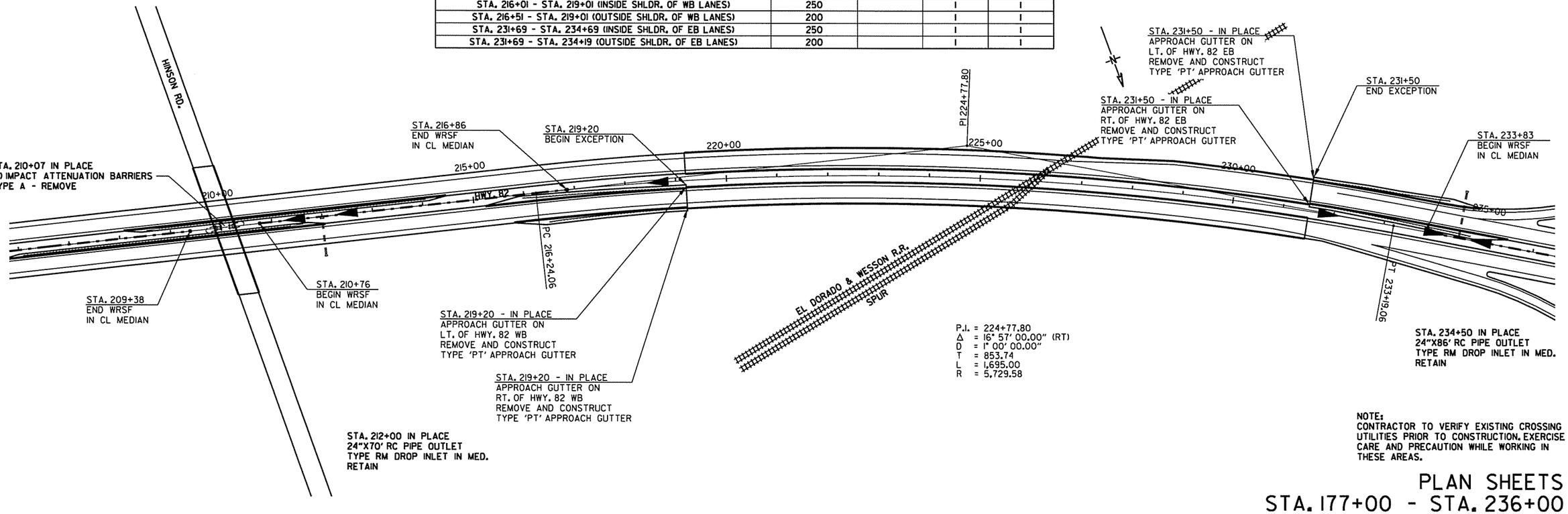
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO
7/11/14



GUARDRAIL	GUARDRAIL (TYPE A)	TERMINAL ANCHOR POST (TYPE I)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
	LF	EA	EA	EA
STA. 176+72 (BK.) - STA. 180+15 (AHD.) (INSIDE SHLDR. OF WB LANES)	300		1	1
STA. 177+93 - STA. 180+43 (OUTSIDE SHLDR. OF WB LANES)	200		1	1
STA. 184+27 - STA. 187+27 (INSIDE SHLDR. OF EB LANES)	250		1	1
STA. 184+05 - STA. 186+55 (OUTSIDE SHLDR. OF EB LANES)	200		1	1
STA. 206+11 - STA. 211+61 (INSIDE SHLDR. OF WB LANES)	500	1	1	
STA. 208+53 - STA. 214+03 (INSIDE SHLDR. OF EB LANES)	500	1	1	
STA. 216+01 - STA. 219+01 (INSIDE SHLDR. OF WB LANES)	250		1	1
STA. 216+51 - STA. 219+01 (OUTSIDE SHLDR. OF WB LANES)	200		1	1
STA. 231+69 - STA. 234+69 (INSIDE SHLDR. OF EB LANES)	250		1	1
STA. 231+69 - STA. 234+19 (OUTSIDE SHLDR. OF EB LANES)	200		1	1

STA. 199+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 205+00 IN PLACE
36"X100' RC PIPE INLET
36"X102' RC PIPE OUTLET
45° RT. FWD. SKEW
TYPE RM DROP INLET IN MED.
RETAIN



NOTE:
CONTRACTOR TO VERIFY EXISTING CROSSING UTILITIES PRIOR TO CONSTRUCTION. EXERCISE CARE AND PRECAUTION WHILE WORKING IN THESE AREAS.

PLAN SHEETS
STA. 177+00 - STA. 236+00

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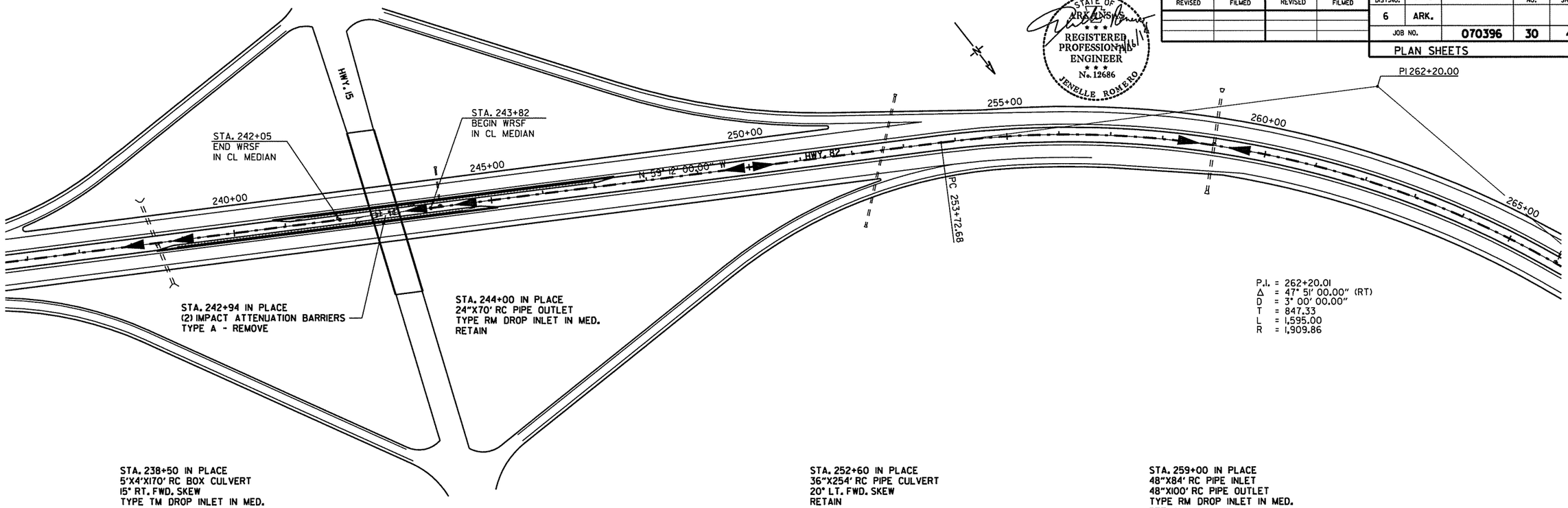
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	30	44

PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO
1/14/14

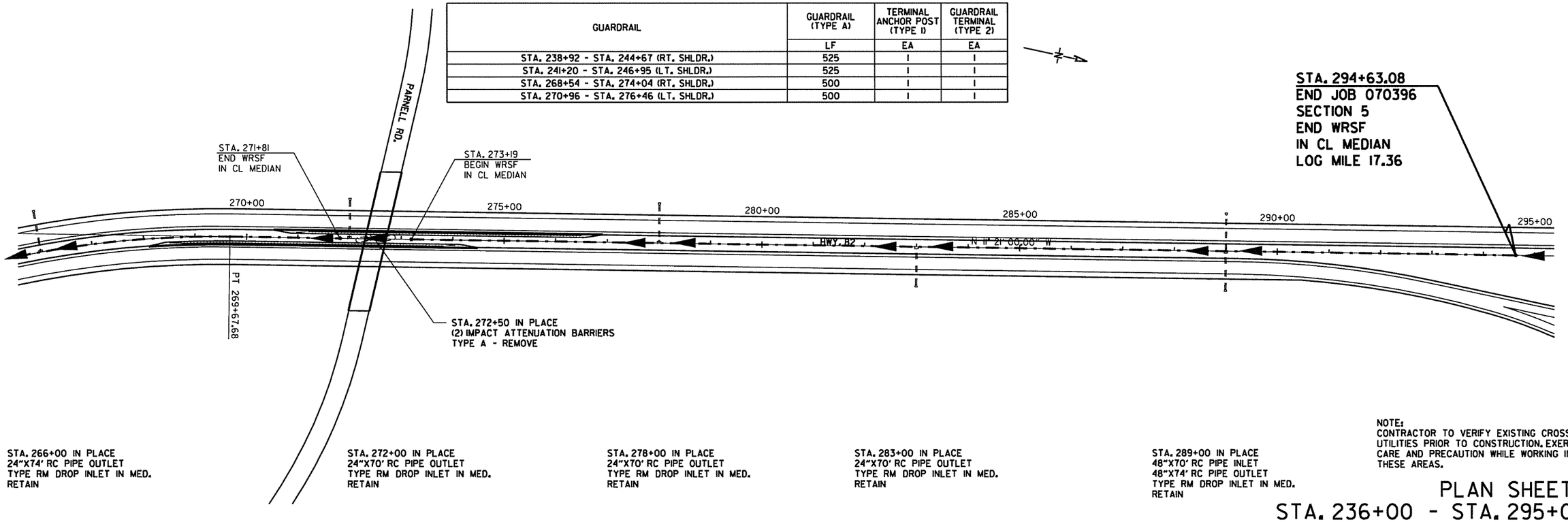


STA. 238+50 IN PLACE
5'X4'X170' RC BOX CULVERT
15° RT. FWD. SKEW
TYPE TM DROP INLET IN MED.
RETAIN

STA. 252+60 IN PLACE
36"X254' RC PIPE CULVERT
20° LT. FWD. SKEW
RETAIN

STA. 259+00 IN PLACE
48"X84' RC PIPE INLET
48"X100' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

