DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	1	52
				(2)	DITCH NO. 43 - ARKANSAS CITY (S)			

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR STATE HIGHWAY

DITCH NO. 43 - ARKANSAS CITY (S)

DESHA COUNTY

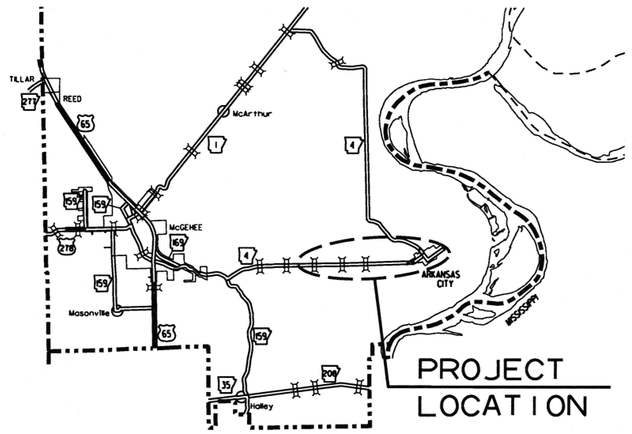
ROUTE 4 SECTION 17

ROUTE 4S SECTION 17S

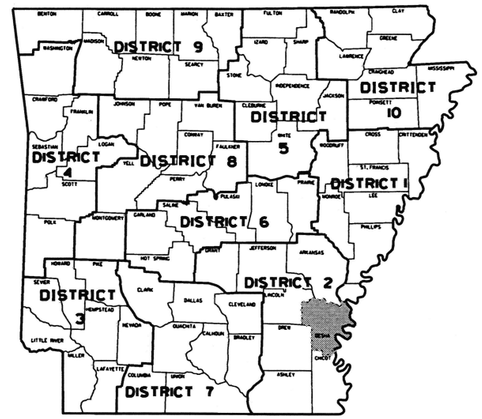
JOB 020573

FED. AID PROJ. STPF-0021(34)

NOT TO SCALE



VICINITY MAP



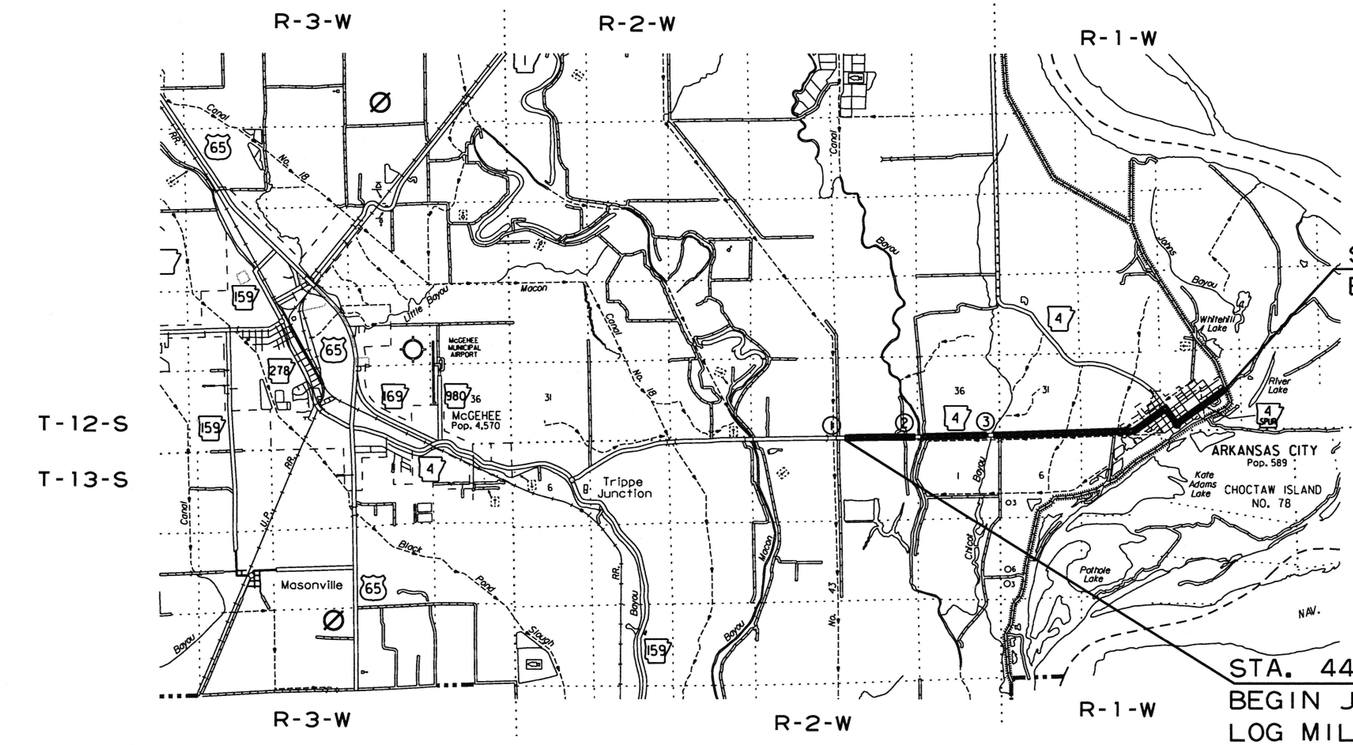
ARK. HWY. DIST. NO. 2

BRIDGE DATA

① STA. 438+09.00 BR. END
BRIDGE NO. 03592
24.0' CLEAR ROADWAY
STA. 439+49.00 BR. END
TOTAL LENGTH = 140.00'
SCOUR REHAB.

② STA. 492+77.98 BR. END
BRIDGE NO. 03593
24.0' CLEAR ROADWAY
STA. 495+52.98 BR. END
TOTAL LENGTH = 275.00'
BRIDGE DECK REHAB. (MILL & POLYMER OVERLAY)

③ STA. 539+45.16 BR. END
BRIDGE NO. 03594
24.0' CLEAR ROADWAY
STA. 540+20.16 BR. END
TOTAL LENGTH = 75.00'
BRIDGE DECK REHAB. (MILL & POLYMER OVERLAY)



DESIGN TRAFFIC DATA

DESIGN YEAR	2037
2017 ADT	1,000
2037 ADT	1,200
2037 DHV	132
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	55 MPH

BEGINNING OF PROJECT	MID-POINT OF PROJECT	END OF PROJECT
LATITUDE = N 33°36'21" LONGITUDE = W 91°16'38"	LATITUDE = N 33°36'19" LONGITUDE = W 91°14'00"	LATITUDE = N 33°36'42" LONGITUDE = W 91°11'41"

GROSS LENGTH OF PROJECT		26682.71 FEET	OR	5.053 MILES
NET	ROADWAY	26332.71		4.987
NET	BRIDGES	350.00		0.066
NET	PROJECT	26682.71		5.053

APPROVED

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

3-9-17

DEPUTY DIRECTOR AND CHIEF ENGINEER

r020573.dgn TITLE SHEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	2	52

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.
1	TITLE SHEET		
2	INDEX OF SHEETS AND STANDARD DRAWINGS		
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES		
4 - 6	TYPICAL SECTIONS OF IMPROVEMENT		
7 - 10	SPECIAL DETAILS		
11 - 18	TEMPORARY EROSION CONTROL DETAILS		
19 - 21	MAINTENANCE OF TRAFFIC DETAILS		
22	PERMANENT PAVEMENT MARKING DETAILS		
23 - 26	QUANTITIES		
27	SUMMARY OF QUANTITIES AND REVISIONS		
28 - 37	SURVEY CONTROL DETAILS		
38 - 48	PLAN SHEETS		
49	SCOUR PREVENTION DETAILS CANAL NO. 43	03592	55870
50	DETAILS FOR TYPE SPECIAL APPROACH GUTTERS	03593, 03594	55871
51	LAYOUT OF BRIDGE OVER BOGGY BAYOU - FOR INFORMATION ONLY	03593	11715
52	LAYOUT OF BRIDGE OVER LITTLE BOGGY BAYOU - FOR INFORMATION ONLY	03594	11716

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
GR-8	GUARD RAIL DETAILS	7-14-10
GR-8A	GUARD RAIL DETAILS	7-14-10
GR-9	GUARD RAIL DETAILS	4-17-08
GR-9A	GUARD RAIL DETAILS	4-17-08
GR-10	GUARD RAIL DETAILS	7-14-10
GR-10A	GUARD RAIL DETAILS	7-14-10
PM-1	PAVEMENT MARKING DETAILS	5-12-16
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	2-27-14
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	10-15-09
TEC-1	TEMPORARY EROSION CONTROL DEVICES	12-15-11
TEC-2	TEMPORARY EROSION CONTROL DEVICES	6-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94

2/21/2017

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(2) GOVERNING SPECIFICATIONS AND GEN. NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-10-17

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
FHWA-1273__	SUPPLEMENT - TRAINING PROGRAM - JOB 020573
100-3_____	CONTRACTOR'S LICENSE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
303-1_____	AGGREGATE BASE COURSE
400-1_____	TACK COATS
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 020573__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 020573__	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS
JOB 020573__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 020573__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 020573__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 020573__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 020573__	COORDINATION OF WORK
JOB 020573__	CULVERT CLEAN OUT
JOB 020573__	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 020573__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 020573__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 020573__	MAINTENANCE OF TRAFFIC
JOB 020573__	MANDATORY ELECTRONIC CONTRACT
JOB 020573__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 020573__	PARTNERING REQUIREMENTS
JOB 020573__	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB 020573__	POLYMER OVERLAY
JOB 020573__	PORTABLE TRAFFIC SIGNAL SYSTEM
JOB 020573__	SECTION 404 NATIONWIDE 3 PERMIT REQUIREMENTS
JOB 020573__	SOIL STABILIZATION
JOB 020573__	SPECIAL CLEARING
JOB 020573__	STORM WATER POLLUTION PREVENTION PLAN
JOB 020573__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 020573__	TEMPORARY PORTABLE RUMBLE STRIPS
JOB 020573__	UTILITY ADJUSTMENTS
JOB 020573__	VALUE ENGINEERING
JOB 020573__	WARM MIX ASPHALT
JOB 020573__	WOVEN GEOTEXTILE FABRIC FOR SUBGRADE REINFORCEMENT

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. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.

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

7. PREPARATORY WORK, SUCH AS CLIPPING THE GRASS AND DEBRIS FROM THE EDGE OF THE EXISTING ROADWAY, WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED A PART OF THE OTHER ITEMS OF WORK. AFTER THE ROADWAY IS COMPLETED, THESE "CLIPPINGS' SHALL BE PULLED UP TO THE EDGE OF THE NEW PAVEMENT BY THE CONTRACTOR. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.

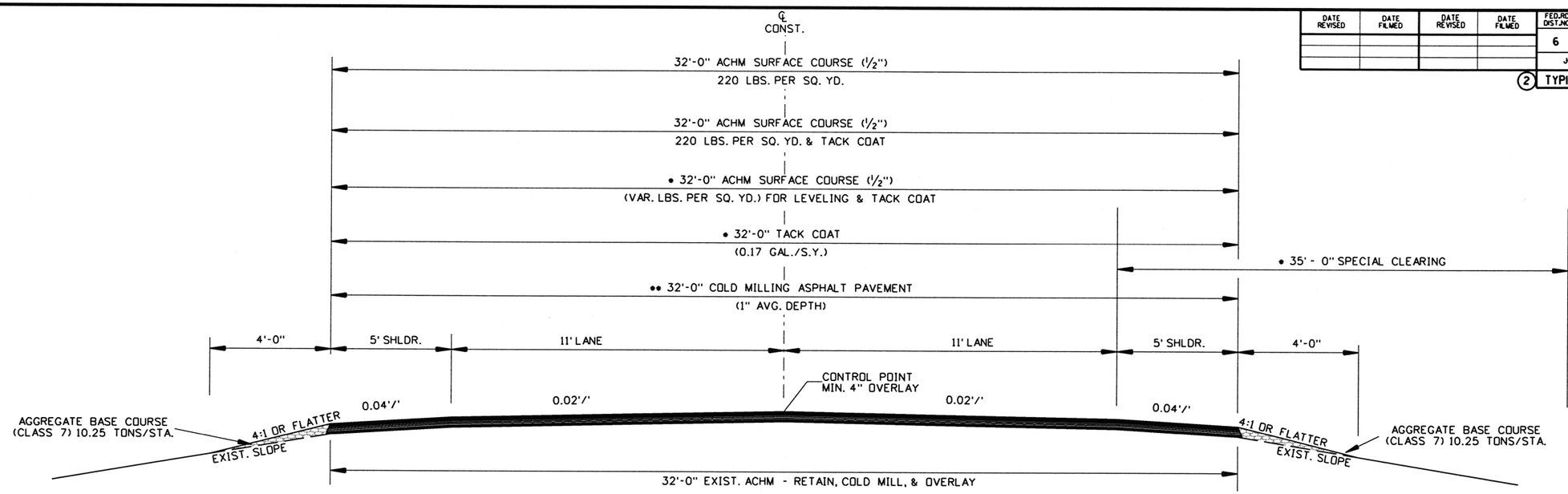
2/21/2017

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				6	ARK.			
				JOB NO.		020573	4	52

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
•• PROFILE COLD MILLING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

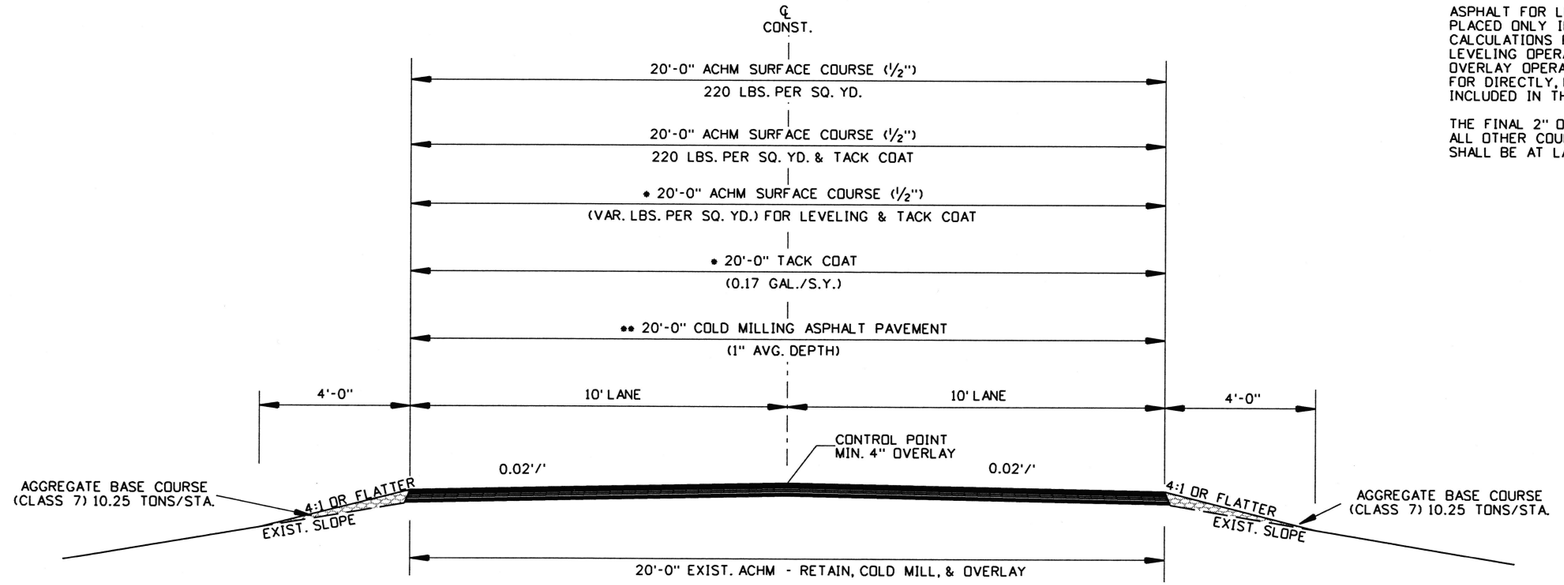
OVERLAY
HWY. 4

STA. 442+00 TO STA. 487+39.02
STA. 632+75.54 TO STA. 660+18.06

NOTES:

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

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



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
•• PROFILE COLD MILLING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

OVERLAY
HWY. 4 SPUR

STA. 660+18.06 TO STA. 708+82.71

11/8/2011

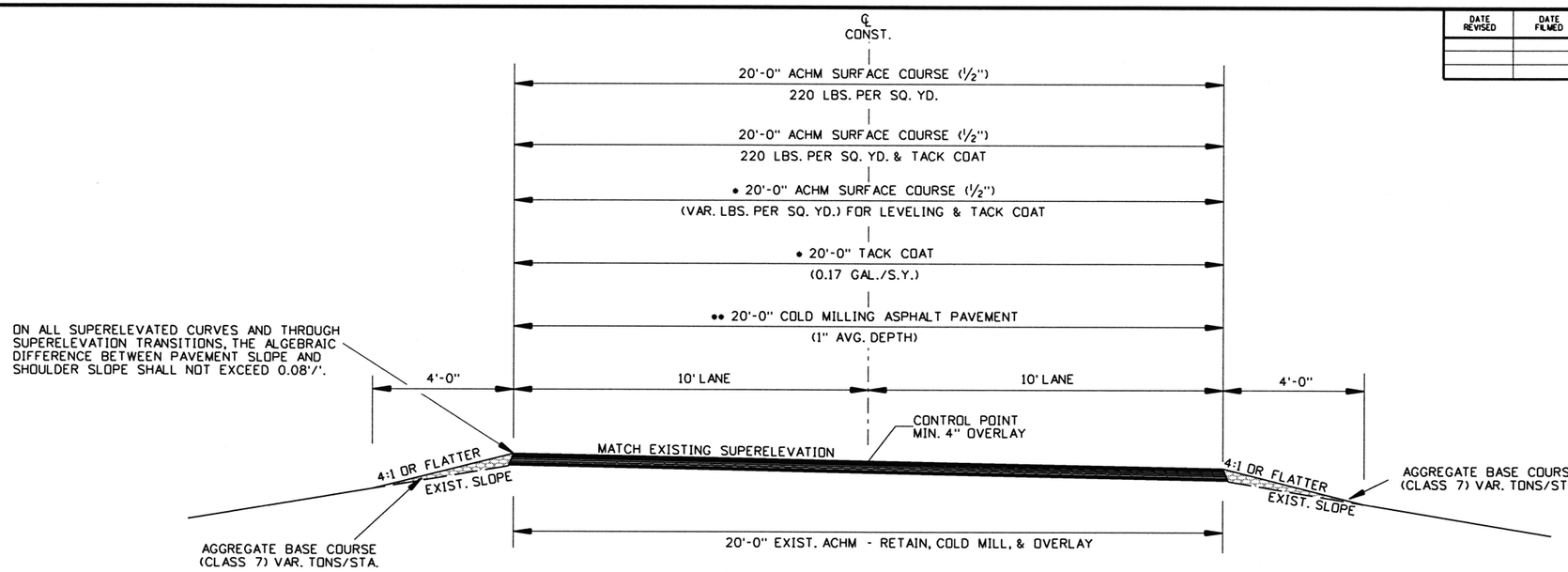
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TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



OVERLAY- SUPERELEVATION
HWY. 4

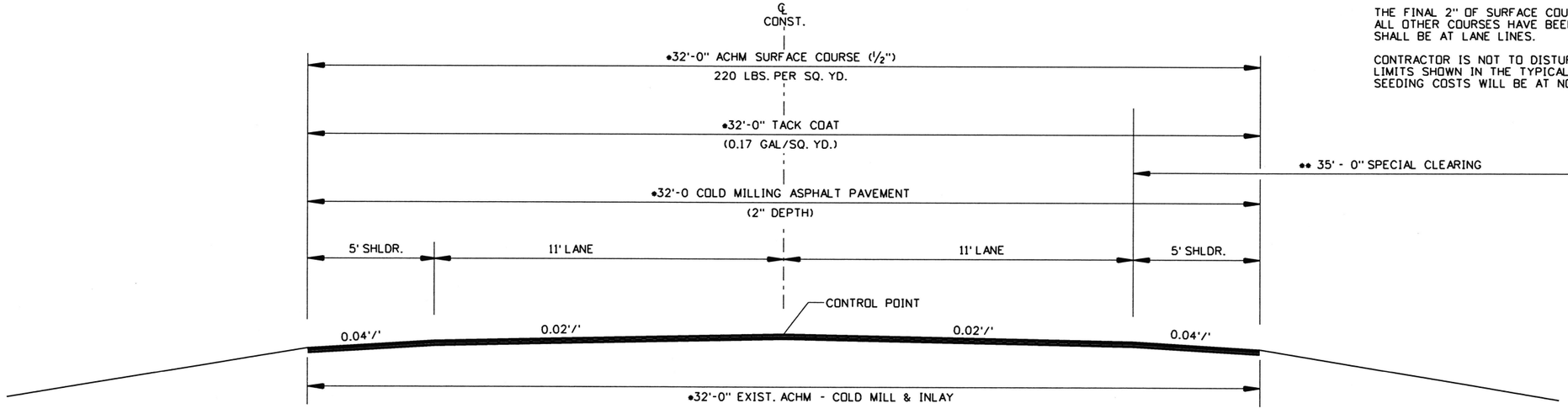
• VARIABLE WIDTH BASED ON BRIDGE WIDTH.
•• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTES:

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

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

CONTRACTOR IS NOT TO DISTURB THE FORE-SLOPE OUTSIDE OF THE LIMITS SHOWN IN THE TYPICAL SECTIONS. ANY RE-DRESSING AND SEEDING COSTS WILL BE AT NO COST TO THE DEPARTMENT.



MILL & INLAY
HWY. 4

STA. 492+77.98 TO STA. 495+52.98
STA. 539+45.16 TO STA. 540+20.16

• VARIABLE WIDTH BASED ON BRIDGE WIDTH.
•• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

11/8/2011

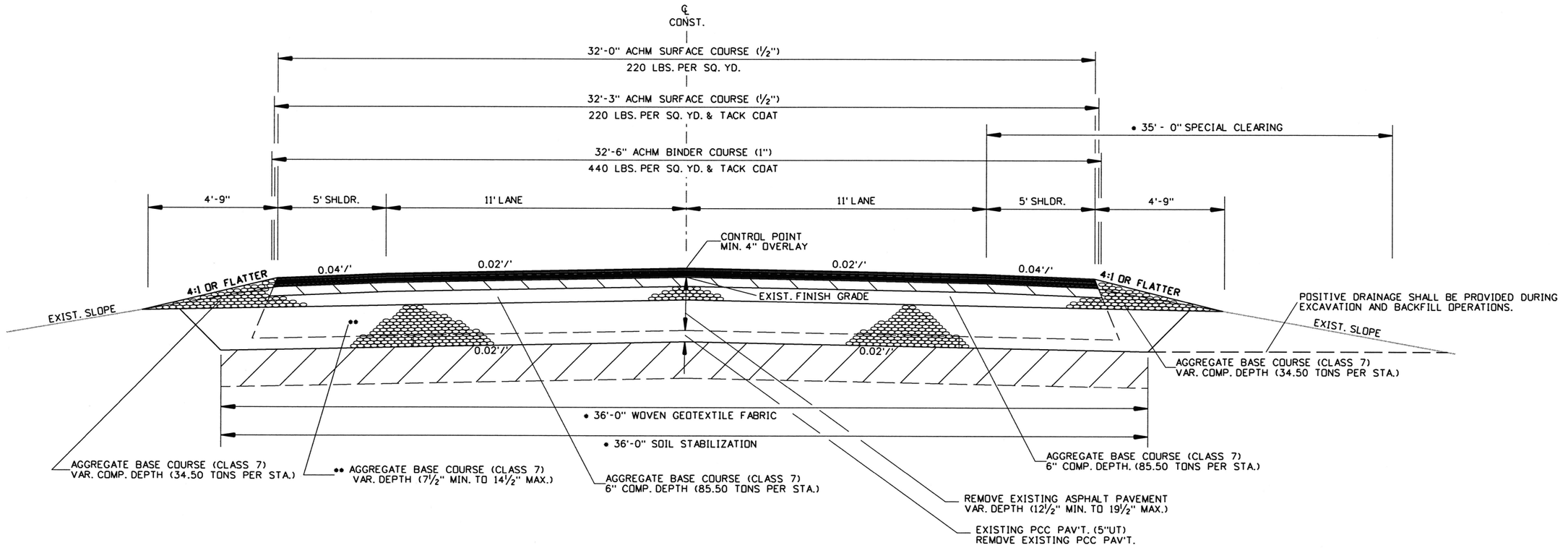
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TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



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

FULL DEPTH RECONSTRUCTION
HWY. 4

STA. 487+39.02 TO B.E. 492+77.98
B.E. 495+52.98 TO B.E. 539+45.16
B.E. 540+20.16 TO STA. 632+75.54

NOTES:

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

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

ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210-UNCLASSIFIED EXCAVATION.

CONTRACTOR IS NOT TO DISTURB THE FORE-SLOPE OUTSIDE OF THE LIMITS SHOWN IN THE TYPICAL SECTIONS. ANY RE-DRESSING AND SEEDING COSTS WILL BE AT NO COST TO THE DEPARTMENT.

TYPICAL SECTIONS OF IMPROVEMENT

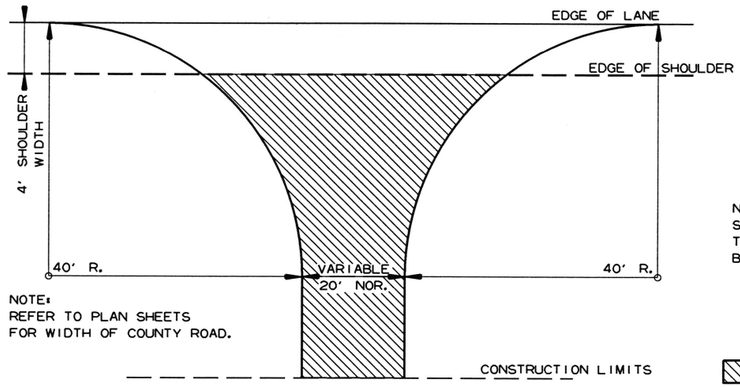
11/8/2011

ZBORDER.CEL

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(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17

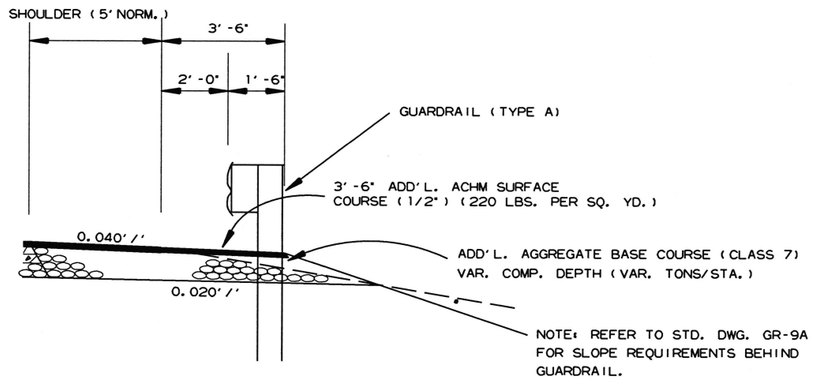


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

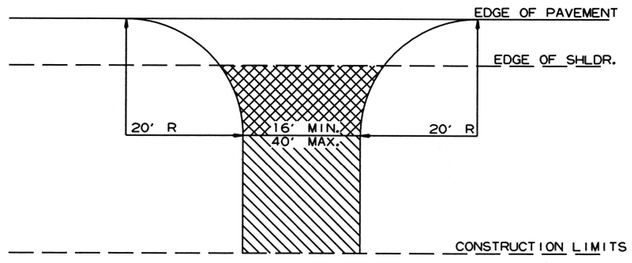
NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

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

DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



WIDENING FOR GUARDRAIL



ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.) AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT DRIVE EXIST OR 6" CONCRETE IF CONCRETE DRIVE EXIST.

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

DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

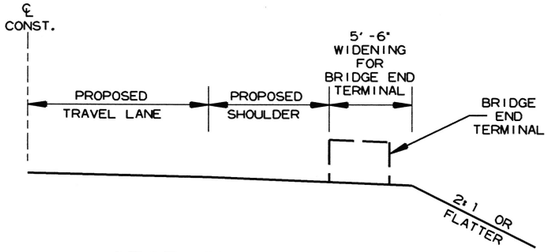
2/22/2017

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(2) SPECIAL DETAILS

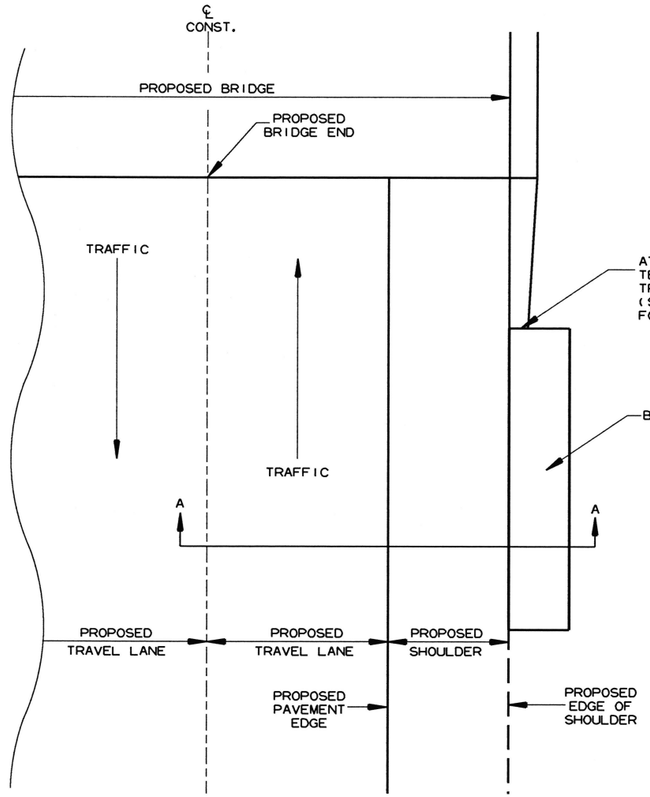
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



SECTION A-A

NOTE:
ELIMINATE OR MODIFY APPROACH CURB SECTION TO FIT BRIDGE END TERMINAL. NO PAYMENT SHALL BE MADE FOR ELIMINATING OR MODIFYING THIS CURB BUT SHALL BE CONSIDERED IN PAYMENT MADE FOR APPROACH GUTTERS OF THE TYPE SPECIFIED.

NOTE:
BRIDGE END TERMINAL SHALL CONFORM TO THE FOLLOWING:
-MAXIMUM LENGTH: 20'
-MAXIMUM HEIGHT: 2.75'
-DESIGN SPEED: 60 MPH



PLAN VIEW

BRIDGE END TERMINAL DETAILS

2/22/2017

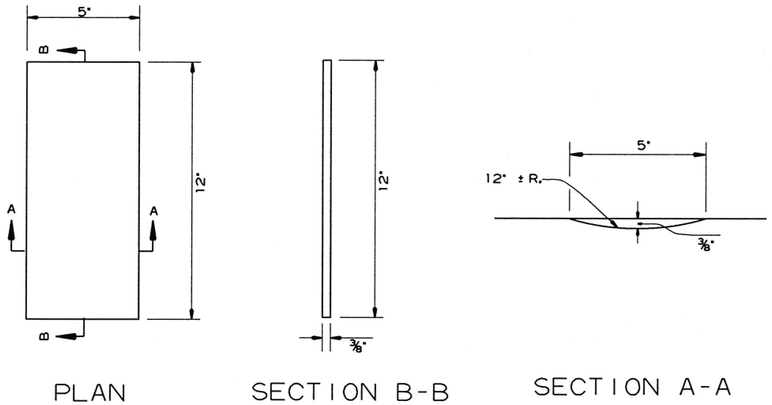
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SPECIAL DETAILS

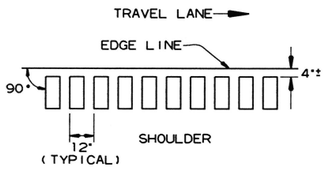
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) SPECIAL DETAILS

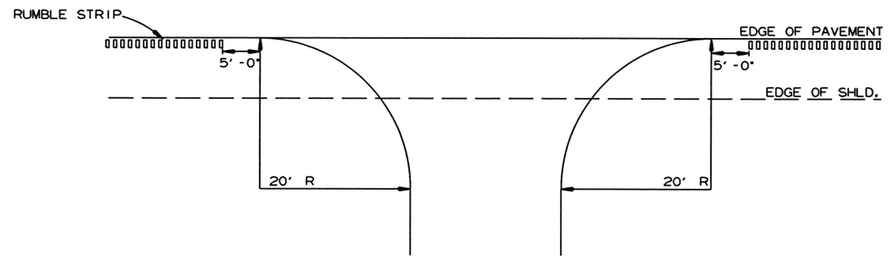
STATE OF ARKANSAS
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TRINITY D. SMITH
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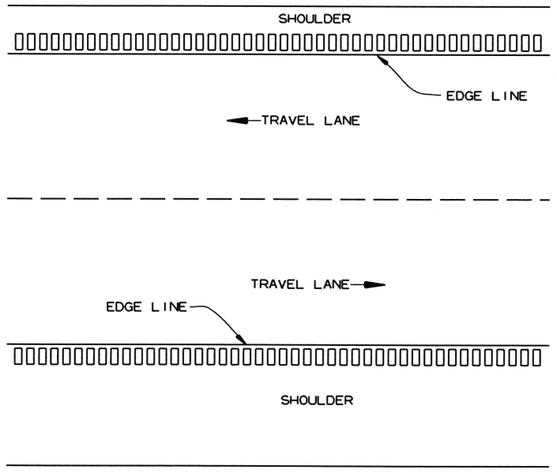
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



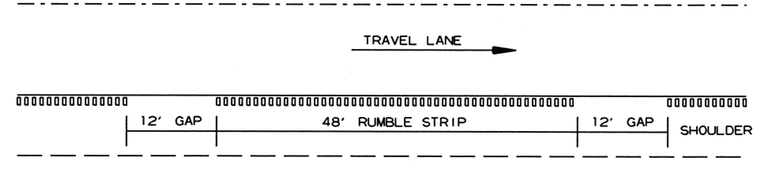
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. THE 4" OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.
4. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPS HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPS HAVE NOT BEEN CONSTRUCTED.
5. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP.

