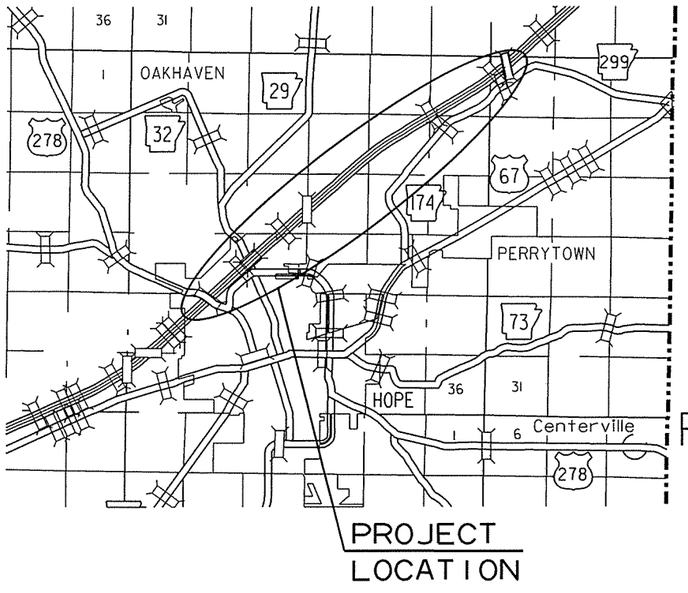
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	1	84
				(2) HWY. 278-HWY. 299 (S)				

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



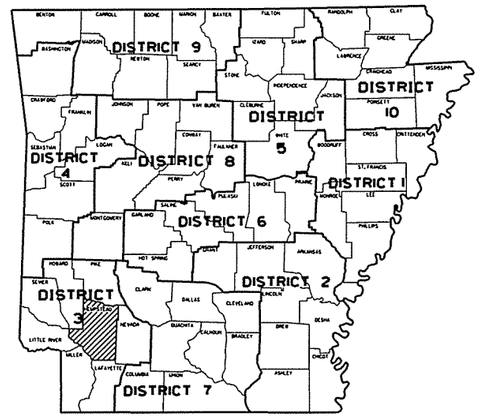
HWY. 278-HWY. 299 (S)

HEMPSTEAD COUNTY

ROUTE 30 SECTION 12

JOB NO. BB0307

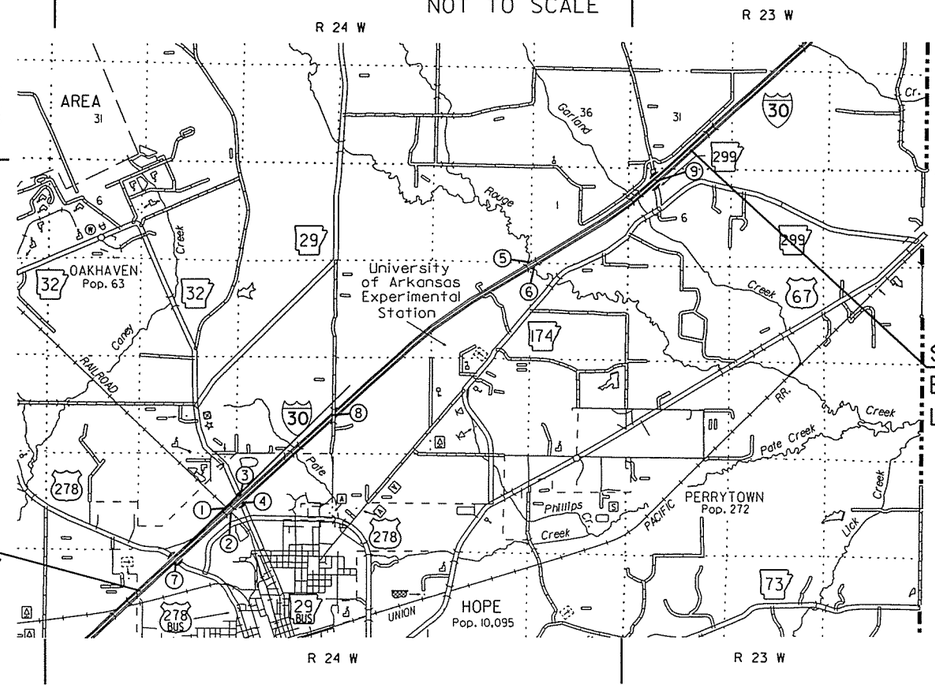
FED. AID PROJ. NHPP-30-1(155)30



ARK. HWY. DIST. NO. 3

VICINITY MAP

NOT TO SCALE



BRIDGE DATA

① STA. 1399+71.53 BR. END
EXISTING 161.13' BRIDGE 5051A
39'-0" CLEAR ROADWAY
STA. 1401+32.66 BR. END
REHABILITATE BRIDGE DECK-HYDRODEMOLITION

② STA. 1399+82.14 BR. END
EXISTING 161.11' BRIDGE 5051B
39'-0" CLEAR ROADWAY
STA. 1401+43.25 BR. END
REHABILITATE BRIDGE DECK-HYDRODEMOLITION

③ STA. 1408+86.64 BR. END
EXISTING 137.21' BRIDGE 5052A
47'-0" CLEAR ROADWAY
STA. 1410+23.85 BR. END
POLYMER OVERLAY

④ STA. 1408+35.00 BR. END
EXISTING 137.21' BRIDGE 5052B
39'-0" CLEAR ROADWAY
STA. 1409+72.21 BR. END
POLYMER OVERLAY

⑤ STA. 1613+35.00 BR. END
EXISTING 140.00' BRIDGE 5054A
40'-0" CLEAR ROADWAY
STA. 1614+75.00 BR. END
POLYMER OVERLAY

⑥ STA. 1613+35.00 BR. END
EXISTING 140.00' BRIDGE 5054B
40'-0" CLEAR ROADWAY
STA. 1614+75.00 BR. END
POLYMER OVERLAY

⑦ HWY. 278
STA. 14+31.42 BR. END
EXISTING 290'-2" BRIDGE 07061
58'-0" CLEAR ROADWAY
STA. 17+21.59 BR. END
RETAIN

⑧ CO. RD. 248
STA. 12+82.83 BR. END
EXISTING 434.34' BRIDGE NO. 5053
27'-11" CLEAR ROADWAY
STA. 17+17.17 BR. END
RETAIN

⑨ HWY. 299
STA. 14+12.96 BR. END
EXISTING 362.42' BRIDGE NO. 5055
27'-11" CLEAR ROADWAY
STA. 17+75.40 BR. END
RETAIN

STA. 1335+00.00
BEGIN JOB BB0307
LOG MILE 29.49

STA. 1715+00.00
END JOB BB0307
LOG MILE 36.69

DESIGN TRAFFIC DATA

DESIGN YEAR	2035
2015 ADT	24,000
2035 ADT	35,000
2035 DHV	3,850
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	57%
DESIGN SPEED	70 MPH

BEGINNING OF PROJECT	MID POINT OF PROJECT	END OF PROJECT
LATITUDE = N 33°39'04"	LATITUDE = N 33°42'42.26"	LATITUDE = N 33°44'27.88"
LONGITUDE = W 93°37'01"	LONGITUDE = W 93°34'11.16"	LONGITUDE = W 93°31'05.90"

GROSS LENGTH OF	PROJECT	38000.00	FEET	OR	7.197	MILES
NET	"	"	ROADWAY	37561.67	"	"	7.114	"
NET	"	"	BRIDGES	438.33	"	"	0.083	"
NET	"	"	PROJECT	38000.00	"	"	7.197	"

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7836
M.E. BANKS

8-31-15

DEPUTY DIRECTOR
AND CHIEF ENGINEER

8/26/15

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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.		BB0307	2	84

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-1-15

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.	DATE
1	TITLE SHEET			
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES			
3 - 4	TYPICAL SECTIONS OF IMPROVEMENT			
5 - 10	SPECIAL DETAILS			
11 - 23	TEMPORARY EROSION CONTROL DETAILS			
24 - 29	MAINTENANCE OF TRAFFIC			
30	PERMANENT PAVEMENT MARKING DETAILS			
31 - 33	QUANTITIES			
34	SCHEDULE OF BRIDGE QUANTITIES	A&B5051, A&B5052, A&B5054	57500	
35	SUMMARY OF QUANTITIES AND REVISIONS			
36 - 54	PLAN SHEETS			
55	DETAILS OF LATEX MODIFIED CONCRETE OVERLAY	A&B5051	57501	
56	LAYOUT OF OVERPASS OVER UNION PACIFIC RAILROAD (FOR INFORMATION ONLY)	A5051	57502	
57	LAYOUT OF OVERPASS OVER UNION PACIFIC RAILROAD (FOR INFORMATION ONLY)	B5051	57503	
58	DETAILS OF SUPERSTRUCTURE UNION PACIFIC RAILROAD OVERPASS (FOR INFORMATION ONLY)	A&B5051	57504	
59	LAYOUT OF BRIDGE S.H. 29 OVERPASS (FOR INFORMATION ONLY)	A5052	57505	
60	LAYOUT OF BRIDGE S.H. 29 OVERPASS (FOR INFORMATION ONLY)	B5052	57506	
61	DETAILS OF SUPERSTRUCTURE S.H. 29 OVERPASS (FOR INFORMATION ONLY)	A&B5052	57507	
62	DETAILS OF SUPERSTRUCTURE S.H. 29 OVERPASS (FOR INFORMATION ONLY)	A&B5052	57508	
63	LAYOUT OF REHABILITATED BRIDGES OVER TERRE ROUGE CREEK (FOR INFORMATION ONLY)	A&B5054	57509	
64	DETAILS FOR REMODELING 28' R.C. SLAB SPANS (SHEET 1 OF 2) (FOR INFORMATION ONLY)	A&B5054	57510	
65	DETAILS FOR REMODELING 28' R.C. SLAB SPANS (SHEET 2 OF 2) (FOR INFORMATION ONLY)	A&B5054	57511	
66	GUARD RAIL DETAILS		GR-8	7-14-10
67	GUARD RAIL DETAILS		GR-8A	7-14-10
68	GUARD RAIL DETAILS		GR-9	4-17-08
69	GUARD RAIL DETAILS		GR-9A	4-17-08
70	GUARD RAIL DETAILS		GR-10	7-14-10
71	GUARD RAIL DETAILS		GR-10A	7-14-10
72	PAVEMENT MARKING DETAILS		PM-1	9-12-13
73	PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS		PM-2	9-12-13
74	DETAILS OF PIPE UNDERDRAIN		PU-1	4-10-03
75	TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC		SE-1	1-09-87
76	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-1	9-02-15
77	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-2	9-02-15
78	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	9-02-15
79	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER		TC-4	2-27-14
80	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER		TC-5	10-15-09
81	TEMPORARY EROSION CONTROL DEVICES		TEC-1	12-15-11
82	TEMPORARY EROSION CONTROL DEVICES		TEC-2	6-02-94
83	TEMPORARY EROSION CONTROL DEVICES		TEC-3	11-03-94
84	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS		TR-1	1-21-00

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
620-1	MULCH COVER
JOB BB0307	BIDDING REQUIREMENTS AND CONDITIONS
JOB BB0307	BRIDGE DECK REPAIR
JOB BB0307	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS
JOB BB0307	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB BB0307	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB BB0307	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB BB0307	EMPLOYMENT REPORTING
JOB BB0307	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB BB0307	HIGH PERFORMANCE PAVEMENT MARKING
JOB BB0307	HYDRODEMOLITION
JOB BB0307	INSURANCE, FLAGGING, AND CONSTRUCTION REQUIREMENTS ON RAILROAD PROPERTY (UPRR)
JOB BB0307	LATEX MODIFIED CONCRETE OVERLAY
JOB BB0307	MAINTENANCE OF TRAFFIC
JOB BB0307	MANDATORY ELECTRONIC CONTRACT
JOB BB0307	MANAGEMENT OF HYDRODEMOLITION WASTEWATER
JOB BB0307	NESTING SITES OF MIGRATORY BIRDS
JOB BB0307	PARTNERING REQUIREMENTS
JOB BB0307	PERCENT WITHIN LIMITS
JOB BB0307	POLYMER OVERLAY
JOB BB0307	PORTABLE CHANGEABLE MESSAGE SIGNS (TRUCK MOUNTED)
JOB BB0307	REMOVAL AND DISPOSAL OF GUARDRAIL
JOB BB0307	REMOVAL AND DISPOSAL OF PLOWABLE PAVEMENT MARKER
JOB BB0307	SEQUENCE OF CONSTRUCTION
JOB BB0307	SITE USE (A+C METHOD)
JOB BB0307	SPECIAL SAFETY REQUIREMENTS FOR BRIDGE NOS. A&B5051
JOB BB0307	STORM WATER POLLUTION PREVENTION PLAN
JOB BB0307	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB BB0307	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB BB0307	UTILITY ADJUSTMENTS
JOB BB0307	VALUE ENGINEERING
JOB BB0307	WARM MIX ASPHALT

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 TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
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. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY NECESSARY SWEEPING OR CLEANING OF THE EXISTING ASPHALT PAVEMENT PRIOR TO THE PLACEMENT OF ACHM SURFACE COURSE.
7. THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING ANY BUILD UP OF DIRT OR DEBRIS ON SHOULDER PRIOR TO PLACEMENT OF ACHM SURFACE COURSE.
8. THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING ANY GRASS ON THE SHOULDER PRIOR TO PLACEMENT OF ACHM SURFACE COURSE.

9/1/15

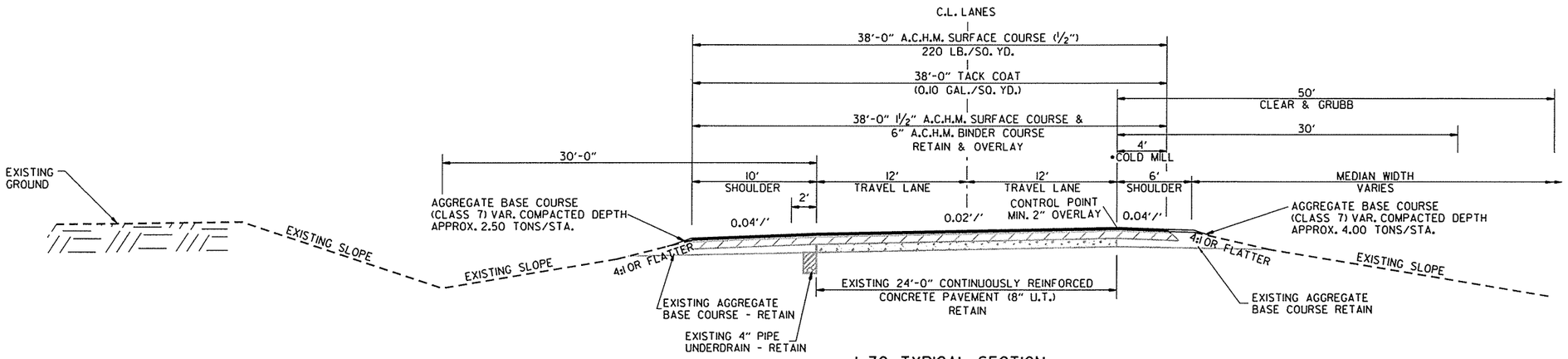
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INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES

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				6	ARK.			
				JOB NO.		BB0307	3	84

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

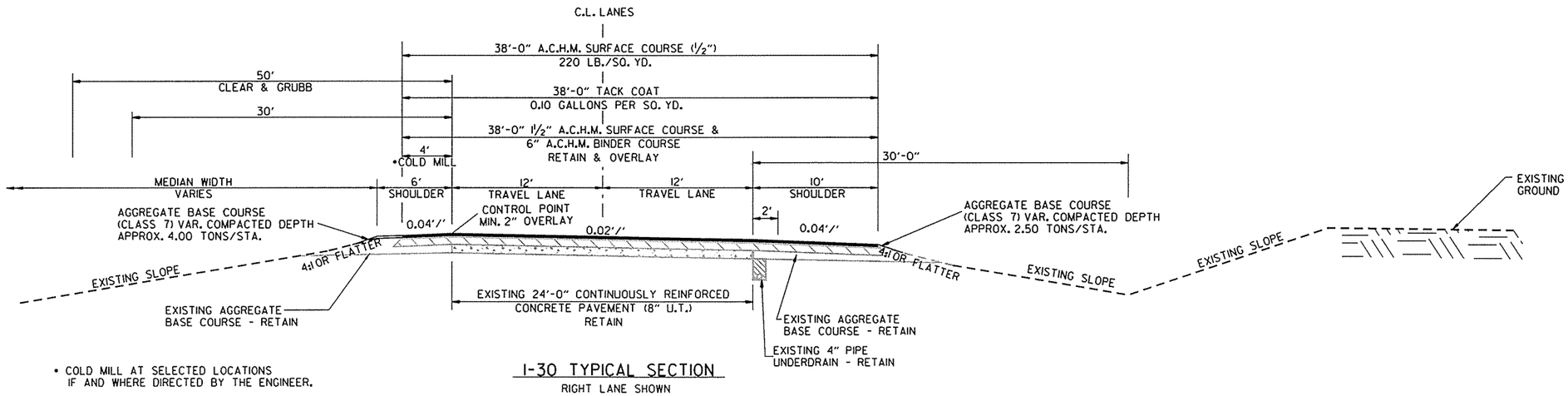


I-30 TYPICAL SECTION

LEFT LANE SHOWN

STA. 1335+00.00 TO STA. 1398+43.87
STA. 1402+58.85 TO STA. 1407+59.93
STA. 1411+43.87 TO STA. 1475+33.00
STA. 1482+33.00 TO STA. 1612+09.07
STA. 1615+97.89 TO STA. 1714+00.00

• COLD MILL AT SELECTED LOCATIONS
IF AND WHERE DIRECTED BY THE ENGINEER.



I-30 TYPICAL SECTION

RIGHT LANE SHOWN

STA. 1335+00.00 TO STA. 1398+54.75
STA. 1402+68.84 TO STA. 1407+10.27
STA. 1410+94.33 TO STA. 1612+09.07
STA. 1615+97.89 TO STA. 1714+00.00

• COLD MILL AT SELECTED LOCATIONS
IF AND WHERE DIRECTED BY THE ENGINEER.

8/20/15

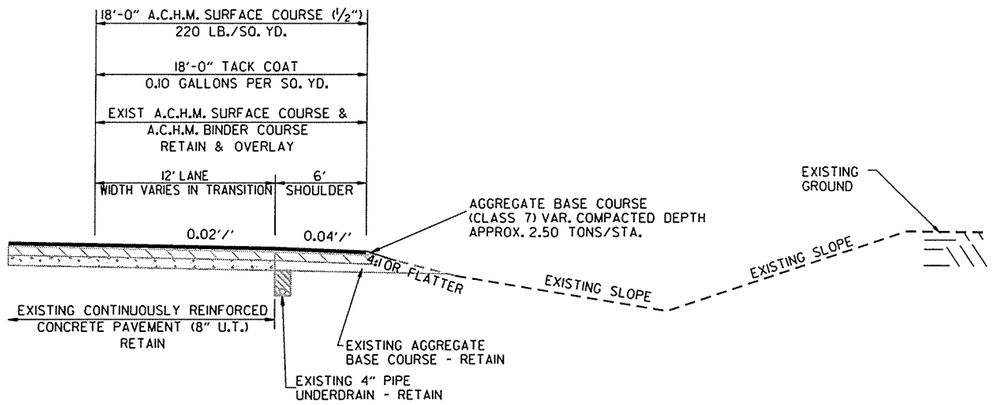
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TYPICAL SECTIONS OF IMPROVEMENT

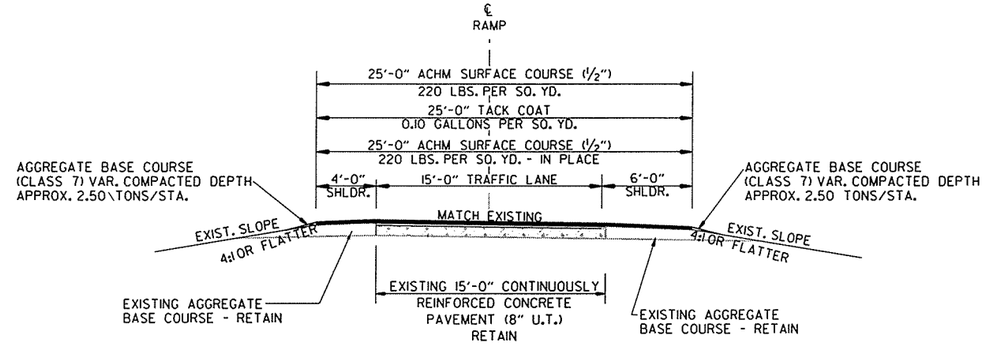
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(2) TYPICAL SECTIONS OF IMPROVEMENT

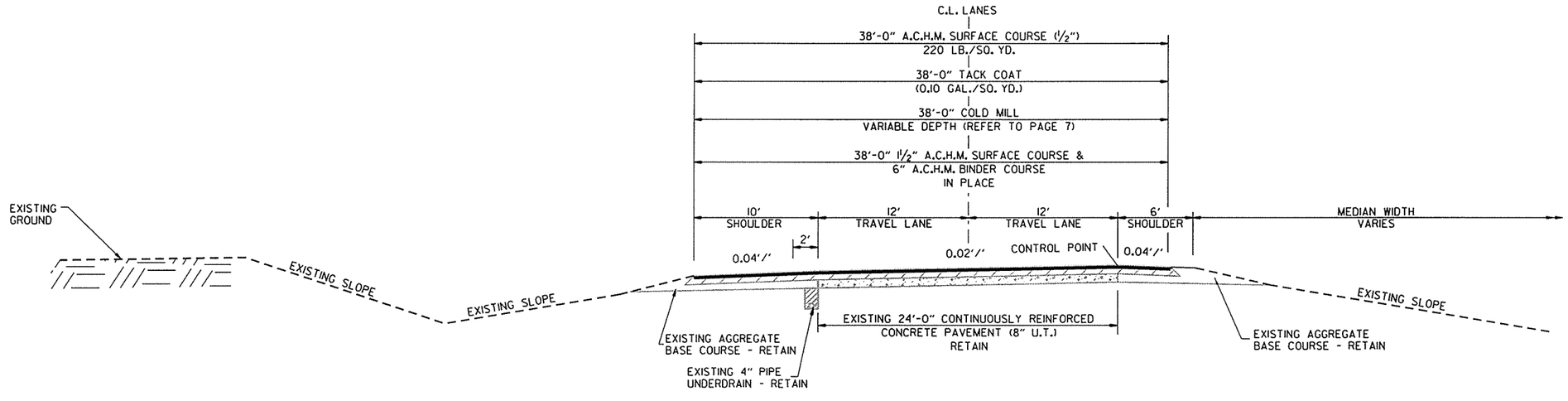
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



OVERLAY - ACCELERATION/DECELERATION LANES
(SHOWN IN DIRECTION OF TRAFFIC)



TYPICAL RAMP - MILL & INLAY
(SHOWN IN DIRECTION OF TRAFFIC)



I-30 TYPICAL SECTION - MILL & OVERLAY
LEFT LANE SHOWN

STA. 1475+33.00 TO STA. 1482+33.00 LT. LANE
STA. 1692+46.00 TO STA. 1699+46.00 RT. LANE

8/20/15

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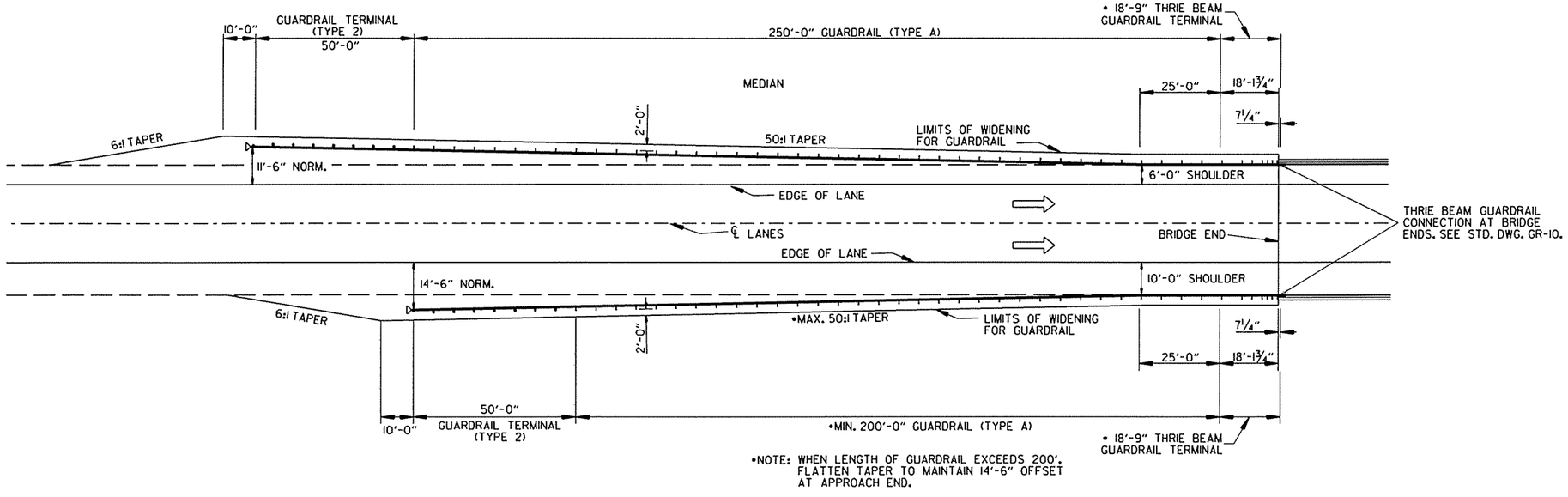
TYPICAL SECTIONS OF IMPROVEMENT

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(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

• THE CONTRACTOR SHALL DRILL 1" HOLES FOR THE NEW THRIE BEAM CONNECTION BOLTS IN THE EXISTING TRANSITION RAIL. CARE SHALL BE EXERCISED TO AVOID THE EXISTING REINFORCING STEEL IN THE RAIL. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED INCLUDED IN THE VARIOUS CONTRACT ITEMS. SEE DETAIL OF GUARDRAIL CONNECTION AT BRIDGE END AND STANDARD DRAWING GR-10 FOR ADDITIONAL DETAILS.



•NOTE: WHEN LENGTH OF GUARDRAIL EXCEEDS 200', FLATTEN TAPER TO MAINTAIN 14'-6" OFFSET AT APPROACH END.

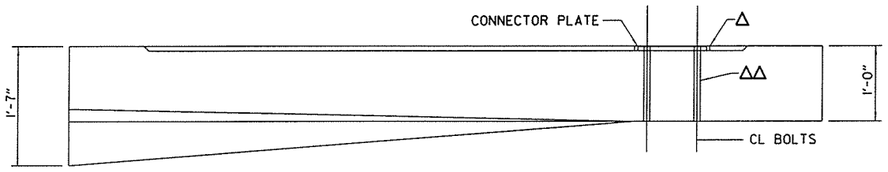
TYPICAL LAYOUT OF GUARDRAIL AT BRIDGE ENDS

8/25/15

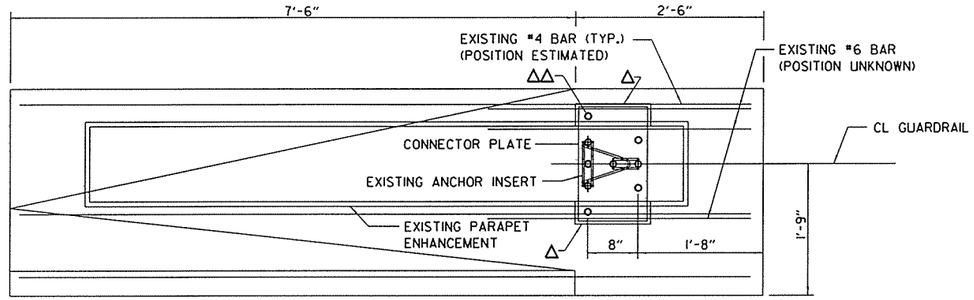
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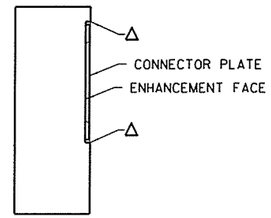
(2) SPECIAL DETAILS



PLAN OF GUARDRAIL CONNECTION AT BRIDGE END



ELEVATION OF GUARDRAIL CONNECTION AT BRIDGE END

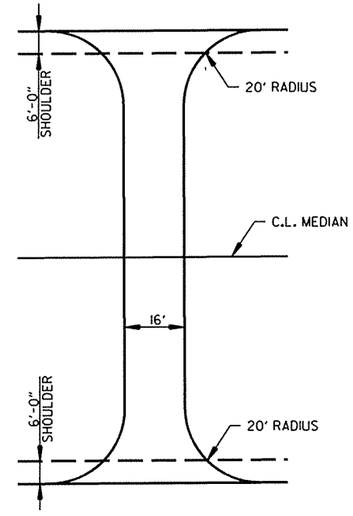


END VIEW
(SHOWN @ CONNECTOR PLATE)

△ SAW CUT, CHIP OUT CONCRETE, & GROUT AS NEEDED TO MAKE CONNECTOR PLATE FLUSH WITH ENHANCEMENT FACE.

△△ DRILL 5 - 1" Ø HOLES IN EXISTING RAIL TO ACCOMMODATE NEW THRIE BEAM CONNECTION.

NOTE:
ALL WORK ASSOCIATED WITH NEW THRIE BEAM CONNECTIONS WILL BE SUBSIDIARY TO THRIE BEAM GUARDRAIL TERMINAL.



DETAIL FOR PAVED MEDIAN CROSSING

STA. 1582+90

NOTE:
MEDIAN CROSSING TO BE OVERLAID WITH ACHM SURFACE COURSE (1/2") - 220 LB./SQ. YD. AS SHOWN IN MAIN LANE TYPICAL SECTIONS.

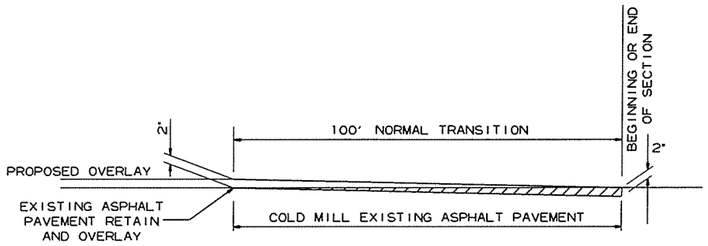
STATE OF ARKANSAS
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8/20/15

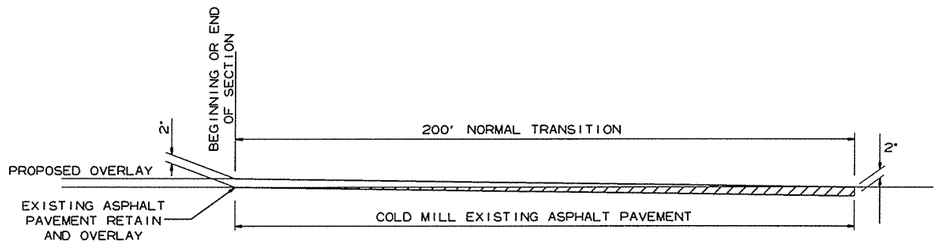
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(2) SPECIAL DETAILS

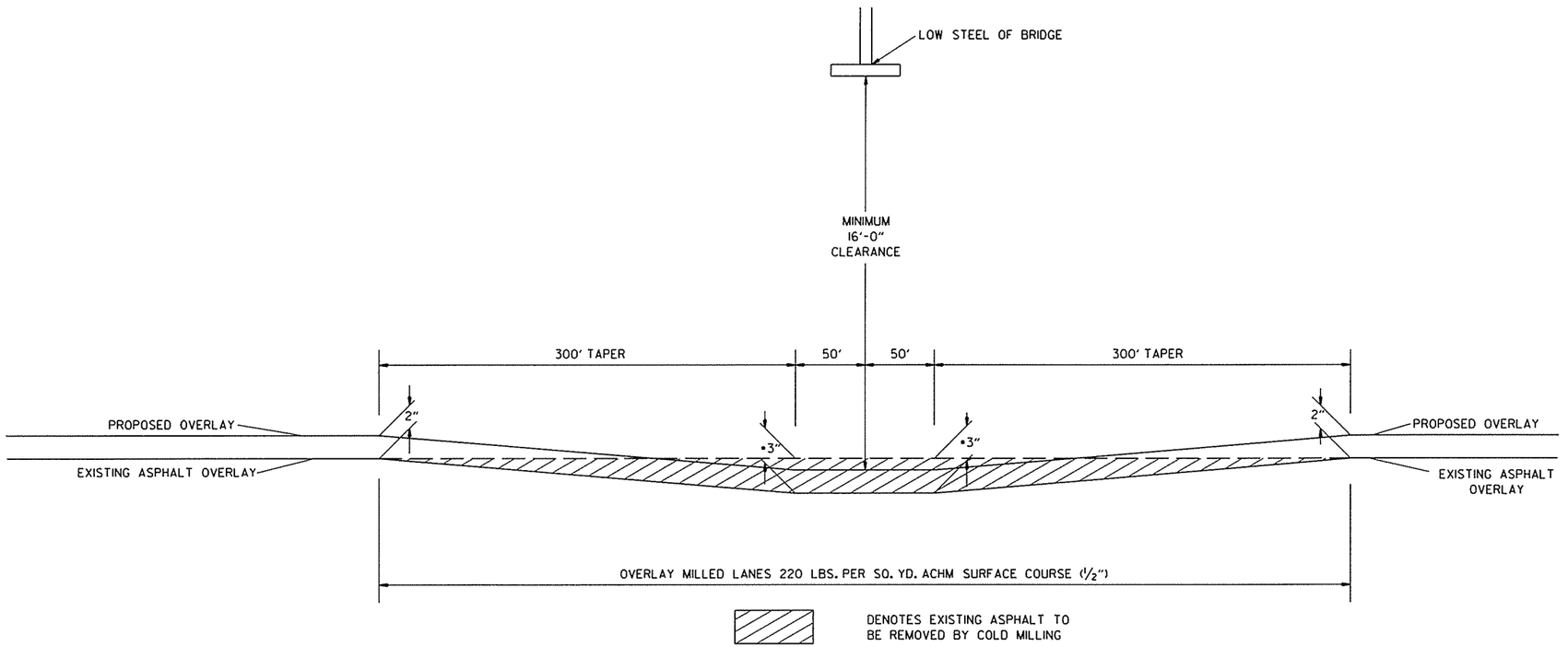


DETAIL FOR TRANSITIONS - RAMPS



DETAIL FOR TRANSITIONS - MAIN LANES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



• DEPTH SHOWN ESTIMATED. ACTUAL DEPTH TO BE DETERMINED IN THE FIELD. PAYMENT FOR MILLING OF EXISTING CONCRETE PAVEMENT, IF REQUIRED, WILL BE INCLUDED IN THE PRICE BID FOR COLD MILLING ASPHALT PAVEMENT. CONCRETE PAVEMENT SHALL NOT BE MILLED MORE THAN 1" DEEP.

PROFILE
LEFT LANES AT CO. RD. 248 (BRIDGE NO. 5053)
RIGHT LANES AT HWY. 299 (BRIDGE NO. 5055)

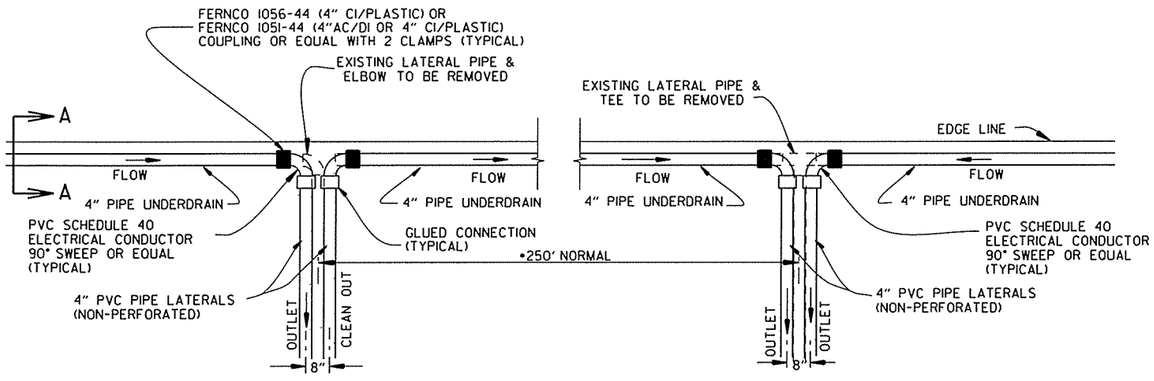
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				JOB NO.		BB0307	8	84

(2) SPECIAL DETAILS

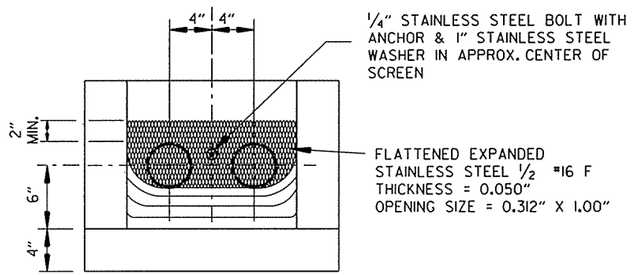
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



NOTE:
PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE. UNDERDRAIN OUTLET PROTECTORS SHALL BE INSTALLED ON NEW LATERALS. (REFER TO STD. DWG. PU-1.)

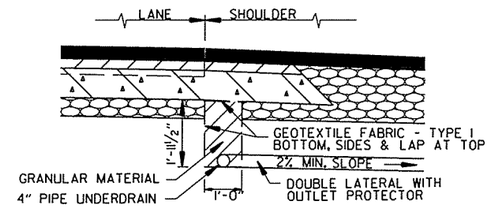
NOTE:
LATERALS SHALL BE INSTALLED AT ALL SAGS AND 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

PLAN DETAIL OF PIPE UNDERDRAIN LATERALS



DETAIL OF RODENT SCREEN

NOTE: IN LIEU OF LAPPING GEOTEXTILE FABRIC, THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, UTILIZE AN ALTERNATE METHOD FOR PROVIDING A POSITIVE CLOSURE.



MAIN LANES - SHOULDER

NOTES FOR PIPE UNDERDRAINS

1. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."
2. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
3. 4" PIPE UNDERDRAINS SHALL BE PLACED ON THE LOW SIDE OF SUPERELEVATED ROADWAYS AS SHOWN ON THE TYPICAL SECTIONS. 4" PIPE UNDERDRAINS SHALL BE CONNECTED TO MEDIAN DROP INLETS WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (WHITE, 4", TYPE III) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC.
5. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAINS OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
6. THE RODENT SCREEN SHOWN HEREON SHALL BE USED IN LIEU OF THE WIRE MESH RODENT SCREEN SHOWN IN STANDARD DRAWING PU-1. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR " 4" PIPE UNDERDRAINS."
7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED, THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1) INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2) INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE. PAYMENT SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS".

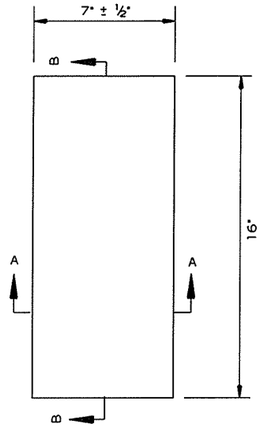
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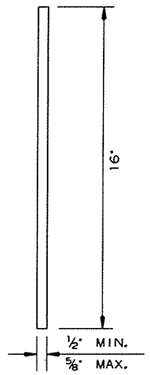
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				JOB NO.		BB0307	9	84

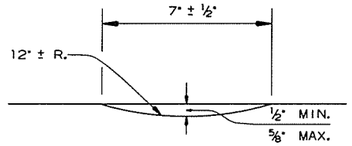
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PLAN

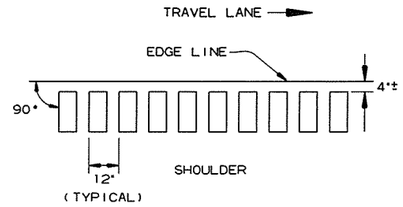


SECTION B-B



SECTION A-A

DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS

LEFT OR RIGHT SHOULDER

PLAN VIEW

NOTES:

1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE.
2. THE ½" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

8/10/15

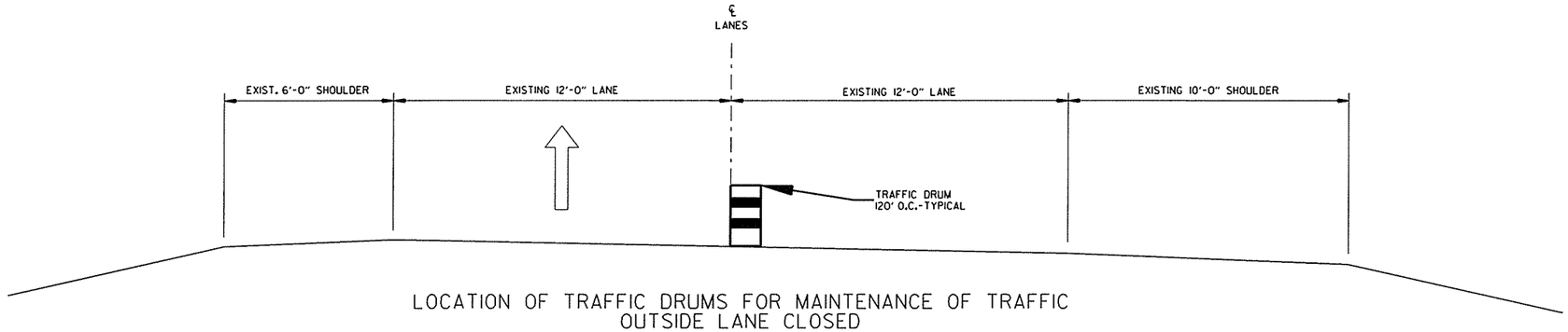
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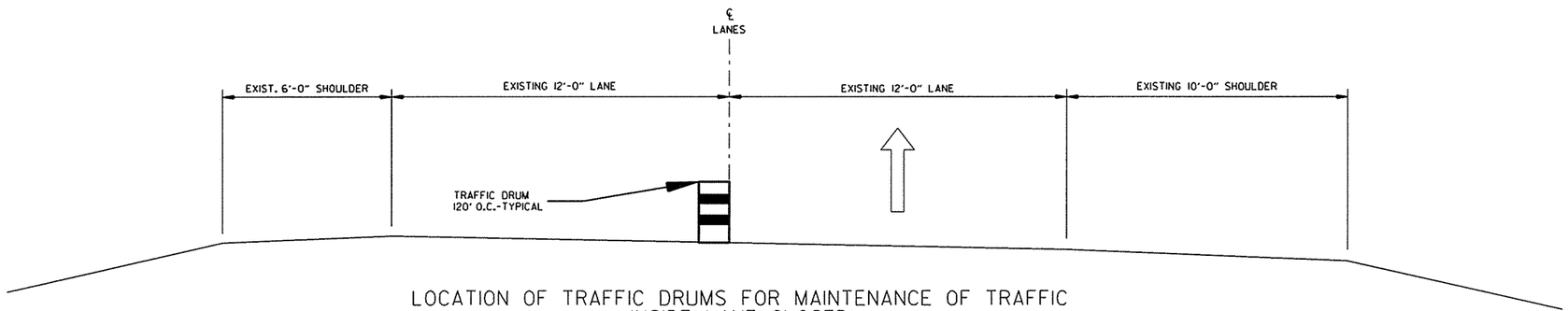
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(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



LOCATION OF TRAFFIC DRUMS FOR MAINTENANCE OF TRAFFIC
OUTSIDE LANE CLOSED
(SHOWN IN DIRECTION OF TRAFFIC)



LOCATION OF TRAFFIC DRUMS FOR MAINTENANCE OF TRAFFIC
INSIDE LANE CLOSED
(SHOWN IN DIRECTION OF TRAFFIC)

8/10/15

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(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

STA. 1335+00.00
BEGIN JOB BB0307
LOG MILE 29.49

POB 1330+00.00
1330
1335
E-5
1340
N 49°45' 19" E
1345
P.I. 1342+00.00
N 49°45' 19" E
1345
1342+04.78
1337+95.06

LEGEND

E-5 SAND BAG DITCH CHECKS

E-7 DROP INLET SILT FENCE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

P.C. 1349+
1350
N 49°45' 19" E
1345
1350
P.I. 1351+94.39
E-5
E-5
E-5
E-5
N 49°45' 19" E
1355
1360
1345
P.I. 1349+82.95
1350
N 55°27' 49" E
1348+24.07

7/20/15

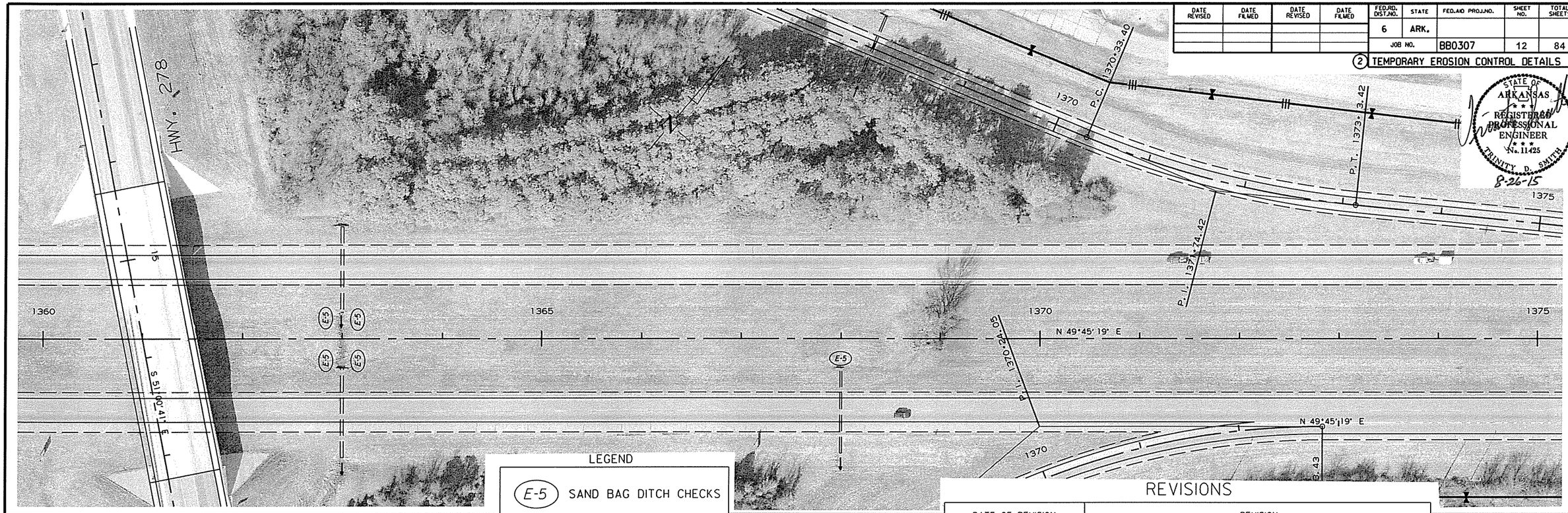
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(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



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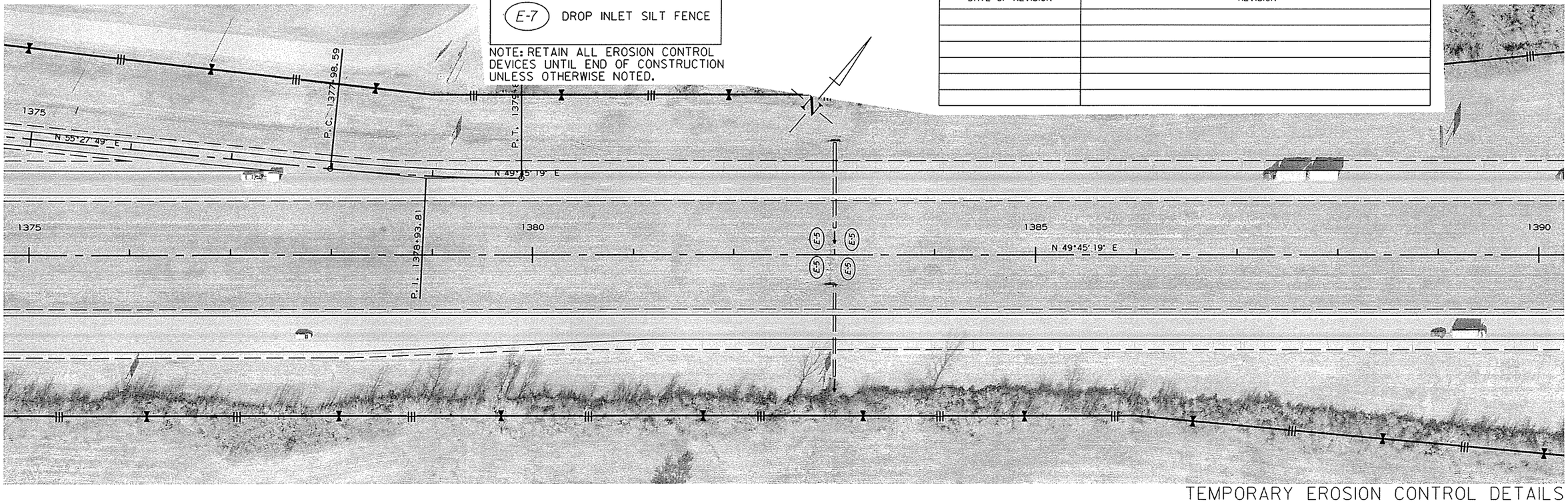
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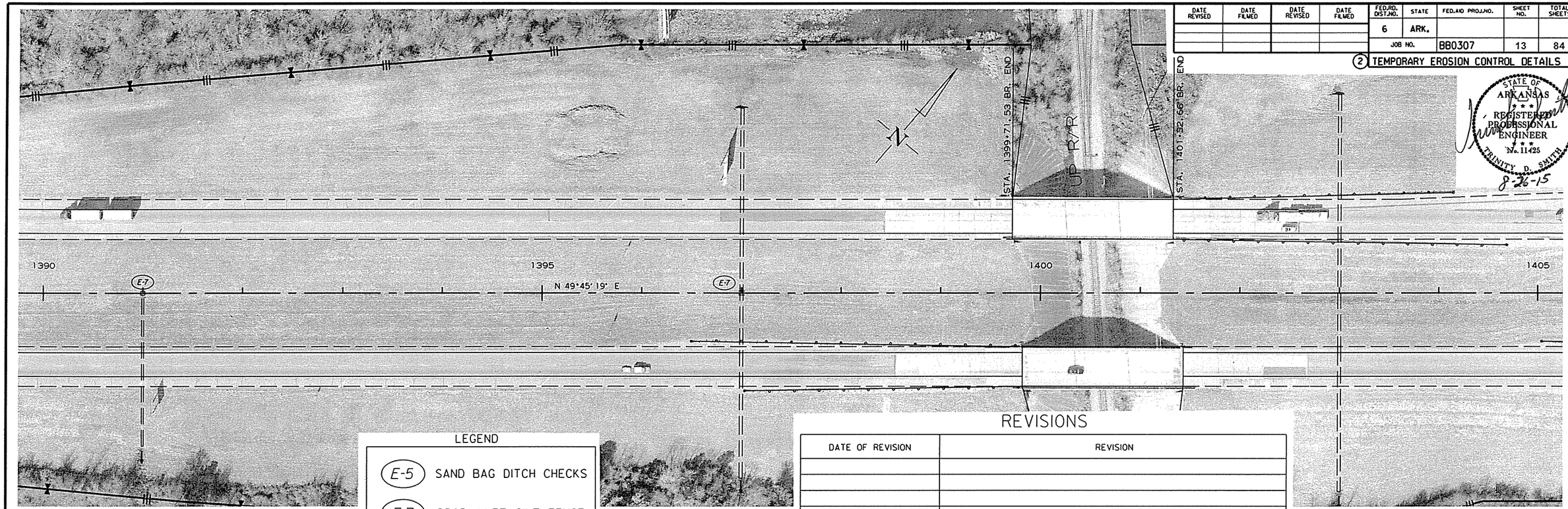
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REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