GUARDRAIL	GUARDRAIL (TYPE A)	TERMINAL ANCHOR POST (TYPE I)	GUARDRAIL TERMINAL (TYPE 2)
	LF	EA	EA
STA. 238+92 - STA. 244+67 (RT. SHLDR.)	525	1	1
STA. 241+20 - STA. 246+95 (LT. SHLDR.)	525	1	1
STA. 268+54 - STA. 274+04 (RT. SHLDR.)	500	1	1
STA. 270+96 - STA. 276+46 (LT. SHLDR.)	500	1	1



STA. 266+00 IN PLACE
24"X74' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 272+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 278+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 283+00 IN PLACE
24"X70' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 289+00 IN PLACE
48"X70' RC PIPE INLET
48"X74' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

NOTE:
CONTRACTOR TO VERIFY EXISTING CROSSING UTILITIES PRIOR TO CONSTRUCTION. EXERCISE CARE AND PRECAUTION WHILE WORKING IN THESE AREAS.

PLAN SHEETS
STA. 236+00 - STA. 295+00

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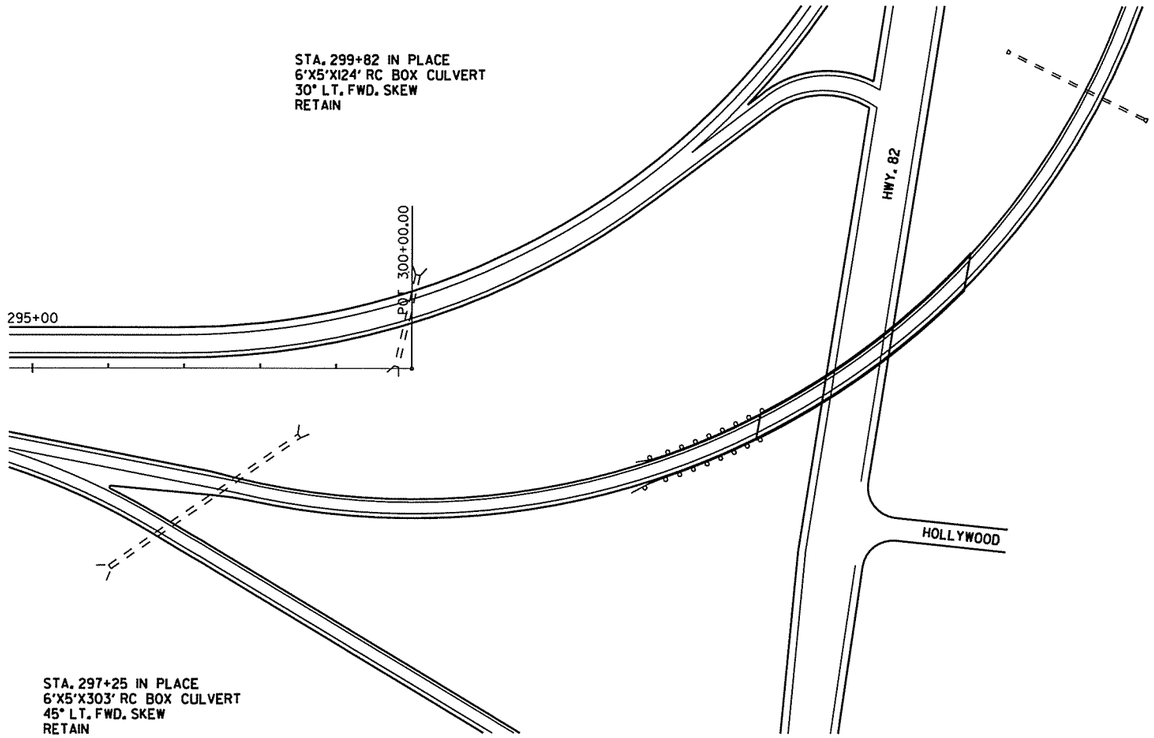

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO

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.		070396	31	44
PLAN SHEETS				

NOTE:
CONTRACTOR TO VERIFY EXISTING CROSSING UTILITIES PRIOR TO CONSTRUCTION. EXERCISE CARE AND PRECAUTION WHILE WORKING IN THESE AREAS.

PLAN SHEETS
STA. 295+00 - STA. 300+00

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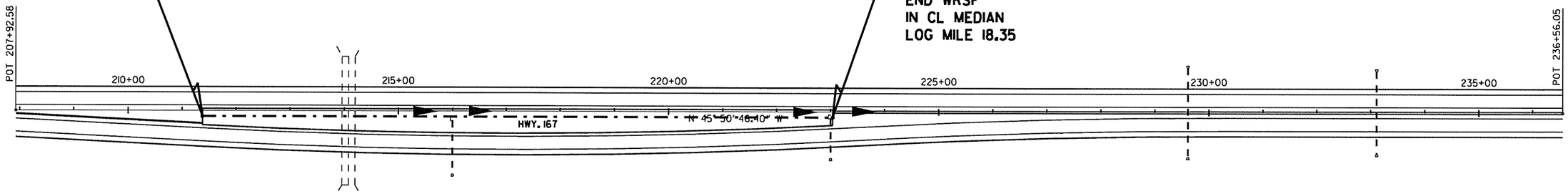
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070396	32	44
PLAN SHEETS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12686
JENELLE ROMERO

STA. 211+37.69
BEGIN JOB 070396
SECTION I
BEGIN WRSF
IN CL MEDIAN
LOG MILE 18.58

STA. 223+03.83
END JOB 070396
SECTION I
END WRSF
IN CL MEDIAN
LOG MILE 18.35



STA. 214+08 IN PLACE
DBL. 12'X8'X236' RC BOX CULVERT
RETAIN

STA. 216+00 IN PLACE
24"X98' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 223+00 IN PLACE
24"X73' RC PIPE OUTLET
TYPE RM DROP INLET IN MED.
RETAIN

STA. 229+61 IN PLACE
24"X164' RC PIPE CULVERT
RETAIN

STA. 233+11 IN PLACE
24"X152' RC PIPE CULVERT
RETAIN

NOTE:
CONTRACTOR TO VERIFY EXISTING CROSSING UTILITIES PRIOR TO CONSTRUCTION. EXERCISE CARE AND PRECAUTION WHILE WORKING IN THESE AREAS.

PLAN SHEETS
STA. 207+92.58 - STA. 236+56.05

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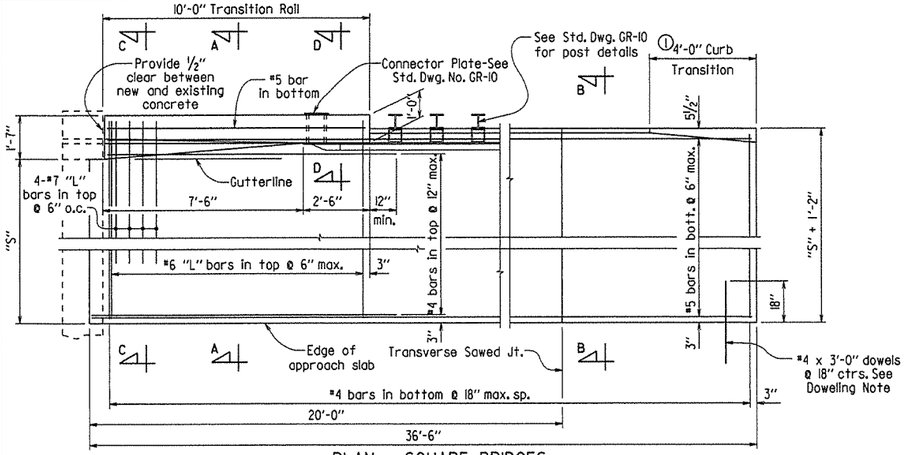
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		33	
				JOB NO.				

