DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	1	60
				(2) HWY. 10 - HWY. 7 (SAFETY IMPVTS.) (SEL. SECS.) (S)				

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

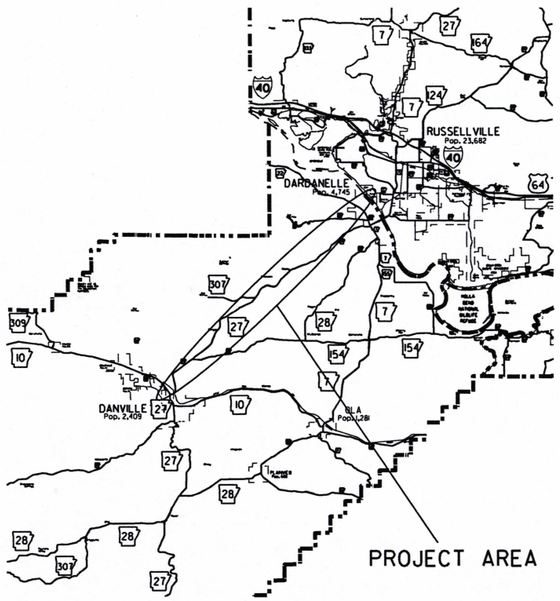
HWY. 10 - HWY. 7

(SAFETY IMPVTS.) (SEL. SECS.) (S)

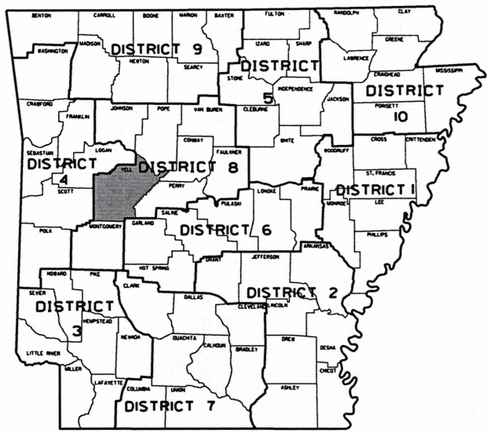
YELL COUNTY
ROUTE 27 SECTION 10

JOB 080495

FED. AID PROJ. STPR-HSIP-0075(35)

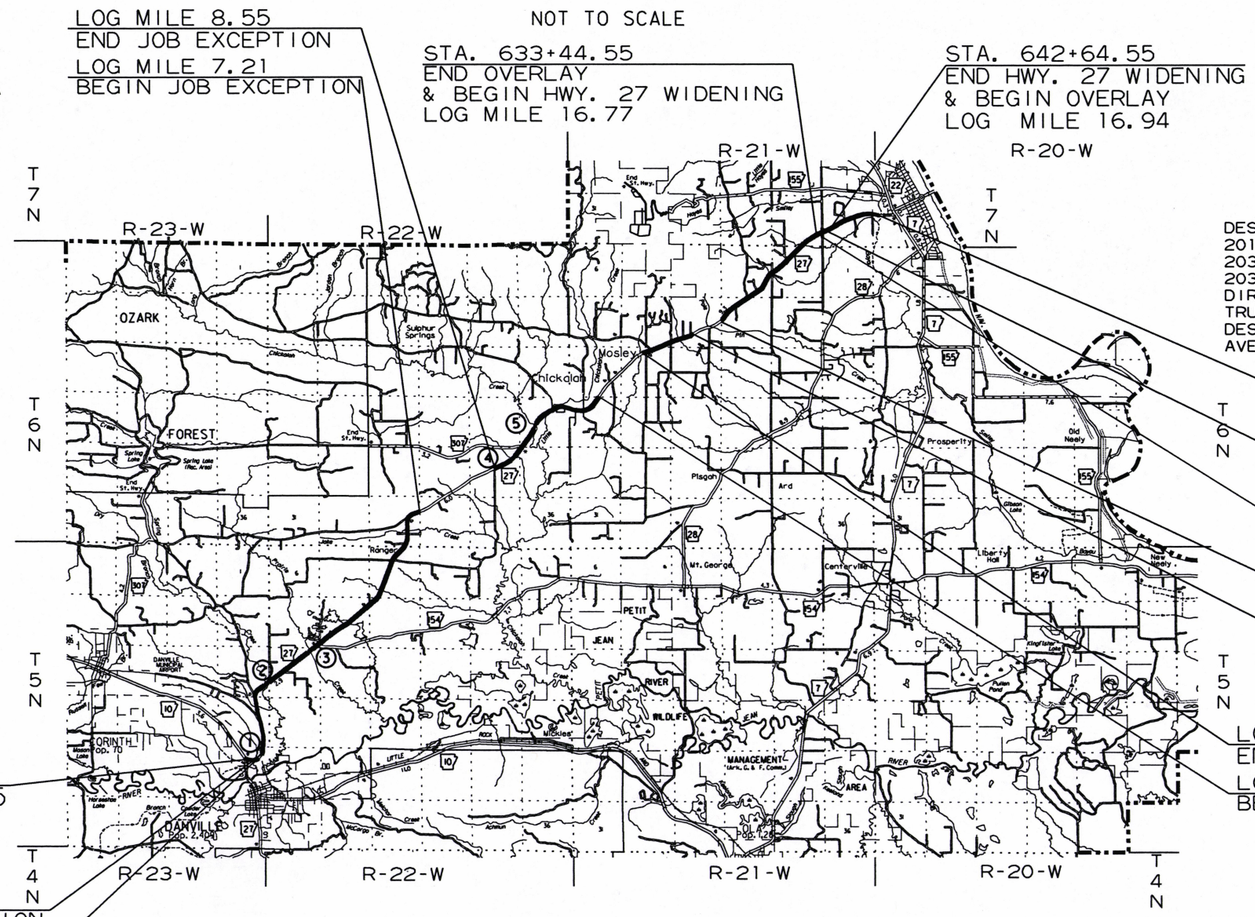


VICINITY MAP



ARK. HWY. DIST. NO. 8

NOT TO SCALE



BRIDGE DATA
(FOR INFORMATION ONLY)

(1) LOG MILE 0.32 RETAIN
BRIDGE NO. 02948
182'-2" THREE SPAN CONTINUOUS R.C. SLAB UNIT
(60',60',60')
24'-0" CLEAR ROADWAY

BRIDGE DATA

(2) LOG MILE 1.90 RETAIN & DECK SEAL
BRIDGE NO. 02949
168'-0" SIX SPAN CONTINUOUS R.C. SLAB UNIT
(28',28',28',28',28',28')
24'-0" CLEAR ROADWAY

(3) LOG MILE 2.98 RETAIN & DECK SEAL
BRIDGE NO. 02950
84'-0" THREE SPAN CONTINUOUS R.C. SLAB UNIT
(28',28',28')
24'-0" CLEAR ROADWAY

(4) LOG MILE 9.65 RETAIN & DECK SEAL
BRIDGE NO. 02951
252'-0" NINE SPAN CONTINUOUS R.C. SLAB UNIT
(28',28',28',28',28',28',28',28',28')
24'-0" CLEAR ROADWAY

(5) LOG MILE 10.17 RETAIN & DECK SEAL
BRIDGE NO. 02952
112'-0" FOUR SPAN CONTINUOUS R.C. SLAB UNIT
(28',28',28',28')
24'-0" CLEAR ROADWAY

DESIGN TRAFFIC DATA

	HWY. 27	LIBERTY ROAD
DESIGN YEAR	2039	2039
2019 ADT	5000	800
2039 ADT	6000	1000
2039 DHV	660	110
DIRECTIONAL DISTRIBUTION	0.60	0.60
TRUCKS	8%	2%
DESIGN SPEED	N/A	30 MPH
AVERAGE RUNNING SPEED	53 MPH	N/A

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°03'57"	N 35°09'07"	N 35°13'08"
LONGITUDE	W 93°23'51"	W 93°17'59"	W 93°10'10"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT		95568.00	FEET OR	18.100	MILES
NET : :	ROADWAY	79215.84	:	15.003	MILES
NET : :	BRIDGES	616.00	:	0.117	MILES
NET : :	PROJECT	79833.60	:	15.120	MILES

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7636
M.E. BANKS

10-1-19

DEPUTY DIRECTOR
AND CHIEF ENGINEER

12/19/2017

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	2	60

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

INDEX OF SHEETS

SHEET NO.		TITLE
1		TITLE SHEET
2		INDEX OF SHEETS AND STANDARD DRAWINGS
3		GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 -	9	TYPICAL SECTIONS OF IMPROVEMENT
10 -	14	SPECIAL DETAILS
15 -	18	TEMPORARY EROSION CONTROL DETAILS
19 -	23	MAINTENANCE OF TRAFFIC DETAILS
24		PERMANENT PAVEMENT MARKING DETAILS
25 -	34	QUANTITIES
35		SUMMARY OF QUANTITIES AND REVISIONS
36 -	40	SURVEY CONTROL DETAILS
41 -	43	PLAN AND PROFILE SHEETS
44 -	60	CROSS SECTIONS

NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	02-27-14
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
GR-8	GUARD RAIL DETAILS	11-16-17
GR-8A	GUARD RAIL DETAILS	11-16-17
GR-9	GUARD RAIL DETAILS	04-17-08
GR-9A	GUARD RAIL DETAILS	04-17-08
GR-10	GUARD RAIL DETAILS	11-16-17
GR-11	GUARD RAIL DETAILS	11-16-17
GR-12	GUARD RAIL DETAILS	11-16-17
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	07-25-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

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INDEX OF SHEETS AND STANDARD DRAWINGS

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				6	ARK.			
				JOB NO.		080495	3	60

(2) GOVERNING SPECS. AND GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

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
100-3_____ CONTRACTOR'S LICENSE
100-4_____ DEPARTMENT NAME CHANGE
102-2_____ ISSUANCE OF PROPOSALS
108-1_____ LIQUIDATED DAMAGES
108-2_____ WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____ PROTECTION OF WATER QUALITY AND WETLANDS
303-1_____ AGGREGATE BASE COURSE
306-1_____ QUALITY CONTROL AND ACCEPTANCE
400-1_____ TACK COATS
400-4_____ DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____ PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____ LIQUID ANTI-STRIP ADDITIVE
410-1_____ CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____ DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
600-2_____ INCIDENTAL CONSTRUCTION
604-1_____ RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
605-1_____ CONCRETE DITCH PAVING
606-1_____ PIPE CULVERTS FOR SIDE DRAINS
617-1_____ GUARDRAIL TERMINAL (TYPE 2)
620-1_____ MULCH COVER
632-1_____ CONCRETE ISLAND
734-1_____ BRIDGE END TERMINAL
804-2_____ REINFORCING STEEL FOR STRUCTURES
JOB 080495__ AGGREGATE SURFACE COURSE
JOB 080495__ BIDDING REQUIREMENTS AND CONDITIONS
JOB 080495__ BRIDGE DECK REPAIR
JOB 080495__ BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080495__ BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 080495__ CARGO PREFERENCE ACT REQUIREMENTS
JOB 080495__ DELAY IN RIGHT OF WAY OCCUPANCY
JOB 080495__ DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 080495__ EXTENSION FOR PIPE CULVERTS
JOB 080495__ FLEXIBLE BEGINNING OF WORK
JOB 080495__ GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080495__ MANDATORY ELECTRONIC CONTRACT
JOB 080495__ MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 080495__ NESTING SITES OF MIGRATORY BIRDS
JOB 080495__ OFF-SITE RESTRAINING CONDITIONS FOR AMERICAN BURYING BEETLE
JOB 080495__ OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB 080495__ PARTNERING REQUIREMENTS
JOB 080495__ PENETRATING HEALER SEALER
JOB 080495__ PLASTIC PIPE
JOB 080495__ PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 080495__ RUMBLE STRIPS
JOB 080495__ SHORING FOR CULVERTS
JOB 080495__ SOIL STABILIZATION
JOB 080495__ STORM WATER POLLUTION PREVENTION PLAN
JOB 080495__ SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080495__ UTILITY ADJUSTMENTS
JOB 080495__ VALUE ENGINEERING
JOB 080495__ WARM MIX ASPHALT
JOB 080495__ WELLHEAD PROTECTION

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
9. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
10. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
11. 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.

3/25/2019

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GOVERNING SPECIFICATIONS AND GENERAL NOTES

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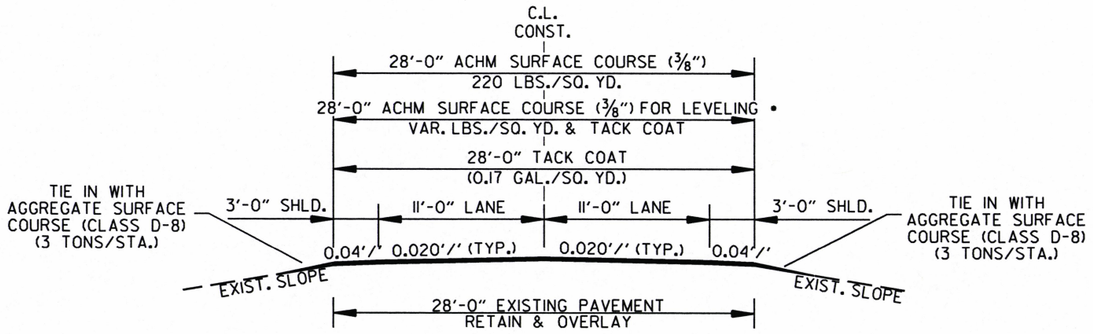
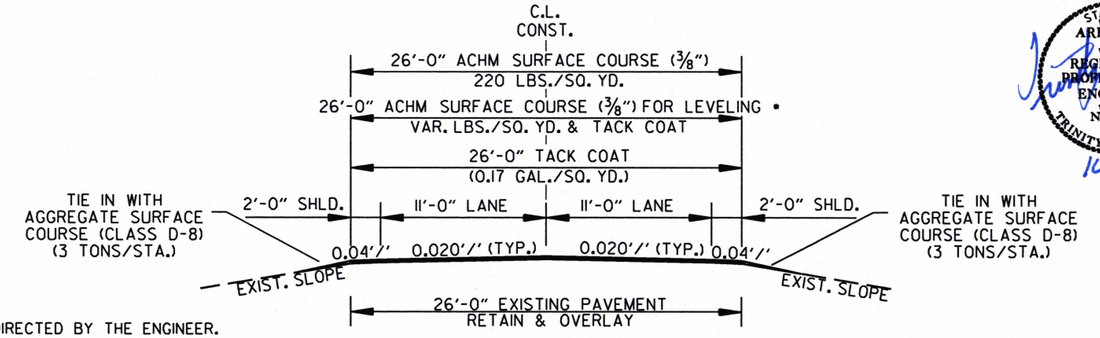
				6	ARK.			
				JOB NO.		080495	4	60