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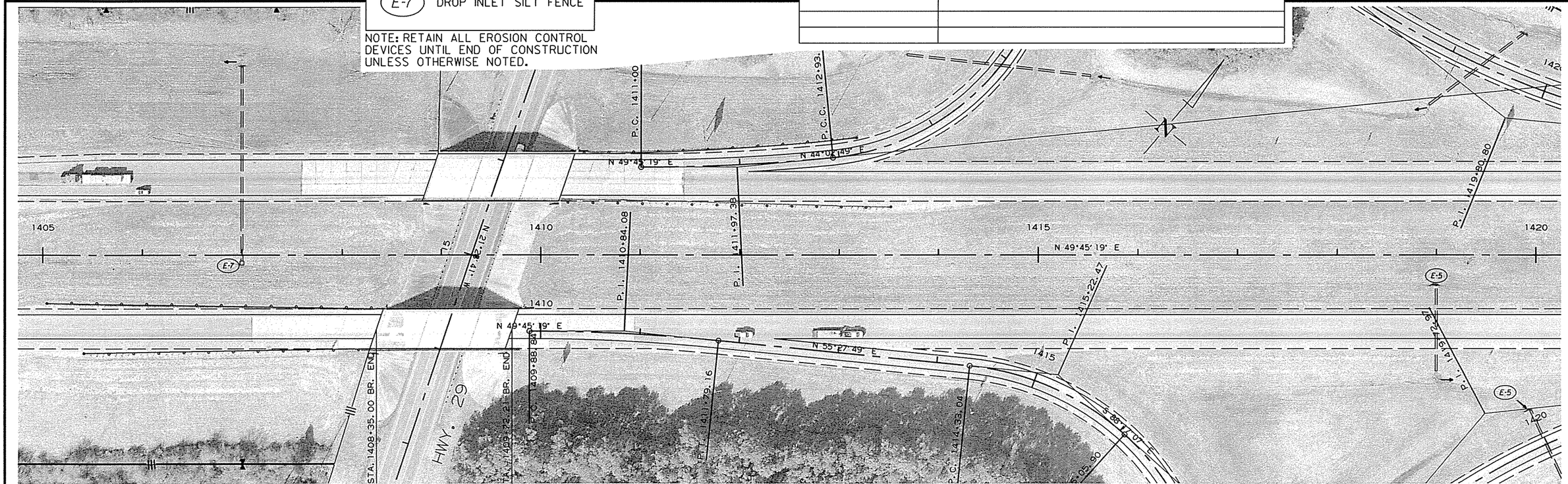
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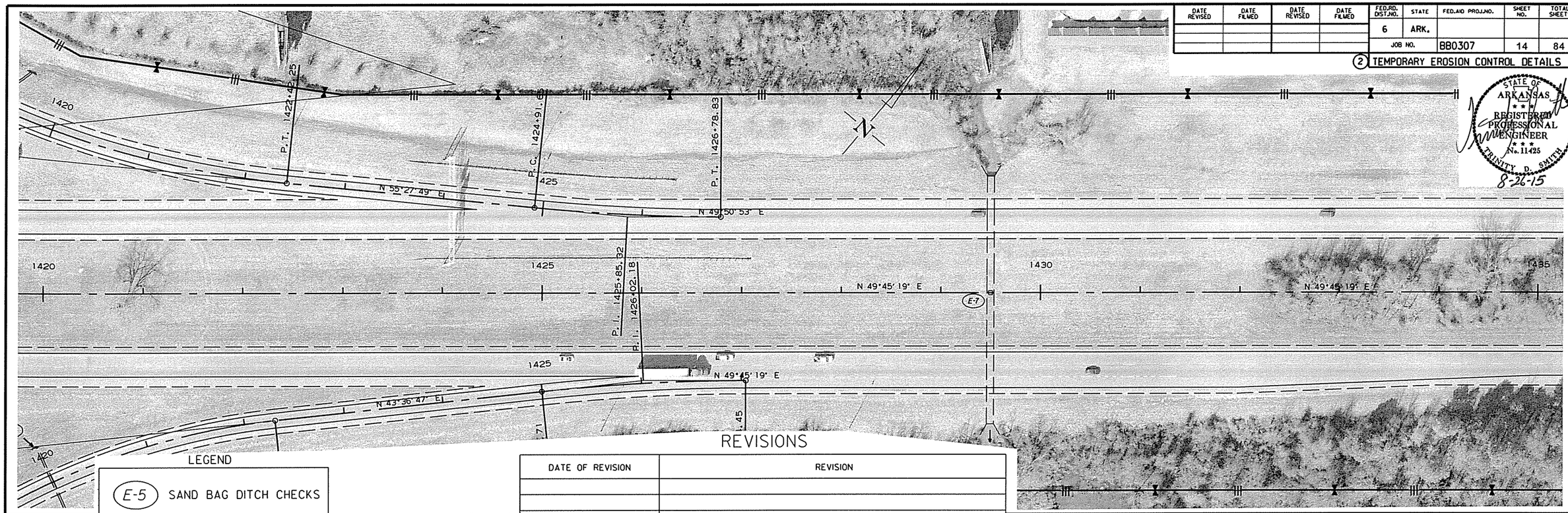
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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



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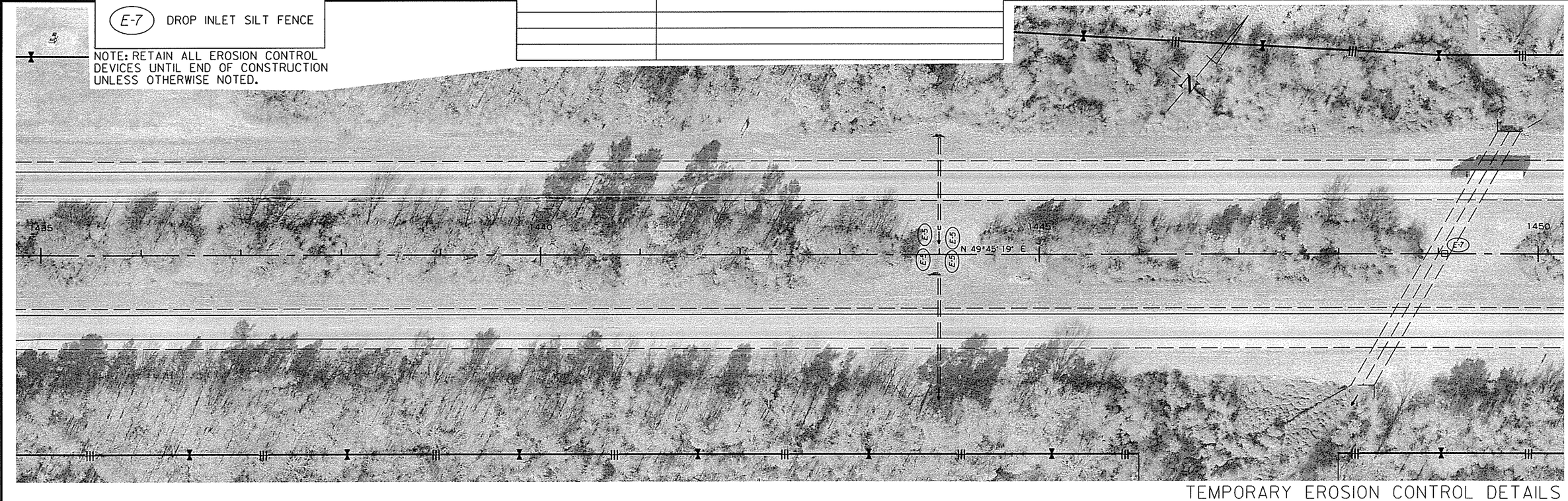
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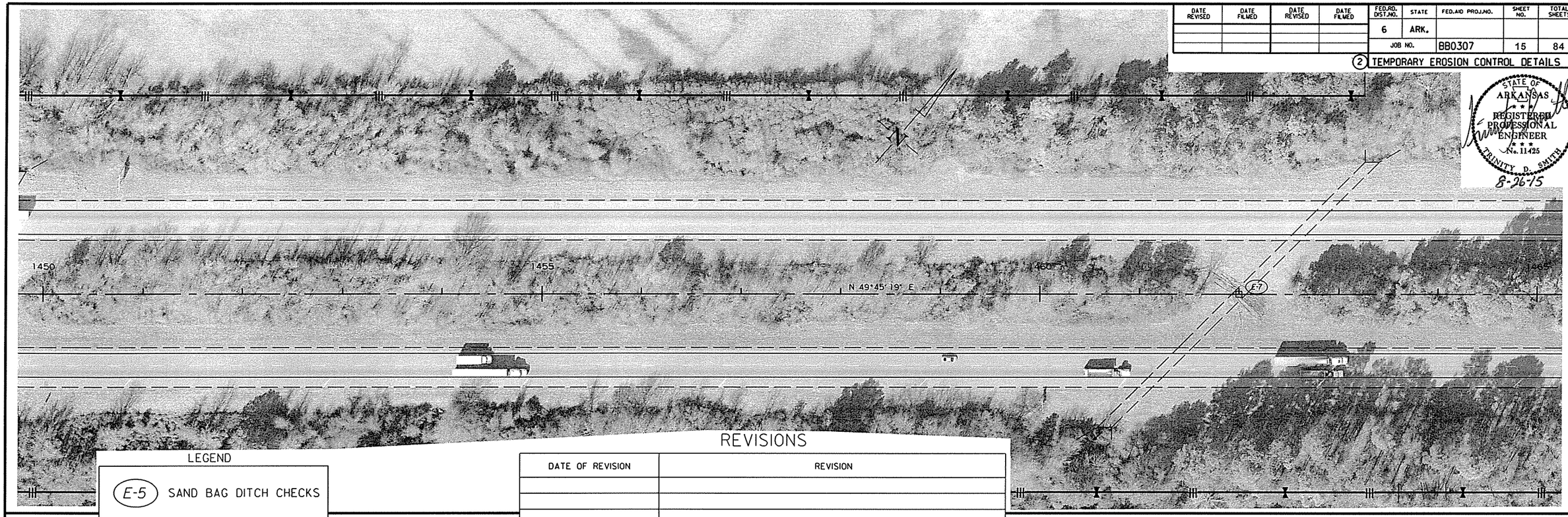
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TRINITY D. SMITH
8-26-15



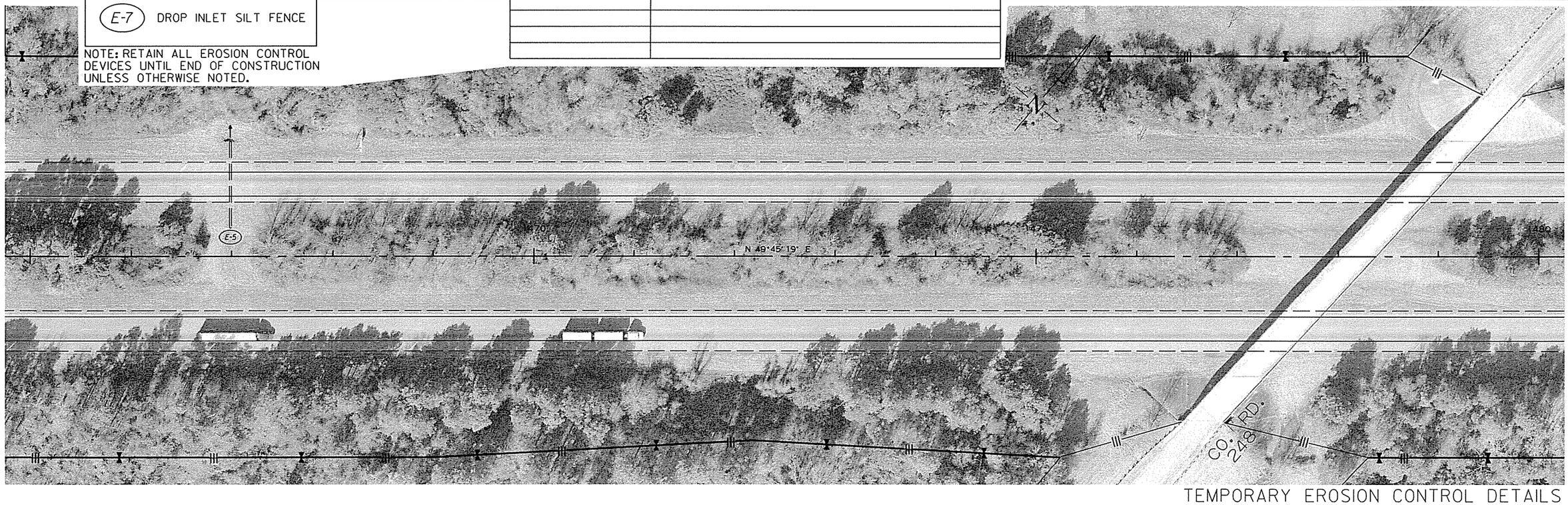
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- E-5 SAND BAG DITCH CHECKS
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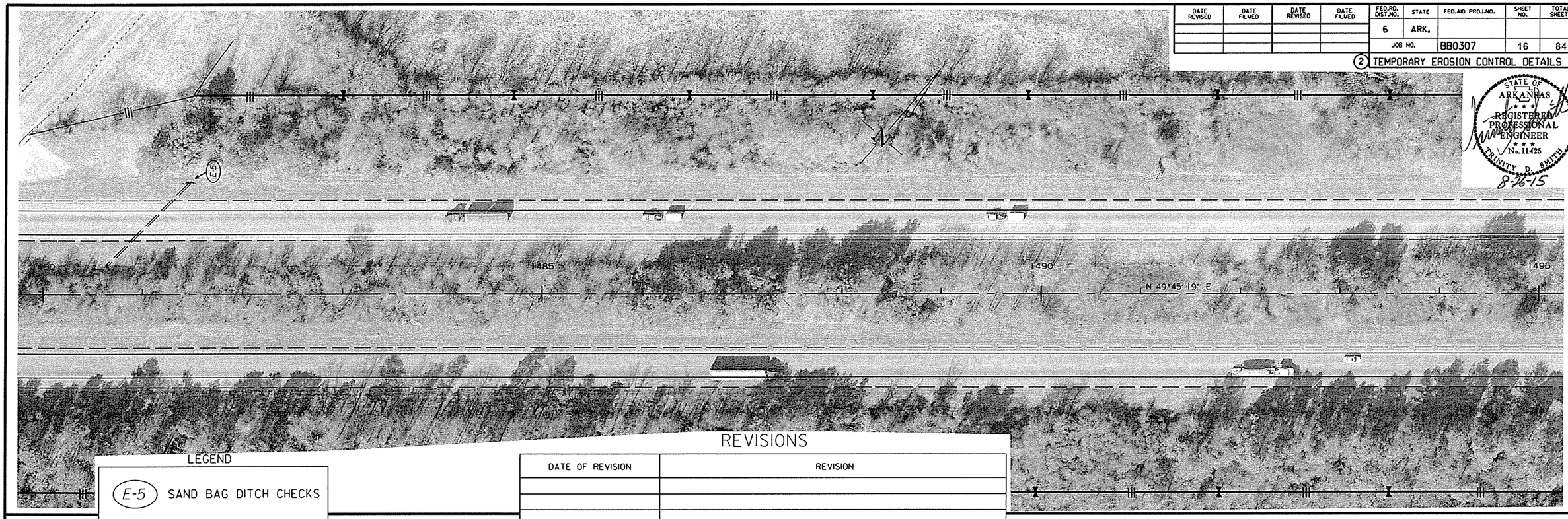
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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



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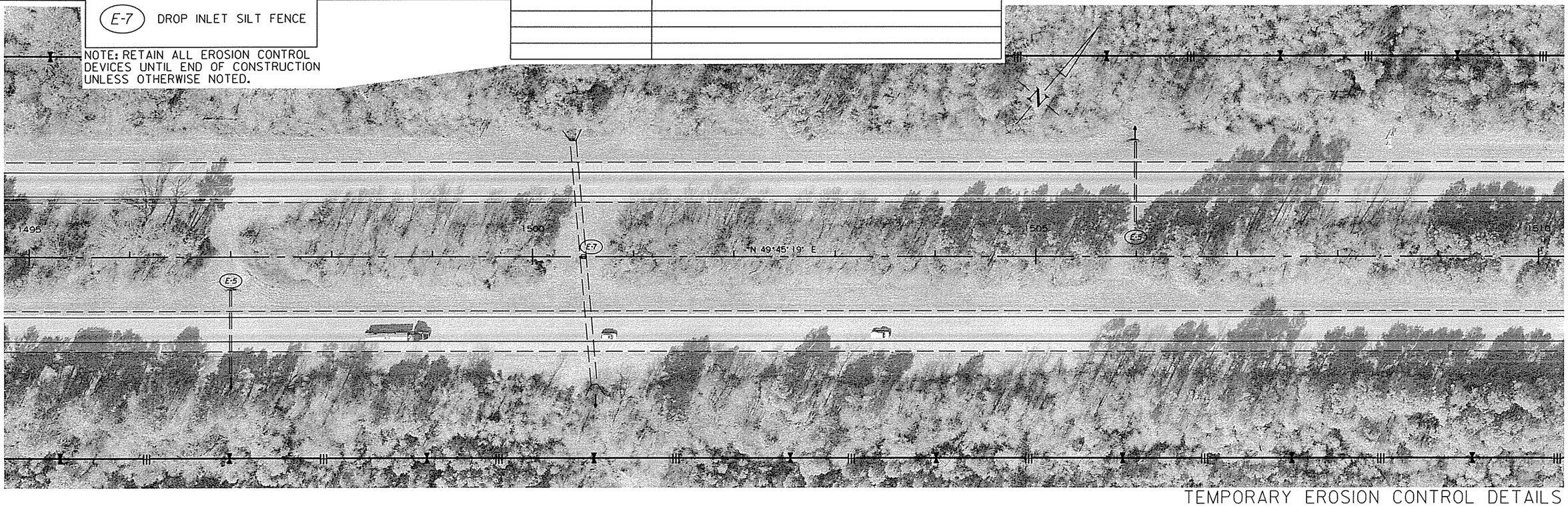
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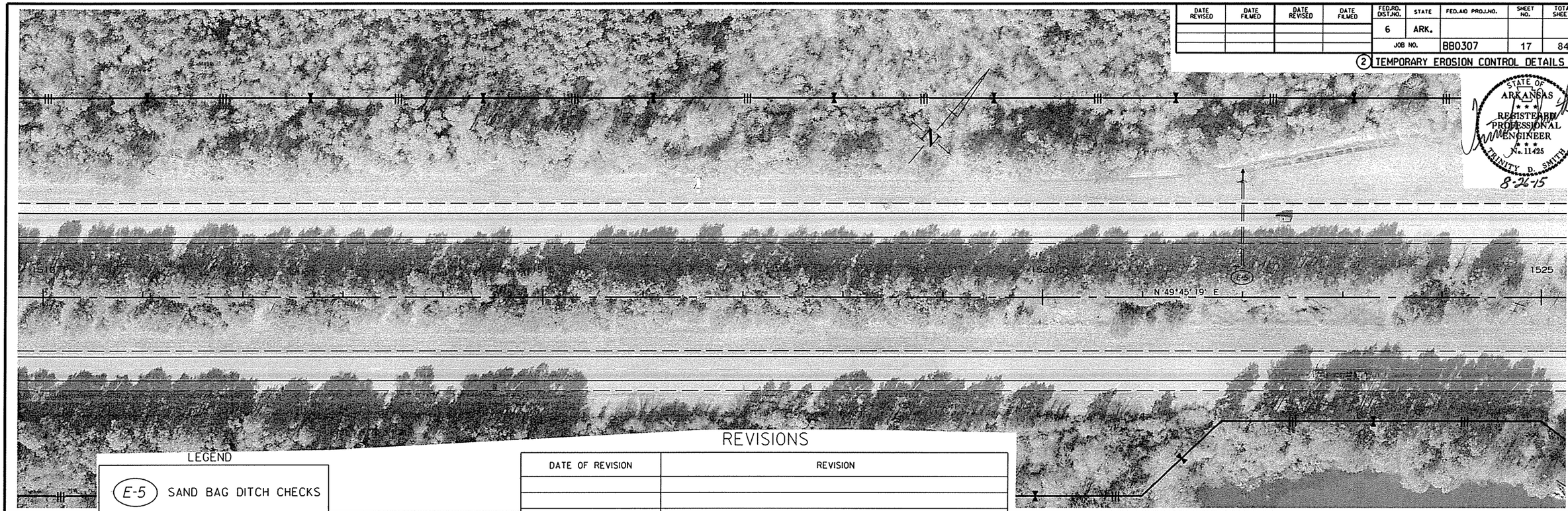
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REGISTERED PROFESSIONAL ENGINEER
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8-26-15



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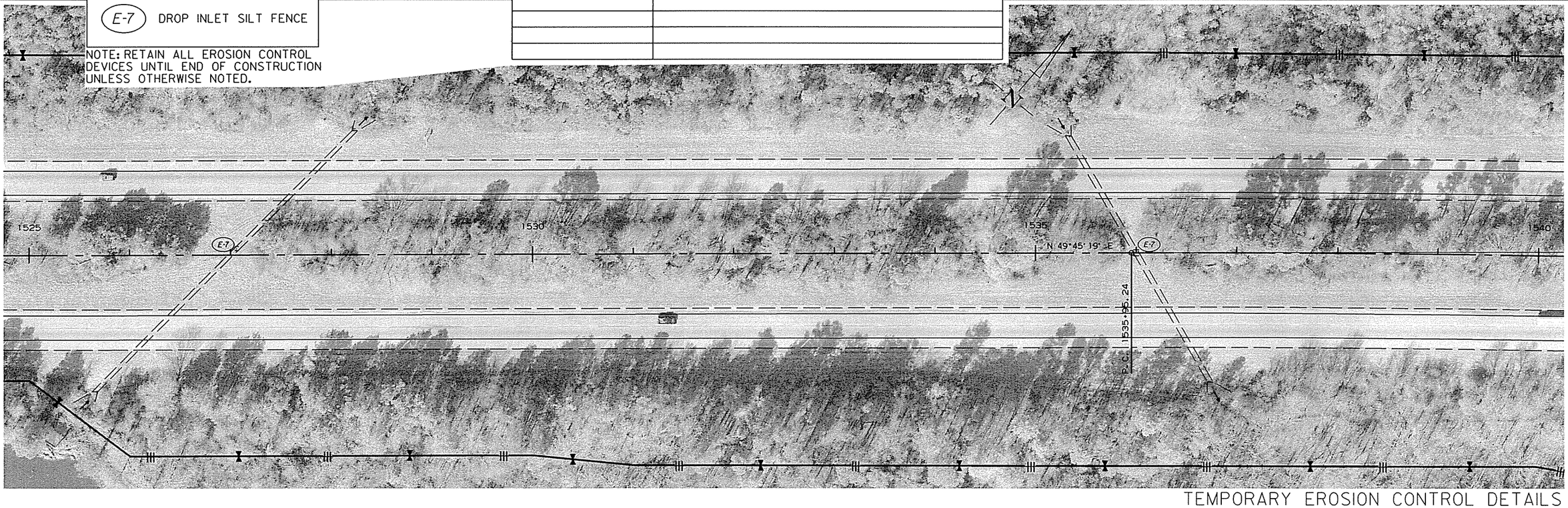
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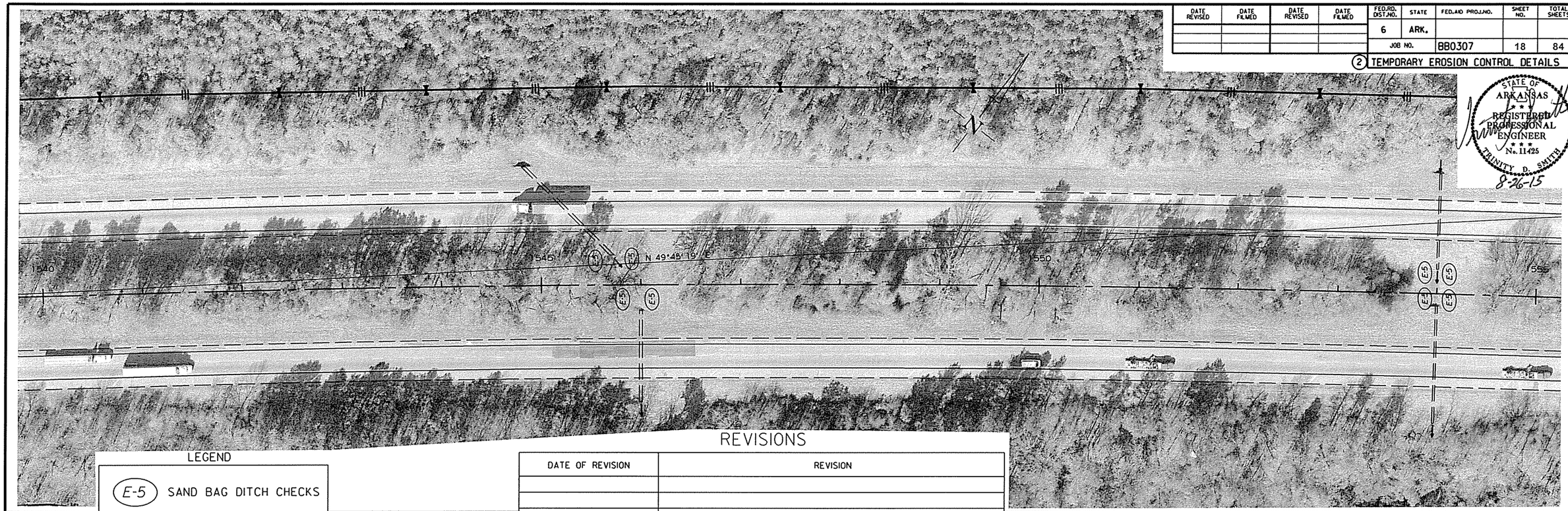
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STATE OF ARKANSAS
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8-26-15



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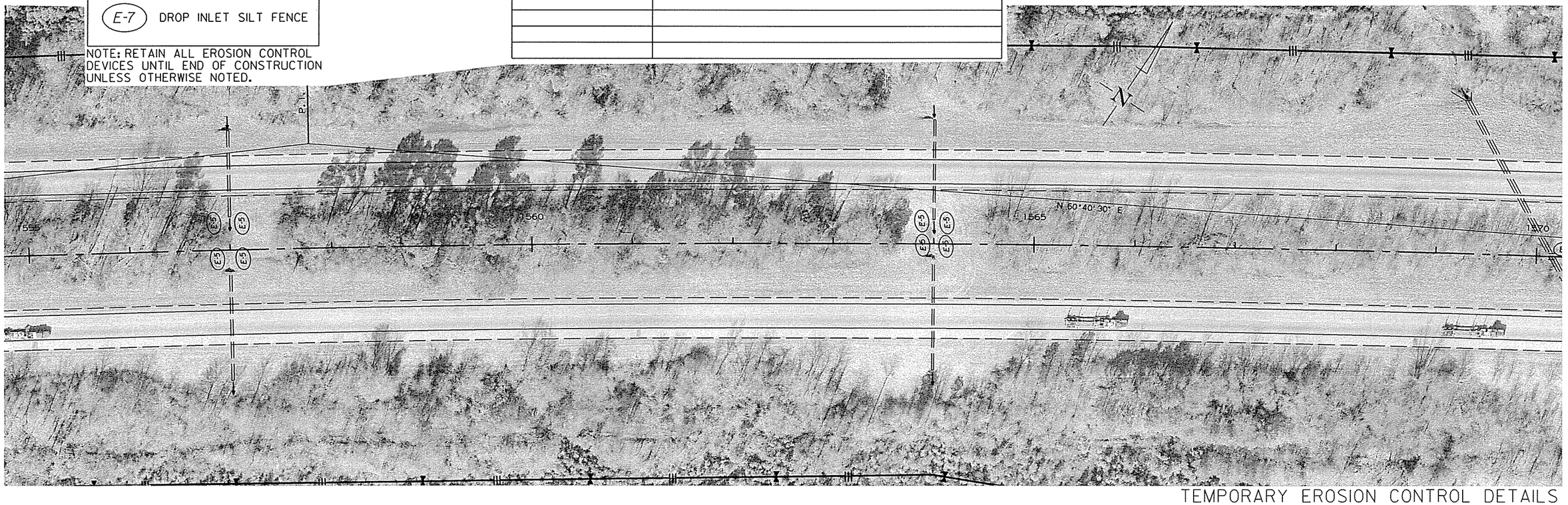
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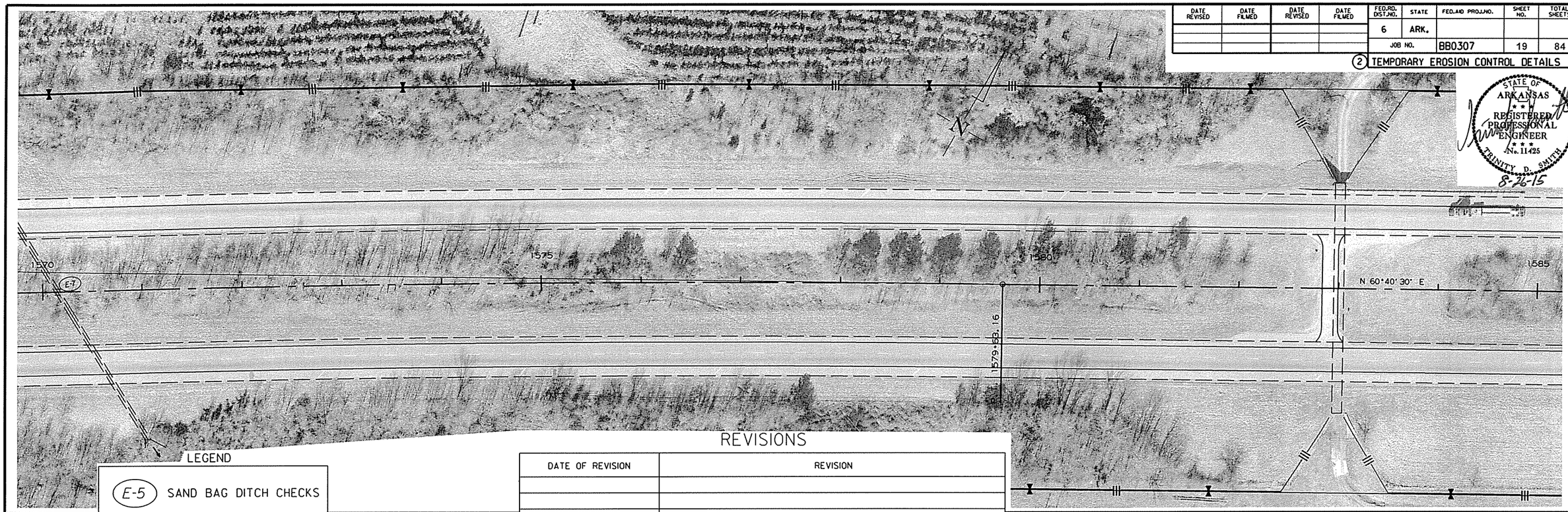
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No. 11425
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8-26-15



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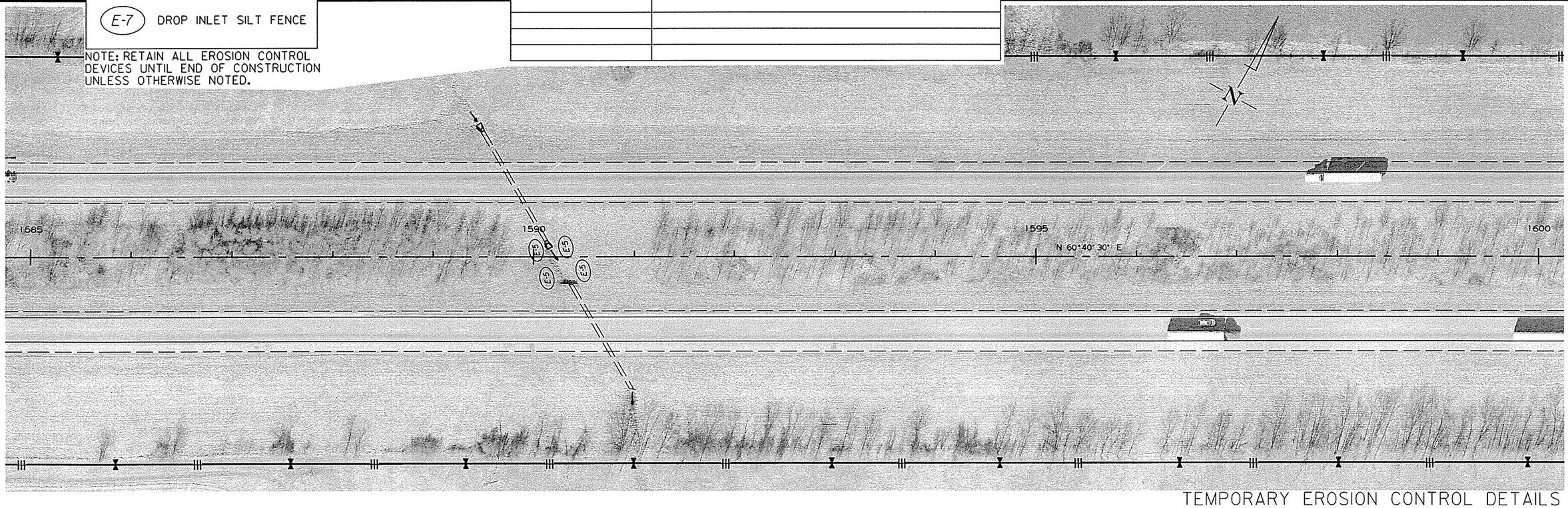
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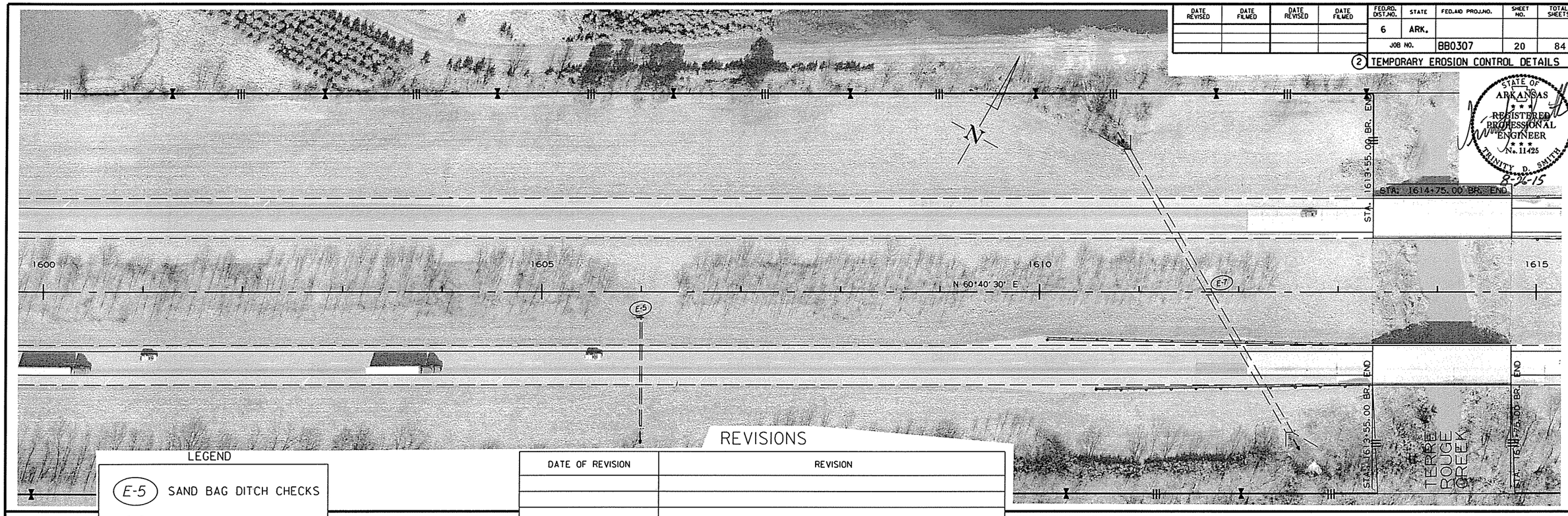
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No. 11425
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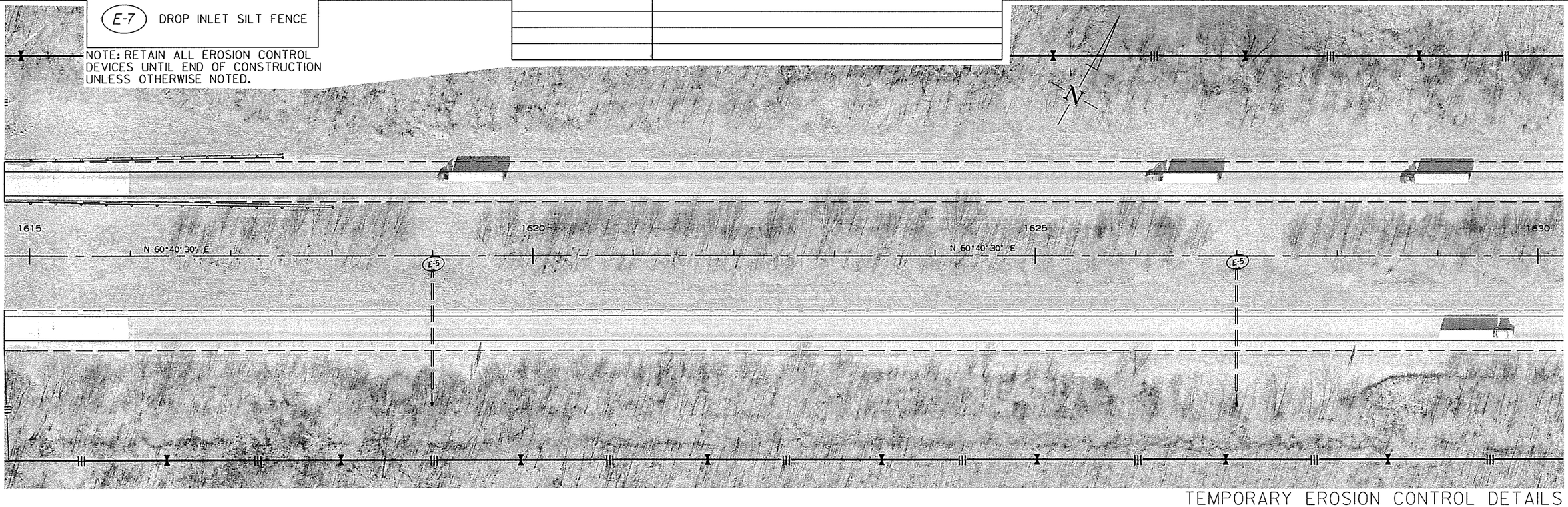
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7/20/15

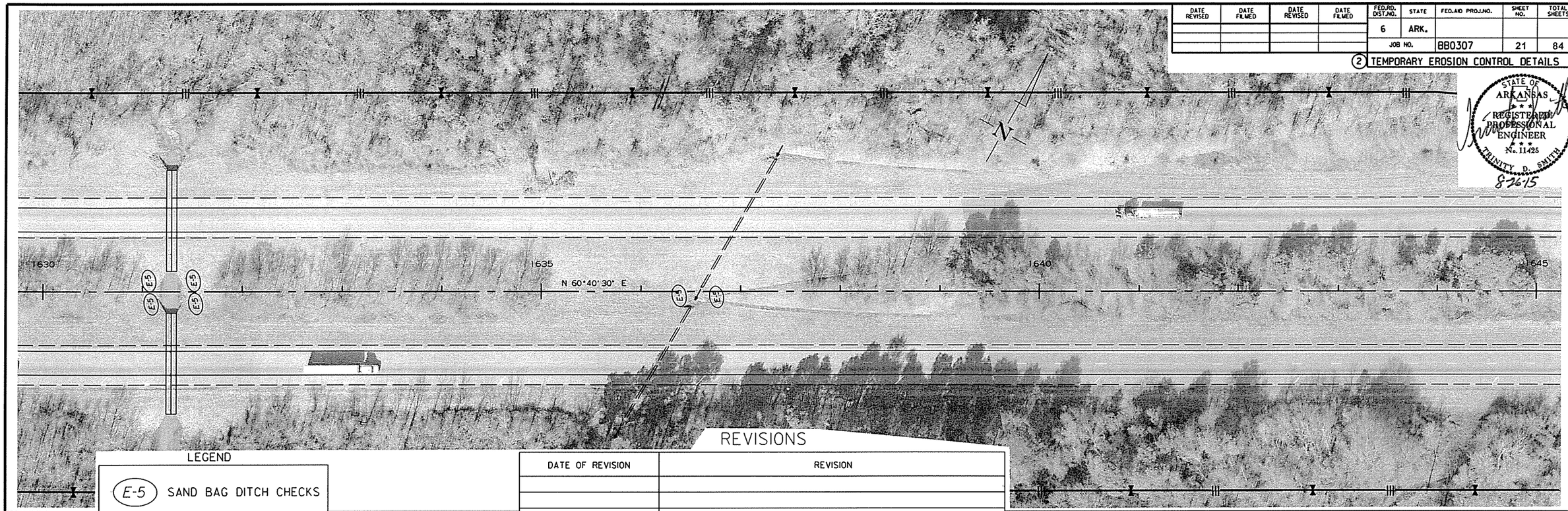
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TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	21	84

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



LEGEND

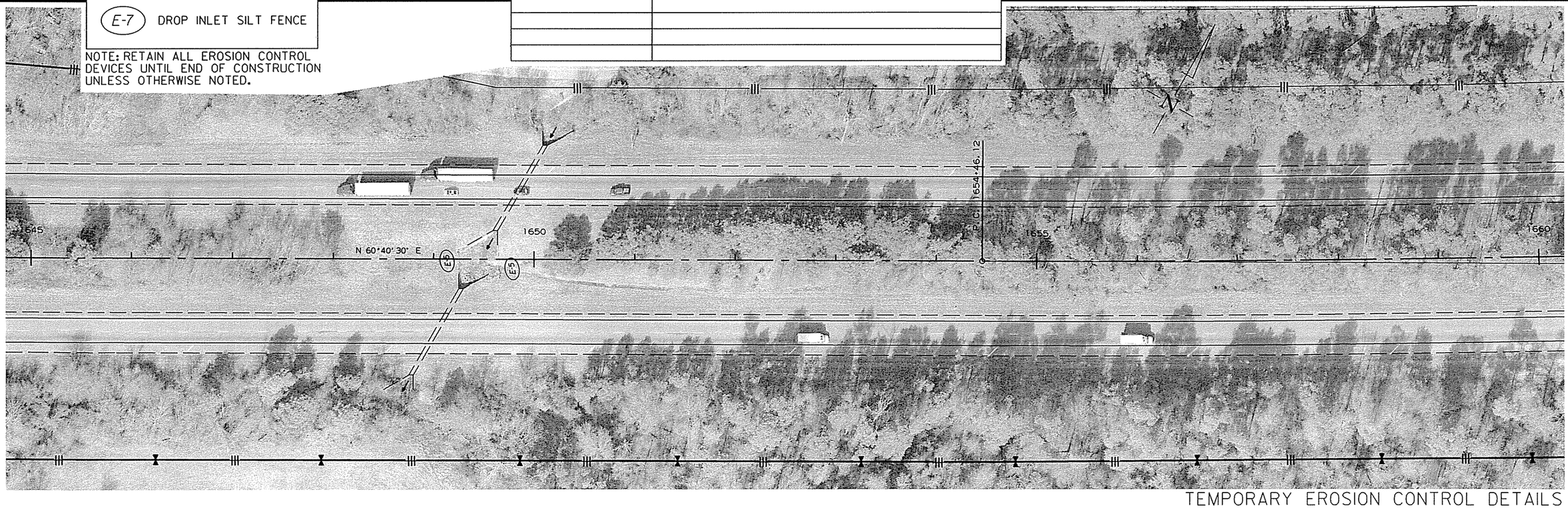
(E-5) SAND BAG DITCH CHECKS

(E-7) DROP INLET SILT FENCE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION



7/20/15

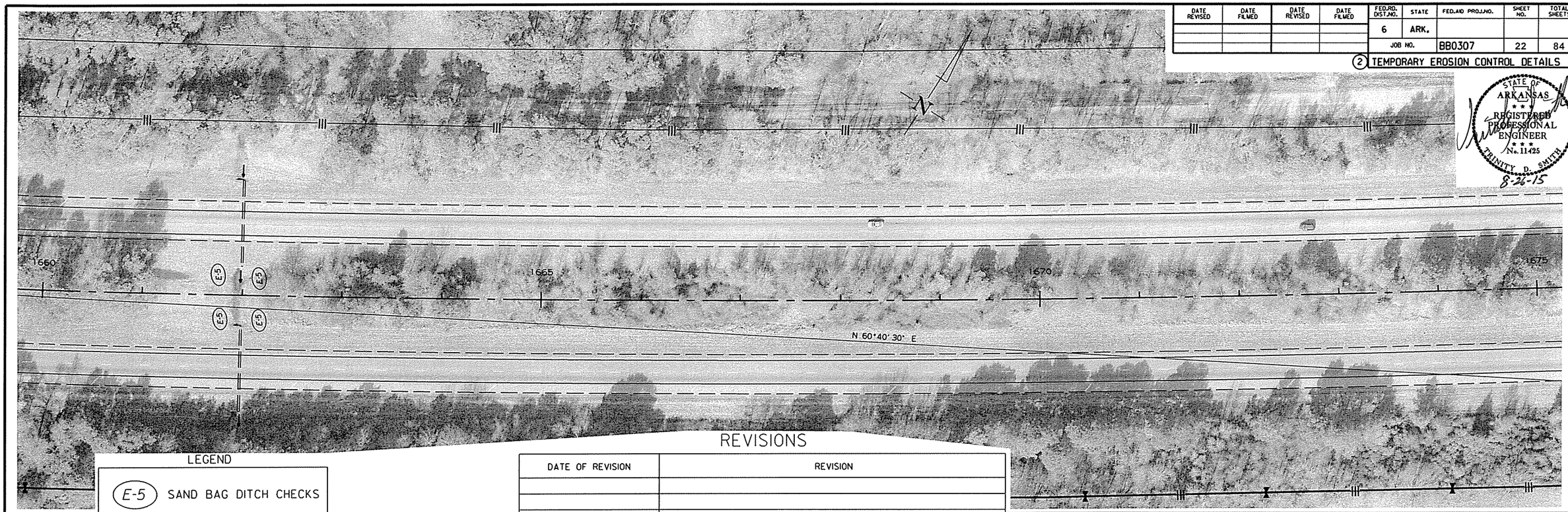
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TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	22	84