DETAIL FOR GAP PATTERN RUMBLE STRIP

2/22/2017

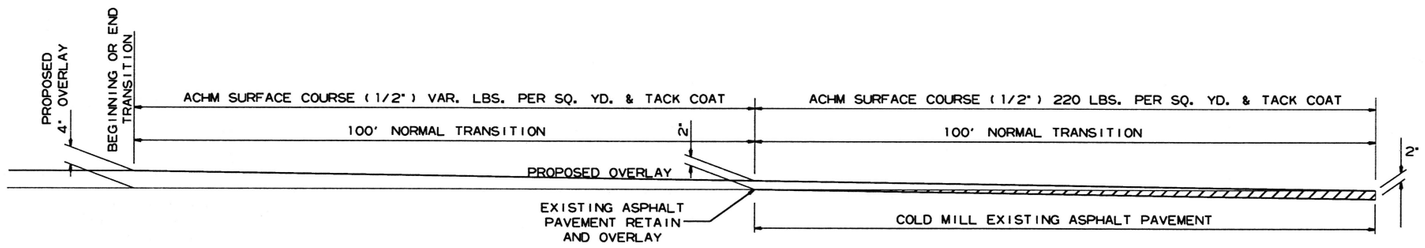
R020573.DGN

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	10	52

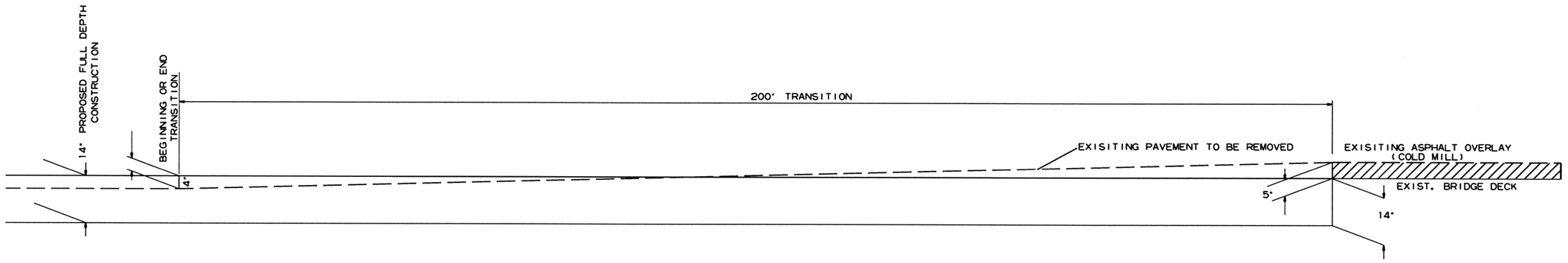
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



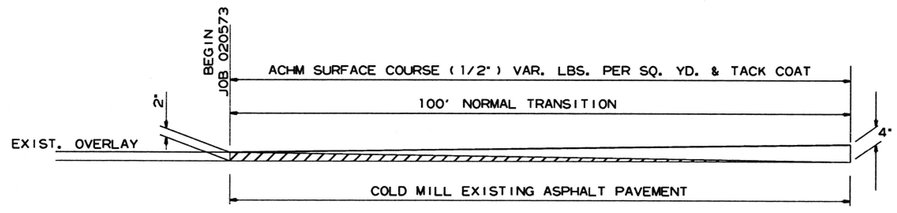
DETAIL FOR COLD MILLING TRANSITIONS

STA. 706+82.71 TO STA. 708+82.71



DETAIL TRANSITION FROM FULL DEPTH TO BRIDGE MILL & INLAY

STA. 490+77.98 TO STA. 492+77.98
STA. 495+52.98 TO STA. 497+52.98
STA. 539+45.16 TO STA. 542+20.16



DETAIL FOR COLD MILLING TRANSITIONS

STA. 441+00 TO STA. 442+00

2/22/2017

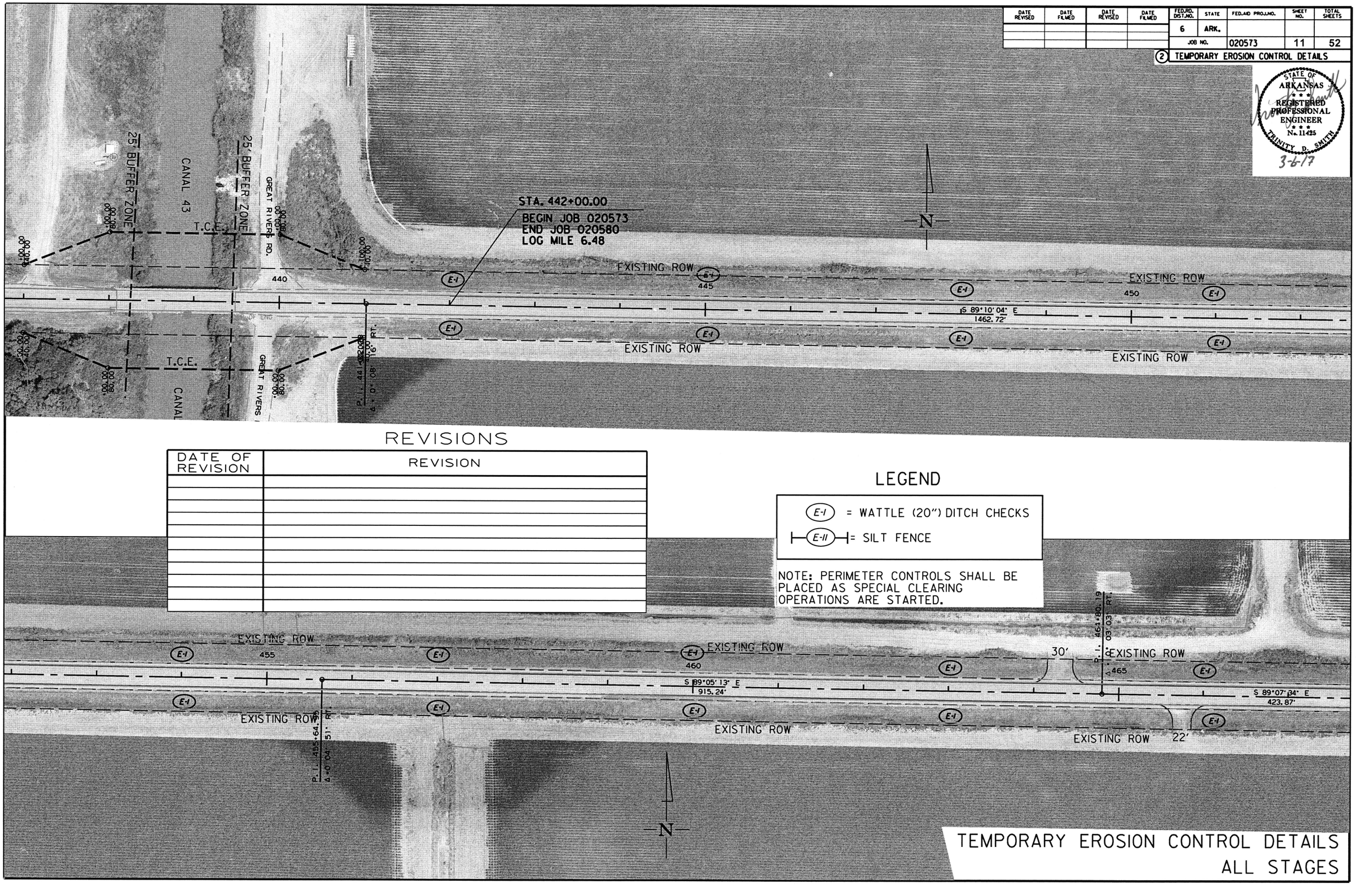
R020573.DGN

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	11	52

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-I = WATTLE (20") DITCH CHECKS

E-II = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS SPECIAL CLEARING OPERATIONS ARE STARTED.

2/21/2017

R020573.DGN

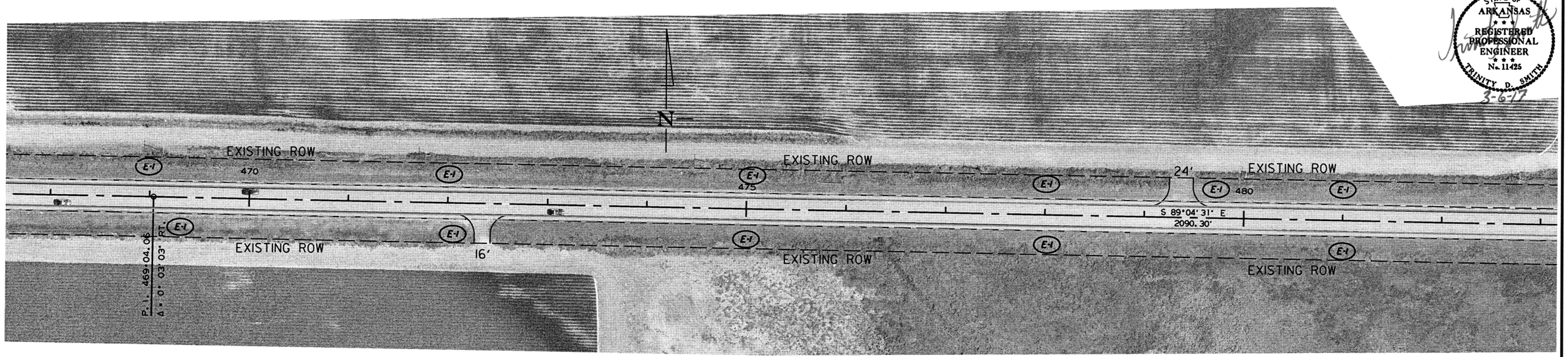
TEMPORARY EROSION CONTROL DETAILS ALL STAGES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020573	12	52

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



REVISIONS

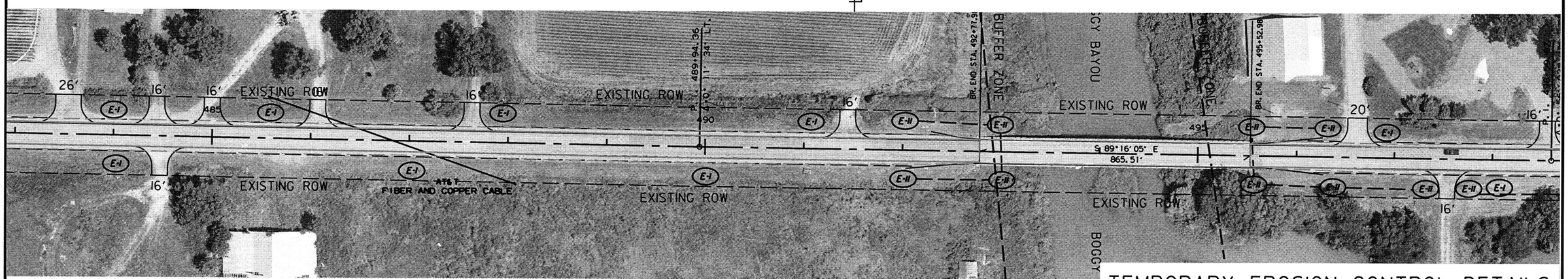
DATE OF REVISION	REVISION

LEGEND

E-I = WATTLE (20") DITCH CHECKS

E-II = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS SPECIAL CLEARING OPERATIONS ARE STARTED.



2/21/2017

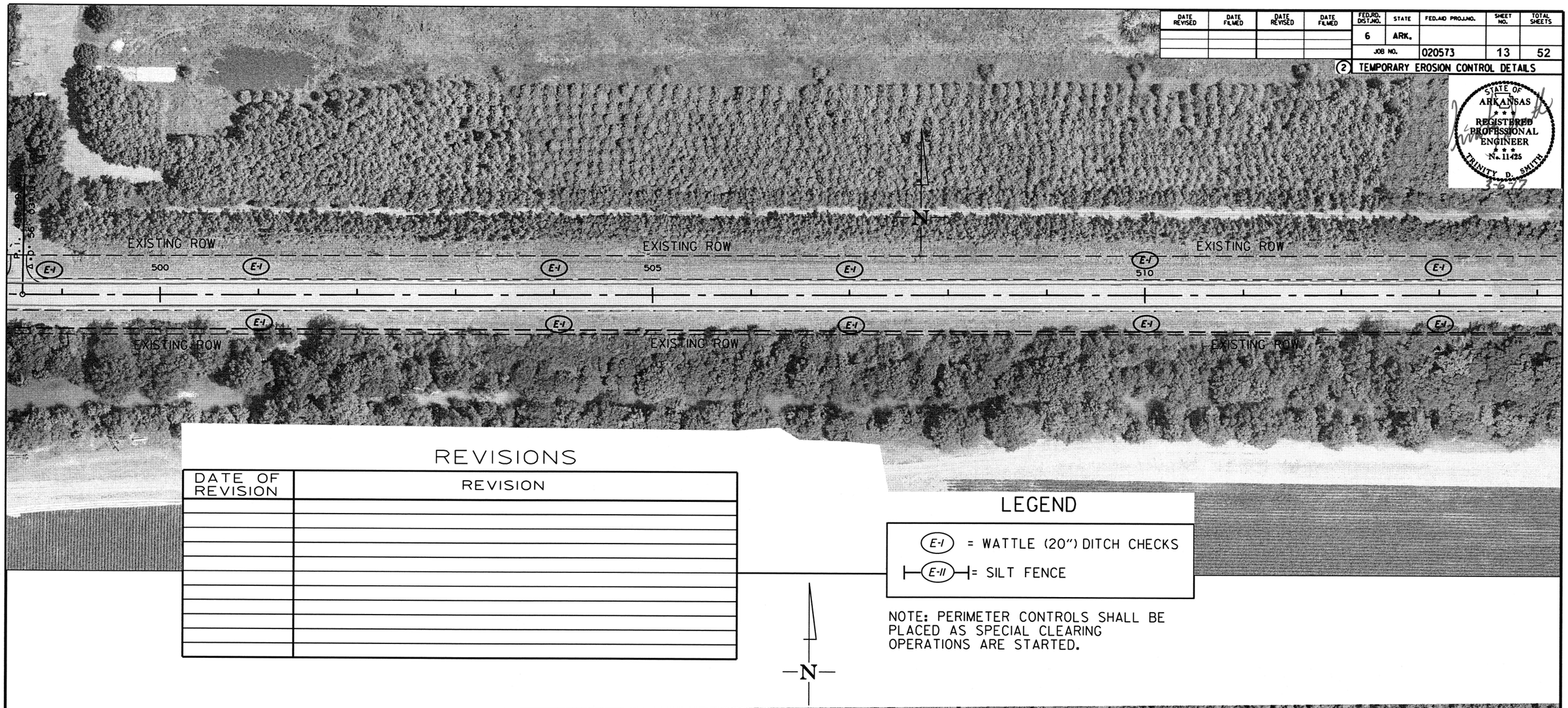
R020573.DGN

TEMPORARY EROSION CONTROL DETAILS ALL STAGES

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.		020573	13	52

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-9-17



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-1 = WATTLE (20") DITCH CHECKS

E-11 = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS SPECIAL CLEARING OPERATIONS ARE STARTED.

2/21/2017

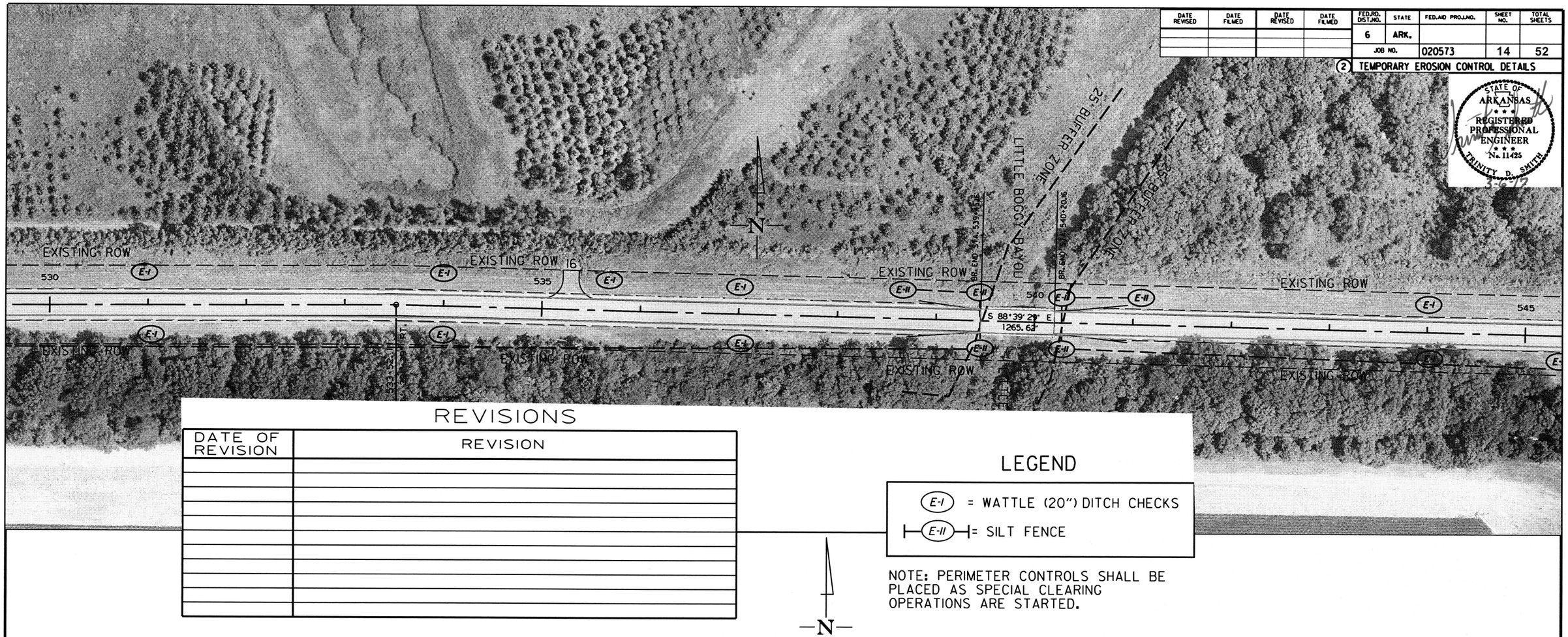
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TEMPORARY EROSION CONTROL DETAILS ALL STAGES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	14	52

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



REVISIONS

DATE OF REVISION	REVISION

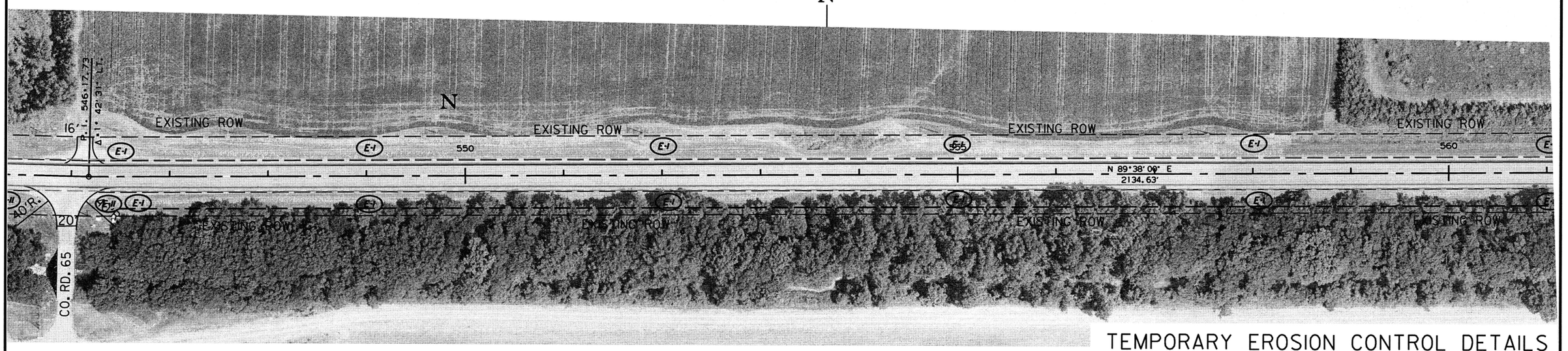
LEGEND

E-I = WATTLE (20") DITCH CHECKS

E-II = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS SPECIAL CLEARING OPERATIONS ARE STARTED.

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TEMPORARY EROSION CONTROL DETAILS
ALL STAGES

2/21/2017

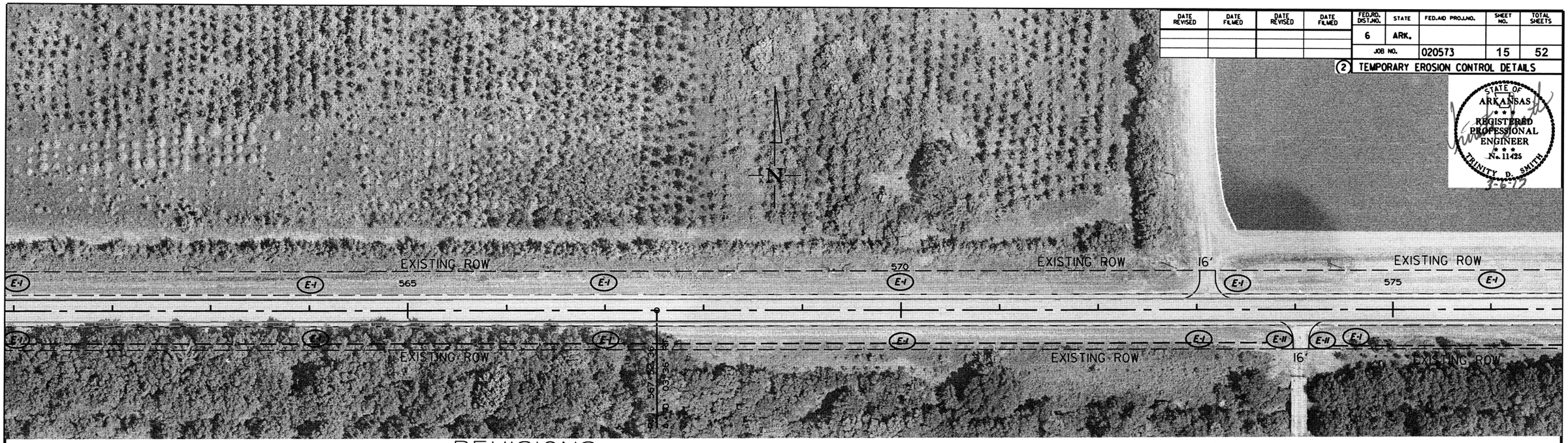
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020573	15	52

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



REVISIONS

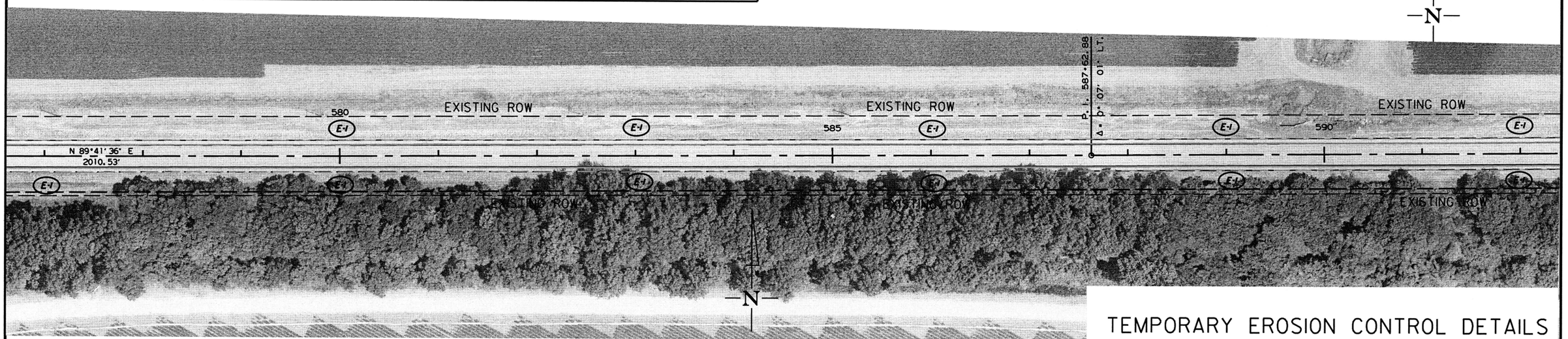
DATE OF REVISION	REVISION

LEGEND

E-I = WATTLE (20") DITCH CHECKS

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2/21/2017

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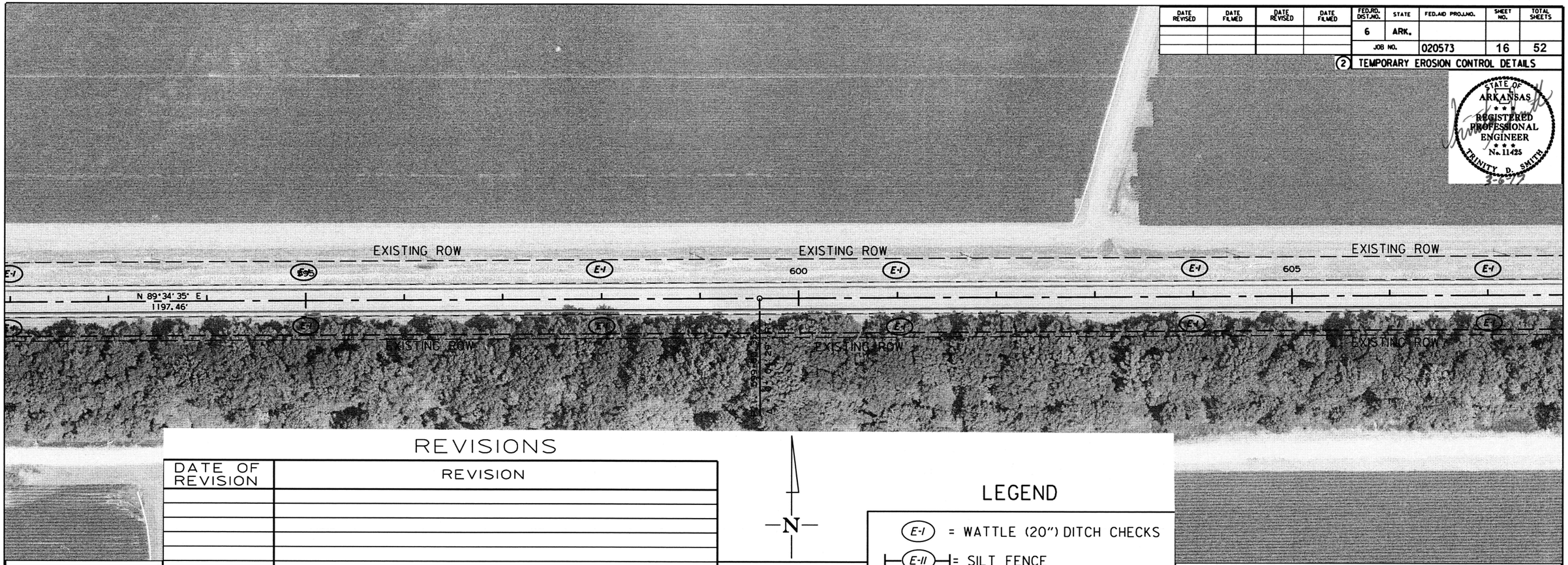
TEMPORARY EROSION CONTROL DETAILS ALL STAGES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020573	16	52

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



REVISIONS

DATE OF REVISION	REVISION

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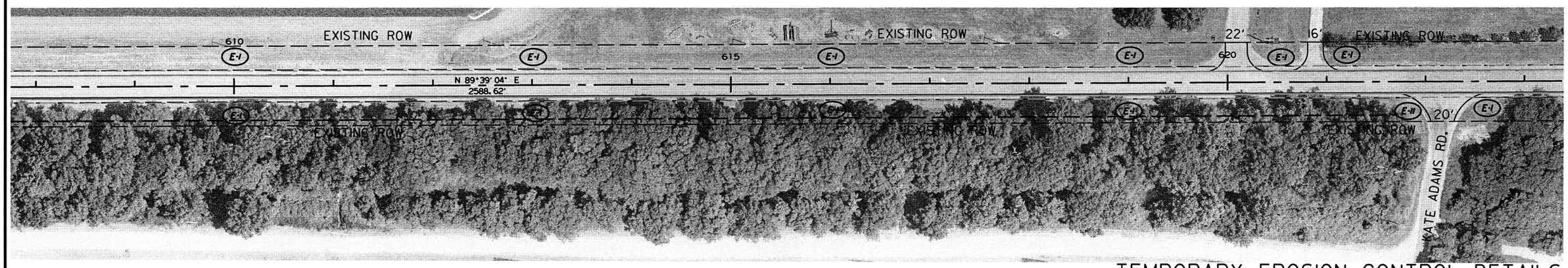
LEGEND

E-1 = WATTLE (20") DITCH CHECKS

E-11 = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS SPECIAL CLEARING OPERATIONS ARE STARTED.

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TEMPORARY EROSION CONTROL DETAILS
ALL STAGES

2/21/2017

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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.		020573	17	52

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

(E-I) = WATTLE (20") DITCH CHECKS

(E-II) = SILT FENCE

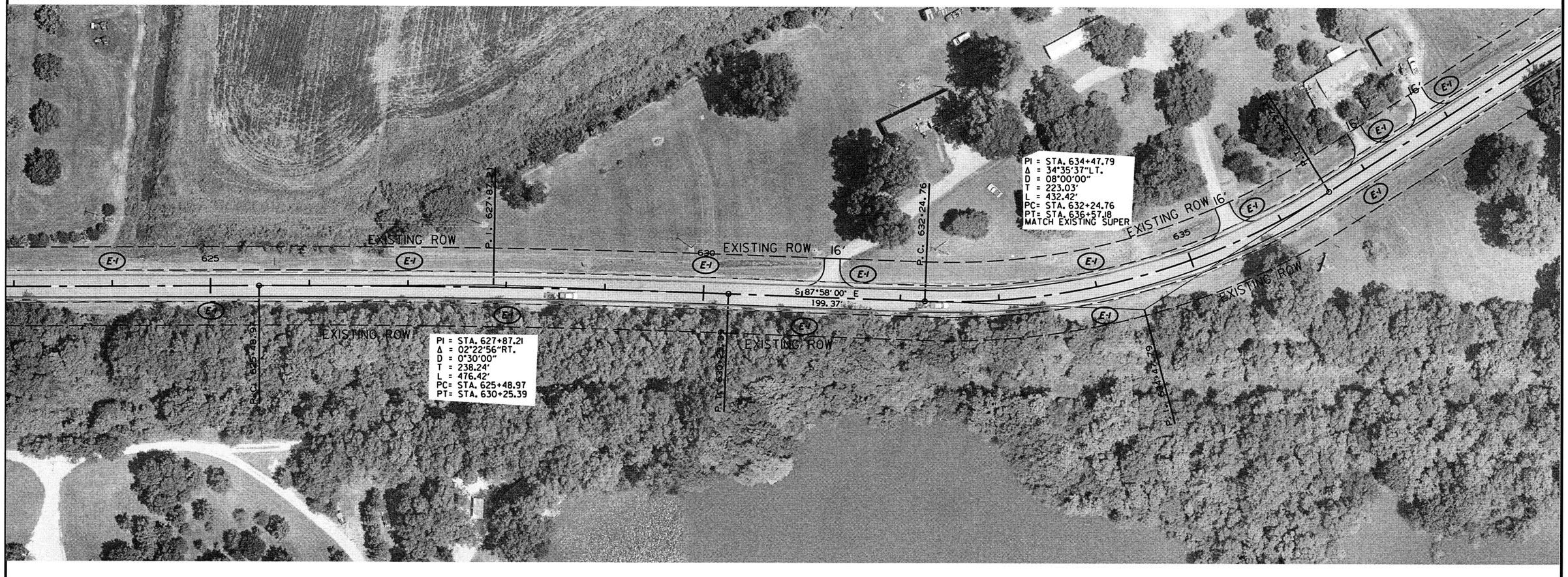
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS SPECIAL CLEARING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17

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TEMPORARY EROSION CONTROL DETAILS
ALL STAGES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020573	18	52

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
2-21-17



LEGEND

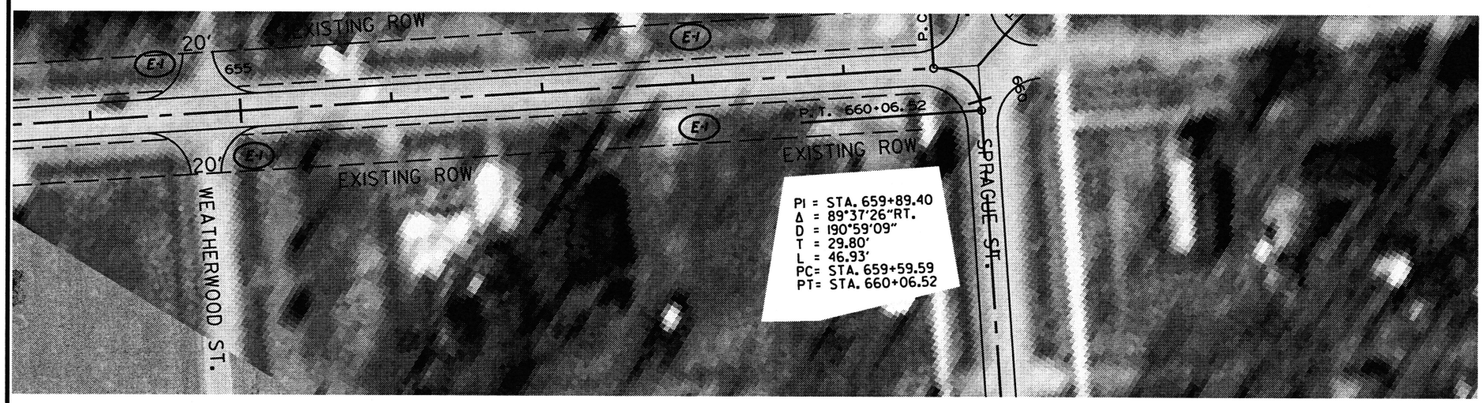
E-I = WATTLE (20") DITCH CHECKS

E-II = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS SPECIAL CLEARING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION



2/21/2017

R020573.DGN

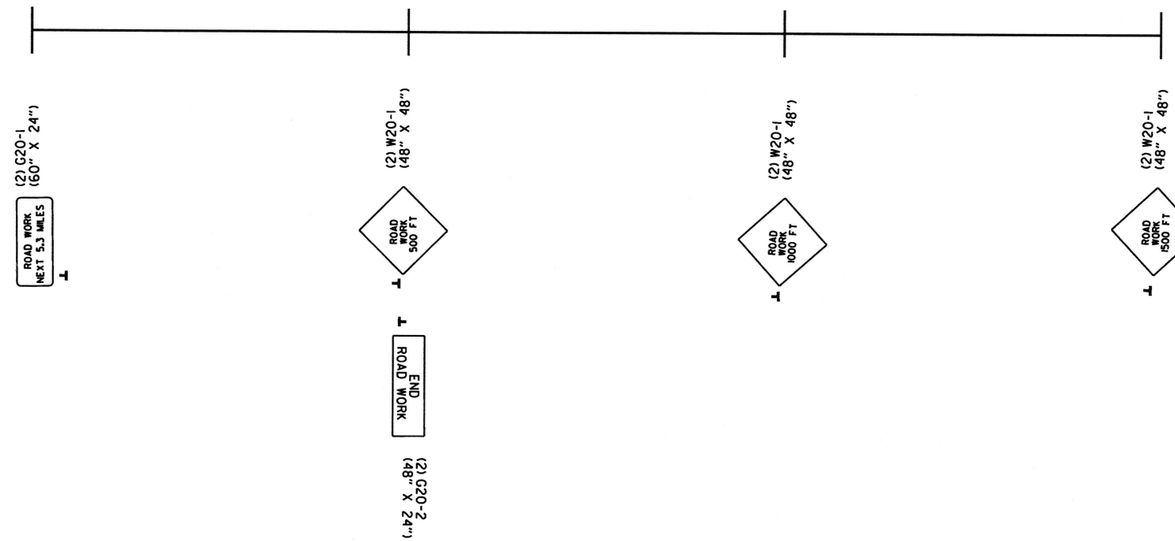
TEMPORARY EROSION CONTROL DETAILS ALL STAGES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	19	52

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-8-17

STA. 442+00 BEGIN JOB
STA. 708+82.71 END JOB
STA. 659+59.59 HWY. 4 & HWY. 4 SPUR INTERSECTION



ADVANCE WARNING DETAILS



(4) R4-1
(24" X 30")

R4-1 SIGNS SHALL BE USED
IF AND WHERE DIRECTED BY THE ENGINEER.



(4) W21-5A
(30" X 30")

W20-1 SIGNS SHALL BE USED
IF AND WHERE DIRECTED BY THE ENGINEER.



(2) R2-5A
(48" X 60")

R2-5A SIGNS SHALL BE USED
IF AND WHERE DIRECTED BY THE ENGINEER.