(2) TYPICAL SECTIONS OF IMPROVEMENT

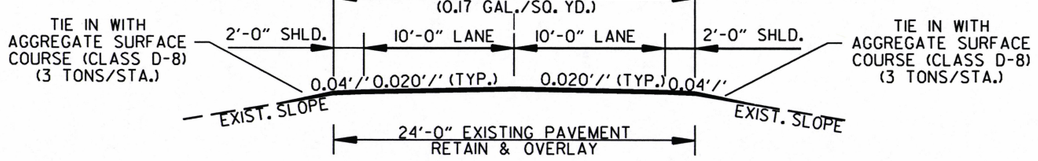


2 LANE OPEN SHOULDER OVERLAY
LOG MILE 0.00 TO LOG MILE 0.14

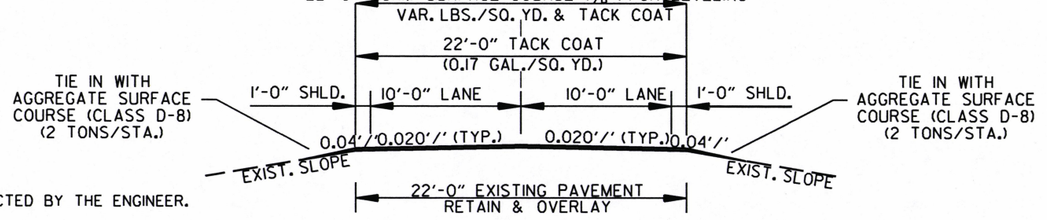


• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

2 LANE OPEN SHOULDER OVERLAY
LOG MILE 0.14 TO LOG MILE 0.32
LOG MILE 0.36 TO LOG MILE 1.93
LOG MILE 1.97 TO LOG MILE 3.04
LOG MILE 3.05 TO LOG MILE 4.75
LOG MILE 9.05 TO LOG MILE 9.65
LOG MILE 9.69 TO LOG MILE 10.17
LOG MILE 10.20 TO LOG MILE 11.13
LOG MILE 12.33 TO LOG MILE 12.65

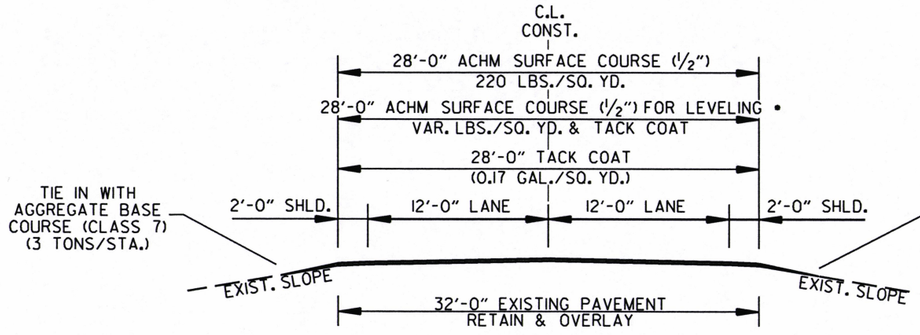


2 LANE OPEN SHOULDER OVERLAY
LOG MILE 4.75 TO LOG MILE 7.21
LOG MILE 8.55 TO LOG MILE 9.05



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

2 LANE OPEN SHOULDER OVERLAY
LOG MILE 12.65 TO LOG MILE 13.60



2 LANE OPEN SHOULDER OVERLAY
LOG MILE 14.00 TO LOG MILE 16.77
LOG MILE 16.94 TO LOG MILE 18.12

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

NOTES:

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATION FOR FLAG PERSONS.
2. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
3. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-1 "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
4. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.
5. LONGITUDINAL JOINTS ARE TO BE PLACED PER TYPICAL SECTION IN ACCORDANCE WITH SECTION 410.07 UNLESS OTHERWISE APPROVED BY THE ENGINEER.
6. ALL CROSS SLOPES ARE TO MATCH EXISTING CROSS SLOPES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

12/20/2017

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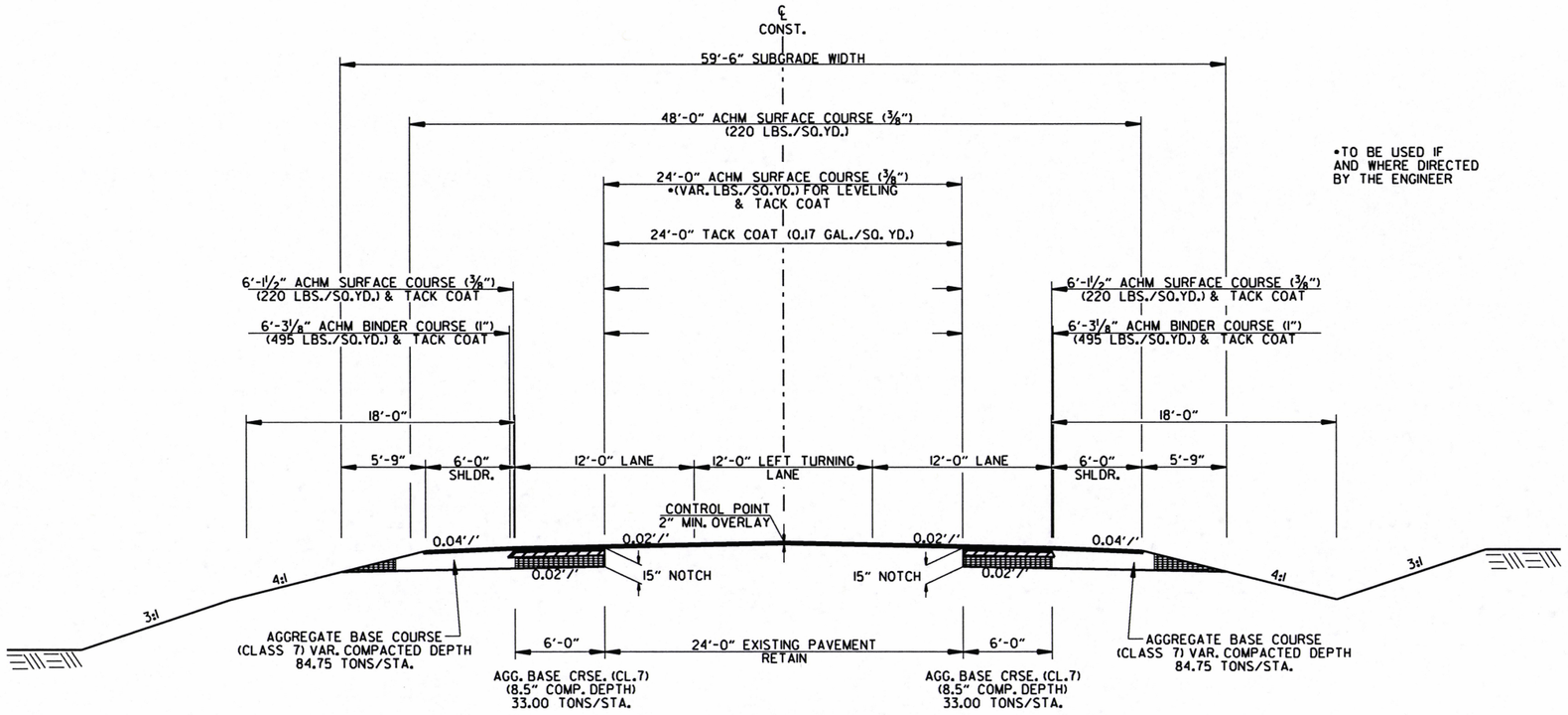
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	5	60

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

HWY. 27 NOTCH, WIDEN, & OVERLAY
TANGENT SECTION
STA. 633+44.55 TO STA. 633+52.98

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
3. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.
4. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
5. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

••TRANSITION FROM 2 LANE TO 3 LANE

STA. 633+44.55 TO STA. 636+74.55
STA. 639+34.55 TO STA. 642+64.55

12/20/2017

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TYPICAL SECTIONS OF IMPROVEMENT

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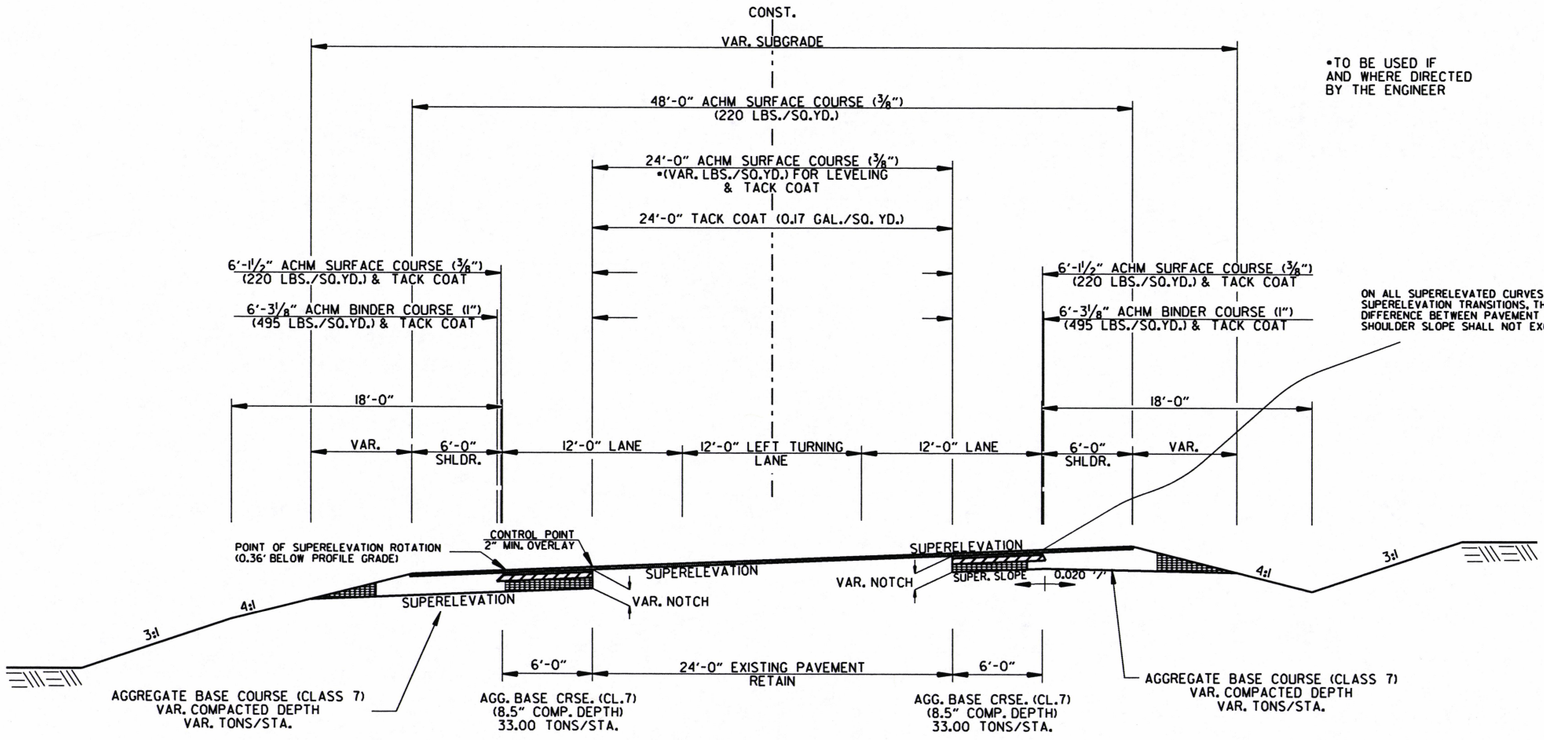
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19



HWY. 27 NOTCH, WIDEN, & OVERLAY
SUPERELEVATED SECTION
STA. 633+52.98 TO STA. 642+64.55

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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

••TRANSITION FROM 2 LANE TO 3 LANE

STA. 633+44.55 TO STA. 636+74.55
STA. 639+34.55 TO STA. 642+64.55

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
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TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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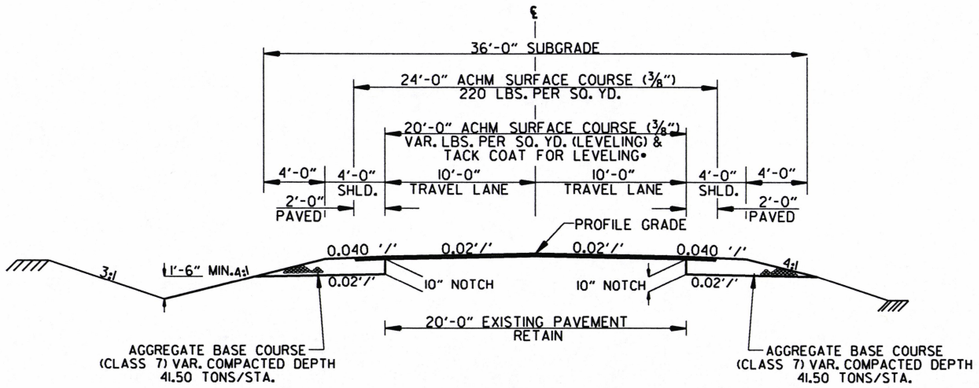
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19



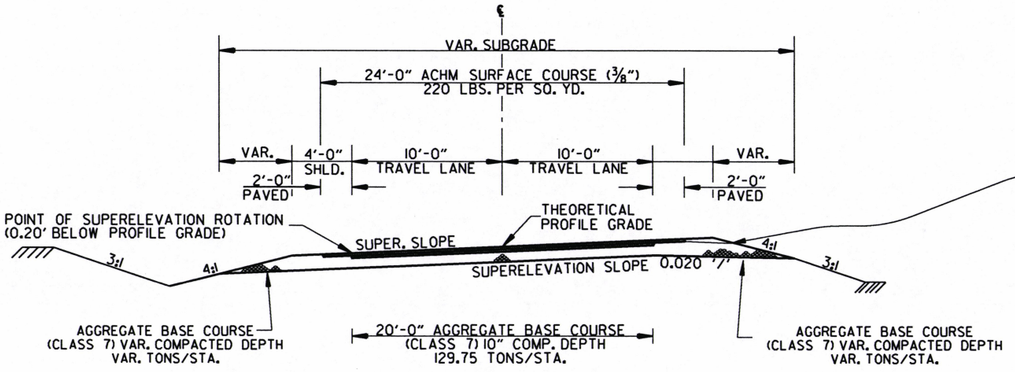
LIBERTY ROAD SOUTH NOTCH, WIDEN, & OVERLAY
TANGENT SECTION

STA. 1002+75.00 TO STA. 1003+28.63

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
3. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.
4. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
5. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.