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



LEGEND

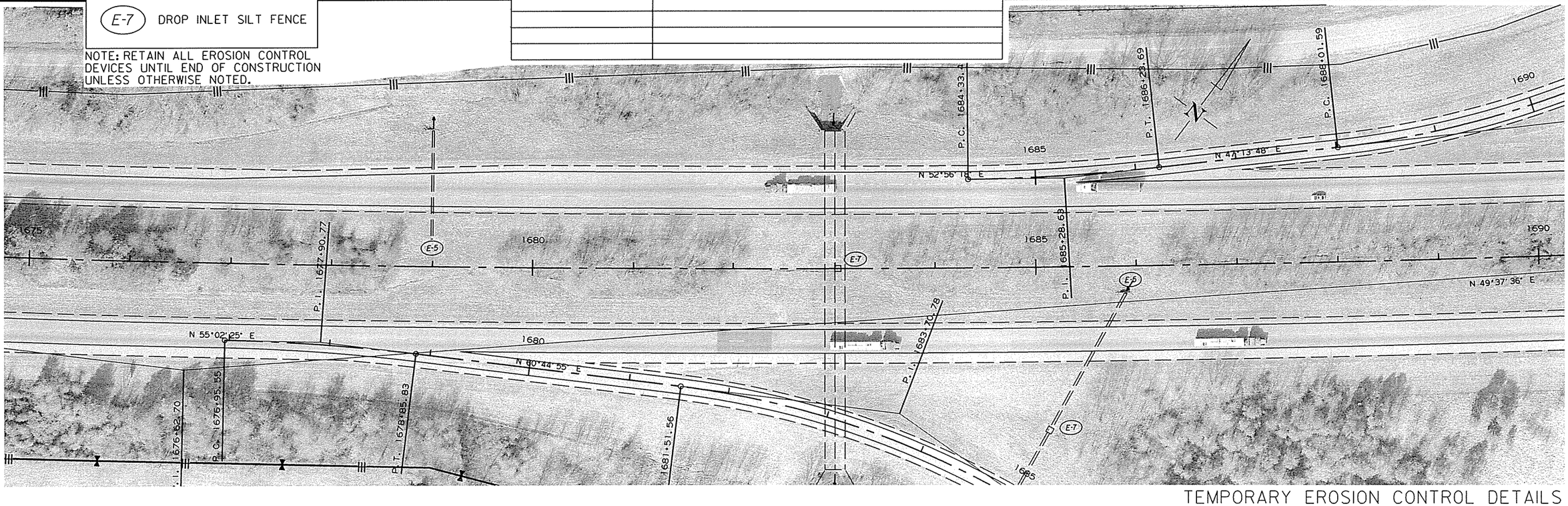
(E-5) SAND BAG DITCH CHECKS

(E-7) DROP INLET SILT FENCE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION



TEMPORARY EROSION CONTROL DETAILS

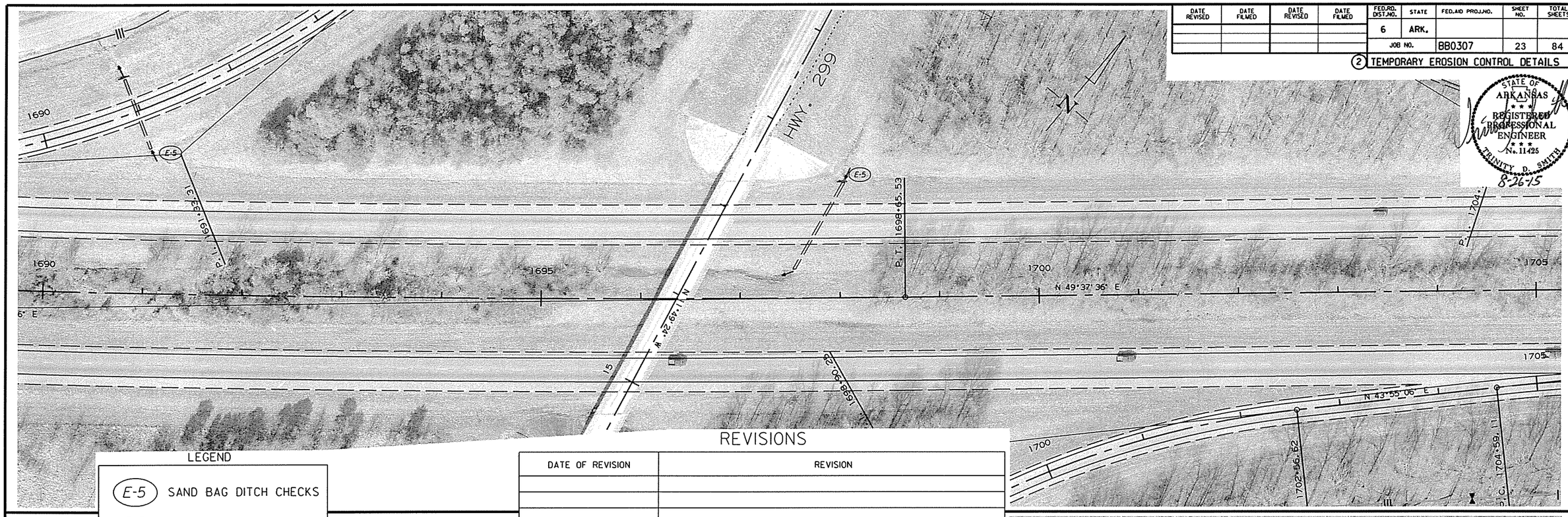
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	23	84

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



LEGEND

E-5 SAND BAG DITCH CHECKS

E-7 DROP INLET SILT FENCE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

7/20/15

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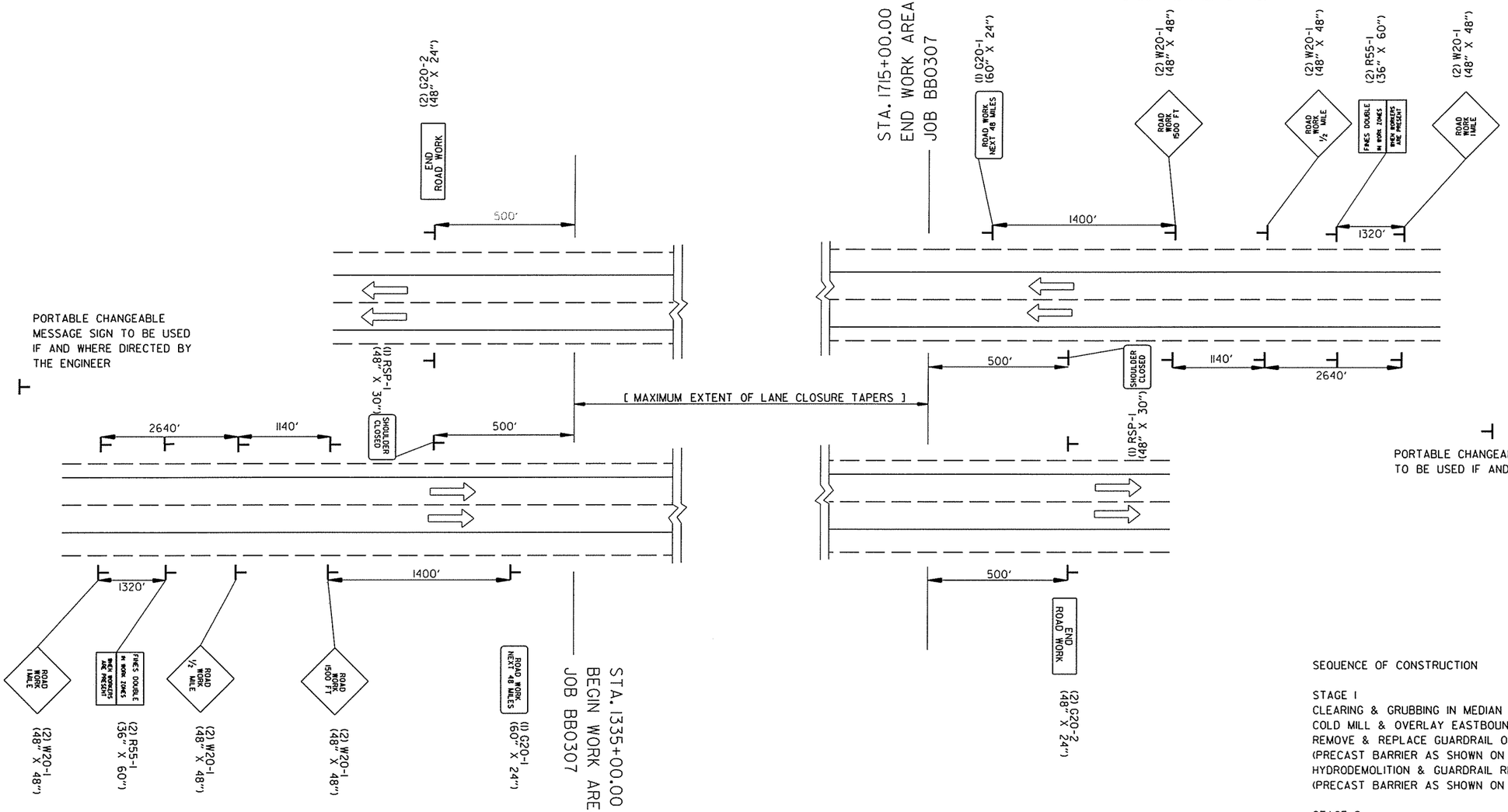
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	24	84

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-28-15

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.

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

SEQUENCE OF CONSTRUCTION

STAGE 1
CLEARING & GRUBBING IN MEDIAN
COLD MILL & OVERLAY EASTBOUND LANES & RAMPS
REMOVE & REPLACE GUARDRAIL ON BRIDGES 5052B & 5054B
(PRECAST BARRIER AS SHOWN ON PAGE 29)
HYDRODEMOLITION & GUARDRAIL REPLACEMENT ON BRIDGE 5051A
(PRECAST BARRIER AS SHOWN ON PAGE 28)

STAGE 2
COLD MILL & OVERLAY WESTBOUND LANES & RAMPS
REMOVE & REPLACE GUARDRAIL ON BRIDGES 5052A & 5054A
(PRECAST BARRIER AS SHOWN ON PAGE 29)
HYDRODEMOLITION & GUARDRAIL REPLACEMENT ON BRIDGE 5051B
(PRECAST BARRIER AS SHOWN ON PAGE 28)

STAGE 3
POLYMER OVERLAY ON BRIDGES 5052A, 5052B, 5054A, & 5054B

ADVANCE SIGNS AT BEGINNING AND END OF JOB ALL STAGES

MAINTENANCE OF TRAFFIC ADVANCE SIGNS AT JOB ENDS

8/20/15

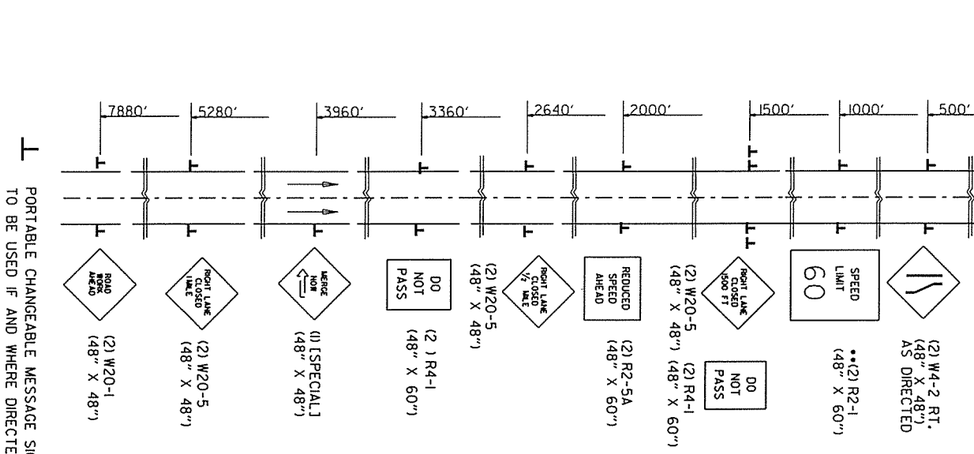
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	25	84

(2) MAINTENANCE OF TRAFFIC

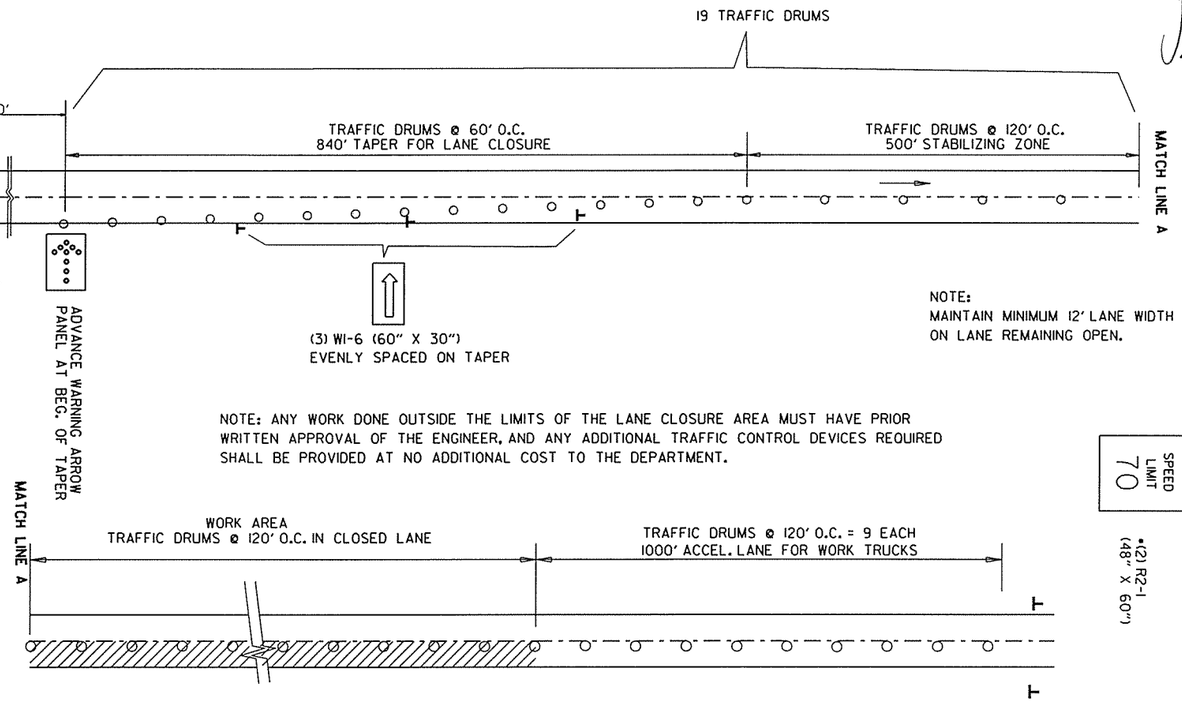
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

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

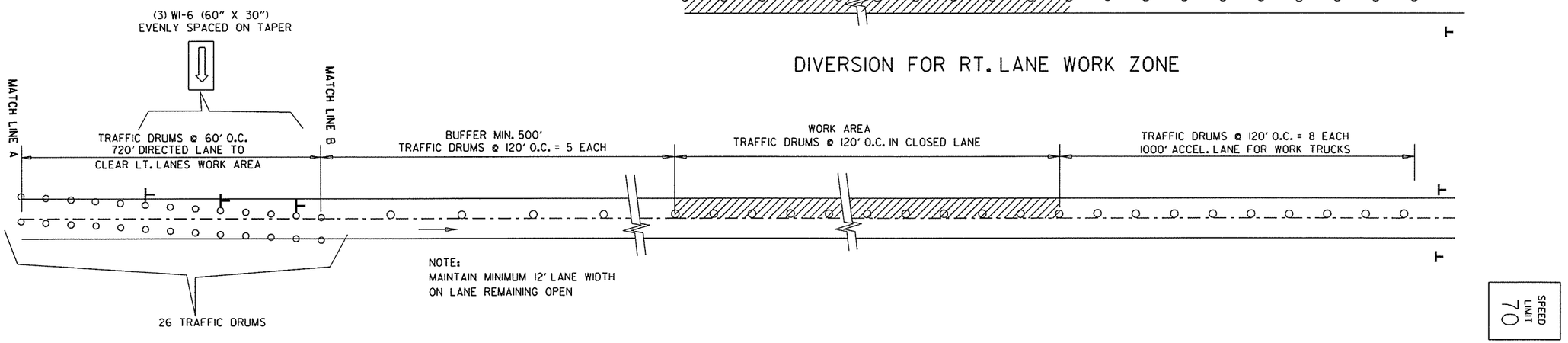


••SPEED LIMIT SIGNS SHALL BE
10 MPH BELOW PERMANENT SPEED LIMIT.

RT. LANE CLOSURE



DIVERSION FOR RT. LANE WORK ZONE



DIVERSION FOR LT. LANE WORK ZONE

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 LANE CLOSURES

8/20/15

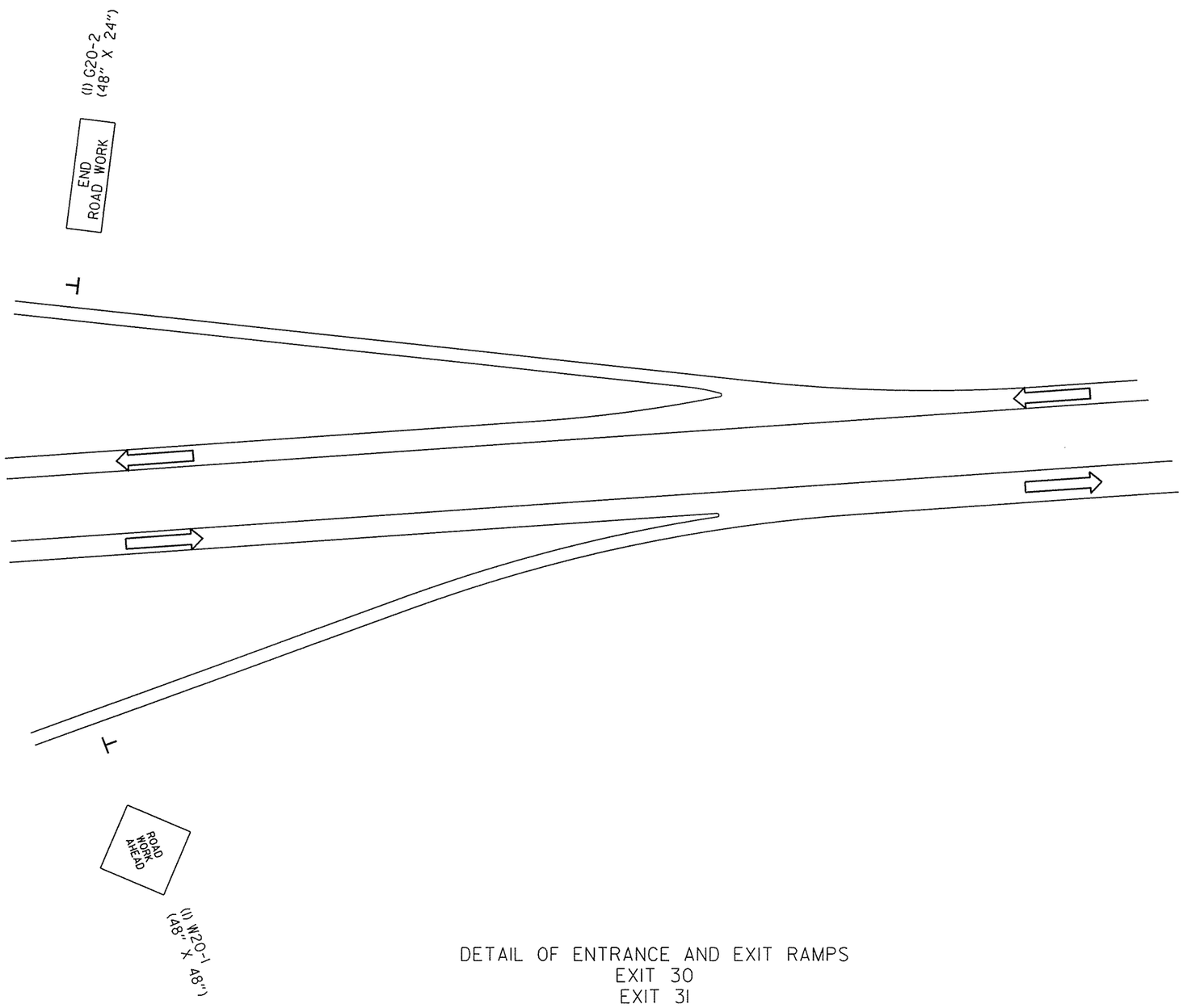
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	26	84

(2) MAINTENANCE OF TRAFFIC

ADVANCE WARNING SIGNS FOR ENTRANCE AND EXIT RAMPS
ROAD WORK AHEAD (6) = 96 SQ. FT.
END ROAD WORK (6) = 48 SQ. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



DETAIL OF ENTRANCE AND EXIT RAMPS
EXIT 30
EXIT 31
EXIT 36

8/10/15

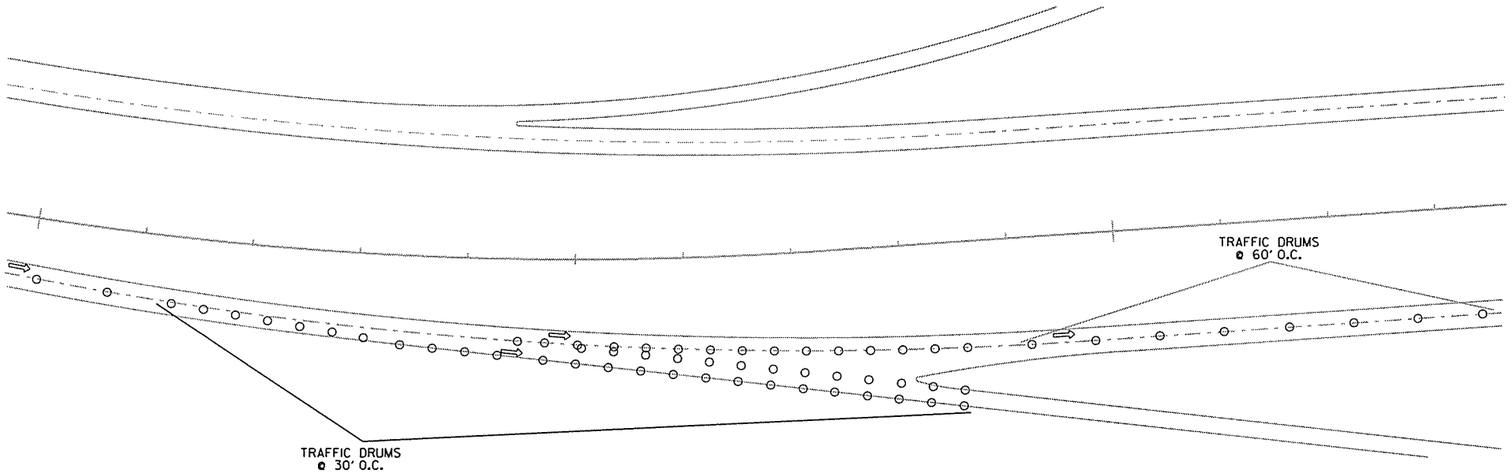
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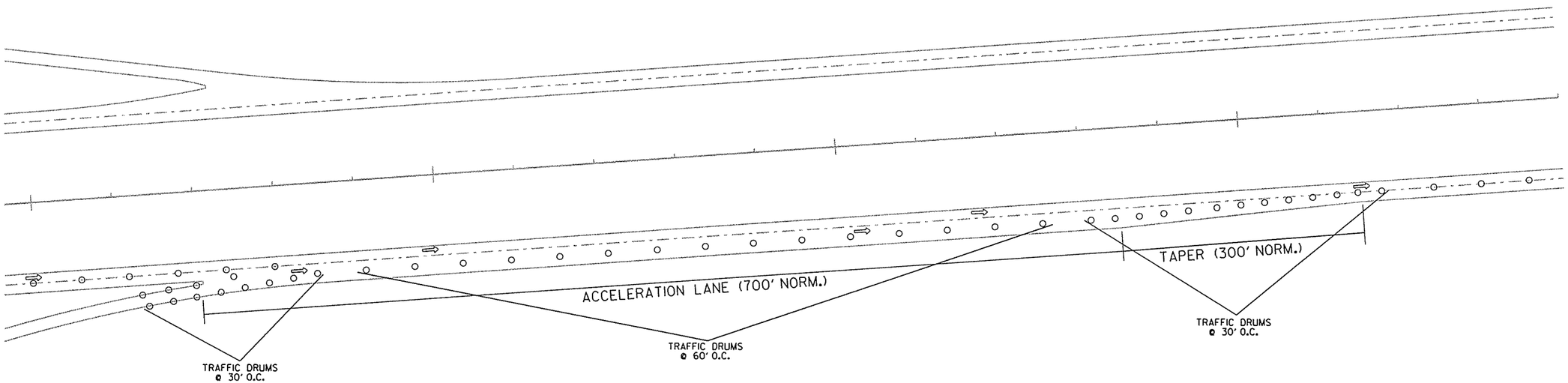
MAINTENANCE OF TRAFFIC
DETAIL OF RAMPS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	27	84

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15





EXIT 30:
EASTBOUND EXIT = 40 TRAFFIC DRUMS
EASTBOUND ENTRANCE = 17 TRAFFIC DRUMS

WESTBOUND EXIT = 40 TRAFFIC DRUMS
WESTBOUND ENTRANCE = 17 TRAFFIC DRUMS

EXIT 31:
EASTBOUND EXIT = 40 TRAFFIC DRUMS
EASTBOUND ENTRANCE = 17 TRAFFIC DRUMS

WESTBOUND EXIT = 40 TRAFFIC DRUMS
WESTBOUND ENTRANCE = 17 TRAFFIC DRUMS

EXIT 36:
EASTBOUND EXIT = 40 TRAFFIC DRUMS
EASTBOUND ENTRANCE = 17 TRAFFIC DRUMS

WESTBOUND EXIT = 40 TRAFFIC DRUMS
WESTBOUND ENTRANCE = 17 TRAFFIC DRUMS

7/16/15

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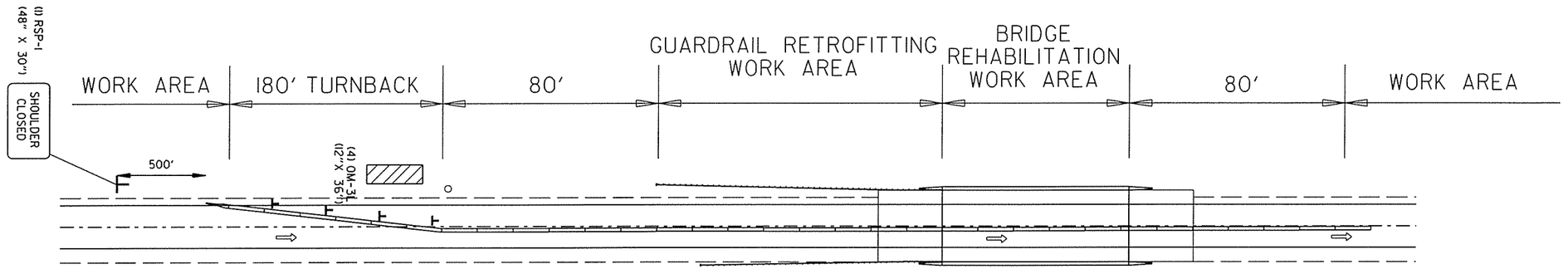
MAINTENANCE OF TRAFFIC
DETAIL OF RAMPS WITH LANE CLOSURE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	28	84
				(2) MAINTENANCE OF TRAFFIC				

PRECAST CONCRETE BARRIER WALL RIGHT LANE (1 LOCATION PER SIDE)
(1) RELOCATE = 1624 LIN. FT. TOTAL (2 LOCATIONS)
(812 LIN. FT.) PER LOCATION

PRECAST CONCRETE BARRIER WALL LEFT LANE (1 LOCATION PER SIDE)
(1) FURNISH AND INSTALL = 1704 LIN. FT. TOTAL (2 LOCATIONS)
(852 LIN. FT.) PER LOCATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

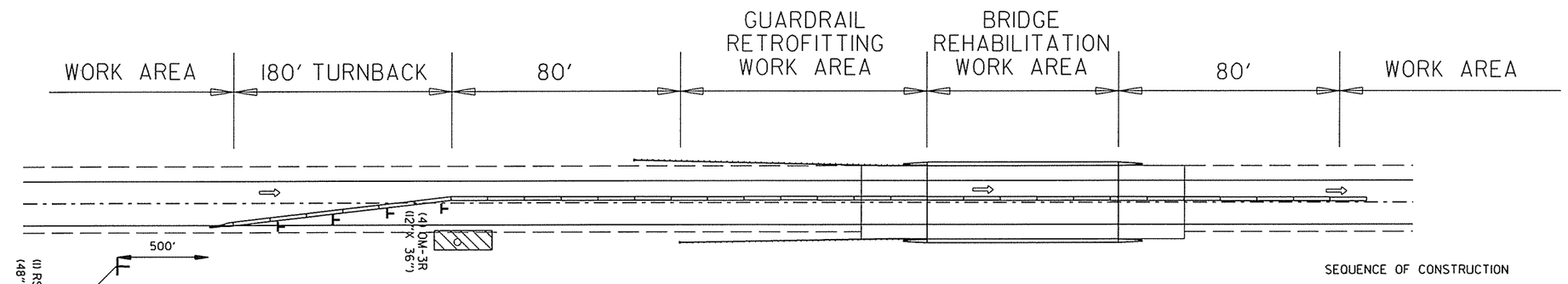


REFER TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

NOTE: OM-3L SIGNS SHALL
BE EQUALLY SPACED ALONG
P.C.C.B. TURNBACK.

DIVERSION FOR LT. LANE BRIDGE DECK REHABILITATION

BRIDGE REHABILITATION AND GUARDRAIL REPLACEMENT BRIDGES 5051A & 5051B



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

NOTE: OM-3R SIGNS SHALL
BE EQUALLY SPACED ALONG
P.C.C.B. TURNBACK.

DIVERSION FOR RT. LANE BRIDGE DECK REHABILITATION

BRIDGE REHABILITATION AND GUARDRAIL REPLACEMENT BRIDGES 5051A & 5051B

SEQUENCE OF CONSTRUCTION

STAGE 1
CLEARING & GRUBBING IN MEDIAN
COLD MILL & OVERLAY EASTBOUND LANES & RAMPS
REMOVE & REPLACE GUARDRAIL ON BRIDGES 5052B & 5054B
(PRECAST BARRIER AS SHOWN ON PAGE 29)
HYDRODEMOLITION & GUARDRAIL REPLACEMENT ON BRIDGE 5051A
(PRECAST BARRIER AS SHOWN ON PAGE 28)

STAGE 2
COLD MILL & OVERLAY WESTBOUND LANES & RAMPS
REMOVE & REPLACE GUARDRAIL ON BRIDGES 5052A & 5054A
(PRECAST BARRIER AS SHOWN ON PAGE 29)
HYDRODEMOLITION & GUARDRAIL REPLACEMENT ON BRIDGE 5051B
(PRECAST BARRIER AS SHOWN ON PAGE 28)

STAGE 3
POLYMER OVERLAY ON BRIDGES 5052A, 5052B, 5054A, & 5054B

MAINTENANCE OF TRAFFIC DETAILS
WORK ZONE - BRIDGE DECK REHABILITATION

8/20/15

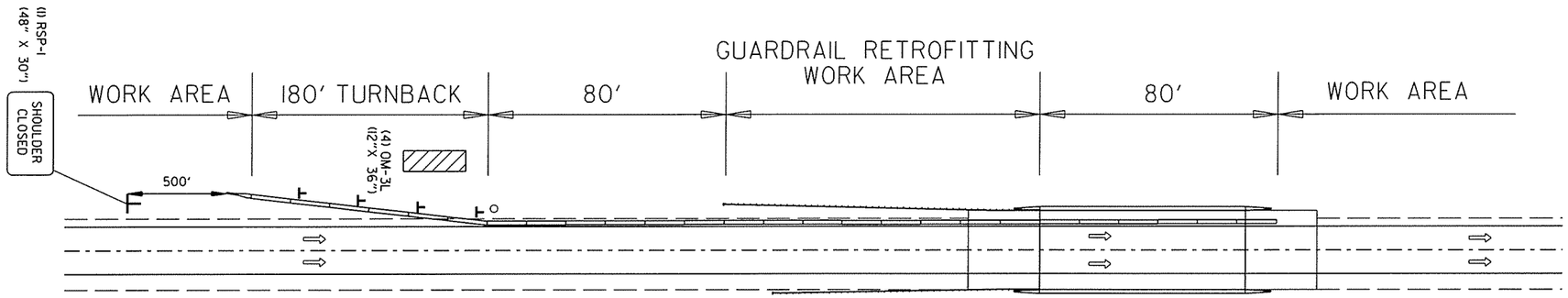
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	29	84
				(2) MAINTENANCE OF TRAFFIC				

PRECAST CONCRETE BARRIER WALL OUTSIDE SHOUDER (2 LOCATIONS PER SIDE)
(1) RELOCATE = 2528 LIN. FT. TOTAL (4 LOCATIONS)
(632 LIN. FT.) PER LOCATION

PRECAST CONCRETE BARRIER WALL INSIDE SHOULDER (2 LOCATIONS PER SIDE)
(1) RELOCATE = 2688 LIN. FT. TOTAL (4 LOCATIONS)
(672 LIN. FT.) PER LOCATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

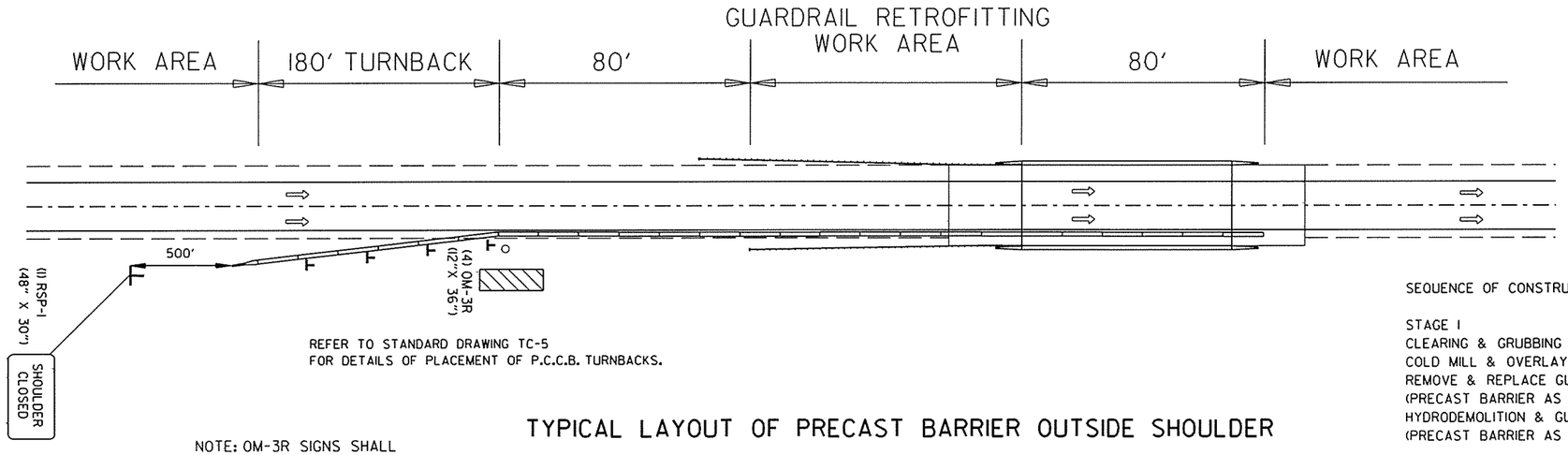


REFER TO STANDARD DRAWING TC-5
FOR DETAILS OF PLACEMENT OF P.C.C.B. TURNBACKS.

NOTE: OM-3L SIGNS SHALL
BE EQUALLY SPACED ALONG
P.C.C.B. TURNBACK.

TYPICAL LAYOUT OF PRECAST BARRIER INSIDE SHOULDER

GUARDRAIL REPLACEMENT BRIDGES 5052A, 5052B, 5054A, & 5054B



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

NOTE: OM-3R SIGNS SHALL
BE EQUALLY SPACED ALONG
P.C.C.B. TURNBACK.

TYPICAL LAYOUT OF PRECAST BARRIER OUTSIDE SHOULDER

GUARDRAIL REPLACEMENT BRIDGES 5052A, 5052B, 5054A, & 5054B

SEQUENCE OF CONSTRUCTION

STAGE 1
CLEARING & GRUBBING IN MEDIAN
COLD MILL & OVERLAY EASTBOUND LANES & RAMPS
REMOVE & REPLACE GUARDRAIL ON BRIDGES 5052B & 5054B
(PRECAST BARRIER AS SHOWN ON PAGE 29)
HYDRODEMOLITION & GUARDRAIL REPLACEMENT ON BRIDGE 5051A
(PRECAST BARRIER AS SHOWN ON PAGE 28)

STAGE 2
COLD MILL & OVERLAY WESTBOUND LANES & RAMPS
REMOVE & REPLACE GUARDRAIL ON BRIDGES 5052A & 5054A
(PRECAST BARRIER AS SHOWN ON PAGE 29)
HYDRODEMOLITION & GUARDRAIL REPLACEMENT ON BRIDGE 5051B
(PRECAST BARRIER AS SHOWN ON PAGE 28)

STAGE 3
POLYMER OVERLAY ON BRIDGES 5052A, 5052B, 5054A, & 5054B

MAINTENANCE OF TRAFFIC DETAILS
WORK ZONE - BRIDGE DECK REHABILITATION

8/20/15

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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.		BB0307	30	84

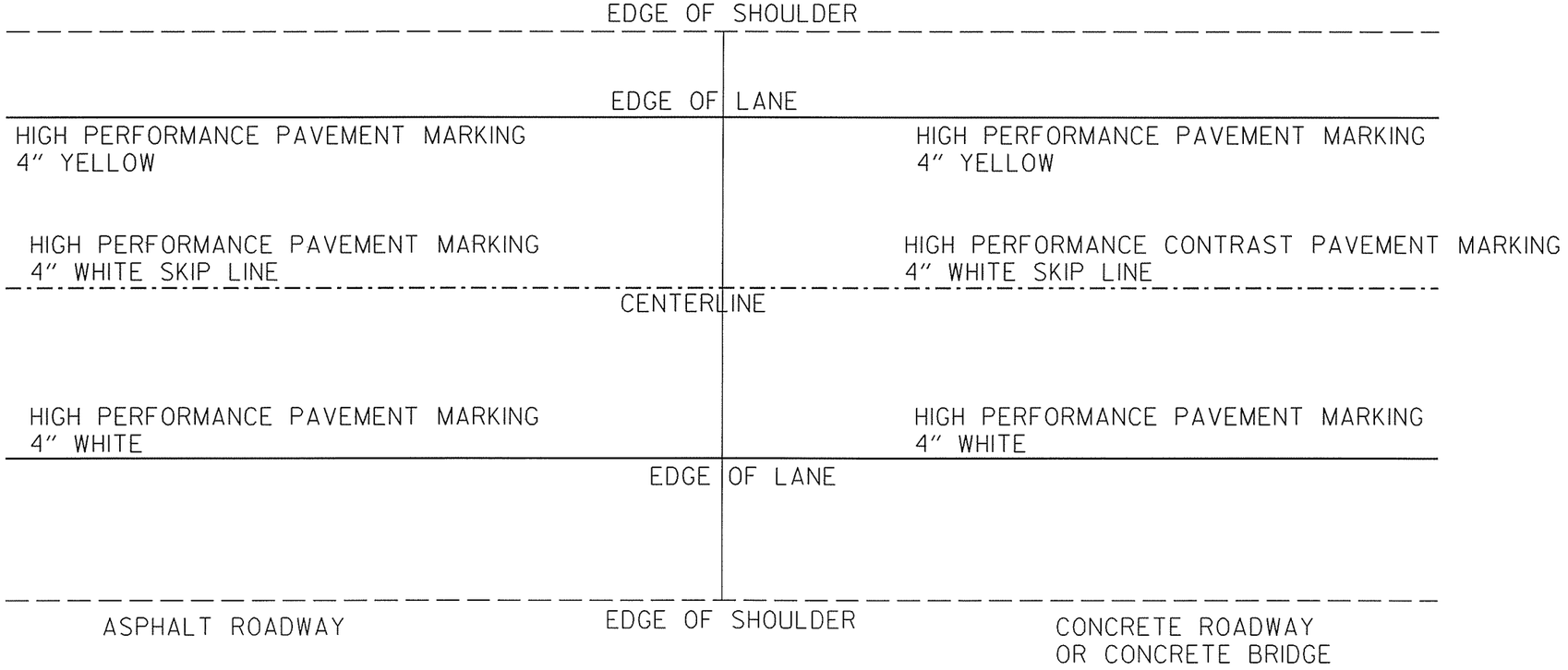
(2) PERMANENT PAVEMENT MARKING DETAILS

CONSTRUCTION PAVEMENT MARKINGS:
APPLY CONSTRUCTION PAVEMENT MARKINGS
ACCORDING TO STD. DWG. PM-2
4" YELLOW - 73620 LIN. FT. MAIN LANES; 17348 LIN. FT. RAMPS
4" WHITE - 73620 LIN. FT. MAIN LANES; 17348 LIN. FT. RAMPS
4" (SKIP LINE) - 18660 LIN. FT. MAIN LANES
8" WHITE - 5202 LIN. FT. MAIN LANES

PERMANENT PAVEMENT MARKINGS:
APPLY ACCORDING TO STD. DWG. PM-2
HIGH PERFORMANCE PAVEMENT MARKINGS
4" YELLOW - 76000 LIN. FT. MAIN LANES; 17348 LIN. FT. RAMPS
4" WHITE - 76000 LIN. FT. MAIN LANES; 17348 LIN. FT. RAMPS
4" WHITE (SKIP LINE) - 18420 LIN. FT. MAIN LANES
4" WHITE CONTRAST - 600 LIN. FT. MAIN LANES
8" WHITE - 5202 LIN. FT. MAIN LANES
8" WHITE CONTRAST - 96 LIN. FT. MAIN LANES
RAISED PAV'T MARKERS (TYPE II) = 1960 EACH
80' SPACING (EXCEPT WHERE SHOWN ON STD. DWG. PM-2)

NOTE:
CONSTRUCTION PAVEMENT MARKINGS
QUANTITY BASED ON ONE APPLICATION
OF EXISTING PAVEMENT MARKINGS.
FOR ADDITIONAL INFORMATION,
SEE STD. DWG. PM-2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15



8/25/15

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PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-29-15				6	ARK.			
				JOB NO.		BB0307	31	84

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-29-15

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	ENTIRE JOB	CONSTRUCTION PAVEMENT MARKINGS	* PERMANENT PAVEMENT MARKING TAPE	RAISED PAVEMENT MARKERS	HIGH PERFORMANCE CONTRAST PAVEMENT MARKING		HIGH PERFORMANCE PAVEMENT MARKING			
			(WHITE, 4", TYPE 3)	TYPE II (WHITE/RED)	4" WHITE	8" WHITE	4" WHITE	4" WHITE (SKIP LINE)	4" YELLOW	8" WHITE
	LIN. FT. - EACH	LIN. FT.	LIN. FT.	EACH	LIN. FT.		LIN. FT.			
CONSTRUCTION PAVEMENT MARKINGS	205798	205798								
* PERMANENT PAVEMENT MARKING TAPE (WHITE, 4", TYPE 3)	280		280							
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)	1960			1960						
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")	600				600					
HIGH PERFORMANCE PAVEMENT MARKING WHITE (4")	93348						93348			
HIGH PERFORMANCE PAVEMENT MARKING WHITE (8")	5202									5202
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (8")	96					96				
HIGH PERFORMANCE PAVEMENT MARKING (SKIP LINE) WHITE (4")	18420							18420		
HIGH PERFORMANCE PAVEMENT MARKING YELLOW (4")	93348								93348	
TOTALS:		**205798**	**280**	**1960**	**600**	**96**	**93348**	**18420**	**93348**	**5202**

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

* PERMANENT PAVEMENT MARKING TAPE TO MARK LATERAL LOCATIONS (SEE NOTE 4 ON PAGE 8).

NOTE: NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED UNTIL A MINIMUM OF 3 DAYS AFTER ALL MAIN LANE PAVING HAS BEEN COMPLETED. IN ADDITION, NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED DURING THE TIME PERIOD FROM DECEMBER 21 TO MARCH 15, INCLUSIVE.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	ROADWAY	BRIDGE	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	ADVANCE WARNING ARROW PANEL	PORTABLE CHANGEABLE MESSAGE SIGN	PORTABLE CHANGEABLE MESSAGE SIGN (TRUCK MOUNTED)
			LIN. FT. - EACH			NO.	SQ. FT.	EACH	LIN. FT.		DAY	WEEK	WEEK
W20-1	ROAD WORK 1 MILE	48"x48"	4	4	4	4	64.0						
W20-1	ROAD WORK 1/2 MILE	48"x48"	4	4	4	4	64.0						
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	64.0						
W20-1	ROAD WORK AHEAD	48"x48"	8	4	8	8	128.0						
G20-2	END ROAD WORK	48"x24"	10	4	10	10	80.0						
G20-1	ROAD WORK NEXT xx MILES	60"x24"	2	2	2	2	20.0						
W20-5	RIGHT LANE CLOSED 1 MILE	48"x48"	2	2	4	4	64.0						
W20-5	RIGHT LANE CLOSED 1/2 MILE	48"x48"	2	2	4	4	64.0						
W20-5	RIGHT LANE CLOSED 1500 FT.	48"x48"	2	2	4	4	64.0						
SPECIAL	MERGE NOW W/ ARROW	48"x48"	1	1	2	2	32.0						
R2-5A	REDUCE SPEED AHEAD	48"x60"	2	2	4	4	80.0						
OM-3L	OBJECT MARKER	12"x36"		4	4	4	12.0						
OM-3R	OBJECT MARKER	12"x36"		4	4	4	12.0						
W1-6	LARGE ARROW	48"x24"	6	6	12	12	96.0						
R4-1	DO NOT PASS	24"x30"	4	4	8	8	40.0						
R55-1	FINES DOUBLE	36"x60"	4	4	4	4	60.0						
RSP-1	SHOULDER CLOSED	48"x30"	2	2	2	2	20.0						
R20-1	SPEED LIMIT 60 MPH	48"x60"	2	2	4	4	80.0						
R2-1	SPEED LIMIT 70 MPH	48"x60"	2	2	4	4	80.0						
W4-2 RT.	MERGE RIGHT	48"x48"	2	2	4	4	64.0						
	TRAFFIC DRUMS		235	147	382			382					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			1704	1704				1704				
	RELOCATING PRECAST CONCRETE BARRIER			6840	6840					6840			
	ADVANCE WARNING ARROW PANEL		1	1	2						120		
	PORTABLE CHANGEABLE MESSAGE SIGN		2	2	4							112	
	PORTABLE CHANGEABLE MESSAGE SIGN (TRUCK MOUNTED)		2	4	4								112
TOTALS:							**1188.0**	**382**	**1704**	**6840**	**120**	**112**	**112**

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

NOTE: THE QUANTITY OF TRAFFIC DRUMS PROVIDED IS FOR A 4 MILE WORK AREA IN ONE DIRECTION AND 2 MILES IN THE OTHER DIRECTION. HOWEVER, THE INSTALLATION OF TRAFFIC DRUMS SHALL NEVER EXCEED THE ACTUAL WORK AREA BY MORE THAN 1/4 MILE, UNLESS APPROVED BY THE ENGINEER.

9/29/15

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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.		BB0307	32	84

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	
1335+00	1340+00	5	5
1341+40	1342+85	2	2
1345+00	1349+00	4	4
1353+30	1359+50	7	7
1363+30	1371+00	8	8
1432+20	1477+00	45	45
1479+00	1582+00	103	103
1584+00	1589+80	6	6
1591+15	1612+40	22	22
1616+35	1635+00	19	19
1637+90	1648+00	11	11
1650+70	1661+00	11	11
1662+30	1695+70	34	34
1698+40	1715+00	17	17
TOTALS:		294	294

NOTE:
CLEARING AND GRUBBING WILL BE PERFORMED TO A MINIMUM OF 50 FEET FROM INSIDE SHOULDER EDGE IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 201 OF THE STANDARD SPECIFICATIONS.