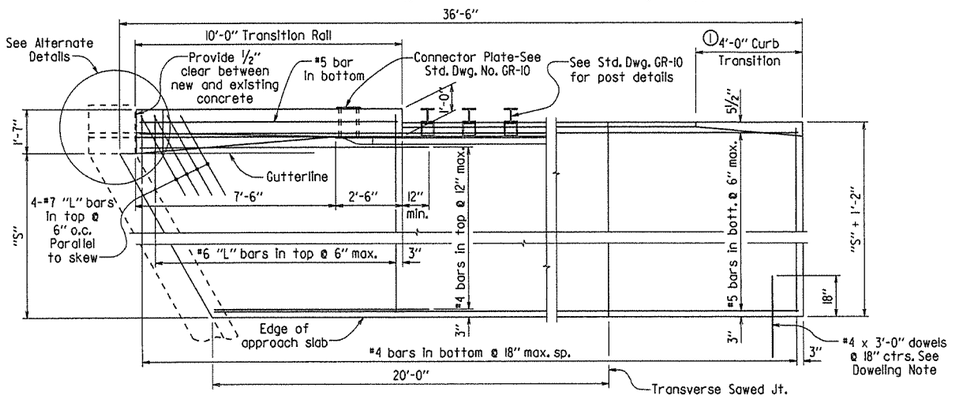
① TYPE PT GUTTERS 55035

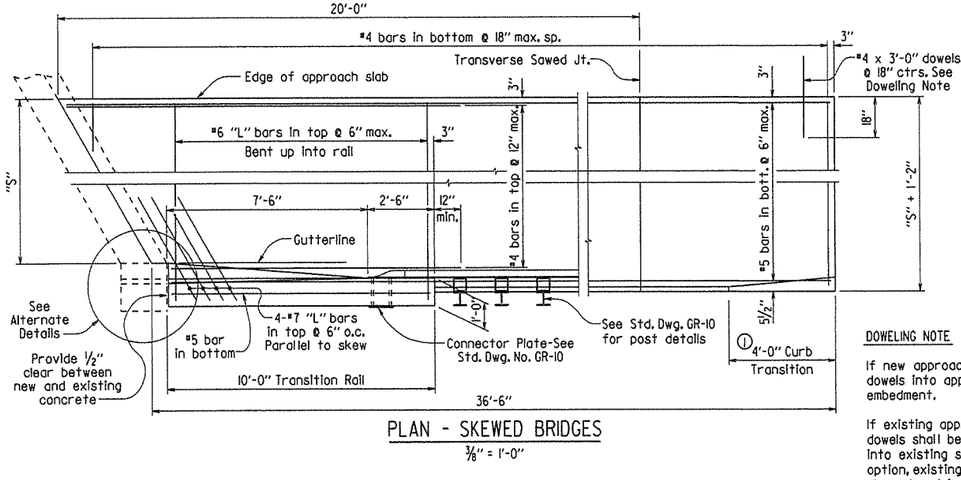


PLAN - SQUARE BRIDGES

3/8" = 1'-0"

"S" = Distance from gutterline to edge of approach slab.





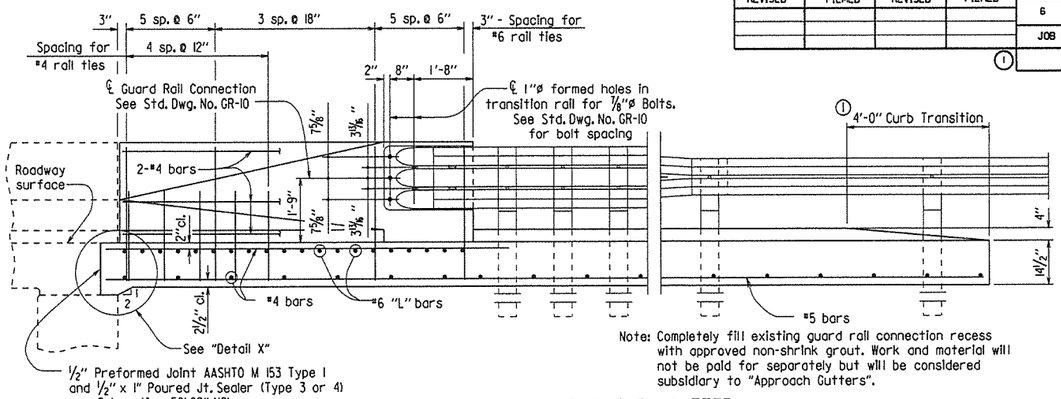
PLAN - SKEWED BRIDGES

3/8" = 1'-0"

DOWELING NOTE

If new approach slab is used, place dowels into approach slab using 18" embedment.

If existing approach slab is retained, dowels shall be drilled and grouted 18" into existing slab. At the Contractor's option, existing dowels may be retained, cleaned and incorporated into new gutters. Work for drilling and grouting, or retaining and cleaning will not be paid for separately but will be considered subsidiary to "Approach Gutters".



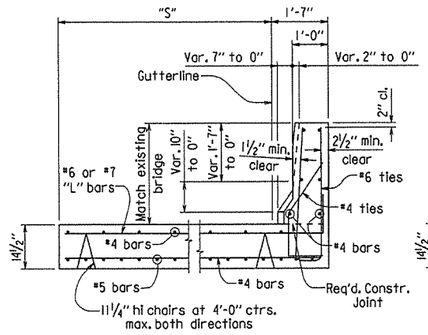
①Construct curb with height-transition as shown if drop inlet is not used at end of gutter.

Construct curb full height (no height-transition) if drop inlet is used at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.

Note: Completely fill existing guard rail connection recess with approved non-shrink grout. Work and material will not be paid for separately but will be considered subsidiary to "Approach Gutters".

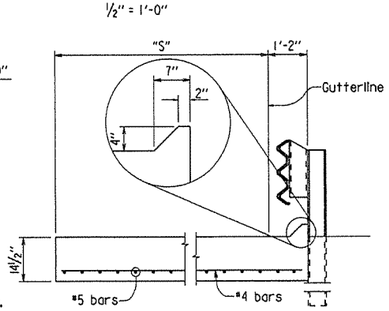
LONGITUDINAL SECTION THRU GUTTER

½" = 1'-0"



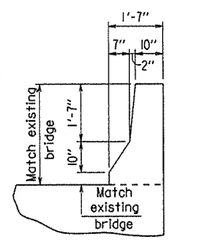
SECTION A-A

½" = 1'-0"



SECTION B-B

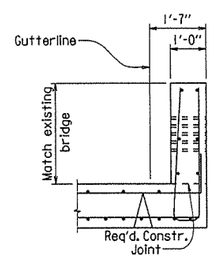
½" = 1'-0"



SECTION C-C

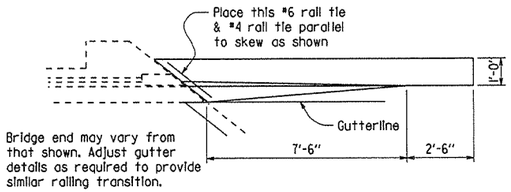
At End of Transition Rail

½" = 1'-0"



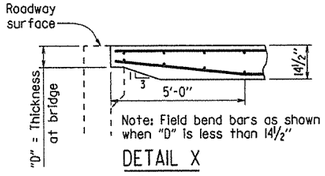
SECTION D-D

½" = 1'-0"



ALTERNATE DETAILS

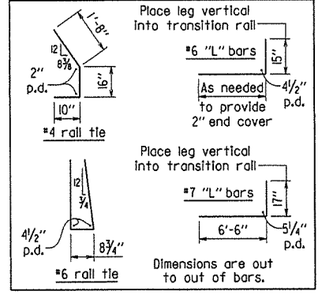
3/8" = 1'-0"



Note: Field bend bars as shown when "D" is less than 14½"

DETAIL X

3/8" = 1'-0"



GENERAL NOTES

All concrete shall be Class S or S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports. Fabricate bar lengths to provide 2" minimum cover at each end.

Approach gutters will be measured and paid for in accordance with Section 504.

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

(FOR INFORMATION ONLY)

"S"	Concrete	Reinforcing Steel
5'-6"	12.49 cu.yd.	1227 lb.
5'-9"	12.91 cu.yd.	1276 lb.
6'-0"	13.34 cu.yd.	1296 lb.
9'-6"	19.23 cu.yd.	1746 lb.
9'-9"	19.65 cu.yd.	1795 lb.
10'-0"	20.07 cu.yd.	1815 lb.

This document was originally issued and sealed by Carl J. Fuselier, PE No. 7510, on February 27, 2014. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

STANDARD DETAILS FOR TYPE 'PT' APPROACH GUTTERS (BRIDGES WITH CONCRETE PARAPET RAILING)

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

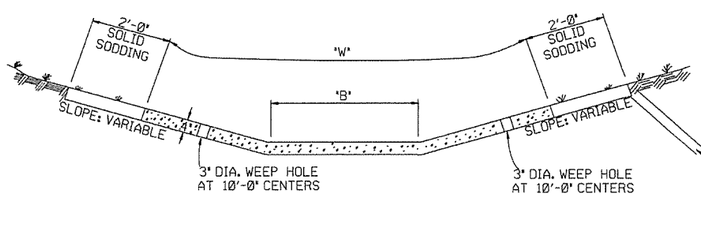
DRAWN BY: KDH DATE: 2/27/2014 FILENAME: b55035.dgn

CHECKED BY: KWY DATE: 2/27/2014 SCALE: AS SHOWN

DESIGNED BY: STD. DATE:

DRAWING NO. 55035

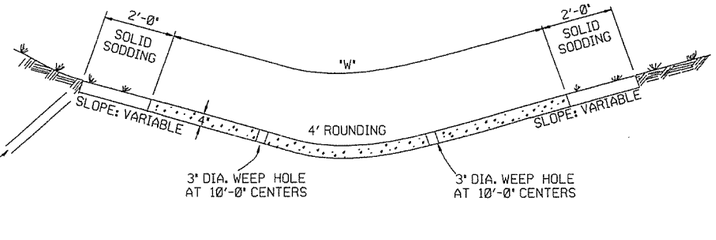
REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



TYPE A

EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

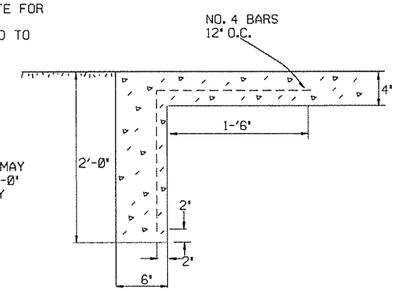
REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



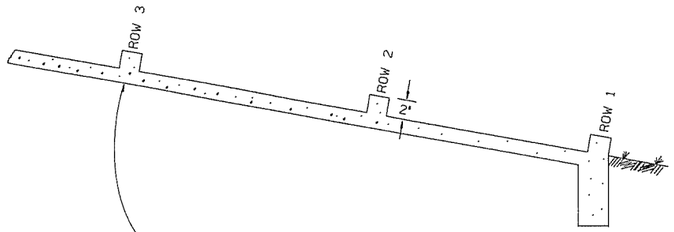
TYPE B

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

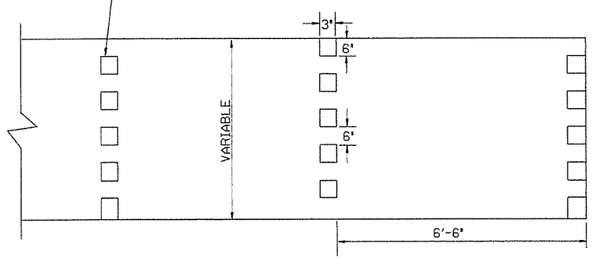


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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.