LIBERTY ROAD SOUTH
SUPERELEVATED SECTION

STA. 1003+28.63 TO STA. 1005+21.39

NOTE:

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

12/20/2017

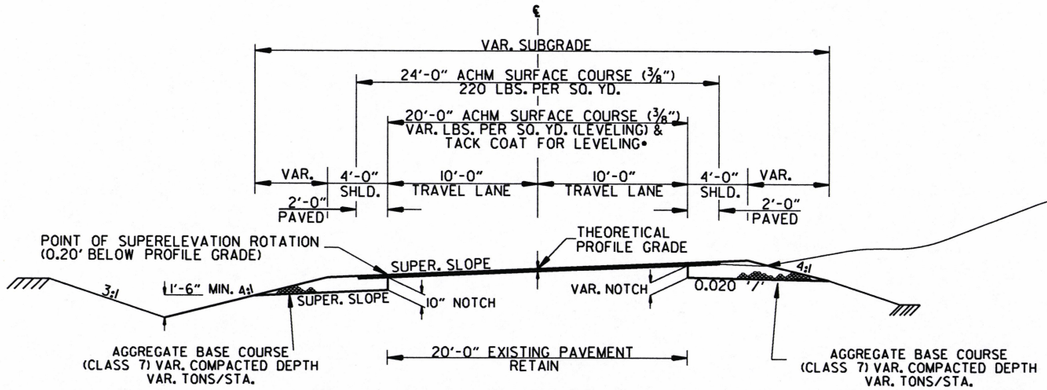
R080495.DGN

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	8	60

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19



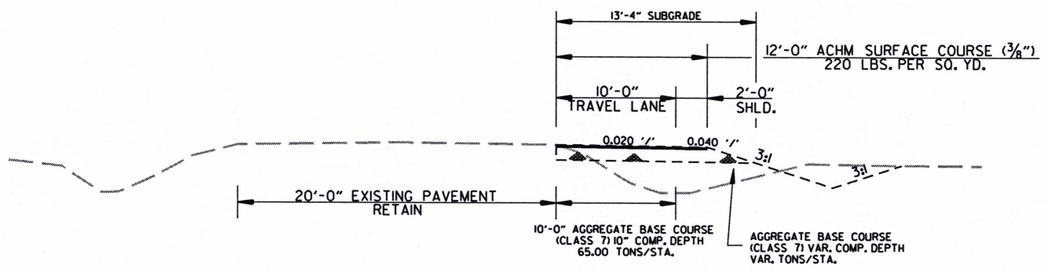
LIBERTY ROAD NOTCH, WIDEN, & OVERLAY
SUPERELEVATED SECTION

STA. 1009+10.00 TO STA. 1010+93.13

NOTE:

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

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



LIBERTY ROAD
TEMPORARY WIDENING SECTION

STA. 801+71.93 TO STA. 809+31.42

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
3. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.
4. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
5. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

12/20/2017

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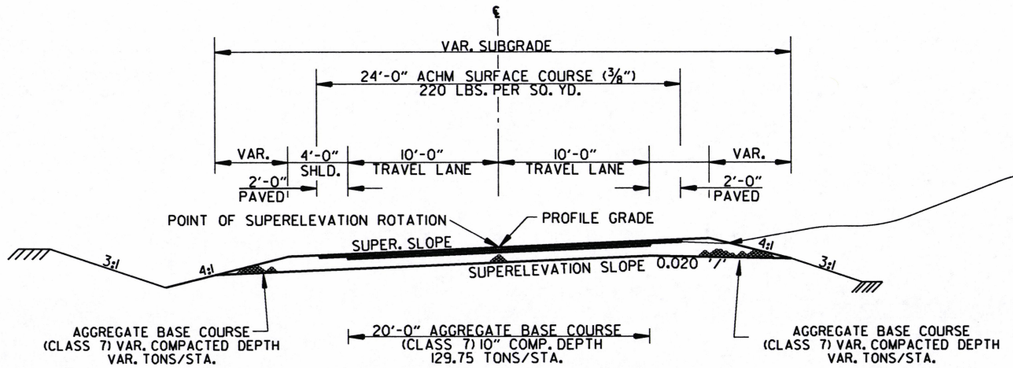
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	9	60

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

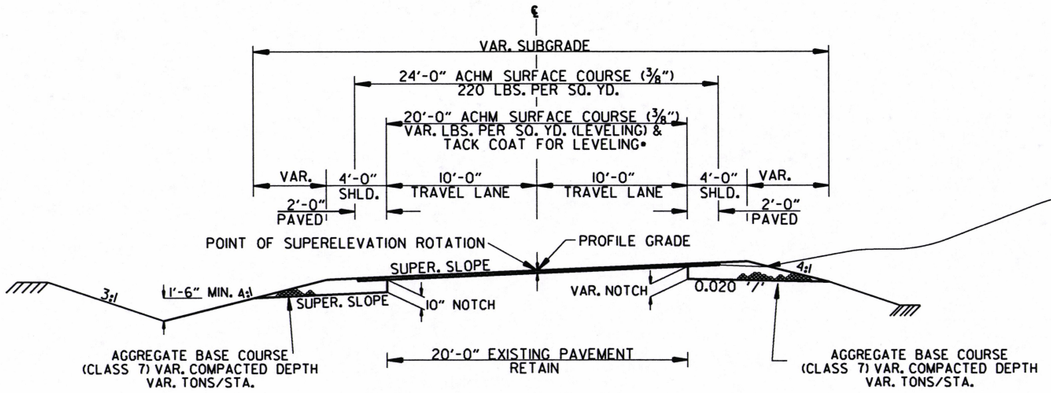


LIBERTY ROAD NORTH
SUPERELEVATED SECTION

STA. 1005+57.39 TO STA. 1009+10.00

NOTE:

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



LIBERTY ROAD NORTH NOTCH, WIDEN, & OVERLAY
SUPERELEVATED SECTION

STA. 1009+10.00 TO STA. 1010+93.13

NOTE:

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

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

12/20/2017

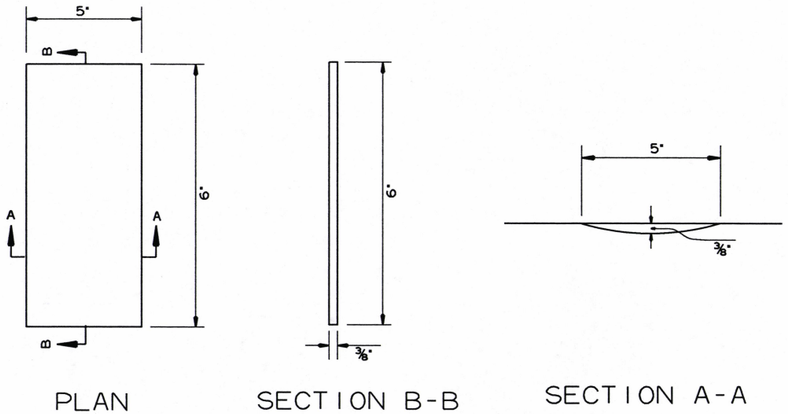
R080495.DGN

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	10	60

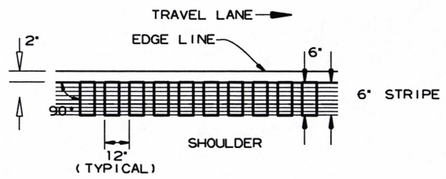
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

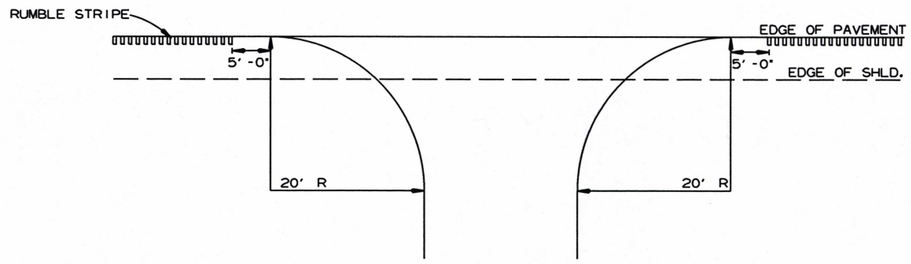


PLAN SECTION B-B SECTION A-A

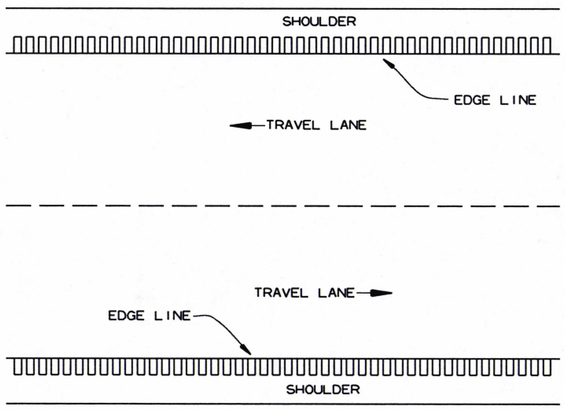
DETAILS OF RUMBLE STRIPE



LOCATION PLAN OF RUMBLE STRIPE
LEFT OR RIGHT SHOULDER



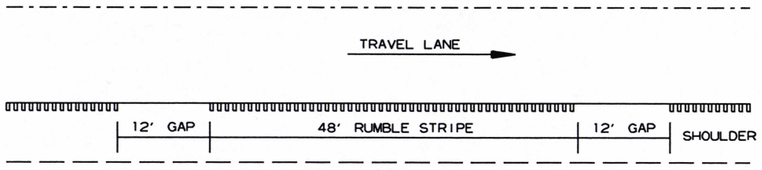
DETAIL FOR RUMBLE STRIPE GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPES SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.
4. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 6" 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 STRIPE

9/23/2019

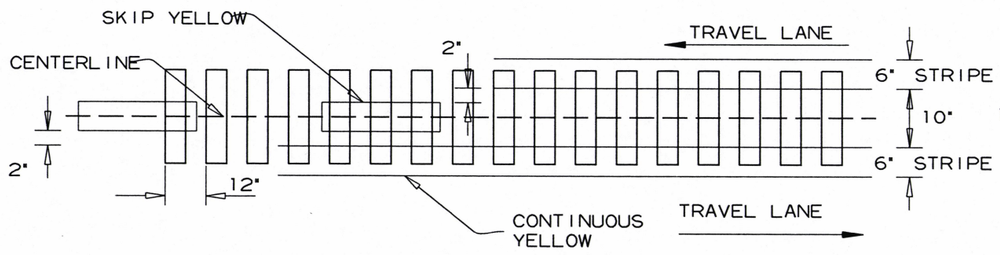
R080495.DGN

SPECIAL DETAILS

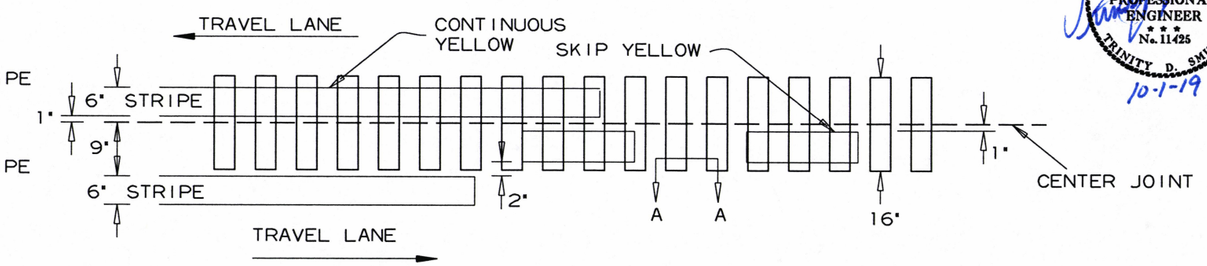
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	11	60

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

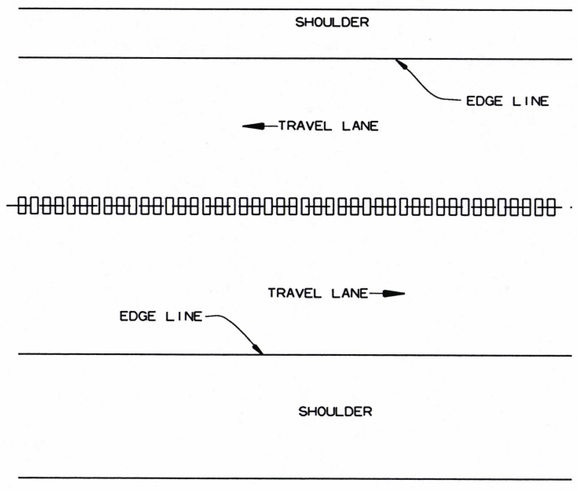


ASPHALT PAVEMENT

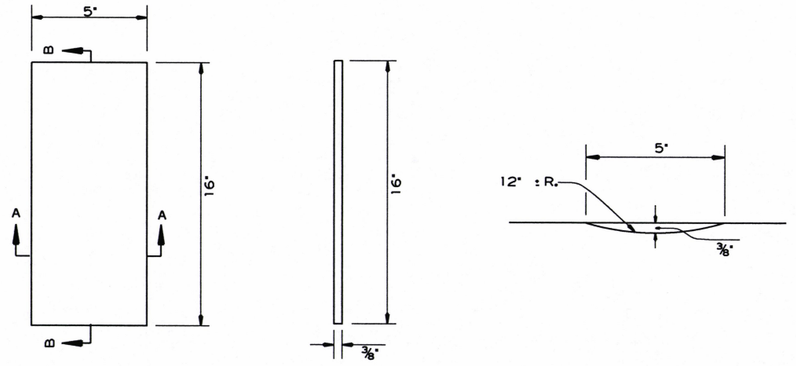


CONCRETE PAVEMENT

LOCATION PLAN OF CENTERLINE RUMBLE STRIPES



PLAN VIEW



PLAN SECTION B-B SECTION A-A

DETAILS OF CENTERLINE RUMBLE STRIPES

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE CENTERLINE.
3. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SLOPE BREAKS MAY BE NECESSARY.

9/23/2019

R080495.DGN

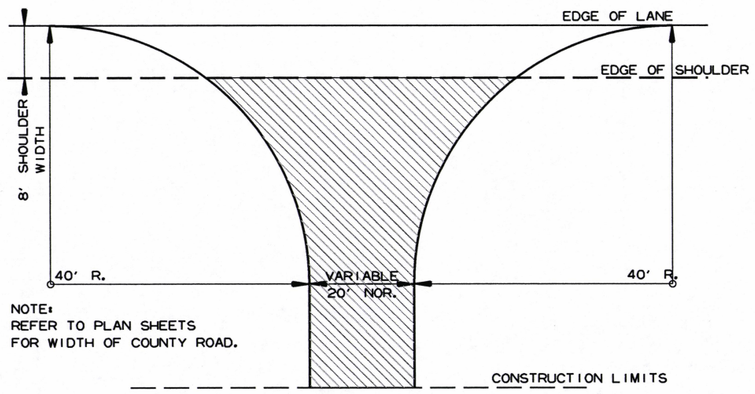
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	12	60

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

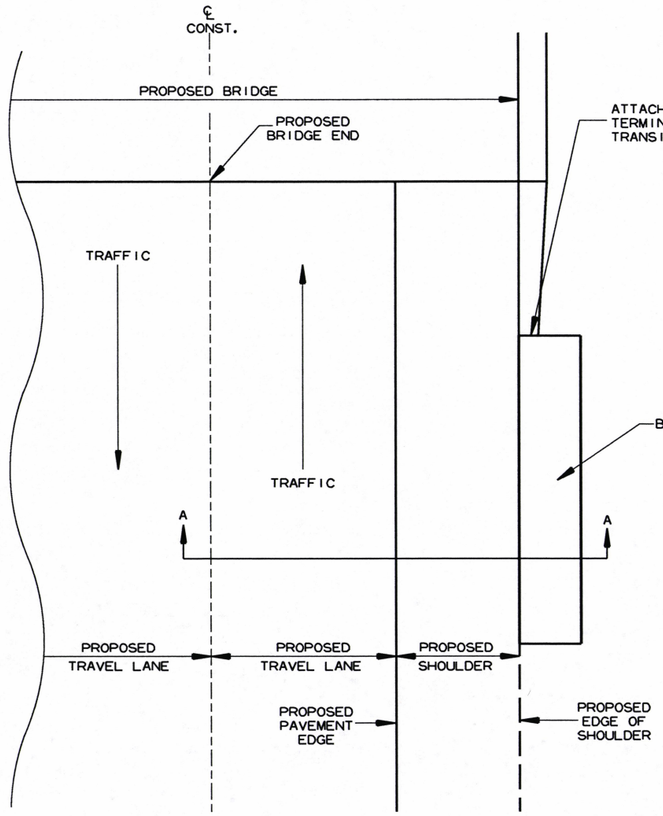
ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH