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	PLOWABLE PAVEMENT MARKER	GUARDRAIL
			EACH	LIN. FT.
1396+97	1399+72	RT. OF RT. MAIN LANES		275
1396+47	1399+72	LT. OF RT. MAIN LANES		325
1401+43	1404+18	LT. OF LT. MAIN LANES		275
1401+43	1404+68	RT. OF LT. MAIN LANES		325
1405+50	1408+25	RT. OF RT. MAIN LANES		275
1405+00	1408+25	LT. OF RT. MAIN LANES		325
1410+34	1413+09	LT. OF LT. MAIN LANES		275
1410+34	1413+59	RT. OF LT. MAIN LANES		325
1610+60	1613+35	RT. OF RT. MAIN LANES		275
1610+10	1613+35	LT. OF RT. MAIN LANES		325
1614+75	1617+50	LT. OF LT. MAIN LANES		275
1614+75	1618+00	RT. OF LT. MAIN LANES		325
* ENTIRE	PROJECT	RT. & LT MAIN LANES	964	
TOTALS:			964	3600

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

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			2000	10
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			2000	10

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

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
1397+03.25	1399+72.00	RT. OF RT. MAIN LANES	200	1	1
1396+53.25	1399+72.00	LT. OF RT. MAIN LANES	250	1	1
1401+43.00	1404+11.75	LT. OF LT. MAIN LANES	200	1	1
1401+43.00	1404+61.75	RT. OF LT. MAIN LANES	250	1	1
1405+56.25	1408+25.00	RT. OF RT. MAIN LANES	200	1	1
1405+06.25	1408+25.00	LT. OF RT. MAIN LANES	250	1	1
1411+34.00	1414+02.75	LT. OF LT. MAIN LANES	200	1	1
1411+34.00	1414+52.75	RT. OF LT. MAIN LANES	250	1	1
1610+66.25	1613+35.00	RT. OF RT. MAIN LANES	200	1	1
1610+16.25	1613+35.00	LT. OF RT. MAIN LANES	250	1	1
1614+75.00	1617+43.75	LT. OF LT. MAIN LANES	200	1	1
1614+75.00	1617+93.75	RT. OF LT. MAIN LANES	250	1	1
TOTALS:			2700	12	12

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
1335+00	1399+47	RT. OF RT. MAIN LANES	6447
1401+79	1408+00	RT. OF RT. MAIN LANES	621
1410+08	1613+00	RT. OF RT. MAIN LANES	20292
1615+10	1717+00	RT. OF RT. MAIN LANES	10190
1335+00	1399+47	LT. OF RT. MAIN LANES	6447
1401+79	1408+00	LT. OF RT. MAIN LANES	621
1410+08	1613+00	LT. OF RT. MAIN LANES	20292
1615+10	1717+00	LT. OF RT. MAIN LANES	10190
1335+00	1399+36	RT. OF LT. MAIN LANES	6436
1401+68	1408+51	RT. OF LT. MAIN LANES	683
1410+60	1613+00	RT. OF LT. MAIN LANES	20240
1615+10	1717+00	RT. OF LT. MAIN LANES	10190
1335+00	1399+36	LT. OF LT. MAIN LANES	6436
1401+68	1408+51	LT. OF LT. MAIN LANES	683
1410+60	1613+00	LT. OF LT. MAIN LANES	20240
1615+10	1717+00	LT. OF LT. MAIN LANES	10190
TOTAL:			150198

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL						
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	LIN. FT.	LIN. FT.	CU. YD.
ENTIRE	PROJECT	MAIN LANES						40.00	40.00	816.0	1408	224		72
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			10.00	20.00	10.00	1020.0	10.00	10.00	10.00	204.0		80	2000	77
TOTALS:			10.00	20.00	10.00	1020.0	10.00	50.00	50.00	1020.0	1408	304	2000	149

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

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

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

8/20/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	33	84

(2) QUANTITIES

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM SURFACE COURSE (1/2")			
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22
			FEET			FEET				FEET			TON
MAIN LANES													
1335+00.00	1342+04.78	RT. MAIN LANES	704.78	6.50	45.81	38.00	2975.74	0.10	297.57	38.00	2975.74	220.00	327.33
1342+04.78	1344+70.44	RT. MAIN LANES & DECEL. LANE	265.66	6.50	17.27	VAR.	1214.67	0.10	121.47	VAR.	1214.67	220.00	133.61
1344+70.38	1362+47.00	RAMP 1 HWY. 278	1776.62	5.00	88.83	25.00	4935.06	0.10	493.51	25.00	4935.06	220.00	542.86
1344+70.44	1371+95.75	RT. MAIN LANES	2725.31	6.50	177.15	38.00	11506.86	0.10	1150.69	38.00	11506.86	220.00	1265.75
1362+03.00	1371+96.41	RAMP 2 HWY. 278	993.41	5.00	49.67	25.00	2759.47	0.10	275.95	25.00	2759.47	220.00	303.54
1371+95.75	1381+15.47	RT. MAIN LANES & ACCEL. LANE	919.72	6.50	59.78	VAR.	4581.33	0.10	458.13	VAR.	4581.33	220.00	503.95
1381+15.47	1398+54.75	RT. MAIN LANES	1739.28	6.50	113.05	38.00	7343.63	0.10	734.36	38.00	7343.63	220.00	807.80
1402+68.84	1407+10.27	RT. MAIN LANES	441.43	6.50	28.69	38.00	1863.82	0.10	186.38	38.00	1863.82	220.00	205.02
1410+94.33	1412+54.52	RT. MAIN LANES & DECEL. LANE	160.19	6.50	10.41	VAR.	773.64	0.10	77.36	VAR.	773.64	220.00	85.10
1412+54.46	1419+20.00	RAMP 1 HWY. 29	665.54	5.00	33.28	25.00	1848.72	0.10	184.87	25.00	1848.72	220.00	203.36
1419+20.00	1426+30.00	RAMP 1 HWY. 29	710.00	5.00	35.50	23.00	1814.44	0.10	181.44	23.00	1814.44	220.00	199.59
1426+30.00	1428+30.00	RAMP 1 HWY. 29	200.00	5.00	10.00	VAR.	557.90	0.10	55.79	VAR.	55709.00	220.00	6127.99
1412+54.52	1425+66.07	RT. MAIN LANES	1311.55	6.50	85.25	38.00	5537.66	0.10	553.77	38.00	5537.66	220.00	609.14
1406+00.00	1408+00.00	RAMP 2 HWY. 29	200.00	5.00	10.00	VAR.	548.06	0.10	54.81	VAR.	548.06	220.00	60.29
1408+00.00	1415+40.00	RAMP 2 HWY. 29	740.00	5.00	37.00	23.00	1891.11	0.10	189.11	23.00	1891.11	220.00	208.02
1415+40.00	1425+66.41	RAMP 2 HWY. 29	1026.41	5.00	51.32	25.00	2851.14	0.10	285.11	25.00	2851.14	220.00	313.63
1425+66.07	1434+97.23	RT. MAIN LANES & ACCEL. LANE	931.16	6.50	60.53	VAR.	4650.07	0.10	465.01	VAR.	4650.07	220.00	511.51
1434+97.23	1612+09.07	RT. MAIN LANES	17711.84	6.50	1151.27	38.00	74783.32	0.10	7478.33	38.00	74783.32	220.00	8226.17
1615+97.89	1676+95.56	RT. MAIN LANES	6097.67	6.50	396.35	38.00	25745.72	0.10	2574.57	38.00	25745.72	220.00	2832.03
1676+95.56	1679+47.05	RT. MAIN LANES & DECEL. LANE	251.49	6.50	16.35	VAR.	1155.24	0.10	115.52	VAR.	1155.24	220.00	127.08
1679+47.73	1693+00.00	RAMP 1 HWY. 299	1352.27	5.00	67.61	25.00	3756.31	0.10	375.63	25.00	3756.31	220.00	413.19
1679+47.05	1705+11.00	RT. MAIN LANES	2563.95	6.50	166.66	38.00	10825.57	0.10	1082.56	38.00	10825.57	220.00	1190.81
1690+00.00	1705+11.38	RAMP 2 HWY. 299	1511.38	5.00	75.57	25.00	4198.28	0.10	419.83	25.00	4198.28	220.00	461.81
1705+11.00	1713+42.17	RT. MAIN LANES & ACCEL. LANE	831.17	6.50	54.03	VAR.	4138.96	0.10	413.90	VAR.	4138.96	220.00	455.29
1713+42.17	1717+00.00	RT. MAIN LANES	357.83	6.50	23.26	38.00	1510.84	0.10	151.08	38.00	1510.84	220.00	166.19
1335+00.00	1341+48.73	LT. MAIN LANES	648.73	6.50	42.17	38.00	2739.08	0.10	273.91	38.00	2739.08	220.00	301.30
1341+48.73	1350+18.45	LT. MAIN LANES & ACCEL. LANE	869.72	6.50	56.53	VAR.	4325.78	0.10	432.58	VAR.	4325.78	220.00	475.84
1350+17.84	1360+08.00	RAMP 4 HWY. 278	990.16	5.00	49.51	25.00	2750.44	0.10	275.04	25.00	2750.44	220.00	302.55
1350+18.45	1377+23.21	LT. MAIN LANES	2704.76	6.50	175.81	38.00	11420.10	0.10	1142.01	38.00	11420.10	220.00	1256.21
1359+75.00	1377+23.27	RAMP 3 HWY. 278	1748.27	5.00	87.41	25.00	4856.31	0.10	485.63	25.00	4856.31	220.00	534.19
1377+23.21	1379+88.87	LT. MAIN LANES & DECEL. LANE	265.66	6.50	17.27	VAR.	1214.67	0.10	121.47	VAR.	1214.67	220.00	133.61
1379+88.87	1398+43.87	LT. MAIN LANES	1855.00	6.50	120.58	38.00	7832.22	0.10	783.22	38.00	7832.22	220.00	861.54
1402+58.85	1407+59.93	LT. MAIN LANES & ACCEL. LANE	501.08	6.50	32.57	VAR.	2383.83	0.10	238.38	VAR.	2383.83	220.00	262.22
1411+43.87	1412+40.16	LT. MAIN LANES & ACCEL. LANE	96.29	6.50	6.26	VAR.	515.68	0.10	51.57	VAR.	515.68	220.00	56.72
1412+39.84	1418+05.00	RAMP 4 HWY. 29	565.16	5.00	28.26	25.00	1569.89	0.10	156.99	25.00	1569.89	220.00	172.69
1418+05.00	1419+43.00	RAMP 4 HWY. 29	138.00	5.00	6.90	23.00	352.67	0.10	35.27	23.00	352.67	220.00	38.79
1419+43.00	1421+43.00	RAMP 4 HWY. 29	200.00	5.00	10.00	VAR.	534.50	0.10	53.45	VAR.	534.50	220.00	58.80
1412+40.16	1424+14.88	LT. MAIN LANES	1174.72	6.50	76.36	38.00	4959.93	0.10	495.99	38.00	4959.93	220.00	545.59
1410+25.00	1412+25.00	RAMP 3 HWY. 29	200.00	5.00	10.00	VAR.	696.48	0.10	69.65	VAR.	696.48	220.00	76.61
1412+25.00	1413+79.00	RAMP 3 HWY. 29	154.00	5.00	7.70	23.00	393.56	0.10	39.36	23.00	393.56	220.00	43.29
1413+79.00	1424+14.78	RAMP 3 HWY. 29	1035.78	5.00	51.79	25.00	2877.17	0.10	287.72	25.00	2877.17	220.00	316.49
1424+14.88	1426+78.83	LT. MAIN LANES & DECEL. LANE	263.95	6.50	17.16	VAR.	1210.34	0.10	121.03	VAR.	1210.34	220.00	133.14
1426+78.83	1612+09.07	LT. MAIN LANES	18530.24	6.50	1204.47	38.00	78238.79	0.10	7823.88	38.00	78238.79	220.00	8606.27
1615+97.89	1676+85.84	LT. MAIN LANES	6087.95	6.50	395.72	38.00	25704.68	0.10	2570.47	38.00	25704.68	220.00	2827.51
1676+85.84	1685+72.58	LT. MAIN LANES & ACCEL. LANE	886.74	6.50	57.64	VAR.	4413.16	0.10	441.32	VAR.	4413.16	220.00	485.45
1685+71.68	1699+85.00	RAMP 4 HWY. 299	1413.32	5.00	70.67	25.00	3925.89	0.10	392.59	25.00	3925.89	220.00	431.85
1685+72.58	1711+10.37	LT. MAIN LANES	2537.79	6.50	164.96	38.00	10715.11	0.10	1071.51	38.00	10715.11	220.00	1178.66
1699+80.00	1711+10.42	RAMP 3 HWY. 299	1130.42	5.00	56.52	25.00	3140.06	0.10	314.01	25.00	3140.06	220.00	345.41
1711+10.37	1713+76.02	LT. MAIN LANES & DECEL. LANE	265.65	6.50	17.27	VAR.	1186.99	0.10	118.70	VAR.	1186.99	220.00	130.57
1713+76.02	1717+00.00	LT. MAIN LANES	323.98	6.50	21.06	38.00	1367.92	0.10	136.79	38.00	1367.92	220.00	150.47
ADDITIONAL													
1396+45.25	1399+72.00	RT. OF RIGHT MAIN LANES	326.75			VAR.	191.15	0.10	19.12	VAR.	191.15	220.00	21.03
1395+89.25	1399+72.00	LT. OF RIGHT MAIN LANES	382.75			VAR.	238.93	0.10	23.89	VAR.	238.93	220.00	26.28
1401+43.00	1404+69.75	LT. OF LEFT MAIN LANES	326.75			VAR.	191.15	0.10	19.12	VAR.	191.15	220.00	21.03
1401+43.00	1405+25.75	RT. OF LEFT MAIN LANES	382.75			VAR.	238.93	0.10	23.89	VAR.	238.93	220.00	26.28
1404+98.25	1408+25.00	RT. OF RIGHT MAIN LANES	326.75			VAR.	191.15	0.10	19.12	VAR.	191.15	220.00	21.03
1404+42.25	1408+25.00	LT. OF RIGHT MAIN LANES	382.75			VAR.	238.93	0.10	23.89	VAR.	238.93	220.00	26.28
1411+34.00	1414+60.75	LT. OF LEFT MAIN LANES	326.75			VAR.	191.15	0.10	19.12	VAR.	191.15	220.00	21.03
1411+34.00	1415+16.75	RT. OF LEFT MAIN LANES	382.75			VAR.	238.93	0.10	23.89	VAR.	238.93	220.00	26.28
1610+08.25	1613+35.00	RT. OF RIGHT MAIN LANES	326.75			VAR.	191.15	0.10	19.12	VAR.	191.15	220.00	21.03
1609+52.25	1613+35.00	LT. OF RIGHT MAIN LANES	382.75			VAR.	238.93	0.10	23.89	VAR.	238.93	220.00	26.28
1614+75.00	1618+01.75	LT. OF LEFT MAIN LANES	326.75			VAR.	191.15	0.10	19.12	VAR.	191.15	220.00	21.03
1614+75.00	1618+57.75	RT. OF LEFT MAIN LANES	382.75			VAR.	238.93	0.10	23.89	VAR.	238.93	220.00	26.28
1582+90.00		MEDIAN CROSSING				VAR.	268.03	0.10	26.80	VAR.	268.03	220.00	29.48
* ENTIRE	PROJECT	LEVELING										VAR.	600.00
TOTALS:					5649.23		365941.32		36594.15		421092.42		46920.17

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	200	400
DIRECTED BY THE ENGINEER		
TOTALS:	200	400

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

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	600
DIRECTED BY THE ENGINEER	
TOTAL:	600

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	LENGTH	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			LIN. FT.	FEET	SQ. YD.
1335+00.00	1337+00.00	RT. MAIN LANES	200.00	38.00	844.44
1361+47.00	1362+47.00	RAMP 1 HWY. 278	100.00	25.00	277.78
1362+03.00	1363+03.00	RAMP 2 HWY. 278	100.00	25.00	277.78
1396+54.75	1398+54.75	RT. MAIN LANES	200.00	38.00	844.44
1402+68.84	1404+68.84	RT. MAIN LANES	200.00	38.00	844.44
1405+10.27	1407+10.27	RT. MAIN LANES	200.00	38.00	844.44
1410+94.33	1412+54.52	RT. MAIN LANES	160.19	VAR.	773.64
1412+54.52	1412+94.33	RT. MAIN LANES	39.81	38.00	168.09
1412+54.52	1412+94.33	RAMP 1 HWY. 29	39.81	25.00	110.58
1427+30.00	1428+30.00	RAMP 1 HWY. 29	100.00	VAR.	324.81
1406+00.00	1407+00.00	RAMP 2 HWY. 29	100.00	VAR.	313.77
1610+09.07	1612+09.07	RT. MAIN LANES	200.00	38.00	844.44
1615+97.89	1617+97.89	RT. MAIN LANES	200.00	38.00	844.44
1692+00.00	1693+00.00	RAMP 1 HWY. 299	100.00	25.00	277.78
1692+46.00	1699+46.00	RT. MAIN LANES	700.00	38.00	2955.56
1690+00.00	1691+00.00	RAMP 2 HWY. 299	100.00	25.00	277.78
1715+00.00	1717+00.00	RT. MAIN LANES	200.00	38.00	844.44
1335+00.00	1337+00.00	LT. MAIN LANES	200.00	38.00	844.44
1359+08.00	1360+08.00	RAMP 4 HWY. 278	100.00	25.00	277.78
1359+75.00	1360+75.00	RAMP 3 HWY. 278	100.00	25.00	277.78
1396+43.87	1398+43.87	LT. MAIN LANES	200.00	38.00	844.44
1402+58.85	1404+58.85	LT. MAIN LANES	200.00	VAR.	866.66
1405+59.93	1407+59.93	LT. MAIN LANES	200.00	VAR.	1022.22
1411+43.87	1412+40.16	LT. MAIN LANES	96.29	VAR.	473.44
1412+40.16	1413+43.87	LT. MAIN LANES	103.71	38.00	437.89
1412+40.16	1413+43.87	RAMP 4 HWY. 29	103.71	25.00	288.08
1620+43.00	1621+43.00	RAMP 4 HWY. 29	100.00	VAR.	297.60
1410+25.00	1411+25.00	RAMP 3 HWY. 29	100.00	VAR.	393.38
1475+33.00	1482+33.00	LT. MAIN LANES	700.00	38.00	2955.56
1610+09.07	1612+09.07	LT. MAIN LANES	200.00	38.00	844.44
1615+97.89	1617+97.89	LT. MAIN LANES	200.00	38.00	844.44
1697+85.00	1699+85.00	RAMP 4 HWY. 299	200.00	25.00	555.56
1699+80.00	1701+80.00	RAMP 3 HWY. 299	200.00	25.00	555.56
1715+00.00	1717+00.00	LT. MAIN LANES	200.00	38.00	844.44
* ENTIRE	PROJECT	INSIDE SHOULDER			1800.00
TOTAL:					26092.36

NOTE: VARIABLE MILLING DEPTH.

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

8/20/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0307	34	84

(1) A&B5051, A&B5052, A&B5054 - QUANTITIES - 57500

SCHEDULE OF BRIDGE QUANTITIES - JOB BB0307

LOG MILE	(1) UNIT OF STRUCTURE	ITEM NO.	802	803	803	804	SP JOB BB0307	SP JOB BB0307	SP JOB BB0307	SP JOB BB0307	SP JOB BB0307
		ITEM	(3) GROOVING	CLASS 1 PROTECTIVE SURFACE TREATMENT	CLASS 3 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	(3) HYDRODEMOLITION	BRIDGE DECK REPAIR	(3) LATEX MODIFIED CONCRETE OVERLAY (1½" THICK)	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS	(3) POLYMER OVERLAY
		UNIT	SQ. YD.	GAL.	LIN. FT.	LBS.	SQ. YD.	SQ. FT.	SQ. YD.	SQ. FT.	SQ. YD.
30.72	EXISTING BRIDGE NO. A5051		916	20.0	450	300	1,000.7	496	1,002.8		
30.72	EXISTING BRIDGE NO. B5051		916	20.0	450	300	1,000.7	496	1,002.8		
30.89	EXISTING BRIDGE NO. A5052					300				508	1,078.9
30.89	EXISTING BRIDGE NO. B5052					300				422	896.7
34.77	EXISTING BRIDGE NO. A5054										933.3
34.77	EXISTING BRIDGE NO. B5054										933.3
	TOTALS FOR JOB NO. BB0307		1,832	40.0	900	1,200 (2)	2,001.4	992 (2)	2,005.6	930 (2)	3,842.2

(1) BRIDGE DECKS FOR BRIDGE NOS. A&B5051 AND A&B5054 HAVE NO EXISTING ASPHALT OVERLAY.
BRIDGE DECKS FOR BRIDGE NOS. A&B5052 HAVE SOME RESIDUE FROM MILLING OF ASPHALT OVERLAY.

(2) QUANTITY SHOWN IS FOR ESTIMATING AND BIDDING PURPOSES ONLY. ACTUAL QUANTITY, IF ANY, WILL BE DETERMINED IN THE FIELD.

(3) INCLUDES APPROACH SLABS AND GUTTERS.

AILEEN SCHUBEL
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-11-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HWY. 278 - HWY. 299 (S)
HEMPSTEAD COUNTY

ROUTE 30 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 8/4/15 FILENAME: bbb0307_ql.dgn
CHECKED BY: L.J.B DATE: 8/10/15 SCALE: —
DESIGNED BY: — DATE: —
BRIDGE NO. A&B5051, A&B5052, A&B5054 DRAWING NO. 57500

PRINT DATE: 8/11/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-29-15				6	ARK.			
				JOB NO.		BB0307	35	84

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-29-15

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		294	STATION
201	GRUBBING		294	STATION
SP	REMOVAL AND DISPOSAL OF PLOWABLE PAVEMENT MARKER		964	EACH
SP & 202	REMOVAL AND DISPOSAL OF GUARDRAIL		3600	LIN. FT.
303	AGGREGATE BASE COURSE (CLASS 7)		5649	TON
401	TACK COAT		36994	GAL.
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		44480	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		2440	TON
412	COLD MILLING ASPHALT PAVEMENT		26092	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		200	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY		600	TON
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SP & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		1188	SQ. FT.
SS & 604	TRAFFIC DRUMS		382	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		1704	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER		6840	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS		205798	LIN. FT.
604	ADVANCE WARNING ARROW PANEL		120	DAY
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGNS (TRUCK MOUNTED)		112	WEEK
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN		112	WEEK
611	UNDERDRAIN OUTLET PROTECTORS		10	EACH
611	4" PIPE UNDERDRAINS		2000	LIN. FT.
617	GUARDRAIL (TYPE A)		2700	LIN. FT.
617	GUARDRAIL TERMINAL (TYPE 2)		12	EACH
617	THRIE BEAM GUARDRAIL TERMINAL		12	EACH
620	LIME		20	TON
620	SEEDING		10.00	ACRE
SS & 620	MULCH COVER		60.00	ACRE
620	WATER		2040.0	M.GAL.
621	TEMPORARY SEEDING		50.00	ACRE
621	SILT FENCE		2000	LIN. FT.
621	SAND BAG DITCH CHECKS		1408	BAG
621	DROP INLET SILT FENCE		304	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL		149	CU. YD.
623	SECOND SEEDING APPLICATION		10.00	ACRE
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		150198	LIN. FT.
720	PERMANENT PAVEMENT MARKING TAPE (WHITE, 4", TYPE 3)		280	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	93348	LIN. FT.
* SP	HIGH PERFORMANCE MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	93348	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING (SKIP LINE) WHITE (4")	(ALTERNATE NO. 1)	18420	LIN. FT.
* SP	HIGH PERFORMANCE MARKING TAPE (SKIP LINE) WHITE (4")	(ALTERNATE NO. 2)	18420	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (8")	(ALTERNATE NO. 1)	5202	LIN. FT.
* SP	HIGH PERFORMANCE MARKING TAPE WHITE (8")	(ALTERNATE NO. 2)	5202	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	93348	LIN. FT.
* SP	HIGH PERFORMANCE MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	93348	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	600	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	600	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (8")	(ALTERNATE NO. 1)	96	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (8")	(ALTERNATE NO. 2)	96	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		1960	EACH
	STRUCTURES OVER 20' SPAN			
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
802	GROOVING		1832	SQ. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT		40.0	GAL.
803	CLASS 3 PROTECTIVE SURFACE TREATMENT		900	LIN. FT.
804	REINFORCING STEEL-BRIDGE (GRADE 60)		1200	POUND
SP	LATEX MODIFIED CONCRETE OVERLAY (1 1/2" THICK)		2005.6	SQ. YD.
SP	HYDRODEMOLITION		2001.4	SQ. YD.
SP	BRIDGE DECK REPAIR		992	SQ. FT.
SP	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS		930	SQ. FT.
SP	POLYMER OVERLAY		3842.2	SQ. YD.

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
9/29/2015	ADDED NOTE ABOUT PERMANENT PAVEMENT MARKINGS	31, 35

9/29/15

rbb0307.dgn

SUMMARY OF QUANTITIES AND REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	36	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

STA. 1335+00.00
BEGIN JOB BB0307
LOG MILE 29.49

STA. 133900 LT. LANES - IN PLACE
24" x 92' R.C. PIPE CULVERT
RETAIN

200' TRANSITION

300' TAPER

550' ACCEL. LANE

P.O.B. 1330+00.00

N 49°45' 19" E

P.I. 1342+00.00

HWY. 278 RAMP I
P.I. STA. 1343+04.00
Δ = 5°42'30"RT.
D = 3°00'00"
T = 95.22
L = 180.28
P.C. STA. 1342+04.78
P.T. STA. 1343+95.06

1342+04.78

1343+95.06

HWY. 278 RAMP H
P.I. STA. 1349+30.76
Δ = 38°04'40"LT.
D = 7°30'00"
T = 263.63
L = 507.70
P.C. STA. 1349+30.76
P.T. STA. 1354+38.47

STA. 1353+00 LT. LANES - IN PLACE
30" X 96' R.C. PIPE CULVERT
RETAIN

550' ACCEL. LANE

P.C. 1349+30.76

P.I. 1351+46.23

HWY. 278 RAMP I
P.I. STA. 1349+24.07
Δ = 18°53'33"RT.
D = 6°00'00"
T = 158.88
L = 314.88
P.C. STA. 1348+24.07
P.T. STA. 1351+38.95

P.I. 1349+82.95

P.C. 1348+24.07

STA. 1353+00 RT. LANES - IN PLACE
30" X 104' R.C. PIPE CULVERT
RETAIN

RAMP I
STA. 1352+80 - IN PLACE
80' R.C. PIPE CULVERT
RETAIN

1330 1335 1340 1345 1350 1355 1360

N 49°45' 19" E

N 55°27' 49" E

7/2/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	37	84

(2) PLAN SHEETS

EXISTING VERTICAL CLEARANCE UNDER BRIDGE NO. 07061 IS 16'-9". MINIMUM 16'-0" VERTICAL CLEARANCE IS REQUIRED FROM FINISHED ROADWAY.

NOTE: THE ABOVE LISTED EXISTING VERTICAL CLEARANCE SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

HWY. 278

STA. 1363+00 LT. LANES - IN PLACE
36" X 86' R.C. PIPE CULVERT
RETAIN

RAMP 3
STA. 1368+00 - IN PLACE
24" X 72' R.C. PIPE CULVERT
RETAIN

HWY. 278 RAMP 3
P.I. STA. 1371+74.42
Δ = 16°48'05"LT.
D = 6°00'00"
T = 141.02
L = 280.02
P.C. STA. 1370+33.40
P.T. STA. 1373+13.42

P.C. 1370+33.40
P.T. 1373+13.42
P.I. 1371+74.42
P.I. 1370+24.05

1360 1365 1370 1375

N 49°45'19" E

S 51°00'41" E

STA. 1363+00 RT. LANES - IN PLACE
36" X 90' R.C. PIPE CULVERT
RETAIN

STA. 1368+00 RT. LANES - IN PLACE
24" X 86' R.C. PIPE CULVERT
RETAIN

HWY. 278 RAMP 2
P.I. STA. 1370+40.61
Δ = 40°42'42"RT.
D = 7°30'00"
T = 283.44
L = 542.82
P.C. STA. 1367+40.61
P.T. STA. 1372+83.43

600' ACCEL. LANE

STA. 1383+00 LT. LANES - IN PLACE
36" X 86' R.C. PIPE CULVERT
RETAIN

HWY. 278 RAMP 3
P.I. STA. 1378+93.59
Δ = 5°42'30"LT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. STA. 1377+98.59
P.T. STA. 1379+88.87

P.C. 1377+98.59
P.T. 1379+88.87
P.I. 1378+93.81

1375 1380 1385 1390

N 55°27'49" E

N 49°45'19" E

600' ACCEL. LANE 300' TAPER

STA. 1383+00 RT. LANES - IN PLACE
30" X 92' R.C. PIPE CULVERT
RETAIN

7/2/15

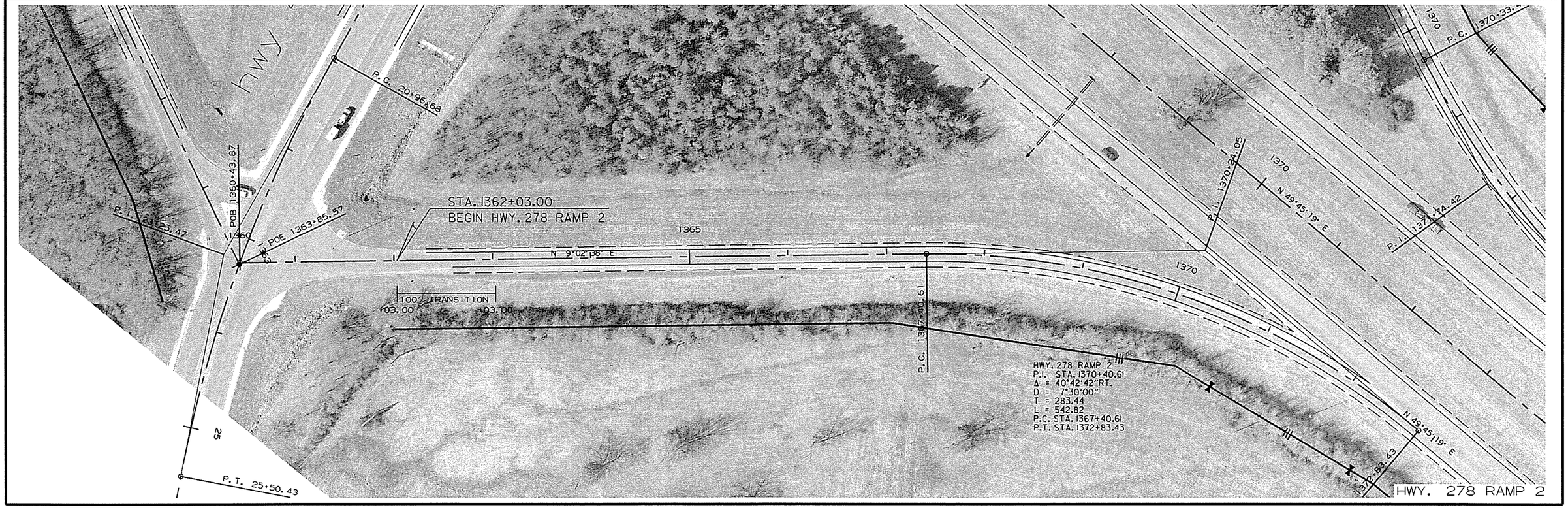
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	38	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15





7/2/15

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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.		BB0307	39	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

HWY. 278 RAMP 3
P.I. STA. 1371+74.42
Δ = 16°48'05"LT.
D = 6°00'00"
T = 141.02
L = 280.02
P.C. STA. 1370+33.40
P.T. STA. 1373+13.42

STA. 1359+75.00
BEGIN HWY. 278 RAMP 3

P.I. 9+01.66
POB 1358+29.62
1358
1360
1365
1370
N 72°15'54" E
100' TRANSITION
+75.00
+75.00
P.C. 1370+33.40
P.T.
P.I. 1371+74.42
N 49°45'19" E
1370
10

HWY. 278 RAMP 3

HWY. 278 RAMP 4
P.I. STA. 1349+30.76
Δ = 38°04'40"LT.
D = 7°30'00"
T = 263.63
L = 507.70
P.C. STA. 1349+30.76
P.T. STA. 1354+38.47

P.C. 1349+30.76
N 49°45'19" E
1350
P.I. 1349+82.95
P.I. 1351+94.36
1350
1350
P.T. 1354+38.47
1355
N 11°40'39" E
STA. 1360+08.00
END HWY. 278 RAMP 4
1360
100' TRANSITION
+08.00
+08.00
P.C. 5+91.75
POE 1361+11.75
1361
POB 1358+29.62
P.I. 9+01.66
10

HWY. 278 RAMP 4

7/2/15

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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.		BB0307	40	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

STA. 1397+00 - IN PLACE
36" X 372' R.C. PIPE CULVERT
W/ TYPE S DI IN MEDIAN
RETAIN

STA. 1399+71.53 BR. END
EXISTING 161.13' BRIDGE 5051A
39'-0" CLEAR ROADWAY
STA. 1401+32.66 BR. END
HYDRODEMOLITION

STA. 1399+82.14 BR. END
EXISTING 161.11' BRIDGE 5051B
39'-0" CLEAR ROADWAY
STA. 1401+43.25 BR. END
REHABILITATE BRIDGE DECK-
HYDRODEMOLITION

STA. 1403+00 - IN PLACE
36" X 398' R.C. PIPE CULVERT
RETAIN

STA. 1391+00 RT. LANES - IN PLACE
TYPE S DI IN MEDIAN
W/ 24" X 152' R.C. PIPE OUTLET
RETAIN

STA.	STA.	GUARDRAIL LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
1397+03	1399+72	RT. OF RML	200 LIN. FT.	1 EACH	1 EACH
1396+53	1399+72	LT. OF RML	250 LIN. FT.	1 EACH	1 EACH
1401+43	1404+12	LT. OF LML	200 LIN. FT.	1 EACH	1 EACH
1401+43	1404+62	RT. OF LML	250 LIN. FT.	1 EACH	1 EACH

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	LOCATION	LENGTH
1396+97	1399+72	RT. OF RML	275 LIN. FT.
1396+47	1399+72	LT. OF TML	325 LIN. FT.
1401+43	1404+18	LT. OF LML	275 LIN. FT.
1401+43	1404+68	RT. OF LML	325 LIN. FT.

STA. 1407+00 LT. LANES - IN PLACE
TYPE S DI IN MEDIAN
W/24" X 195' R.C. PIPE OUTLET
RETAIN

STA. 1408+86.64 BR. END
EXISTING 137.21' BRIDGE 5052A
47'-0" CLEAR ROADWAY
STA. 1410+23.85 BR. END
POLYMER OVERLAY

STA. 1408+35.00 BR. END
EXISTING 137.21' BRIDGE 5052B
39'-0" CLEAR ROADWAY
STA. 1409+72.21 BR. END
POLYMER OVERLAY

HWY. 29 RAMP 4
P.I. STA. 1411+97.38
Δ = 5°42'30"LT.
D = 2°57'27"
T = 96.59
L = 193.02
P.C. STA. 1411+00.79
P.C.C. STA. 1412+93.81

HWY. 29 RAMP 1
P.I. STA. 1410+84.08
Δ = 5°42'30"RT.
D = 2°59'57"
T = 95.24
L = 190.24
P.C. STA. 1409+88.84
P.T. STA. 1411+79.16

RAMP 4
STA. 1417+09 - IN PLACE
24" X 188' R.C. PIPE CULVERT
30° LT. FORWARD SKEW
RETAIN

RAMP 3
STA. 1419+30 - IN PLACE
24" X 120' R.C. PIPE CULVERT
30° RT. FORWARD SKEW
RETAIN

HWY. 29 RAMP 1
P.I. STA. 1415+22.47
Δ = 36°15'04"RT.
D = 20°58'20"
T = 89.43
L = 172.85
P.C. STA. 1414+33.04
P.C.C. STA. 1416+05.90

STA. 1419+00 RT. LANES - IN PLACE
24" X 82' R.C. PIPE CULVERT
RETAIN

RAMP 2
STA. 1420+00 - IN PLACE
24" X 76' R.C. PIPE CULVERT
RETAIN

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	LOCATION	LENGTH
1405+50	1408+25	RT. OF RML	275 LIN. FT.
1405+00	1408+25	LT. OF RML	325 LIN. FT.
1410+34	1413+09	LT. OF LML	275 LIN. FT.
1410+34	1413+59	RT. OF LML	325 LIN. FT.

STA.	STA.	GUARDRAIL LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
1405+56	1408+25	RT. OF RML	200 LIN. FT.	1 EACH	1 EACH
1405+06	1408+25	LT. OF RML	250 LIN. FT.	1 EACH	1 EACH
1411+34	1414+03	LT. OF LML	200 LIN. FT.	1 EACH	1 EACH
1411+34	1414+53	RT. OF LML	250 LIN. FT.	1 EACH	1 EACH

8/26/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	41	84

(2) PLAN SHEETS

EXISTING OVERHEAD SIGN STRUCTURE AT STA. 1424+00 OVER WESTBOUND LANES. MINIMUM 15'-0" VERTICAL CLEARANCE IS REQUIRED FROM FINISHED ROADWAY.

NOTE: THE ABOVE LISTED EXISTING VERTICAL CLEARANCE SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

HWY. 29 RAMP 3
P.I. STA. 1419+80.80
Δ = 32°15'13"LT.
D = 6°00'00"
T = 276.11
L = 537.56
P.C. STA. 1417+04.69
P.T. STA. 1422+42.25

HWY. 29 RAMP 3
P.I. STA. 1425+91.65
Δ = 5°36'56"LT.
D = 3°00'00"
T = 93.67
L = 187.18
P.C. STA. 1424+91.65
P.T. STA. 1426+78.83

HWY. 29 RAMP 2
P.I. STA. 1419+72.97
Δ = 43°31'42"RT.
D = 8°00'00"
T = 285.94
L = 544.10
P.C. STA. 1416+87.03
P.T. STA. 1422+31.13

HWY. 29 RAMP 2
P.I. STA. 1426+02.18
Δ = 6°08'32"RT.
D = 3°00'00"
T = 102.47
L = 204.74
P.C. STA. 1424+99.71
P.T. STA. 1427+04.45

STA. 1429+50 IN PLACE
7' X 5' X 256' R.C. BOX CULVERT
W/ TYPE T DI IN MEDIAN
RETAIN

STA. 1444+00 LT. LANES - IN PLACE
30" X 92' R.C. PIPE CULVERT
RETAIN

STA. 1449+00 - IN PLACE
DBL. 10' X 5' X 295' R.C. BOX CULVERT
30° LT. FORWARD SKEW
W/TYPE T DI IN MEDIAN
RETAIN

STA. 1444+00 RT. LANES - IN PLACE
30" X 108' R.C. PIPE CULVERT
RETAIN

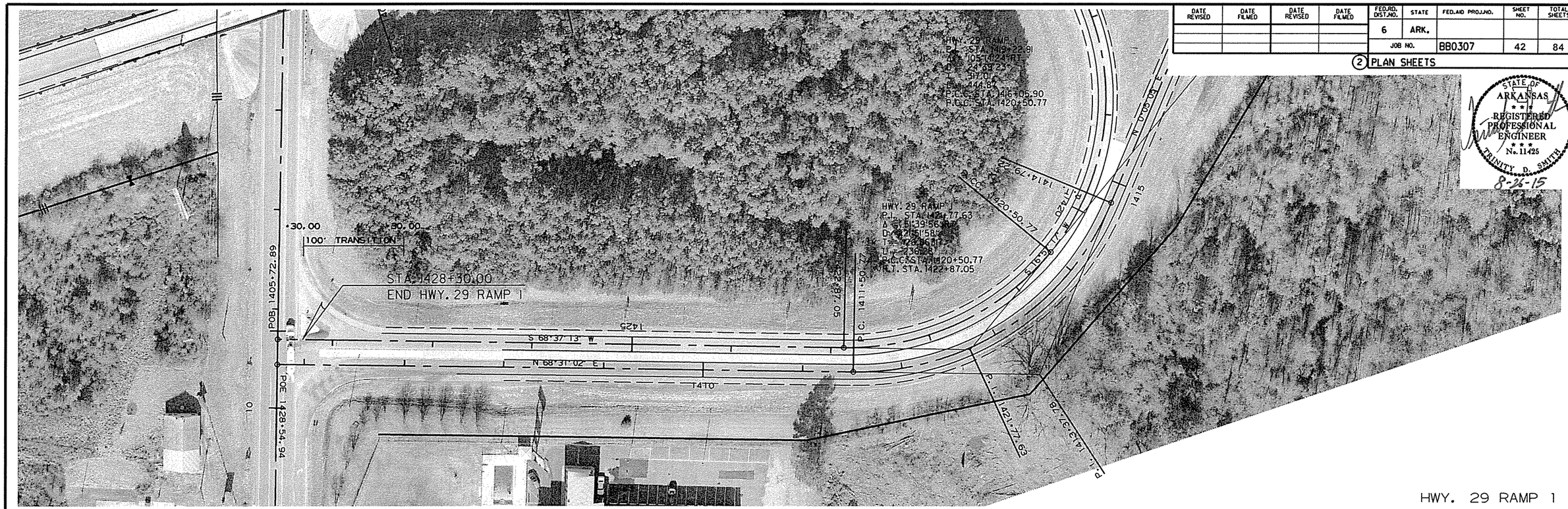
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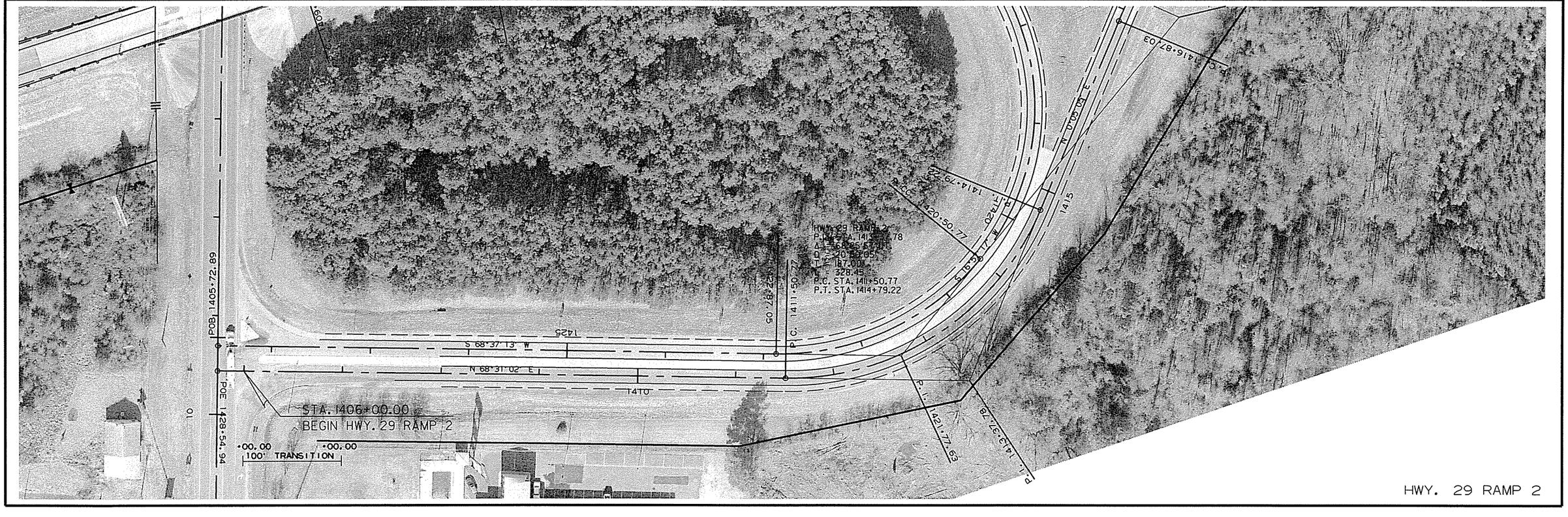
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	42	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-25-15



HWY. 29 RAMP 1



HWY. 29 RAMP 2

7/2/15

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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.		BB0307	43	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

HWY. 29 RAMP 3
P.I. STA. 1412+60.85
Δ = 18°50'48"RT.
D = 19°05'55"
T = 49.79
L = 98.68
P.C. STA. 1412+11.05
P.T. STA. 1413+09.74

HWY. 29 RAMP 3
P.I. STA. 1419+80.80
Δ = 32°15'13"LT.
D = 6°00'00"
T = 276.11
L = 537.56
P.C. STA. 1417+04.69
P.T. STA. 1422+42.25

P.O.E. 23+00.00
P.O.B. 1410+02.74
P.I. 23+00.00
100' TRANSITION
•25.00 •25.00
STA. 1410+25.00
BEGIN HWY. 29 RAMP 3
N 68°52'14" E
S 68°37'11" W
P.I. 1412+60.85
P.C. 1412+11.05
P.T. 1413+09.74
P.C. 1417+04.69
P.T. 1419+58.42
P.T. 1422+42.25
N 87°43'02" E
N 55°27'49" E
P.I. 1419+80.80
P.O.E. 1421+69.28
1420
1415
20
28

HWY. 29 RAMP 3

P.O.E. 23+00.00
P.O.B. 1410+02.74
P.I. 23+00.00
P.I. 1412+60.85
N 68°52'14" E
S 68°37'11" W
STA. 1421+43.00
END HWY. 29 RAMP 4
100' TRANSITION
•43.00 •43.00
P.C. 1412+11.05
P.T. 1419+58.42
P.T. 1413+09.74
P.C. 1417+04.69
P.I. 1419+80.80
P.O.E. 1421+69.28
N 87°43'02" E
1415
1420
20
28

HWY. 29 RAMP 4
P.I. STA. 1424+18.76
Δ = 155°25'38"LT.
D = 23°23'10"
T = 1124.95
L = 664.62
P.C.C. STA. 1412+93.81
P.T. STA. 1419+58.42

HWY. 29 RAMP 4

7/2/15

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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.		BB0307	44	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

STA. 1462+00 - IN PLACE
10' X 5' X 380' R.C. BOX CULVERT
45° LT. FORWARD SKEW
W/ TYPE T D1 IN MEDIAN
RETAIN

1450 1455 N 49°45' 19" E 1460 1465

STA. 1467+00 LT. LANES - IN PLACE
24" X 86' R.C. PIPE CULVERT
RETAIN

EXISTING VERTICAL CLEARANCE UNDER BRIDGE NO. 05053 IS 15'-11" WESTBOUND AND 16'-4" EASTBOUND.
MINIMUM 16'-0" VERTICAL CLEARANCE IS REQUIRED FROM FINISHED ROADWAY.