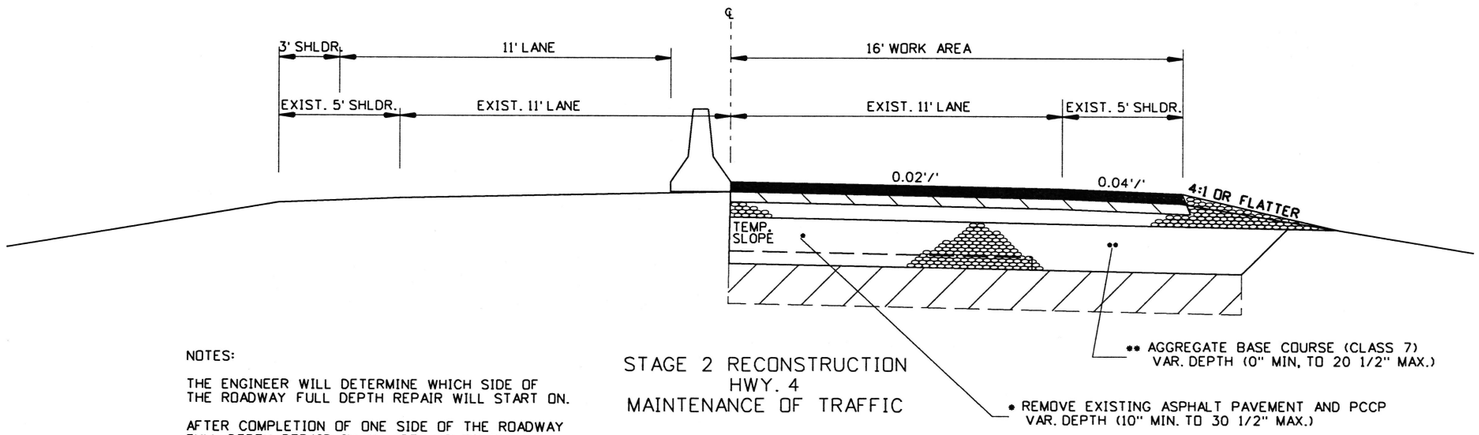
R020573.DGN 2/6/2017

MAINTENANCE OF TRAFFIC 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.		020573	20	52

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17

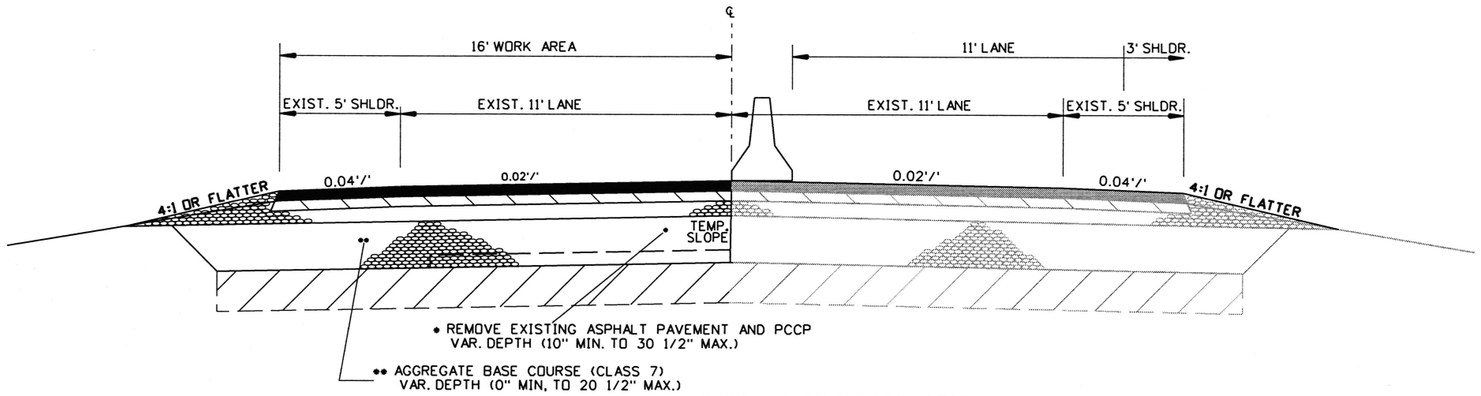


NOTES:

THE ENGINEER WILL DETERMINE WHICH SIDE OF THE ROADWAY FULL DEPTH REPAIR WILL START ON.

AFTER COMPLETION OF ONE SIDE OF THE ROADWAY FULL DEPTH REPAIR, IN AN AREA UP TO 2400',THE OTHER SIDE OF THE ROADWAY FULL DEPTH REPAIR ADJACENT TO THE FIRST MUST BE COMPLETED PRIOR TO THE CONCRETE BARRIER WALL BEING REMOVED FROM THE SECTION.

STAGE 2 RECONSTRUCTION
HWY. 4
MAINTENANCE OF TRAFFIC

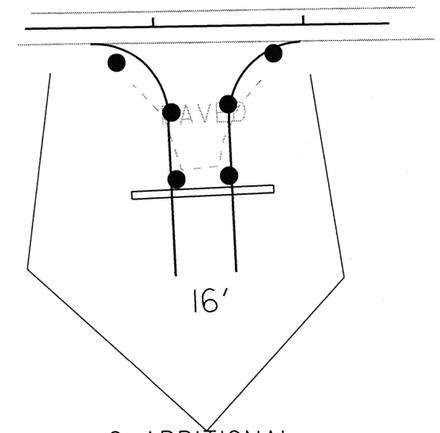


NOTES:

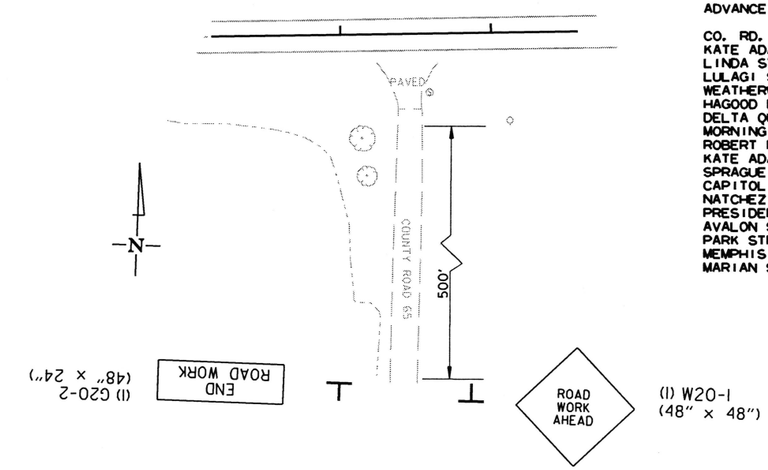
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STAGE 2 RECONSTRUCTION
HWY. 4
MAINTENANCE OF TRAFFIC



6 ADDITIONAL TRAFFIC DRUMS AT DRIVE TURNOUT 20' O.C.



ADVANCE SIGNS NEEDED AT ADDITIONAL SIDE STREETS:

CO. RD. 65
KATE ADAMS RD.
LINDA ST.(2)
LULAGI ST.(2)
WEATHERWOOD ST. (2)
HAGOOD DRIVE (2)
DELTA QUEEEN AVE./SPRAGUE STREET
MORNING STAR AVE. (2)
ROBERT MOORE AVE. (2)
KATE ADAMS AVE. (2)
SPRAGUE STREET/KATE ADAMS AVE
CAPITOL STREET (2)
NATCHEZ STREET (2)
PRESIDENT STREET (2)
AVALON STREET (2)
PARK STREET
MEMPHIS STREET (2)
MARIAN STREET

STAGE CONSTRUCTION

STAGE 1 - SPECIAL CLEARING

STAGE 2 - FULL DEPTH RECONSTRUCTION

STAGE 3 - OVERLAY EASTBOUND & WESTBOUND LANES AND MILL & INLAY BRIDGES

STAGE 4 - FINAL LIFT OF SURFACE & FINAL STRIPING

MAINTENANCE OF TRAFFIC DETAILS

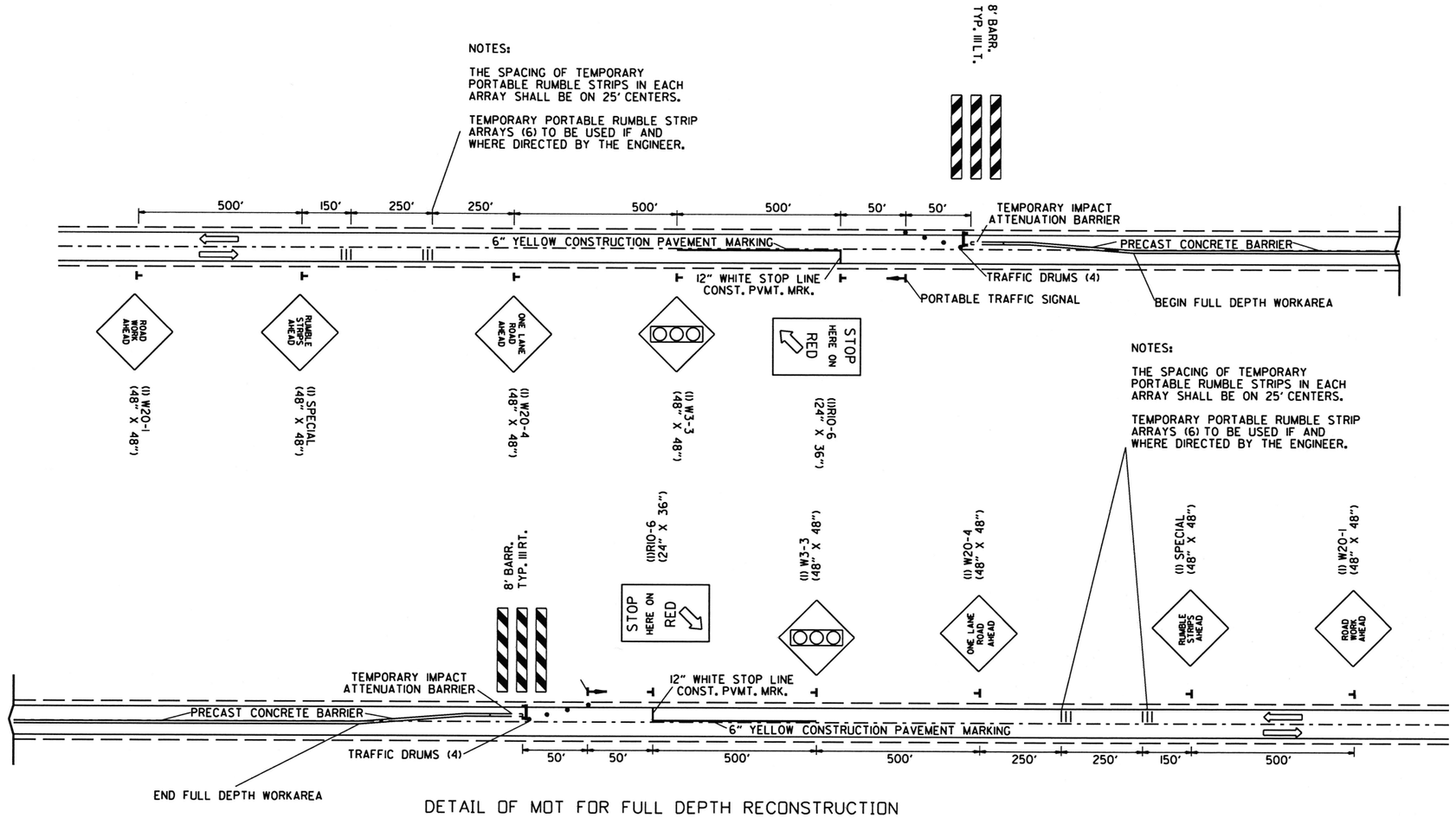
2/6/2017

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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.		020573	21	52

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-8-17



DETAIL OF MOT FOR FULL DEPTH RECONSTRUCTION

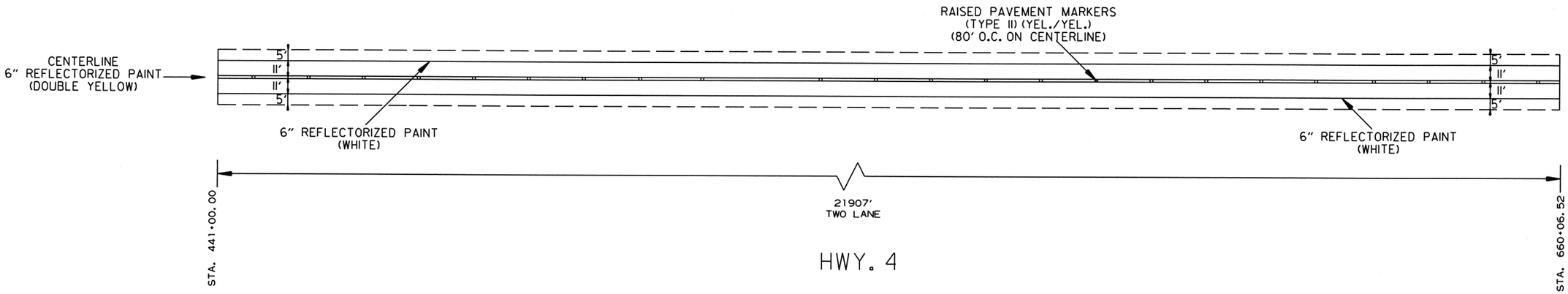
R020573.DGN 2/6/2017

MAINTENANCE OF TRAFFIC DETAILS

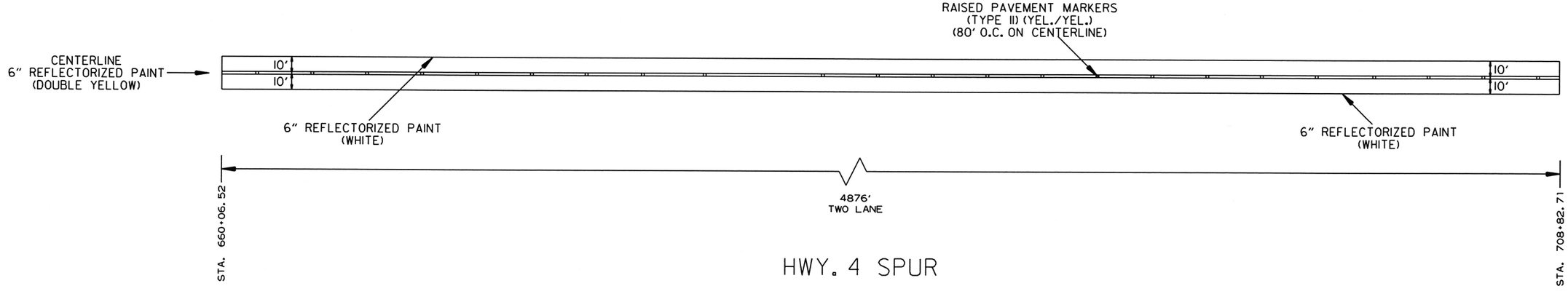
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	22	52

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



HWY. 4



HWY. 4 SPUR

•THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

PERMANENT PAVEMENT MARKING DETAILS:

MAIN LANES:
6" REFLECTORIZED PAINT PAVEMENT MARKINGS:
RT. AND LT. EDGE LINES = 53566 LIN. FT. WHITE
DBL. CENTERLINE = 53566 LIN. FT. YELLOW

RAISED PAVEMENT MARKERS:
TYPE II (YEL./YEL.) 80' O.C. ON CENTERLINE = 334 EACH

2/6/2017

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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
				6	ARK.			
				JOB NO.		020573	23	52

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-8-17

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 2	STAGE 3	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
					TYPE II	6"	
					(YEL/YEL)	WHITE	YELLOW
	LIN. FT. - EACH			LIN. FT.	EACH	LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	107132	107132		214264			
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)			334		334		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			53566			53566	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			53566				53566
TOTALS:				**214264**	**334**	**53566**	**53566**

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

NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	STAGE 4	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TEMPORARY PORTABLE RUMBLE STRIPS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	TEMP. IMPACT ATTEN. BARR. (REPAIR)	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED
												RIGHT	LEFT						
			LIN. FT. - EACH					NO.	SQ. FT.	EACH				LIN. FT.		EACH			LUMP SUM
W20-1	ROAD WORK 1500 FT.	48"x48"	3	3	3	3	3	3	48.0										
W20-1	ROAD WORK 1000 FT.	48"x48"	3	3	3	3	3	3	48.0										
W20-1	ROAD WORK 500 FT.	48"x48"	3	3	3	3	3	3	48.0										
W20-1	ROAD WORK AHEAD	48"x48"	33	33	33	33	33	33	528.0										
W20-4	ONE LANE ROAD AHEAD	48"x48"		2			2	2	32.0										
W3-3	SIGNAL AHEAD	48"x48"		2	2	2	2	2	32.0										
G20-2	END ROAD WORK	48"x24"	33	33	33	33	33	33	264.0										
G20-1	ROAD WORK NEXT 5.3 MILES	60"x24"	3	3	3	3	3	3	30.0										
R2-5A	REDUCED SPEED AHEAD	48"x60"	4	4	4	4	4	4	80.0										
R4-1	DO NOT PASS	24"x30"	4	4	4	4	4	4	20.0										
R10-6	STOP HERE ON RED	24"x36"		2			2	2	12.0										
W21-5A	RIGHT SHOULDER CLOSED	30"x30"		4			4	4	20.0										
SPECIAL	RUMBLE STRIPS AHEAD	48"x48"		2			2	2	32.0										
	TEMPORARY PORTABLE RUMBLE STRIPS			12			12			12									
	TRAFFIC DRUMS			626	1804	1804	1804				1804								
	TYPE III BARRICADE-RT. (8')			1			1					8							
	TYPE III BARRICADE-LT. (8')			1			1						8						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			2400			2400							2400					
	RELOCATING PRECAST CONCRETE BARRIER			24273			24273								24273				
	TEMPORARY IMPACT ATTENUATION BARRIER			2			2									2			
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			11			11										11		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			2			2											2	
	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED			1			1												1.00
TOTALS:									**1194.0**	**12**	**1804**	**8**	**8**	**2400**	**24273**	**2**	**11**	**2**	**1.00**

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

2/21/2017

R020573.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
4-3-17				6	ARK.			
				JOB NO.		020573	24	52

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
4-3-17

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CONCRETE PAVEMENT	GUARDRAIL
			SQ. YD.	LIN. FT.
487+39.02	492+74.68	HWY. 4	1190	
495+49.68	539+37.93	HWY. 4	9752	
540+12.93	632+75.54	HWY. 4	20584	
492+74.68	495+49.68	BRIDGE NO. 03593		275
539+37.93	540+12.93	BRIDGE NO. 03594		300
TOTALS:			31526	575

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

COLD MILLING ASPHALT PAVEMENT

	STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
				FEET	SQ. YD.
*	441+00.00	442+00.00	MAIN LANES	32.00	355.56
	492+77.98	495+52.98	MAIN LANES	24.00	733.33
	539+45.16	540+20.16	MAIN LANES	24.00	200.00
*	657+64.46	658+64.46	MAIN LANES	32.00	355.56
*	658+64.46	708+82.71	MAIN LANES	20.00	11151.67
**	ENTIRE	PROJECT	AS DIRECTED BY THE ENGINEER	VAR.	36699.44
TOTAL:					49495.56

* AVERAGE MILLING DEPTH 1".

** PROFILE MILLING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
AVERAGE MILLING DEPTH 1".

THE CONTRACTOR SHALL HAUL THE MATERIAL GENERATED FROM COLD MILLING OPERATIONS TO LOCATIONS DESIGNATED BY THE ENGINEER. ONCE PLACED, THE MATERIAL WILL BECOME PROPERTY OF THE DEPARTMENT. THE MATERIAL SHALL BE PLACED AT THE DESIGNATED LOCATION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL STOCKPILE THE MATERIAL IN SUCH A WAY THAT IT CAN BE EASILY MEASURED USING THE AVERAGE END AREA METHOD. THE AREA DESIGNATED FOR COLD MILLING MATERIAL STORAGE FOR MATERIAL GENERATED IS AS FOLLOWS: AHTD MAINTENANCE HEADQUARTERS LOCATED AT 9054 HWY. 65N, McGEHEE.

DUMPED RIPRAP AND FILTER BLANKET

STATION	STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
			CU. YD.	SQ. YD.
438+09	439+49	BRIDGE NO. 03592	597	408
TOTALS:			597	408

*NOTE: QUANTITY ESTIMATED.
SEE SECTION 1 SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

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

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	* SOIL STABILIZATION
				CU. YD.	TON
	487+39.02	492+74.68	MAIN LANES	1012	
	495+49.68	539+37.93	MAIN LANES	8289	
	540+12.93	632+75.54	MAIN LANES	17496	
	ENTIRE	PROJECT	BRIDGE NO. 03592	597	
	ENTIRE	PROJECT	BRIDGE NO. 03593 GUARDRAIL WIDENING	92	
	ENTIRE	PROJECT	BRIDGE NO. 03594 GUARDRAIL WIDENING	92	
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE		6000
			DIRECTED BY THE ENGINEER		
TOTALS:				27578	6000

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

SPECIAL CLEARING

STATION	STATION	LOCATION	SPECIAL CLEARING STATION
*ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	124
TOTAL:			124

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

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	BRIDGE END TERMINAL
			LIN. FT.	EACH		
491+84.83	492+78.58	LT. SIDE	75	1	1	
490+59.83	492+78.58	RT. SIDE	150	1	1	
495+52.38	496+46.13	LT. SIDE				1
495+52.38	496+46.13	RT. SIDE	75	1	1	
538+52.01	539+45.76	LT. SIDE	75	1	1	
537+27.01	539+45.76	RT. SIDE	150	1	1	
540+19.56	542+38.31	LT. SIDE	150	1	1	
540+19.56	541+13.31	RT. SIDE	75	1	1	
TOTALS:			750	7	7	1

EROSION CONTROL

	STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL					
				SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	SILT FENCE (E-11)	*SEDIMENT REMOVAL & DISPOSAL
				ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	LIN. FT.	CU. YD.
	ENTIRE	PROJECT	STAGE 1	9.96	19.92	9.96	1015.9	9.96	12.45	12.45	254.0	1431	13500	500
	*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			2.88	5.76	2.88	293.8	2.88	3.61	3.61	73.6	250	5500	204
TOTALS:				12.84	25.68	12.84	1309.7	12.84	16.06	16.06	327.6	1681	19000	704

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION

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

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

CULVERT CLEAN OUT

STATION	LOCATION	EACH
633+79	HWY. 4	1
TOTAL:		1

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	3000
DIRECTED BY THE ENGINEER	
TOTAL:	3000

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

2/21/2017

R020573.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	25	52

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17

SOIL LOG (BOX 1 OF 2)

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
442+00	33	36	20.70	91	16	37.00	06RT	0-5	55	29	A-7-6(28)	BROWN
442+00	33	36	20.70	91	16	37.00	27RT	0-5	41	20	A-7-6(15)	BROWN
442+00	33	36	20.50	91	16	37.00	14RT	0-5	38	20	A-6(14)	BROWN
450+00	33	36	20.70	91	16	27.40	27LT	0-5	47	23	A-7-6(22)	BR/GR
450+00	33	36	20.80	91	16	27.40	06LT	0-5	54	30	A-7-6(31)	GRAY
450+00	33	36	20.90	91	16	27.40	14LT	0-5	45	24	A-7-6(23)	BR/GR
458+00	33	36	20.30	91	16	17.90	14RT	0-5	49	29	A-7-6(29)	BR/GR
458+00	33	36	20.30	91	16	17.90	26RT	0-5	53	33	A-7-6(29)	BR/GR
458+00	33	36	20.20	91	16	17.90	06RT	0-5	64	35	A-7-5(41)	BROWN
466+00	33	36	20.30	91	16	8.50	06LT	0-5	60	38	A-7-6(42)	GRAY
466+00	33	36	20.40	91	16	8.50	14LT	0-5	52	34	A-7-6(33)	GRAY
466+00	33	36	20.50	91	16	8.50	27LT	0-5	50	31	A-7-6(31)	GRAY
474+00	33	36	20.00	91	15	58.80	13RT	0-5	46	29	A-7-6(27)	GRAY
474+00	33	36	19.90	91	15	58.80	25RT	0-5	37	22	A-6(14)	BROWN
474+00	33	36	19.90	91	15	58.80	25RT	0-5	38	23	A-6(19)	BROWN
474+00	33	36	20.10	91	15	58.80	06RT	0-5	52	31	A-7-6(32)	GRAY
482+00	33	36	20.00	91	15	49.20	06LT	0-5	58	34	A-7-6(39)	BROWN
482+00	33	36	20.00	91	15	49.30	13LT	0-5	45	24	A-7-6(22)	BR/GR
482+00	33	36	20.20	91	15	49.30	28LT	0-5	52	25	A-7-6(25)	BROWN
490+00	33	36	19.70	91	15	39.90	06RT	0-5	48	26	A-7-6(24)	BROWN
490+00	33	36	19.60	91	15	39.90	13RT	0-5	36	18	A-6(13)	BROWN
490+00	33	36	19.50	91	15	39.90	26RT	0-5	48	30	A-7-6(25)	BROWN
498+00	33	36	19.70	91	15	30.40	06LT	0-5	50	29	A-7-6(31)	BROWN
498+00	33	36	19.70	91	15	30.40	26LT	0-5	48	28	A-7-6(29)	BROWN
498+00	33	36	19.90	91	15	30.40	14LT	0-5	48	30	A-7-6(31)	BROWN
506+00	33	36	19.50	91	15	21.00	28RT	0-5	64	40	A-7-6(43)	GRAY
506+00	33	36	19.40	91	15	21.00	06RT	0-5	75	41	A-7-5(50)	GRAY
506+00	33	36	19.30	91	15	21.00	13RT	0-5	51	27	A-7-6(22)	GRAY
514+00	33	36	19.60	91	15	11.60	06LT	0-5	66	41	A-7-6(44)	GRAY
514+00	33	36	19.70	91	15	11.60	14LT	0-5	54	33	A-7-6(32)	GRAY
514+00	33	36	19.80	91	15	11.60	25LT	0-5	54	33	A-7-6(33)	BR/GR
522+00	33	36	19.00	91	15	2.20	25RT	0-5	59	40	A-7-6(40)	BROWN
522+00	33	36	19.40	91	15	2.20	14RT	0-5	58	35	A-7-6(37)	GRAY
522+00	33	36	19.30	91	15	2.20	06RT	0-5	66	45	A-7-6(48)	GRAY
530+00	33	36	19.60	91	14	53.00	14LT	0-5	50	31	A-7-6(31)	BROWN
530+00	33	36	19.60	91	14	53.00	32RT	0-5	46	27	A-7-6(28)	BROWN
530+00	33	36	19.80	91	14	53.00	06LT	0-5	50	32	A-7-6(34)	BROWN
538+00	33	36	19.30	91	14	43.90	05RT	0-5	59	39	A-7-6(41)	GRAY
538+00	33	36	19.20	91	14	43.90	13RT	0-5	46	26	A-7-6(27)	GRAY
538+00	33	36	19.10	91	14	43.90	26RT	0-5	56	35	A-7-6(37)	BROWN
546+00	33	36	19.20	91	14	33.60	14LT	0-5	70	46	A-7-6(49)	BROWN
546+00	33	36	19.40	91	14	33.60	27LT	0-5	54	32	A-7-6(33)	BROWN

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

SOIL LOG (BOX 2 OF 2)

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
546+00	33	36	19.10	91	14	33.60	06LT	0-5	48	33	A-7-6(34)	BROWN
546+00	33	36	19.40	91	14	33.60	27LT	0-5	47	25	A-7-6(27)	BROWN
554+00	33	36	19.10	91	14	24.20	05RT	0-5	49	26	A-7-6(28)	GRAY
554+00	33	36	19.00	91	14	24.20	14RT	0-5	52	31	A-6(16)	BROWN
554+00	33	36	18.80	91	14	24.20	26RT	0-5	49	27	A-7-6(28)	BROWN
562+00	33	36	19.20	91	14	15.00	06LT	0-5	72	38	A-7-5(47)	GRAY
562+00	33	36	19.40	91	14	15.00	27LT	0-5	54	33	A-7-6(36)	BROWN
562+00	33	36	19.20	91	14	15.00	14LT	0-5	60	37	A-7-6(40)	BROWN
570+00	33	36	19.00	91	14	5.50	06RT	0-5	64	36	A-7-6(42)	BROWN
570+00	33	36	18.90	91	14	5.50	14RT	0-5	42	22	A-7-6(21)	BROWN
570+00	33	36	18.80	91	14	5.60	28RT	0-5	43	20	A-7-6(22)	BROWN
578+00	33	36	19.20	91	13	55.90	13LT	0-5	50	25	A-7-6(26)	GRAY
578+00	33	36	19.30	91	13	55.90	25LT	0-5	69	42	A-7-6(46)	GRAY
578+00	33	36	19.10	91	13	55.90	05LT	0-5	72	41	A-7-5(48)	GRAY
586+00	33	36	19.00	91	13	46.20	05RT	0-5	69	40	A-7-6(43)	BROWN
586+00	33	36	18.90	91	13	46.20	14RT	0-5	46	26	A-7-6(23)	BROWN
586+00	33	36	18.80	91	13	46.20	24RT	0-5	46	28	A-7-6(27)	BROWN
594+00	33	36	19.10	91	13	36.50	05LT	0-5	53	37	A-7-6(37)	GRAY
594+00	33	36	19.20	91	13	36.60	13LT	0-5	44	17	A-7-6(18)	BROWN
594+00	33	36	19.30	91	13	36.50	23LT	0-5	67	40	A-7-6(40)	GRAY
602+00	33	36	18.80	91	13	27.60	26RT	0-5	58	36	A-7-6(39)	BROWN
602+00	33	36	19.00	91	13	27.70	06RT	0-5	67	40	A-7-6(46)	GRAY
602+00	33	36	18.90	91	13	27.70	13RT	0-5	62	39	A-7-6(43)	GRAY
602+00	33	36	18.80	91	13	27.60	26RT	0-5	31	16	A-6(12)	BROWN
610+00	33	36	19.10	91	13	18.90	06LT	0-5	75	48	A-7-6(55)	GRAY
610+00	33	36	19.30	91	13	18.20	26LT	0-5	70	48	A-7-6(93)	GRAY
610+00	33	36	19.20	91	13	18.20	14LT	0-5	61	38	A-7-6(40)	GRAY
618+00	33	36	18.80	91	13	8.50	14RT	0-5	55	20	A-7-5(21)	BROWN
618+00	33	36	19.00	91	13	8.40	06RT	0-5	58	34	A-7-6(37)	BROWN
618+00	33	36	18.80	91	13	8.50	24RT	0-5	73	59	A-7-6(62)	BROWN
626+00	33	36	19.00	91	12	59.30	06LT	0-5	72	44	A-7-6(50)	GRAY
626+00	33	36	19.20	91	12	59.30	26LT	0-5	71	67	A-7-6(17)	GRAY
626+00	33	36	19.10	91	12	59.30	14LT	0-5	53	31	A-7-6(25)	GRAY
634+00	33	36	19.10	91	12	49.70	14RT	0-5	35	21	A-6(7)	BROWN
634+00	33	36	19.00	91	12	49.60	28RT	0-5	55	34	A-7-6(26)	BROWN
634+00	33	36	19.20	91	12	49.70	06RT	0-5	64	46	A-7-6(48)	BROWN
634+00	33	36	19.00	91	12	49.60	28RT	0-5	54	33	A-7-6(31)	BROWN
642+00	33	36	23.50	91	12	41.60	13LT	0-5	51	34	A-7-6(30)	GRAY
642+00	33	36	23.60	91	12	41.70	24LT	0-5	50	29	A-7-6(26)	GRAY
642+00	33	36	23.40	91	12	41.60	05LT	0-5	71	47	A-7-6(50)	GRAY
650+00	33	36	27.70	91	12	33.80	06RT	0-5	55	35	A-7-6(34)	GRAY
650+00	33	36	27.60	91	12	33.70	14RT	0-5	57	20	A-7-5(25)	GRAY

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

WOVEN GEOTEXTILE FABRIC

STATION	STATION	LOCATION	LENGTH	WIDTH	WOVEN GEOTEXTILE FABRIC
			LIN. FT.	FEET	SQ. YD.
ENTIRE	PROJECT	AS DIRECTED BY THE ENGINEER	14186.52	36.00	56746
TOTAL:					**56746**

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

BRIDGE OVERLAY & REPAIR

LOCATION	* REINFORCING STEEL-BRIDGE (GRADE 60)	* BRIDGE DECK REPAIR FOR POLYMER OVERLAYS	POLYMER OVERLAY
	POUND	SQ. FT.	SQ. YD.
BRIDGE NO. 03593	130	858	734
BRIDGE NO. 03594	35	234	200
TOTALS:	**165**	**1092**	**934**

*NOTE:
EXISTING BRIDGE DECKS HAVE ASPHALTIC OVERLAYS.

QUANTITIES SHOWN FOR "REINFORCING STEEL - BRIDGE (GRADE 60)," & "BRIDGE DECK REPAIR FOR POLYMER OVERLAYS" ARE FOR ESTIMATING AND BIDDING PURPOSES ONLY. ACTUAL QUANTITY, IF ANY, WILL BE DETERMINED IN THE FIELD.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	125	250
DIRECTED BY THE ENGINEER		
TOTALS:	**125**	**250**

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.

2/21/2017

R020573.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
3-16-17				6	ARK.			
				JOB NO.		020573	26	52

(2) QUANTITIES

4" PIPE UNDERDRAINS

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			5000	20
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			5000	20

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

APPROACH GUTTERS

STATION	STATION	LOCATION	APPROACH GUTTERS (TYPE SPECIAL)	REINFORCING STEEL-RDWY. (GR. 60)
			CU.YD.	POUND
492+70.48	492+77.98	LT. SIDE	9.30	980
492+70.48	492+77.98	RT. SIDE	9.30	980
495+52.98	495+60.48	LT. SIDE	9.30	980
495+52.98	495+60.48	RT. SIDE	9.30	980
539+37.66	539+45.16	LT. SIDE	9.30	980
539+37.66	539+45.16	RT. SIDE	9.30	980
540+20.16	540+27.66	LT. SIDE	9.30	980
540+20.16	540+27.66	RT. SIDE	9.30	980
TOTALS:			74.40	7840

NOTE: USE T =14" FOR 5' SHOULDER.