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

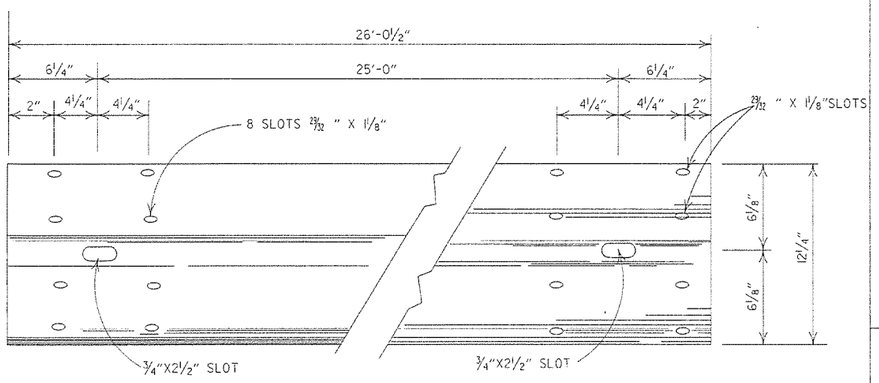
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

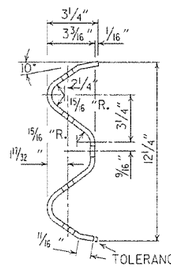
DATE	REVISION	DATE FILM'D
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING.	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED 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

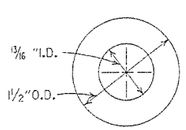




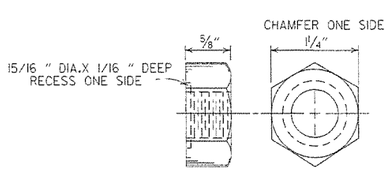
DETAILS OF W-BEAM GUARD RAIL

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

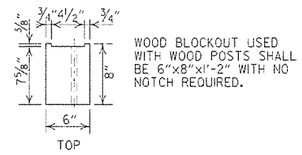
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

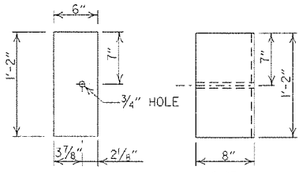


NUT

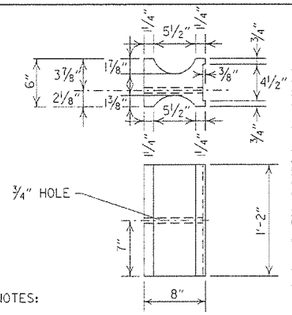


WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

TOP



WOOD BLOCKOUT (W-BEAM)

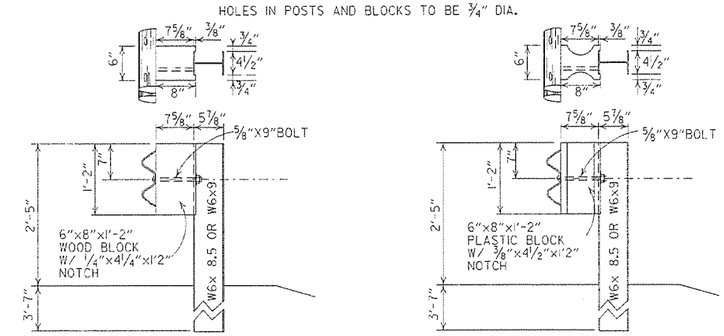


NOTES:

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

PLASTIC BLOCKOUT (W-BEAM)

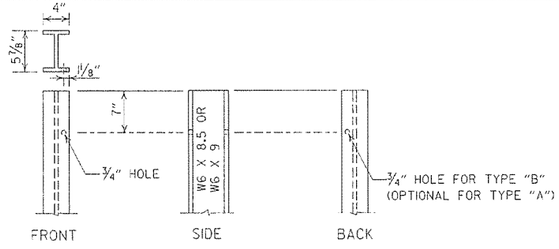
HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.



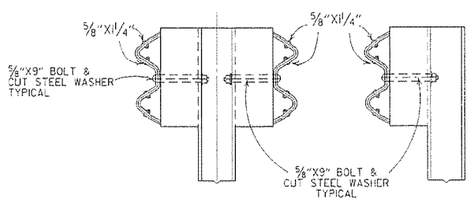
WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.

POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

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

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

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

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

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

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

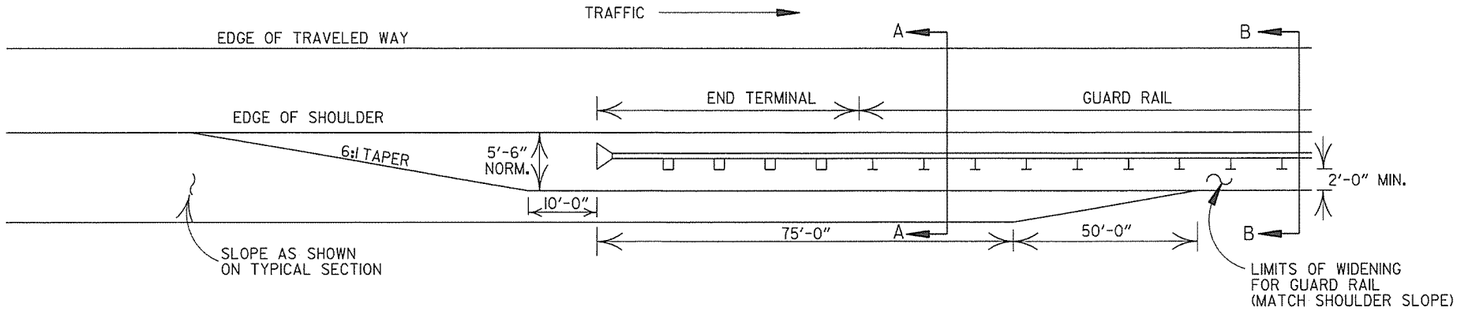
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

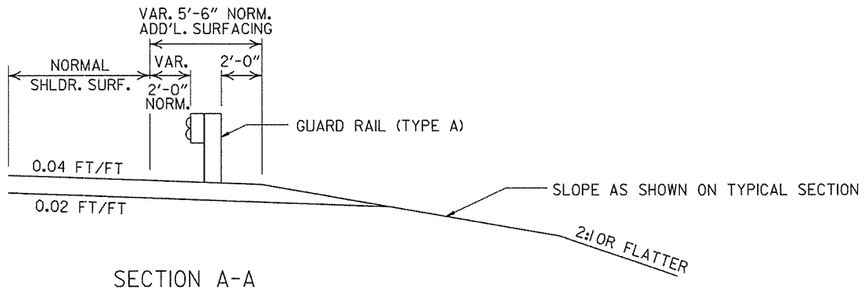
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD 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 4 I.T. 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

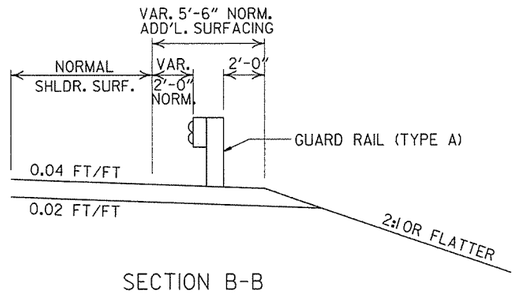
GUARD RAIL DETAILS

STANDARD DRAWING GR-8





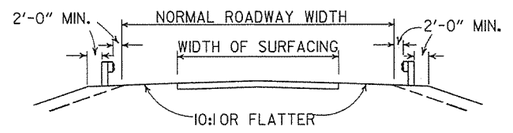
SECTION A-A



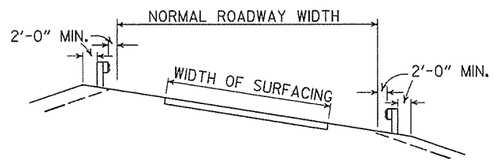
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