NOTE: THE ABOVE LISTED EXISTING VERTICAL CLEARANCE SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

1470 N 49°45' 19" E 1475+23

LT. MAIN LANES
300' COLD MILL TRANSITION

LT. MAIN LANES
100' COLD MILL

1480

CO. RD. 248

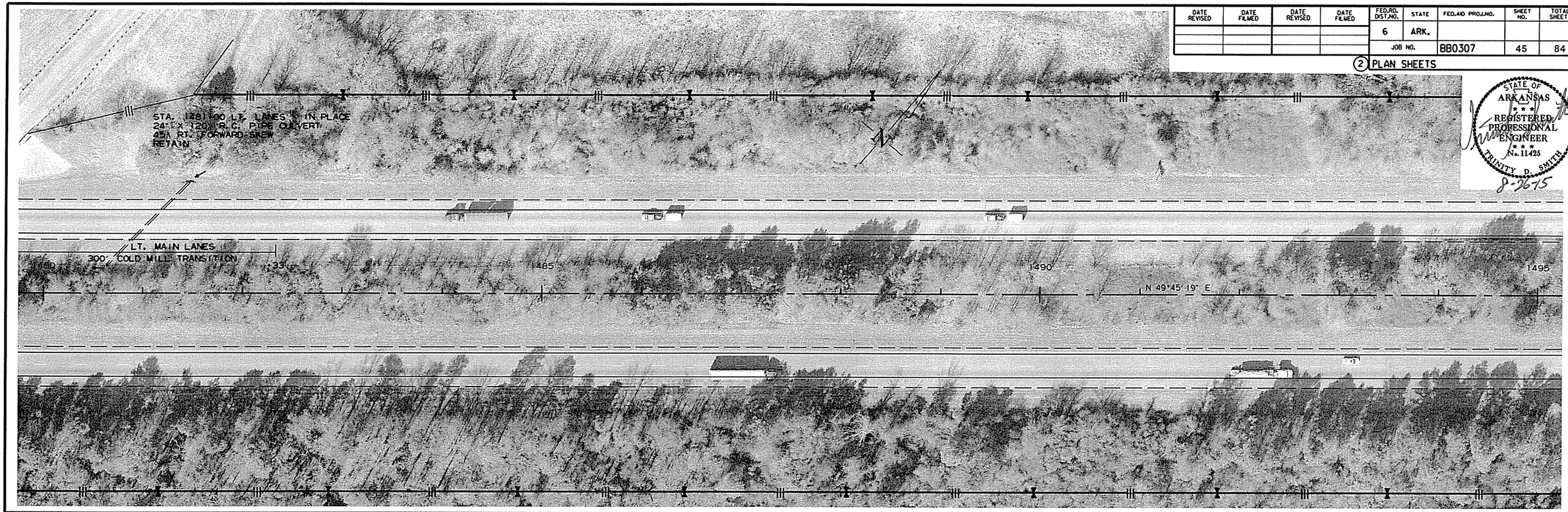
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	45	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15





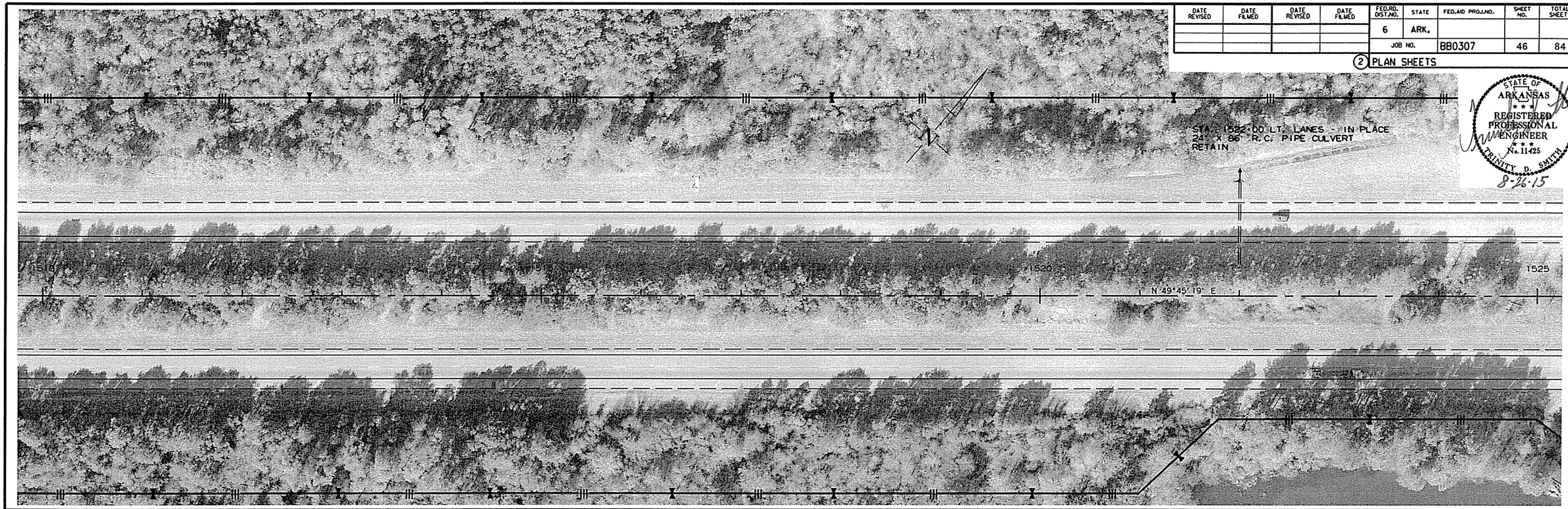
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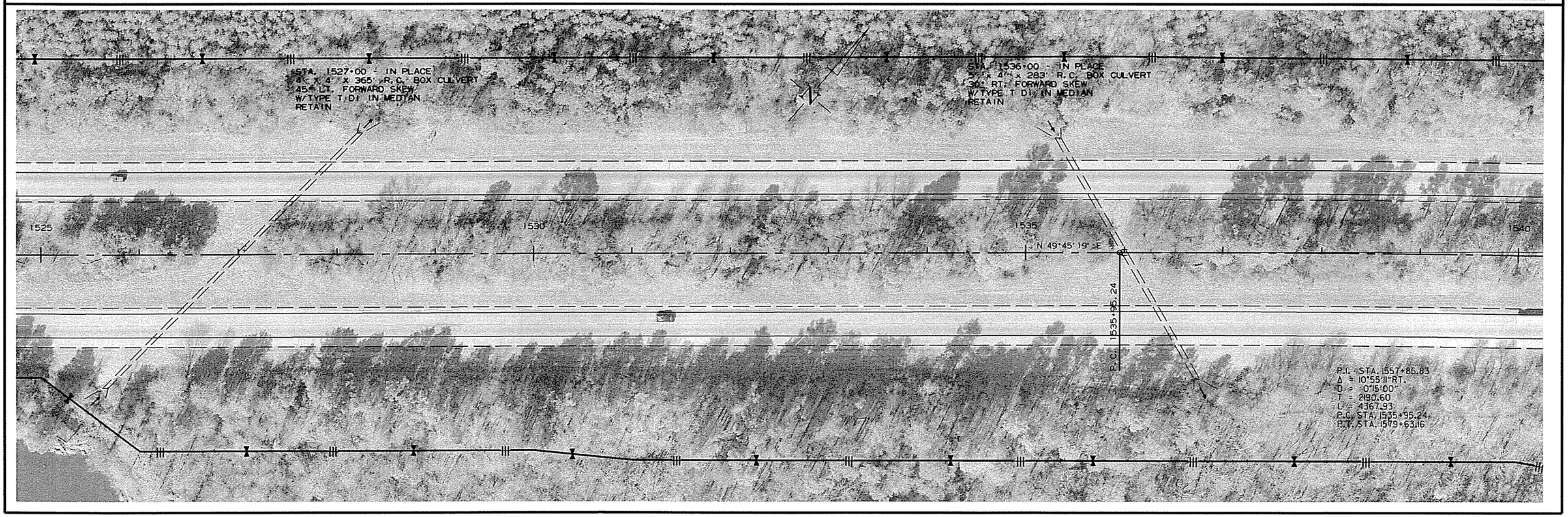
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	46	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15





7/2/15

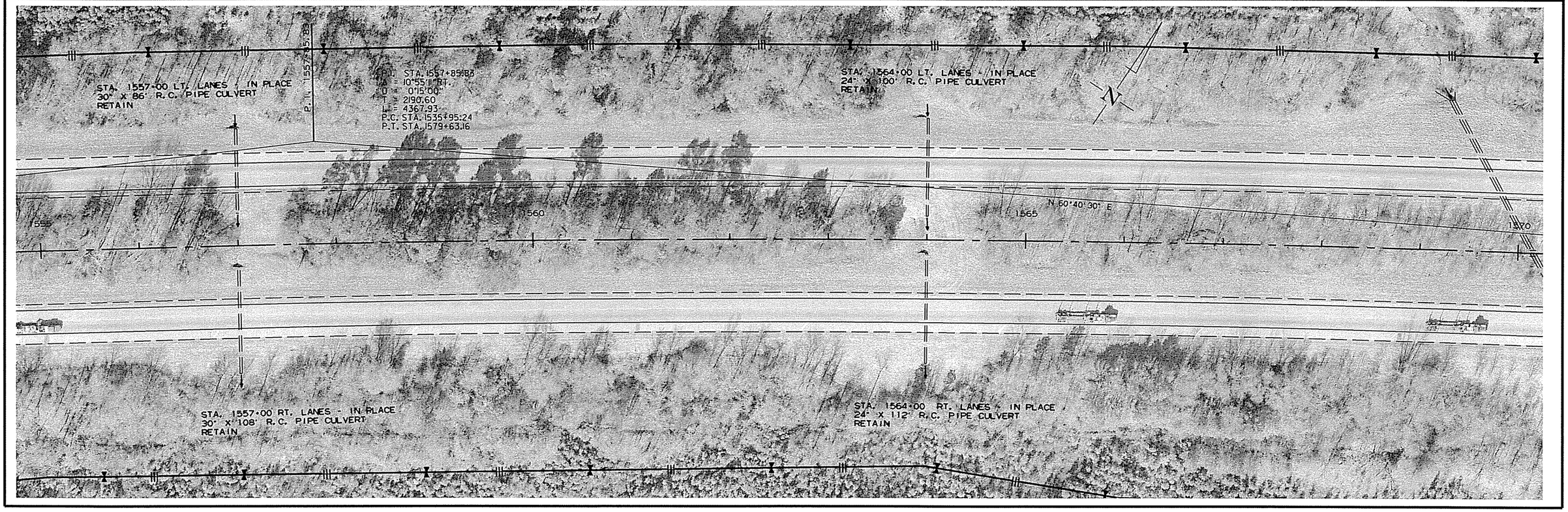
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	47	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15





7/2/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	48	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

STA. 1570+15 - IN PLACE
5' X 3' X 351' R.C. BOX CULVERT
30° RT. FORWARD SKEW
W/TYPE T DI IN MEDIAN
RETAIN

1570
1575
1580
1585
N 60°40' 30" E

P.I. STA. 1557+85.83
Δ = 10°55'11" RT.
D = 0°15'00"
T = 2190.60'
L = 4367.93'
R.C. STA. 1535+95.24
P.T. STA. 1579+63.16

1579+63.16

STA. 1582+90 - IN PLACE
PAVED MEDIAN CROSSING
OVERLAY

STA. 1583+00 - IN PLACE
10' X 8' X 230' R.C. BOX CULVERT
RETAIN

STA. 1589+80 LT. LANES - IN PLACE
42" X 116' R.C. PIPE CULVERT
30° RT. FORWARD SKEW
W/FES LT. & RT.
RETAIN

1585
1590
1595
1600
N 60°40' 30" E

STA. 1590+63 RT. LANES - IN PLACE
42" X 120' R.C. PIPE CULVERT
30° RT. FORWARD SKEW
RETAIN

7/2/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	49	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

STA.	GUARDRAIL STA.	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
1610+66	1613+35	RT. OF RML	200 LIN. FT.	1 EACH	1 EACH
1610+16	1613+35	LT. OF RML	250 LIN. FT.	1 EACH	1 EACH
1614+75	1617+44	LT. OF LML	200 LIN. FT.	1 EACH	1 EACH
1614+75	1617+94	RT. OF LML	250 LIN. FT.	1 EACH	1 EACH

STA. 1611+70 - IN PLACE
6' X 6' X 331' R.C. BOX CULVERT
30° RT. FORWARD SKEW
W/DI IN MEDIAN
RETAIN

STA. 1613+35.00 BR. END
EXISTING 140.00' BRIDGE 5054A
40'-0" CLEAR ROADWAY
STA. 1614+75.00 BR. END
POLYMER OVERLAY

STA. 1613+55.00 BR. END
STA. 1614+75.00 BR. END

1600 1605 1610 1615

+09.07 200' TRANSITION +09.07

N 60°40' 30" E

STA. 1606+00 RT. LANES - IN PLACE
24" X 108' R.C. PIPE CULVERT
RETAIN

REMOVAL AND DISPOSAL OF GUARDRAIL			
STA.	STA.	LOCATION	LENGTH
1610+60	1613+35	RT. OF RML	275 LIN. FT.
1610+10	1613+35	LT. OF RML	325 LIN. FT.
1614+75	1617+50	LT. OF LML	275 LIN. FT.
1614+75	1618+00	RT. OF LML	325 LIN. FT.

STA. 1613+35.00 BR. END
EXISTING 140.00' BRIDGE 5054B
40'-0" CLEAR ROADWAY
STA. 1614+75.00 BR. END
POLYMER OVERLAY

TERRE ROUGE CREEK

+97.89 200' TRANSITION +97.89

1615 1620 1625 1630

N 60°40' 30" E N 60°40' 30" E

STA. 1619+00 RT. LANES - IN PLACE
24" X 116' R.C. PIPE CULVERT
RETAIN

STA. 1627+00 RT. LANES - IN PLACE
24" X 120' R.C. PIPE CULVERT
RETAIN

8/26/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	50	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

STA. 1631+30 LT. LANES - IN PLACE
102' R.C. BOX CULVERT
RETAIN

STA. 1637+00 LT. LANES - IN PLACE
24' X 148' R.C. PIPE CULVERT
30° LT. FORWARD SKEW
RETAIN

1630 1635 1640 1645

N 60°40'30" E

STA. 1631+30 RT. LANES - IN PLACE
102' R.C. BOX CULVERT
RETAIN

STA. 1636+17 RT. LANES - IN PLACE
24' X 136' R.C. PIPE CULVERT
30° LT. FORWARD SKEW
RETAIN

STA. 1649+76 LT. LANES - IN PLACE
4' X 6' X 100' R.C. BOX CULVERT
30° LT. FORWARD SKEW
RETAIN

P.I. STA. 1676+62.70
Δ = 11°02'55" LT.
D = 0°15'00"
T = 2216.58
L = 4419.41
P.C. STA. 1654+46.12
P.T. STA. 1698+65.53

P.C. 1654+46.12

1645 1650 1655 1660

N 60°40'30" E

STA. 1648+93 RT. LANES - IN PLACE
4' X 6' X 100' RC BOX CULVERT
30° LT. FORWARD SKEW
RETAIN

8/26/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	51	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

STA. 1662+00 LT. LANES - IN PLACE
24" x 86' R.C. PIPE CULVERT
RETAIN

P.I. STA. 1676+62.70
Δ = 11°02'55"LT.
D = 0°15'00"
T = 2216.58
L = 4419.41
P.C. STA. 1654+46.12
P.T. STA. 1698+65.53

1660 1665 1670 1675

N 60°40' 30" E

STA. 1662+00 RT. LANES - IN PLACE
24" x 86' R.C. PIPE CULVERT
RETAIN

STA. 1679+00 LT. LANES - IN PLACE
24" x 108 R.C. PIPE CULVERT
RETAIN

300' TAPER

550' ACCEL. LANE

STA. 1683+00 - IN PLACE
DBL 10' X 8' X 340 R.C. BOX CULVERT
W/TYPE T DI IN MEDIAN
RETAIN

HWY. 299 RAMP 4
P.I. STA. 1685+28.63
Δ = 5°42'30"LT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. STA. 1684+33.41
P.T. STA. 1686+23.69

P.C. 1684+33.41

P.T. 1686+23.69

P.C. 1688+01.59

HWY. 299 RAMP 4
P.I. STA. 1691+33.31
Δ = 38°18'43"LT.
D = 6°00'00"
T = 331.72
L = 626.70
P.C. STA. 1688+01.59
P.T. STA. 1694+40.12

1675 1680 1685 1690

N 52°56' 18" E

N 44°13' 48" E

N 49°37' 36" E

P.I. 1677+90.77

P.I. 1685+28.63

N 55°02' 25" E

N 80°44' 55" E

P.I. 1683+70.78

P.I. 1676+62.70

P.C. 1676+95.55

P.T. 1678+85.83

P.C. 1681+51.56

1685

P.I. STA. 1676+62.70
Δ = 11°02'55"LT.
D = 0°15'00"
T = 2216.58
L = 4419.41
P.C. STA. 1654+46.12
P.I. STA. 1698+65.53

HWY. 299 RAMP 1
P.I. STA. 1677+90.77
Δ = 5°42'30"RT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. STA. 1676+95.55
P.T. STA. 1678+85.83

HWY. 299 RAMP 1
P.I. STA. 1683+70.78
Δ = 27°55'53"RT.
D = 6°30'00"
T = 219.22
L = 429.71
P.C. STA. 1681+51.56
P.T. STA. 1685+81.27

STA. 1685+75 RT. LANES - IN PLACE
30" x 140' R.C. PIPE INLET
30° LT. FORWARD SKEW
W/TYPE R DI ON RT.
& 30" x 112' R.C. PIPE OUTLET
RETAIN

7/2/15

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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.		BB0307	52	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-26-15

RAMP 4
STA. 1691+00 - IN PLACE
30" x 76' R.C. PIPE CULVERT
RETAIN

EXISTING VERTICAL CLEARANCE UNDER BRIDGE NO. 05055 IS 16'-1" WESTBOUND AND 16'-6" EASTBOUND.
MINIMUM 16'-0" VERTICAL CLEARANCE IS REQUIRED FROM FINISHED ROADWAY.

NOTE: THE ABOVE LISTED EXISTING VERTICAL CLEARANCE SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

HWY. 299

STA. 1698+00 LT. LANES - IN PLACE
30" x 100' R.C. PIPE CULVERT
30° LT. FORWARD SKEW
RETAIN

P.I. 1691+33.91

P.T. 1698+65.53

P.I. 1704+

1690 1695 1700 1705

N 49°37'36" E

•46 300' COLD MILL TAPER RT. MAIN LANES 100' COLD MILL RT. MAIN LANES 300' COLD MILL TAPER RT. MAIN LANES •46

P.I. 1698+90.28

N 43°55'06" E

P.I. 1702+56.62

P.I. 1704+59.11

P.I. STA. 1676+62.70
Δ = 11°02'55"LT.
D = 0°15'00"
T = 2216.58
L = 4419.41
P.C. STA. 1654+46.12
P.T. STA. 1698+65.53

HWY. 299 RAMP 3
P.I. STA. 1704+75.86
Δ = 25°52'02"LT.
D = 4°00'00"
T = 328.95
L = 646.68
P.C. STA. 1701+46.92
P.T. STA. 1707+93.60

P.I. 1707+93.60

P.C. 1711+85.75

HWY. 299 RAMP 33
P.I. STA. 1712+80.96
Δ = 5°42'30"LT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. STA. 1711+85.75
P.T. STA. 1713+76.02

P.T. 1713+76.02

STA. 1715+00.00
END JOB BB0307
LOG MILE 36.69

1705 1710 1715 1720

N 55°20'06" E

N 49°37'36" E

P.I. 1705+54.33

P.I. 1712+80.96

N 49°37'36" E

HWY. 299 RAMP 2
P.I. STA. 1705+54.33
Δ = 5°42'30"RT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. STA. 1704+59.11
P.T. STA. 1706+49.39

P.T. 1706+49.39

500' ACCEL. LANE 300' TAPER 200' TRANSITION

STA. 1715+00 - IN PLACE
TYPE R DI IN MEDIAN
W/30" x 174' R.C. PIPE INLET
& 30" x 194' R.C. PIPE OUTLET
45° RT° FORWARD SKEW
RETAIN

STA. 1718+50 - IN PLACE
4' x 3' x 290' R.C. BOX CULVERT
30° LT. FORWARD SKEW
W/TYPE T DI IN MEDIAN
RETAIN

7/2/15

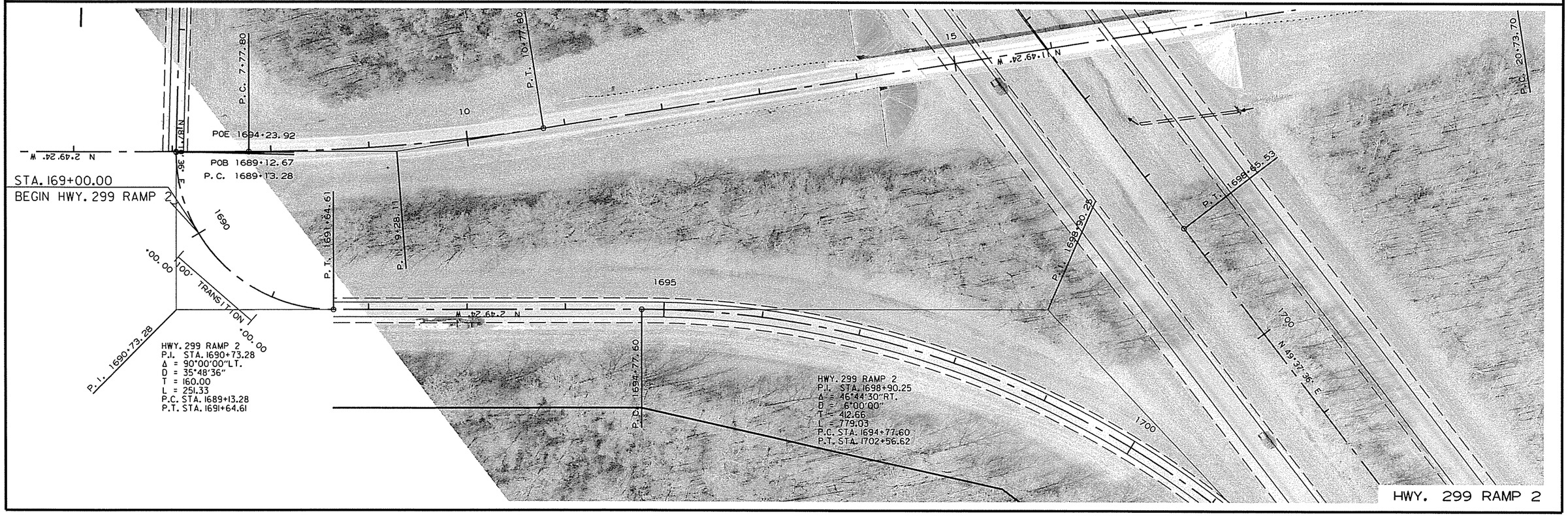
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	53	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-16-15





7/2/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	54	84

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-16-15

HWY. 299 RAMP 3
P.I. STA. 1704+75.86
Δ = 25°52'02"LT.
D = 4°00'00"
T = 328.95
L = 646.68
P.C. STA. 1701+46.92
P.T. STA. 1707+93.60

P.T. 1699+60.40
P.C. 1698+18.60
P.I. 23+60.37
P.I. 22+17.30
P.I. 20+73.70
P.C. 1701+46.92
P.T. 1707+93.60
P.I. 1704+75.86
P.I. 1705+54.38
N 84°06'34" E
N 81°12'08" E
N 35°20'06" E
20.00
100' TRANSITION
STA. 1699+20.00
BEGIN HWY. 299 RAMP 3
1700
1705
1710

HWY. 299 RAMP 3

HWY. 299 RAMP 4
P.I. STA. 1691+33.31
Δ = 38°18'43"LT.
D = 6°00'00"
T = 331.72
L = 626.70
P.C. STA. 1688+01.59
P.T. STA. 1694+40.12

HWY. 299 RAMP 4
P.I. STA. 1698+51.93
Δ = 75°11'29"RT.
D = 28°38'52"
T = 154.00
L = 262.47
P.C. STA. 1696+97.94
P.T. STA. 1699+60.40

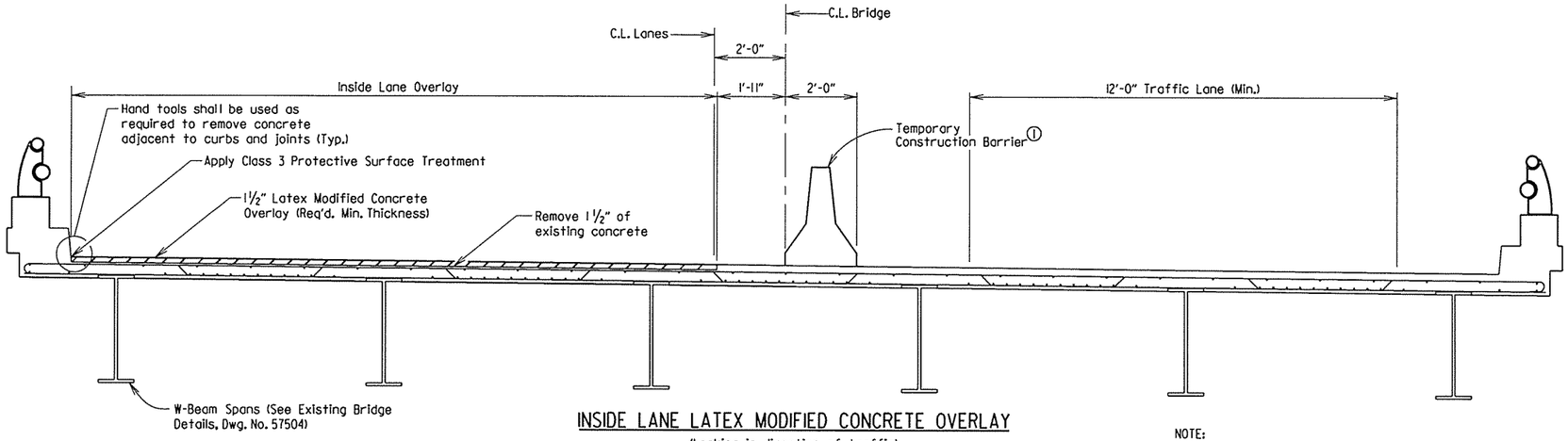
P.T.
P.C. 1688+01.59
P.I. 1691+83.31
P.T. 1694+40.12
P.C. 1696+97.94
P.T. 1699+60.40
N 41°13'48" E
N 49°37'36" E
N 8°55'05" E
N 84°06'34" E
85.00
100' TRANSITION
STA. 1699+85.00
END HWY. 299 RAMP 4
1690
1695
1700

HWY. 299 RAMP 4

7/2/15

rbb0307.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	55	84
				①	A&B5051	- LMC OVERLAY - 57501		

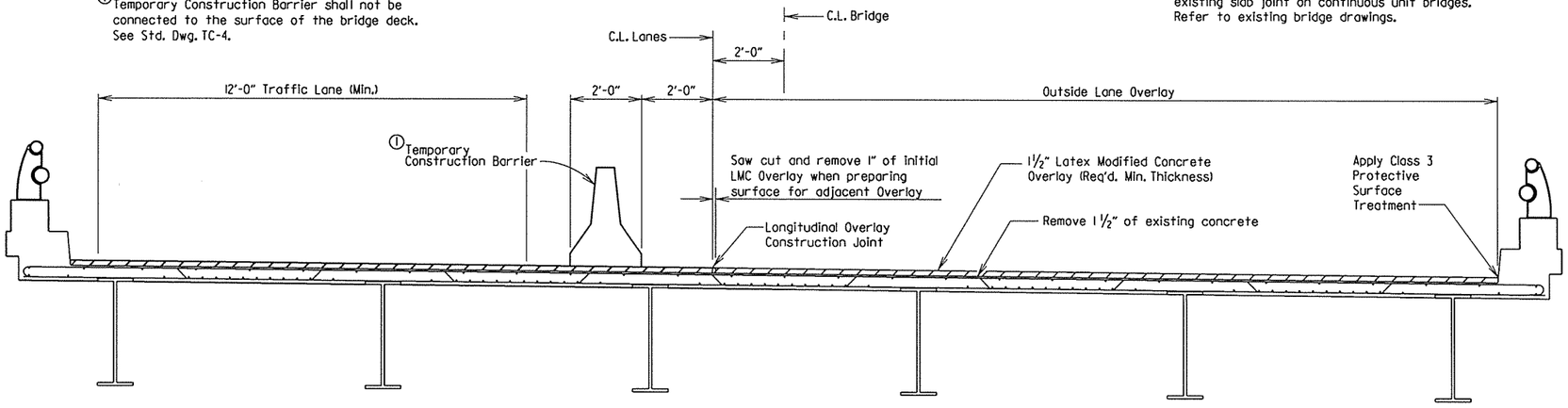


INSIDE LANE LATEX MODIFIED CONCRETE OVERLAY

(Looking in direction of traffic)

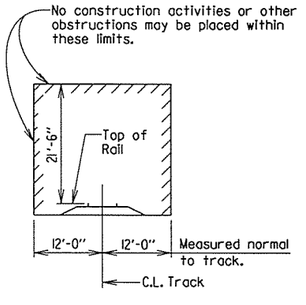
NOTE:
The minimum overlay placement length shall be a full span on simple span bridges and to an existing slab joint on continuous unit bridges. Refer to existing bridge drawings.

① Temporary Construction Barrier shall not be connected to the surface of the bridge deck. See Std. Dwg. TC-4.



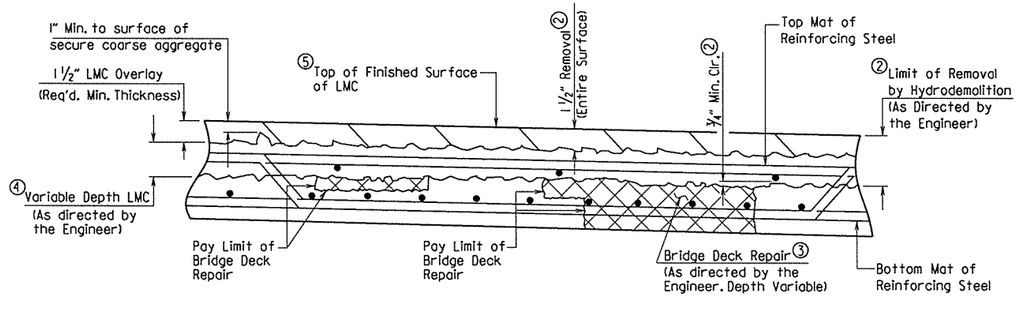
OUTSIDE LANE LATEX MODIFIED CONCRETE OVERLAY

(Looking in direction of traffic)



MINIMUM CONSTRUCTION CLEARANCES

Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment.



DETAILS OF HYDRODEMOLITION AND LATEX MODIFIED CONCRETE OVERLAY

② Removal of unsound concrete beyond 1½" below the original surface shall be at the direction of the Engineer. If the bond between existing concrete and the top mat of reinforcing steel is destroyed, then the concrete shall be removed to a minimum of ¾" clearance below the bar.

③ Areas requiring additional repair, as determined by the Engineer, shall be repaired in accordance with the Job Special Provision "Bridge Deck Repair".

④ Depth Varies to achieve minimum clearance below top mat of reinforcing steel, where required.

⑤ Finished Surface of LMC Overlay shall match existing concrete deck surfaces unless increase is required to maintain minimum required LMC Overlay thickness and a minimum of 1½" cover to reinforcing steel.

GENERAL NOTES:
CONSTRUCTION SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 2014, with applicable Special Provisions and Supplemental Specifications. Unless otherwise noted in the plans Section and Subsection refer to the Standard Specifications.

Drawing shows details and dimensions of existing structures based on the original bridge plans. The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and fit the new work to the existing structure.

The operation or placement of vehicles, equipment and, or materials on the subject bridges necessary for the completion of this work shall be evaluated in accordance with Subsection 105.14. Certifications of the adequacy of all components for the anticipated loads shall address the capacity of the existing structure at all phases of this work.

HYDRODEMOLITION: The entire area of the existing bridge deck and the approach slabs and approach gutters shall receive hydrodemolition in accordance with the Job Special Provision "Hydrodemolition" to a planned depth of 1½" below the existing bridge deck surface. Deteriorated concrete in the bridge deck below this depth shall be removed at the direction of the Engineer and up to the limits detailed. These areas shall be measured by the square yard and shall be paid for at the unit price bid for the item SP Job BB0307 "Hydrodemolition." Prior to hydrodemolition, cold milling of the concrete deck to a maximum depth of 1" will be allowed unless there will be a conflict with the existing reinforcing.

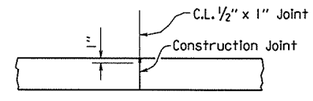
BRIDGE DECK REPAIR: After hydrodemolition, the deck surface shall be sounded and any areas of unsound, delaminated or otherwise deteriorated concrete shall be removed at the direction of the Engineer and in accordance with SP Job BB0307 "Bridge Deck Repair".

LATEX MODIFIED CONCRETE OVERLAY: The entire area of the existing bridge deck and the approach slabs and approach gutters shall receive a Latex Modified Concrete (LMC) Overlay to a planned depth of 1½" below the existing bridge deck surface, in accordance with SP Job BB0307 "Latex Modified Concrete Overlay". These areas shall be measured by the square yard and shall be paid for at the unit price bid for the item SP Job BB0307 "Latex Modified Concrete Overlay (1½" Thick)". Areas of the existing bridge deck removed at the direction of the Engineer to a depth greater than 1½" below the existing bridge deck surface shall be filled with LMC concurrent to the placement of the 1½" LMC Overlay. This area shall be measured and paid for in accordance with SP Job BB0307 "Latex Modified Concrete Overlay".

BRIDGE DECK: The LMC Overlay surface of the bridge deck shall be given a grooved finish as specified for final finishing in Subsection 802.19 for Class 7 Grooved Bridge Roadway Surface Finish and in accordance with SP Job BB0307 "Latex Modified Concrete Overlay".

PROTECTIVE SURFACE TREATMENT : The longitudinal joint between the LMC overlay and the adjacent existing concrete curb or rail shall be given a Class 3 Protective Surface Treatment as specified in Section 803 and in accordance with SP Job BB0307 "Latex Modified Concrete Overlay". Longitudinal construction joints separating adjacent overlay placements shall be prepared and sealed as shown.

The roadway surface of the LMC overlay shall be given a Class 1 Protective Surface Treatment as specified in Section 803.



Notes:
Use ½" X 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer Rod shall not be installed. Joint Sealer shall be measured and paid for as LMC Overlay. Sealant must be gray or other color similar to concrete.

Longitudinal construction joints shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the Overlay.

LONGITUDINAL OVERLAY CONSTRUCTION JOINT DETAIL

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-11-15
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF LATEX MODIFIED CONCRETE OVERLAY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

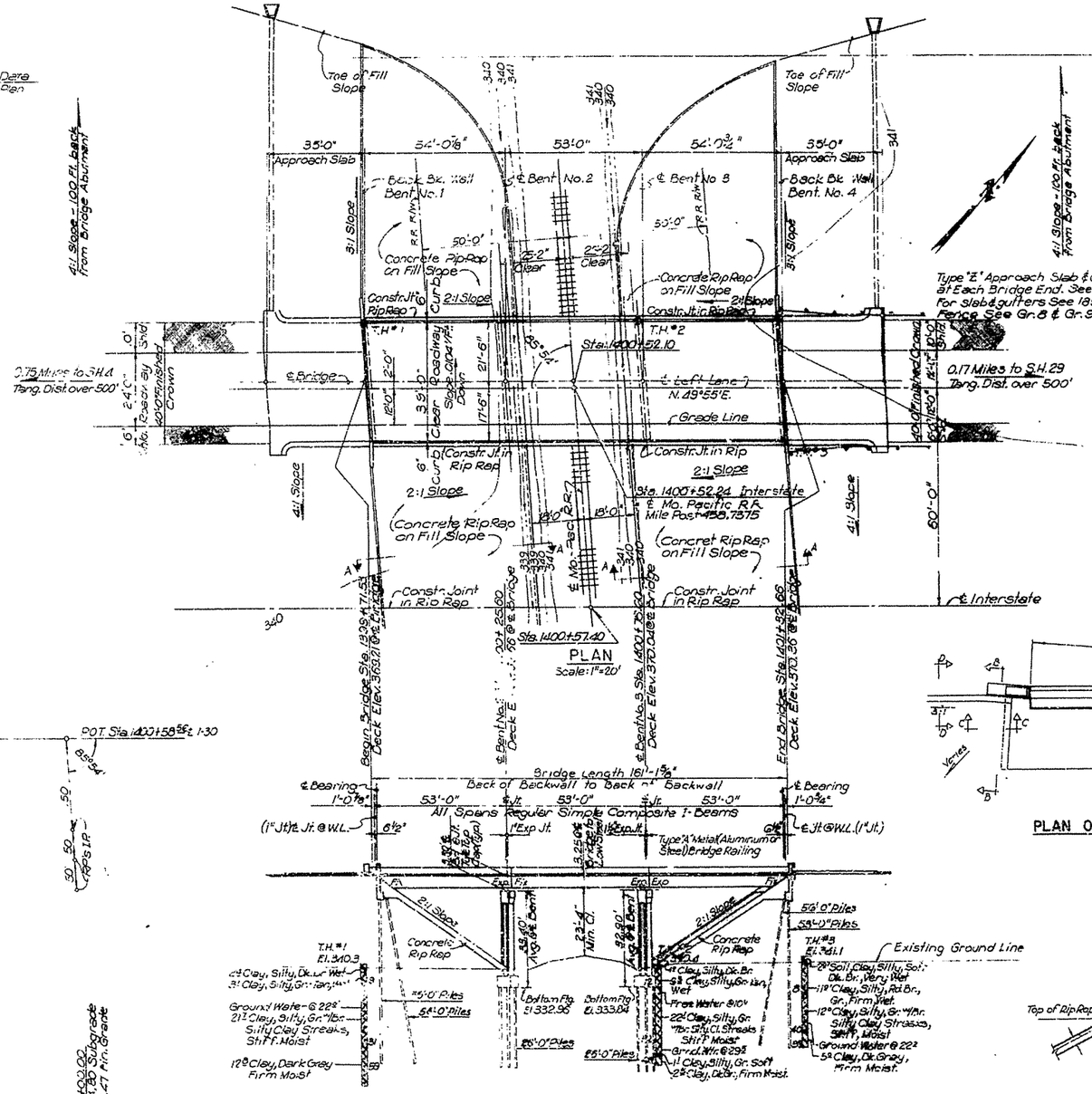
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DESIGNED BY: DATE:

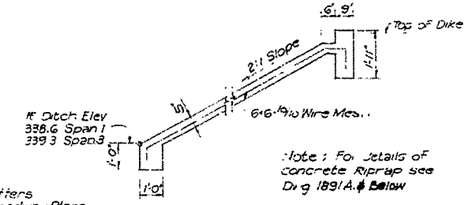
BRIDGE NO. A&B5051 DRAWING NO. 57501

PRINT DATE: 10-AUG-2015

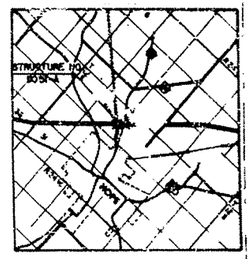
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0307	56	84
(1) A5051		- LAYOUT -		57502

Right-of-Way Data
See Roadway Plan



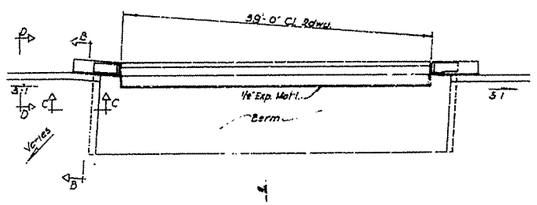


SECTION A-A
scale ⅜"=1'-0"



KEY PLAN

Type 'E' Approach Slab & Gutters at Each Bridge End. See Roadway Plans. For slab & gutters See 1898F. For Guard Fence See Gr. 8 & Gr. 9.



PLAN OF CONCRETE RIPRAP AT END BENT
Scale ⅛"=1'-0"

GENERAL NOTES

ALL CONCRETE TO BE POURED IN THE DRY. EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

IN GENERAL, ALL CONSTRUCTION JOINTS IN ABUTMENTS AND PIERS SHALL BE HORIZONTAL AND SHALL BE PROVIDED WITH KEYS NOT LESS THAN 1½" HIGH COVERING THE MIDDLE THIRD OF BOTH DIMENSIONS.

ALL PILING SHALL BE 16" OCTAGONAL PRECAST CONCRETE OR 16" CONCRETE FILLED METAL SHELLS AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 40 TONS PER PILE, WITH A MINIMUM LENGTH OF 30' OR 32' INTO EXISTING GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES ONLY, ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 51' TEST PILE IN BENT NO. 2.

PILES IN END BENTS SHALL BE DRIVEN, AFTER EMBANKMENT IS IN PLACE TO SUBGRADE ELEVATION.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1959, AND 1966 SUPPLEMENTAL SPECIFICATIONS.

DESIGN SPECIFICATIONS AASHO 1961

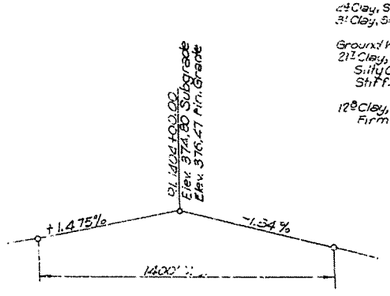
LIVE LOADING: H520 AND SPECIAL INTERSTATE LOADING OF 3-24,000# AXLES SPACED 4'-0" ON CENTER.

UNIT STRESSES:

CLASS A CONCRETE (n=15)	840 PSI
CLASS S (SEL) CONCRETE (n=10)	1,200 PSI
CLASS S CONCRETE (n=10)	1,250 PSI
REINFORCING STEEL	20,000 PSI
STRUCTURAL STEEL (A-36)	20,000 PSI

REFERENCE LIST OF DRAWINGS

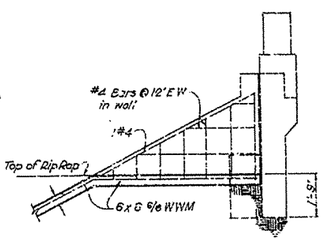
FOR DETAILS OF BENT NOS. 1 & 4, SEE DWG. NO. 14243
FOR DETAILS OF BENT NOS. 2, 3, SEE DWG. NO. 14244
FOR FRAMING PLAN & STRUCTURAL DETAILS, SEE DWG. NO. 14245 & 14246



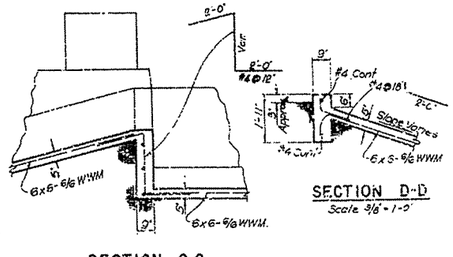
CURVE DATA

SPECIAL NOTE:
Bridge Stations & Elevations are Shown along ℄ Bridge

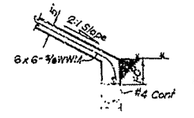
ELEVATION
Scale: 1"=20'



SECTION B-B
Scale: ⅜"=1'-0"



SECTION D-D
Scale ⅜"=1'-0"



TOE OF CONCRETE RIPRAP
Scale ⅜"=1'-0"

NOTE:
Slope Surfaces of Concrete riprap to be marked off into blocks (Construction Joints optional) with an approved grooving tool, spacing the grooved lines about 3' apart

SECTION C-C
Scale ⅜"=1'-0"

FOR INFORMATION ONLY

LAYOUT OF OVERPASS OVER
UNION PACIFIC RAILROAD
HIGHWAY 4 — HIGHWAY 29
HEMPSTEAD COUNTY
ROUTE 30 SEC. 12

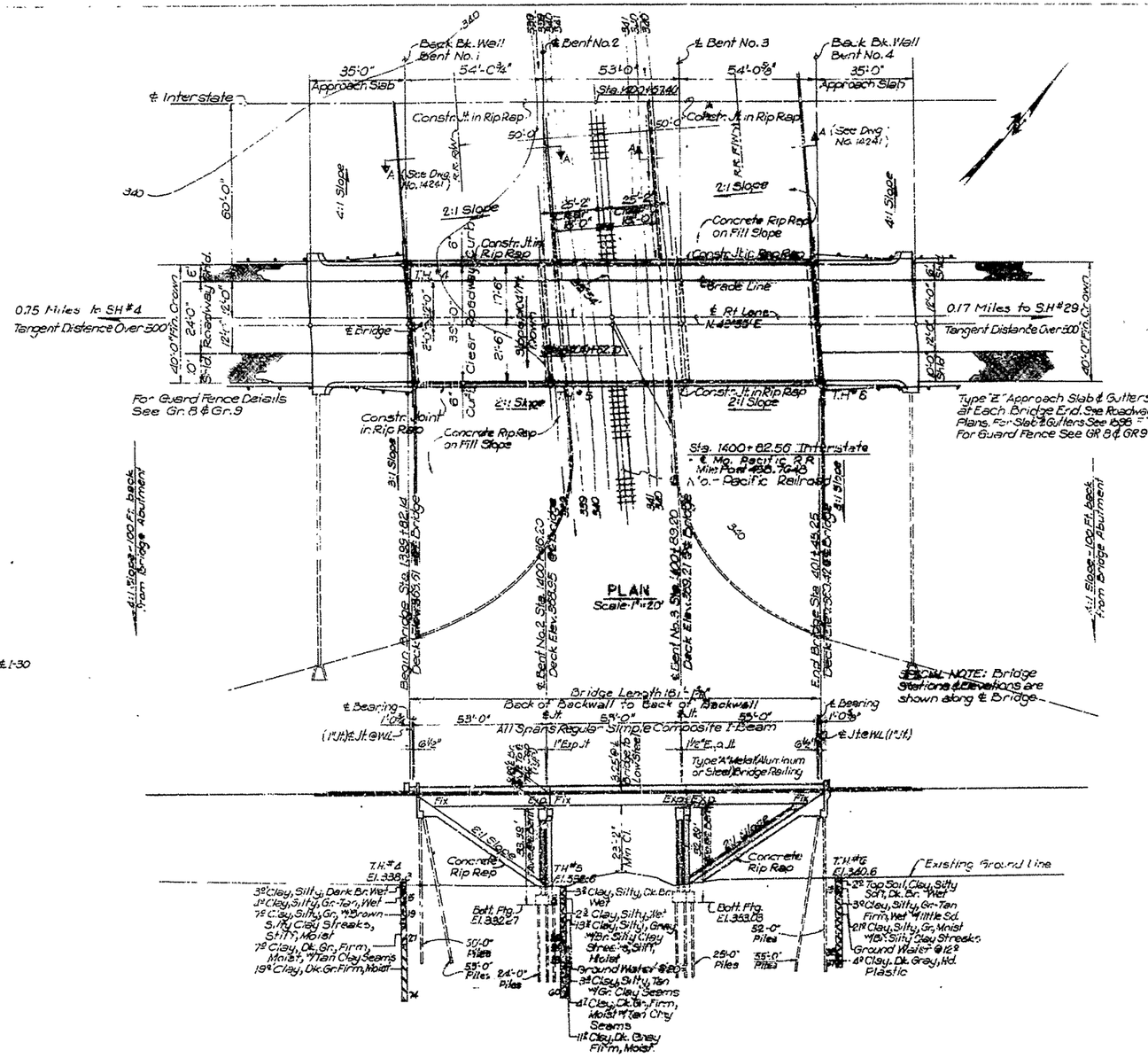
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

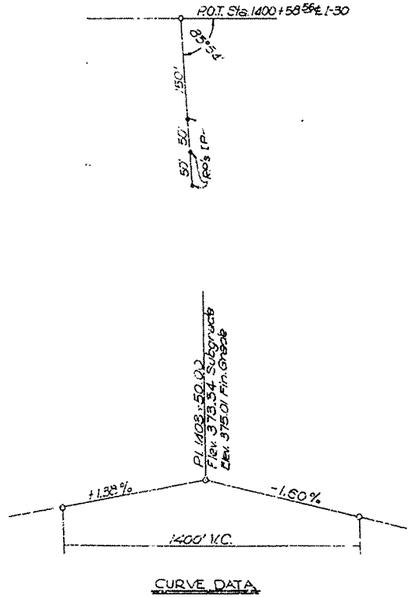
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TRACED BY: LDM DATE:
CHECKED BY: DW DATE:
SCALE: 1" = 20'

BRIDGE NO. A5051 DRAWING NO. 57502

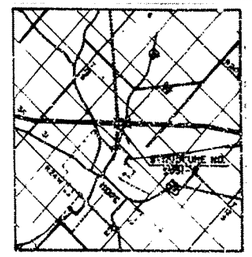
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0307	57	84
(1) B5051	-	LAYOUT -		57503

Right-of-Way Data
See Roadway Plans





CURVE DATA



KEY PLAN

GENERAL NOTES

ALL CONCRETE TO BE POURED IN THE DRY. EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

IN GENERAL, ALL CONSTRUCTION JOINTS IN ABUTMENTS AND PIERS SHALL BE HORIZONTAL AND SHALL BE PROVIDED WITH KEYS NOT LESS THAN 1½" HIGH COVERING THE MIDDLE THIRD OF BOTH DIMENSIONS.

ALL PILING SHALL BE 16" OCTAGONAL PRECAST CONCRETE OR 16" CONCRETE FILLED METAL SHELLS AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 40 TONS PER PILE, WITH A MINIMUM LENGTH OF 20' OR 12' INTO EXISTING GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES ONLY, ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 90' TEST PILE IN BENT NO. 3.

PILES IN END BENTS SHALL BE DRIVEN, AFTER EMBANKMENT IS IN PLACE TO SUBGRADE ELEVATION.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1959, AND 1964 SUPPLEMENTAL SPECIFICATIONS.

DESIGN SPECIFICATIONS AASHO 1961

LIVE LOADING: H520 AND SPECIAL INTERSTATE LOADING OF 2-24,000# AXLES SPACED 4'-4" ON CENTER.

UNIT STRESSES:

CLASS A CONCRETE (n-15)	900 PSI
CLASS S (AE) CONCRETE (n-10)	1,200 PSI
CLASS S CONCRETE (n-10)	1,200 PSI
%E REINFORCING STEEL	20,000 PSI
STRUCTURAL STEEL (A-36)	20,000 PSI

REFERENCE LIST OF DRAWINGS

FOR DETAILS OF BENT NOS. 1 & 4 SEE DWG. NO. 14243
FOR DETAILS OF BENT NOS. 2, & 3 SEE DWG. NO. 14244
FOR FRAMING PLAN & STRUCTURAL DETAILS SEE DWG. NO. 14245 & 14246

FOR INFORMATION ONLY

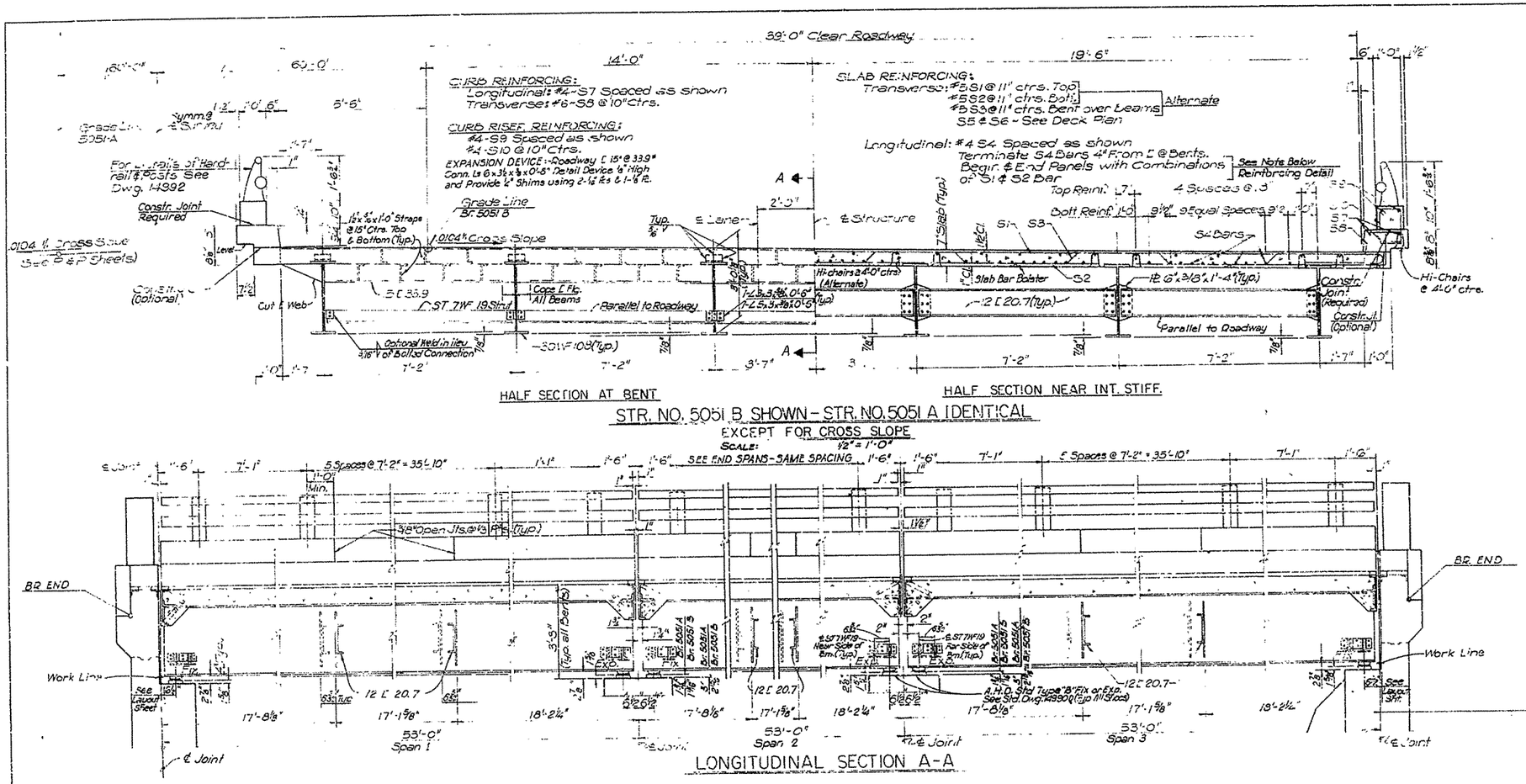
LAYOUT OF OVERPASS OVER
UNION PACIFIC RAILROAD
HIGHWAY 4 – HIGHWAY 29
HEMPSTEAD COUNTY
ROUTE : SEC.

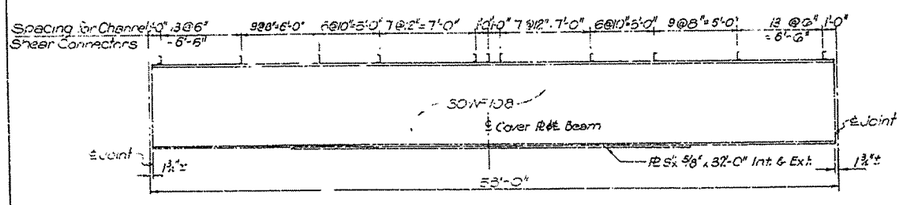
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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SCALE: 1" = 20"

BRIDGE NO. B5051 **DRAWING NO.** 57503

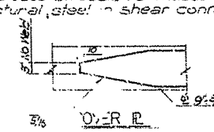
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6	ARK.			
JOB NO.		BB0307	58	84
(1) A&B5051 - SUPERSTRUCTURE - 57504				

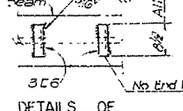




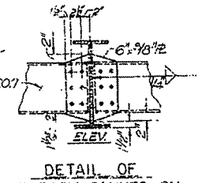
BEAM DETAIL

NOTE: Stud shear connectors, granular flux filled, or equal, may be used in place of the channels shown at the following ratios: 3/4" diameter stud in place of 1.82 inches of channel, 7/8" dia. stud in place of 2.52 inches of channel. The studs shall be 4 inches long and automatically welded to the main flanges in accordance with the recommendations of the manufacturer. Channel sections will be used as basis for measurement of structural steel in shear connectors.