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



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

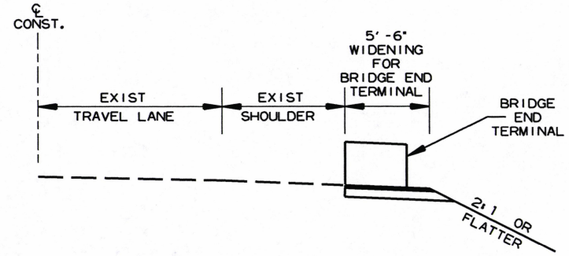
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



PLAN VIEW

BRIDGE END TERMINAL LOCATED AT SOUTHEAST CORNER OF BRIDGE 02948

ROUTE 27, SECTION 10
LOG MILE 0.31 TO LOG MILE 0.32

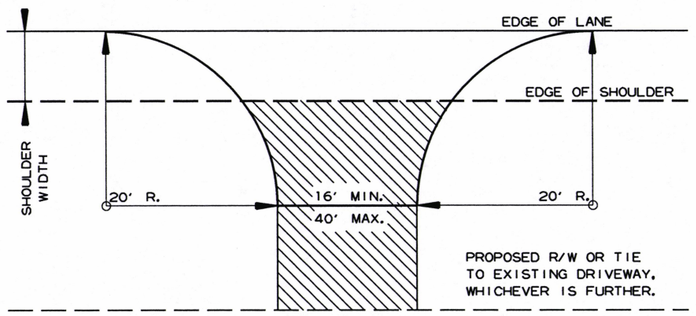


SECTION A-A

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: 36.5'
- -MAXIMUM HEIGHT: 2.75'
- -DESIGN SPEED: 55 MPH

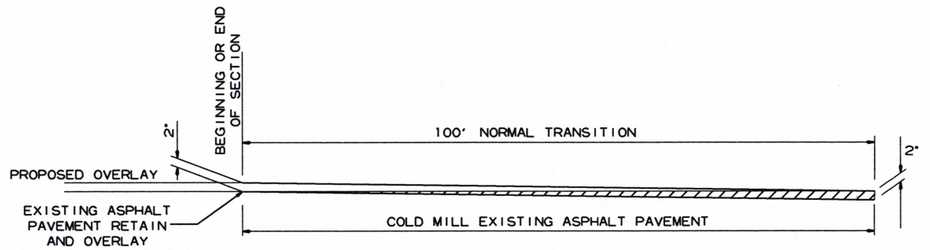
BRIDGE END TERMINAL DETAILS



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

ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING; OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION



DETAIL FOR TRANSITIONS

9/23/2019

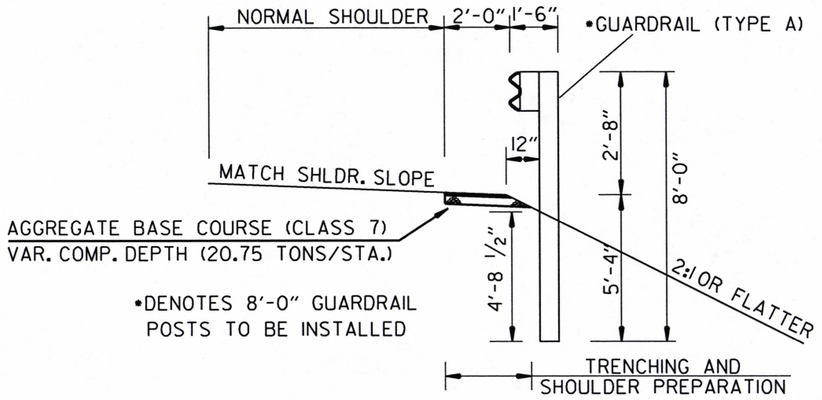
R080495.DGN

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.		080495	13	60

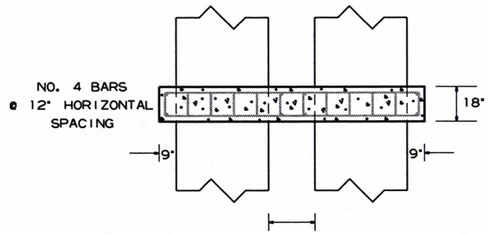
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19



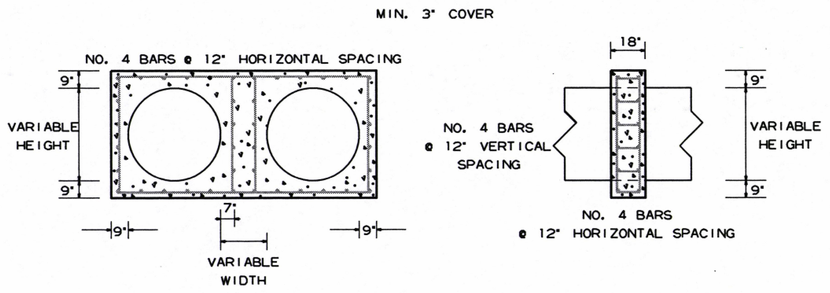
SECTION DETAIL FOR GUARDRAIL

NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-8A, GR-9, GR-9A, GR-10, GR-11, & GR-12 FOR ADDITIONAL INFORMATION.



TOP VIEW

NOTE: PIPE COLLAR TO BE UTILIZED AS APPROVED BY THE ENGINEER.



FRONT VIEW

SIDE VIEW

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL

9/23/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	14	60

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

STA. 638+04.54 HWY. 27 =
STA. 1005+39.39 LIBERTY ROAD
Δ = 90°08'15"

STA. 642+64.55
END HWY. 27 WIDENING

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

DETAIL OF HIGHWAY 27/LIBERTY ROAD INTERSECTION

9/23/2019

R080495.DGN

SPECIAL DETAILS

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.		080495	15	60

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

LEGEND

- E-5 — SAND BAG DITCH CHECKS
- E-6 — ROCK DITCH CHECKS
- E-II — E-II — SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

STA. 632+44 - STA. 633+76 LT.
INSTALL E-II = 149 LIN. FT.

STA. 634+20 - STA. 638+30 LT.
INSTALL E-II = 475 LIN. FT.

STA. 632+44 - STA. 634+30 RT.
INSTALL E-II = 302 LIN. FT.

STA. 634+51 - STA. 637+50 RT.
INSTALL E-II = 292 LIN. FT.

STA. 639+28 - STA. 641+54 LT.
INSTALL E-II = 214 LIN. FT.

STA. 638+85 - STA. 641+75 RT.
INSTALL E-II = 299 LIN. FT.

STA. 642+10 - STA. 642+95 LT.
INSTALL E-II = 85 LIN. FT.

STA. 642+32 - STA. 643+43 RT.
INSTALL E-II = 101 LIN. FT.

STA. 642+64.55
END HWY. 27 WIDENING

REVISIONS

DATE OF REVISION	REVISION

STA. 1002+75.00
BEGIN LIBERTY ROAD

STA. 1003+19 - STA. 1003+55 LT.
INSTALL E-II = 56 LIN. FT.

STA. 1002+93 - STA. 1004+78 RT.
INSTALL E-II = 202 LIN. FT.

STA. 1010+93.13
END LIBERTY ROAD

LEGEND

- E-5 — SAND BAG DITCH CHECKS
- E-6 — ROCK DITCH CHECKS
- E-II — E-II — SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

1/16/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	16	60

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

LEGEND

(E-5) SAND BAG DITCH CHECKS

(E-6) ROCK DITCH CHECKS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

STA. 642+64.55
END HWY. 27 WIDENING

REVISIONS

DATE OF REVISION	REVISION

STA. 1002+75.00
BEGIN LIBERTY ROAD

STA. 1010+93.13
END LIBERTY ROAD

STA. 800+00.00 =
1003+29.25 C.L. CONST.
BEGIN TEMP. WIDENING

STA. 809+31.38 =
1011+19.27 C.L. CONST.
END TEMP. WIDENING

LEGEND

(E-5) SAND BAG DITCH CHECKS

(E-6) ROCK DITCH CHECKS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

1/16/2019

R080495.DGN

STAGE I
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	17	60

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

LEGEND

(E-5) SAND BAG DITCH CHECKS
(E-6) ROCK DITCH CHECKS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

STA. 642+64.55
END HWY. 27 WIDENING

REVISIONS

DATE OF REVISION	REVISION

STA. 1002+75.00
BEGIN LIBERTY ROAD

STA. 634+20 - STA. 638+30 LT.
INSTALL E-II = 120 LIN. FT.

STA. 1010+93.13
END LIBERTY ROAD

LEGEND

(E-5) SAND BAG DITCH CHECKS
(E-6) ROCK DITCH CHECKS
(E-II)—(E-II) SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 800+00.00 =
1003+29.25 C.L. CONST.
BEGIN TEMP. WIDENING

STA. 809+31.38 =
1011+19.27 C.L. CONST.
END TEMP. WIDENING

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

1/16/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	18	60

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

LEGEND

(E-5) SAND BAG DITCH CHECKS
(E-6) ROCK DITCH CHECKS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

STA. 642+64.55
END HWY. 27 WIDENING

REVISIONS

DATE OF REVISION	REVISION

STA. 1002+75.00
BEGIN LIBERTY ROAD

STA. 1010+93.13
END LIBERTY ROAD

LEGEND

(E-5) SAND BAG DITCH CHECKS
(E-6) ROCK DITCH CHECKS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

OBLITERATE TEMPORARY WIDENING

STA. 800+00.00 =
1003+29.25 C.L. CONST.
BEGIN TEMP. WIDENING

STA. 809+31.38 =
1011+19.27 C.L. CONST.
END TEMP. WIDENING STAGE 3

TEMPORARY EROSION CONTROL DETAILS

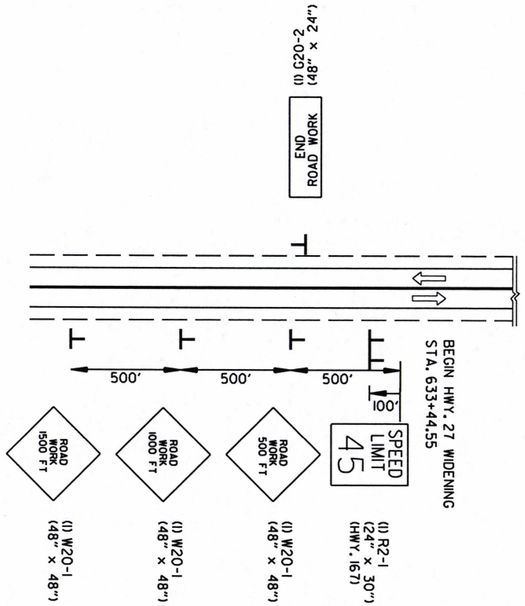
1/16/2019

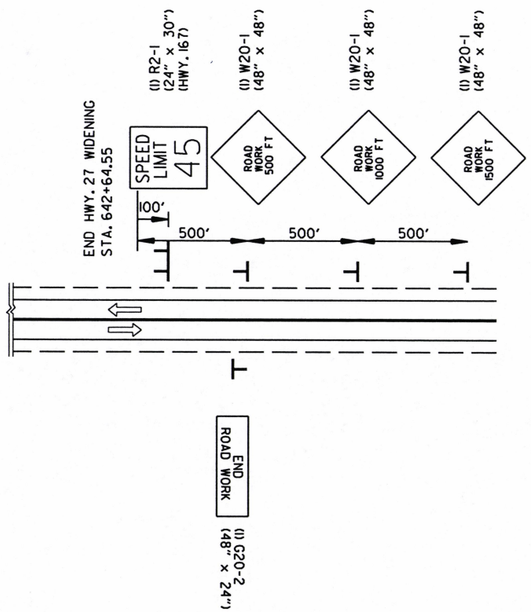
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	19	60

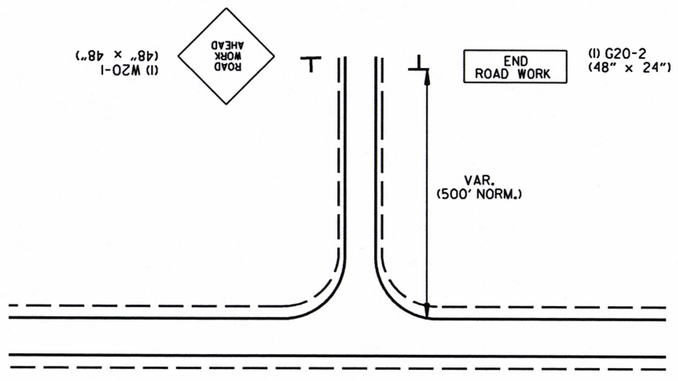
(2) MAINTENANCE OF TRAFFIC DETAILS

ADVANCE WARNING (ALL STAGES)





SHOULDER CLOSED	(2) W21-5a (36" X 36")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
DO NOT PASS	(2) R4-1 (24" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
BUMP	(2) W8-1 (30" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



ADVANCE WARNING - SIDE ROADS (ALL STAGES)

STA. 638+04.54, LIBERTY ROAD
NOTE: ALL STATIONS BASED OFF HWY. 27.

HWY. 27/LIBERTY RD. INT.

STAGE I CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS, END ROAD WORK SIGNS, AND INSTALL ROAD WORK AHEAD (W20-1) SIGN AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

USE VERTICAL PANELS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT TEMPORARY WIDENING FROM STA. 801+71.42 TO STA. 809+31.38 AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT STRUCTURES AND EMBANKMENT FROM STA. 633+44.55 TO STA. 637+64.65 RT. AND FROM STA. 638+95.00 TO STA. 642+64.55 RT. AS SHOWN ON THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2 CONSTRUCTION SEQUENCE

MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT LIBERTY ROAD TRAFFIC ONTO TEMP. WIDENING AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT STRUCTURES AND EMBANKMENT FROM STA. 633+44.55 TO STA. 638+70.57 LT. AND STA. 639+18.31 TO STA. 642+64.55 LT. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT LIBERTY ROAD REALIGNMENT STRUCTURES AND EMBANKMENT FROM STA. 1002+75 TO STA. 1003+66.03 LT. & RT.
CONSTRUCT EMBANKMENT FROM STA. 1003+66.03 TO STA. 1005+21.39 LT. AND STA. 1005+57.39 TO STA. 1008+24.28 LT. & RT.
CONSTRUCT EMBANKMENT STA. 1008+24.28 TO STA. 1010+93.13 LT. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3 CONSTRUCTION SEQUENCE

MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT TRAFFIC ONTO THE NEW LIBERTY ROAD AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

OBLITERATE TEMP. WIDENING AND CONSTRUCT FINAL PORTIONS OF EMBANKMENT, STRUCTURES, AND DRIVEWAYS AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

END OF JOB CONSTRUCTION SEQUENCE

PLACE FINAL 2" ACHM SURFACE COURSE AND TRANSITIONS.
PLACE FINAL STRIPING.

STAGE I QUANTITIES

SIGNS = 222.5 SQ. FT.
TRAFFIC DRUMS = 6 EACH
VERTICAL PANELS = 39 EACH
TYPE III BARRICADE-RT. = 16 LIN. FT.
TYPE III BARRICADE-LT. = 16 LIN. FT.

STAGE 2 QUANTITIES

SIGNS = 248.5 SQ. FT.
TRAFFIC DRUMS = 6 EACH
VERTICAL PANELS = 37 EACH
TYPE III BARRICADE-RT. = 24 LIN. FT.
TYPE III BARRICADE-LT. = 24 LIN. FT.