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
442+00.00	659+59.59	LT. SIDE HWY. 4	19497
442+00.00	659+59.59	RT. SIDE HWY. 4	20224
TOTAL:			39721

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																						
441+00.00	442+00.00	TRANSITION	100.00	20.50	20.50	32.00	355.56	0.05	17.78									32.00	355.56	220.00	39.11	39.11
440+00.00	442+00.00	TRANSITION - COLD MILL	200.00			32.00	711.11	0.17	120.89													
442+00.00	487+39.02	OVERLAY	4539.02	20.50	930.50	32.00	16138.74	0.05	806.94					32.00	16138.74	220.00	1775.26	32.25	16264.82	220.00	1789.13	3564.39
487+39.02	492+77.98	FULL DEPTH	538.96	154.50	832.69	64.75	3877.52	0.05	193.88	32.50	1946.24	440.00	428.17	32.00	1916.30	220.00	210.79	32.25	1931.27	220.00	212.44	423.23
492+77.98	495+52.98	MILL AND INLAY	275.00			32.00	977.78	0.17	166.22									32.00	977.78	220.00	107.56	107.56
495+52.98	539+45.16	FULL DEPTH	4392.18	154.50	6785.92	64.75	31599.30	0.05	1579.97	32.50	15860.65	440.00	3489.34	32.00	15616.64	220.00	1717.83	32.25	15738.65	220.00	1731.25	3449.08
539+45.16	540+20.16	MILL AND INLAY	75.00			32.00	266.67	0.17	45.33									32.00	266.67	220.00	29.33	29.33
540+20.16	632+75.54	FULL DEPTH	9255.38	154.50	14299.56	64.75	66587.32	0.05	3329.37	32.50	33422.21	440.00	7352.89	32.00	32908.02	220.00	3619.88	32.25	33165.11	220.00	3648.16	7268.04
632+75.54	659+49.39	OVERLAY	2673.85	20.50	548.14	32.00	9507.02	0.05	475.35					32.00	9507.02	220.00	1045.77	32.25	9581.30	220.00	1053.94	2099.71
659+49.39	660+17.45	OVERLAY INTERSECTION	68.06	VAR.	13.95	VAR.	829.00	0.05	41.45					VAR.	414.50	220.00	45.60	VAR.	414.50	220.00	45.60	91.20
660+17.45	672+00.00	OVERLAY	1182.55	20.50	242.42	20.00	2627.89	0.05	131.39					20.00	2627.89	220.00	289.07	20.25	2660.74	220.00	292.68	581.75
672+00.00	672+74.10	OVERLAY INTERSECTION	74.10	VAR.	15.19	VAR.	1023.78	0.05	51.19					VAR.	511.89	220.00	56.31	VAR.	511.89	220.00	56.31	112.62
672+74.10	706+82.71	OVERLAY	3408.61	20.50	698.77	20.00	7574.69	0.05	378.73					20.00	7574.69	220.00	833.22	20.25	7669.37	220.00	843.63	1676.85
706+82.71	708+82.71	TRANSITION	200.00	20.50	41.00	20.00	444.44	0.05	22.22									20.00	444.44	220.00	48.89	48.89
706+82.71	708+82.71	TRANSITION - COLD MILL	200.00			20.00	444.44	0.17	75.55													
ADDITIONAL FOR LEVELING																						
442+00.00	487+39.02	LEVELING	4539.02			32.00	16138.74	0.17	2743.59									30.00	15130.07	VAR.	1700.00	1700.00
632+75.54	659+49.39	LEVELING	2673.85			32.00	9507.02	0.17	1616.19									30.00	8912.83	VAR.	900.00	900.00
659+49.39	660+17.45	LEVELING	68.06			VAR.	414.50	0.17	70.47									VAR.	414.50	VAR.	50.00	50.00
660+17.45	672+00.00	LEVELING	1182.55			20.00	2627.89	0.17	446.74									20.00	2627.89	VAR.	300.00	300.00
672+00.00	672+74.10	LEVELING	74.10			VAR.	511.89	0.17	87.02									VAR.	511.89	VAR.	100.00	100.00
672+74.10	708+82.71	LEVELING	3608.61			20.00	8019.13	0.17	1363.25									20.00	8019.13	VAR.	900.00	900.00
ADDITIONAL FOR REPLACEMENT OF EXISTING PAVEMENT REMOVAL																						
487+39.02	492+77.98	ADDITIONAL	538.96	VAR.	2452.27																	
495+52.98	539+45.16	ADDITIONAL	4392.18	VAR.	19984.42																	
540+20.16	632+75.54	ADDITIONAL	9255.38	VAR.	42111.98																	
ADDITIONAL FOR TURNOUT																						
ENTIRE	PROJECT	DRIVEWAY TURNOUTS																VAR.	VAR.	VAR.	425.00	425.00
ENTIRE	PROJECT	STREET TURNOUTS																VAR.	VAR.	VAR.	325.00	325.00
ENTIRE	PROJECT	TEMPORARY DRIVES		VAR.	650.00																	
ADDITIONAL FOR GUARDRAIL WIDENING																						
491+53.83	491+74.83	TRANSITION	21.00	22.38	4.70													1.25	2.92	220.00	0.32	0.32
490+28.83	490+49.83	TRANSITION	21.00	22.38	4.70													1.25	2.92	220.00	0.32	0.32
496+35.13	496+56.13	TRANSITION	21.00	22.38	4.70													1.25	2.92	220.00	0.32	0.32
496+35.13	496+56.13	TRANSITION	21.00	22.38	4.70													1.25	2.92	220.00	0.32	0.32
538+21.01	538+42.01	TRANSITION	21.00	22.38	4.70													1.25	2.92	220.00	0.32	0.32
536+96.01	537+17.01	TRANSITION	21.00	22.38	4.70													1.25	2.92	220.00	0.32	0.32
542+48.31	542+69.31	TRANSITION	21.00	22.38	4.70													1.25	2.92	220.00	0.32	0.32
541+23.31	541+44.31	TRANSITION	21.00	22.38	4.70													1.25	2.92	220.00	0.32	0.32
491+74.83	492+78.58	GUARDRAIL WIDENING	103.75	44.75	46.43													3.50	40.35	220.00	4.44	4.44
490+49.83	492+78.58	GUARDRAIL WIDENING	228.75	44.75	102.37													3.50	88.96	220.00	9.79	9.79
495+52.38	496+56.13	GUARDRAIL WIDENING	103.75	44.75	46.43													3.50	40.35	220.00	4.44	4.44
495+52.38	496+56.13	GUARDRAIL WIDENING	103.75	44.75	46.43													3.50	40.35	220.00	4.44	4.44
538+42.01	539+45.76	GUARDRAIL WIDENING	103.75	44.75	46.43													3.50	40.35	220.00	4.44	4.44
537+17.01	539+45.76	GUARDRAIL WIDENING	228.75	44.75	102.37													3.50	88.96	220.00	9.79	9.79
540+19.56	542+48.31	GUARDRAIL WIDENING	228.75	44.75	102.37													3.50	88.96	220.00	9.79	9.79
540+19.56	541+23.31	GUARDRAIL WIDENING	103.75	44.75	46.43													3.50	40.35	220.00	4.44	4.44
TOTALS:					90204.17		180184.43		13763.52		51229.10		11270.40		87215.69		9593.73		126090.40		14652.16	24245.89

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

2/21/2017

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
3-16-17				6	ARK.			
4-3-17				JOB NO.		020573	27	52

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
4-3-17

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP	SPECIAL CLEARING	124	STATION
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT	31526	SQ. YD.
202	REMOVAL AND DISPOSAL OF GUARDRAIL	575	LIN. FT.
210	UNCLASSIFIED EXCAVATION	27578	CU. YD.
SP & 210	SOIL STABILIZATION	6000	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	90204	TON
SS & 401	TACK COAT	14014	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	10763	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	507	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	22985	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	1261	TON
412	COLD MILLING ASPHALT PAVEMENT	49496	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	125	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY	3000	TON
504	APPROACH GUTTERS	74.40	CU. YD.
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	1194	SQ. FT.
SS & 604	BARRICADES	16	LIN. FT.
SS & 604	TRAFFIC DRUMS	1804	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	2400	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER	24273	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	214264	LIN. FT.
SP	TEMPORARY PORTABLE RUMBLE STRIPS	12	EACH
SP	CULVERT CLEAN OUT	1	EACH
611	UNDERDRAIN OUTLET PROTECTORS	20	EACH
611	4" PIPE UNDERDRAINS	5000	LIN. FT.
617	GUARDRAIL (TYPE A)	750	LIN. FT.
617	GUARDRAIL TERMINAL (TYPE 2)	7	EACH
617	THRIE BEAM GUARDRAIL TERMINAL	7	EACH
620	LIME	26	TON
620	SEEDING	12.84	ACRE
SS & 620	MULCH COVER	28.90	ACRE
620	WATER	1637.3	M. GAL.
621	TEMPORARY SEEDING	16.06	ACRE
621	SILT FENCE	19000	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	704	CU. YD.
621	WATTLE (20")	1681	LIN. FT.
623	SECOND SEEDING APPLICATION	12.84	ACRE
SP	WOVEN GEOTEXTILE FABRIC	56746	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	39721	LIN. FT.
SP	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	53566	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	53566	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	334	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	2	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	2	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	11	EACH
734	BRIDGE END TERMINAL	1	EACH
804	REINFORCING STEEL-ROADWAY (GRADE 60)	7840	POUND
	STRUCTURES OVER 20' SPAN		
804	REINFORCING STEEL-BRIDGE (GRADE 60)	165	POUND
816	FILTER BLANKET	408	SQ. YD.
816	DUMPED RIPRAP	597	CU. YD.
SP	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS	1092	SQ. FT.
SP	POLYMER OVERLAY	934	SQ. YD.

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
3/16/2017	ADDED DIMENSIONS ON PLAN SHEETS, REVISED THE QUANTITIES FOR ASPHALT BINDER IN ACHM SURFACE COURSE (1/2") AND MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2").	26, 27, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48
4/3/2017	REVISED THE QUANTITY FOR REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT AND REVISED THE "WOVEN GEOTEXTILE FABRIC FOR SUBGRADE REINFORCEMENT" SP.	24, 27

2/21/2017

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SUMMARY OF QUANTITIES AND REVISIONS

SURVEY CONTROL COORDINATES

Project Name: s020572
Date: 3/7/2017
Coordinate System: Arkansas State Plane Coordinates
Horizontal Control Based on GPS Points 210046 - 210047, Vertical Control Based on Static Obs at PN: 210046 from NGS Mark L 18 42
Projected to Ground Coordinates
Units: U.S. Survey Foot

COORDINATES LISTED BELOW ARE GROUND (Localized) COORDINATES !!!!

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	1654005.075	0.0110	1517062.137	0.0100	138.058	0.0042	CTL	PD:STD AHTD MON. STAMPED PN:1
2	1654343.229	0.0100	1517717.732	0.0090	137.371	0.004	CTL	PD:STD AHTD MON. STAMPED PN:2
3	1654502.718	0.0100	1518499.105	0.0100	136.777	0.005	CTL	PD:STD AHTD MON. STAMPED PN:3
4	1654620.817	0.0100	1519318.026	0.0090	137.485	0.005	CTL	PD:STD AHTD MON. STAMPED PN:4
5	1654788.22	0.0090	1520019.849	0.0080	136.336	0.005	CTL	PD:STD AHTD MON. STAMPED PN:5
6	1654924.028	0.0090	1520910.739	0.0080	135.453	0.005	CTL	PD:STD AHTD MON. STAMPED PN:6
7	1654957.497	0.0090	1521690.370	0.0080	135.339	0.005	CTL	PD:STD AHTD MON. STAMPED PN:7
8	1654984.885	0.0090	1522450.849	0.0080	135.862	0.006	CTL	PD:STD AHTD MON. STAMPED PN:8
9	1654970.951	0.0090	1523203.481	0.0080	134.394	0.006	CTL	PD:STD AHTD MON. STAMPED PN:9
10	1654969.040	0.0080	1523967.638	0.0070	135.331	0.006	CTL	PD:STD AHTD MON. STAMPED PN:10
11	1655010.218	0.0080	1524721.130	0.0070	135.652	0.006	CTL	PD:STD AHTD MON. STAMPED PN:11
18	1654940.238	0.0068	1530340.137	0.0057	134.016	0.003	CTL	PD:STD AHTD MON. STAMPED PN:18
19	1654931.664	0.0070	1531146.235	0.0058	133.781	0.003	CTL	PD:STD AHTD MON. STAMPED PN:19
20	1654922.225	0.0084	1531959.464	0.0069	133.960	0.003	CTL	PD:STD AHTD MON. STAMPED PN:20
21	1654910.646	0.0079	1532784.434	0.0067	134.454	0.004	CTL	PD:STD AHTD MON. STAMPED PN:21
22	1654897.036	0.0076	1533655.272	0.0064	133.355	0.004	CTL	PD:STD AHTD MON. STAMPED PN:22
23	1654885.062	0.0074	1534498.898	0.0062	133.645	0.004	CTL	PD:STD AHTD MON. STAMPED PN:23
24	1654872.343	0.0073	1535306.573	0.0061	134.202	0.004	CTL	PD:STD AHTD MON. STAMPED PN:24
100	1659176.506	0.0050	1500533.027	0.0040	142.454	0.025	GPS	PD:AHTD GPS MON 210045
101	1657187.751	0.0060	1500195.191	0.0040	143.016	0.026	GPS	PD:AHTD GPS MON 210045A
102	1653713.199	0.0060	1511666.066	0.0050	143.663	0.027	GPS	PD:AHTD GPS MON 210046
103	1653727.247	0.0060	1509905.277	0.0050	142.419	0.027	GPS	PD:AHTD GPS MON 210046A
104	1655047.262	0.0060	1525964.417	0.0050	140.859	0.027	GPS	PD:AHTD GPS MON 210047
105	1654950.894	0.0060	1528028.279	0.0050	134.847	0.027	GPS	PD:AHTD GPS MON 210047A
106	1652811.654	0.0060	1542818.968	0.0050	132.734	0.027	GPS	PD:AHTD GPS MON 210048
107	1654779.289	0.0060	1542863.082	0.0050	134.730	0.027	GPS	PD:AHTD GPS MON 210048A
108	1654797.480	0.0050	1554917.876	0.0040	161.011	0.025	GPS	PD:AHTD GPS MON 210049
109	1656312.420	0.0050	1553795.352	0.0040	135.898	0.025	GPS	PD:AHTD GPS MON 210049A
900	1652614.965	30.0000	1514660.412	30.0000	144.099	0.003	TBM	PD:CHISELED SQR CONC CNTR ISLAND
901	1654311.526	0.0170	1517651.063	0.0180	136.443	0.004	TBM	PD:SQ CUT WEST END OF SOUTH HEADWALL
902	1654943.455	0.0150	1521231.921	0.0180	136.341	0.005	TBM	PD:BRASS CAP SW END OF BRIDGE
903	1652637.783	0.0140	1514677.264	0.0140	131.414	0.006	TBM	PD:CHISLELD SQ CTR HEADWALL
904	1655021.813	0.0220	1526467.565	0.0210	139.835	0.007	TBM	PD:RBR IN CHISELED SQR CONC NW CORNER OF BRIDGE
905	1654956.224	0.0103	1532095.185	0.0085	135.006	0.004	TBM	
906	1654910.825	0.0123	1535870.671	0.0100	131.903	0.005	TBM	PD:CHISLELED SQ
907	1654994.649	30.0000	1537397.912	30.0000	134.849	0.005	TBM	PD:SQ CUT IN NW CORNER OF BRIDGE
908	1655009.367	30.0000	1539427.818	30.0000	130.282	0.005	TBM	PD:SQ CUT IN NW END NORTH HEADWALL
909	1655130.277	30.0000	1542133.613	30.0000	133.368	0.006	TBM	PD:SQ CUT IN NE CORNER OF BRIDGE
950	1673058.474	0.0050	1545974.28	0.0050	146.696	0.000	TBM	PD:NGS BM L 18 42
9033	1654960.774	0.0180	1523301.039	0.0190	131.404	0.036	TBM	

*Standard Primary Control Monument - Rebar and Cap - Standard - 5/8"x 24" Rebar with 2"Aluminum Cap stamped: "(include all common information here)" plus other markings indicated in the point description of the individual point. AHTD monuments will be stamped "Arkansas Hwy & Trans Dept" with "PN: ###" & "Job ######". Monuments that are set by Consultants will be stamped "Arkansas Hwy & Trans Dept" with "PN:###", "Job#######", & "PS#####". The consultant Professional Surveyor in charge will stamp his/her PS license number on the cap.
**Standard GPS Control Point Monument - 5/8" x 48" Rebar with 2.5"Aluminum Cap stamped: "(include all common information here)" plus other markings indicated in the point description of the individual point. These monuments will be stamped "Ark. State Hwy Trans. Dept.", "GPS Survey", & "Point No. ######".
SX, SY, SZ – Represents the standard error estimate of the coordinate values of each point at the 67% confidence level (one sigma) based on the least squares analysis of the control network. See the AASHTO SDMS Technical Data Guide data tag definition for SX:, SY:, and SZ: for additional information. These values shall be used when control points are added and the entire network is reprocessed using least square analysis. A value of 0.001 is defined as fixed (no adjustment) in the least square analysis process. A value of 30 is defined as location by handheld GPS device or scaled from USGS Quadmap.
Reference Control points (1500 series) shall be used to re-establish horizontal datum if the primary control has been destroyed. These reference control points shall not be used for vertical control unless the elevation has been established from the project datum with 3-wire level techiniques.
All additional project control shall be occupied, measured, and adjusted with direct survey ties to at least two of the control points listed in the table above. New survey control shall not be independent of the survey control listed above. This includes horizontal coordinates and elevations.

Positional Accuracy:
Horizontal - GPS (1.0 cm± 1PPM) PN: 100-109
Horizontal - Primary (2.0cm± 20PPM): PN: 1-24
Horizontal - Secondary (3 cm ± 50PPM): PN: N/A
Vertical - NGS 1st Order (±4mm x Vdist in km) PN: N/A
Vertical - NGS 2nd Order (±6mm x Vdist in km) PN: N/A
Vertical - NGS 3rd Order (±8mm x Vdist in km) PN: N/A

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0302-South Zone
The adjustment year is based on metadata in the SDMS Control file
A project CAF of: 0.999939534 has been used to compute the above coordinates.
The project CAF shall have a minimum precision of 9 digits right of the decimal.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid:
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM:
A project Elevation Factor of: 0.999993447 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 136.992 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points:
From NGS BM: *SEE HEADER

Basis of Bearing: Grid Bearings based on GPS Points: 210046 - 210047
Convergence Angle is: 00-23-05 RIGHT at PN: 7
LT: 33°36'22" N LG: 091°18'44 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11435 TIMOTHY D. SMITH
3-8-17

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	020573	28	52

JOB NO.

2 SURVEY CONTROL DETAILS

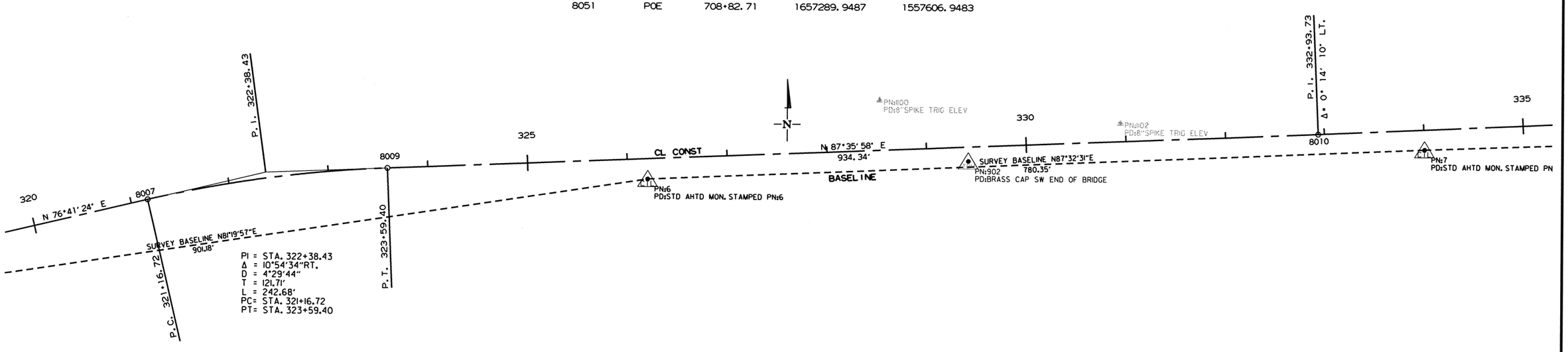
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	29	52

(2) SURVEY CONTROL DETAILS

PROJECT NAME: 020573
HORIZONTAL ALLIGNMENT NAME: CONST

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	282+00.00	1653820.0633	1516688.1596
8001	PC	290+48.18	1654231.5357	1517429.8483
8003	PT	299+74.16	1654506.5489	1518307.4067
8004	PC	305+44.66	1654564.0016	1518875.0062
8006	PT	309+43.48	1654630.0869	1519268.0249
8007	PC	321+16.72	1654900.1884	1520409.7499
8009	PT	323+59.40	1654933.3048	1520649.7853
8010	PI	332+93.73	1654972.4385	1521583.3038
8011	PC	338+73.08	1654999.0892	1522162.0389
8013	PT	342+30.13	1655003.7306	1522518.9939
8014	PC	354+08.13	1654980.1567	1523696.7509
8016	PT	357+26.18	1654994.4803	1524014.2587
8017	PC	359+33.60	1655017.2867	1524220.4179
8019	PT	362+47.47	1655032.2087	1524533.7289
8020	PI	379+88.78	1655006.0980	1526274.8417
8021	PI	394+40.86	1654986.1432	1527726.7903
8022	PI	418+48.53	1654962.5715	1530134.3386
8023	PI	425+30.09	1654955.3810	1530815.8593
8024	PI	441+02.23	1654936.3297	1532387.8842
8025	PI	455+64.95	1654915.0860	1533850.4526
8026	PI	464+80.19	1654900.5016	1534765.5745
8027	PI	469+04.06	1654894.0373	1535189.3993
8028	PI	489+94.36	1654860.3029	1537279.4262
8029	PI	498+59.87	1654849.2472	1538144.8672
8030	PI	533+52.11	1654861.5677	1541637.0809
8031	PI	546+17.73	1654831.9251	1542902.3522
8032	PI	567+52.36	1654845.5888	1545036.9402
8033	PI	587+62.88	1654856.3510	1547047.4388
8034	PI	599+60.35	1654865.2042	1548244.8691
8043	PC	625+48.97	1654880.9650	1550833.4413
8045	PT	630+25.39	1654873.9627	1551309.7764
8046	PC	632+24.76	1654866.8890	1551509.0254
8048	PT	636+57.18	1654979.0063	1551919.8841
8041	PI	644+54.49	1655408.1056	1552591.8724
8035	PC	659+59.59	1656264.6976	1553829.4466
8037	PT	660+06.52	1656257.2653	1553871.0753
8038	PC	672+13.92	1655269.0122	1554564.7381
8040	PT	672+60.47	1655261.3687	1554606.0575
8049	PI	677+53.69	1655536.9851	1555015.0768
8050	PI	680+88.77	1655727.6481	1555290.6353
8051	POE	708+82.71	1657289.9487	1557606.9483

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-6-17



2/23/2017

R020573.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	30	52

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
3-6-17

STA. 442+00.00
BEGIN JOB 020573
END JOB 020580
LOG MILE 6.48

13026
4"X4" CONC R/W MONUMENT

13269
4"X4" CONC R/W MARKER

440 — 8024 — 445 — 450 — 455

SURVEY BASELINE S89°11'45"E
825.05'

P.I. 441+02.23
Δ = 0° 08' 16" RT.

J3
SPIKE TRIG ELEV

CL CONST S 89°10'04" E
1462.72'

SURVEY BASELINE S89°06'16"E
870.94'

BASELINE

Default
Uncoded
13

PN:21
PD:STD AHTD MON. STAMPED PN:21

PN:22
PD:STD AHTD MON. STAMPED PN:22

455 — 8025 — 460 — 465 — 470

PN:22

SURVEY BASELINE S89°11'13"E
843.71'

P.I. 455+64.95
Δ = 0° 04' 51" RT.

CL CONST S 89°05'13" E
915.24'

PN:23
PD:STD AHTD MON. STAMPED PN:23

BASELINE

P.I. 464+80.19
Δ = 0° 02' 21" LT.

8026

S 89°07'34" E
423.87'

8027

SURVEY BASELINE S89°05'52"E
807.78'

P.I. 469+04.06
Δ = 0° 03' 03" RT.

PN
PD

470 — 475 — 480 — 485

BASELINE

PN:24
PD:STD AHTD MON. STAMPED PN:24

PN:906
PD:SO CHISELED CENTER OF N HW

CL CONST S 89°04'31" E
2090.30'

2/23/2017

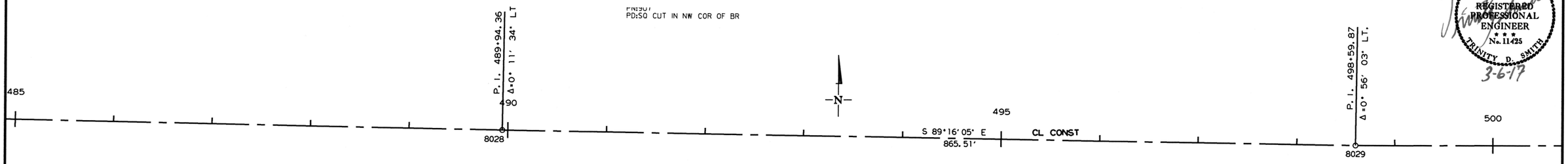
R020573.DGN

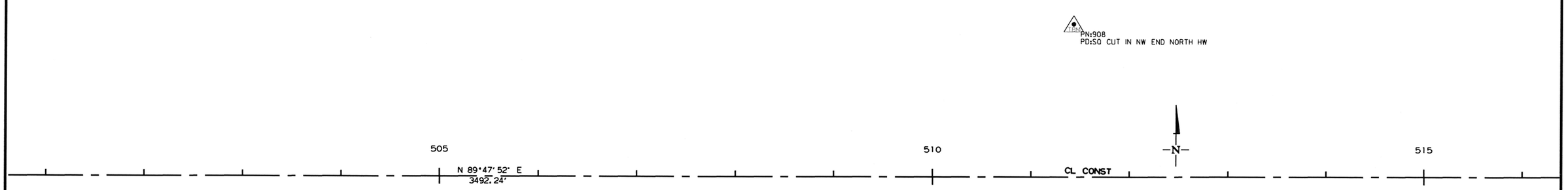
SURVEY CONTROL DETAILS

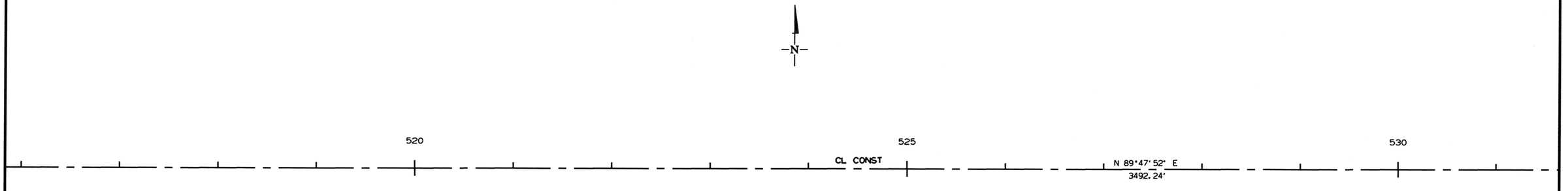
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				6	ARK.			
				JOB NO.		020573	31	52

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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R020573.DGN

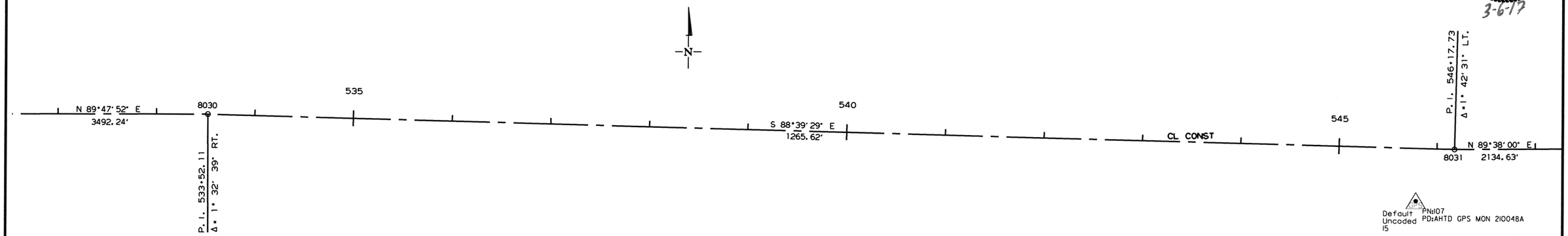
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	32	52

(2) SURVEY CONTROL DETAILS

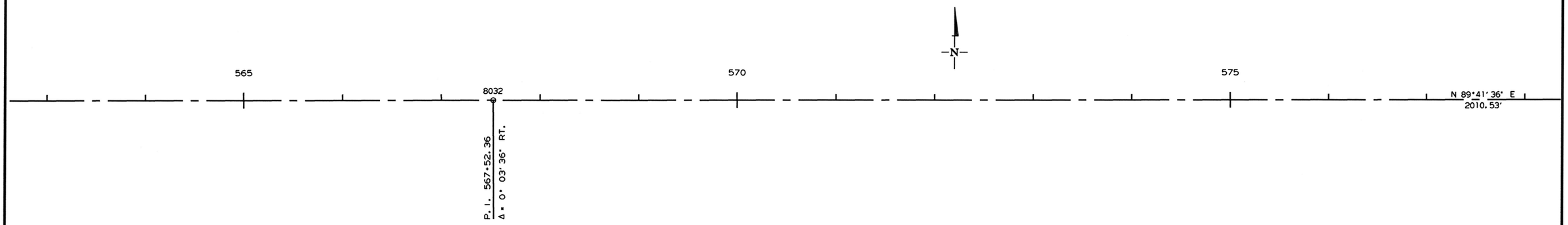
PN:909
PD:SO CUT IN NE COR OF BR

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
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Default Uncoded I5 PN:107 PD:AHTD GPS MON 210048A





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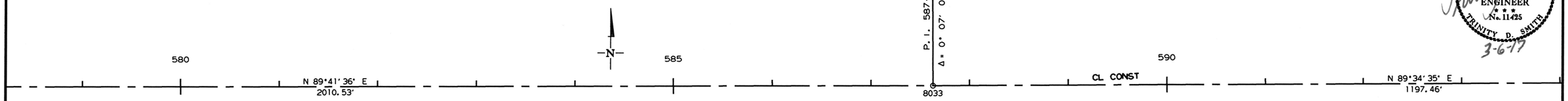
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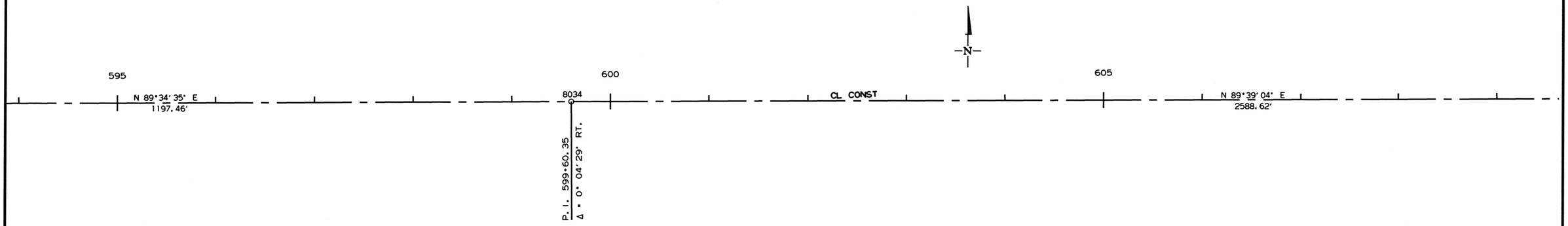
SURVEY CONTROL DETAILS

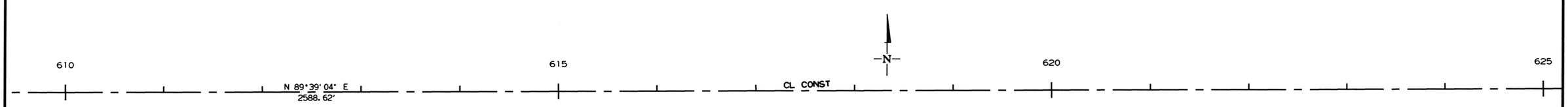
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	33	52

(2) SURVEY CONTROL DETAILS

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No. 11425
TRINITY D. SMITH
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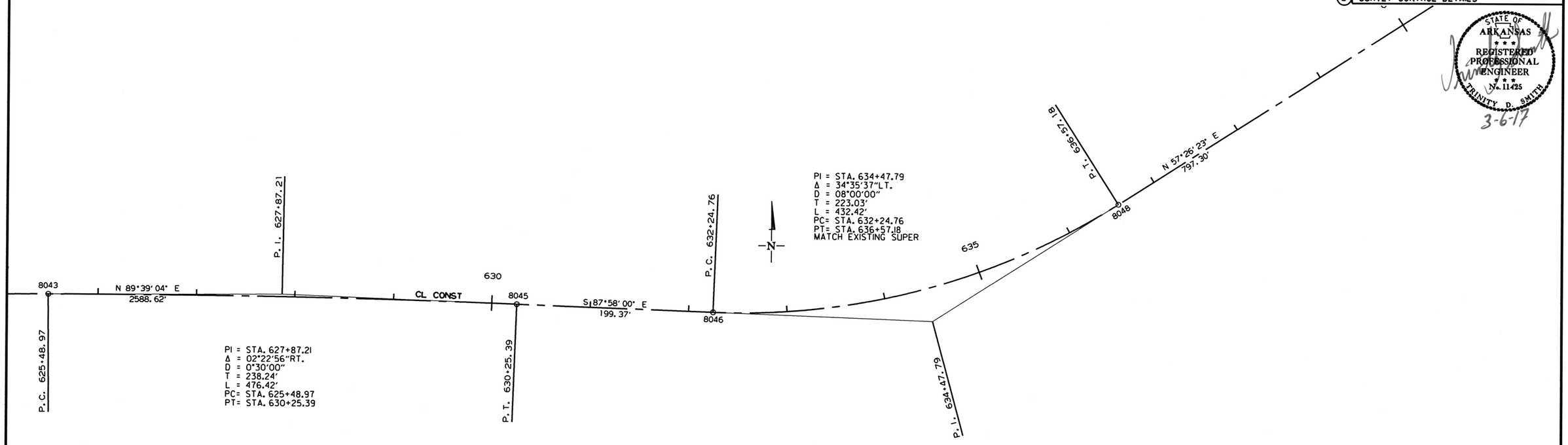
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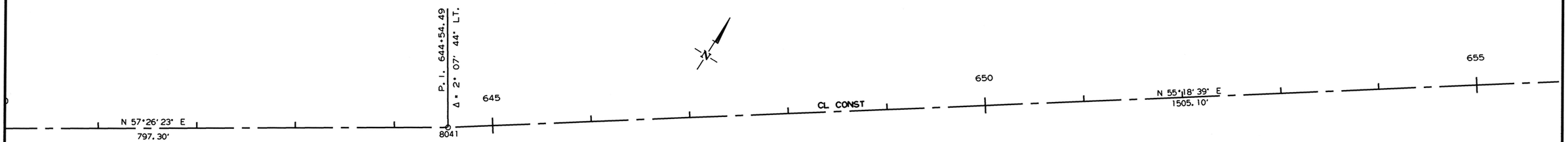
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	34	52

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
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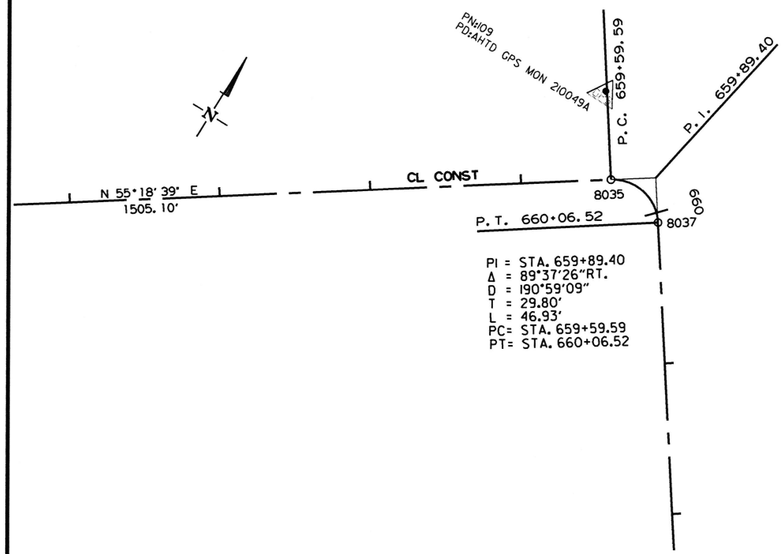
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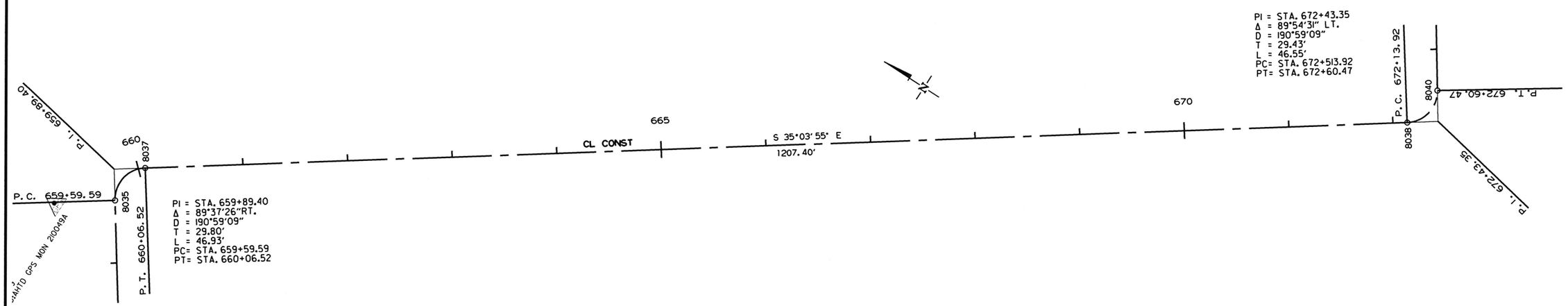
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	35	52

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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2/23/2017