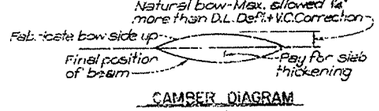




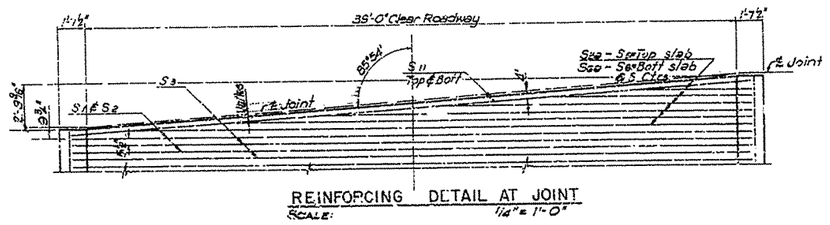
DETAILS OF SHEAR CONNECTORS



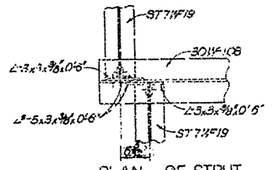
DETAIL OF DIAPHRAGM CONNECTION



CAMBER DIAGRAM

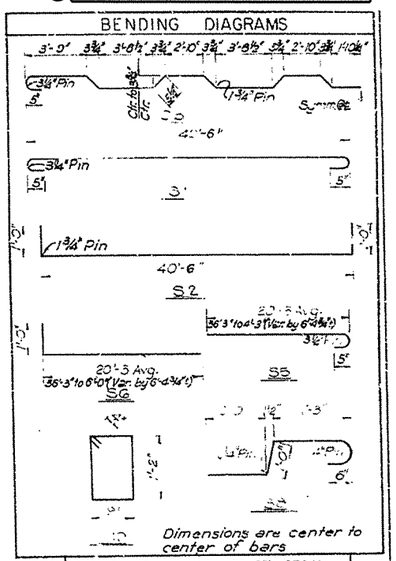


REINFORCING DETAIL AT JOINT
SCALE: 1/4" = 1'-0"



PLAN OF STRUT CONNECTION

BENDING DIAGRAMS



BAR LIST - ONE 53 FT. SPAN				
MARK	SIZE	NO.	LENGTH	PIN DIA.
S1	#5	54	41'-9"	3¼"
S2	#5	54	42'-6"	1¾"
S3	#5	58	42'-10"	See Diag.
S4	#4	91	52'-4"	Str.
Stair Str.	#5	12	20'-0" Avg.	3½"
Stair Str.	#5	12	21'-3" Avg.	1¾"
S7	#4	6	52'-6"	Str.
S8	#6	128	4'-11"	See Dia.
S9	#4	12	17'-2"	Str.
S10	#4	128	4'-5"	1½"
S11	#5	4	40'-6"	Str.

For Details of Shoes, Joints, General Notes and Structural details not shown see

Dimension from top of Concrete to top of Base ℄ shown on the longitudinal section includes ⅛" for Bearing Plate.

DESIGN SPECIFICATIONS AASHO 1961

	Interior Beams	Exterior Beams
1. DEAD LOAD		
(a) To Beam Only Without Joint	180#/Ft.	917#/Ft.
with Joint	180#/Ft.	740#/Ft.
(b) Composite Beam Without Joint	75#/Ft.	75#/Ft.
with Joint	75#/Ft.	253#/Ft.
(c) Wearing Surface	90#/Ft.	85#/Ft.
2. LIVE LOAD		
(a) To Composite	1.30 wheels + impact	1.23 wheels + impact

3. Slab, Curb & Parapet Concrete Class S(AE) Concrete (n=10) f'_c = 1200 psi

DETAILS OF SUPERSTRUCTURE
UNION PACIFIC RAILROAD OVERPASS
HIGHWAY 4 - HIGHWAY 29
HEMPSTEAD COUNTY
ROUTE 30 SEC. 2

FOR INFORMATION ONLY

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

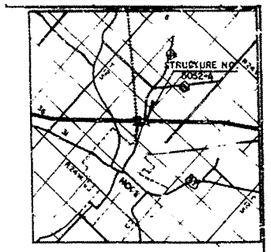
DRAWN BY H H DATE
TRACED BY H H DATE
CHECKED BY D W DATE
SCALE AS NOTED

BRIDGE ENGINEER

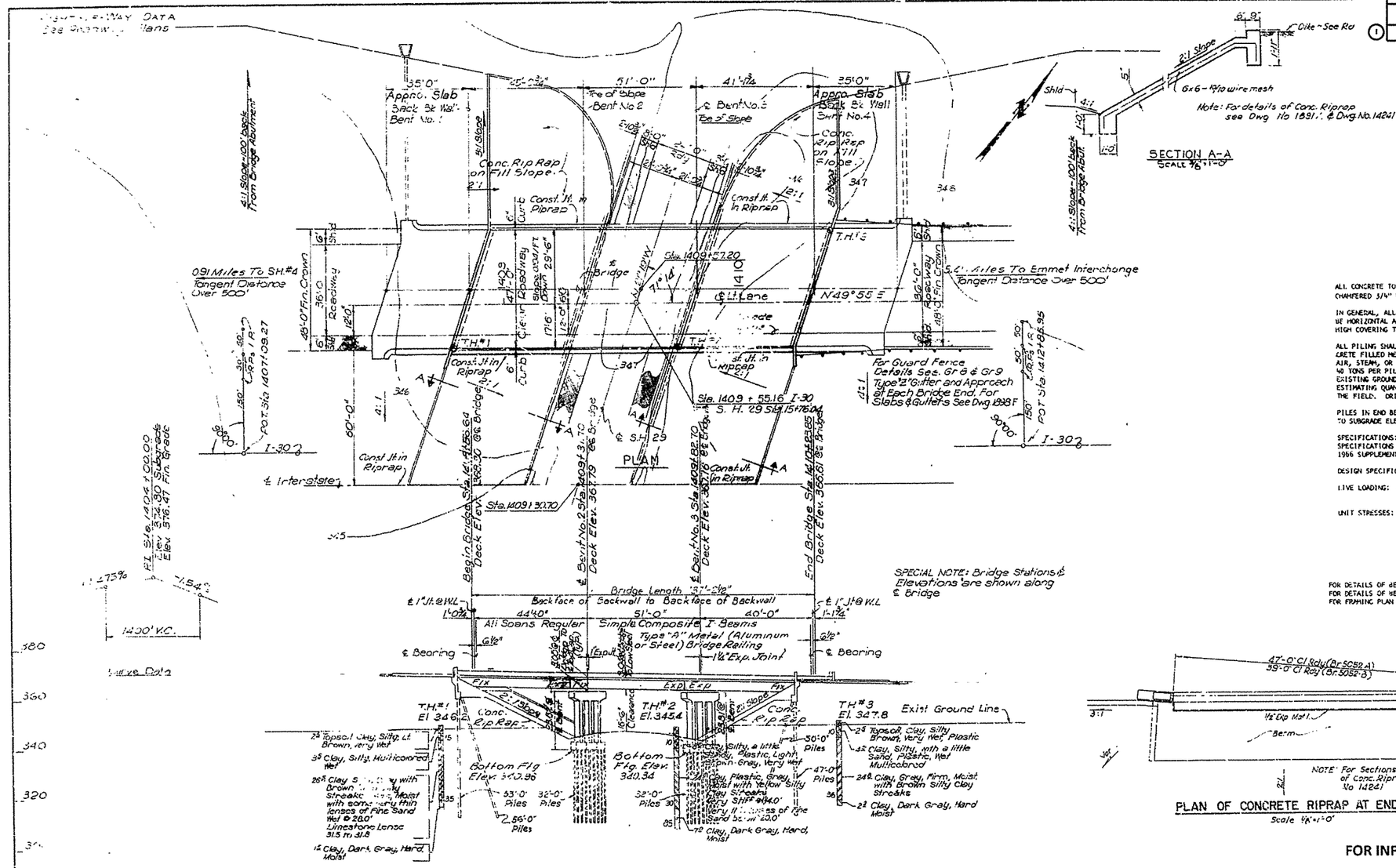
BRIDGE NO. A&B5051 DRAWING NO. 57504

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0307	59	84
A5052		- LAYOUT -		57505

(1)



KEY PLAN



GENERAL NOTES

ALL CONCRETE TO BE POURED IN THE DRY. EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

IN GENERAL, ALL CONSTRUCTION JOINTS IN ABUTMENTS AND PIERS SHALL BE HORIZONTAL AND SHALL BE PROVIDED WITH KEYS NOT LESS THAN 1½" HIGH COVERING THE MIDDLE THIRD OF BOTH DIMENSIONS.

ALL PILING SHALL BE 16" OCTAGONAL PRECAST CONCRETE OR 16" CONCRETE FILLED METAL SHELLS AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 40 TONS PER PILE, WITH A MINIMUM LENGTH OF 20' OR 12' INTO EXISTING GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES ONLY, ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 37' TEST PILE IN BENT NO. 2.

PILES IN END BENTS SHALL BE DRIVEN AFTER EMBANKMENT IS IN PLACE TO SUBGRADE ELEVATION.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1959, AND 1986 SUPPLEMENTAL SPECIFICATIONS.

DESIGN SPECIFICATIONS AASHO 1961

LIVE LOADING: HS20 AND SPECIAL INTERSTATE LOADING OF 2-24,000# AXLES SPACED 4'-0" ON CENTER

UNIT STRESSES:

CLASS A CONCRETE (n=15)	840 PSI
CLASS S (-C) CONCRETE (n=10)	1,200 PSI
CLASS S CONCRETE (n=10)	1,200 PSI
REINFORCING STEEL	20,000 PSI
STRUCTURAL STEEL (A-36)	20,000 PSI

REFERENCE LIST OF DRAWINGS

FOR DETAILS OF BENT NOS. 1 & 4, SEE DWG. NO. 14249
FOR DETAILS OF BENT NOS. 2, 3, SEE DWG NO 19251
FOR FRAMING PLAN & STRUCTURAL DETAILS, SEE DWG. NO. 14254 & 14255

FOR INFORMATION ONLY

LAYOUT OF BRIDGE
S.H. 29 OVERPASS
HIGHWAY 4 — HIGHWAY 29
HEMPSTEAD COUNTY
ROUTE 30 SEC. 12

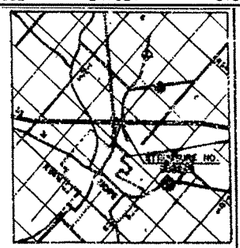
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY UH DATE:
TRACED BY UH DATE:
CHECKED BY DW DATE:
SCALE 1" = 20'

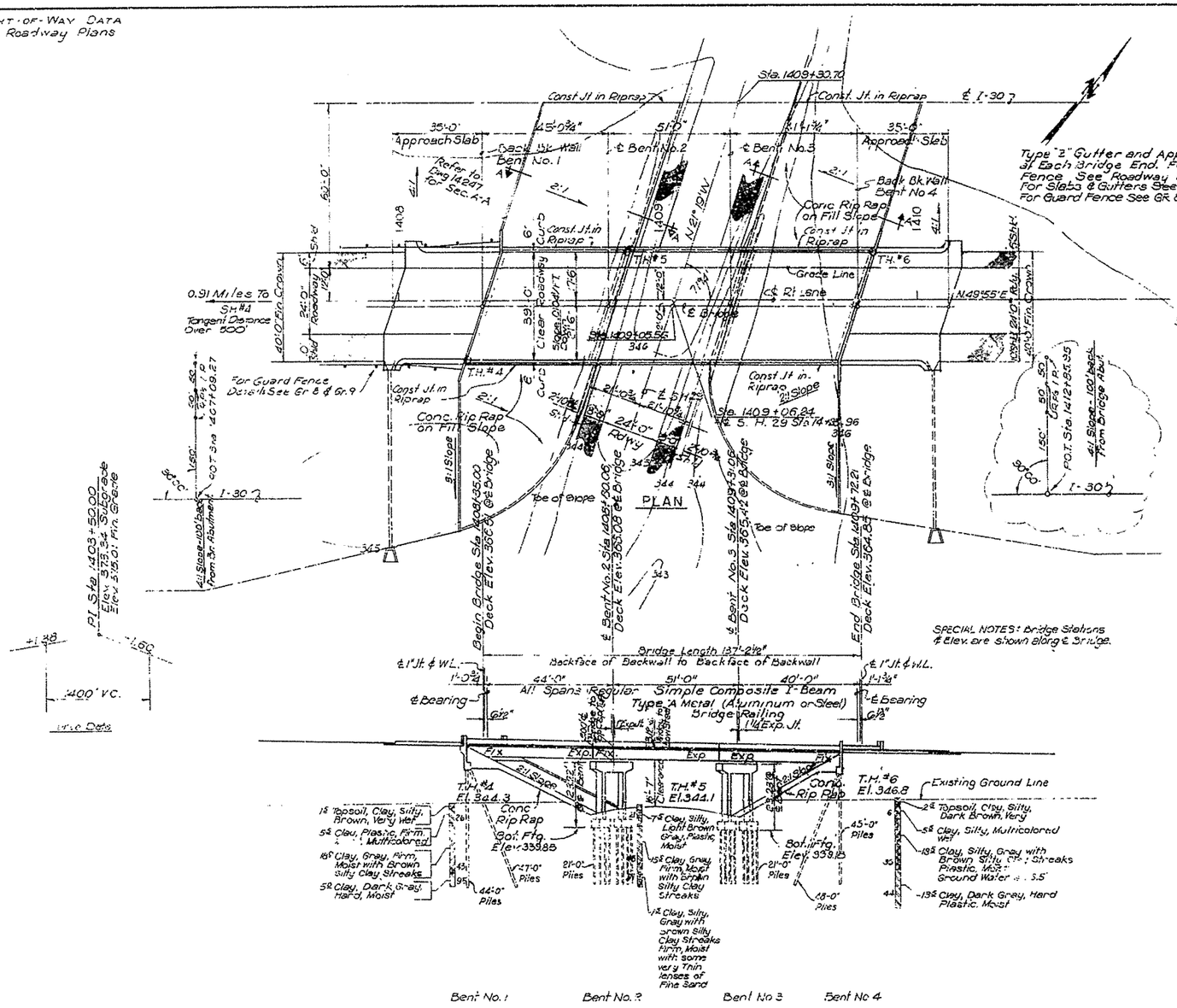
BRIDGE ENGINEER

BRIDGE NO. A5052 **DRAWING NO. 57505**

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0307	60	84
(1) B5052		- LAYOUT -		57506



RIGHT-OF-WAY DATA
See Roadway Plans



GENERAL NOTES

ALL CONCRETE TO BE POURED IN THE DRY. EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

IN GENERAL, ALL CONSTRUCTION JOINTS IN ABUTMENTS AND PIERS SHALL BE HORIZONTAL AND SHALL BE PROVIDED WITH KEYS NOT LESS THAN 1½" HIGH COVERING THE MIDDLE THIRD OF BOTH DIMENSIONS.

ALL PILING SHALL BE 16" OCTAGONAL PRECAST CONCRETE OR 16" CONCRETE FILLED METAL SHELLS AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 50 TONS PER PILE, WITH A MINIMUM LENGTH OF 20' OR 12' INTO EXISTING GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES ONLY, ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 25' TEST PILE IN BENT NO. 3

PILES IN END BENTS SHALL BE DRIVEN, AFTER EMBANKMENT IS IN PLACE TO SUBGRADE ELEVATION.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1959, AND 1966 SUPPLEMENTAL SPECIFICATIONS.

DESIGN SPECIFICATIONS AASHO 1961

LIVE LOADING: H520 AND SPECIAL INTERSTATE LOADING OF 2-24,000# AXLES SPACED 4'-0" ON CENTER.

UNIT STRESSES:

CLASS A CONCRETE (n-15)	840 PSI
CLASS S (AE) CONCRETE (n-10)	1,200 PSI
CLASS S CONCRETE (n-10)	1,200 PSI
REINFORCING STEEL	20,000 PSI
STRUCTURAL STEEL (A-36)	24,000 PSI

REFERENCE LIST OF DRAWINGS

FOR DETAILS OF BENT NOS. 1 & 4, SEE DWG. NO. 14250
FOR DETAILS OF BENT NOS. 2, & 3 SEE DWG NO 14252
FOR FRAMING PLAN & STRUCTURAL DETAILS, SEE DWG. NO. 14253 & 14255

FOR INFORMATION ONLY

LAYOUT OF BRIDGE
S.H. 29 OVERPASS
HIGHWAY 4 – HIGHWAY 29
HEMPSTEAD COUNTY
ROUTE 30 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LDM DATE:
TRACED BY: LDM DATE:
CHECKED BY: DATE:

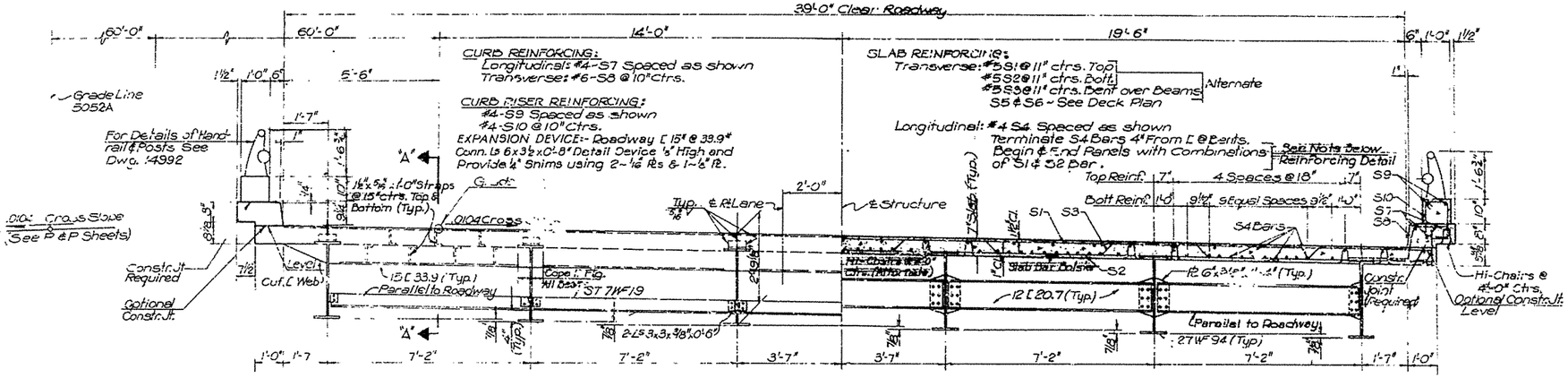
SCALE: AS NOTED

BRIDGE NO. B5052 **DRAWING NO. 57506**

DISTRICT ENGINEER

PROJECT NO SHEET NO

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0307	61	84
(1) A&B5052	- LAYOUT -			57507

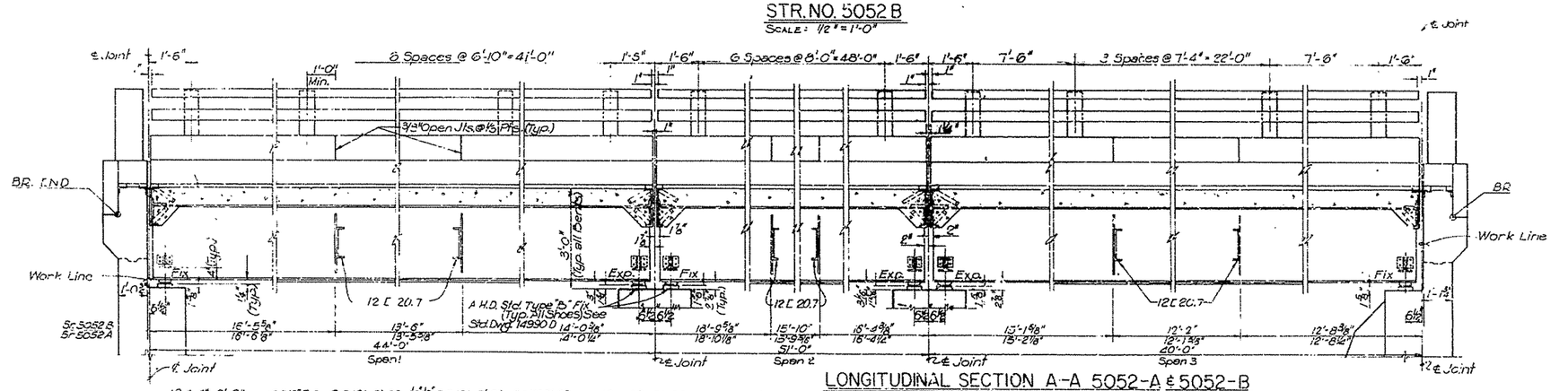


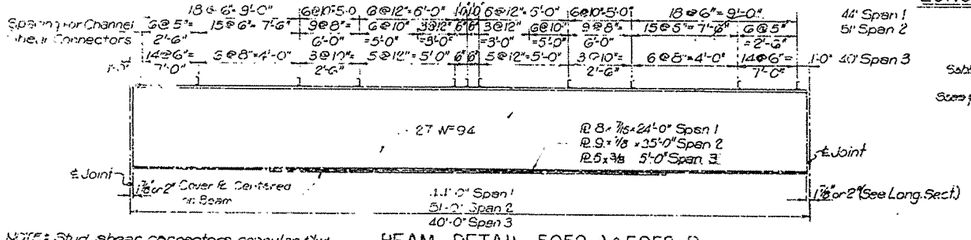
HALF SECTION AT BENT

HALF SECTION NEAR INT. STIFF.

STR. NO. 5052 B

SCALE: 1/2" = 1'-0"

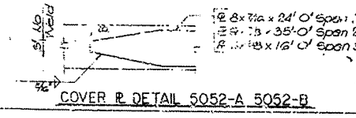




44' Span 1
51' Span 2
40' Span 3

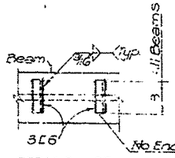
LONGITUDINAL SECTION A-A 5052-A & 5052-B

NOTE: Stud shear connectors, granular flux filled, semi fluxed, or equal may be used in place of the channels shown at the following ratios: ¾" diameter stud in place of 1.62 inches of channel, ⅞" dia. stud in place of 2.52 inches of channel. The studs shall be 4 inches long and automatically end welded to the beam flanges in accordance with the recommendations of the manufacturer. Channel sections will be used as basis for measurement of structural steel in shear connectors.

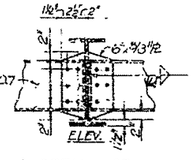


COVER ℄ DETAIL 5052-A 5052-B

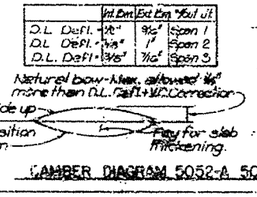
BEAM DETAIL 5052-A & 5052-B



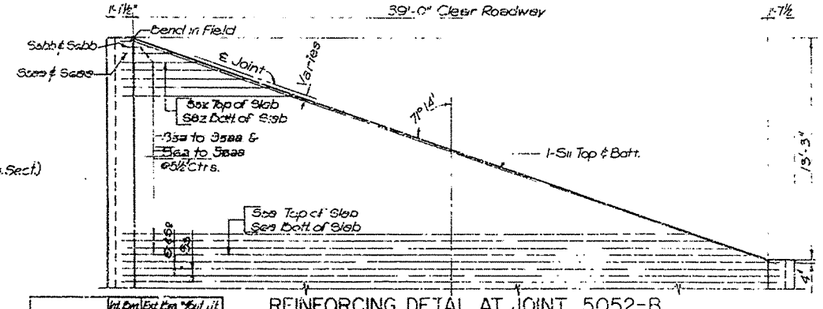
DETAILS OF SHEAR CONNECTORS 5052-A & 5052-B



DETAIL OF DIAPHRAGM CONNECTION 5052-A & 5052-B



CAMBER DIAGRAM 5052-A 5052-B



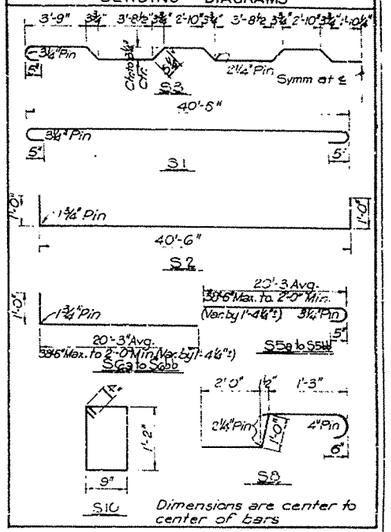
	Int. Bm.	Ext. Bm.	Joint
D.L. Defl.	¼"	9/16"	Span 1
D.L. Defl.	⅜"	1"	Span 2
D.L. Defl.	3/16"	7/16"	Span 3

NOTE: Dead Load Deflections Shown are from a Chord from ℄ of Bearing to ℄ of Bearing. Exterior Beam Deflections are for Curb pours Monolithic with Slab pours. The Exterior Beam Deflections, with the Curb pours Seperate from Slab pours, are 66% of the Deflection shown for the Exterior Beam.

REINFORCING DETAL AT JOINT 5052-B

SCALE: 1/4" = 1'-0"

BENDING DIAGRAMS



Dimensions are center to center of bars

BAR LIST 5052-B

MARK	SIZE	PIN DIA.	4 SPAN NO.	4 SPAN LENGTH	5 SPAN NO.	5 SPAN LENGTH	40' SPAN NO.	40' SPAN LENGTH
C	#5	3¼"	34	41'-9"	42	41'-9"	30	41'-9"
S2	#5	1¾"	34	42'-6"	42	42'-6"	30	42'-6"
S3	#5	See Dia.	33	42'-1"	41	42'-10"	29	42'-10"
S4	#4	Str.	91	43'-4"	91	50'-4"	91	39'-4"
S5a S5b	#5	3¼"	56	39'-1½" 39'-7½"	56	39'-1½" 39'-7½"	56	39'-1½" 39'-7½"
S6a S6b	#6	2¼"	56	39'-5½" 41'-5"	56	39'-5½" 41'-5"	56	39'-5½" 41'-5"
S7	#4	Str.	6	43'-6"	6	50'-6"	6	39'-6"
S8	#6	See Dia.	108	4'-11"	124	4'-11"	98	4'-11"
S9	#4	Str.	12	141'-2"	12	161'-6"	12	12'-10"
S10	#4	1½"	108	4'-5"	124	4'-5"	98	4'-5"
S11	#5	Str.	4	42'-10"	4	42'-10"	4	42'-10"

For Details of Shoes, Joints, General Notes and Structural Details not Shown see Dwg no 14254 and Dwg. no. 14990.0.
Dimension from top of Concrete to top of Sasa ℄ shown on the longitudinal section includes 18" for Bearing Plate.

DESIGN SPECIFICATIONS AASHO-1961

	Interior Beams	Exterior Beams
1. Dead Load		
(a) To Beam Only w/out Joint	765#/Ft.	903#/Ft.
w/ Joint	765#/Ft.	726#/Ft.
(b) Composite Beam w/out Joint	75#/Ft.	75#/Ft.
w/ Joint	75#/Ft.	253#/Ft.
(c) Wearing Surface	90#/Ft.	65#/Ft.
2. Live Load		
(a) To Composite Beams	1.30 Wheels + Impact	1.23 Wheels + Impact

3. Slab, Curb, Parapet Concrete Class S(AE) Concrete (n = 10) Fc = 1200 psi

FOR INFORMATION ONLY
DETAILS OF SUPERSTRUCTURE
S.H. 29 OVERPASS
HIGHWAY 4 - HIGHWAY 29
HEMPSTEAD COUNTY
ROUTE 30 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: H H DATE:
TRACED BY: H H DATE:
CHECKED BY: D W DATE:
SCALE: AS NOTED

BRIDGE NO. A&B5052 DRAWING NO. 57507

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0307	62	84
(1) A&B5052 - SUPERSTRUCTURE - 57508				

39'-0" Clear Roadway

60'-0" | 60'-0" | 14'-0" | 19'-6" | 6" 1'-0" 1½"

CURB REINFORCING:
Longitudinals: #4-S7 Spaced as shown
Transverse: #6-S8 @ 10" ctrs.

CURB RISER REINFORCING:
#4-S9 Spaced as shown
#4-S10 @ 10" ctrs.
EXPANSION DEVICE:- Roadway ℄ 15° @ 33.9°
Conn. L5 6 x 3½ x 0'-8" Detail Device "6" High and Provide ¼" Shims using 2-⅛" Ø's & 1-⅝" Ø.

SLAB REINFORCING:
Transverse: #5 @ 11" ctrs. Top
#5 S2 @ 11" ctrs. Bott.
#5 S3 @ 11" ctrs. Bent over Beams
S5 & S6 - See Deck Plan
Alternate

Longitudinal: #4 S4 Spaced as shown
Terminate S4 Bars 4" From ℄ Bearings.
Begin & End Panels with Combinations of #5 @ 32 per.
See Note Below Reinforcing Detail

Grade Line 5052A

For Details of Hand-rail & Posts See Dwg. 14992

1'-7" | 1'-6¾" | 1'-0" | 1½" x 5¾" x 1'-0" Straps @ 15" ctrs. Top & Bottom (Typ.)

"A"

Grade

Top. ℄ Rt. Lane

℄ Structure

2'-0"

Top Reinf. 7" | 4 Spaces @ 18" | 7" | S9

Bolt Reinf. 11'-0" | 9 Spaces @ 3⅛" = 11'-0" | S10 | S7 | S8

S1 | S3 | S4 Bars

Slab Bar Below S2

Hi-Chairs @ 4'-0" Ctrs. (Not for Hair)

Hi-Chairs @ 4'-0" Ctrs. Optional Constr. Jt. Level

Constr. Joint Required

12 ℄ 20.7 (Typ.)

Parallel to Roadway

27 WF 94 (Typ.)

2 ℄ 33.9 (Typ.)

Parallel to Roadway

Cope ℄ Fig. All Beams ST 7 WF 19

2 L5 3 x 3 x ⅜ @ 1'-0" 6"

Dia. Cross Slope (See P & P Sheets)

Constr. Jt. Required

Optional Constr. Jt.

Level Cut ℄ Web

.0104 Cross Slope

1'-0" | 1'-7 | 7'-2" | 7'-2" | 3'-7" | 3'-7" | 7'-2" | 7'-2" | 1'-7" | 1'-0"

HALF SECTION AT BENT

HALF SECTION NEAR INT. STIFF.

STR. NO. 5052 B
SCALE: 1/2" = 1'-0"

℄ Joint | 1'-6" | 6 Spaces @ 6'-10" = 41'-0" | 1'-5" | 1'-6" | 6 Spaces @ 8'-0" = 48'-0" | 1'-6" | 1'-6" | 7'-6" | 3 Spaces @ 7'-4" = 22'-0" | 7'-6" | 1'-6" | ℄ Joint

1'-0" Min.

3¾" Open Jts. @ ⅛" Pip. (Typ.)

BR. END

Work Line

Fix | Exp. | Fix | Exp. | Exp. | Fix

12 ℄ 20.7

A.H.D. Std. Type "B" Fix. (Typ. all Shoes) See Std. Dwg. 14990 D

Std. Dwg. 14990 D

Sh 5052 B
Sh 5052 A

4 ℄ Joint | 4 ℄ Joint | 4 ℄ Joint | 4 ℄ Joint

44'-0" Span 1 | 51'-0" Span 2 | 40'-0" Span 3

BR

Work Line

LONGITUDINAL SECTION A-A 5052-A & 5052-B

18 @ 6'-9'-0" | 6 @ 10'-5-0 | 6 @ 12" = 6'-0" | 10 @ 6 @ 12" = 5'-0" | 6 @ 10'-5-0" | 18 @ 6" = 9'-0"

Spacing for Channel Shear Connectors

15 @ 5" = 6'-3" | 9 @ 8" = 6'-0" | 6 @ 10" = 5'-0" | 3 @ 12" = 3'-0" | 6 @ 10" = 5'-0" | 9 @ 8" = 6'-0" | 15 @ 6" = 7'-6" | 6 @ 5" = 2'-6"

14 @ 6" = 7'-0" | 5 @ 8" = 4'-0" | 3 @ 10" = 2'-6" | 5 @ 12" = 5'-0" | 6 @ 12" = 6'-0" | 5 @ 12" = 5'-0" | 3 @ 10" = 2'-6" | 6 @ 8" = 4'-0" | 14 @ 6" = 7'-0"

1'-0" | 2'-6" | 1'-0"

27 WF 94

PL 8 x ⅞ x 24'-0" Span 1
PL 9 x ⅞ x 35'-0" Span 2
PL 8 x ⅜ 5'-0" Span 3

℄ Joint | ℄ Joint

1¼" or 2" Cover ℄ Centered in Beam

1'-1" Span 1
5'-1" Span 2
40'-0" Span 3

1'-0" 40' Span 3

1¼" or 2" (See Long. Sect.)

BEAM DETAIL 5052-A & 5052-B

NOTE: Stud shear connectors, granular flux filled, solid fluxed, or equal may be used in place of the channels shown at the following ratios: ¾" diameter stud in place of 1.82 inches of channel, ⅞" dia. stud in place of 2.52 inches of channel. The studs shall be 4 inches long and automatically end welded to the beam flanges in accordance with the recommendations of the manufacturer. Channel sections will be used as basis for measurement of structural steel in shear connectors.

PL ⅞ x 16" Weld

PL 8 x ⅞ x 24'-0" Span 1
PL 9 x ⅞ x 35'-0" Span 2
PL 8 x ⅜ x 16'-0" Span 3

⅜" Weld

COVER PL DETAIL 5052-A 5052-B

Beam | ⅜" Typ. | 3" | All Beams

3 E 6

No End Welds

DETAILS OF SHEAR CONNECTORS 5052-A & 5052-B

11½" | 2½" | 2" | 6" | ⅝" | ⅜" | 12 ℄ 20.7 | 2" | 2" | ELEV.

DETAIL OF DIAPHRAGM CONNECTION 5052-A & 5052-B

39'-0" Clear Roadway

1'-1½" | Bend in Field | ℄ Joint | Varies | 1'-1½"

Slab ℄ Subb | Slab ℄ Subb

Slab Top of Slab
Slab Bott. of Slab

Slab to Slab & Slab to Slab @ 6½" Ctrs.

1-S11 Top & Bott.

7'-0 ½"

Slab Top of Slab
Slab Bott. of Slab

6'-6 ½"

1'-3"

	Int. Span	Ext. Span	Joint
D.L. Defl. +	⅛"	⅜"	Span 1
D.L. Defl. +	⅛"	1"	Span 2
D.L. Defl +	⅜"	1⅛"	Span 3

Natural bow - Max. allowed ½" more than D.L. Defl + ½" Correction

Fabricate bow side up

Final position of beam

Key for slab thickening.

REINFORCING DETAL AT JOINT 5052-B
SCALE: 1½" = 1'-0"

NOTE: Dead Load Deflections Shown are from a Chord from ℄ of Bearing to ℄ of Bearing. Exterior Beam Deflections are for Cull & poure Monolithic with Slab poure. The Exterior Beam Deflections, with the Curb poure Seperate from Slab poure, are 88% of the Deflection shown for the Exterior Beam.

BRIDGE ENGINEER

CAMBER DIAGRAM 5052-A 5052-B

BENDING DIAGRAMS

3'-9" | 3½" | 3'-8½" | 3½" | 2'-10¾" | 3½" | 3'-8½" | 3½" | 2'-10¾" | 3½" | 1'-0½"

3½" Pin | Chamfer Cir. | 2½" Pin | Symm at ℄

40'-6"

3¼" Pin

S1

1'-1¾" Pin

40'-6"

S2

20'-3" Avg. 39'-5" Max. to 21'-0" Min. (Near by 1'-4⅝") 3¼" Pin

20'-3" Avg. 39'-5" Max. to 21'-0" Min. (Near by 1'-4⅝")

S5a to S5W

S6a to S6bb

2'-0" | ½" | 1'-3" | 2¼" Pin | 4" Pin | 6"

S9

S10

Dimensions are center to center of bars

BAR LIST 5052-B

MARK	SIZE	PIN DIA.	44' SPAN NO.	44' SPAN LENGTH	51' SPAN NO.	51' SPAN LENGTH	40' SPAN NO.	40' SPAN LENGTH
S1	#5	3¼"	34	41'-9"	42	41'-9"	30	41'-9"
S2	#5	1¾"	34	42'-6"	42	42'-6"	30	42'-6"
S3	#5	See Dia.	33	42'-1"	41	42'-10"	29	42'-10"
S4	#4	Str.	91	43'-4"	91	50'-4"	91	39'-4"
S5a to S5W	#5	3¼"	56	39'-1½"	56	42'-1½"	56	39'-1½"
S6a to S6bb	#6	2¼"	56	39'-6½"	56	42'-6½"	56	39'-6½"
S7	#4	Str.	6	43'-6"	6	50'-6"	6	39'-6"
S8	#6	See Dia.	108	4'-11"	124	4'-11"	98	4'-11"
S9	#4	Str.	12	14'-2"	12	16'-6"	12	12'-10"
S10	#4	1½"	108	4'-5"	124	4'-5"	98	4'-5"
S11	#5	Str.	4	42'-10"	4	42'-10"	4	42'-10"

For Details of Shoes, Joints, General Notes and Structural Details not shown see Dwg no 14254 and Dwg. no. 14990 D.
Dimension from top of Concrete to top of Base ℝ shown on the longitudinal section includes 18" for Bearing Plate.

DESIGN SPECIFICATIONS AASHO 1961

	Interior Beams	Exterior Beams
1. Dead Load		
(a) To Beam Only w/out Joint	765#/Ft.	903#/Ft.
w/ Joint	765#/Ft.	726#/Ft.
(b) Composite Beam w/out Joint	75#/Ft.	75#/Ft.
w/ Joint	75#/Ft.	253#/Ft.
(c) Wearing Surface	90#/Ft.	65#/Ft.
2. Live Load		
(a) To Composite Beams	1.30 Wheels + Impact	1.23 Wheels + Impact

3. Slab, Curb, Parapet Concrete Class S (AE) Concrete (n = 10) Fc = 1200 psi

FOR INFORMATION ONLY
DETAILS OF SUPERSTRUCTURE
S.H. 29 OVERPASS
HIGHWAY 4 - HIGHWAY 29
HEMPSTEAD COUNTY
ROUTE 30 SEC. 12

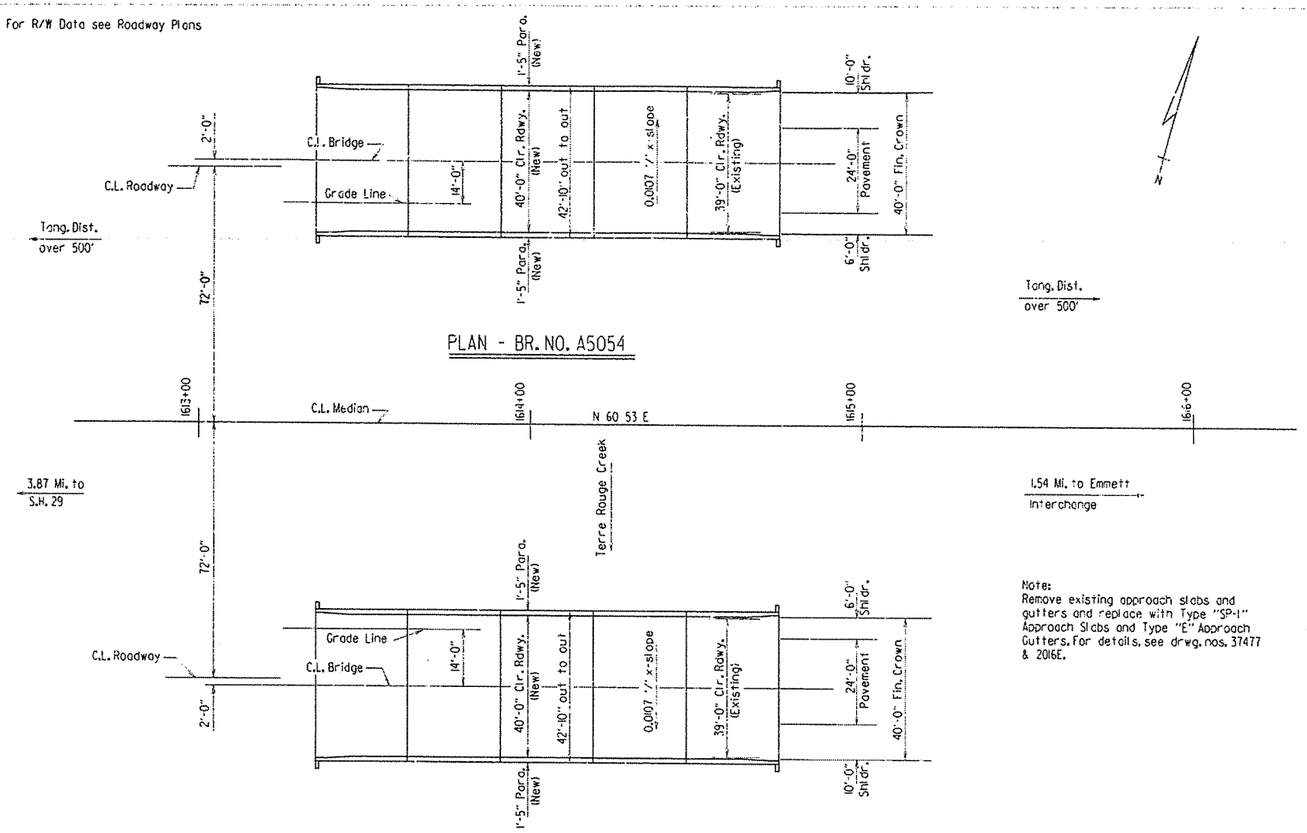
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: H H DATE:
TRACED BY: H H DATE:
CHECKED BY: D W DATE:
SCALE: AS NOTED

BRIDGE NO. A&B5052 DRAWING NO. 57508

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	63	84
				(1) A5054,B5054	LAYOUT		57509	

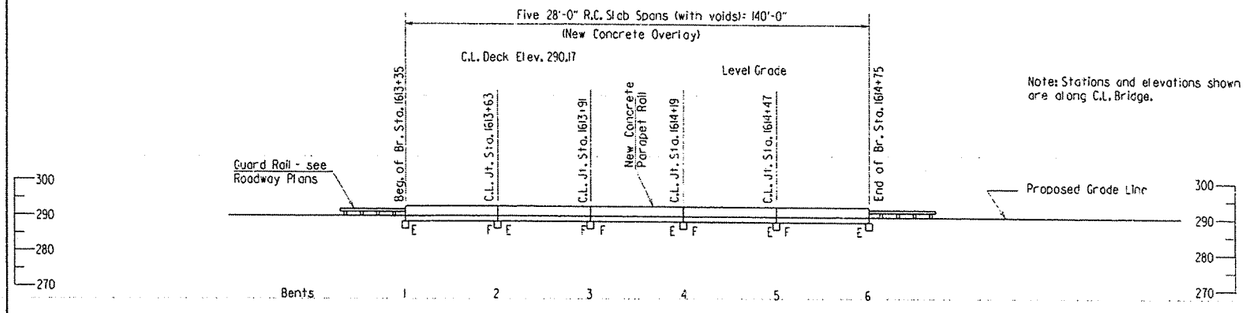
For R/W Data see Roadway Plans



PLAN - BR. NO. A5054

Note:
Remove existing approach slabs and gutters and replace with Type "SP-1" Approach Slabs and Type "E" Approach Gutters. For details, see drwg. nos. 37477 & 2016E.

PLAN - BR. NO. B5054



Note: Stations and elevations shown are along C.L. Bridge.

ELEVATION - BR. NO. A5054 & B5054

GENERAL NOTES

BENCH MARK: Elevations and stations are assumed to be the same as shown on the original plans. The original layout shows the elevation at the top of the deck and on grade line to be 289.67 at Sta. 1613+35 (Beginning of Br. A5054 and Br. B5054)

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1996 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 1996 with current interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:
Superstructure Concrete (see span drws.) f'c = 4,000 psi
Substructure Concrete (Class S) f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 or M53, GR. 60) Fy = 60,000 psi

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

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

SALVAGE: All Type A Bridge Railing shall be retained by the state. All other material from the existing bridge which is not incorporated into the new structure shall become the property of the contractor.

The contractor shall make check measurements and make any adjustments necessary to fit the new work to the existing bridge.

Half-size detail drawings of the existing bridge may be obtained from the Arkansas State Highway and Transportation Department upon request.

MAINTENANCE OF TRAFFIC: Details which relate to maintenance of traffic are shown on the bridge plans for information; however, payment, job special provisions, etc., are considered as part of the roadway plans.

For remodeling details, see Dwg. Nos. 37475, 37476 & 37476A.
For Type SP-1 Approach Slabs, see Drwg. No. 37477.
For Type E Approach Gutters, see Drwg. No. 2016E.

Work to overlay existing bridge deck shall consist of removing the existing deck concrete to a depth one-half inch below the existing finished surface, except as otherwise noted on the plans, disposing of the removed concrete, and overlaying with six and one-half inches of concrete meeting the requirements of subsection 822.02. For pay purposes the limits of pay for the "Bridge Deck Overlay" shall be between new gutter lines. New concrete shown to be placed below the six and one-half inch overlay, with the exception of Bridge Deck Repair, and all concrete outside the new gutter lines shall be measured and paid for as Class S(AE) Concrete.

FOR INFORMATION ONLY

LAYOUT OF REHABILITATED BRIDGES OVER TERRE ROUGE CREEK HWY. 4 - EMMETT INTERCHANGE (F) HEMPSTEAD COUNTY

INT. ROUTE 30 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

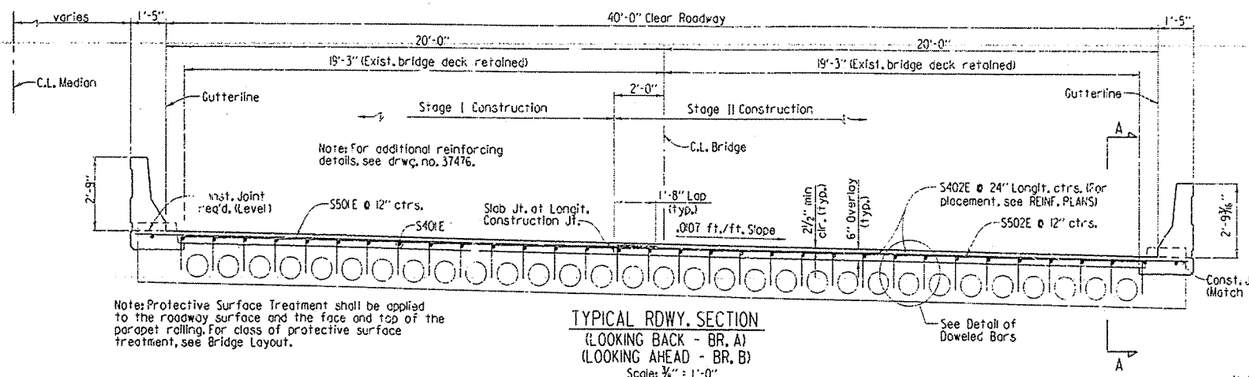
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 3158
1-28-97
DALE P. LOE
BRIDGE ENGINEER

DRAWN BY: KMG DATE: 20 Aug 96
CHECKED BY: GEC DATE: 1-27-97 SCALE: 1" = 20'
DESIGNED BY: WAS DATE: —

BRIDGE NO. A5054,B5054 DRAWING NO. 57509

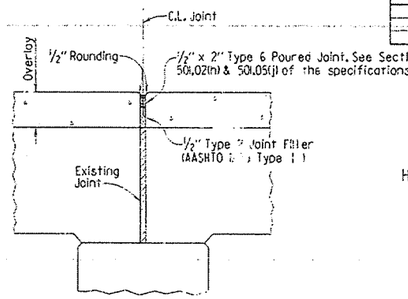
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0307	64	84

(1) A5054,B5054 SPAN DTLS. 57510

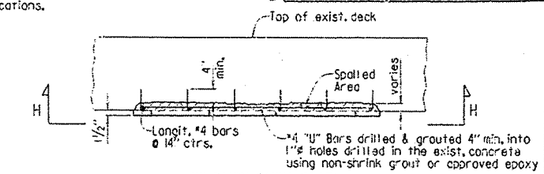


Note: Protective Surface Treatment shall be applied to the roadway surface and the face and top of the parapet railing. For class of protective surface treatment, see Bridge Layout.