STAGE 3 QUANTITIES

SIGNS = 238.5 SQ. FT.
TRAFFIC DRUMS = 6 EACH
VERTICAL PANELS = 12 EACH
TYPE III BARRICADE-RT. = 16 LIN. FT.
TYPE III BARRICADE-LT. = 16 LIN. FT.

STATE OF ARKANSAS
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ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAILS

1/17/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	20	60

(2) MAINTENANCE OF TRAFFIC DETAILS

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

10-1-19

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R080495.DGN 1/17/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	21	60

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-7-19

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

(11) VERTICAL PANELS SPACED 45' ON CENTER

(9) VERTICAL PANELS SPACED 45' ON CENTER

STA. 642+64.55
END HWY. 27 WIDENING

(6) TRAFFIC DRUMS AT DRIVEWAY TURNOUTS

STAGE I CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS, END ROAD WORK SIGNS, AND INSTALL ROAD WORK AHEAD (W20-1) SIGN AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

USE VERTICAL PANELS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT STRUCTURES AND EMBANKMENT FROM STA. 633+44.55 TO STA. 637+64.65 RT. AND FROM STA. 638+95.00 TO STA. 642+64.55 RT. AS SHOWN ON THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE I CONSTRUCTION SEQUENCE

CONSTRUCT TEMPORARY WIDENING FROM STA. 801+71.42 TO STA. 809+31.38 AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STA. 1002+75.00
BEGIN LIBERTY ROAD

STA. 809+31.38 =
1011+19.27 C.L. CONST.
END TEMP. WIDENING
Δ = 90° 0' 0"

ROAD CLOSED
(1) R11-2 (48" X 30")
8' BARR. TYP. III LT.
8' BARR. TYP. III LT.

STA. 800+00.00 =
1003+29.25 C.L. CONST.
BEGIN TEMP. WIDENING

(19) VERTICAL PANELS SPACED 45' ON CENTER

ROAD CLOSED
(1) R11-2 (48" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III RT.

STA. 1010+93.13
END LIBERTY ROAD

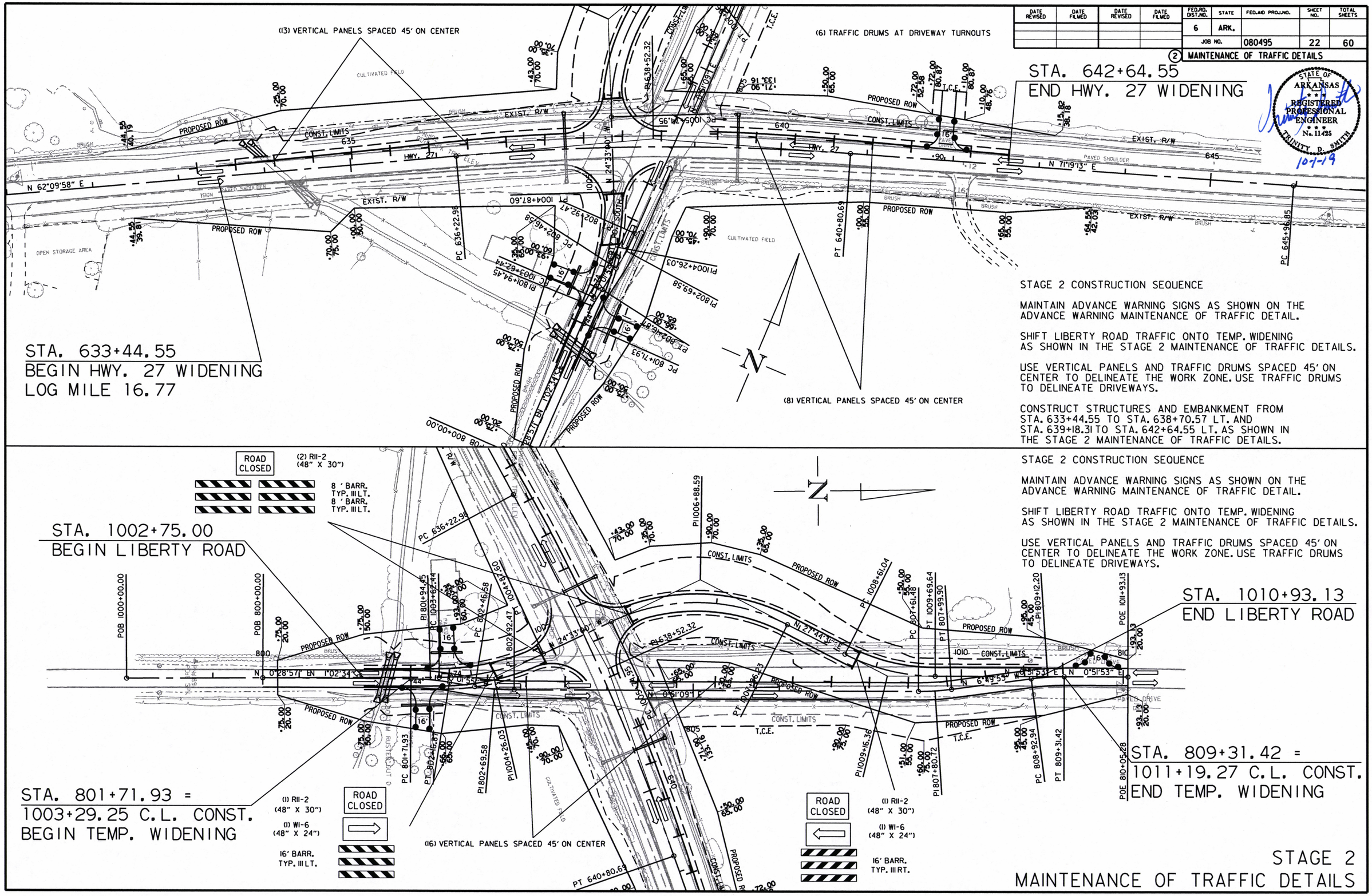
STAGE I
MAINTENANCE OF TRAFFIC DETAILS

1/17/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	22	60

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
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TRINITY D. SMITH
10-1-19

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STAGE 2 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.		080495	23	60

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

(6) VERTICAL PANELS SPACED 45' ON CENTER

STA. 642+64.55
END HWY. 27 WIDENING

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

STAGE 3 CONSTRUCTION SEQUENCE

MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

STAGE 3 CONSTRUCTION SEQUENCE

SHIFT TRAFFIC ONTO THE NEW LIBERTY ROAD AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

OBLITERATE TEMP. WIDENING AND CONSTRUCT FINAL PORTIONS OF EMBANKMENT AND DRIVEWAYS AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

END OF JOB CONSTRUCTION SEQUENCE

PLACE FINAL 2" ACHM SURFACE COURSE AND TRANSITIONS. PLACE FINAL STRIPING.

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

OBLITERATE TEMPORARY WIDENING

STA. 1002+75.00
BEGIN LIBERTY ROAD

STA. 1010+93.13
END LIBERTY ROAD

(6) TRAFFIC DRUMS AT DRIVEWAY TURNOUTS

(6) VERTICAL PANELS SPACED 45' ON CENTER

STA. 801+71.42 =
1003+29.25 C.L. CONST.
BEGIN TEMP. WIDENING

STA. 809+31.38 =
1011+19.27 C.L. CONST.
END TEMP. WIDENING STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

1/17/2019

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	24	60

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

PERMANENT PAVEMENT MARKINGS

THERMOPLASTIC PAVEMENT MARKINGS WHITE (6") = 1980 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (6") = 3732 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS (WORDS) = 2 EACH
RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW)(80' O.C.) = 18 EACH

+44.55 100' TRANSITION +44.55 330' TAPER +74.55

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

6" YELLOW THERMOPLASTIC PAVEMENT MARKING
6" WHITE THERMOPLASTIC PAVEMENT MARKING
12" WHITE STOP BAR THERMOPLASTIC PAVEMENT MARKING
6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING WITH R.P.M. (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
6" WHITE THERMOPLASTIC PAVEMENT MARKING
6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING WITH R.P.M. (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
THERMOPLASTIC PAVEMENT MARKING (ARROWS)

STA. 638+04.54 HWY. 27 =
STA. 1005+39.39 LIBERTY ROAD
Δ = 90°08'15"

STA. 642+64.55
END HWY. 27 WIDENING

+34.55 330' TAPER +64.55 100' TRANSITION +64.55

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.

PERMANENT PAVEMENT MARKINGS

REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (6") = 1878 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKINGS YELLOW (6") = 1866 LIN. FT.

RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW)(80' O.C.) = 12 EACH

STA. 1002+75.00
BEGIN LIBERTY ROAD

6" WHITE REFLECTORIZED PAINT PAVEMENT MARKING
6" DBL. YELLOW REFLECTORIZED PAINT PAVEMENT MARKING WITH R.P.M. (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
12" WHITE STOP BAR THERMOPLASTIC PAVEMENT MARKING
6" DBL. YELLOW REFLECTORIZED PAINT PAVEMENT MARKING WITH R.P.M. (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
6" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

STA. 1010+93.13
END LIBERTY ROAD

+75.00 100' TRANSITION +75.00
+93.13 100' TRANSITION +93.13

STA. 638+04.54 HWY. 27 =
STA. 1005+39.39 LIBERTY ROAD
Δ = 90°08'15"

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.

2/12/2019
R080495.DGN

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	25	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	ENTIRE PROJECT	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)	
			LIN. FT. - EACH					NO.	SQ. FT.	EACH		RIGHT	LEFT
												LIN. FT.	
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	4	4	4	64.0				
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	4	4	4	64.0				
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	4	4	4	64.0				
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	44	44	44	704.0				
G20-2	END ROAD WORK	48"x24"	3	3	3	4	4	4	32.0				
G20-1	ROAD WORK NEXT xx MILES	60"x24"				4	4	4	40.0				
R11-2	ROAD CLOSED	48"x30"	2	3	2		3	3	30.0				
W1-6	LARGE ARROW	48"x24"		2	2		2	2	16.0				
R4-1	DO NOT PASS	24"x30"	2	2	2	36	36	36	180.0				
R4-2	PASS WITH CARE	24"x30"				36	36	36	180.0				
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2		2	2	18.0				
W8-1	BUMP	30"x30"	2	2	2		2	2	12.5				
R2-1	SPEED LIMIT 45	24"x30"	2	2	2		2	2	10.0				
	VERTICAL PANELS		39	37	12		39			39			
	TRAFFIC DRUMS		6	6	6	301	301				301		
	TYPE III BARRICADE-RT. (8')		2	1			2					16	
	TYPE III BARRICADE-LT. (8')		2	1			2						16
	TYPE III BARRICADE-RT. (16')			1	1		1					16	
	TYPE III BARRICADE-LT. (16')			1	1		1						16
TOTALS:									**1414.5**	**39**	**301**	**32**	**32**

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

R080495.DGN 3/22/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	26	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 3	ENTIRE PROJECT	CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKING						REFLECTORIZED PAINT PAVEMENT MARKING		
				TYPE II	6"		8"	12"	YIELD LINE	ARROWS	6"		12"
				(YELLOW/YELLOW)	WHITE	YELLOW	WHITE	WHITE			WHITE	YELLOW	WHITE
	LIN. FT. - EACH		LIN. FT.	EACH	LIN. FT.				LIN. FT.	EACH	LIN. FT.		
CONSTRUCTION PAVEMENT MARKINGS		316800	316800										
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	18	981		999									
THERMOPLASTIC PAVEMENT MARKING WHITE (6")	1980	78514			80494								
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	3732	157027				160759							
THERMOPLASTIC PAVEMENT MARKING WHITE (8")	604						604						
THERMOPLASTIC PAVEMENT MARKING WHITE (12") (LOG MILES 0.00 & 3.25)		22						22					
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE) (LOG MILES 0.00 & 3.25)		48							48				
THERMOPLASTIC PAVEMENT MARKING (ARROWS)	2									2			
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	1878										1878		
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	1866											1866	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (12")	32												32
TOTALS:			**316800**	**999**	**80494**	**160759**	**604**	**22**	**48**	**2**	**1878**	**1866**	**32**

NOTE: THIS IS A HIGH 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.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
633+45	637+45	HWY. 27 LT & RT	5	5
638+90	642+65	HWY. 27 LT & RT	5	5
1002+75	1004+72	LIBERTY ROAD LT & RT	3	3
1006+02	1010+93	LIBERTY ROAD LT & RT	5	5
TOTALS:			**18**	**18**

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
637+82	HWY. 27 LT & RT	1
639+95	HWY. 27 LT & RT	1
1003+01	LIBERTY ROAD LT & RT	2
TOTAL:		**4**

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
632+44	638+52	HWY. 27 LT.	608
632+45	634+81	HWY. 27 RT.	295
639+20	643+15	HWY. 27 LT.	415
638+78	643+15	HWY. 27 RT.	430
1001+75	1003+05	LIBERTY RD. LT.	155
1001+75	1004+97	LIBERTY RD. RT.	350
1005+78	1011+43	LIBERTY RD. LT.	583
105+75	1011+44	LIBERTY RD. RT.	568
TOTAL:			**3404**

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
633+44.55	634+16.00	HWY. 27 LT.	71.45	63.51
635+05.00	637+68.73	HWY. 27 RT.	263.73	234.43
639+50.00	640+94.55	HWY. 27 RT.	144.55	128.49
641+90.00	642+64.55	HWY. 27 LT.	74.55	66.27
TOTAL:				**492.70**

NOTE: AVERAGE WIDTH = 8'-0"

REMOVAL AND DISPOSAL OF ITEMS

LOG MILE	LOG MILE	LOCATION	CONCRETE ISLANDS	GUARDRAIL
			SQ. YD.	LIN. FT.
0.27	0.29	HWY. 27 LT.		100
0.28	0.35	HWY. 27 RT.		104
1.85	1.87	HWY. 27 LT.		60
1.91	1.93	HWY. 27 RT.		61
2.94	2.96	HWY. 27 LT.		55
2.97	2.99	HWY. 27 RT.		57
3.24	3.25	HWY. 27 RT.	104	
3.24	3.25	HWY. 27 RT.	43	
3.24	3.25	HWY. 27 RT.	174	
9.6	9.62	HWY. 27 LT.		56
9.67	9.69	HWY. 27 RT.		66
10.12	10.14	HWY. 27 LT.		66
10.16	10.18	HWY. 27 RT.		72
TOTALS:			**321**	**697**

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.