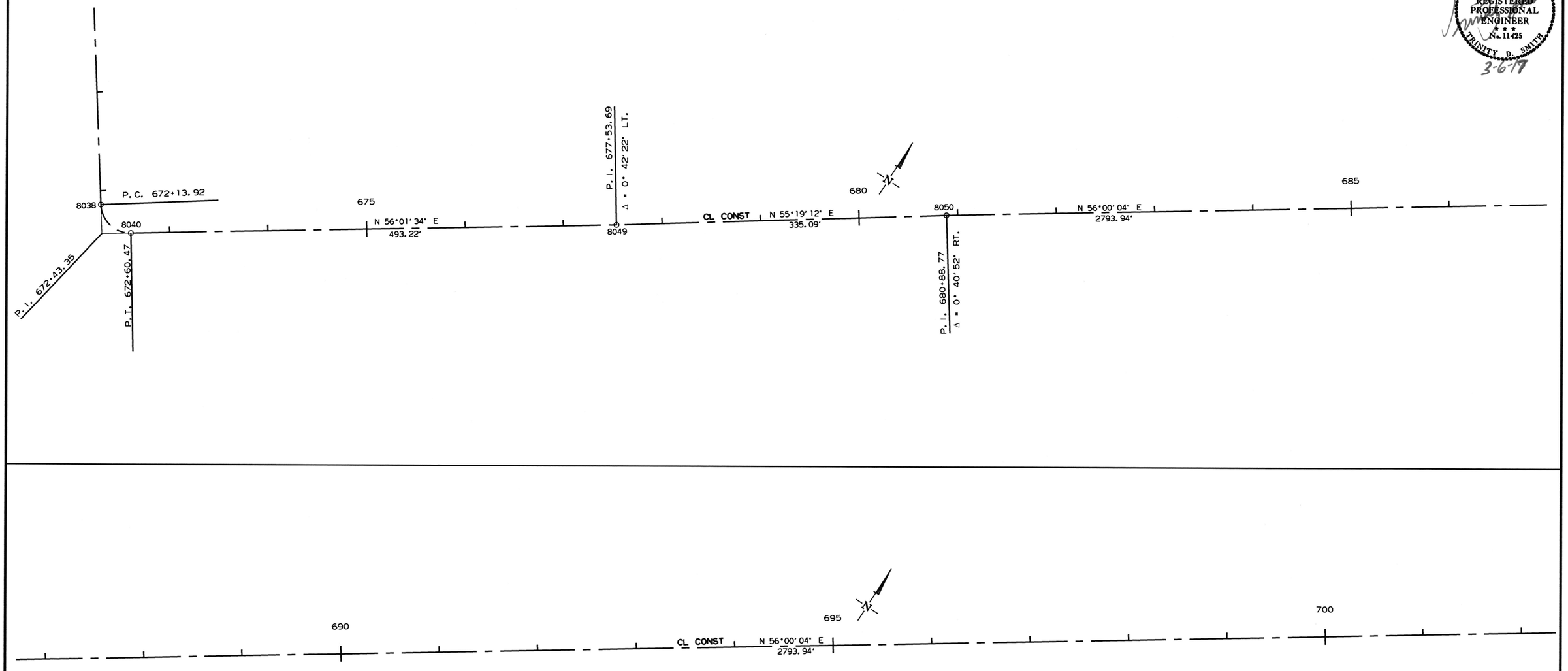
R020573.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	36	52

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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TRINITY D. SMITH
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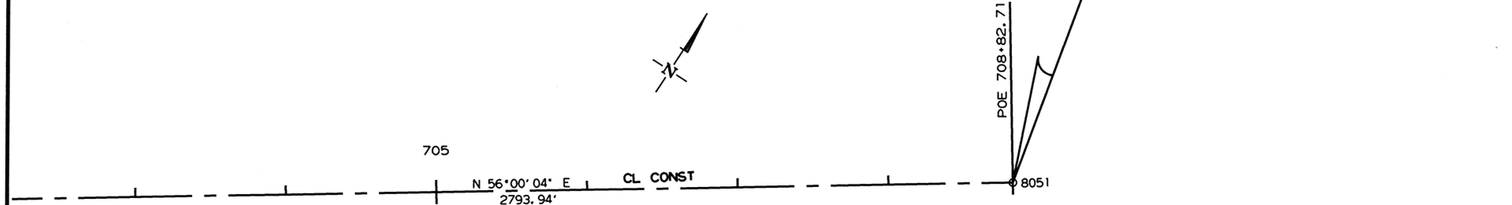
R020573.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020573	37	52

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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TRINITY D. SMITH
3-6-17



R020573.DGN 2/23/2017

SURVEY CONTROL DETAILS

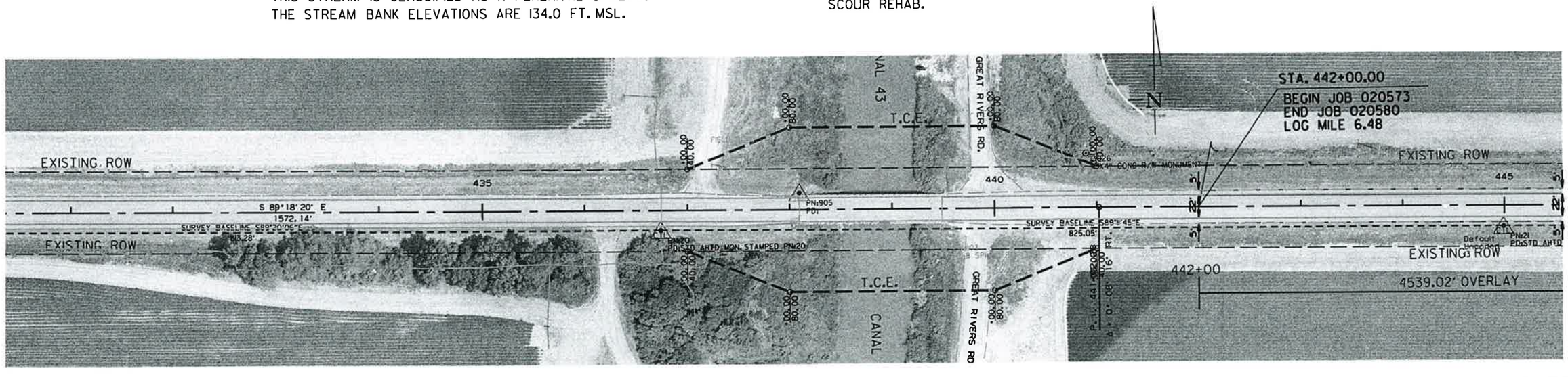
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
3-16-17				6	ARK.			
				JOB NO.		020573	38	52

(2) PLAN SHEETS

STATE OF ARKANSAS
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TRINITY D. SMITH
3-16-17

STA. 438+50 TO STA. 439+30
FOR THE CONSTRUCTION OF TEMPORARY RAMPS OR HAUL ROADS.
THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM.
THE STREAM BANK ELEVATIONS ARE 134.0 FT. MSL.

STA. 438+09.00 BR. END
BRIDGE NO. 03592
24.0' CLEAR ROADWAY
STA. 439+49.00 BR. END
TOTAL LENGTH = 140.00'
SCOUR REHAB.



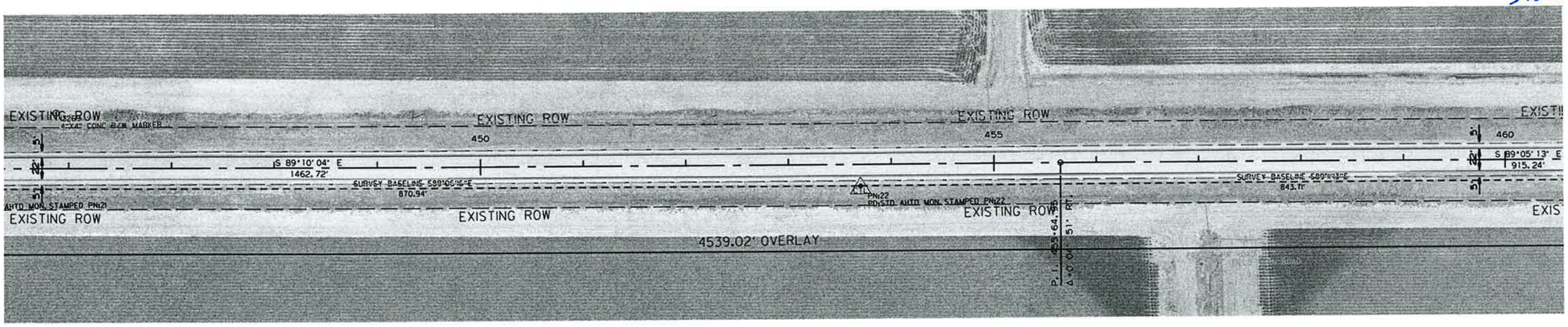
PLAN SHEET

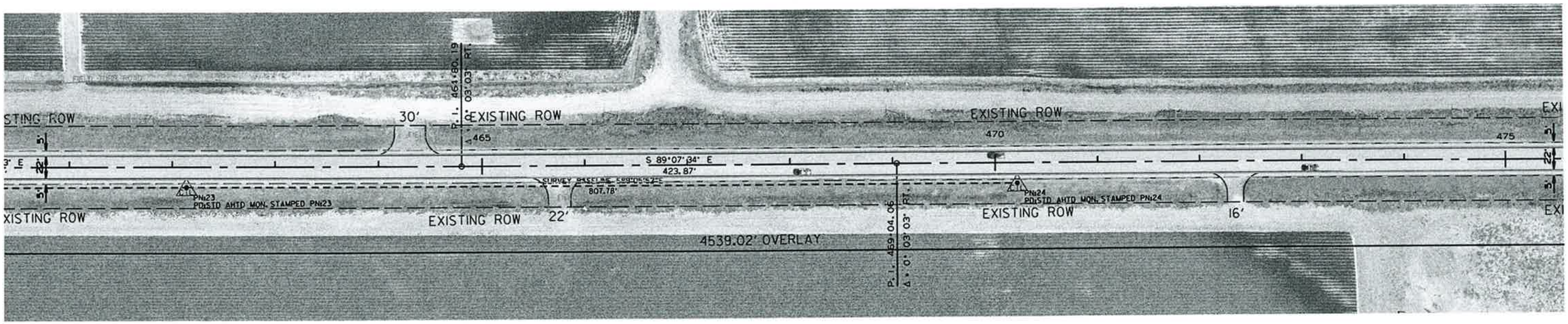
r020573.dgn PLAN AND PROFILE SHEETS
10/3/16

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
3-16-17				6	ARK.			
				JOB NO.		020573	39	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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TRINITY D. SMITH
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PLAN SHEET

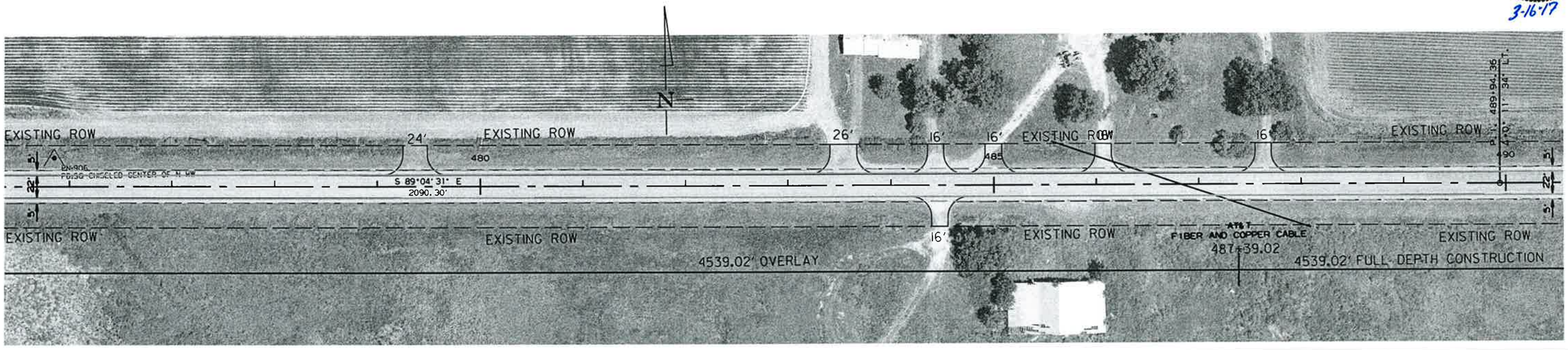
r020573.dgn PLAN AND PROFILE SHEETS

10/3/16

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
3-16-17				6	ARK.			
				JOB NO.		020573	40	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17

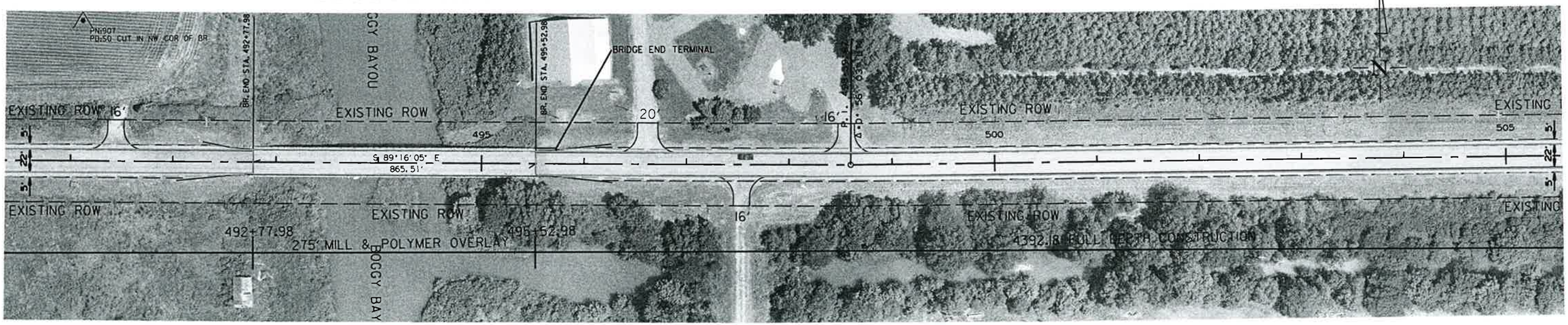


STA. 492+77.98 BR. END
BRIDGE NO. 03593
24' CLEAR ROADWAY
STA. 495+52.98 BR. END
TOTAL LENGTH = 275.00'
BRIDGE DECK REHAB. (MILL & POLYMER OVERLAY)
REMOVE EXISTING GUARDRAIL

490+77.98 — 200' TRANSITION — 492+77.98

495+52.98 — 200' TRANSITION — 497+52.98

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	BRIDGE END TERMINAL
491+84.83	492+78.58	M.L. - LT.	75 LIN. FT.	1EA.	1EA.	
490+59.83	492+78.58	M.L. - RT.	150 LIN. FT.	1EA.	1EA.	
495+52.38	496+46.13	M.L. - LT.				1EA.
495+52.38	496+46.13	M.L. - RT.	75 LIN. FT.	1EA.	1EA.	



r020573.dgn PLAN AND PROFILE SHEETS

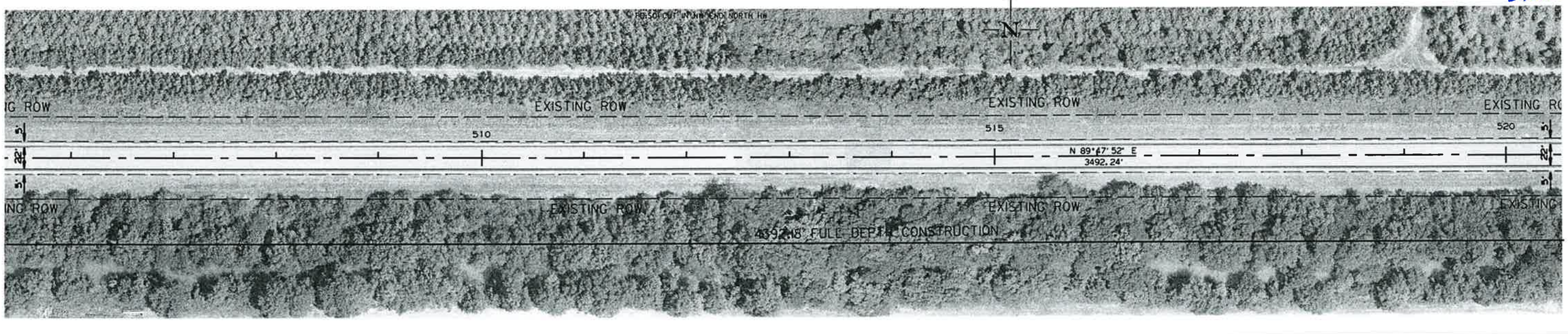
12/20/16

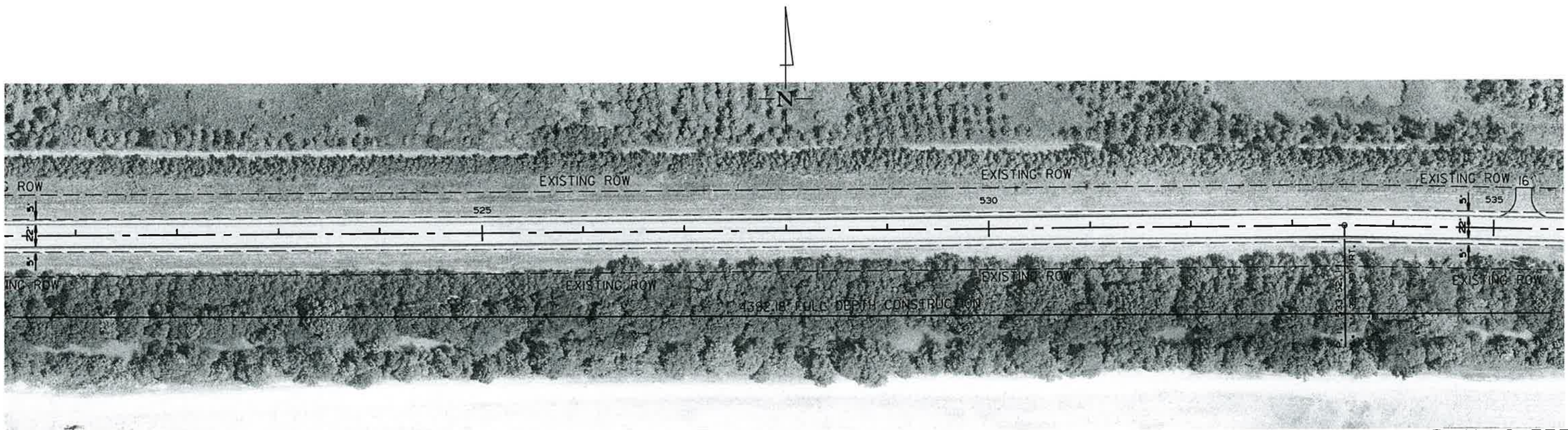
PLAN SHEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
3-16-17				6	ARK.			
				JOB NO.		020573	41	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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TRINITY D. SMITH
3-16-17





r020573.dgn PLAN AND PROFILE SHEETS

10/3/16

PLAN SHEET

STA. 539+45.16 BR. END
BRIDGE NO. 03594
24' CLEAR ROADWAY
STA. 540+20.16 BR. END
TOTAL LENGTH = 75.00'
BRIDGE DECK REHAB. (MILL & POLYMER OVERLAY)
REMOVE EXISTING GUARDRAIL

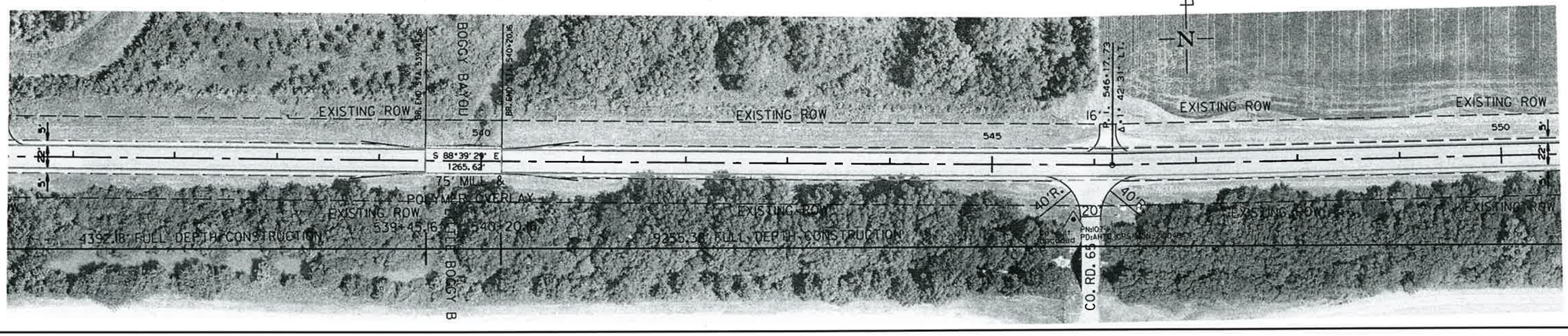
STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
538+52.01	539+45.76	M.L. - LT.	75 LIN. FT.	1 EA.	1 EA.
537+27.01	539+45.76	M.L. - RT.	150 LIN. FT.	1 EA.	1 EA.
540+19.56	542+38.31	M.L. - LT.	150 LIN. FT.	1 EA.	1 EA.
540+19.56	541+13.31	M.L. - RT.	75 LIN. FT.	1 EA.	1 EA.

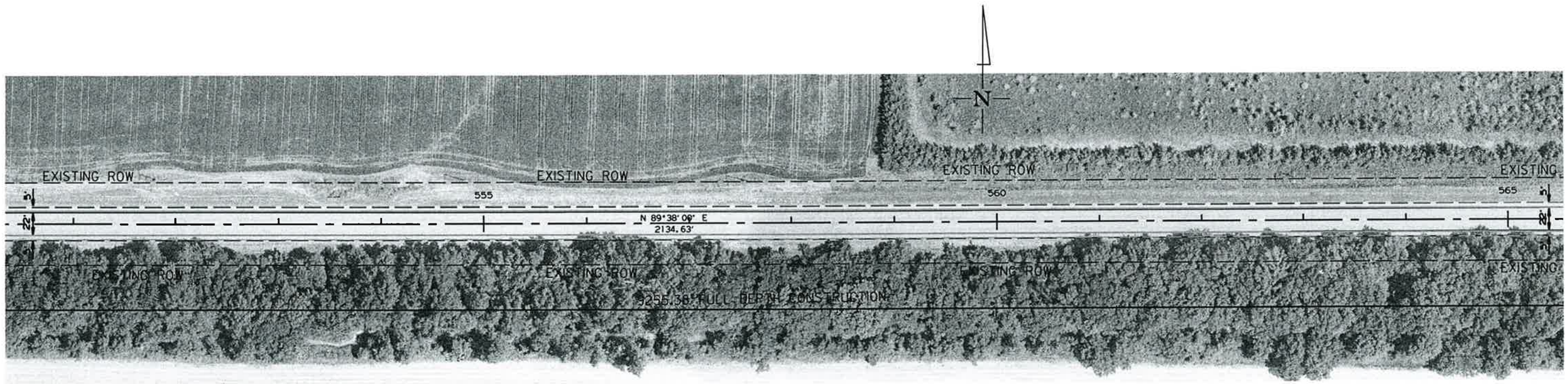
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3-16-17				6	ARK.			
				JOB NO.		020573	42	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17

537+45.16 — 200' TRANSITION — 539+45.16 — 540+20.16 — 200' TRANSITION — 542+20.16





r020573.dgn PLAN AND PROFILE SHEETS

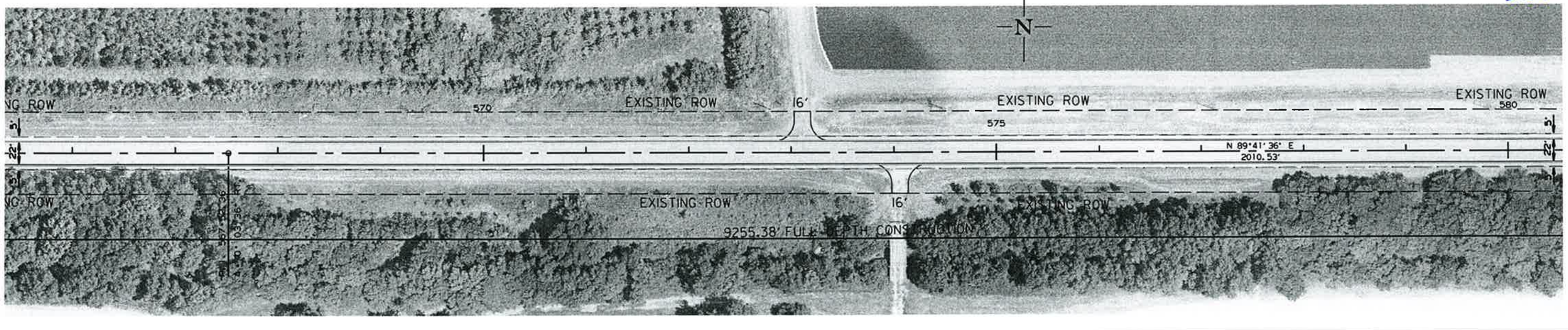
10/3/16

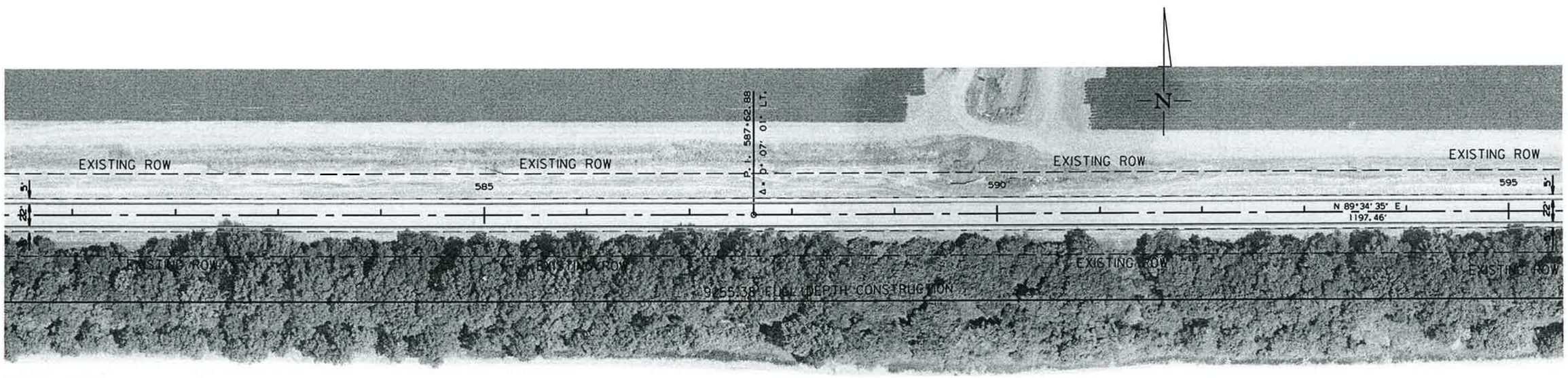
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3-16-17				6	ARK.			
				JOB NO.		020573	43	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17





r020573.dgn PLAN AND PROFILE SHEETS

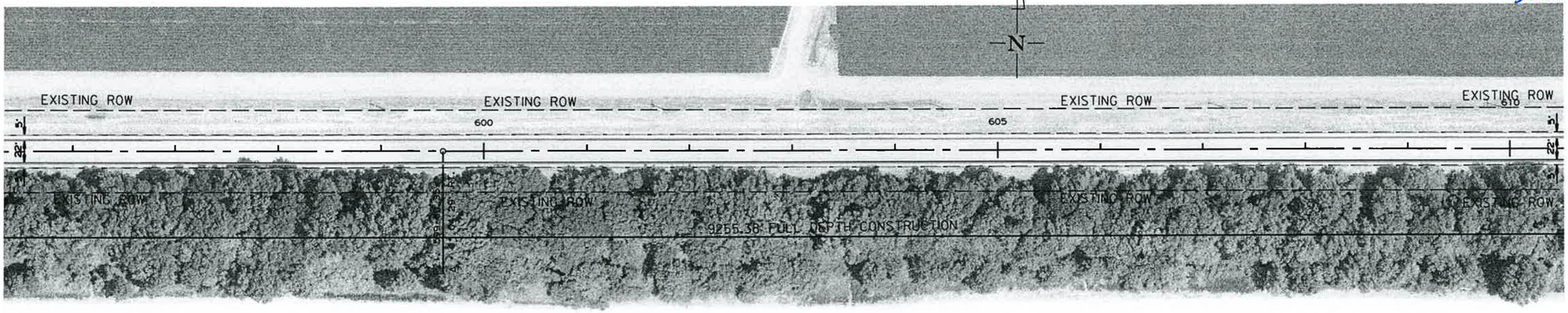
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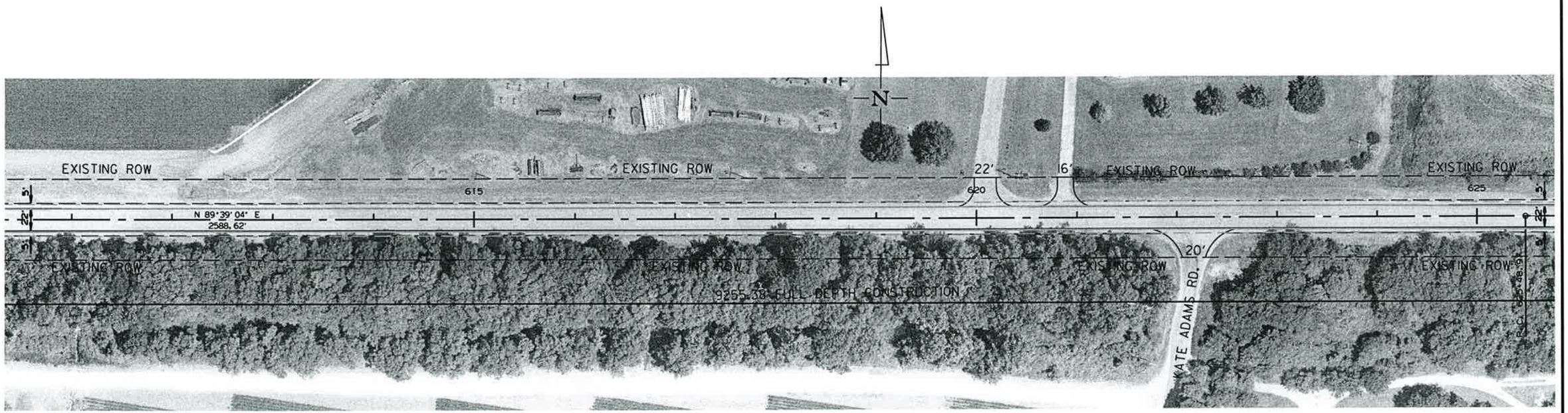
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3-16-17				6	ARK.			
				JOB NO.		020573	44	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17





r020573.dgn PLAN AND PROFILE SHEETS

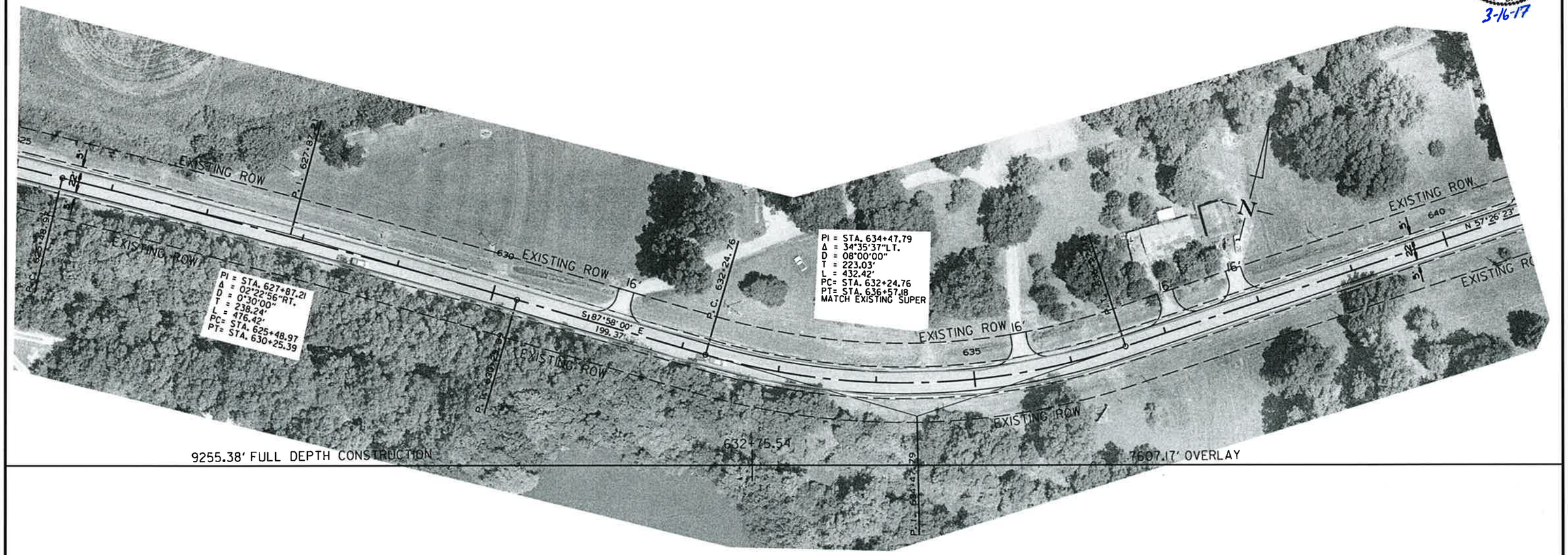
10/3/16

PLAN SHEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
3-16-17				6	ARK.			
				JOB NO.		020573	45	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17



PLAN SHEET

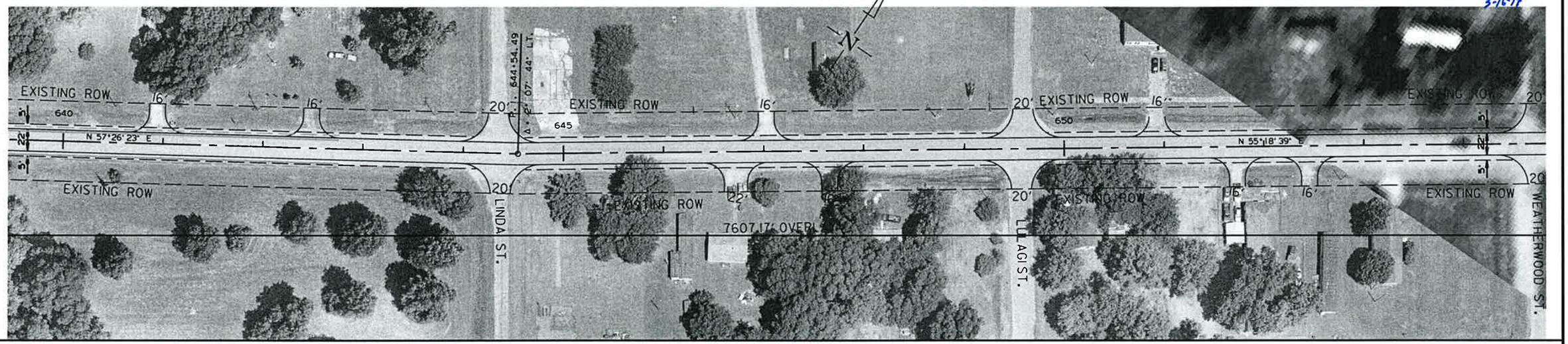
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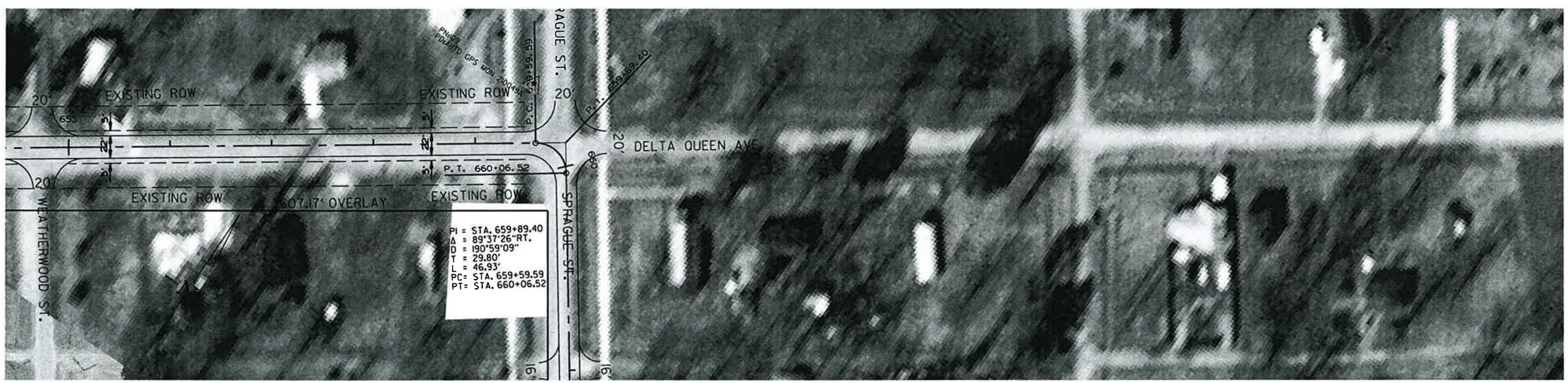
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3-16-17				6	ARK.			
				JOB NO.		020573	46	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17