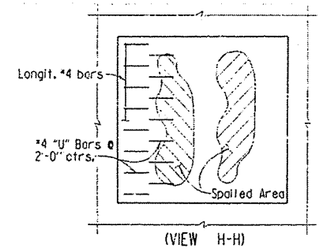
TYPICAL RDWY. SECTION
(LOOKING BACK - BR. A)
(LOOKING AHEAD - BR. B)
Scale: ⅜" = 1'-0"



TYPICAL SECTION THRU JOINT
No Scale

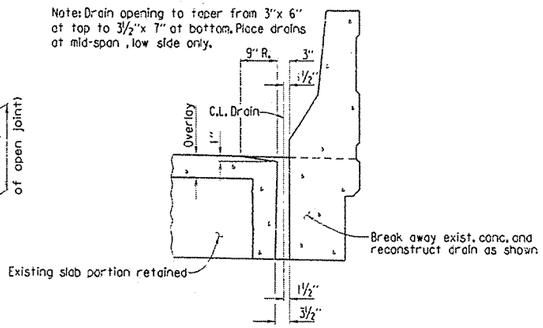


(SECTION THRU SLAB)

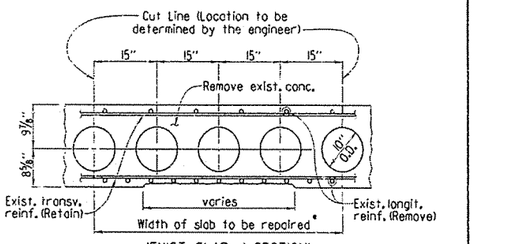


(VIEW H-H)

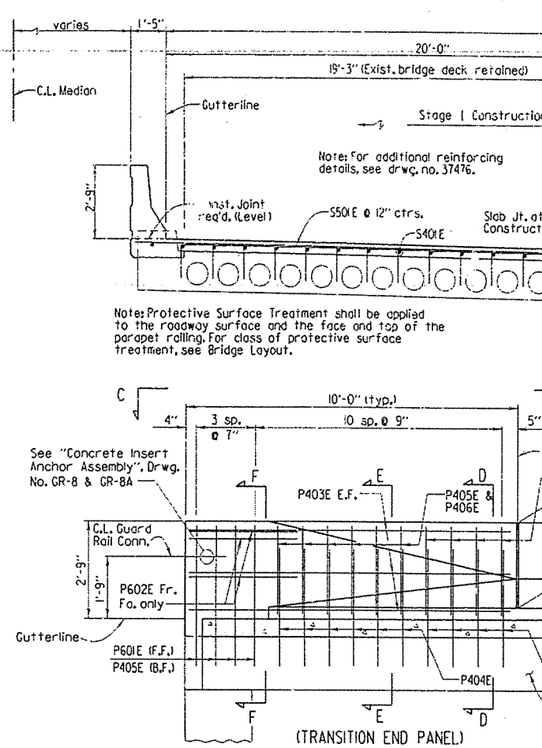
DETAILS FOR CONCRETE SPALL REPAIR
No Scale



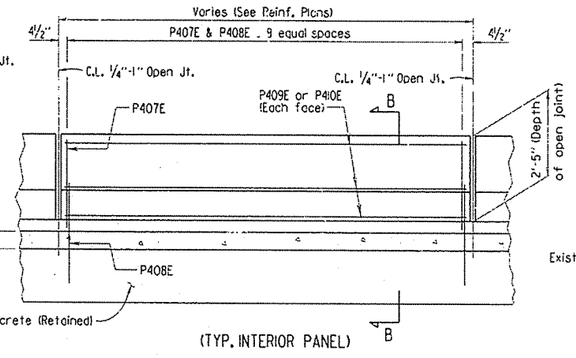
DETAIL OF DRAIN
No Scale



(EXIST. SLAB X-SECTION)

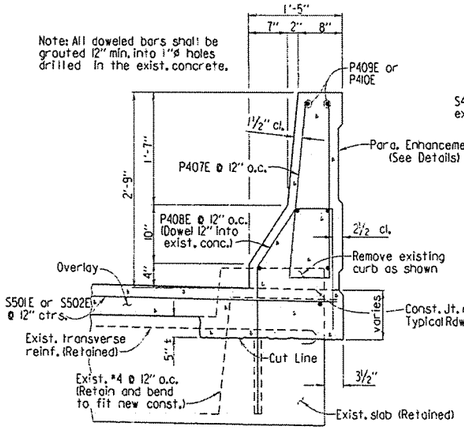


(TRANSITION END PANEL)

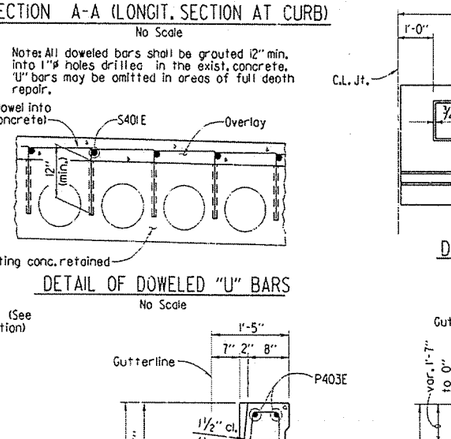


(TYP. INTERIOR PANEL)

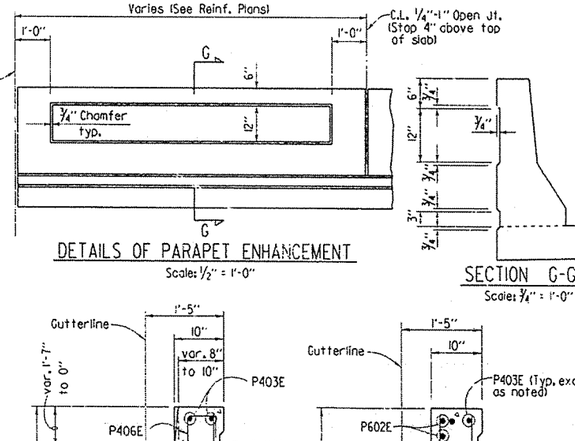
SECTION A-A (LONGIT. SECTION AT CURB)
No Scale



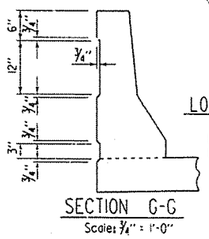
SECTION B-B
No Scale



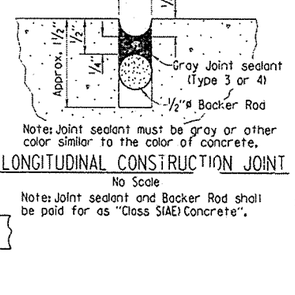
DETAIL OF DOWELED "U" BARS
No Scale



DETAILS OF PARAPET ENHANCEMENT
Scale: ½" = 1'-0"



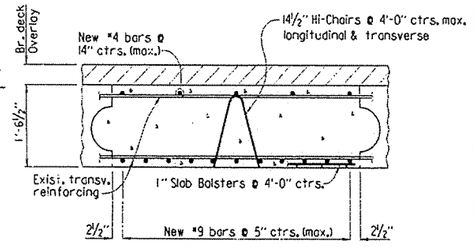
SECTION G-G
Scale: ¾" = 1'-0"



Note: Joint sealant must be gray or other color similar to the color of concrete.

LONGITUDINAL CONSTRUCTION JOINT
No Scale

Note: Joint sealant and Backer Rod shall be paid for as "Class S(AE) Concrete".



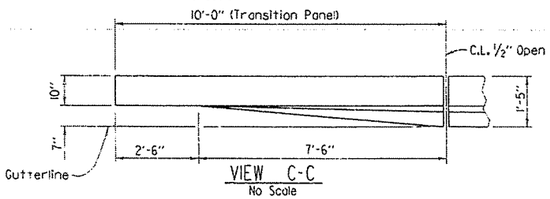
(NEW SLAB X-SECTION)

DETAILS FOR FULL DEPTH REPAIR
No Scale

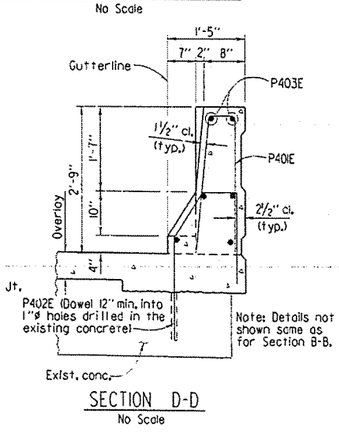
Note: For location of bridge deck repair, see drwg. no. 37476A.

Note: Type of repair to be determined in the field.

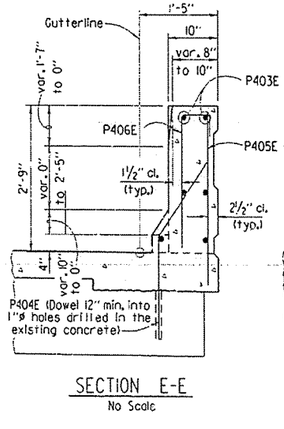
Note: For General Notes, see drwg. no. 37474.



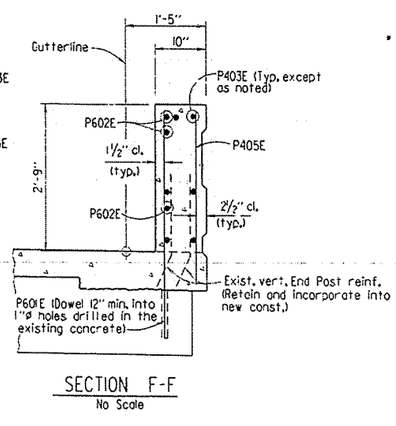
VIEW C-C
No Scale



SECTION D-D
No Scale



SECTION E-E
No Scale



SECTION F-F
No Scale

* Full depth slab repair, where required, shall extend from beginning to end of Span.

FOR INFORMATION ONLY

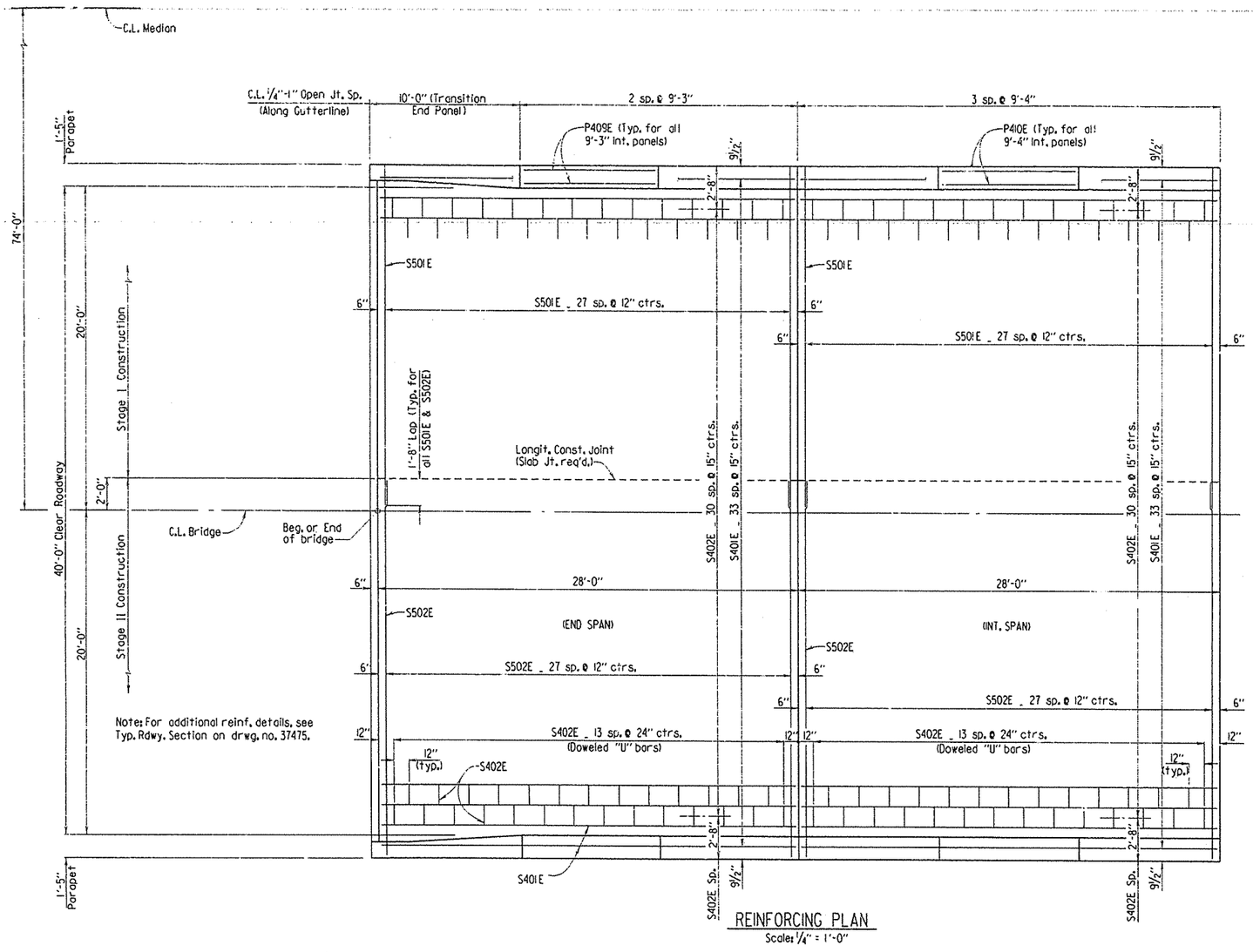
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 2168
1-28-97
DALE F. LOE
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS FOR REMODELING
28' R.C. SLAB SPANS
BRIDGE OVER TERRE ROUGE CREEK
INT. ROUTE 30 S.C. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 20 Aug 96
CHECKED BY: GEC DATE: 1-27-97
DESIGNED BY: UAS DATE: —
SCALE: As Shown

BRIDGE NO. A5054,B5054 DRAWING NO. 57510

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AND PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		B80307	65	84
				(1)	A5054,B5054	SPAN DTLS.	57511	



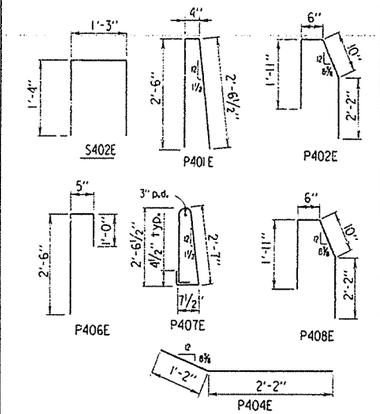
REINFORCING PLAN
Scale: ¼" = 1'-0"

BAR LIST (PER SPAN)

MARK	NUMBER REQUIRED End	NUMBER REQUIRED Int.	LENGTH	P.D.
S401E	34	34	27'-8"	Str.
S402E	419	419	3'-9"	2"
S501E	28	28	21'-0"	Str.
S502E	28	28	23'-2"	Str.
P401E	8		5'-2"	2"
P402E	8		5'-4"	2"
P403E	12		9'-8"	Str.
P404E	12		3'-4"	2"
P405E	20		3'-5"	Str.
P406E	12		3'-9"	2"
P407E	40	60	6'-4"	2"
P408E	40	60	5'-4"	2"
P409E	24		8'-11"	Str.
P410E		36	9'-0"	Str.
P601E	8		4'-7"	Str.
P602E	6		5'-0"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



Note: For General Notes, see drwg. no. 37474.

FOR INFORMATION ONLY

SHEET 2 OF 2

DETAILS FOR REMODELING

28'-0" R.C. SLAB SPANS

BRIDGE OVER TERRE ROUGE CREEK

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 2158 — DALE F. LOE — 1-28-97

BRIDGE ENGINEER

INT. ROUTE 30 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

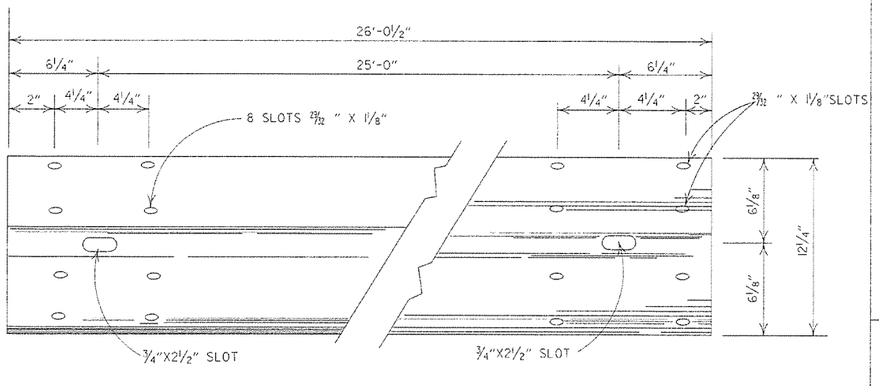
LITTLE ROCK, ARK.

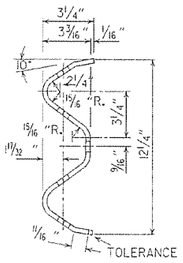
DRAWN BY: KMG DATE: 20 Aug 96

CHECKED BY: GEC DATE: 1-27-97 SCALE: As Shown

DESIGNED BY: UAS DATE: —

BRIDGE NO. A5054,B5054 DRAWING NO. 57511

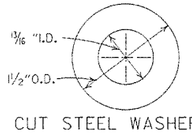




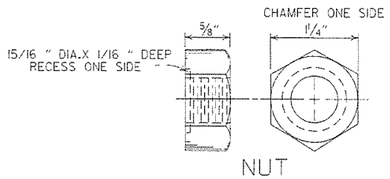
DETAILS OF
W-BEAM GUARD RAIL

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

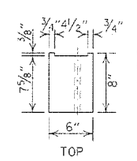
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

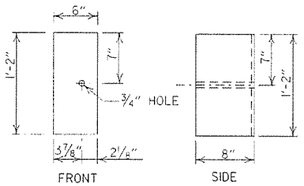


NUT

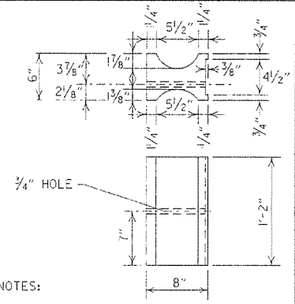


WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"X8"X1'-2" WITH NO NOTCH REQUIRED.

TOP



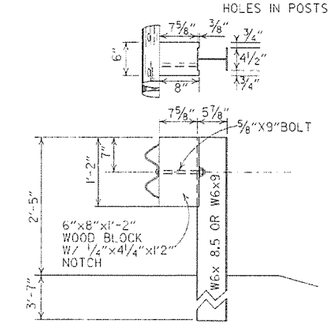
WOOD BLOCKOUT
(W-BEAM)



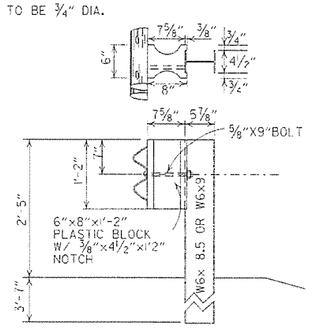
NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT
(W-BEAM)

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

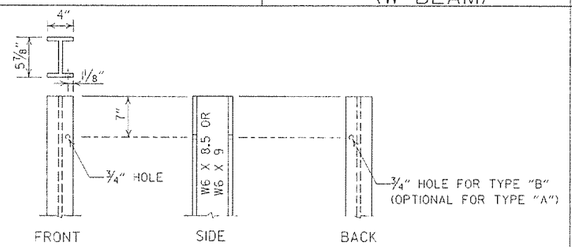


WOOD BLOCKOUT CONNECTIONS

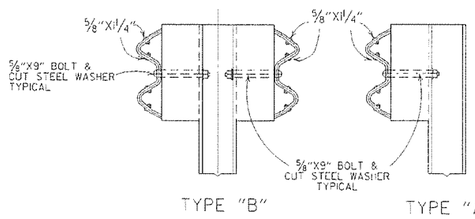


PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS
(W-BEAM)



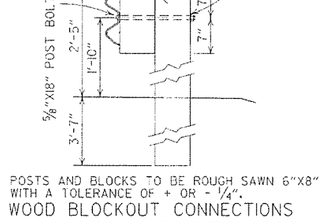
STEEL POST



TYPE "B"
TYPE "A"

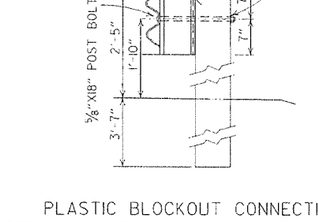
DETAILS OF STEEL LINE POST CONNECTIONS
(W-BEAM)

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.

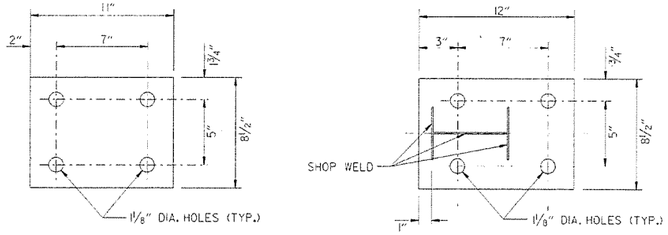
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

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 FT. 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

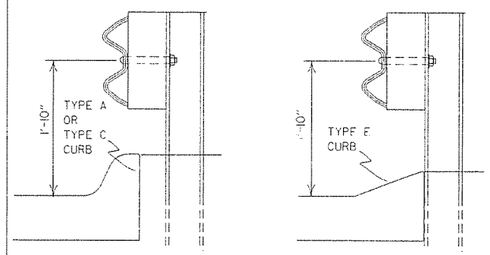
STANDARD DRAWING GR-8



WASHER PLATE

BASE PLATE

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



FOR DESIGN SPEEDS OF 50 MPH OR LESS

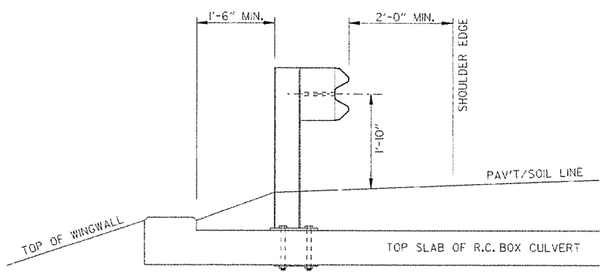
ALIGN FACE OF GUARD RAIL WITH FACE OF CURB.

FOR DESIGN SPEEDS OF 55 MPH OR MORE

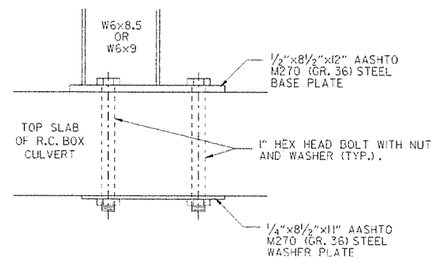
PLACE GUARD RAIL POSTS AGAINST BACK OF CURB.

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

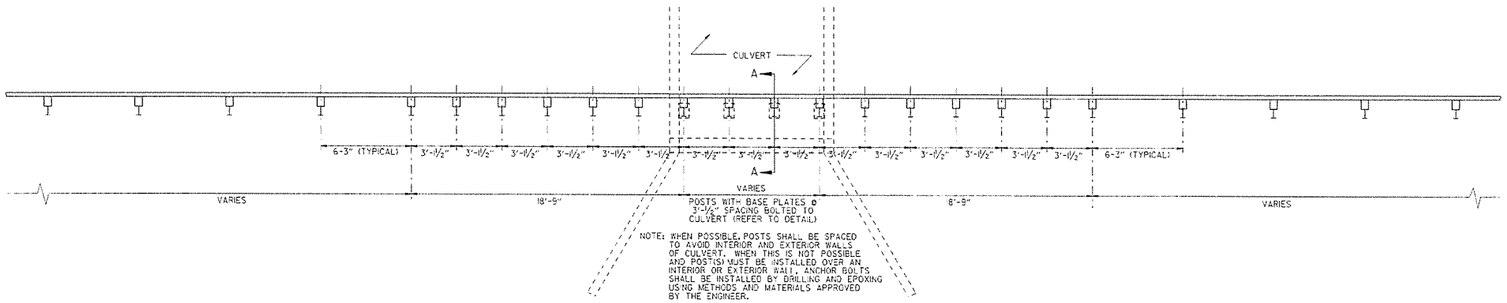
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



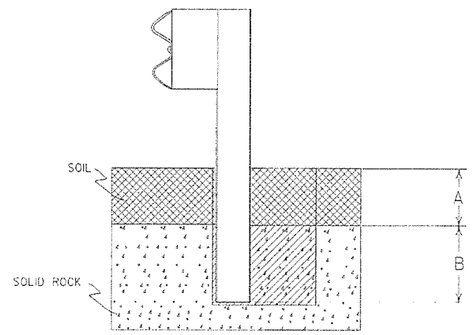
DETAIL OF CONNECTION



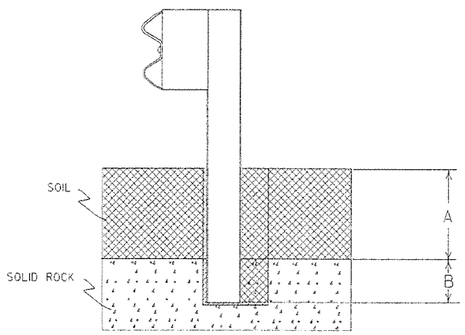
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

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

Case 1

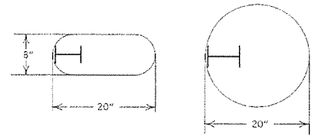


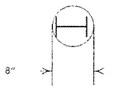
Case 2



Plan View Steel Posts

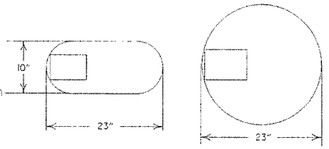
Either hole configuration acceptable

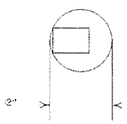




Plan View Wood Posts

Either hole configuration acceptable





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

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

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

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

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

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

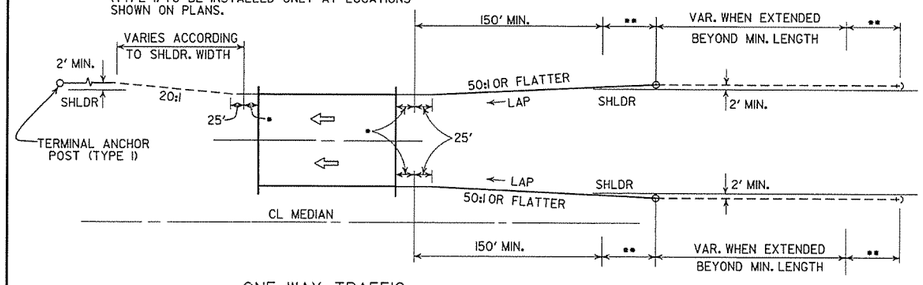
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
6-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T. DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
7-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

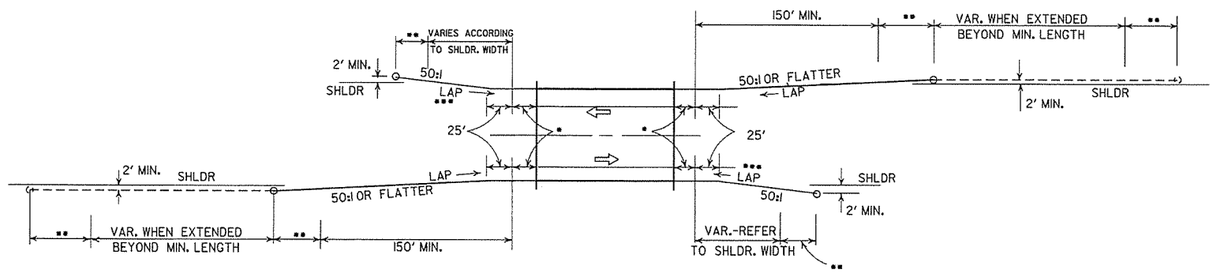
STANDARD DRAWING GR-8A

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



ONE-WAY TRAFFIC

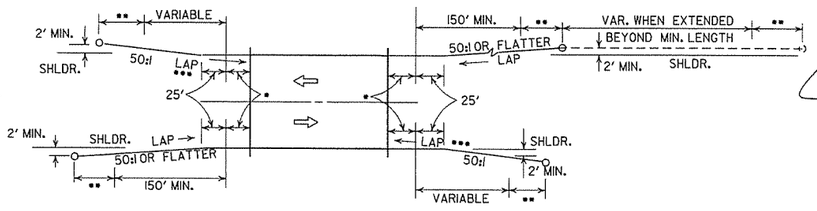
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

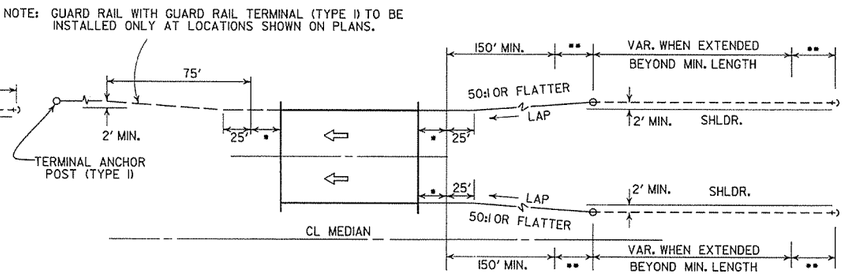
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

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



TWO-WAY TRAFFIC

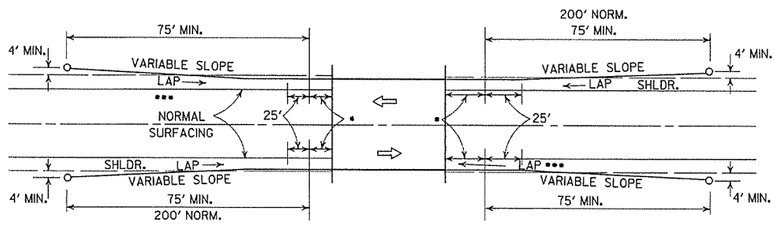
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

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

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



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

LEGEND

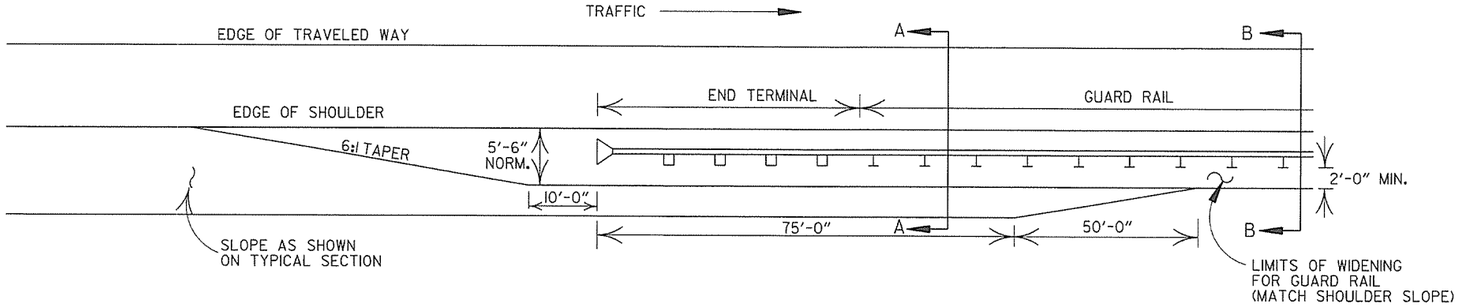
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

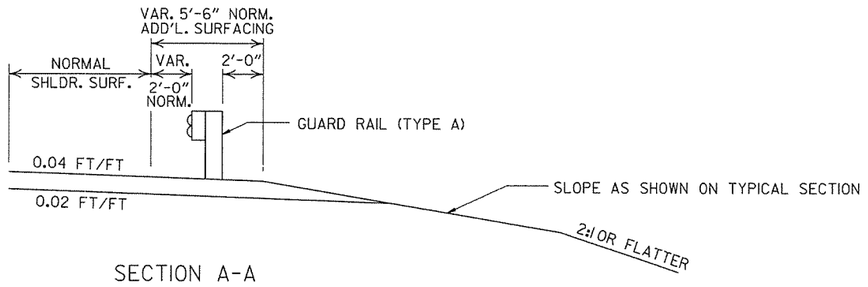
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87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

ARKANSAS STATE HIGHWAY COMMISSION

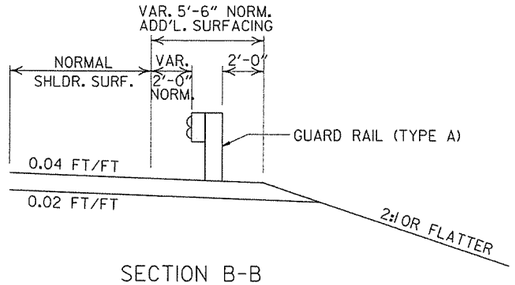
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





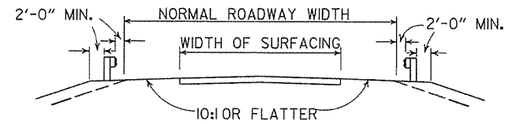
SECTION A-A



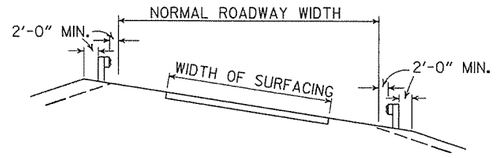
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

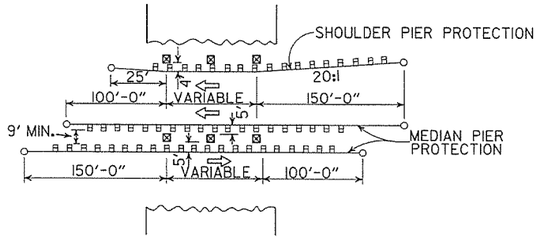


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



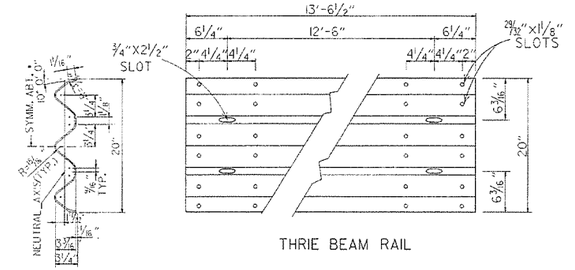
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

ARKANSAS STATE HIGHWAY COMMISSION

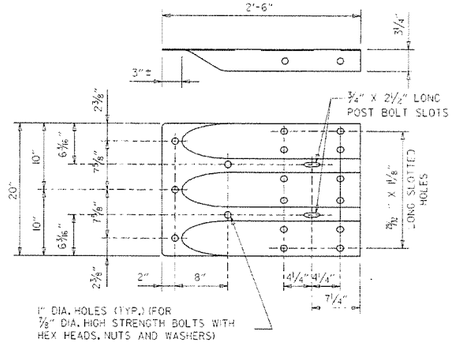
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A



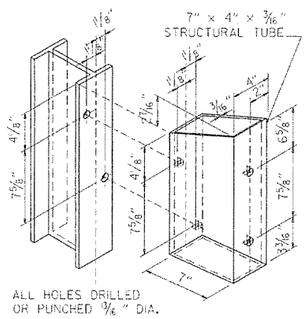
THRIE BEAM RAIL

SECTION THRU
THRIE BEAM RAIL



1" DIA. HOLES (TYP.) (FOR ⅞" DIA. HIGH STRENGTH BOLTS WITH HEX HEADS, NUTS AND WASHERS)

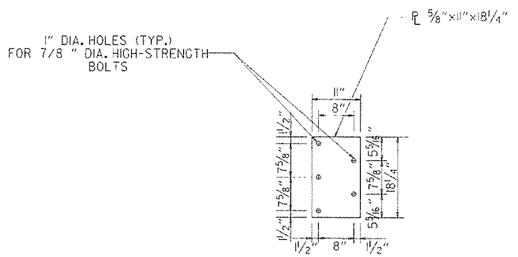
SPECIAL END SHOE



ALL HOLES DRILLED OR PUNCHED ⅜" DIA.

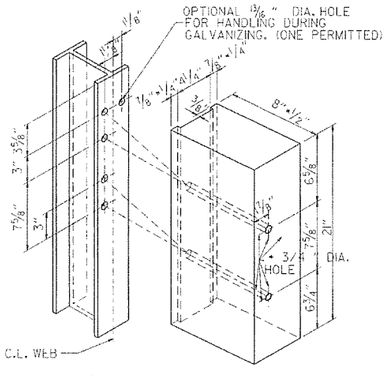
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL

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



CONNECTOR PLATE

NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.



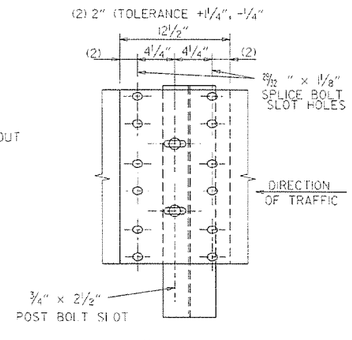
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD
OR PLASTIC BLOCKOUTS

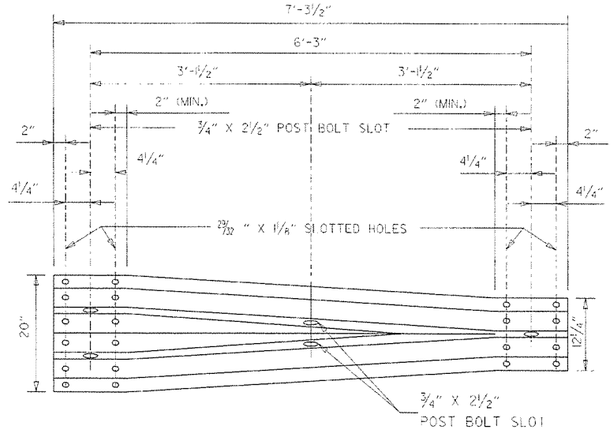
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.

CONNECTOR PLATE

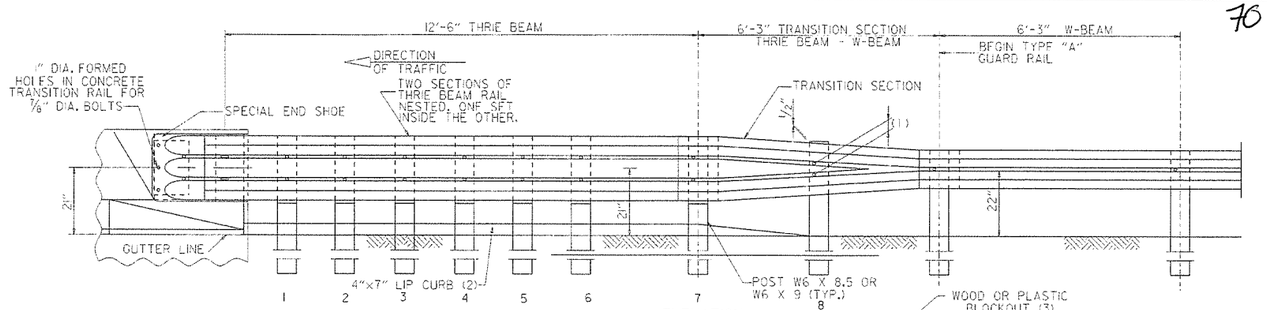
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS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



THRIE BEAM RAIL
SPLICE AT POST



TRANSITION SECTION



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

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

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

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

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

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

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

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

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

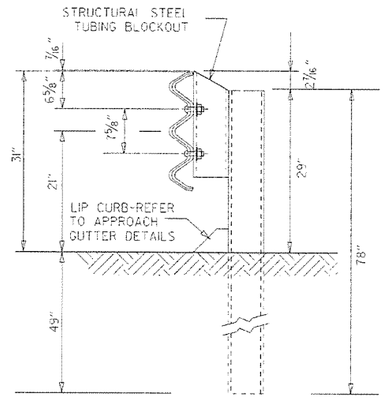
THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W BEAM POSTS FOR ENTIRE JOB.

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

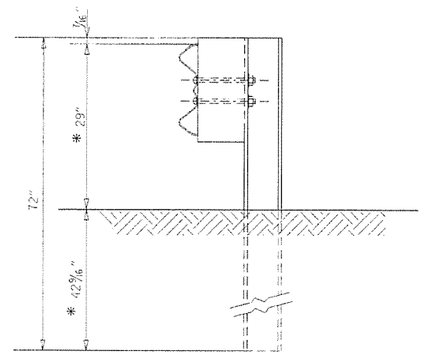
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10

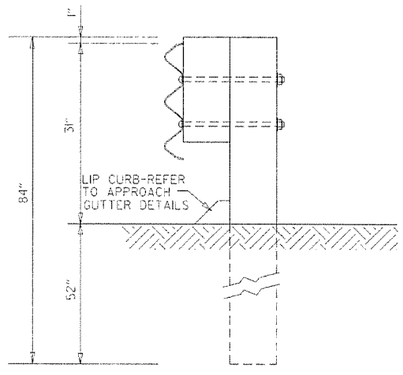


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

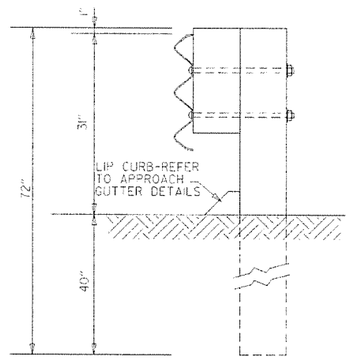


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

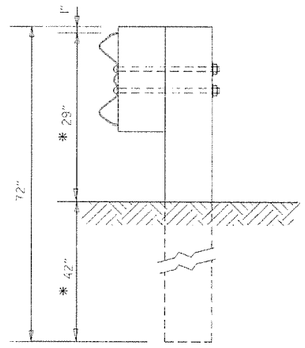
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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



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



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

GENERAL NOTES:

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

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

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

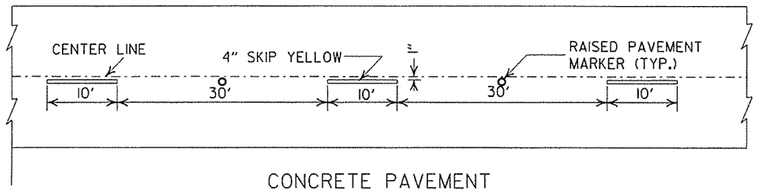
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

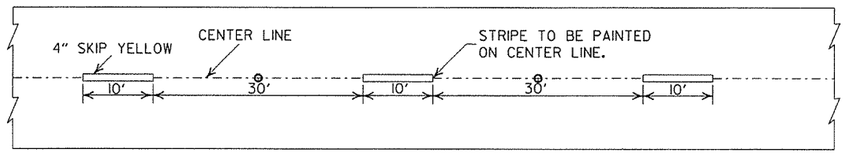
STANDARD DRAWING GR-10A

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

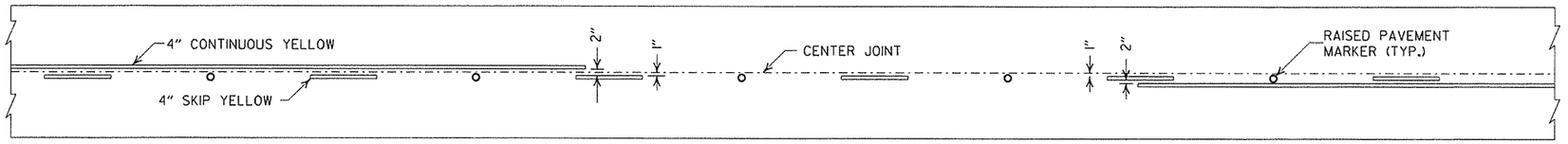


CONCRETE PAVEMENT

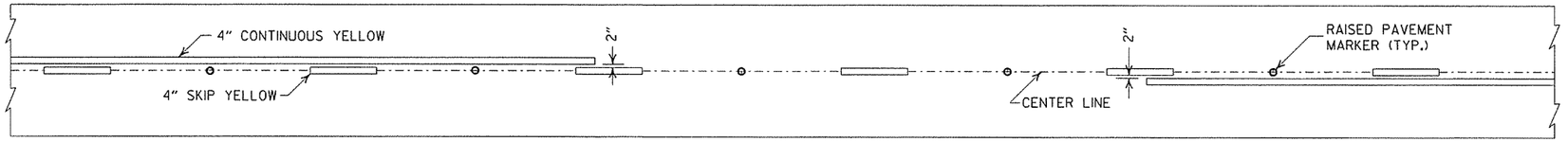


ASPHALT PAVEMENT

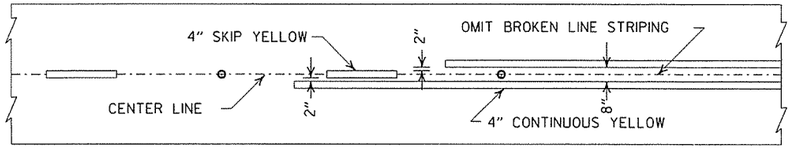
BROKEN LINE STRIPING



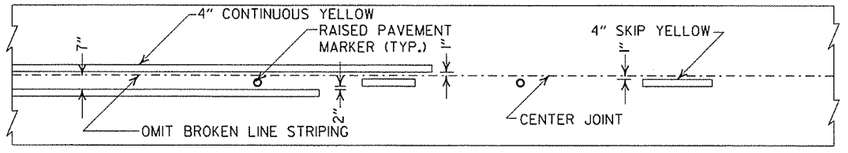
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

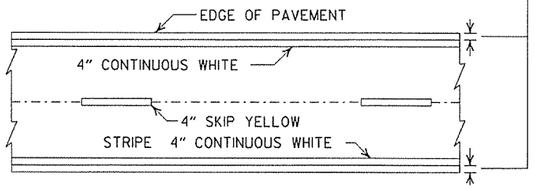


ASPHALT PAVEMENT

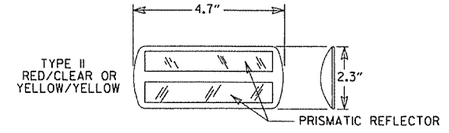


CONCRETE PAVEMENT

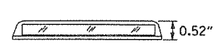
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

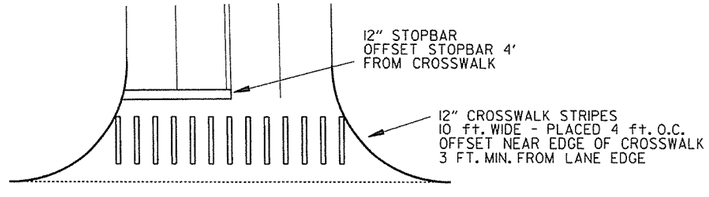
GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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

STRIPING AT ADJACENT NO PASSING LANES



CROSSWALK AND STOPBAR DETAILS

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

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

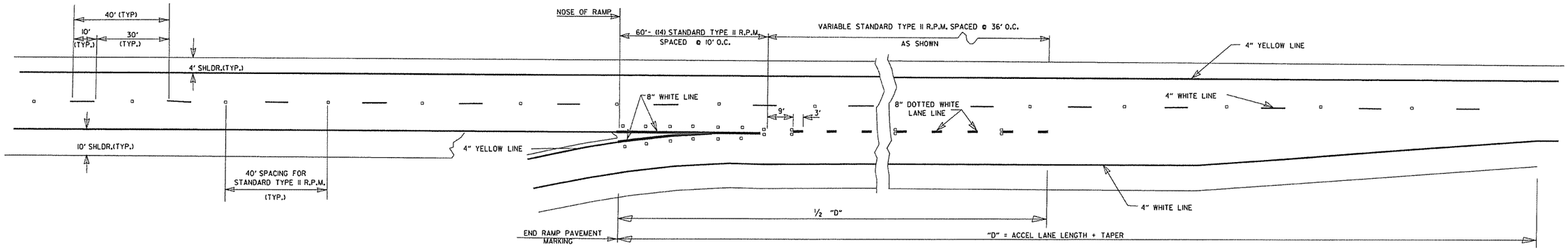
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

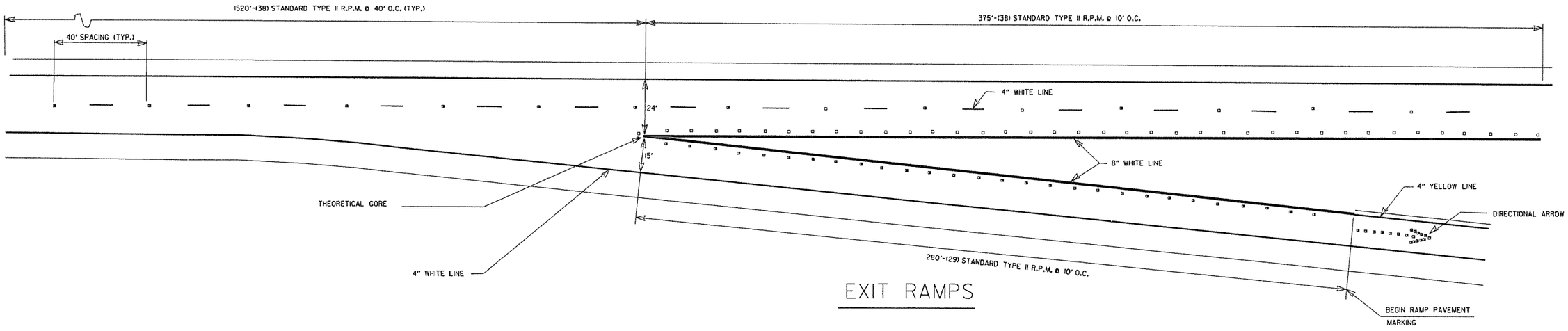
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

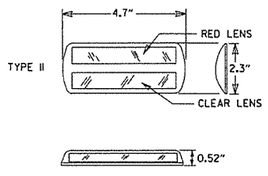
4" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

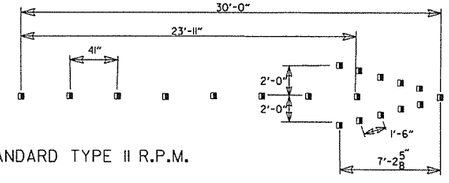


EXIT RAMPS



DETAIL OF
STANDARD
RAISED PAVEMENT MARKERS

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



(19) STANDARD TYPE II R.P.M.