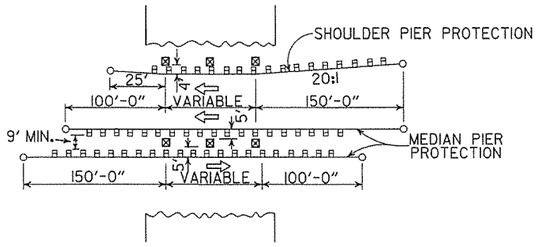


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



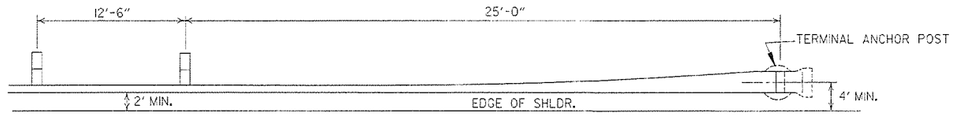
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

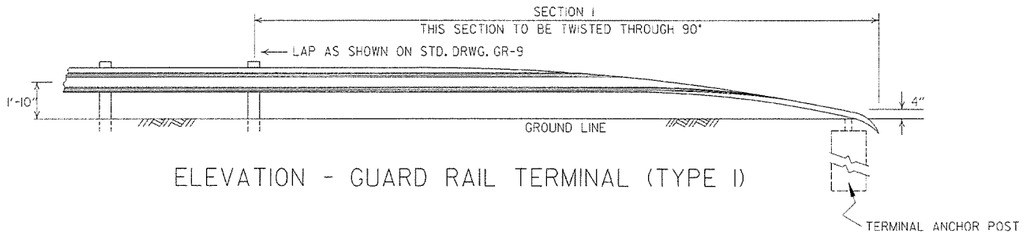
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

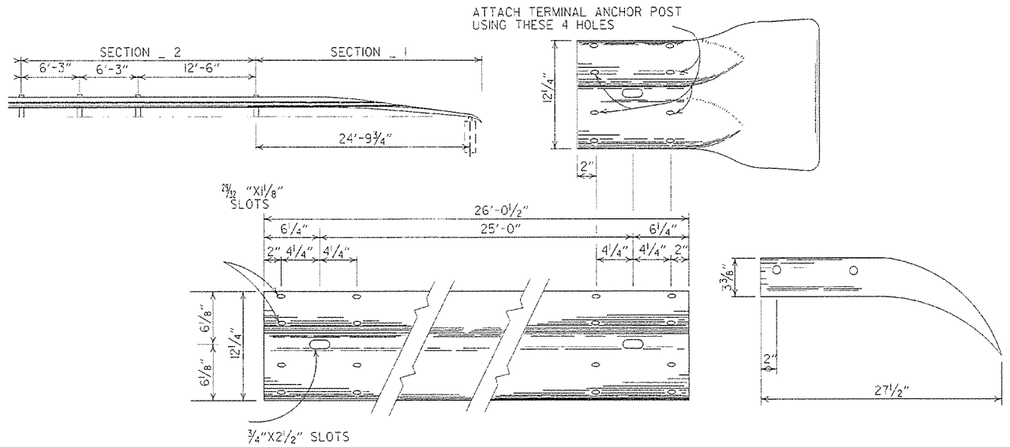


PLAN - GUARD RAIL TERMINAL (TYPE I)



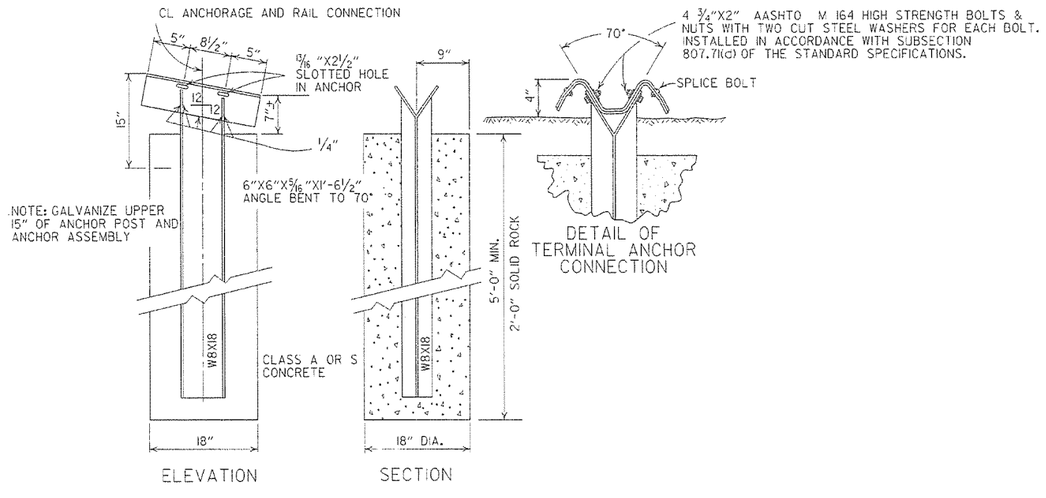
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

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



SECTION 1

TERMINAL SECTION



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

DETAIL OF TERMINAL ANCHOR POST (TYPE I)

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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GRT-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅛	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.

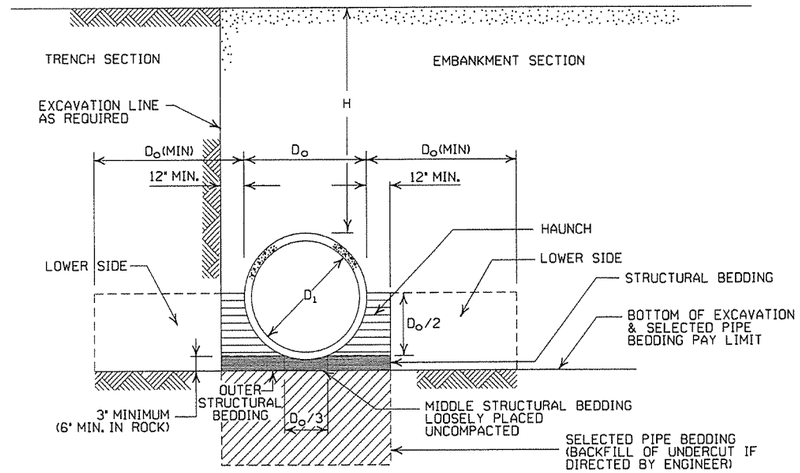
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

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

*SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

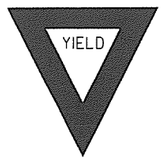
CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

R1-1

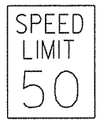
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



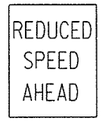
STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



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

R2-5A



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

R2-5C

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

R4-1

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

R4-2

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

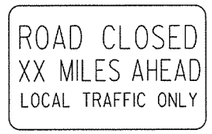
R5-1

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

RII-2

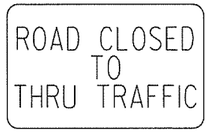
48"X30"

RII-3A



60"X30"

RII-4

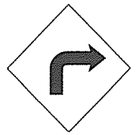


60"X30"

RSP-1

48"X30"

WI-1



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

WI-2

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

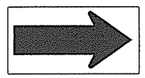
WI-3

STD. 48"X48"

WI-4

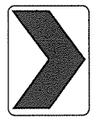
STD. 48"X48"

WI-6



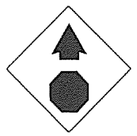
STD. 48"X24"
SPECIAL 60"X30"

WI-8



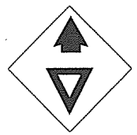
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



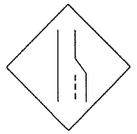
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

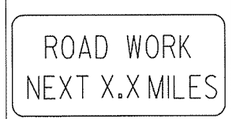
W8-11

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

W8-9

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

G20-1



60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

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

M4-10

48"X18"

R55-1

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.

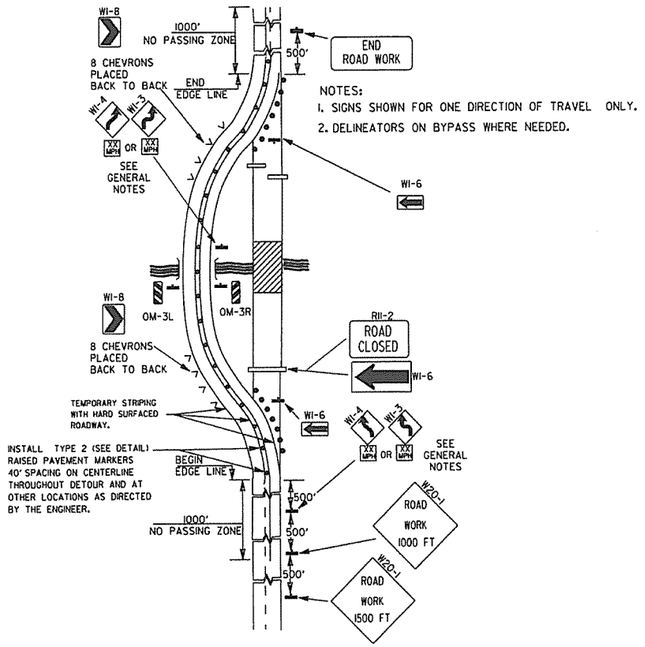
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