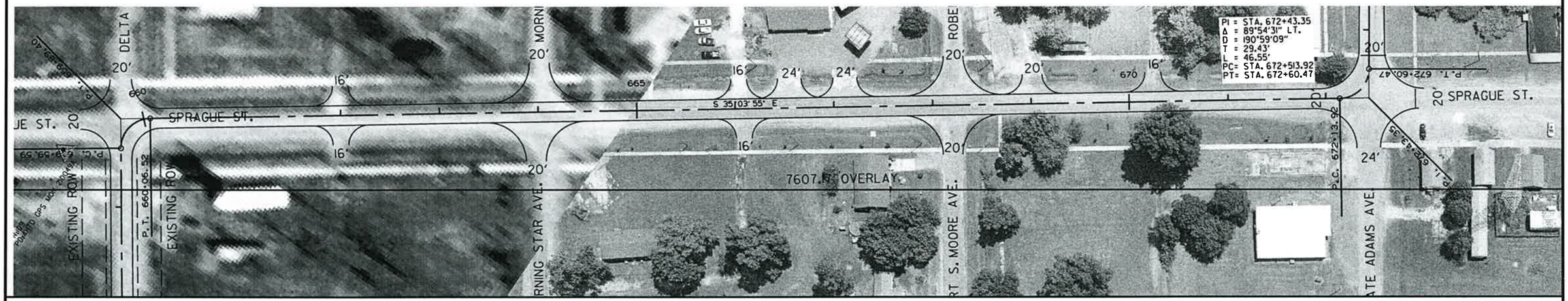
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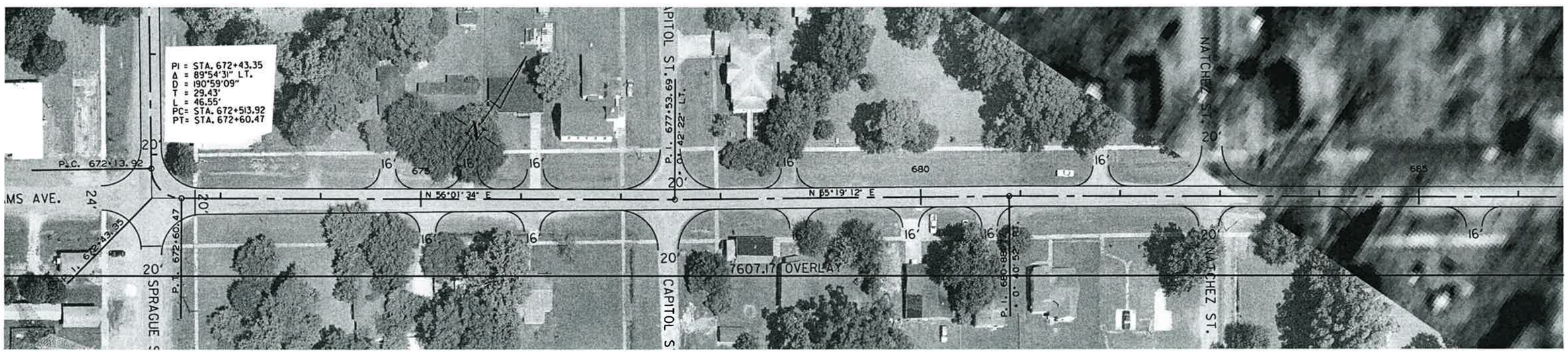
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3-16-17				6	ARK.			
				JOB NO.		020573	47	52
				(2) PLAN SHEETS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17





PLAN SHEET

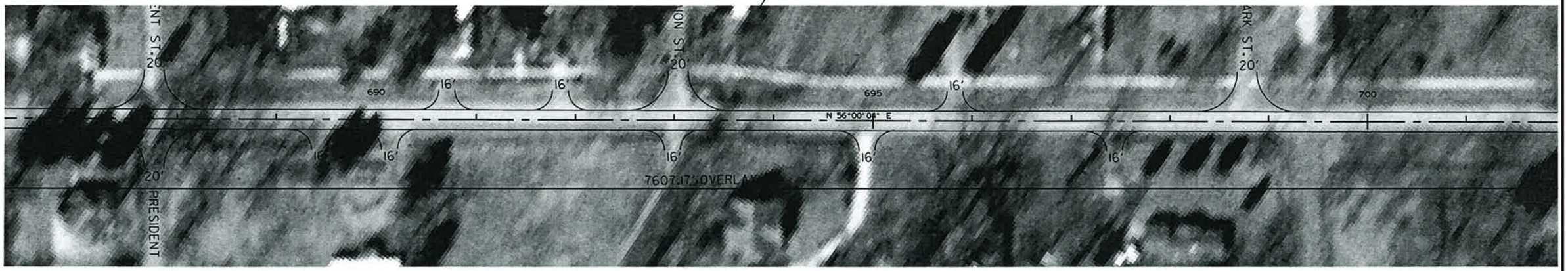
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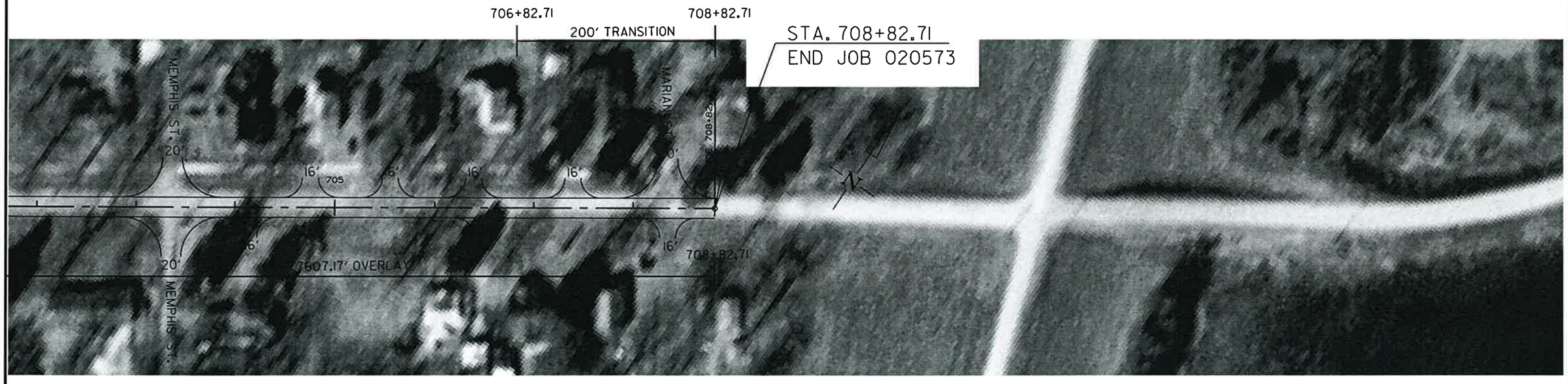
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				JOB NO.		020573	48	52

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-16-17



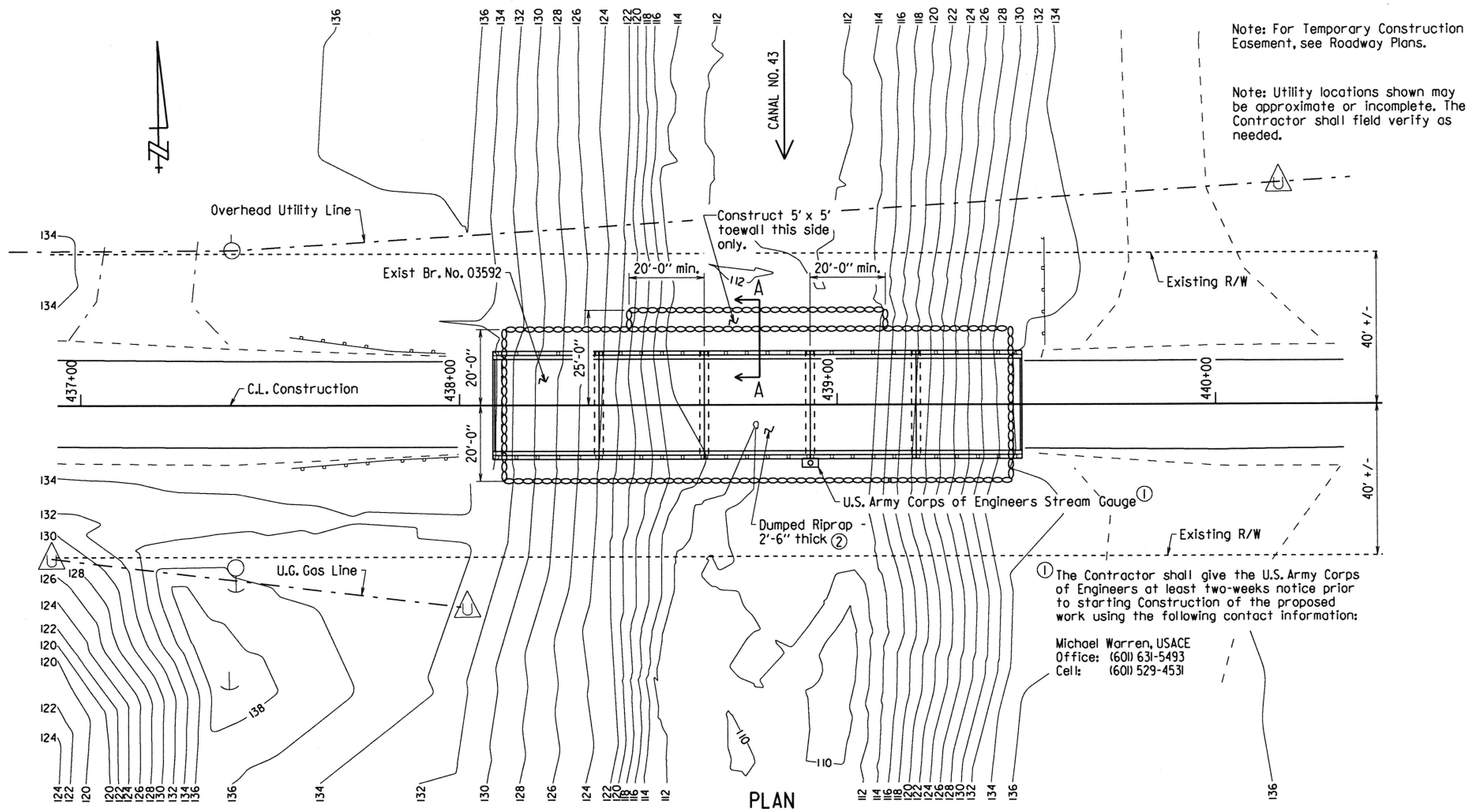


r020573.dgn PLAN AND PROFILE SHEETS

10/3/16

PLAN SHEET

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.		020573	49	52
				①	03592 - SCOUR PREVENTION - 55870			



PLAN

Note: For Temporary Construction Easement, see Roadway Plans.

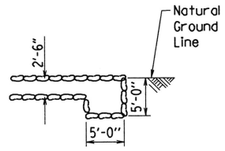
Note: Utility locations shown may be approximate or incomplete. The Contractor shall field verify as needed.

① The Contractor shall give the U.S. Army Corps of Engineers at least two-weeks notice prior to starting Construction of the proposed work using the following contact information:

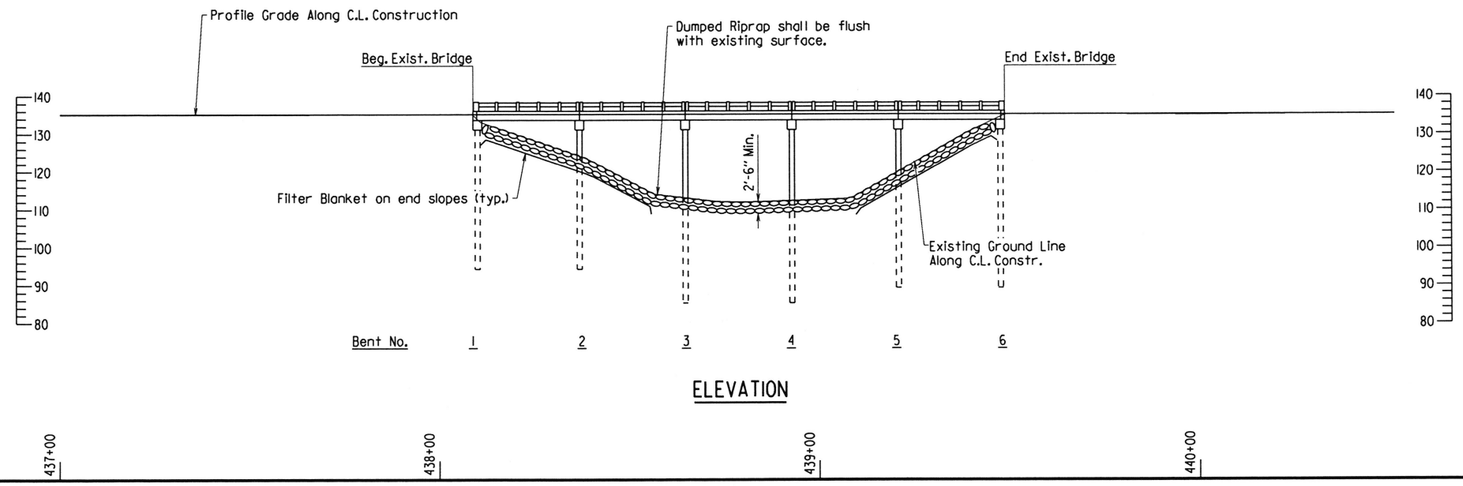
Michael Warren, USACE
Office: (601) 631-5493
Cell: (601) 529-4531

Note: Additional erosion of the stream bed and banks may have occurred since ground data was collected. If significant variations exist between the plotted contours and the actual ground, the Engineer shall be notified. Modification of the scour repair details may be required.

② Place 2'-6" thick Dumped Riprap as shown. Place Riprap on top of Filter Blanket on end slopes at each end of bridge. Top of Riprap Elev. = 133.5. Place riprap flush with existing surface.



SECTION A-A
Toewall Detail
No Scale



ELEVATION

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

The proposed work consists of placing Dumped Riprap on the indicated areas of banks and stream channel. No Filter Blanket is required in the channel. Excavation will be required prior to placing riprap on the banks, in toes, and in the channel. The finished surface of the riprap shall be flush with the existing surface. Care shall be taken to avoid damaging the bridge during excavation and placement of the riprap under the spans and around the piling. The riprap may be placed underwater in a manner that maintains the required gradation. The Engineer shall take soundings before and after placement of the riprap to determine thickness and distribution.

Excavated material shall be hauled away and disposed of by the Contractor. See Section 210. All excavation shall be paid for as "Unclassified Excavation".

Drift and debris in the channel and on the slopes that interferes with the work shall be removed and disposed of prior to placement of the riprap. Payment for drift and debris removal will not be made directly, but shall be considered subsidiary to the other items. Securing disposal sites for drift and debris shall be the responsibility of the Contractor.

Previous foundations may be encountered during the work and may remain in place.

All construction shall be performed from below the bridge superstructure. Construction activities will not be allowed to obstruct traffic on the existing highway.

The Contractor shall protect any existing utilities from damage.

Stockpiling of materials, construction of access roads and staging areas, or any other work performed on the Highway right of way must be approved by the Engineer. Any property that is disturbed during construction shall be restored to its original condition by the Contractor as approved by the Engineer. Such property will include, but not be limited to, pavement, shoulder, embankments, grass, fences, roads, existing riprap, right of way markers, and bridge components. No direct payment will be made for this restoration; payment shall be subsidiary to the other bid items.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
2-16-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SCOUR PREVENTION DETAILS
CANAL NO. 43
DITCH NO. 43 - ARKANSAS CITY (S)
DESHA COUNTY

ROUTE 4 SEC. 17

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

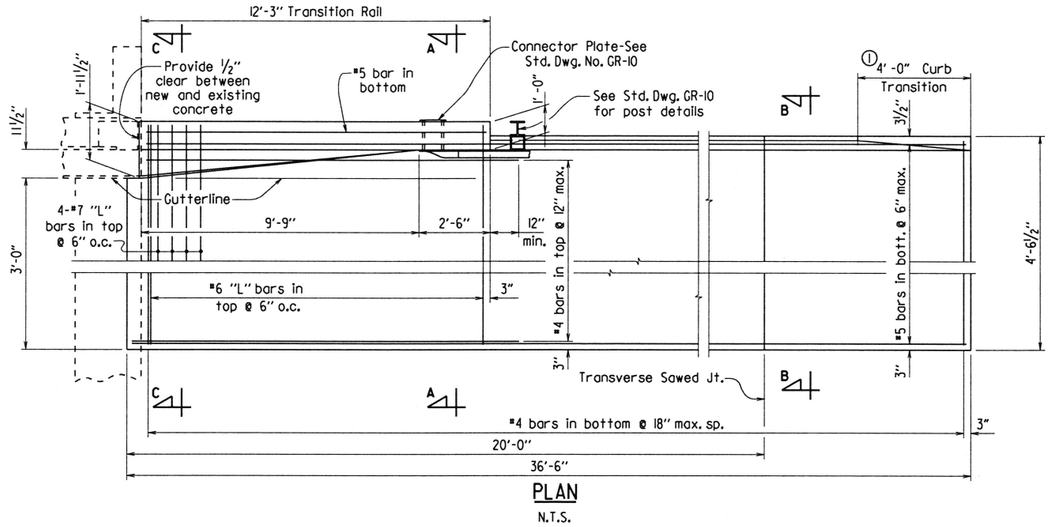
DRAWN BY: LJB DATE: 1-10-2017 FILENAME: b020573_br.dgn
CHECKED BY: BHS DATE: 2-16-17 SCALE: 1" = 20'
DESIGNED BY: LJB DATE: 1-2017

BRIDGE NO. 03592 DRAWING NO. 55870

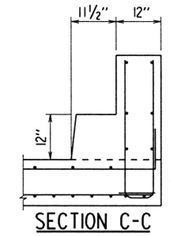
PRINT DATE: 2/16/2017

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.		020573	S0	S2

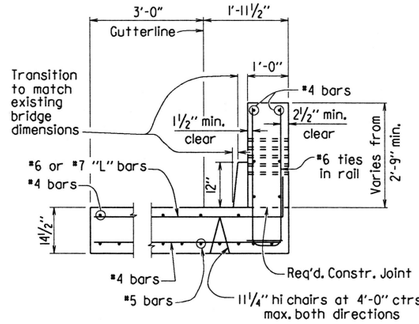
① 03593,03594 - APPR. GUTTERS - 55871



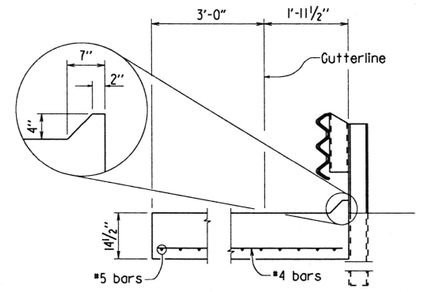
PLAN
N.T.S.



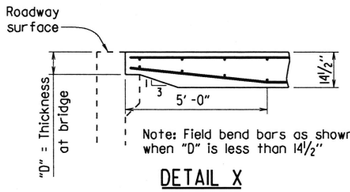
SECTION C-C
At end of Transition Rail
½" = 1'-0"



SECTION A-A
N.T.S.

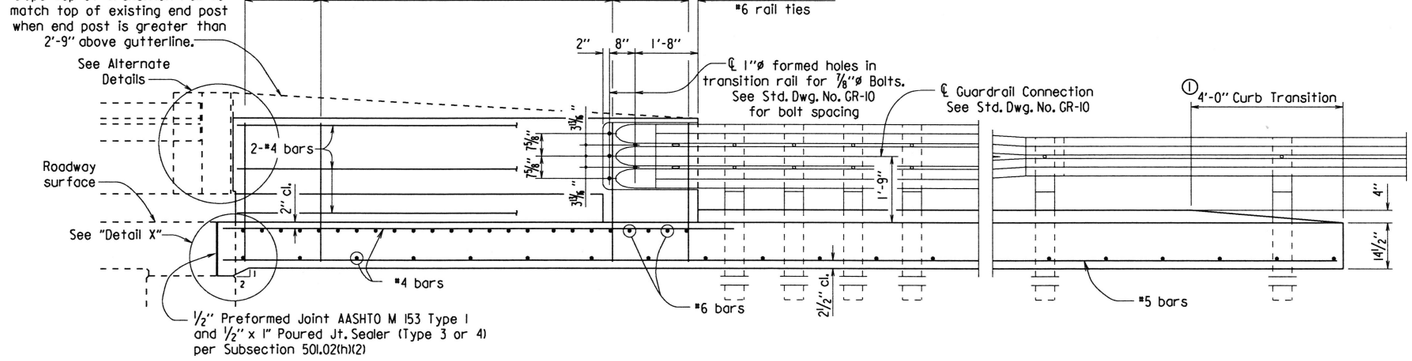


SECTION B-B
N.T.S.

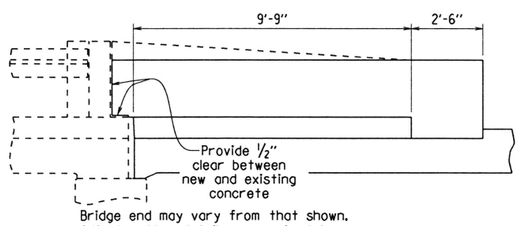


Note: Field bend bars as shown when "D" is less than 14½"

DETAIL X
⅜" = 1'-0"



LONGITUDINAL SECTION THRU GUTTER
½" = 1'-0"



Bridge end may vary from that shown. Adjust gutter details as required to provide similar railing transition.

ALTERNATE DETAILS
N.T.S.

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

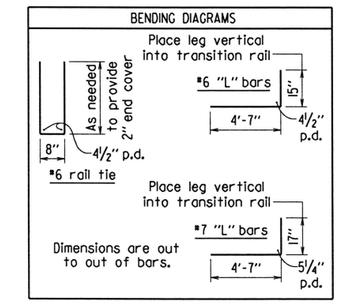
Construct curb full height (no height-transition) if drop inlet is used at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

(FOR INFORMATION ONLY)

Concrete	Reinforcing Steel
9.30 cu.yd.	980 lbs.

Eliminate or modify curb section to fit Bridge End Terminal. No additional payment will be made for eliminating or modifying curb section. See Roadway plans for location of Bridge End Terminals.



GENERAL NOTES

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

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

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
2-16-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS FOR TYPE SPECIAL APPROACH GUTTERS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 2-15-17 FILENAME: b020573_ag.dgn
CHECKED BY: EOR DATE: 2/16/17 SCALE: As Noted
DESIGNED BY: STD DATE: -

BRIDGE NO. 03593,03594 DRAWING NO. 55871

PRINT DATE: 2/16/2017

FED ROAD DIV. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
JOB NO.	020573			51	52

Right-of-Way - See Roadway Plans

N

N.B.C. Fence Post
N.B.C. Fence Post
N.B.C. Fence Post
P.I. Sta 406+00

Existing Fence (Typical)

Boggy Bayou

Frame Barn

N.B.C. P Pole
N.B.C. Fence Post
N.B.C. Fence Post
P.I. Sta. 415+12.1

P Pole 2 Wire

Private Drive

Garage

Exist. Timber Bridge

Toe of Fill Slope

Toe of Cut

P Pole 2 Wire

Top of Cut

7.74 mi. Jct. U.S. 65
Tangent Dist. over 500'

16'0" Crowned Section

℄ Bridge ℄ S 89°01' E

40'0" Bridge 2" Roadway Crown

40'0" Crowned Section

3.12 mi. to end of Section
Tangent Dist over 500'

Exist. U.S.C.E. Stream Gage

Test hole (typical)

Toe of Fill Slope

P Pole

P Pole 2 Wire

Tel. Pole & Wire

Toe of Fill Slope

PLAN

Note Contractor to remove existing 277.3'± Treated Timber Bridge with 4" Concrete deck overlay. Existing Roadway 18'± See Section 1006 of the Specifications. Construct a 225' detour bridge approx. 50' downstream, Deck Elev 134.0 See Special Provision 1008-1.

Total length of bridge = 275'-0"
11 - 25' R.C. Slab Spans

Level Grade . ℄ Deck Elev. 135.0'

Begin Bridge Sta 409+23.5

End Bridge Sta 411+30.0

Guard Fence- See Roadway Plans

Steel (10ga) or Aluminum (0.156") Plate Guard Bridge Railing & Concrete Posts

2'-8" High Water to low concrete

1'-4" ℄ Deck to low concrete

Elev. 136'±

Concrete Posts

3-25 piles

Firm brown sandy clay-Moist

Med. firm gray clay. Face of Sand

Med. Comp. fine gray water bearing Sand

Comp. med. coarse gray water bearing Sand.

Sta 408+58 Rt 11'

Bent Nos.

Bridge Center Pile 12:12

3-30' piles

3-35' piles

3-45' piles

H.W. El. 131.0

W.L. El. 114.7 11-7-61

3-40 piles

El. 117.3

Med. firm brown sandy clay Line of

Med. comp. fine gray water bearing sand

3-35 piles

3-30 piles

Firm Brown Sandy Clay Alluvial

Med. firm gray clay Face of Sand

Med. comp. fine gray water bearing Sand

Comp. med. coarse gray water bearing Sand

Batter Center pile 1½:12

3-25 piles

Sta 411+50 Lt 10'

Sta. 410+41 Rt 18'

1 2 3 4 5 6 7 8 9 10 11 12

ELEVATION

Drainage Area - 157 sq. mi.
C = 0.25

408 409 410 411 412

GENERAL NOTES

Bench Mark - Iron pin marked 402 East End of Bridge 45' South Highway No. 4. Elevation 130.31.

All piling to be 16" Octagonal Precast Concrete Piles driven to a minimum bearing capacity of 2. tons per pile, and a minimum penetration of 20 feet below the natural ground line.

Lengths of piling shown are assumed for estimating quantities only; actual lengths to be determined in the field. Drive one 35 ft. test pile in Bent No. 2 and 11 and one 50 ft. test pile in Bent No.7.

For details of 25' R. C. Slab Spans see Drawing No. 5463-E.

For details of Pile Bents see Drawing No. 5463-F

Riprap Bridge ends with concrete removed from existing deck as directed by the Engineer. All remaining concrete shall be disposed of in a manner set forth in the Specifications.

Loading:	H-15	AASHO 1957
Stresses:	Class B Concrete (n=10)	1,200 psi
	Reinforcing Steel	20,000 psi

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, with designated Special Provisions

FOR INFORMATION ONLY

LAYOUT OF BRIDGE OVER BOGG BAYOU CANAL 43, BOGGY & LITTLE BOGGY BAYOU BRIDGES & APPROACHES DESHA COUNTY ROUTE 4 SEC. 17

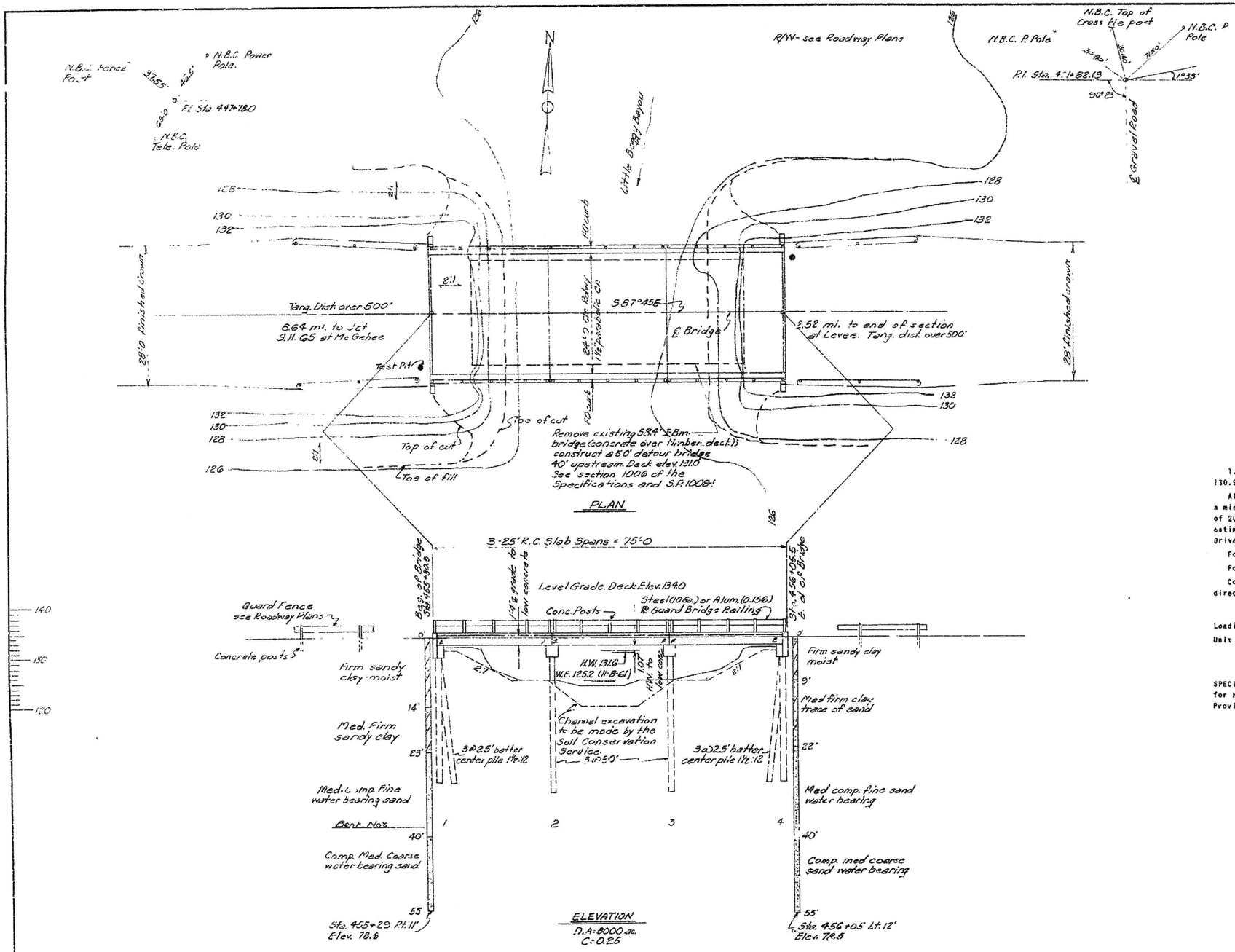
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: C.E.V. DATE: 11-29-61
TRACED BY: DATE:
CHECKED BY: E.R.B. DATE: 11-30-61
SCALE: 1"=20'

BRIDGE NO. 3593 DRAWING NO. 11715

K. Pierson
BRIDGE ENGINEER

FED. ROAD NO.	STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6				
JOB NO.	020573	52	52	



GENERAL NOTES

1.B.N.- Nail in Side of telephone pole 32' Rt. Station 450+53, Elevation 130.90

All piling to be 16" Octagonal Precast Concrete [illegible] driven to a minimum bearing capacity of 36 tons per pile and [illegible] penetration of 20' below natural ground line. Lengths of piling [illegible] are assumed for estimating purposes only. Actual lengths to be determined in the field. Drive one 35' test pile in Bent No. 2.

For Superstructure Details see Dwg. No. 5463-E.

For Substructure Details see Dwg. No. 5463-F.

Concrete removed from existing deck to be placed at bridge ends as directed by the Engineer.

Loading: H-15 AASHO 1957

Unit Stresses: Class S Concrete (n=10) 1,200 psi
Reinforcing Steel 20,000 psi

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, and designated Special Provisions.

FOR INFORMATION ONLY

LAYOUT OF BRIDGE OVER LITTLE BOGGY BAYOU CANAL 43, BOGGY & LITTLE BOGGY BAYOU BRIDGE & APPROACHES

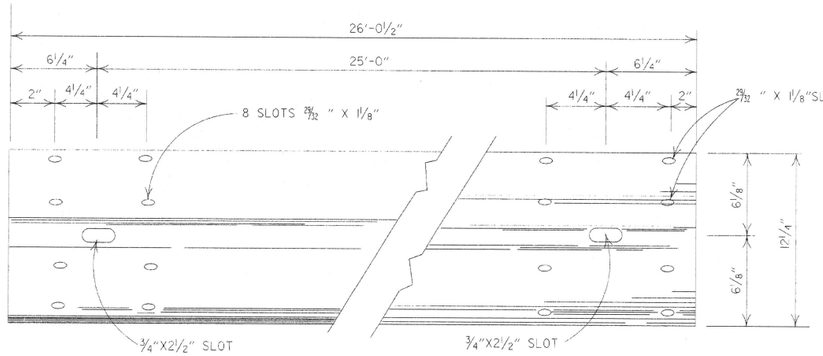
DESHA COUNTY
ROUTE 17 SEC. 4

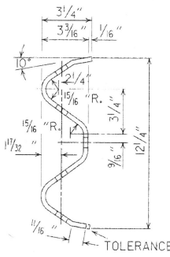
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: E.R.B. DATE: 11-30-61
TRACED BY: DATE:
CHECKED BY: C.E.V. DATE: 12-30-61
SCALE: 1"=10'-0"

BRIDGE ENGINEER

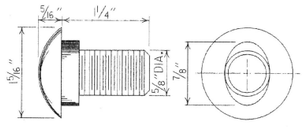
BRIDGE NO. 3594 DRAWING NO. 11716



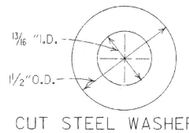


DETAILS OF W-BEAM GUARD RAIL

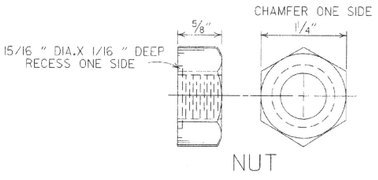
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



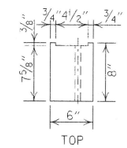
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

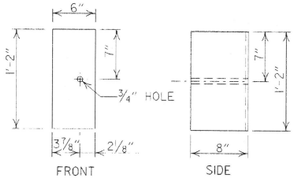


NUT



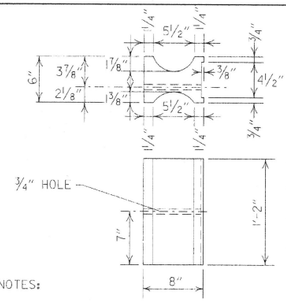
TOP

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



FRONT SIDE

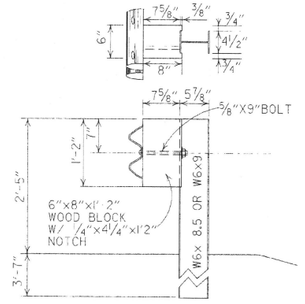
WOOD BLOCKOUT (W-BEAM)



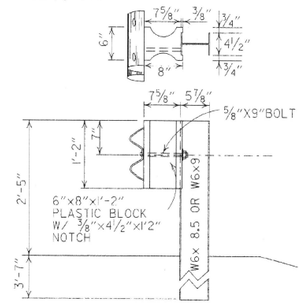
NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)

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

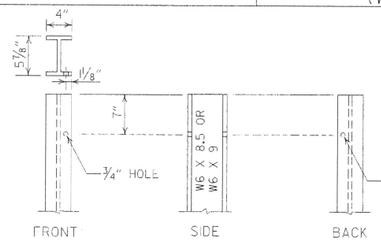


WOOD BLOCKOUT CONNECTIONS

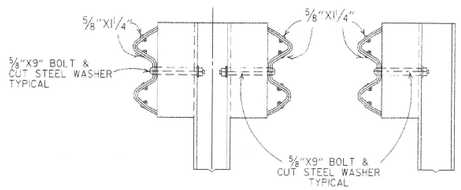


PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



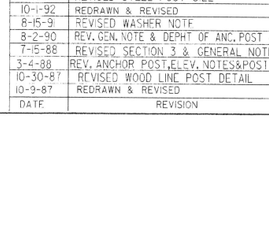
STEEL POST



TYPE "B" TYPE "A"

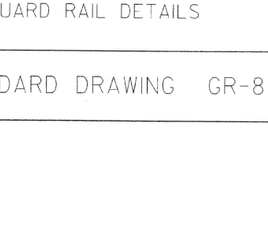
DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

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 9.7f (1400 f) OR NO.1 1350 f SOUTHERN PINE.