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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.		080495	27	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT			* SOIL STABILIZATION
			NORMAL	*UNDERCUT	TOTAL	NORMAL	*UNDERCUT	TOTAL	
			CU. YD.						TON
633+44.55	642+64.55	STAGE 1-MAIN LANES	797	2205	3002	343	2205	2548	
633+44.55	642+64.55	STAGE 2-MAIN LANES	282		282	864		864	
633+44.55	642+64.55	STAGE 3-MAIN LANES	263		263	51		51	
ENTIRE	PROJECT	APPROACHES	10		10	225		225	
1002+75.00	1010+93.13	STAGE 1 - LIBERTY ROAD	394		394	396		396	
1002+75.00	1010+93.13	STAGE 2 - LIBERTY ROAD	1041		1041	1272		1272	
1002+75.00	1010+93.13	STAGE 3 - LIBERTY ROAD	1486		1486	378		378	
* ENTIRE	PROJECT	TO BE USED IF AND WHERE							250
		DIRECTED BY THE ENGINEER							
TOTALS:			4273	2205	6478	3529	2205	5734	250

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

CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS

LOG MILE	LOG MILE	LOCATION	* CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS
			LIN.FT.
0.00	18.12	HWY. 27	79570
TOTAL:			79570

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

RUMBLE STRIPES IN ASPHALT SHOULDERS

LOG MILE	LOG MILE	LOCATION	* RUMBLE STRIPES IN ASPHALT SHOULDERS
			LIN.FT.
0.00	18.12	HWY. 27 - LEFT SHOULDER	73196
0.00	18.12	HWY. 27 - RIGHT SHOULDER	73712
TOTAL:			146908

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS III)			FLARED END SECTIONS FOR R.C. PIPE CULVERTS			SOLID SODDING	WATER	STD. DWG. NOS.
		24"	36"	48"	24"	36"	48"			
		LIN. FT.			EACH			SQ.YD.	M.GAL.	
634+16	EXTEND DBL. 36" x 48' TO COMP. LENGTH OF 100'		120			4		21	0.26	FES-1, FES-2, PCC-1
637+50	24" x 72' R.C. PIPE CULVERT	72			2			8	0.10	FES-1, FES-2, PCC-1
639+50	24" x 68' R.C. PIPE CULVERT		68		2			8		FES-1, FES-2, PCC-1
1003+02	DBL. 48" x 42' R.C. PIPE CULVERT			84			4	32	0.40	FES-1, FES-2, PCC-1
TOTALS:		72	188	84	4	4	4	69	0.76	

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

DRIVEWAYS & TURNOUTS (HWY. 27 WIDENING AND LIBERTY ROAD REALIGNMENT)

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
							18"	24"	
			FEET	SQ. YD.	TON	TON	LIN. FT.		
641+90	LT.	HWY. 27	16	112.83	12.41	46.07			
642+12	RT.	HWY. 27	16	70.47	7.75	28.78			
1003+44	RT.	LIBERTY ROAD SOUTH	16	87.69	9.65	35.81		36	PCC-1, PCM-1, PCP-1, PCP-2
1003+74	LT.	LIBERTY ROAD SOUTH	16	80.00	8.80	32.67		36	PCC-1, PCM-1, PCP-1, PCP-2
1011+58	LT.	LIBERTY ROAD NORTH	16	37.01	4.07	15.11	28		PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE PROJECT TEMPORARY DRIVES						40.00			
TOTALS:				388.00	42.68	198.44	28	72	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

'* FOR INFORMATION ONLY

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

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
633+82	INLET OF PIPE CULVERT	11	22
634+57	OUTLET OF PIPE CULVERT	9	18
637+50	INLET OF PIPE CULVERT	2	4
637+50	OUTLET OF PIPE CULVERT	2	4
639+50	INLET OF PIPE CULVERT	2	4
639+50	OUTLET OF PIPE CULVERT	2	4
1002+92	OUTLET OF PIPE CULVERT	12	24
1003+11	INLET OF PIPE CULVERT	12	24
TOTALS:		52	104

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

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

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	28	60

(2) QUANTITIES

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
530+00	35	11	44.00	93	13	4.00	5' RT	0-5	42	21	A-7-6(17)	BROWN
530+00	35	11	44.00	93	13	4.00	21' RT	0-5	37	16	A-6(15)	BROWN
538+00	35	11	48.00	93	12	56.00	5' LT	0-5	28	10	A-4(4)	BROWN
538+00	35	11	48.00	93	12	56.00	18' LT	0-5	60	35	A-7-6(29)	BROWN
546+00	35	11	52.00	93	12	48.00	5' RT	0-2.5Z	59	24	A-7-4(18)	BROWN
546+00	35	11	52.00	93	12	48.00	21' RT	0-5	40	22	A-6(13)	BROWN
554+00	35	11	58.00	93	12	41.00	5' LT	0-4.5Z	41	19	A-7-6(15)	BROWN
554+00	35	11	58.00	93	12	41.00	18' LT	0-5	37	16	A-6(11)	BROWN
562+00	35	12	4.00	93	12	36.00	5' LT	0-5	35	17	A-6(11)	BROWN
562+00	35	12	4.00	93	12	36.00	18' RT	0-5	33	15	A-6(9)	BROWN
570+00	35	12	11.00	93	12	30.00	5' LT	0-5	32	14	A-6(10)	BROWN
570+00	35	12	11.00	93	12	30.00	18' LT	0-5	31	15	A-6(9)	BROWN
578+00	35	12	15.00	93	12	22.00	5' RT	0-5	27	13	A-6(6)	BROWN
578+00	35	12	15.00	93	12	22.00	18' RT	0-5	33	15	A-6(7)	BROWN
586+00	35	12	20.00	93	12	15.00	5' LT	0-5	43	24	A-7-6(22)	BROWN
586+00	35	12	20.00	93	12	15.00	18' LT	0-5	41	20	A-7-6(19)	BR/GR
594+00	35	12	25.00	93	12	8.00	5' RT	0-5	48	26	A-7-6(18)	BROWN
594+00	35	12	25.00	93	12	8.00	18' RT	0-5	71	41	A-7-5(37)	BROWN
602+00	35	12	31.00	93	12	1.00	5' LT	0-5	40	21	A-6(17)	BR/GR
602+00	35	12	31.00	93	12	1.00	18' LT	0-5	39	21	A-6(17)	BROWN
610+00	35	12	36.00	93	11	54.00	5' RT	0-5	36	18	A-6(14)	BROWN
610+00	35	12	42.00	93	11	47.00	5' LT	0-5	33	15	A-6(11)	BR/GR
618+00	35	12	42.00	93	11	47.00	5' LT	0-5	25	8	A-4(4)	BROWN
618+00	35	12	42.00	93	11	47.00	18' LT	0-5	25	8	A-4(4)	BROWN
626+00	35	12	47.00	93	11	36.00	5' RT	0-5	37	19	A-9(15)	BROWN
626+00	35	12	47.00	93	11	36.00	18' RT	0-5	37	19	A-6(15)	BROWN
635+00	35	12	51.00	93	11	28.00	5' LT	0-5	26	10	A-4(6)	BROWN
635+00	35	12	51.00	93	11	28.00	18' LT	0-5	25	9	A-4(3)	BROWN
642+00	35	12	54.00	93	11	20.00	5' RT	0-5	24	9	A-4(5)	BROWN
642+00	35	12	53.00	93	11	20.00	18' RT	0-5	35	15	A-6(11)	BROWN
650+00	35	12	57.00	93	11	10.00	5' LT	0-5	31	14	A-6(10)	BR/GR
650+00	35	12	57.00	93	11	10.00	18' LT	0-5	32	15	A-6(11)	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

TRENCHING AND SHOULDER PREPARATION

LOG MILE	LOG MILE	LOCATION / DESCRIPTION	TRENCHING AND SHOULDER PREPARATION STATIONS
0.27	0.32	HWY. 27 LT. & RT.	3
0.34	0.38	HWY. 27 LT. & RT.	3
1.85	1.90	HWY 27 LT. & RT.	3
1.93	1.98	HWY 27 LT. & RT.	3
2.93	2.98	HWY. 27 LT. & RT.	3
2.99	3.04	HWY. 27 LT. & RT.	3
9.60	9.65	HWY. 27 LT. & RT.	3
9.70	9.75	HWY. 27 LT. & RT.	3
10.12	10.17	HWY. 27 LT. & RT.	3
10.19	10.24	HWY. 27 LT. & RT.	3
TOTAL:			30

STATE OF ARKANSAS
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TRINITY D. SMITH
10-1-19

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
633+44.55	634+54.55	HWY. 27 RT.	110.00	6.00	73.33	48.89	0.62
1002+75.00	1003+00.00	LIBERTY RD. LT.	25.00	6.00	16.67	11.11	0.14
1002+75.00	1002+87.00	LIBERTY RD. RT.	12.00	6.00	8.00	5.33	0.07
TOTALS:					98.00	65.33	0.83

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING						5.74	5.74	117.1	484	39	1876			104
ENTIRE	PROJECT	STAGE 1						2.21	2.21	45.1	198	36				21
ENTIRE	PROJECT	STAGE 2						3.40	3.40	69.4	198	42	120			27
ENTIRE	PROJECT	STAGE 3	3.04	6.08	3.04	310.1	3.04	0.13	0.13	2.7	44	9				5
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.76	1.52	0.76	77.5	0.76	2.87	2.87	58.5	231	32	3098	300	300	436
TOTALS:			3.80	7.60	3.80	387.6	3.80	14.35	14.35	292.8	1155	158	5094	300	300	593

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

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.

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	29	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

CONCRETE ISLAND

LOG MILE	LOCATION	CURB FACE TYPE	CONCRETE ISLAND SQ.YD.
3.24	HWY. 27 & HWY. 154 INT. RT.	B	103
3.24	HWY. 27 & HWY. 154 INT. RT.	B	43
3.25	HWY. 27 & HWY. 154 INT. RT.	B	174
TOTAL:			320

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D)	WIRE FENCE (TYPE D-1)	WIRE FENCE (TYPE D-2)	* 16'-0" GATES
			LIN. FT.			EACH
638+78	643+65	HWY. 27 RT.		487		1
639+28	643+65	HWY. 27 LT.		437		1
1001+75	1003+05	LIBERTY RD. LT.	130			
1001+75	1003+05	LIBERTY RD. RT.			130	1
1003+05	1004+97	LIBERTY RD. RT.			192	
1005+78	1011+31	LIBERTY RD. LT.	553			1
1006+05	1011+34	LIBERTY RD. RT.	529			
TOTALS:			1212	924	322	4

* DENOTES ALTERNATE BID ITEM.

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	25
ENGINEER	
TOTAL:	25

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

COLD MILLING ASPHALT PAVEMENT (HWY. 27 & LIBERTY RD. INT.)

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
632+44.55	633+44.55	HWY. 27 MAIN LANES	24.00	266.67
642+64.55	643+64.55	HWY. 27 MAIN LANES	24.00	266.67
1001+75.00	1002+75.00	LIBERTY SOUTH	20.00	222.22
1010+93.13	1011+93.13	LIBERTY NORTH	20.00	222.22
ENTIRE	PROJECT	TO BE USED IF AND WHERE		200.00
		DIRECTED BY THE ENGINEER		
TOTAL:				1177.78

NOTE: AVERAGE MILLING DEPTH 1".

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

COLD MILLING ASPHALT PAVEMENT (MAIN LANES)

LOG MILE	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
		FEET	SQ. YD.
1.90	BR. 02949	22.00	977.78
2.98	BR. 02950	22.00	977.78
9.62	BR. 02951	22.00	977.78
10.17	BR. 02952	22.00	977.78
TOTAL:			3911.12

NOTE: AVERAGE MILLING DEPTH 1".

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

GUARDRAIL

LOG MILE	LOG MILE	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	BRIDGE END TERMINAL
			LIN. FT.	EACH	
	0.32	HWY. 27 RT. - BR. 02948			1
0.30	0.32	HWY. 27 LT. - BR. 02948	100	1	
0.34	0.36	HWY. 27 LT. - BR. 02948	175	1	
0.34	0.35	HWY. 27 RT. - BR. 02948	100	1	
1.88	1.90	HWY. 27 RT. - BR. 02949	175	1	
1.89	1.90	HWY. 27 LT. - BR. 02949	100	1	
1.93	1.95	HWY. 27 LT. - BR. 02949	175	1	
1.93	1.94	HWY. 27 RT. - BR. 02949	100	1	
2.96	2.98	HWY. 27 RT. - BR. 02950	175	1	
2.97	2.98	HWY. 27 LT. - BR. 02950	100	1	
2.99	3.01	HWY. 27 LT. - BR. 02950	175	1	
2.99	3.00	HWY. 27 RT. - BR. 02950	100	1	
9.63	9.65	HWY. 27 RT. - BR. 02951	175	1	
9.64	9.65	HWY. 27 LT. - BR. 02951	100	1	
9.70	9.72	HWY. 27 LT. - BR. 02951	175	1	
9.70	9.71	HWY. 27 RT. - BR. 02951	100	1	
10.15	10.17	HWY. 27 RT. - BR. 02952	175	1	
10.16	10.17	HWY. 27 LT. - BR. 02952	100	1	
10.19	10.21	HWY. 27 LT. - BR. 02952	175	1	
10.19	10.20	HWY. 27 RT. - BR. 02952	100	1	
TOTALS:			2575	19	1

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	453	906
DIRECTED BY THE ENGINEER		
TOTALS:	453	906

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

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	500
DIRECTED BY THE ENGINEER	
TOTAL:	500

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

BRIDGE DECK REPAIR & HEALER/SEALER (STPR-0075 (35))

LOG MILE	LOCATION	REINFORCING STEEL - BRIDGE (GRADE 60)	BRIDGE DECK REPAIR	PENETRATING HEALER/SEALER
		POUND	SQ. YD.	SQ. YD.
1.90	BRIDGE NO. 02949	44.00	22.00	448
2.98	BRIDGE NO. 02950	22.00	11.00	224
9.65	BRIDGE NO. 02951	64.00	33.00	672
10.17	BRIDGE NO. 02952	30.00	14.00	299
TOTALS:		160.00	80.00	1643

NOTE:
EXISTING BRIDGE NO. 02949 HAS APPROXIMATELY 6 INCHES OF ASPHALT OVERLAY
EXISTING BRIDGE NO. 02950 HAS APPROXIMATELY 4 INCHES OF ASPHALT OVERLAY
EXISTING BRIDGE NO. 02951 HAS APPROXIMATELY 5 INCHES OF ASPHALT OVERLAY
EXISTING BRIDGE NO. 02952 HAS APPROXIMATELY 5 INCHES OF ASPHALT OVERLAY

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	30	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

DRIVEWAYS & TURNOUTS (BOX 1 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
			FEET	SQ. YD.	TON	GALLONS/ SQ. YD.	GALLON
0.11	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.30	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.36	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.43	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.50	RT.	HWY. 27	40	100.01	11.00	0.17	17.00
0.58	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.59	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.60	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.67	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.71	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.72	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.77	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.79	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.83	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.85	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.87	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
0.95	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.00	LT.	HWY. 27	30	198.66	21.85	0.17	33.77
1.18	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.19	RT.	HWY. 27	20	17.78	1.96	0.17	3.02
1.21	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.29	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.48	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.49	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.50	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.52	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.55	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.57	LT.	HWY. 27	30	198.66	21.85	0.17	33.77
1.95	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
1.98	LT.	HWY. 27	20	101.77	11.19	0.17	17.30
2.08	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
2.10	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
2.23	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
2.25	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
2.29	RT.	HWY. 27	30	133.99	14.74	0.17	22.78
2.30	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
2.52	LT.	HWY. 27	40	100.01	11.00	0.17	17.00
2.54	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
2.56	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
2.60	LT.	HWY. 27	20	17.78	1.96	0.17	3.02
2.64	LT.	HWY. 27	20	17.78	1.96	0.17	3.02
2.81	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
3.04	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
3.18	RT.	HWY. 27	40	327.37	36.01	0.17	55.65
3.21	LT.	HWY. 27	30	22.22	2.44	0.17	3.78
3.36	RT.	HWY. 27	20	17.78	1.96	0.17	3.02
3.40	RT.	HWY. 27	20	17.78	1.96	0.17	3.02
3.41	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
3.42	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
3.49	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 1 OF 6):				**1863.59**	**205.00**		**316.79**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