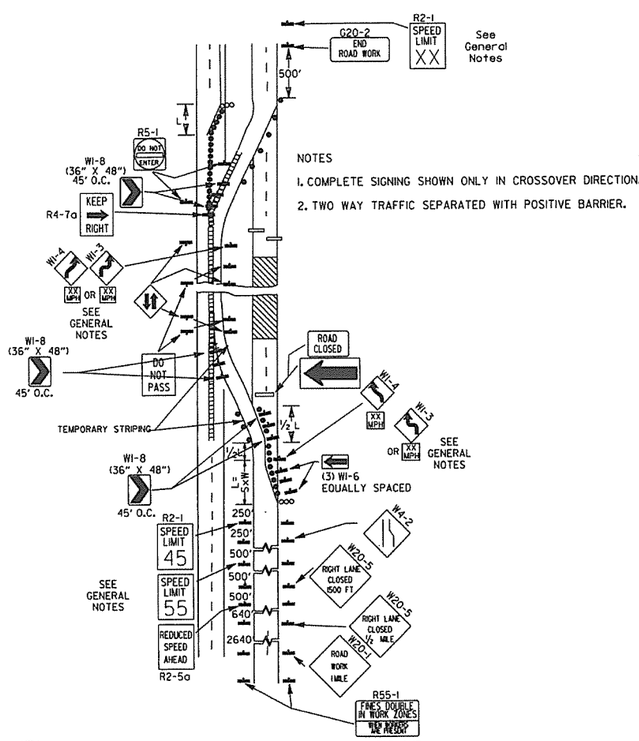
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

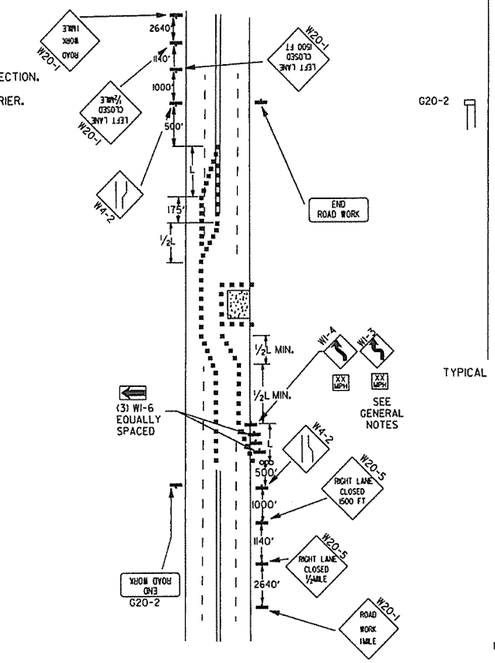
STANDARD DRAWING TC-1



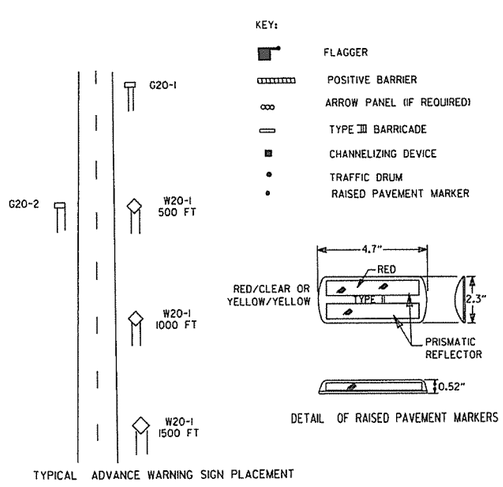
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



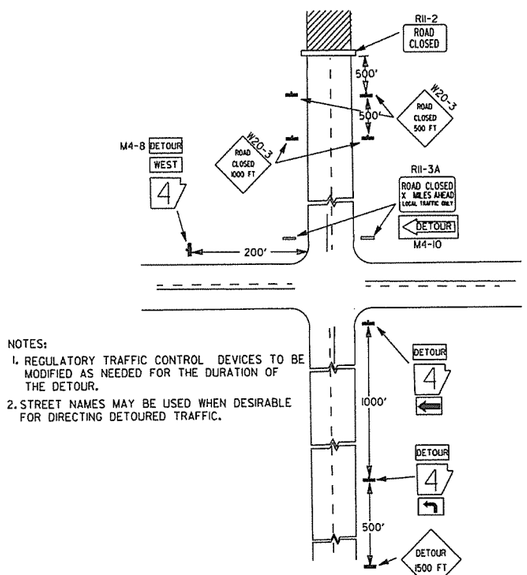
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



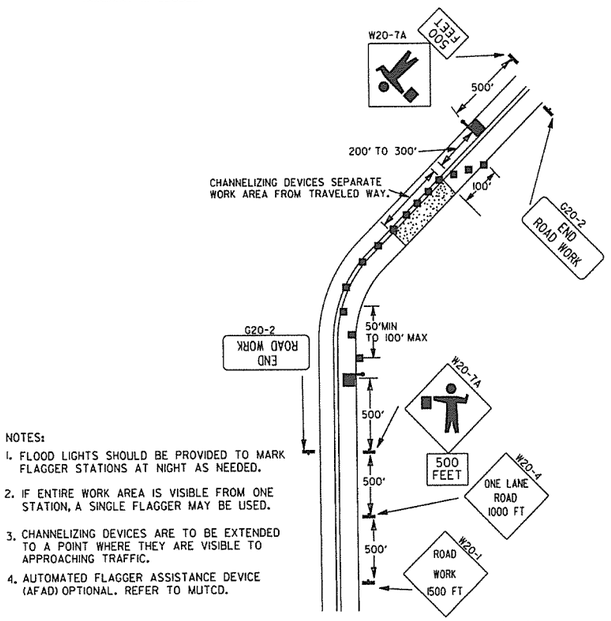
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



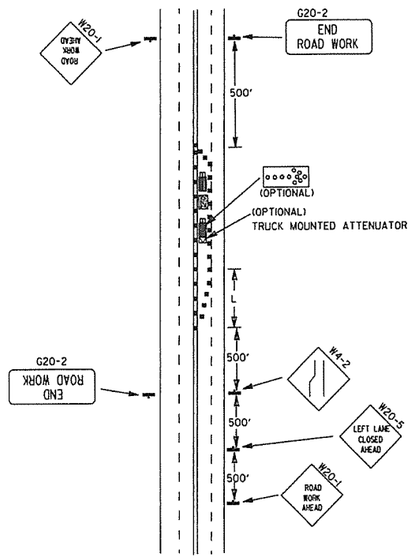
TYPICAL ADVANCE WARNING SIGN PLACEMENT



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



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



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

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:

L= MINIMUM LENGTH OF TAPER.

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

W= WIDTH OF OFFSET.

GENERAL NOTES:

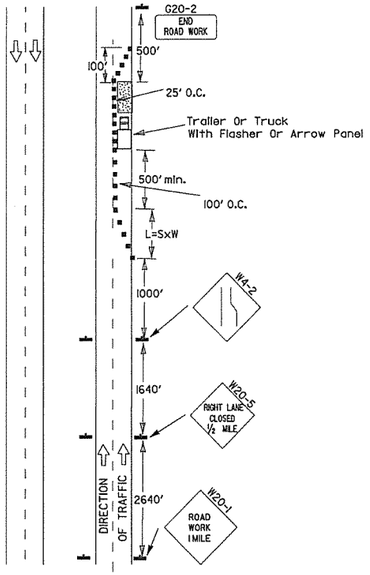
1. ADVISORY SPEED POSTED ON WI-3 OR WI-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED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

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	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 WI-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

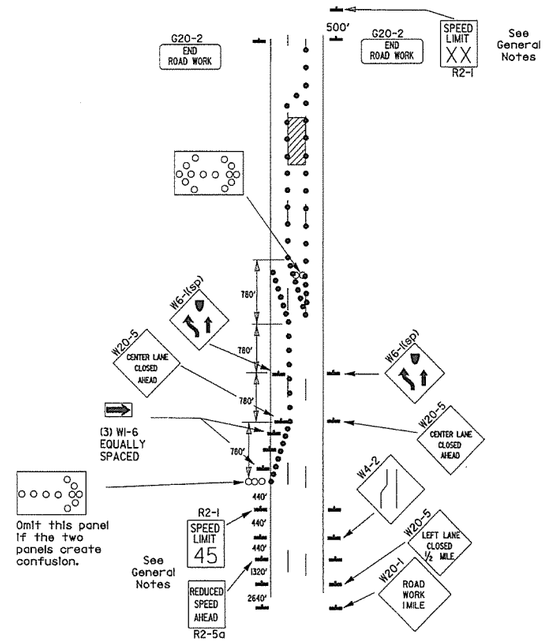
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

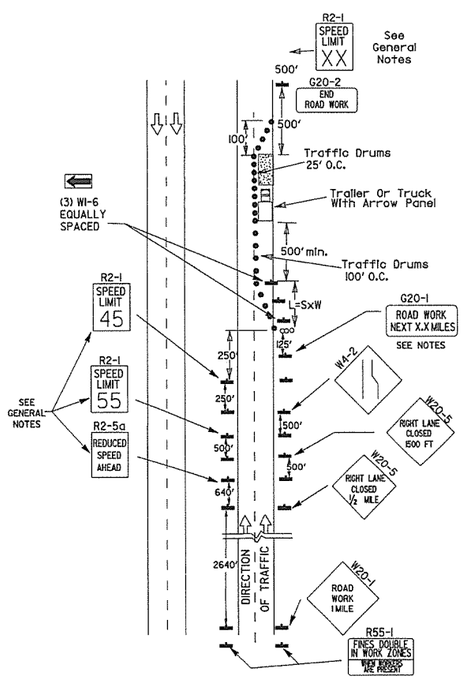
STANDARD DRAWING TC-2



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



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



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

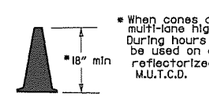
KEY:

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

GENERAL NOTES:

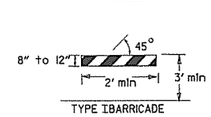
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 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. 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

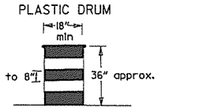


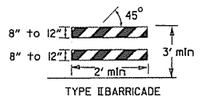
CONES

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

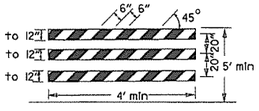


TYPE I BARRICADE



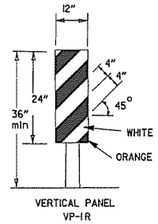


TYPE II BARRICADE



TYPE III BARRICADE

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



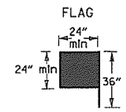
VERTICAL PANEL
VP-1R

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

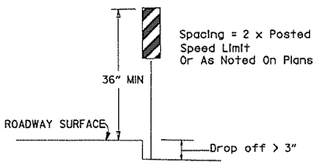
* When shown on the plans concrete barrier will be used.