DIRECTIONAL ARROWS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
7-26-12	REVISED RPM NOTATION	
12-15-11	REVISED RPMs ACCORDING TO LATEST POLICY	
11-17-10	REMOVED PLOWABLE PAVEMENT MARKERS	
6-3-10	REVISED PER 2009 MUTCD	
11-18-04	REVISED NOTES	
8-22-02	ADDED & REVISED NOTES; REV. ENTRANCE & EXIT RAMPS	
5-18-00	REMOVED HASHMARKS	
7-02-98	CHANGED TYPES TO ROMAN NUMERALS	
4-26-96	ADDED DIMENSIONS & QUANTITIES; REVISED LANE WIDTH ON EXIT RAMP	
2-2-95	PLACED IN USE	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

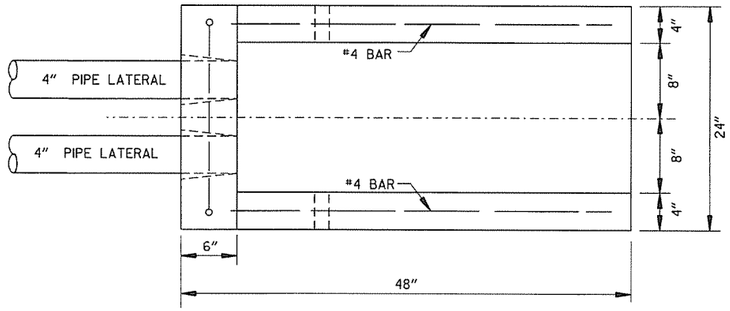
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

STANDARD DRAWING PM-2

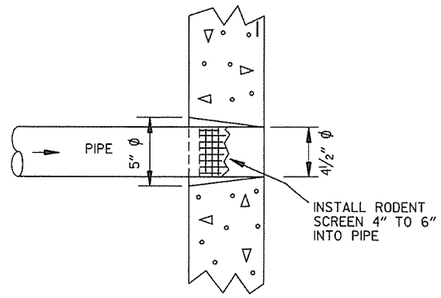
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

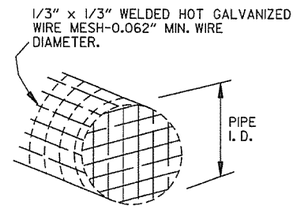
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



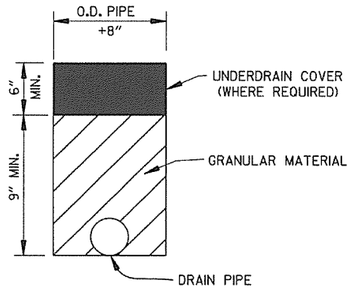
PLAN VIEW

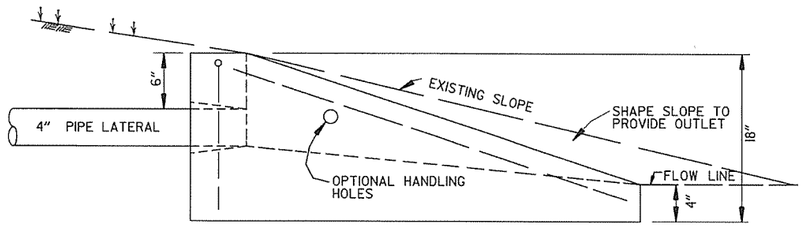


DETAIL OF HOLE FOR 4" PIPE

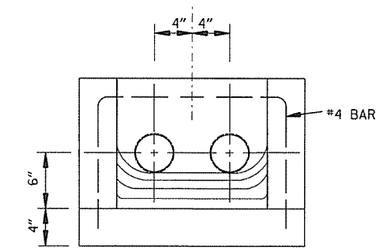


DETAIL OF RODENT SCREEN

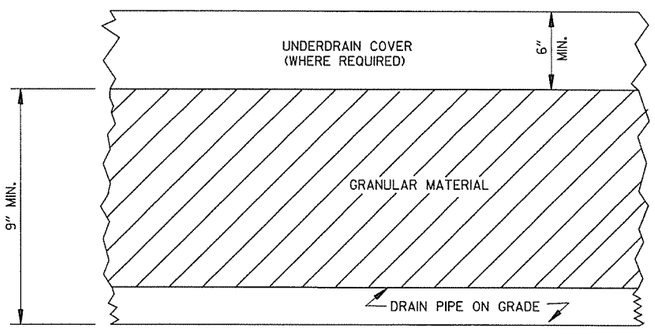




SIDE VIEW

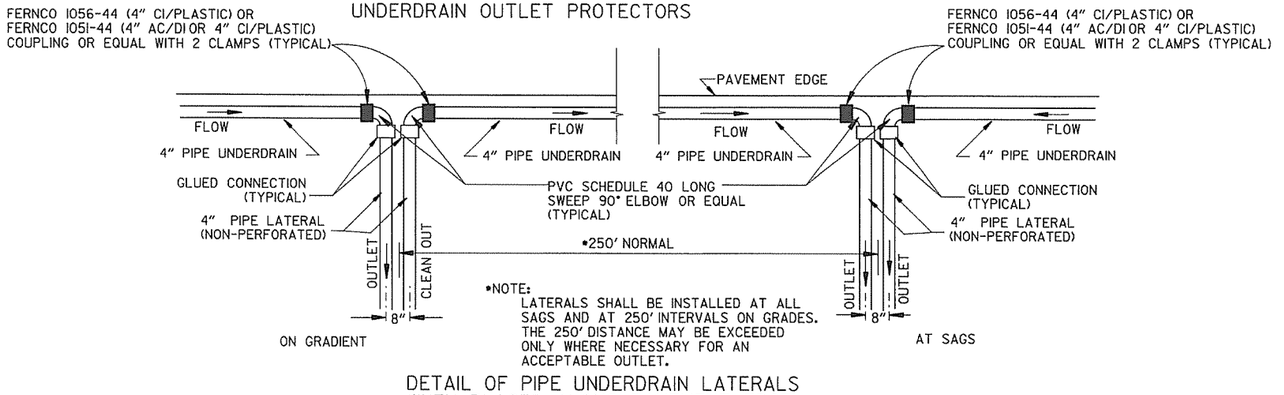


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	65 MPH e	65 MPH Ls (FT) MINIMUM	65 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15′	N. C.			N. C.			N. C.			N. C.			N. C.			N. C.			N. C.		
0° 30′	N. C.			N. C.			N. C.			N. C.			N. C.			N. C.			N. C.		
0° 45′	N. C.			N. C.			R. C.			0.022			0.023			0.025			0.028		
1° 00′	N. C.			N. C.			0.021			0.026			0.030			0.033			0.037		
1° 15′	N. C.			R. C.			0.026			0.032			0.037			0.041			0.046		
1° 30′	N. C.			0.021			0.031	200		0.037	225		0.043	250		0.048	250		0.054	275	
1° 45′	N. C.			0.025	175		0.036			0.043			0.049			0.055			0.062		
2° 00′	R. C.			0.028			0.040			0.048			0.055			0.062			0.070		
2° 15′	R. C.			0.031			0.045			0.053			0.061			0.069	265		0.078	300	
2° 30′	0.021			0.034			0.049			0.058			0.067			0.075	280		0.085	315	400
2° 45′	0.023			0.037			0.053			0.063			0.072			0.081	300		0.091	335	
3° 00′	0.025			0.040			0.057			0.067	230		0.077	260		0.087	315		0.096	350	
3° 15′	0.027	150		0.043		250	0.061			0.072	245		0.082	275		0.090	325	400	0.098	360	450
3° 30′	0.029			0.046			0.065	205		0.076	255		0.086	285		0.095	340		0.100	360	
3° 45′	0.031			0.049			0.069	215		0.080	265		0.090	295	400	0.097	345				
4° 00′	0.033			0.051			0.072	225		0.083	270		0.093	305		0.099	350				
4° 30′	0.037			0.056			0.078	240		0.087	280		0.096	315							
5° 00′	0.040			0.061			0.083	250		0.091	295	400	0.098	320							
5° 30′	0.043			0.066	185		0.088	260		0.094	300										
6° 00′	0.046			0.070	190		0.092	270		0.096	305										
6° 30′	0.050			0.074	200		0.095	280	350	0.100	315										
7° 00′	0.053			0.078	210		0.098	285													
7° 30′	0.056			0.081	215		0.099	290													
8° 00′	0.058			0.084	220	300	0.100	290													
8° 30′	0.061			0.087	225																
9° 00′	0.063			0.089	230																
10° 00′	0.068	160		0.094	235																
11° 00′	0.072	170		0.097	250																
12° 00′	0.076	175		0.099	250																
13° 00′	0.080	180		0.100	250																
14° 00′	0.083	190																			
15° 00′	0.086	195																			
16° 00′	0.089	200																			
17° 00′	0.091	200																			
18° 00′	0.093	205																			
19° 00′	0.095	210																			
20° 00′	0.097	215	300																		
21° 00′	0.098	215																			
22° 00′	0.099	215																			
23° 00′	0.099	215																			
24° 00′	0.100	220																			

D MAX = 24° 45′ | D MAX = 13° 15′ | D MAX = 8° 15′ | D MAX = 6° 30′ | D MAX = 5° 15′ | D MAX = 4° 15′ | D MAX = 3° 30′

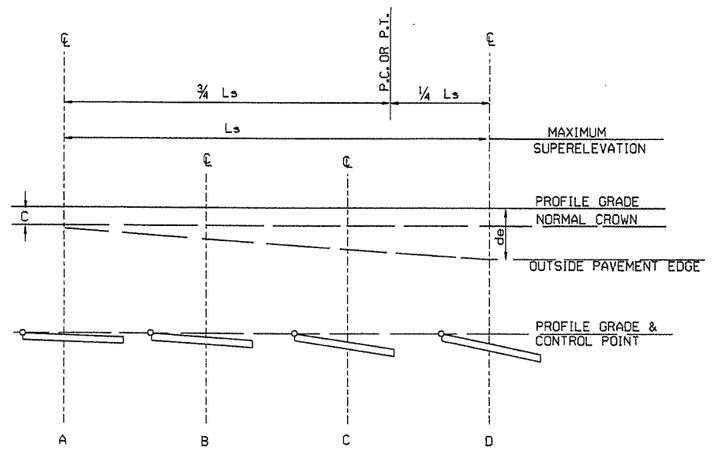
GENERAL NOTES

1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L_s MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. MINIMUM L_s VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
5. DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLOWS:

6 LANE DIVIDED---------+20%
8 LANE DIVIDED---------+50%

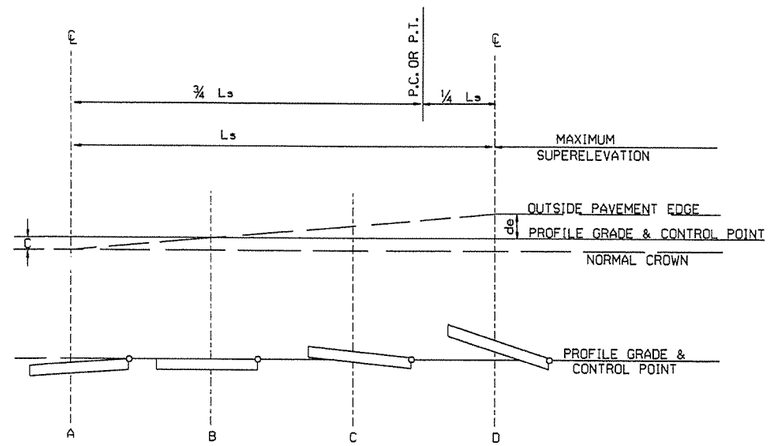
ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
S - SUPERELEVATION
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT
e - MAXIMUM RATE OF SUPERELEVATION (FT. PER FT.)
L_s - LENGTH OF SUPERELEVATION TRANSITION (FT.)
C - NORMAL CROWN (FT.)



ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$



ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

DATE	REVISION	DATE FILMED
01-09-87	ISSUED	578-1-15-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

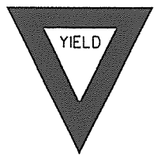
STANDARD DRAWING SE-1

R1-1



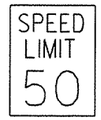
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



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

R2-1



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

W3-5



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

W3-5a



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

R4-1



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

R4-2



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

R5-1



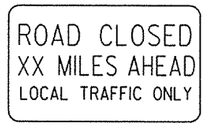
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



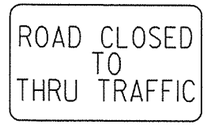
48"X30"

R11-3A



60"X30"

R11-4



60"X30"

RSP-1



48"X30"

W1-1



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

W1-2



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

W1-3



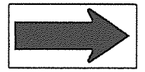
STD. 48"X48"

W1-4



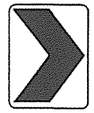
STD. 48"X48"

W1-6



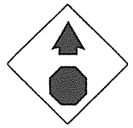
STD. 48"X24"
SPECIAL 60"X30"

W1-8



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

W3-1



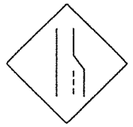
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



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

W9-2



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

W13-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



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

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



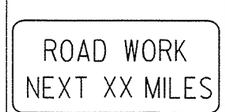
STD. 36"X36"
FWY. 48"X48"

W8-9



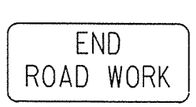
STD. 36"X36"
FWY. 48"X48"

G20-1



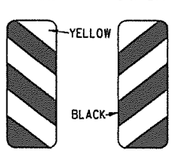
60"X24"

G20-2



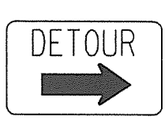
48"X24"

OM-3L OM-3R



12"X36"

M4-9



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

M4-10



48"X18"

R55-1

FINES DOUBLE
IN WORK ZONES •

WHEN WORKERS
ARE PRESENT ••

36"X60"

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

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.

3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.

• 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.

• 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.

6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.

7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.

8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.

9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.

10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

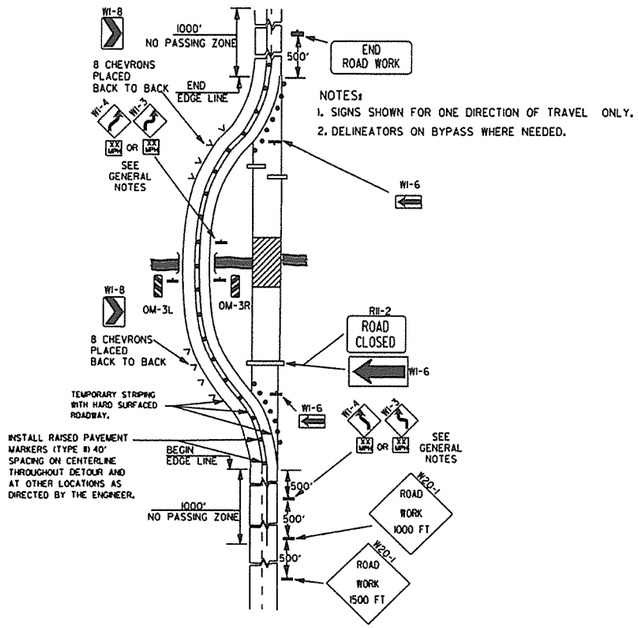
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

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

ARKANSAS STATE HIGHWAY COMMISSION

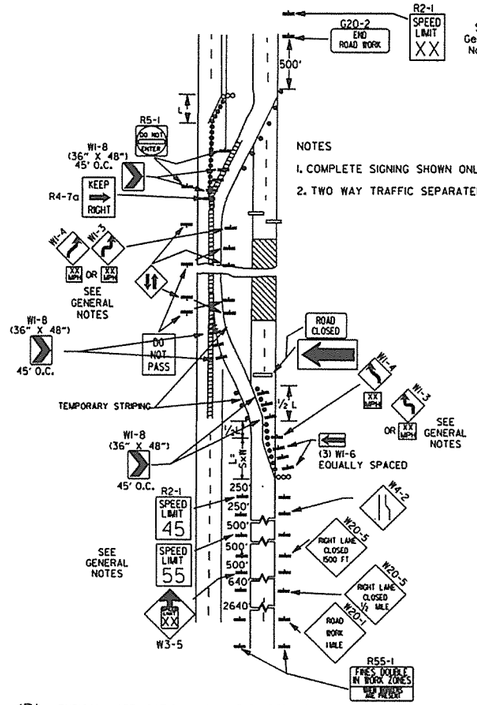
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



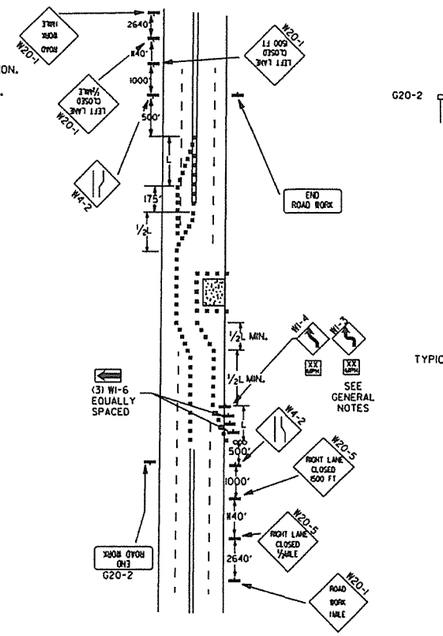
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

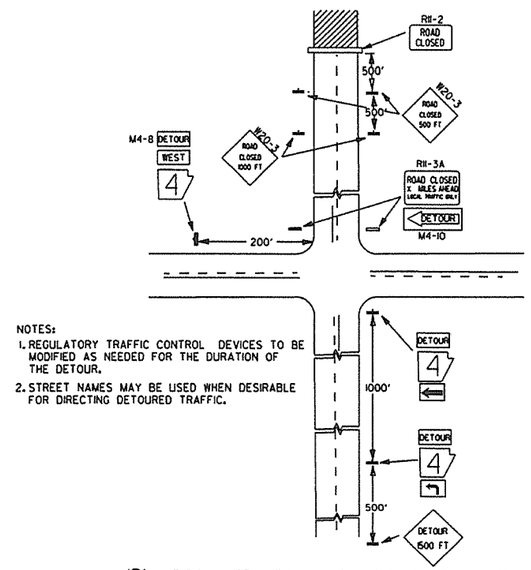


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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

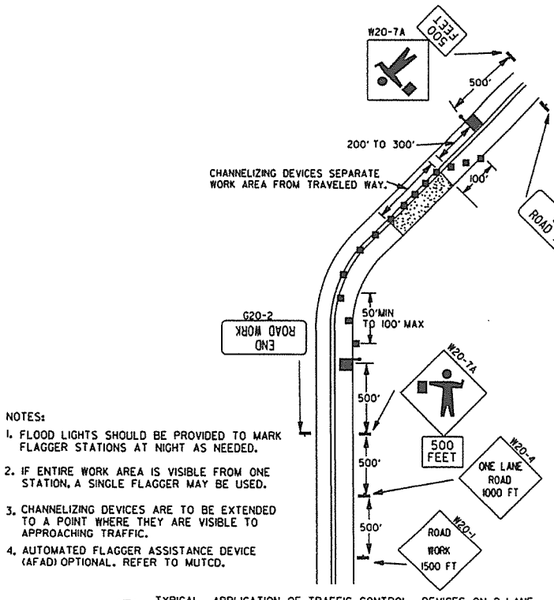


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



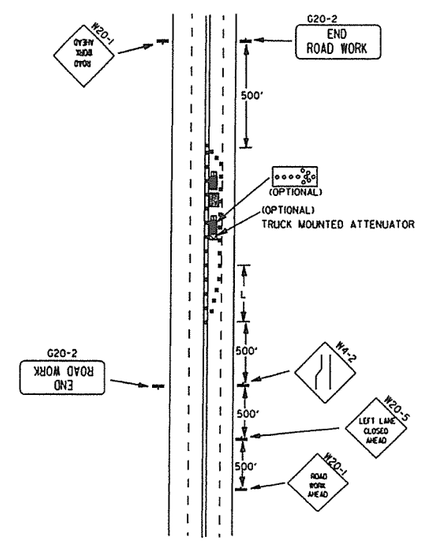
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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

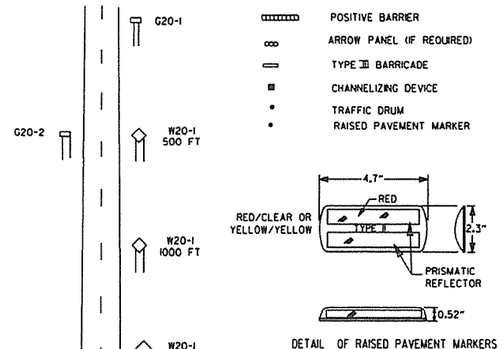


NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE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

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



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



KEY:
- FLAGGER
- POSITIVE BARRIER
- ARROW PANEL (IF REQUIRED)
- TYPE III BARRICADE
- CHANNELIZING DEVICE
- TRAFFIC DRUM
- RAISED PAVEMENT MARKER

DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

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

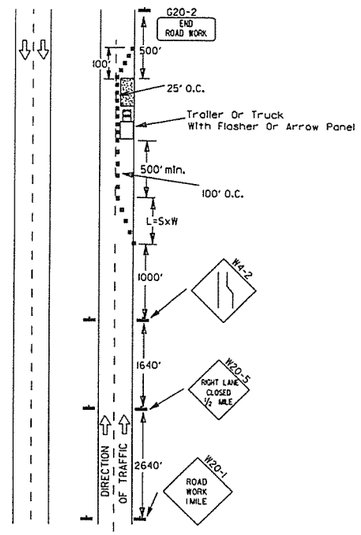
GENERAL NOTES:
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 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.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

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

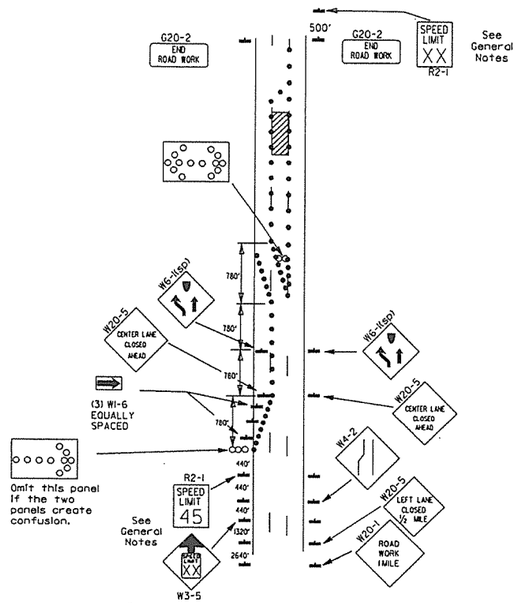
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

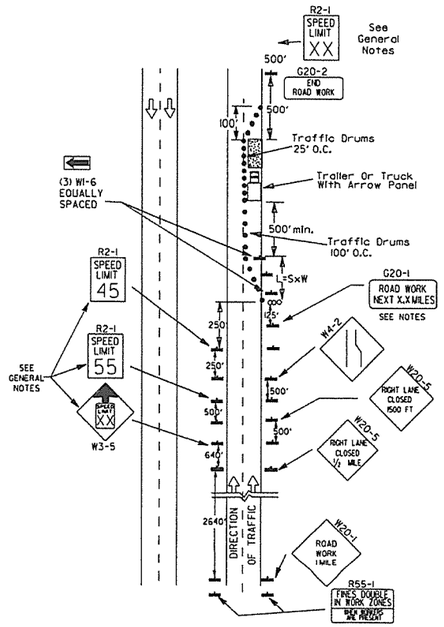
STANDARD DRAWING TC-2



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



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



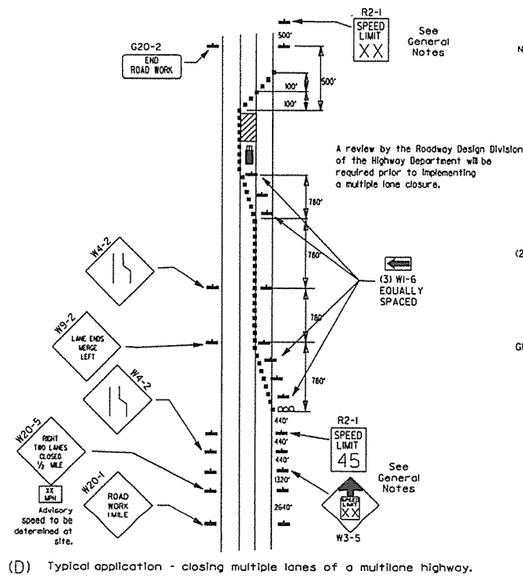
(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

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

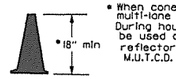
GENERAL NOTES:

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



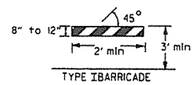
(D) Typical application - closing multiple lanes of a multilane highway.

Channelizing devices



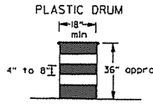
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

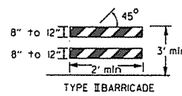
CONES



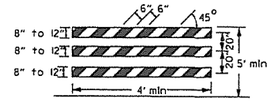
TYPE I BARRICADE

PLASTIC DRUM



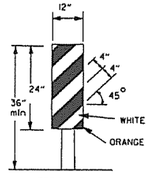


TYPE II BARRICADE



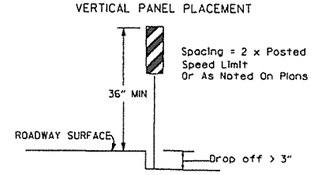
TYPE III BARRICADE

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



VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



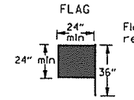
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

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

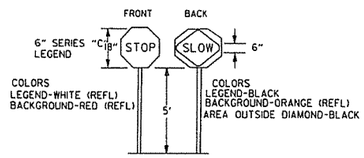
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

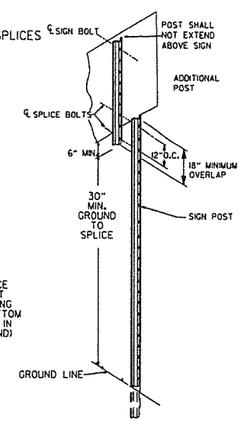


Flag shall be of good grade red material

STOP SLOW PADDLE



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

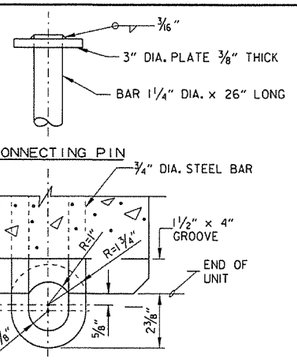
ARKANSAS STATE HIGHWAY COMMISSION

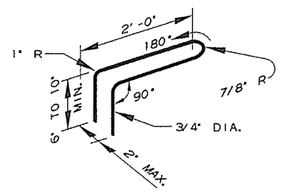
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

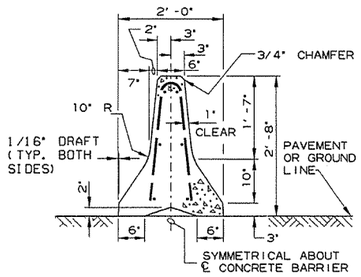
REINFORCING BAR TABLE PER BARRIER UNIT

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

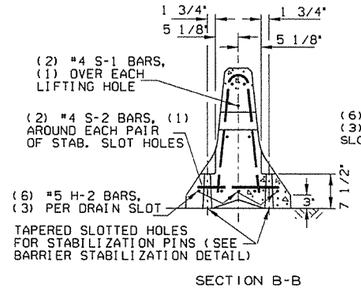




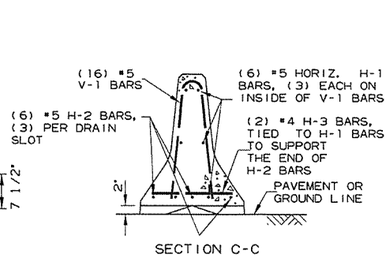
CONNECTION LOOP



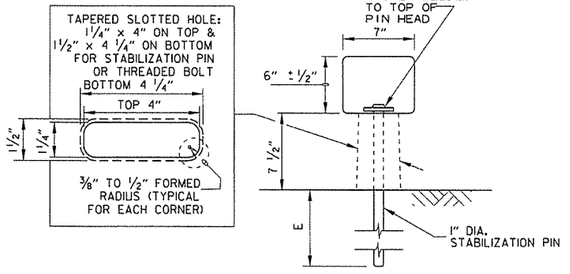
SECTION A-A



SECTION B-B



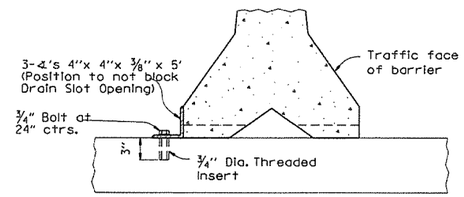
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

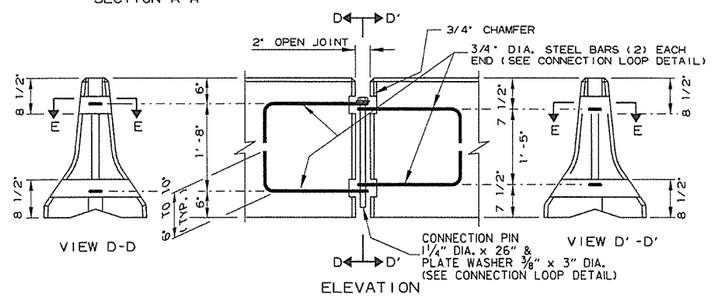
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



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

BARRIER STABILIZATION DETAIL

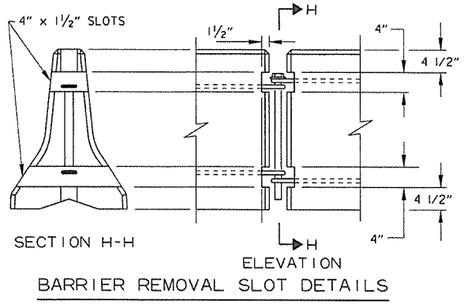
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

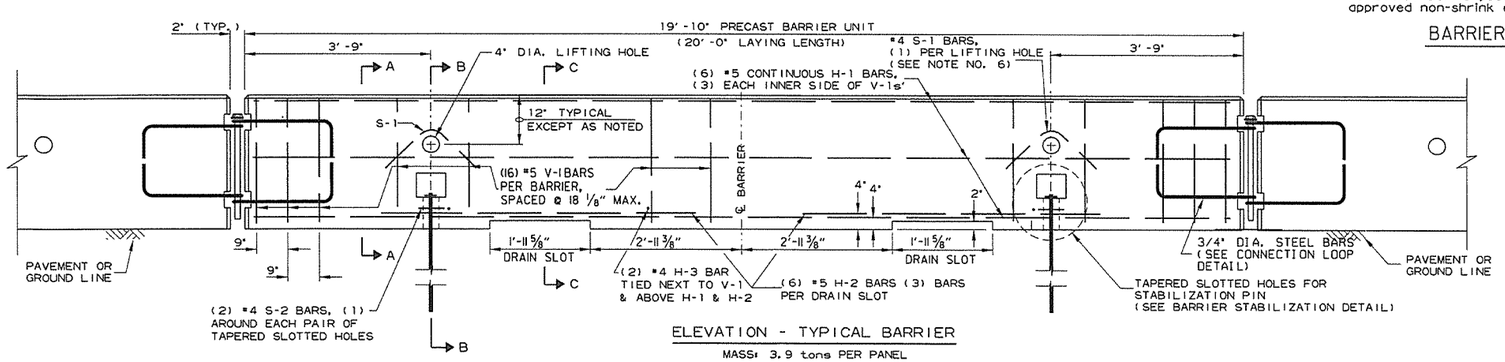
ELEVATION



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.

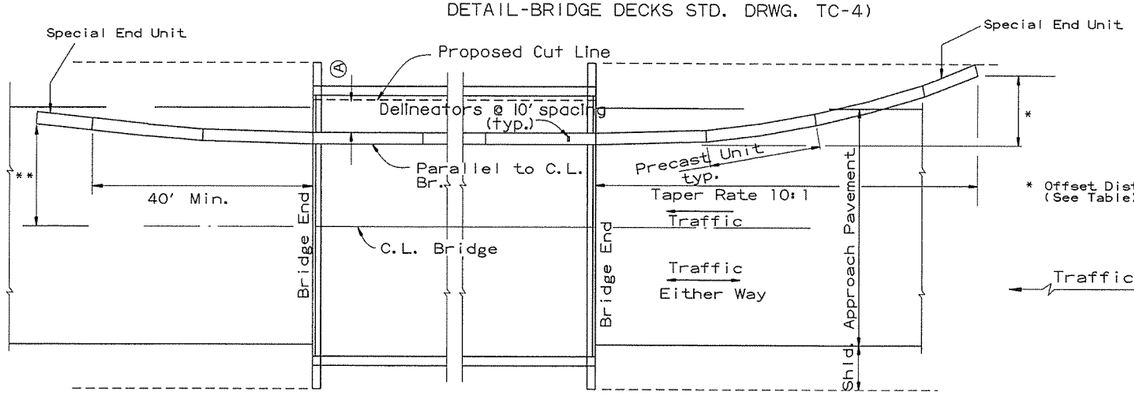
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

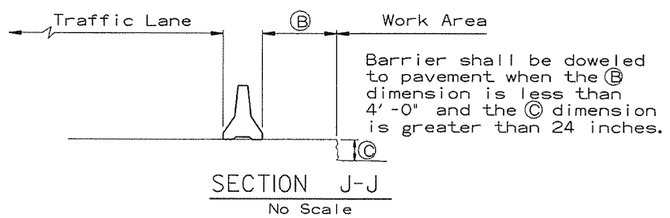
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

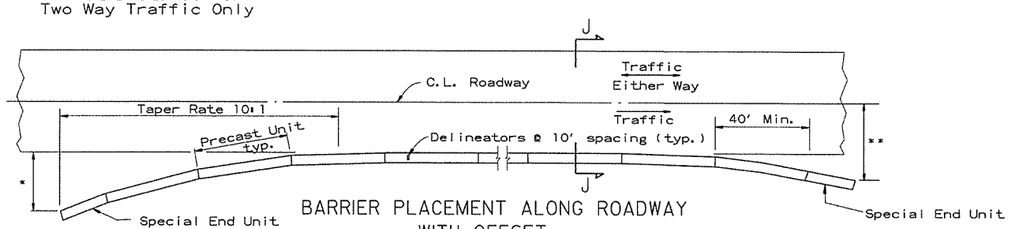
** Offset Distance for Two Way Traffic Only



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

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

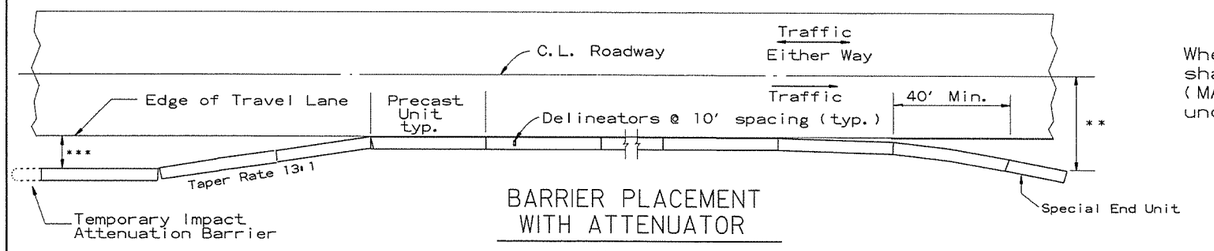
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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

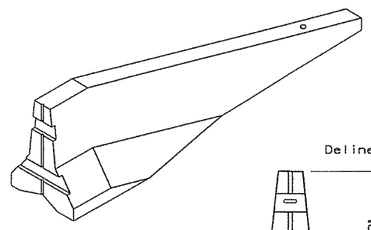


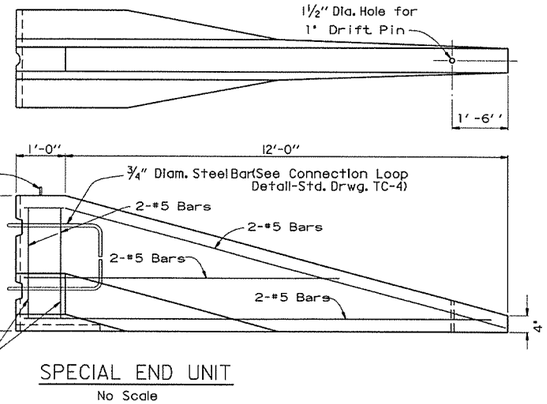
BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only





SPECIAL END UNIT

No Scale

General Notes

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

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

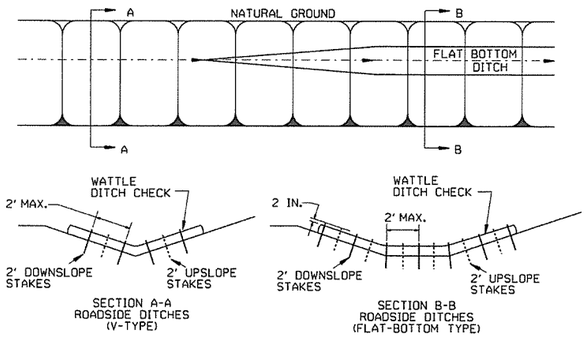
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

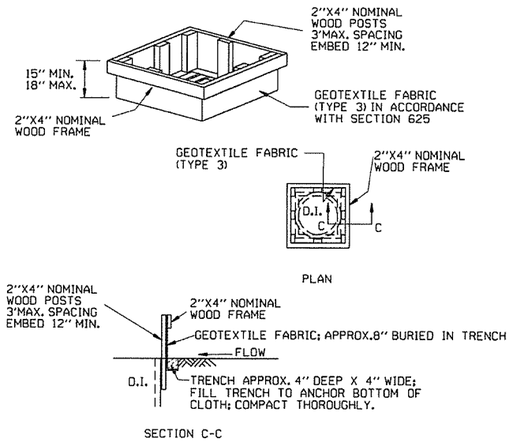
STANDARD DRAWING TC-5

GENERAL NOTES

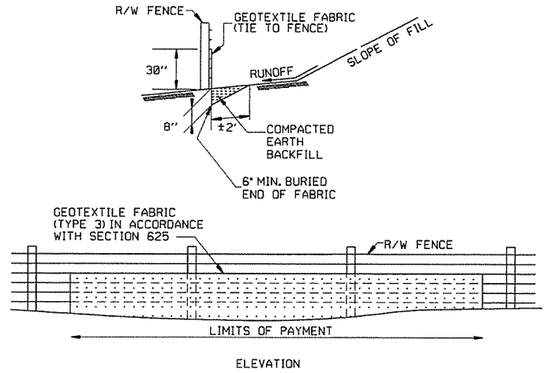
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

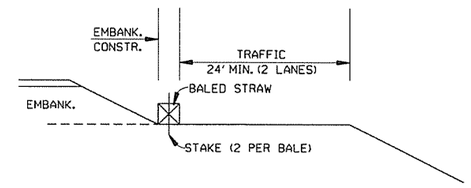
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

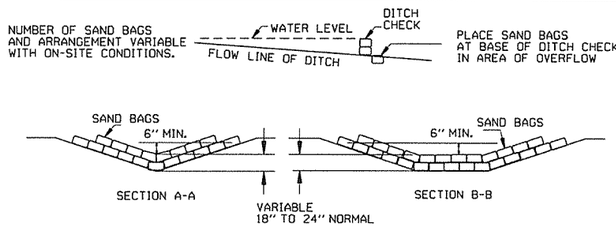
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

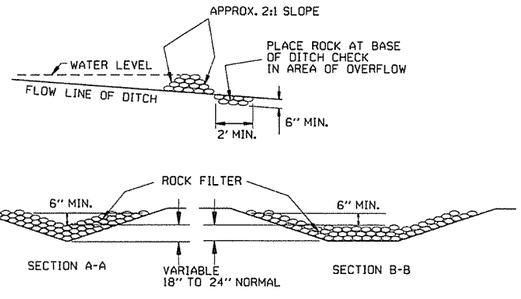
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



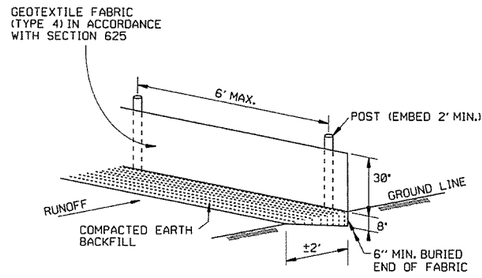
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

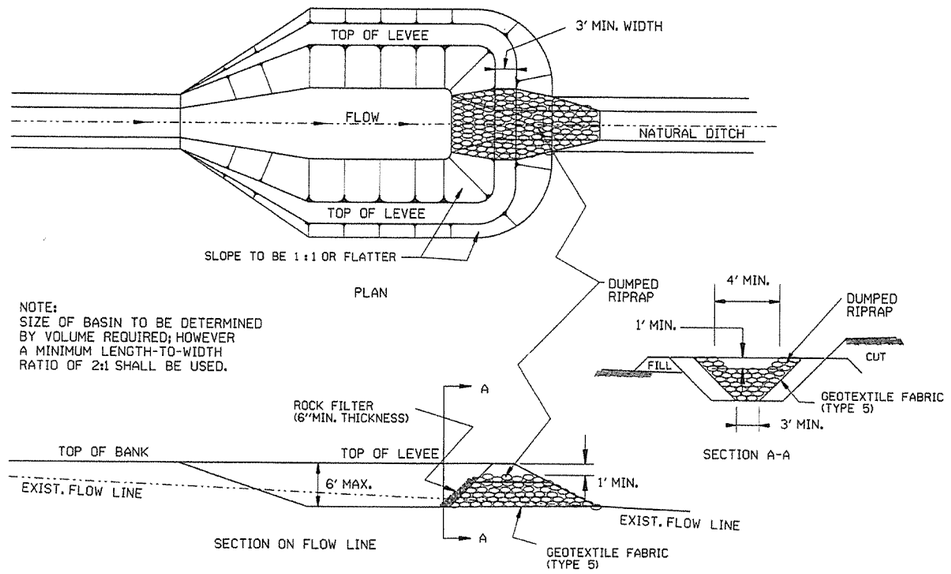
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76

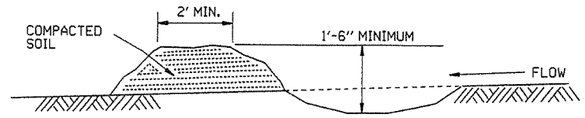
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

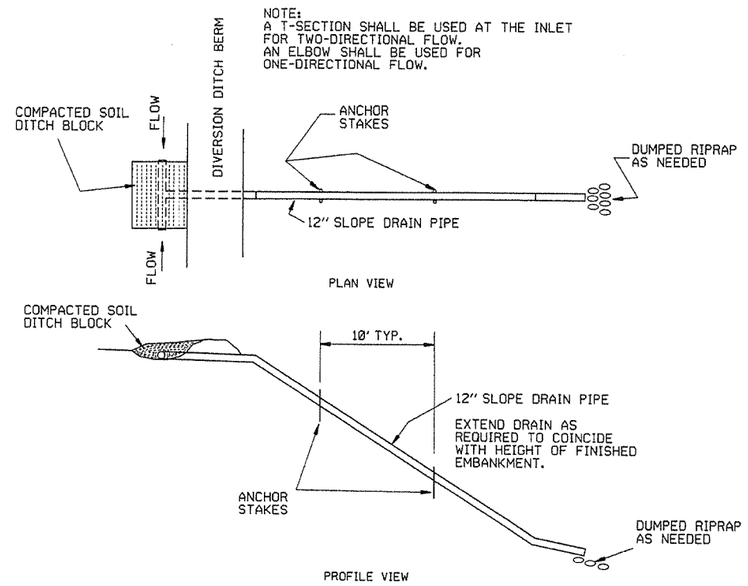
STANDARD DRAWING TEC-1



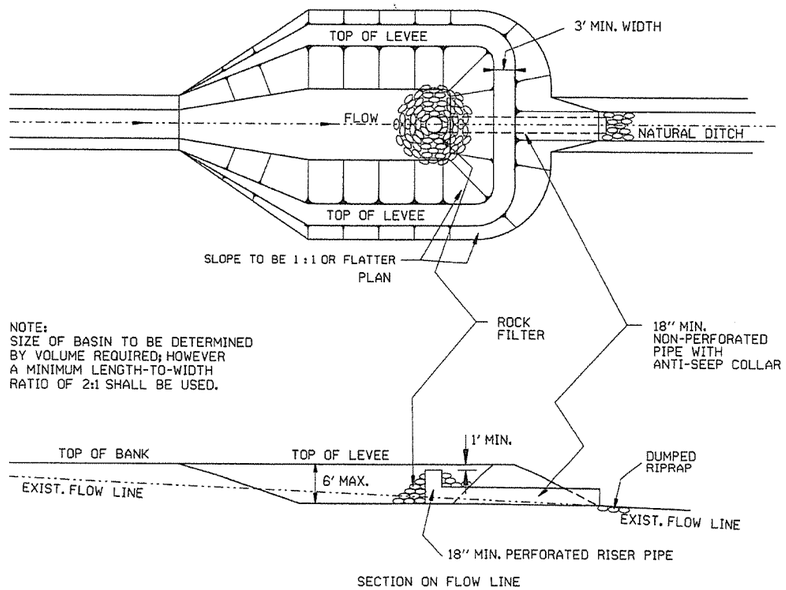
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



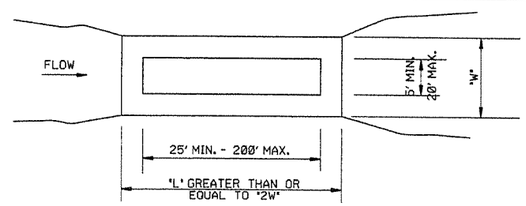
DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN WITH PIPE OUTLET (E-10)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

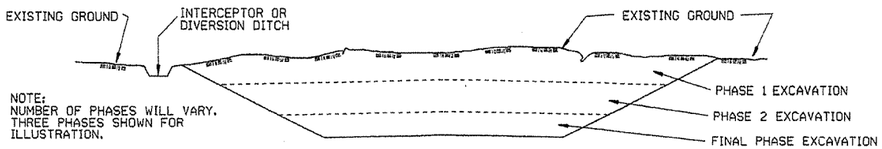
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



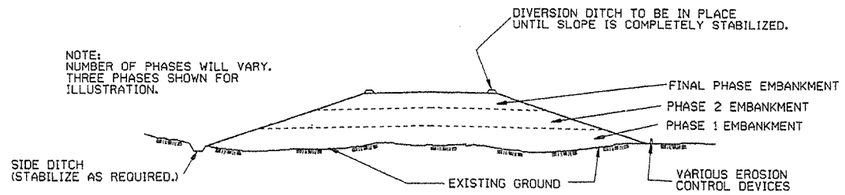
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES, CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

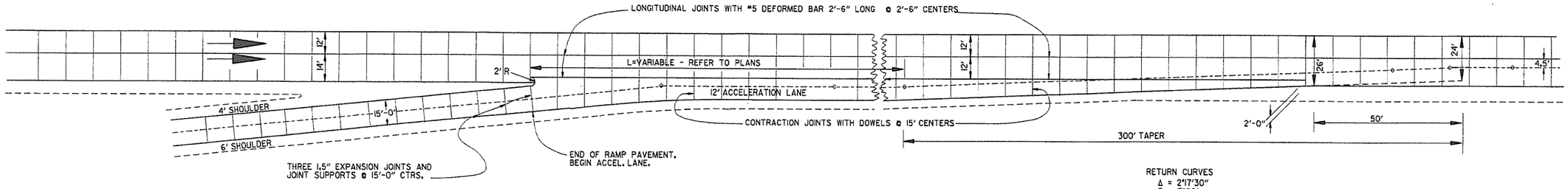
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
8-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

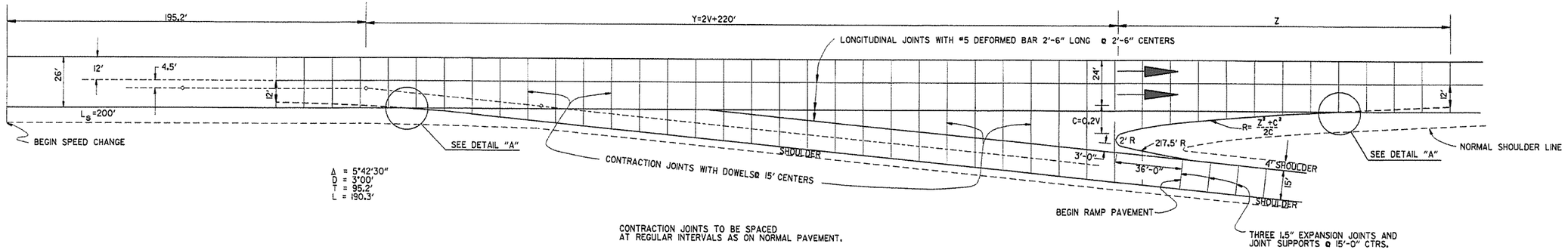
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



ENTRANCE RAMP

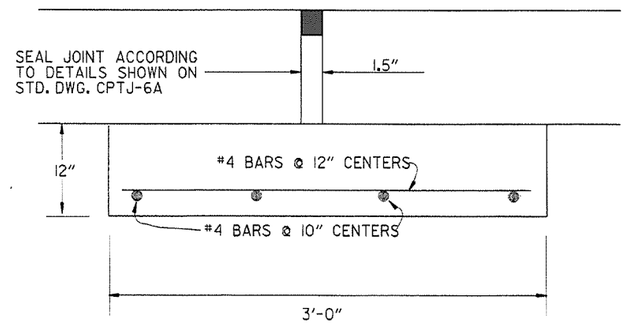
RETURN CURVES
Δ = 2°17'30"
D = 3°00'
T = 38.2'
L = 76.4'



Δ = 5°42'30"
D = 3°00'
T = 95.2'
L = 190.3'

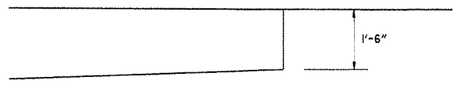
CONTRACTION JOINTS TO BE SPACED AT REGULAR INTERVALS AS ON NORMAL PAVEMENT.

EXIT RAMP



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS).
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE SUBSIDIARY TO THE ABOVE ITEMS.



DETAIL "A"

EXIT RAMP

DESIGN SPEED V	Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R
40	300.0	8.0	96.0	580.0
50	320.0	10.0	120.0	725.0
60	340.0	12.0	168.0	1182.0
70	360.0	14.0	210.0	1582.0

DATE	REVISION	DATE FILM'D
1-12-00	REDRAWN & REISSUED	1-12-00

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS

STANDARD DRAWING TR-1