DRIVEWAYS & TURNOUTS (BOX 2 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
			FEET	SQ. YD.	TON	GALLONS/ SQ. YD.	GALLON
3.61	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
3.69	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
4.08	RT.	HWY. 27	24	19.56	2.15	0.17	3.33
4.24	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
4.27	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
4.28	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
4.44	LT.	HWY. 27	24	19.56	2.15	0.17	3.33
4.50	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
4.73	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.00	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.10	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.20	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.24	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.29	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.30	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.37	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.42	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.43	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.45	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.46	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.47	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.49	LT.	HWY. 27	24	66.23	7.29	0.17	11.26
5.50	RT.	HWY. 27	24	66.23	7.29	0.17	11.26
5.53	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.54	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.62	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.70	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.71	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.77	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.79	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.83	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
5.94	LT.	HWY. 27	20	22.22	2.44	0.17	3.78
5.99	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.02	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.08	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.12	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.13	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.15	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.30	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.35	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.41	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.46	LT.	HWY. 27	30	133.99	14.74	0.17	22.78
6.56	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.57	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.60	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.62	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.72	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.76	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.77	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.78	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 2 OF 6):				**1031.79**	**113.50**		**175.42**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

3/22/2019

R080495.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.		080495	31	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

DRIVEWAYS & TURNOUTS (BOX 3 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
			FEET	SQ. YD.	TON	GALLONS/ SQ. YD.	GALLON
6.83	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.90	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.95	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
6.98	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
7.08	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
7.14	RT.	HWY. 27	20	57.78	6.36	0.17	9.82
7.15	LT.	HWY. 27	20	57.78	6.36	0.17	9.82
8.59	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
8.78	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
8.79	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
8.86	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
9.05	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
9.06	RT.	HWY. 27	20	17.78	1.96	0.17	3.02
9.15	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
9.18	LT.	HWY. 27	30	133.99	14.74	0.17	22.78
9.39	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
9.43	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
9.47	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
9.58	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
9.93	LT.	HWY. 27	20	17.78	1.96	0.17	3.02
9.94	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.13	LT.	HWY. 27	20	57.78	6.36	0.17	9.82
10.21	RT.	HWY. 27	16	49.34	5.43	0.17	8.39
10.26	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.27	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.31	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.33	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.36	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.36	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.37	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.38	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.39	RT.	HWY. 27	16	49.34	5.43	0.17	8.39
10.48	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.51	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.54	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.56	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.57	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.62	RT.	HWY. 27	16	49.34	5.43	0.17	8.39
10.64	RT.	HWY. 27	20	101.77	11.19	0.17	17.30
10.65	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.69	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.72	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.77	RT.	HWY. 27	20	101.77	11.19	0.17	17.30
10.78	LT.	HWY. 27	16	49.34	5.43	0.17	8.39
10.87	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.91	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
10.95	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
11.03	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.36	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.38	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 3 OF 6):				**1351.79**	**148.72**		**229.80**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

DRIVEWAYS & TURNOUTS (BOX 4 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
			FEET	SQ. YD.	TON	GALLONS/ SQ. YD.	GALLON
12.50	LT.	HWY. 27	30	22.22	2.44	0.17	3.78
12.52	RT.	HWY. 27	20	57.78	6.36	0.17	9.82
12.54	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.59	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.60	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.61	LT.	HWY. 27	20	57.78	6.36	0.17	9.82
12.66	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.67	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.71	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.79	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.81	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.87	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.89	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
12.91	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.03	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.03	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.06	RT.	HWY. 27	20	57.78	6.36	0.17	9.82
13.07	LT.	HWY. 27	20	57.78	6.36	0.17	9.82
13.12	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.15	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.27	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.32	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.33	LT.	HWY. 27	16	49.34	5.43	0.17	8.39
13.36	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.39	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.45	LT.	HWY. 27	16	49.34	5.43	0.17	8.39
13.48	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.50	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.53	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
13.59	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.04	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.08	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.08	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.09	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.11	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.13	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.14	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.15	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.17	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.41	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.41	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.45	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.58	RT.	HWY. 27	20	57.78	6.36	0.17	9.82
14.59	LT.	HWY. 27	16	49.34	5.43	0.17	8.39
14.63	LT.	HWY. 27	16	49.34	5.43	0.17	8.39
14.65	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.66	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.71	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.77	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.79	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 4 OF 6):				**1148.48**	**126.36**		**195.24**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

3/22/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	32	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-7-19

DRIVEWAYS & TURNOUTS (BOX 5 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
			FEET	SQ. YD.	TON	GALLONS/ SQ. YD.	GALLON
14.86	LT.	HWY. 27	24	66.23	7.29	0.17	11.26
14.92	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
14.98	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.00	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.03	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.08	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.10	LT.	HWY. 27	20	57.78	6.36	0.17	9.82
15.12	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.14	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.22	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.23	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.43	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.50	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.57	RT.	HWY. 27	20	101.77	11.19	0.17	17.30
15.59	LT.	HWY. 27	16	49.34	5.43	0.17	8.39
15.65	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.67	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.78	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
15.87	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.00	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.01	LT.	HWY. 27	20	57.78	6.36	0.17	9.82
16.10	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.23	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.27	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.29	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.33	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.41	LT.	HWY. 27	20	57.78	6.36	0.17	9.82
16.55	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.56	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.59	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.62	RT.	HWY. 27	24	19.56	2.15	0.17	3.33
16.63	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.63	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.64	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.69	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.73	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
16.73	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.14	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.19	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.23	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.24	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.32	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.33	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.37	LT.	HWY. 27	20	57.78	6.36	0.17	9.82
17.43	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.44	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.51	LT.	HWY. 27	30	22.22	2.44	0.17	3.78
17.54	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.57	RT.	HWY. 27	20	57.78	6.36	0.17	9.82
17.58	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 5 OF 6):				**1188.02**	**130.70**		**201.96**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

DRIVEWAYS & TURNOUTS (BOX 6 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
			FEET	SQ. YD.	TON	GALLONS/ SQ. YD.	GALLON
17.58	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.62	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.65	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.68	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.70	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.91	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.94	RT.	HWY. 27	20	57.78	6.36	0.17	9.82
17.97	RT.	HWY. 27	16	16.00	1.76	0.17	2.72
17.99	LT.	HWY. 27	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 1 OF 6):				**1863.59**	**205.00**		**316.79**
SUBTOTALS (BOX 2 OF 6):				**1031.79**	**113.50**		**175.42**
SUBTOTALS (BOX 3 OF 6):				**1351.79**	**148.72**		**229.80**
SUBTOTALS (BOX 4 OF 6):				**1148.48**	**126.36**		**195.24**
SUBTOTALS (BOX 5 OF 6):				**1188.02**	**130.70**		**201.96**
SUBTOTALS (BOX 6 OF 6):				**185.78**	**20.44**		**31.58**
TOTALS:				**6769.45**	**744.72**		**1150.79**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

3/22/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	33	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

BASE AND SURFACING (BOX 1 OF 2)

LOG MILE	LOG MILE	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		AGGREGATE BASE COURSE (CLASS D-8)		TACK COAT							ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (3/8")							
								(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)														
			FEET	TON / STATION	TON	TON / STATION	TON	TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	TOTAL PG 64-22 TON
MAIN LANES																										
0.00	0.14	HWY. 27 MAIN LANES	739.20			6.00	44.35	28.00	2299.73	114.99				114.99									28.00	2299.73	220.00	252.97	252.97
0.14	0.32	HWY. 27 MAIN LANES	950.40			6.00	57.02	26.00	2745.60	137.28				137.28									26.00	2745.60	220.00	302.02	302.02
0.36	1.93	HWY. 27 MAIN LANES	8289.60			6.00	497.38	26.00	23947.73	1197.39				1197.39									26.00	23947.73	220.00	2634.25	2634.25
1.97	3.04	HWY. 27 MAIN LANES	5649.60			6.00	338.98	26.00	16321.07	816.05				816.05									26.00	16321.07	220.00	1795.32	1795.32
3.05	4.75	HWY. 27 MAIN LANES	8976.00			6.00	538.56	26.00	25930.67	1296.53				1296.53									26.00	25930.67	220.00	2852.37	2852.37
4.75	7.21	HWY. 27 MAIN LANES	12988.80			6.00	779.33	24.00	34636.80	1731.84				1731.84									24.00	34636.80	220.00	3810.05	3810.05
8.55	9.05	HWY. 27 MAIN LANES	2640.00			6.00	158.40	24.00	7040.00	352.00				352.00									24.00	7040.00	220.00	774.40	774.40
9.05	9.65	HWY. 27 MAIN LANES	3168.00			6.00	190.08	26.00	9152.00	457.60				457.60									26.00	9152.00	220.00	1006.72	1006.72
9.69	10.17	HWY. 27 MAIN LANES	2534.40			6.00	152.06	26.00	7321.60	366.08				366.08									26.00	7321.60	220.00	805.38	805.38
10.20	11.13	HWY. 27 MAIN LANES	4910.40			6.00	294.62	26.00	14185.60	709.28				709.28									26.00	14185.60	220.00	1560.42	1560.42
12.33	12.65	HWY. 27 MAIN LANES	1689.60			6.00	101.38	26.00	4881.07	244.05				244.05									26.00	4881.07	220.00	536.92	536.92
12.65	13.60	HWY. 27 MAIN LANES	5016.00			4.00	200.64	22.00	12261.33	613.07				613.07									22.00	12261.33	220.00	1348.75	1348.75
14.00	16.77	HWY. 27 MAIN LANES	14625.60			6.00	877.54	22.00	35751.47	1787.57				1787.57									28.00	45501.87	220.00	5005.21	5005.21
16.94	18.12	HWY. 27 MAIN LANES	6230.40			6.00	373.82	22.00	15229.87	761.49				761.49									28.00	19383.47	220.00	2132.18	2132.18
ADDITIONAL FOR LEVELING																										
0.00	0.14	HWY. 27 MAIN LANES	739.20								28.00	2299.73	390.95	390.95					28.00	2299.73	VAR.	252.97				252.97
0.14	.32	HWY. 27 MAIN LANES	950.40								26.00	2745.60	466.75	466.75					26.00	2745.60	VAR.	302.02				302.02
.36	1.93	HWY. 27 MAIN LANES	8289.60								26.00	23947.73	4071.11	4071.11					26.00	23947.73	VAR.	2634.25				2634.25
1.97	3.04	HWY. 27 MAIN LANES	5649.60								26.00	16321.07	2774.58	2774.58					26.00	16321.07	VAR.	1795.32				1795.32
3.05	4.75	HWY. 27 MAIN LANES	8976.00								26.00	25930.67	4408.21	4408.21					26.00	25930.67	VAR.	2852.37				2852.37
4.75	7.20	HWY. 27 MAIN LANES	12936.00								24.00	34496.00	5864.32	5864.32					24.00	34496.00	VAR.	3794.56				3794.56
8.55	9.05	HWY. 27 MAIN LANES	2640.00								24.00	7040.00	1196.80	1196.80					24.00	7040.00	VAR.	774.40				774.40
9.05	9.65	HWY. 27 MAIN LANES	3168.00								26.00	9152.00	1555.84	1555.84					26.00	9152.00	VAR.	1006.72				1006.72
9.69	10.17	HWY. 27 MAIN LANES	2534.40								26.00	7321.60	1244.67	1244.67					26.00	7321.60	VAR.	805.38				805.38
10.20	11.13	HWY. 27 MAIN LANES	4910.40								26.00	14185.60	2411.55	2411.55					26.00	14185.60	VAR.	1560.42				1560.42
12.33	12.65	HWY. 27 MAIN LANES	1689.60								26.00	4881.07	829.78	829.78					26.00	4881.07	VAR.	536.92				536.92
12.65	13.60	HWY. 27 MAIN LANES	5016.00								22.00	12261.33	2084.43	2084.43					22.00	12261.33	VAR.	1348.75				1348.75
14.00	16.75	HWY. 27 MAIN LANES	14520.00								28.00	45173.33	7679.47	7679.47					28.00	45173.33	VAR.	4969.07				4969.07
16.96	18.12	HWY. 27 MAIN LANES	6124.80								28.00	19054.93	3239.34	3239.34					28.00	19054.93	VAR.	2096.04				2096.04
ADDITIONAL FOR GUARDRAIL WIDENING																										
0.27	0.28	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
0.28	0.32	WIDENING LT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
0.30	0.32	WIDENING RT.	36.50	20.75	7.57																						
0.34	0.38	WIDENING LT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
0.38	0.39	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
0.34	0.37	WIDENING RT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
0.37	0.38	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
1.85	1.86	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
1.86	1.90	WIDENING RT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
1.86	1.87	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
1.87	1.90	WIDENING LT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
1.93	1.96	WIDENING RT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
1.96	1.97	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
1.93	1.97	WIDENING LT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
1.97	1.98	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
2.93	2.94	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
2.94	2.98	WIDENING RT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
2.94	2.95	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
2.95	2.98	WIDENING LT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
2.99	3.02	WIDENING RT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
3.02	3.03	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
2.99	3.03	WIDENING LT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
3.03	3.04	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
9.60	9.61	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
9.61	9.65	WIDENING RT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
9.61	9.62	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
9.62	9.65	WIDENING LT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
9.70	9.73	WIDENING RT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
9.73	9.74	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
9.70	9.74	WIDENING LT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
9.74	9.75	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
10.12	10.13	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
10.13	10.17	WIDENING RT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
10.13	10.14	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
10.14	10.17	WIDENING LT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
10.19	10.22	WIDENING RT.	125.00	20.75	25.94																		2.00	27.78	220.00	3.06	3.06
10.22	10.23	WIDENING TAPER RT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
10.19	10.23	WIDENING LT.	200.00	20.75	41.50																		2.00	44.44	220.00	4.89	4.89
10.23	10.24	WIDENING TAPER LT.	25.00	10.38	2.60																		1.00	2.78	220.00	0.31	0.31
SUBTOTALS (BOX 1 OF 2):					**689.87**		**4604.16**		**211704.54**	**10585.22**		**224810.66**	**38217.80**	**48803.02**						**224810.66**		**24729.19**		**226339.12**		**24897.46**	**49626.65**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% 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.