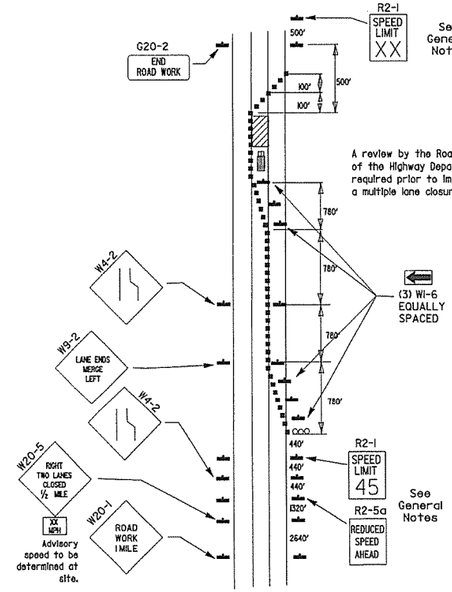
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



Flag shall be of good grade red material

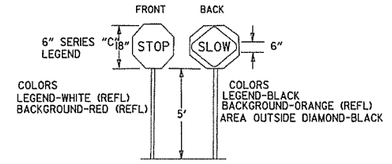
VERTICAL PANEL PLACEMENT





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

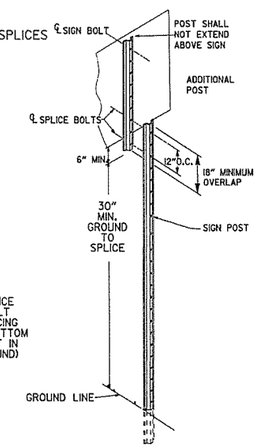
STOP SLOW PADDLE



COLORS
LEGEND-WHITE (REFL)
BACKGROUND-RED (REFL)

COLORS
LEGEND-BLACK
BACKGROUND-ORANGE (REFL)
AREA OUTSIDE DIAMOND-BLACK

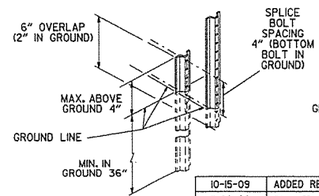
DETAIL OF SPLICES



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

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

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



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

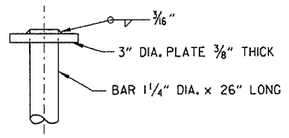
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

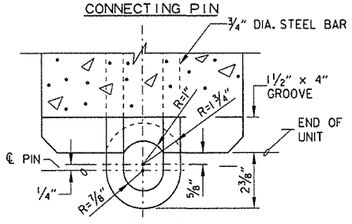
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", 90°, 3 3/8" R, LIFTING HOLE
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 1 1/2", 9", 2'-1 3/8", 4 3/8"

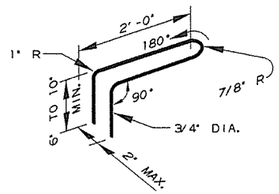


CONNECTING PIN

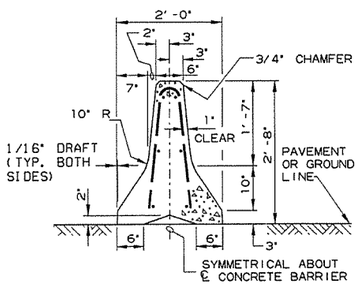


SECTION E-E

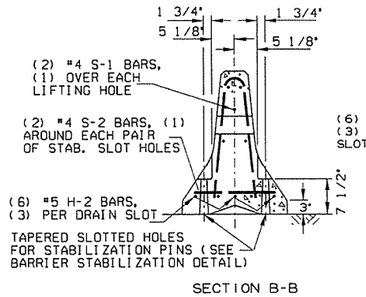
CONNECTION DETAILS



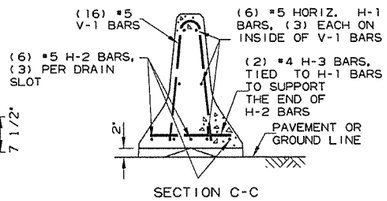
CONNECTION LOOP



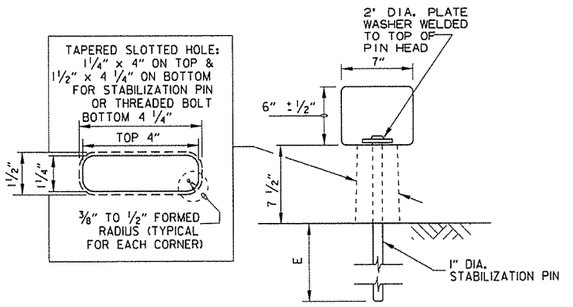
SECTION A-A



SECTION B-B



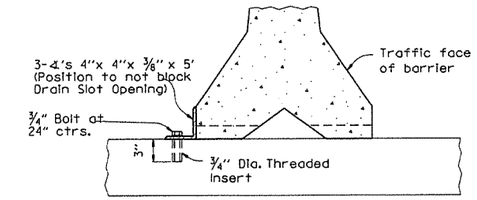
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

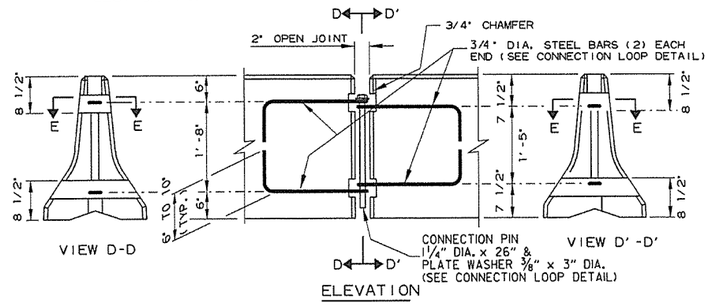
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



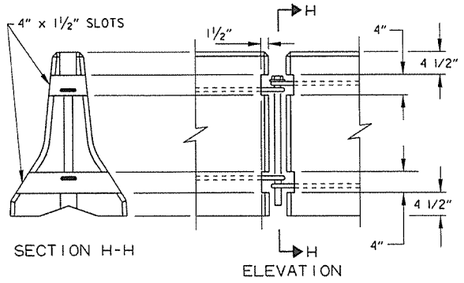
NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the Inserts shall be filled with approved non-shrink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

BARRIER STABILIZATION DETAIL

BRIDGE DECKS



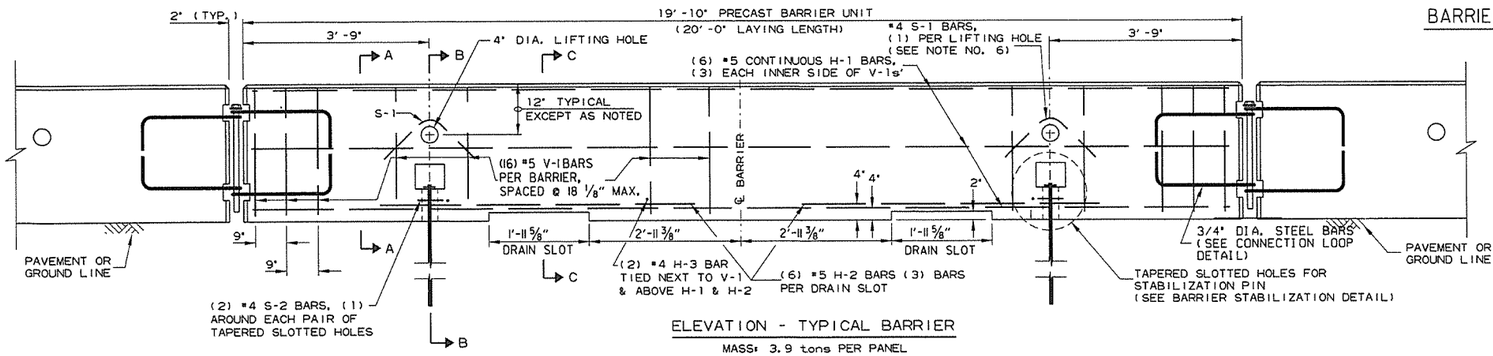
ELEVATION



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.