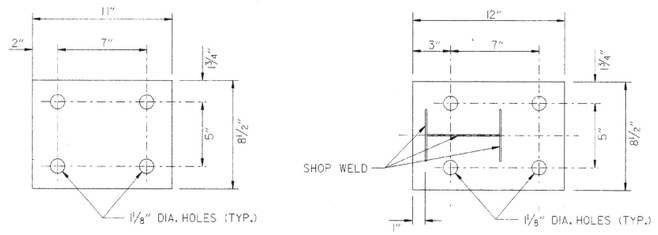
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

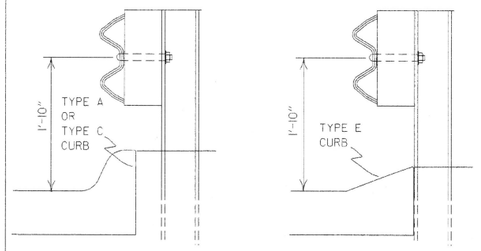
STANDARD DRAWING GR-8



WASHER PLATE

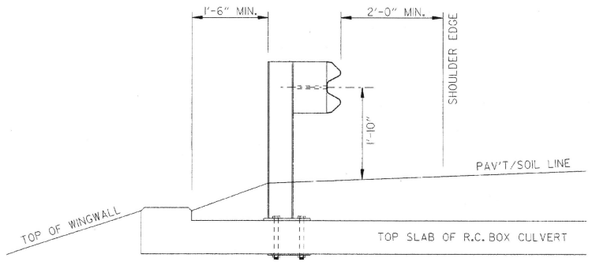
BASE PLATE

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

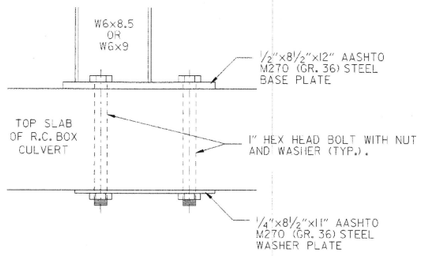


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

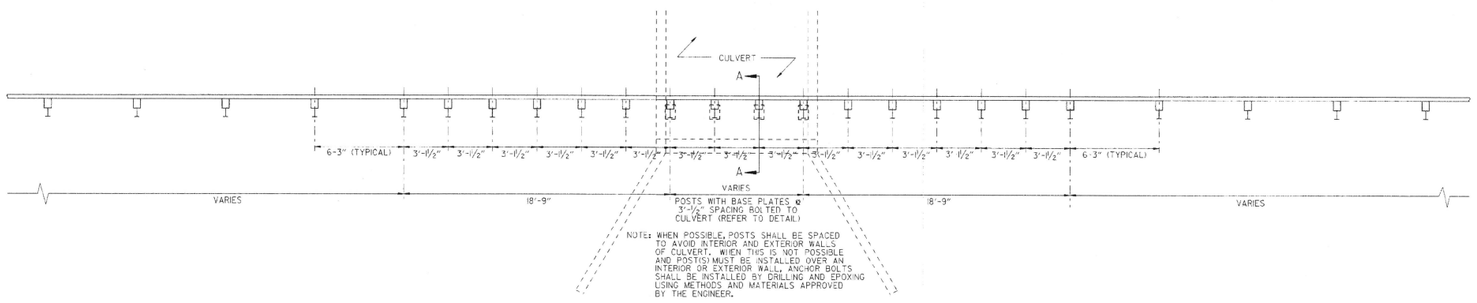
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



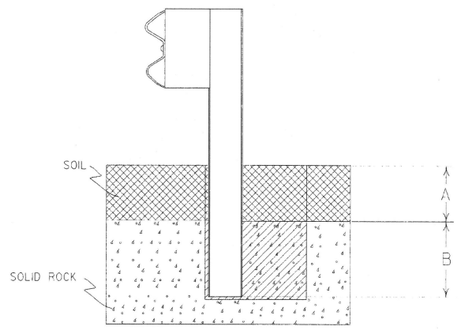
DETAIL OF CONNECTION



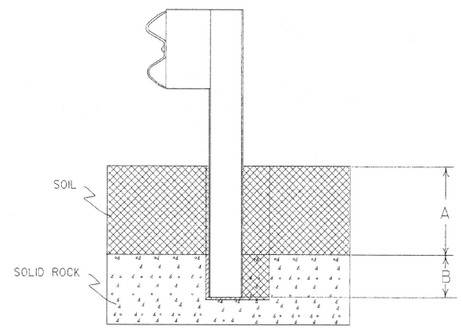
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

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

Case 1

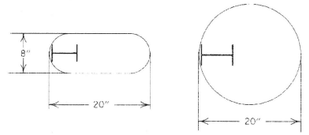


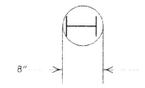
Case 2



Plan View Steel Posts

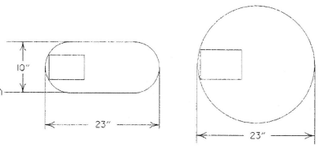
Either hole configuration acceptable

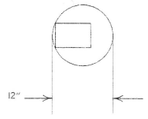




Plan View Wood Posts

Either hole configuration acceptable





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

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

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

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

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

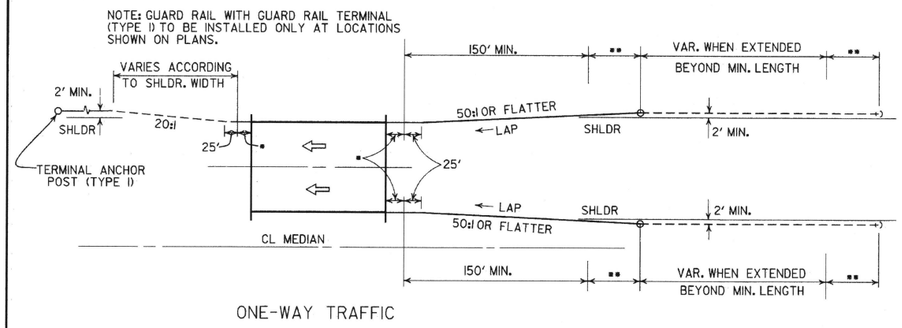
DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
8-12-98	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
1-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87

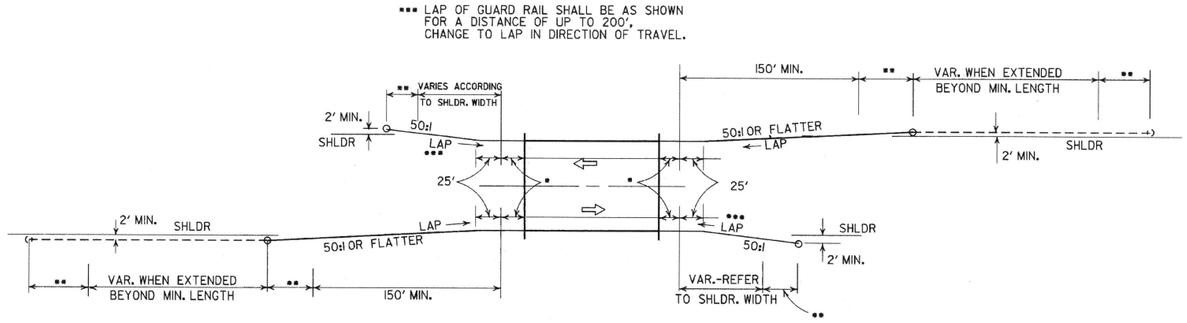
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8A



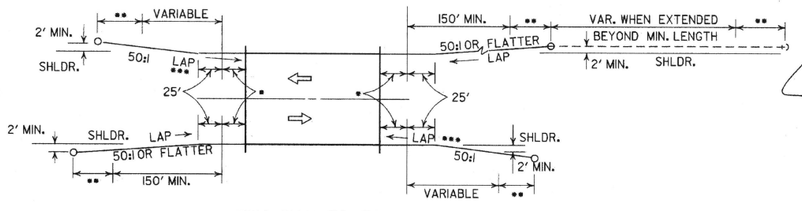
ONE-WAY TRAFFIC



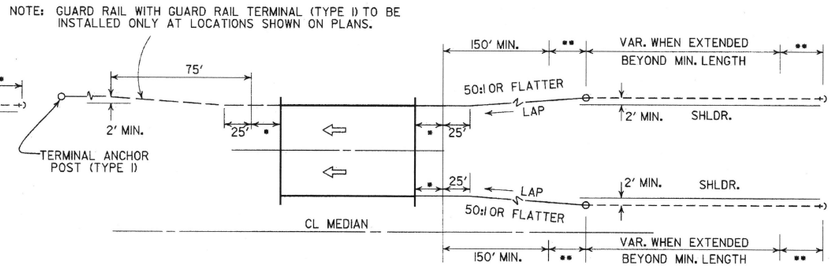
TWO-WAY TRAFFIC

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

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



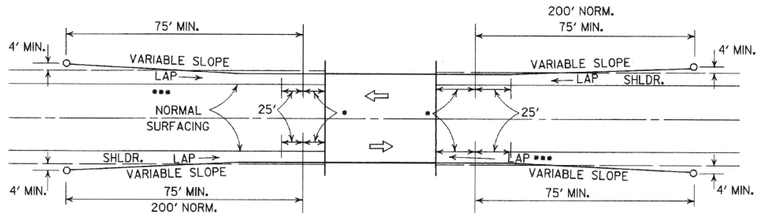
TWO-WAY TRAFFIC



ONE-WAY TRAFFIC

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

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



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

LEGEND

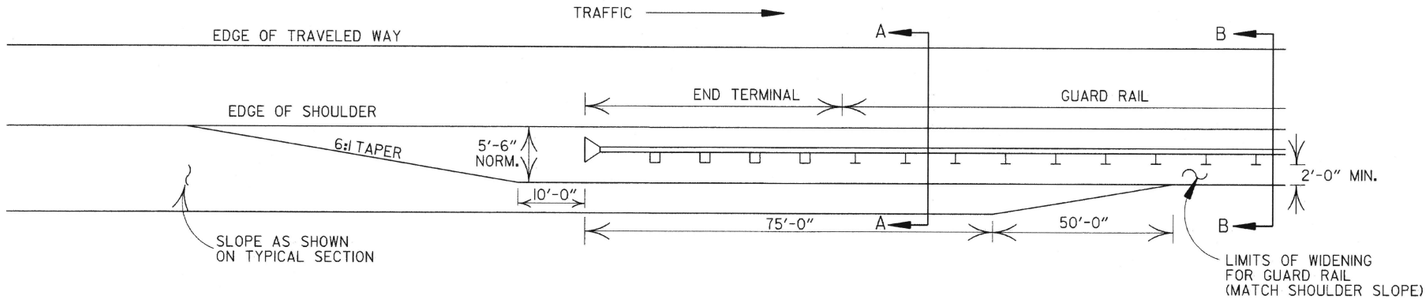
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

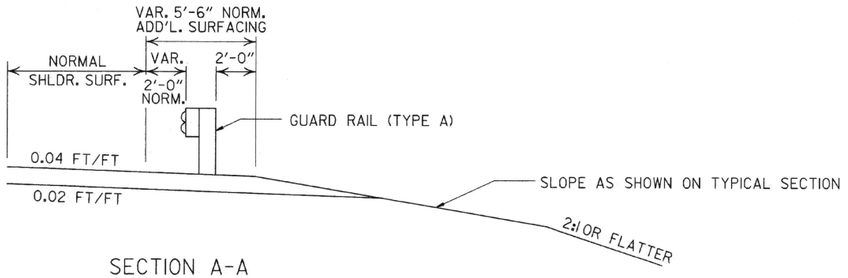
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87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

ARKANSAS STATE HIGHWAY COMMISSION

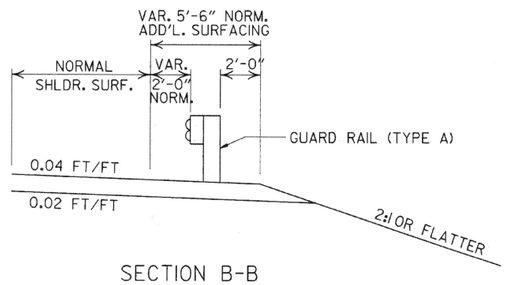
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





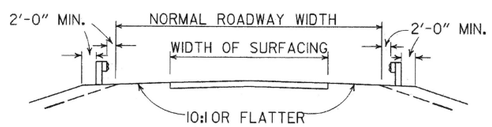
SECTION A-A



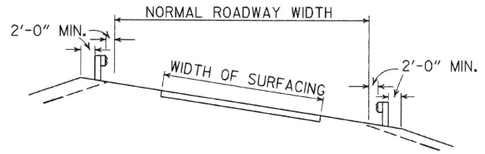
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

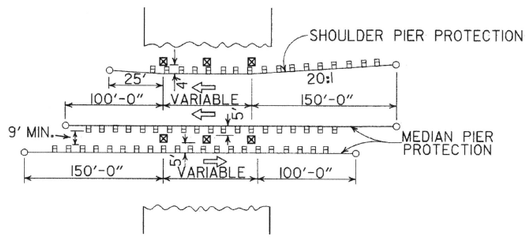


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



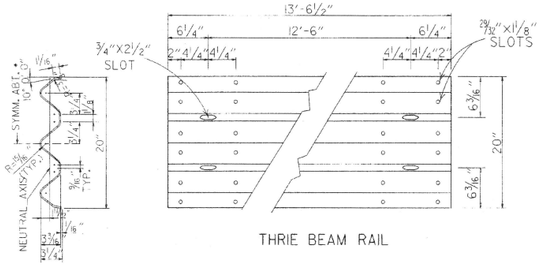
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

ARKANSAS STATE HIGHWAY COMMISSION

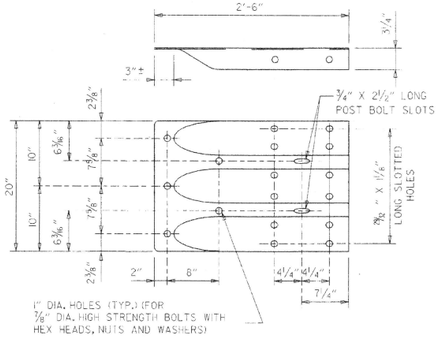
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A



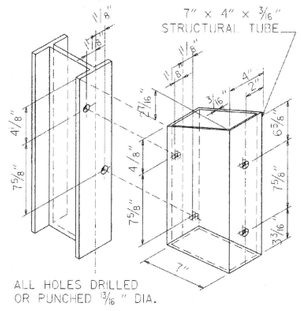
THRIE BEAM RAIL

SECTION THRU
THRIE BEAM RAIL



1" DIA. HOLES (TYP.) (FOR 7/8" DIA. HIGH STRENGTH BOLTS WITH HEX HEADS, NUTS AND WASHERS)

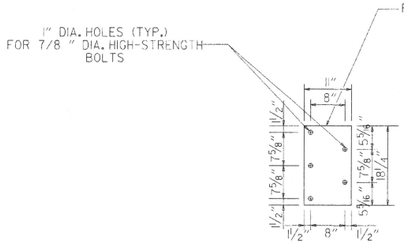
SPECIAL END SHOE



ATTACH BLOCKOUT TO POST USING 5/8" DIA. HEX HEAD BOLTS WITH 1 1/2" O.D. CUT STEEL WASHERS AND NUT.

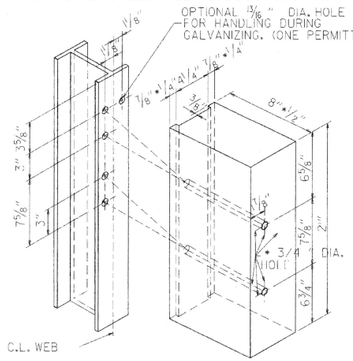
ALL HOLES DRILLED OR PUNCHED 3/16" DIA.

STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



CONNECTOR PLATE

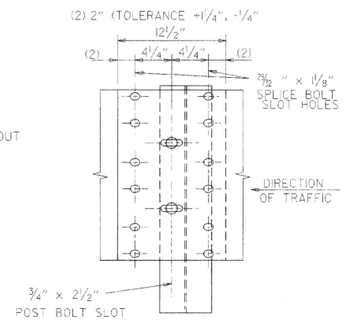
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING 7/8" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



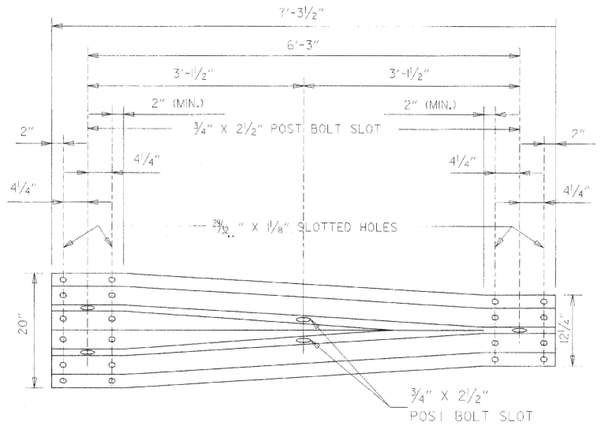
ALL HOLES 3/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD
OR PLASTIC BLOCKOUTS

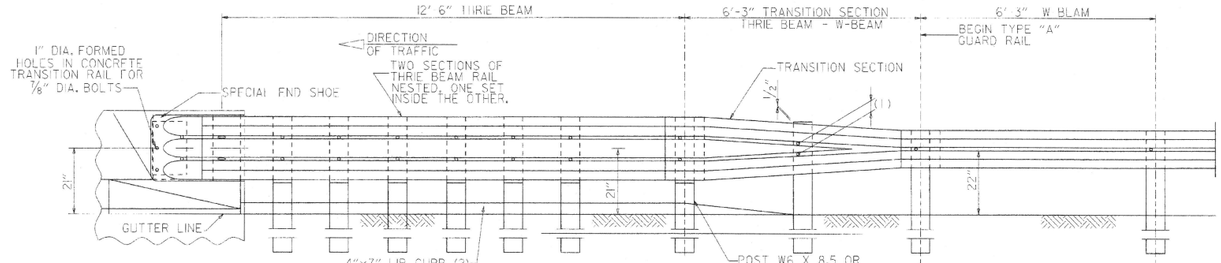
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



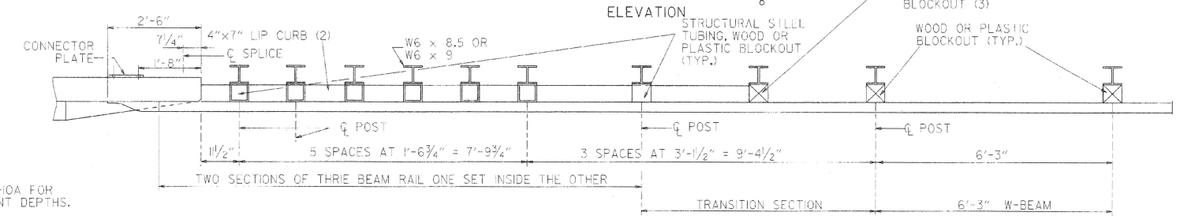
THRIE BEAM RAIL
SPLICE AT POST



TRANSITION SECTION

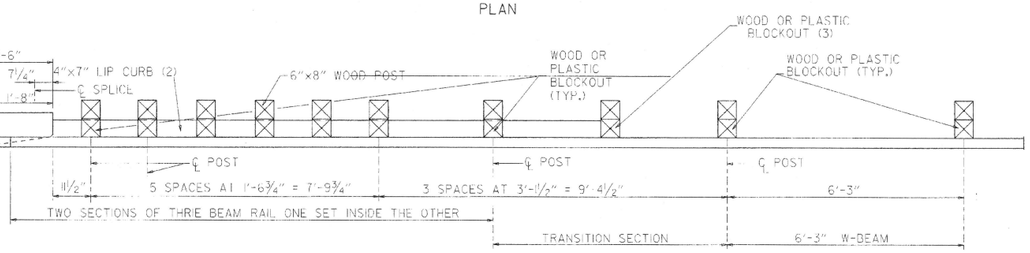


ELEVATION



PLAN

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



PLAN

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

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

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

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 3/4" BEYOND IT.

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

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

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

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

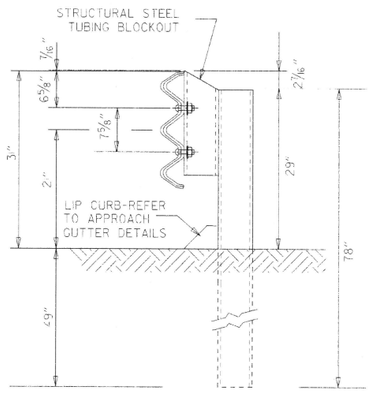
THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

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

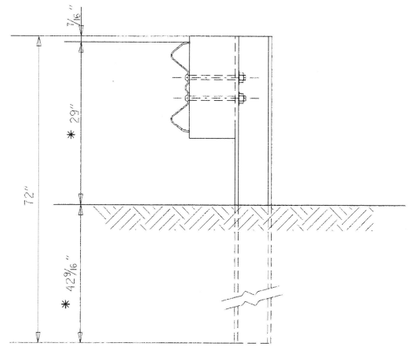
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10

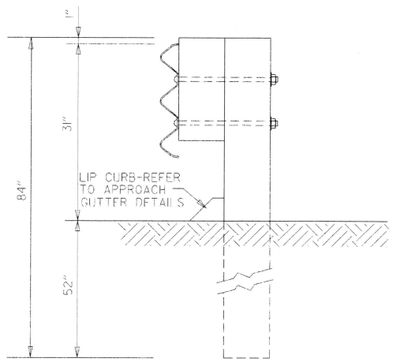


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

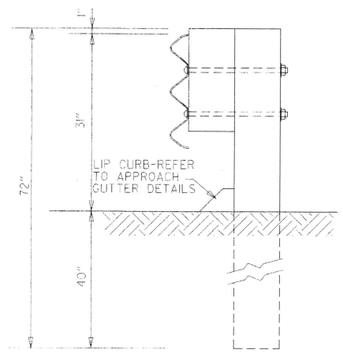


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

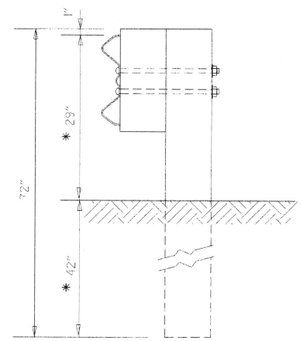
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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



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



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

GENERAL NOTES:

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

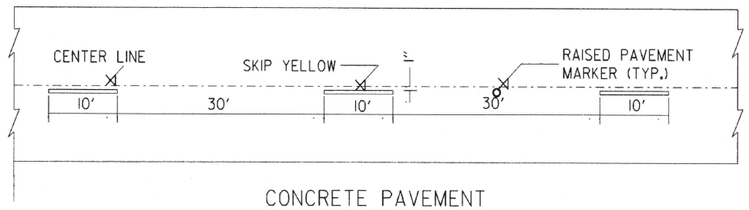
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 #) OR NO. 1 (1350 #) SOUTHERN PINE.

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	

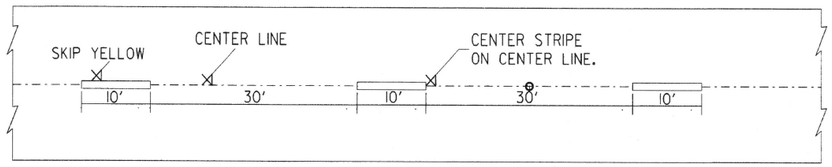
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

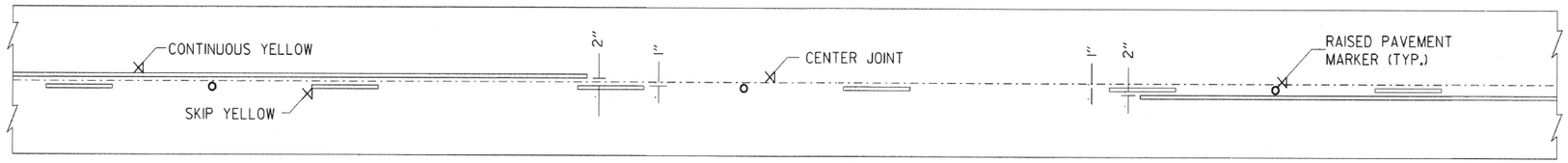


CONCRETE PAVEMENT

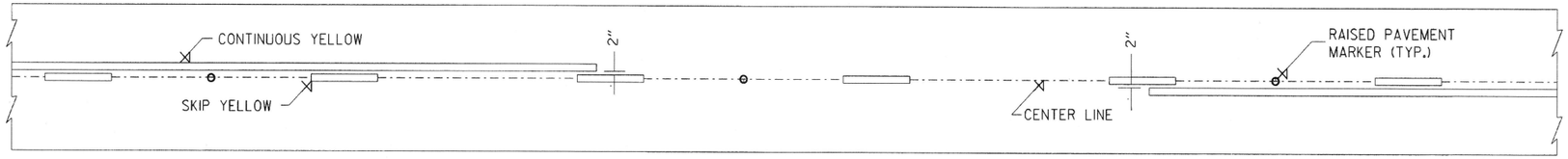


ASPHALT PAVEMENT

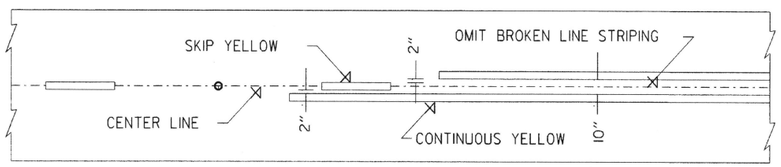
BROKEN LINE STRIPING



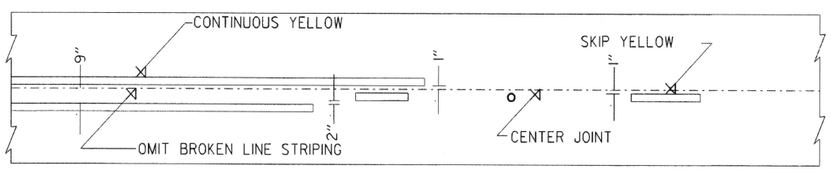
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

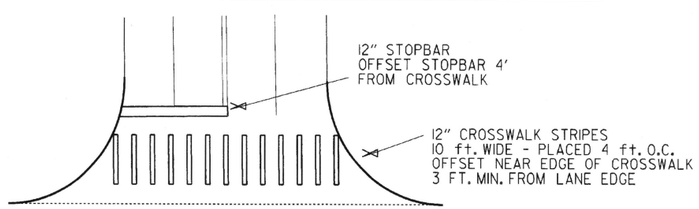


ASPHALT PAVEMENT



CONCRETE PAVEMENT

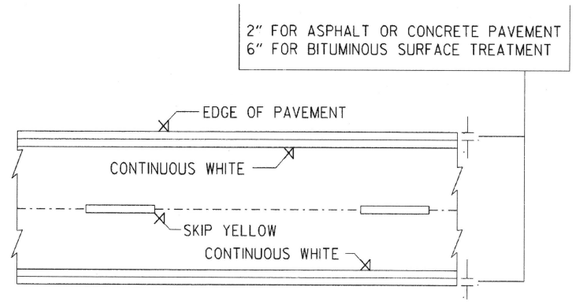
STRIPING AT ADJACENT NO PASSING LANES



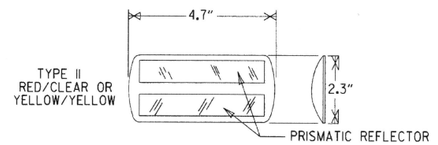
CROSSWALK AND STOPBAR DETAILS

NOTES:

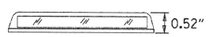
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



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

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
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

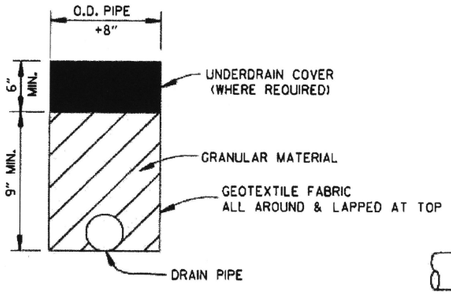
PAVEMENT MARKING DETAILS

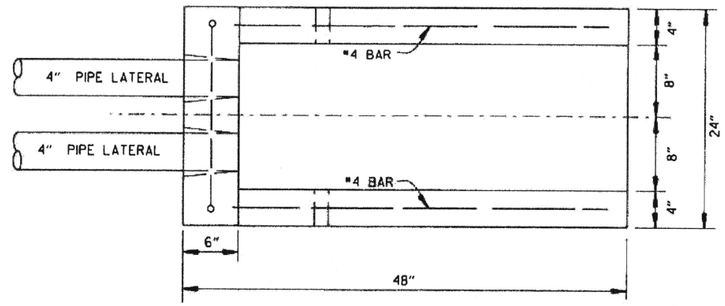
STANDARD DRAWING PM-1

NOTE:

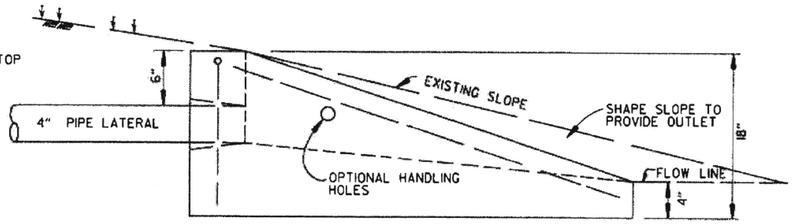
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

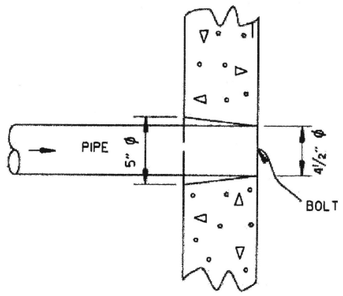




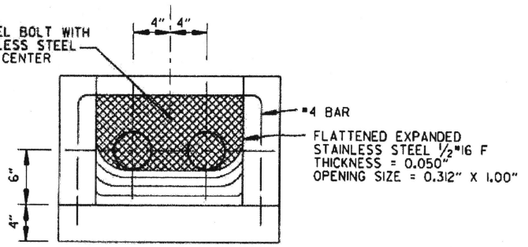
PLAN VIEW



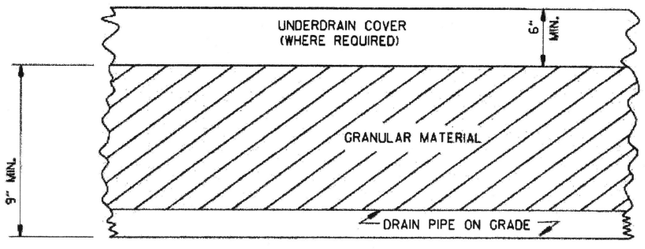
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE



FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE 1. 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.

2. 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." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED 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 (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

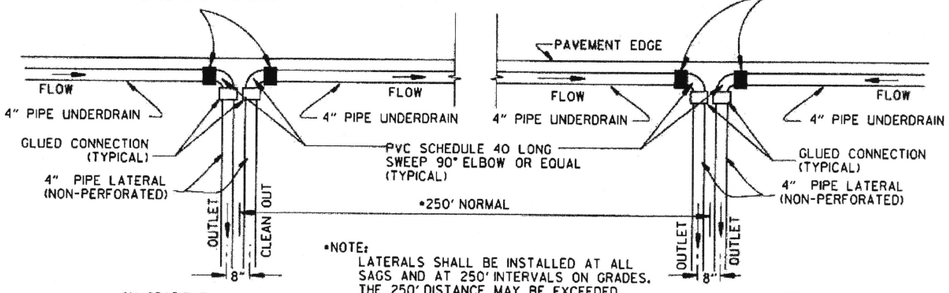
6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

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.