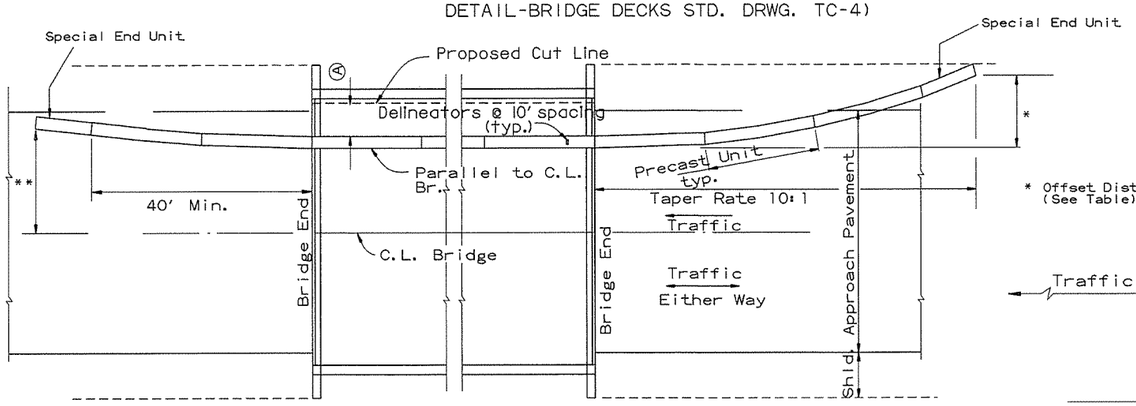
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

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

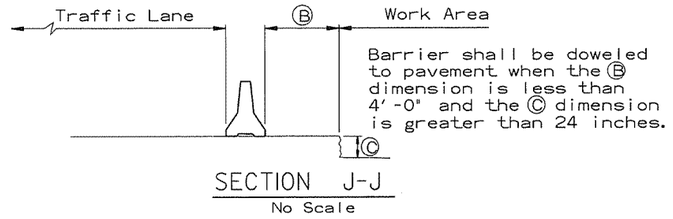


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

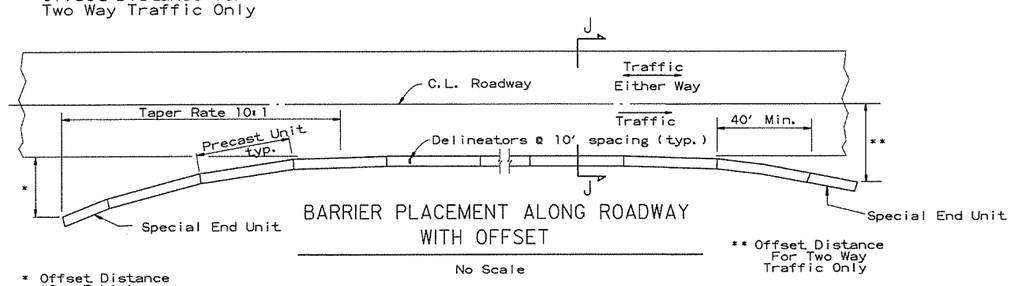
* Offset Distance (See Table)



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

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

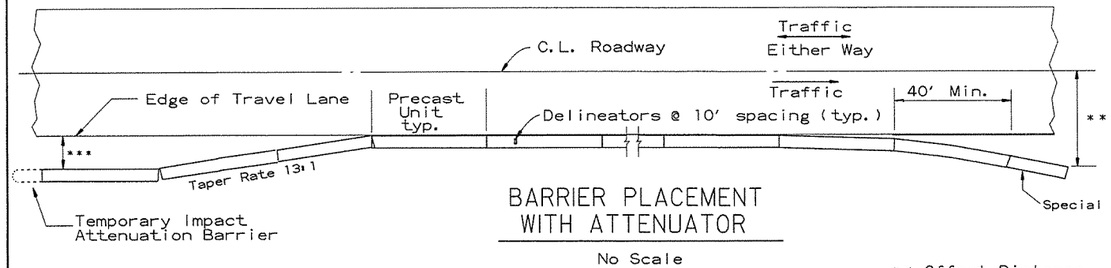
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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

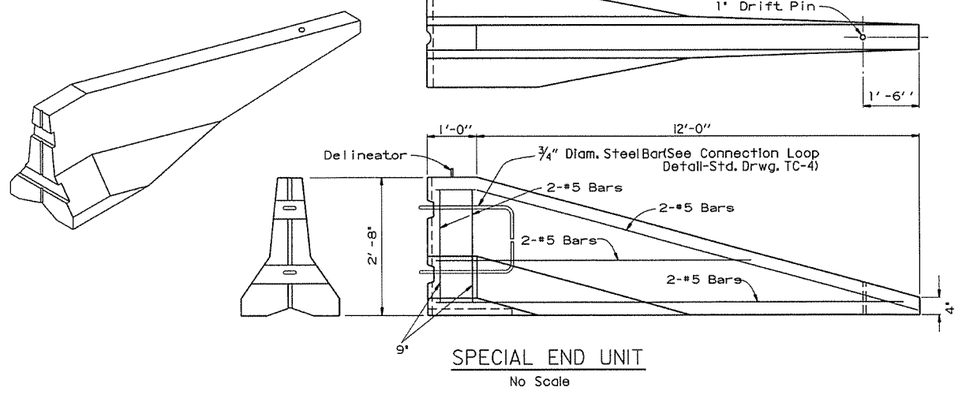


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** 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	

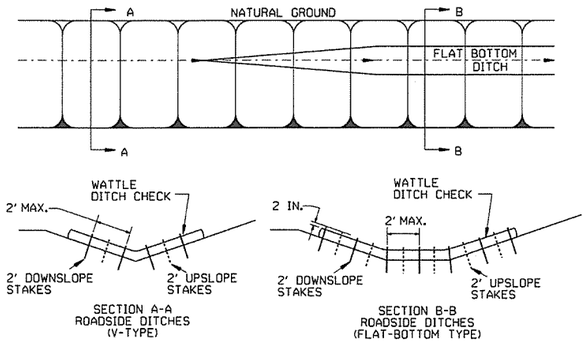
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

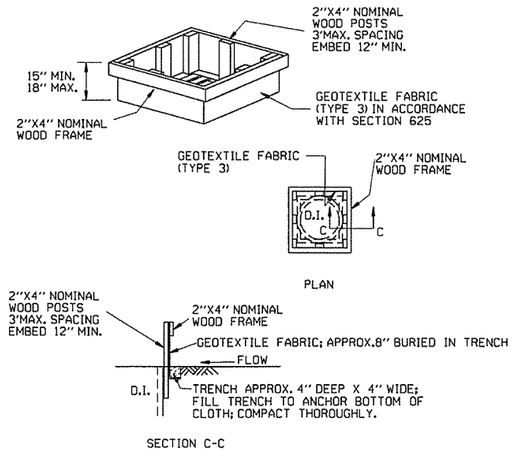
STANDARD DRAWING TC-5

GENERAL NOTES

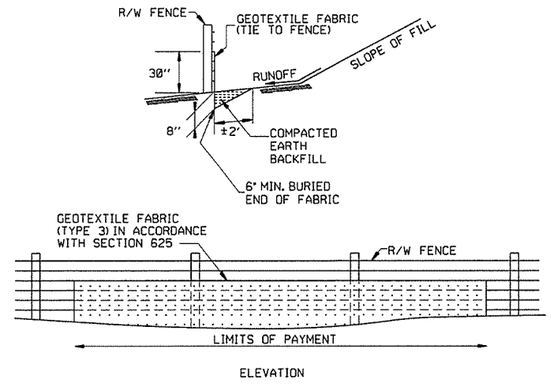
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



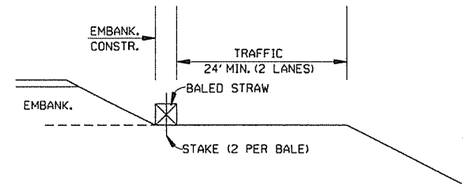
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

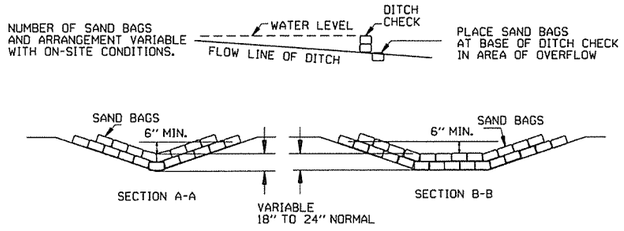
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

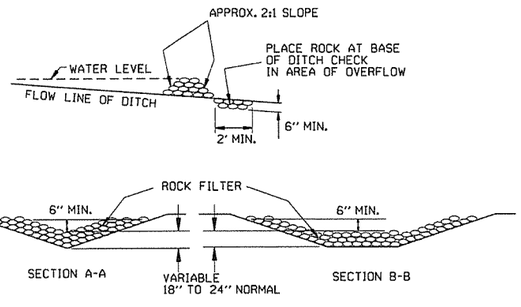
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED 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.



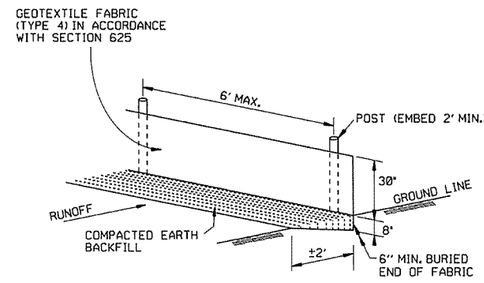
BALED STRAW FILTER BARRIER (E-2)



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