FERNCO 1056-44 (4" CI/PLASTIC) OR
FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC)
COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)

UNDERDRAIN OUTLET PROTECTORS

FERNCO 1056-44 (4" CI/PLASTIC) OR
FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC)
COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



ON GRADIENT

AT SAGS

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

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
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
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

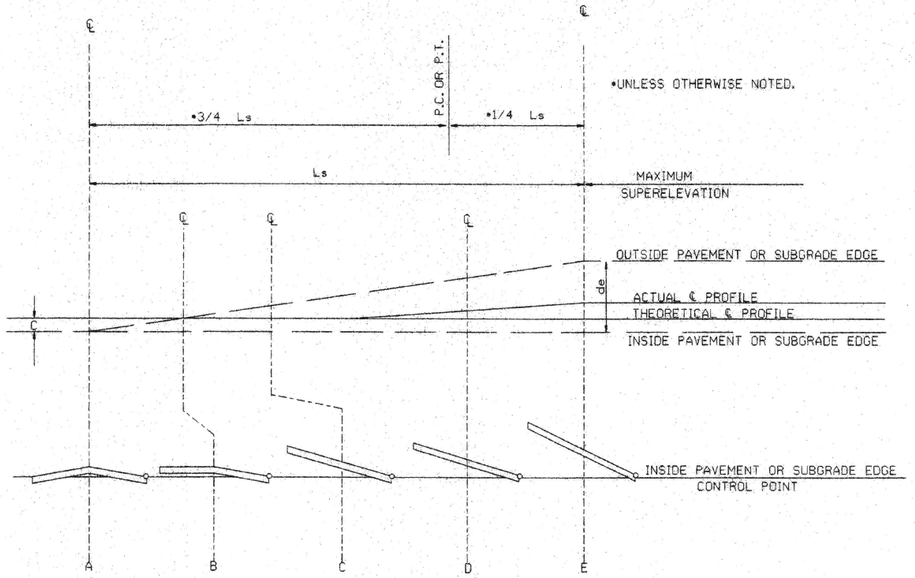
STANDARD DRAWING PU-1

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15′	N. C.			N. C.			N. C.			N. C.			N. C.			N. C.		
0° 30′	N. C.			N. C.			N. C.			N. C.			N. C.			N. C.		
0° 45′	N. C.			N. C.			R. C.			0.022			0.023			0.028		
1° 00′	N. C.			N. C.			0.021			0.026			0.030			0.037	275	300
1° 15′	N. C.			R. C.			0.026			0.032			0.037			0.046		
1° 30′	N. C.			0.021			0.031	200		0.037	225		0.043	250		0.054		
1° 45′	N. C.			0.025	175		0.036			0.043		300	0.049		300	0.062		
2° 00′	R. C.			0.028			0.040			0.048			0.055			0.070		
2° 15′	R. C.			0.031			0.045		250	0.053			0.061			0.078	300	350
2° 30′	0.021			0.034			0.049			0.058			0.067			0.085	315	
2° 45′	0.023			0.037		200	0.053			0.063			0.072			0.091	335	400
3° 00′	0.025	150		0.040			0.057			0.067	230		0.077	260		0.096	350	
3° 15′	0.027			0.043			0.061			0.072	245		0.082	275		0.098	360	
3° 30′	0.029			0.046			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45′	0.031			0.049			0.069	215		0.080	265		0.090	295				
4° 00′	0.033			0.051			0.072	225		0.083	270		0.093	305	350			
4° 30′	0.037			0.056			0.078	240		0.087	280		0.096	315				
5° 00′	0.040			0.061			0.083	250		0.091	295		0.098	320				
5° 30′	0.043			0.066	185		0.088	260		0.094	300	350						
6° 00′	0.046			0.070	190		0.092	270		0.096	305							
6° 30′	0.050			0.074	200		0.096	280	300	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	250	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	250															
21° 00′	0.098	215																
22° 00′	0.099	215																
23° 00′	0.099	215																
24° 00′	0.100	220																
	D MAX = 24° 45′			D MAX = 13° 15′			D MAX = 8° 15′			D MAX = 6° 30′			D MAX = 5° 15′			D MAX = 3° 30′		

ABBREVIATIONS

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

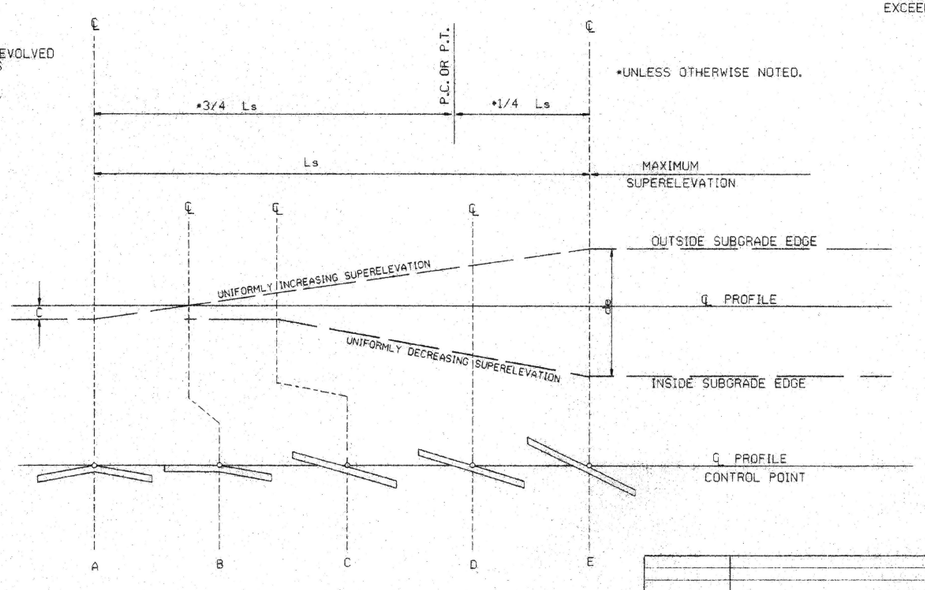
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

$$\text{SUPERELEVATION FORMULA} = \frac{Lde}{Ls}$$

DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-28-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

FILE STDSE2.DGN

R1-1



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



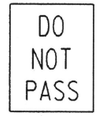
STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a



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

R4-1



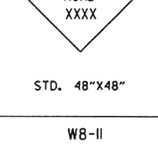
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



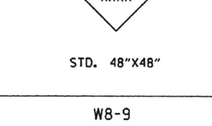
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



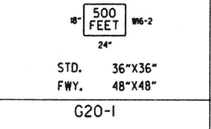
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



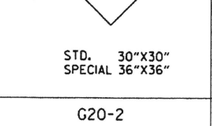
48"X30"

RII-3A



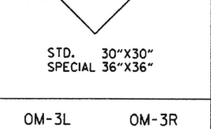
60"X30"

RII-4



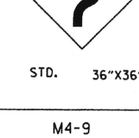
60"X30"

RSP-1



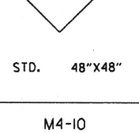
48"X30"

WI-1



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

WI-2



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

WI-3



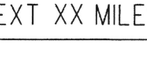
STD. 48"X48"

WI-4



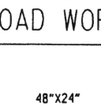
STD. 48"X48"

WI-6



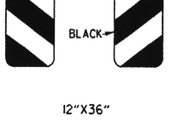
STD. 48"X24"
SPECIAL 60"X30"

WI-8



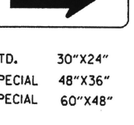
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



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

W9-2



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

WI3-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



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

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

WI-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11

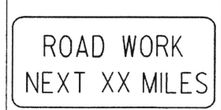
STD. 36"X36"
FWY. 48"X48"

W8-9



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

G20-1



60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

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

M4-10

48"X18"

R55-1

36"X60"

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

ADVANCE DISTANCES
(XXXX)

500 FT	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.

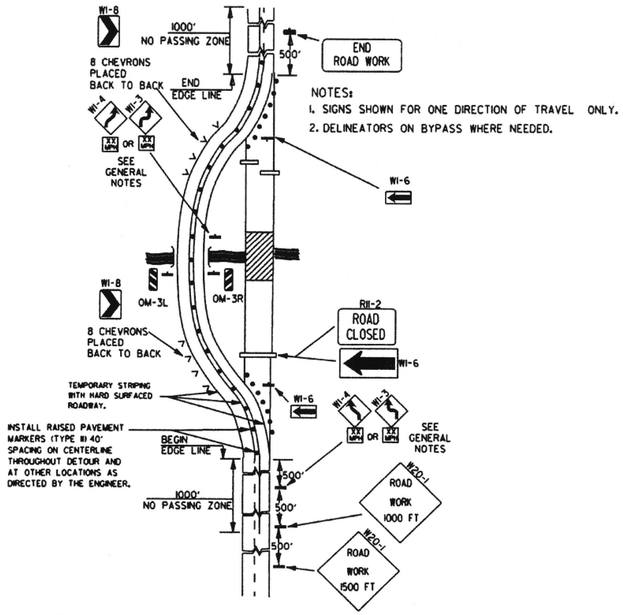
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

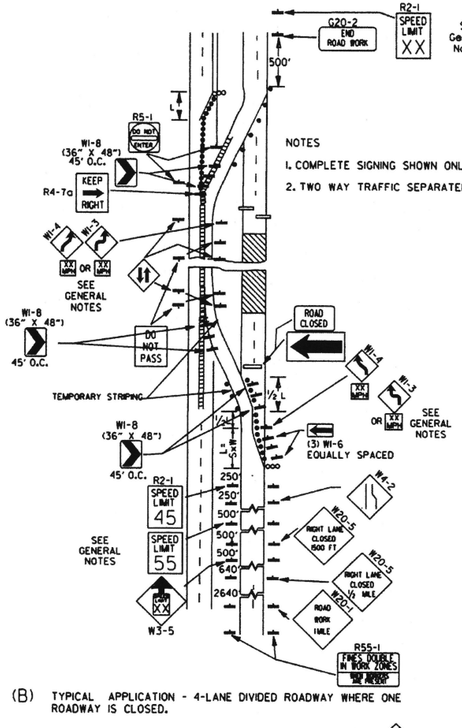
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

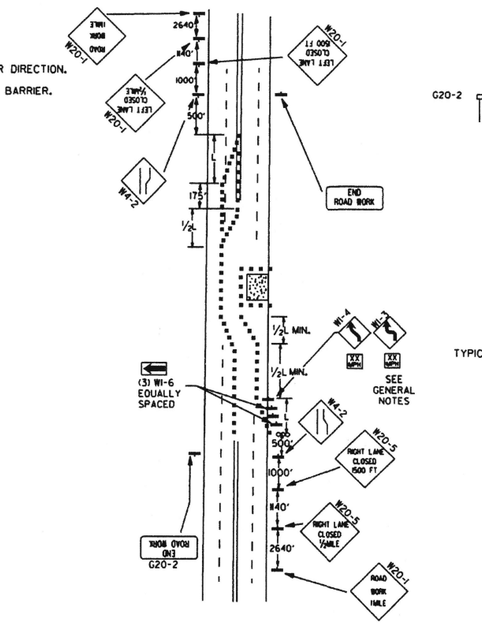
STANDARD DRAWING TC-1



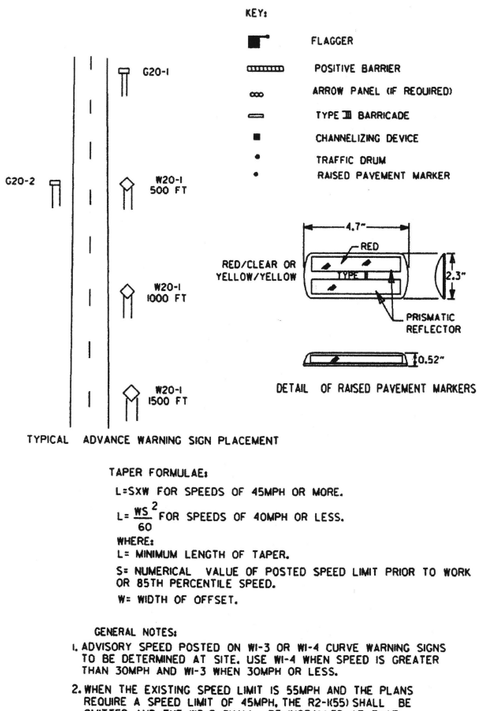
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



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



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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:

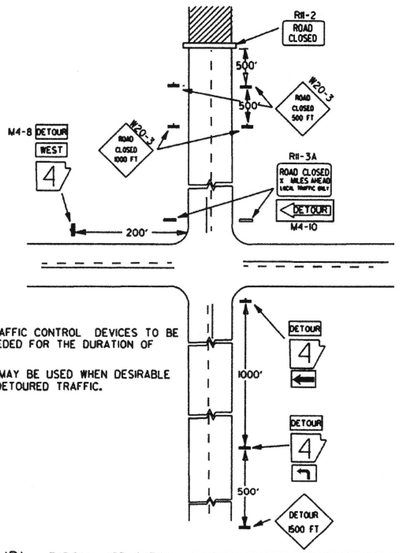
L= MINIMUM LENGTH OF TAPER.

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

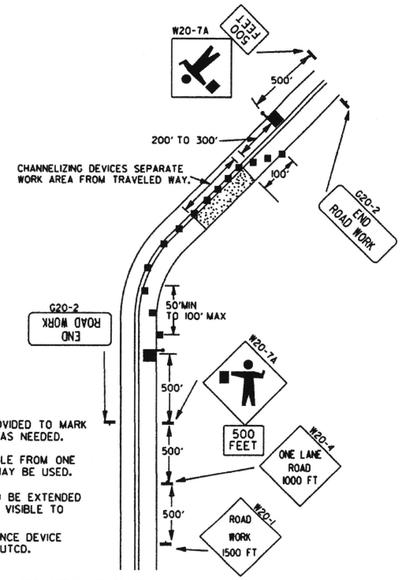
W= WIDTH OF OFFSET.

GENERAL NOTES:

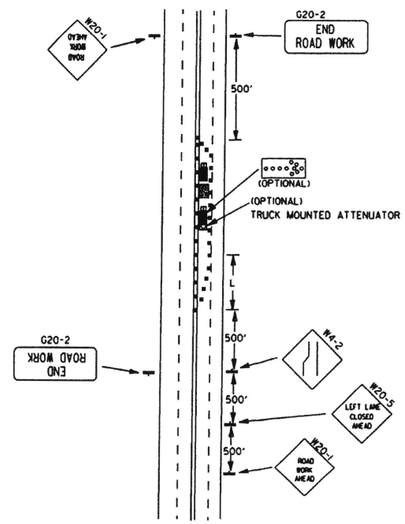
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED 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.



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



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



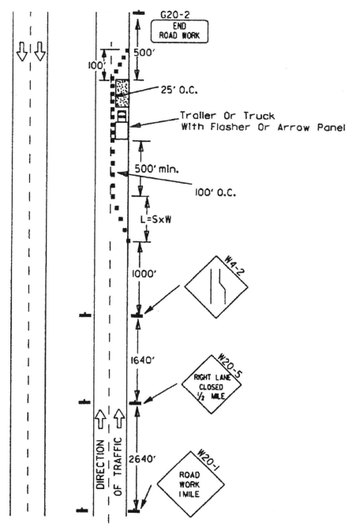
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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 (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

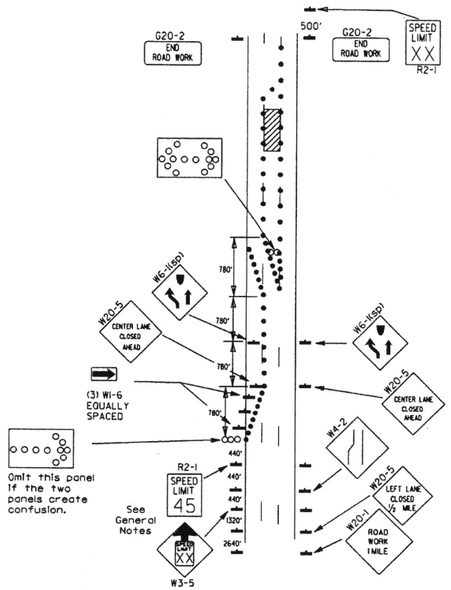
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

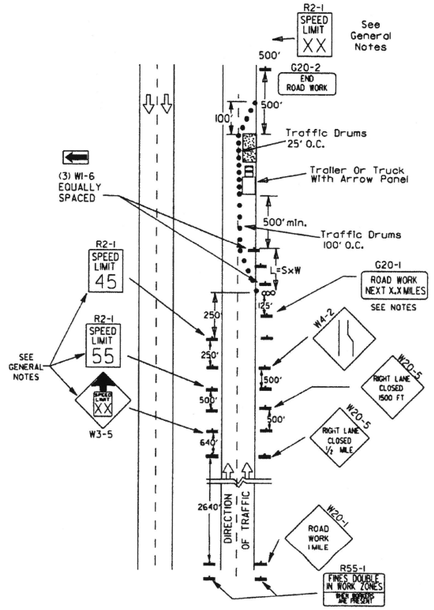
STANDARD DRAWING TC-2



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



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



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

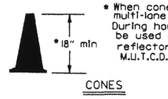
KEY:

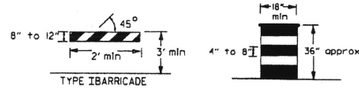
- ooo Arrow Panel (If Required)
- ■ Channelizing Device
- ● Traffic drum

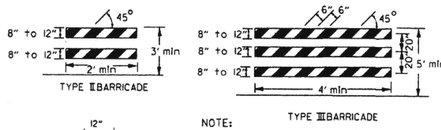
GENERAL NOTES:

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

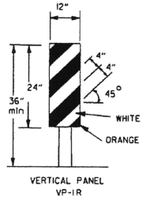
Channelizing devices



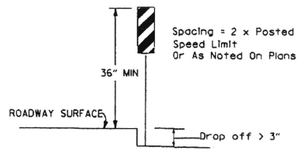


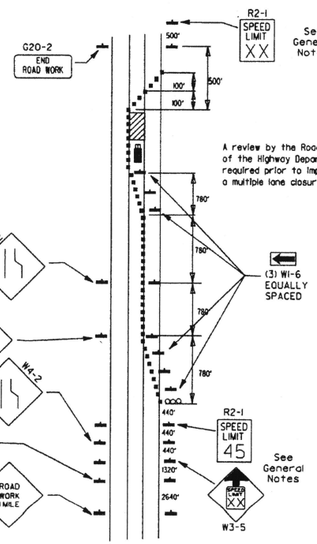


NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



VERTICAL PANEL PLACEMENT





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

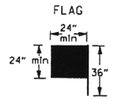
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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.

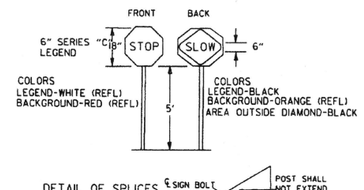
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

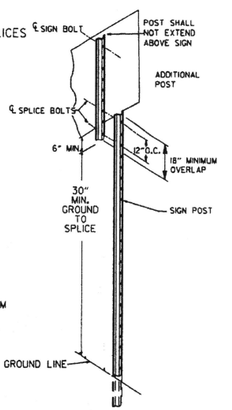


Flag shall be of good grade red material

STOP SLOW PADDLE



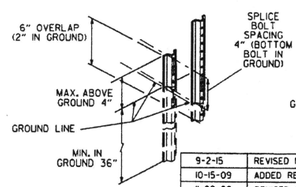
DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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	

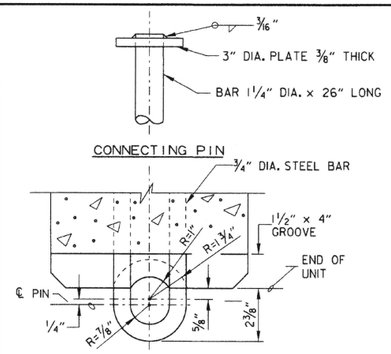
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

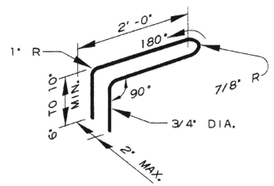
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

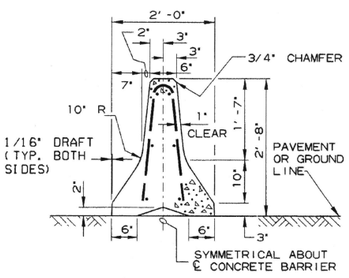
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2. TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ.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



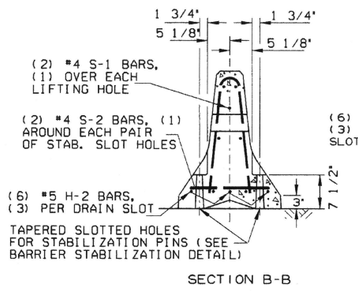
CONNECTION DETAILS



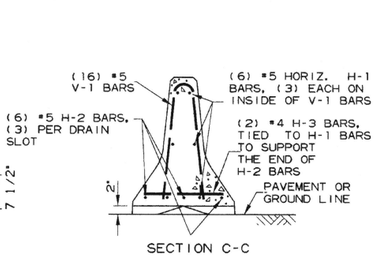
CONNECTION LOOP



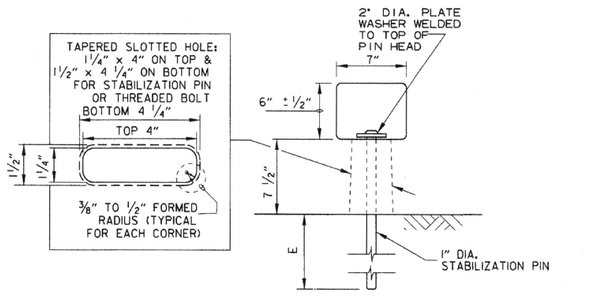
SECTION A-A



SECTION B-B



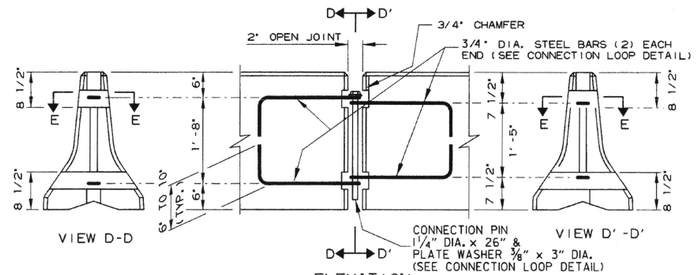
SECTION C-C



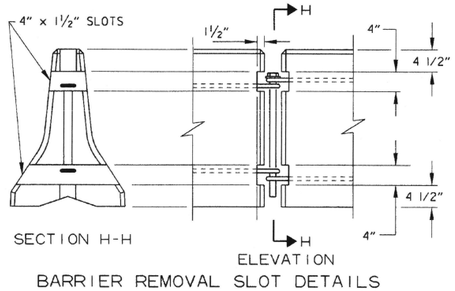
BARRIER STABILIZATION DETAIL

ROADWAY SECTION

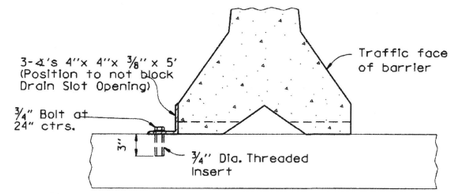
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



ELEVATION



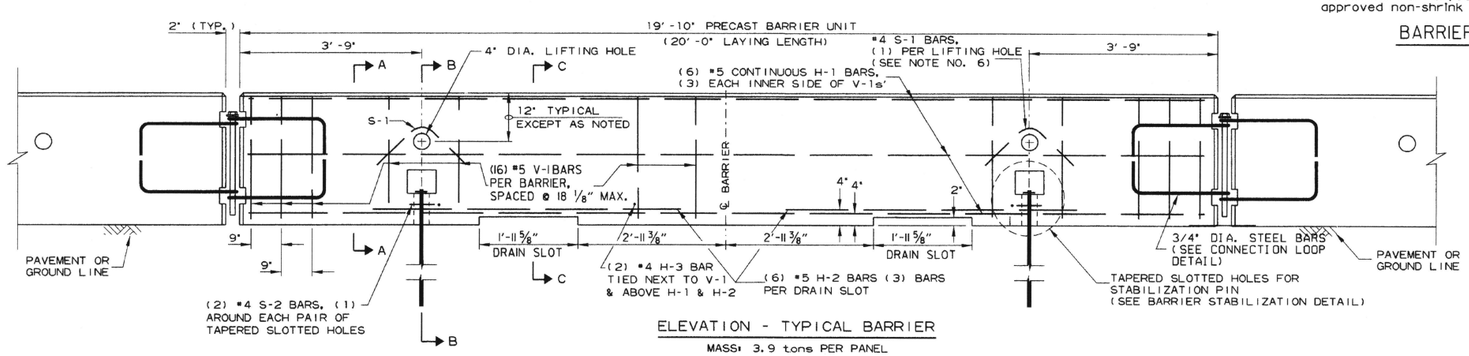
BARRIER REMOVAL SLOT DETAILS



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

BARRIER STABILIZATION DETAIL

BRIDGE DECKS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

(1) The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

(2) Materials shall meet the following minimum requirements:
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier wall is within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers.
Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

(3) Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

(4) Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

(5) Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

(6) A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

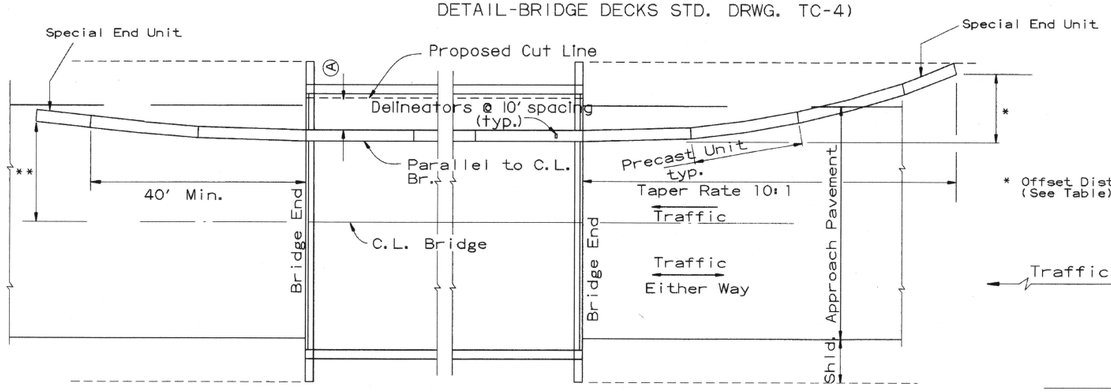
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

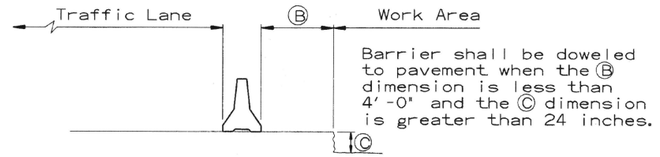
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

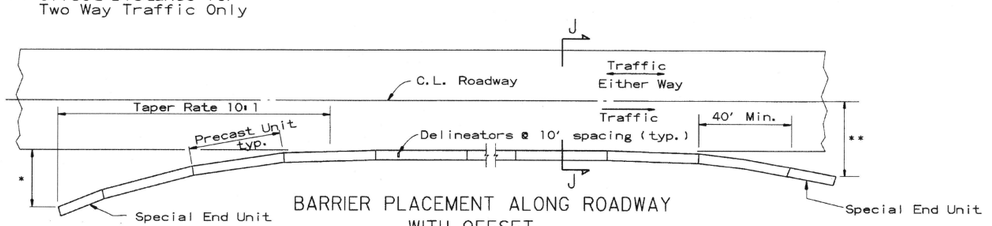


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

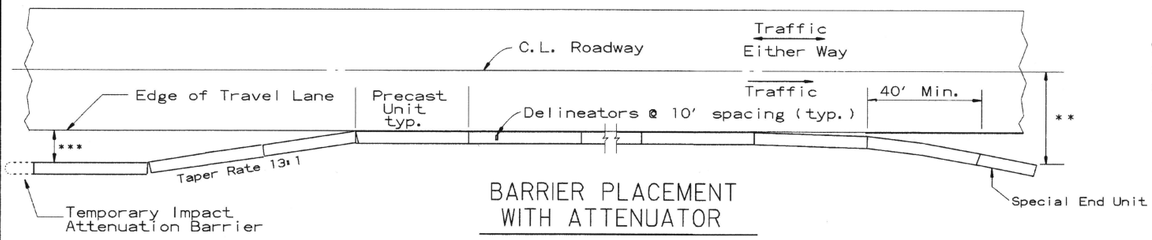
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

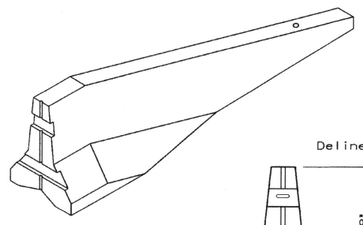


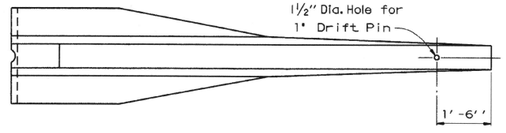
BARRIER PLACEMENT WITH ATTENUATOR

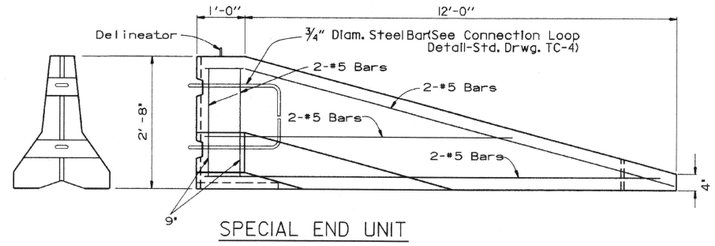
No Scale

** Offset Distance For Two Way Traffic Only

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







SPECIAL END UNIT

No Scale

General Notes

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

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

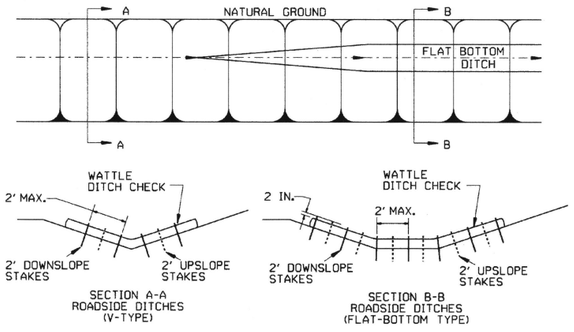
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

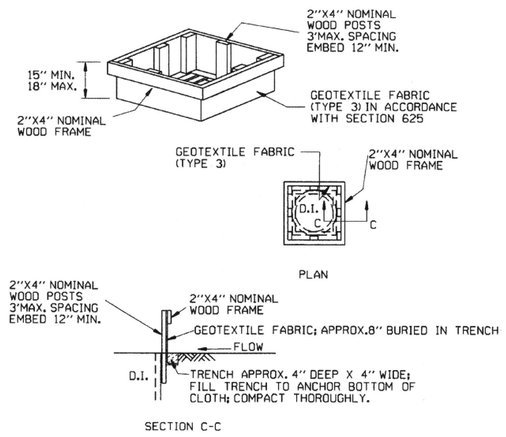
STANDARD DRAWING TC-5

GENERAL NOTES

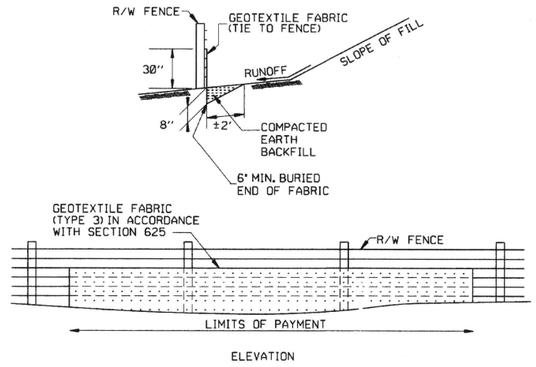
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

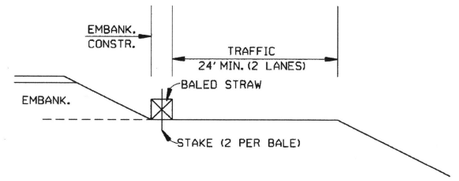
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

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

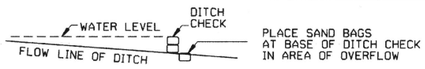
2. NO GAPS SHALL BE LEFT BETWEEN BALES.

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

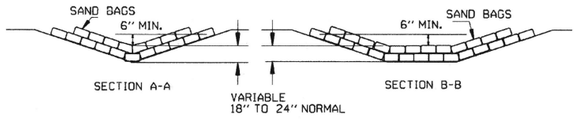


BALED STRAW FILTER BARRIER (E-2)

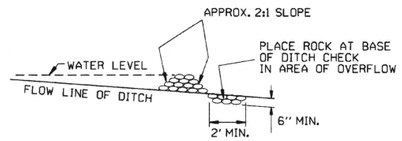
NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS.

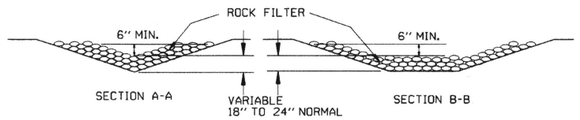


PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW

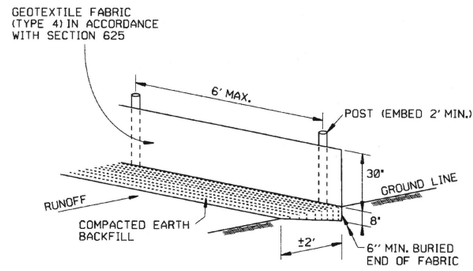


SAND BAG DITCH CHECK (E-5)





ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

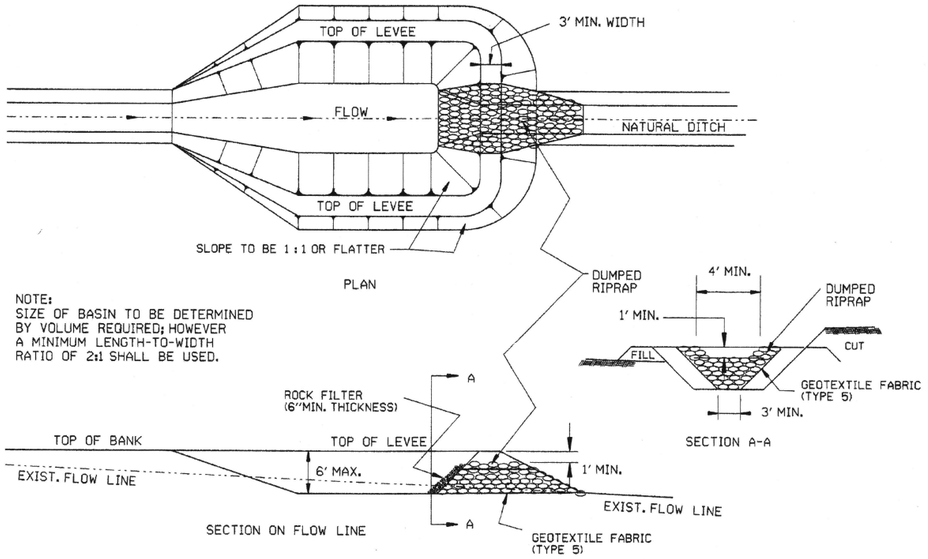
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

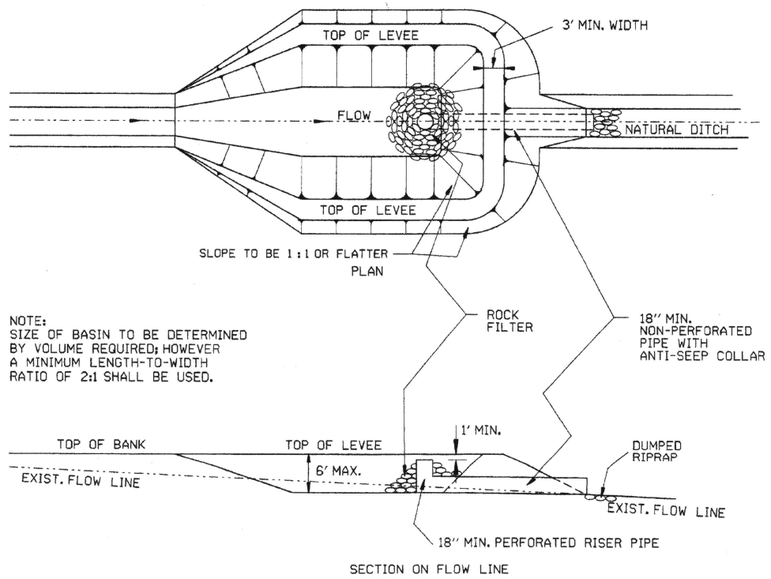
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

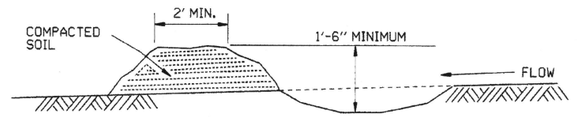
STANDARD DRAWING TEC-1



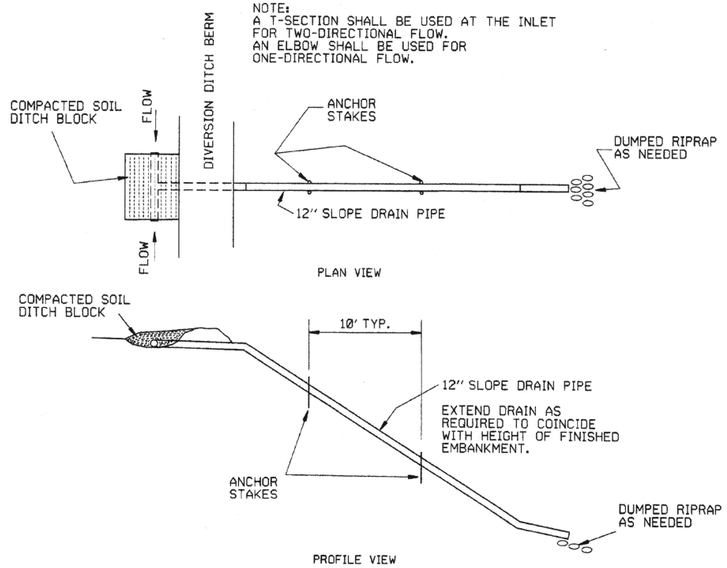
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



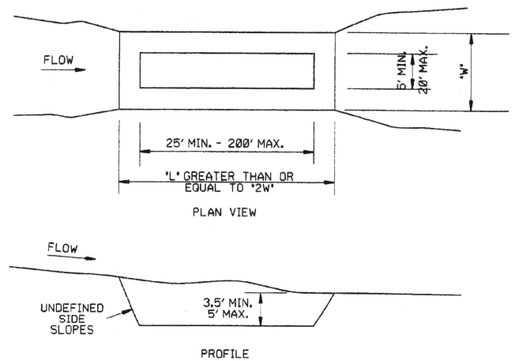
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

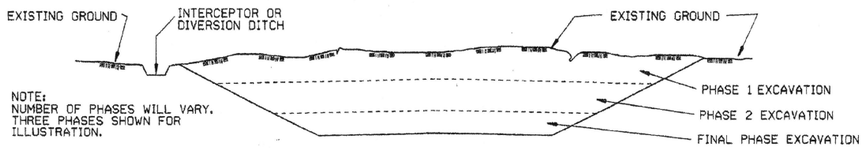
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



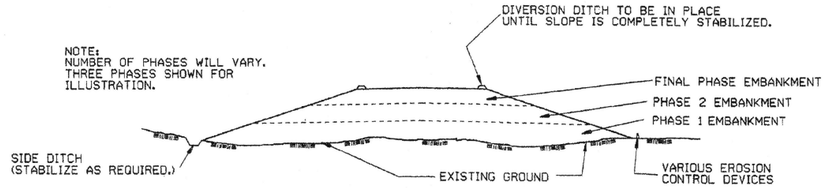
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

DATE	REVISION	FILMED
11-23-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

stdtec3.dgn