3/22/2019

R080495.DGN

QUANTITIES

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.		080495	34	60

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

BASE AND SURFACING (BOX 2 OF 2)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		AGGREGATE BASE COURSE (CLASS D-8)		TACK COAT							ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (3/8")							
				TON / STATION	TON	TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	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.	TOTAL PG 64-22
			FEET					TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	FEET			TON
MAIN LANES																									
632+44.55	633+44.55	TRANSITION	100.00	63.50	63.50																		30.00	333.33	220.00	36.67	36.67
633+44.55	636+74.55	HWY. 27 NOTCH AND WIDEN TAPER	330.00	VAR.	516.28			VAR.	861.78	43.09				43.09	VAR.	430.89	495.00	106.65	VAR.	430.89	220.00	47.40	VAR.	1109.62	220.00	122.06	169.46
636+74.55	639+34.55	HWY. 27 LEFT TURNING LANE	260.00	235.50	612.30			48.77	1408.91	70.45				70.45	12.52	361.69	495.00	89.52	12.25	353.89	220.00	38.93	48.00	1386.67	220.00	152.53	191.46
639+34.55	642+64.55	HWY. 27 NOTCH AND WIDEN TAPER	330.00	VAR.	516.28			VAR.	861.78	43.09				43.09	VAR.	430.89	495.00	106.65	VAR.	430.89	220.00	47.40	VAR.	1109.62	220.00	122.06	169.46
642+64.55	643+64.55	TRANSITION	100.00	63.50	63.50																		30.00	333.33	220.00	36.67	36.67
LIBERTY ROAD																											
1001+75.00	1002+75.00	TRANSITION	100.00	41.50	41.50																		24.00	266.67	220.00	29.33	29.33
1002+75.00	1003+28.63	LIBERTY ROAD NOTCH AND WIDEN	53.63	83.00	44.51																		24.00	143.01	220.00	15.73	15.73
1003+28.63	1004+69.43	LIBERTY ROAD FULL DEPTH	140.80	212.75	299.55																		24.00	375.47	220.00	41.30	41.30
1004+69.43	1005+21.39	LIBERTY ROAD RADIUS - SOUTH	51.96	VAR.	156.69																		VAR.	302.62	220.00	33.29	33.29
1005+57.39	1006+26.14	LIBERTY ROAD RADIUS - NORTH	68.75	VAR.	186.89																		VAR.	357.70	220.00	39.35	39.35
1006+26.14	1009+10.00	LIBERTY ROAD FULL DEPTH	283.86	212.75	603.91																		24.00	756.96	220.00	83.27	83.27
1009+10.00	1010+93.13	LIBERTY ROAD NOTCH AND WIDEN	183.13	83.00	152.00																		24.00	488.35	220.00	53.72	53.72
1010+93.13	1011+93.13	TRANSITION	100.00	41.50	41.50																		24.00	266.67	220.00	29.33	29.33
ADDITIONAL FOR LEVELING																											
633+44.55	636+74.55	HWY. 27 NOTCH AND WIDEN	330.00								VAR.	1109.62	188.64	188.64									VAR.	1109.62	VAR.	122.06	122.06
636+74.55	639+34.55	HWY. 27 NOTCH AND WIDEN	260.00								24.00	693.33	117.87	117.87									24.00	693.33	VAR.	76.27	76.27
639+34.55	642+64.55	HWY. 27 NOTCH AND WIDEN	330.00								VAR.	1109.62	188.64	188.64									VAR.	1109.62	VAR.	122.06	122.06
1002+75.00	1003+28.63	LIBERTY ROAD NOTCH AND WIDEN	53.63								20.00	119.18	20.26	20.26									20.00	119.18	VAR.	13.11	13.11
1009+10.00	1010+93.13	LIBERTY ROAD NOTCH AND WIDEN	183.13								20.00	406.96	69.18	69.18									20.00	406.96	VAR.	44.77	44.77
ADDITIONAL FOR MOT WIDENING																											
1003+29.73	1005+21.39	TEMPORARY WIDENING - NOTCH AND WIDEN	191.66	VAR.	106.62																		VAR.	234.30	220.00	25.77	25.77
1005+57.39	1011+19.27	TEMPORARY WIDENING - NOTCH AND WIDEN	561.88	VAR.	312.54																		VAR.	733.07	220.00	80.64	80.64
ADDITIONAL FOR SUPERELEVATION																											
633+52.98	637+12.98	SUPERELEVATION TRANSITION	360.00	15.25	54.90																						
637+12.98	639+90.69	MAXIMUM SUPERELEVATION	277.71	30.50	84.70																						
639+90.69	642+64.55	SUPERELEVATION TRANSITION	273.86	15.25	41.76																						
642+64.55	643+50.69	SUPERELEVATION TRANSITION - MATCH HWY. 27 GRADE	86.14	15.25	13.14																						
1003+28.63	1004+25.01	SUPERELEVATION TRANSITION	96.38	20.13	19.40																						
1004+25.01	1005+21.39	MAXIMUM SUPERELEVATION	96.38	40.25	38.79																						
1005+57.39	1006+80.59	SUPERELEVATION TRANSITION	123.20	22.38	27.57																						
1006+80.59	1007+00.44	MAXIMUM SUPERELEVATION	19.85	44.75	8.88																						
1007+00.44	1008+23.64	SUPERELEVATION TRANSITION	123.20	22.38	27.57																						
1008+23.64	1009+15.35	SUPERELEVATION TRANSITION	91.71	20.13	18.46																						
1009+15.35	1009+89.68	MAXIMUM SUPERELEVATION	74.33	40.25	29.92																						
1009+89.68	1010+81.39	SUPERELEVATION TRANSITION	91.71	20.13	18.46																						
SUBTOTALS (BOX 1 OF 2)					**689.87**		**4604.16**		**211704.54**	**10585.22**		**224810.66**	**38217.80**	**48803.02**						**224810.66**		**24729.19**		**226339.12**		**24897.46**	**49626.65**
SUBTOTALS (BOX 2 OF 2)					**4101.12**				**3132.47**	**156.63**		**3438.71**	**584.59**	**741.22**		**1223.47**		**302.82**		**1215.67**		**133.73**		**11636.10**		**1279.99**	**1413.72**
TOTALS:					**4790.99**		**4604.16**		**214837.01**	**10741.85**		**228249.37**	**38802.39**	**49544.24**		**1223.47**		**302.82**		**226026.33**		**24862.92**		**237975.22**		**26177.45**	**51040.37**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.5% MIN. AGGR.....5.5% 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.

3/22/2019

R080495.DGN

QUANTITIES

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	HSIP-0075(35) QUANTITY	STPR-0075(35) QUANTITY	TOTAL QUANTITY	UNIT
201	CLEARING	18		18	STATION
201	GRUBBING	18		18	STATION
202	REMOVAL AND DISPOSAL OF FENCE	3404		3404	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	321		321	SQ. YD.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	4		4	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	697		697	LIN. FT.
210	UNCLASSIFIED EXCAVATION	6478		6478	CU. YD.
210	COMPACTED EMBANKMENT	5734		5734	CU. YD.
SP & 210	SOIL STABILIZATION	250		250	TON
215	TRENCHING AND SHOULDER PREPARATION	30		30	STATION
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	4989		4989	TON
SP & 303	AGGREGATE SURFACE COURSE (CLASS D-8)	4604		4604	TON
SS & 401	TACK COAT	51601		51601	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	289		289	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	14		14	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8")	48977		48977	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8")	2851		2851	TON
412	COLD MILLING ASPHALT PAVEMENT	5089		5089	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	453		453	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	500		500	TON
601	MOBILIZATION	1.00		1	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1		1	EACH
603	MAINTENANCE OF TRAFFIC	1.00		1	LUMP SUM
SS & 604	SIGNS	1415		1415	SQ. FT.
SS & 604	BARRICADES	64		64	LIN. FT.
SS & 604	TRAFFIC DRUMS	301		301	EACH
604	CONSTRUCTION PAVEMENT MARKINGS	316800		316800	LIN. FT.
SS & 604	VERTICAL PANELS	39		39	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE B)	98		98	SQ. YD.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	72		72	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	188		188	LIN. FT.
606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	84		84	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	28		28	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	72		72	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4		4	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4		4	EACH
606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4		4	EACH
606	SELECTED PIPE BEDDING	25		25	CU. YD.
SS & 617	GUARDRAIL (TYPE A)	2575		2575	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	19		19	EACH
619	WIRE FENCE (TYPE D)	1212		1212	LIN. FT.
619	WIRE FENCE (TYPE D-1)	924		924	LIN. FT.
619	WIRE FENCE (TYPE D-2)	322		322	LIN. FT.
* 619	16' STEEL GATES (ALTERNATE NO. 1)	4		4	EACH
* 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	4		4	EACH
620	LIME	8		8	TON
620	SEEDING	3.80		4	ACRE
SS & 620	MULCH COVER	18.15		18	ACRE
620	WATER	682.0		682	M. GAL.
621	TEMPORARY SEEDING	14.35		14	ACRE
621	SILT FENCE	5094		5094	LIN. FT.
621	SAND BAG DITCH CHECKS	1155		1155	BAG
621	SEDIMENT BASIN	300		300	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	300		300	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	593		593	CU. YD.
621	ROCK DITCH CHECKS	158		158	CU. YD.
623	SECOND SEEDING APPLICATION	3.80		4	ACRE
624	SOLID SODDING	134		134	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	493		493	SQ. YD.
SS & 632	CONCRETE ISLAND	320		320	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00		1	LUMP SUM
SP & 642	RUMBLE STRIPES IN ASPHALT SHOULDERS	146908		146908	LIN. FT.
SP & 642	CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS	79570		79570	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	1878		1878	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (12")	32		32	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	1866		1866	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	80494		80494	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	604		604	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	22		22	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	160759		160759	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)	48		48	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	2		2	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	999		999	EACH
SS & 734	BRIDGE END TERMINAL	1		1	EACH
816	FILTER BLANKET	104		104	SQ. YD.
816	DUMPED RIPRAP	52		52	CU. YD.
	STRUCTURES OVER 20' SPAN				
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		160	160	POUND
SP & 822	BRIDGE DECK REPAIR		80	80	SQ. YD.
SP	PENETRATING HEALER/SEALER		1643	1643	SQ. YD.

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER

SUMMARY OF QUANTITIES & REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TIMOTHY D. SMITH
10-1-19

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

(2) SUMMARY OF QUANTITIES & REVISIONS

FEDERAL DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	080495	35	60

JOB NO.

SURVEY CONTROL COORDINATES
Project Name: s080495
Date: 1/5/2016
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *580012 - 580012A, 750001 - 750001A, 750018 - 750018A, 750019 - 750020, 750020A - 750021, 750021A - 750022, 750022A*
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	267857.4154	0.0220	894359.6223	0.0220	338.928	0.001	CTL	PD:STD AHTD MON STAMPED PN 1
2	268940.9000	0.0290	894403.2573	0.0300	336.897	0.002	CTL	PD:STD AHTD MON STAMPED PN 2
3	269524.4800	0.0210	894441.7345	0.0220	346.599	0.002	CTL	PD:STD AHTD MON STAMPED PN 3
4	269387.1769	0.0250	894882.1860	0.0260	343.072	0.003	CTL	PD:STD AHTD MON STAMPED PN 4
5	269425.0531	0.0290	895435.7127	0.0300	342.304	0.003	CTL	PD:STD AHTD MON STAMPED PN 5
6	269674.6760	0.0270	895743.1570	0.0280	359.975	0.004	CTL	PD:STD AHTD MON STAMPED PN 6
7	270116.2349	0.0210	896044.6859	0.0230	365.974	0.004	CTL	PD:STD AHTD MON STAMPED PN 7
8	270734.7425	0.0210	896194.8748	0.0230	374.925	0.004	CTL	PD:STD AHTD MON STAMPED PN 8
9	271422.1040	0.0270	896286.1184	0.0290	391.682	0.004	CTL	PD:STD AHTD MON STAMPED PN 9
10	272060.6085	0.0240	896277.8039	0.0250	401.768	0.004	CTL	PD:STD AHTD MON STAMPED PN 10
11	272688.4722	0.0240	896169.0965	0.0250	400.981	0.004	CTL	PD:STD AHTD MON STAMPED PN 11
12	273321.2323	0.0230	895983.7458	0.0240	405.200	0.004	CTL	PD:STD AHTD MON STAMPED PN 12
13	273995.7453	0.0270	895857.9286	0.0280	352.708	0.005	CTL	PD:STD AHTD MON STAMPED PN 13
14	274600.3315	0.0300	895685.7637	0.0300	338.048	0.005	CTL	PD:STD AHTD MON STAMPED PN 14
15	275235.0764	0.0330	895642.4957	0.0320	327.968	0.005	CTL	PD:STD AHTD MON STAMPED PN 15
16	275892.0112	0.0300	895486.6186	0.0280	337.393	0.077	CTL	PD:STD AHTD MON STAMPED PN 16
17	276441.4006	0.0340	895545.0831	0.0310	332.107	0.005	CTL	PD:STD AHTD MON STAMPED PN 17
18	276822.7880	0.0360	896061.6642	0.0320	334.096	0.005	CTL	PD:STD AHTD MON STAMPED PN 18
19	277198.5487	0.0360	896604.6237	0.0330	334.906	0.005	CTL	PD:STD AHTD MON STAMPED PN 19
20	277528.6383	0.0260	897086.3921	0.0220	334.653	0.005	CTL	PD:STD AHTD MON STAMPED PN 20
21	277950.2710	0.0250	897607.2893	0.0240	353.731	0.005	CTL	PD:STD AHTD MON STAMPED PN 21
22	278331.0743	0.0240	898146.7176	0.0280	363.580	0.005	CTL	PD:STD AHTD MON STAMPED PN 22
23	278721.9370	0.0200	898719.9893	0.0230	376.861	0.005	CTL	PD:STD AHTD MON STAMPED PN 23
24	279165.1282	0.0210	899351.2050	0.0230	379.438	0.006	CTL	PD:STD AHTD MON STAMPED PN 24
25	279535.0953	0.0190	899879.1124	0.0180	355.082	0.006	CTL	PD:STD AHTD MON STAMPED PN 25
26	279981.0992	0.0220	900491.0666	0.0210	355.845	0.006	CTL	PD:STD AHTD MON STAMPED PN 26
27	280211.7447	0.0200	900825.3127	0.0170	352.794	0.005	CTL	PD:STD AHTD MON STAMPED PN 27
28	280574.4108	0.0180	901326.6723	0.0130	328.919	0.006	CTL	PD:STD AHTD MON STAMPED PN 28
29	280956.4917	0.0150	901937.5729	0.0120	328.952	0.005	CTL	PD:STD AHTD MON STAMPED PN 29
30	281319.1768	0.0001	902452.2214	0.0001	348.596	0.000	CTL	PD:STD AHTD MON STAMPED PN 30
31	281632.1679	0.0150	902981.6162	0.0140	360.214	0.006	CTL	PD:STD AHTD MON STAMPED PN 3
32	282294.3158	0.0160	903791.3471	0.0140	405.750	0.006	CTL	PD:STD AHTD MON STAMPED PN 32
33	282687.0786	0.0150	904375.2617	0.0140	380.531	0.005	CTL	PD:STD AHTD MON STAMPED PN 33
34	287881.1244	0.0310	909603.7449	0.0260	368.145	0.005	CTL	PD:STD AHTD MON STAMPED PN 34
35	288540.1661	0.0330	909862.6482	0.0270	372.741	0.004	CTL	PD:STD AHTD MON STAMPED PN 35
36	289142.5438	0.0220	910125.0457	0.0220	374.107	0.004	CTL	PD:STD AHTD MON STAMPED PN 36
37	289924.3045	0.0210	910438.4134	0.0220	394.725	0.004	CTL	PD:STD AHTD MON STAMPED PN 37
38	290523.1963	0.0220	911024.5246	0.0210	397.308	0.004	CTL	PD:STD AHTD MON STAMPED PN 38
39	290891.3407	0.0170	911463.2570	0.0170	403.598	0.004	CTL	PD:STD AHTD MON STAMPED PN 39
40	291233.0621	0.0210	911769.7511	0.0230	430.793	0.004	CTL	PD:STD AHTD MON STAMPED PN 40
41	291541.8495	0.0190	911877.3631	0.0190	418.893	0.003	CTL	PD:STD AHTD MON STAMPED PN 41
42	314732.1931	0.0190	946590.5307	0.0160	485.325	0.006	CTL	PD:STD AHTD MON STAMPED PN 42
43	315014.6953	0.0170	946937.0743	0.0160	496.632	0.006	CTL	PD:STD AHTD MON STAMPED PN 43
44	315477.5900	0.0150	947508.9777	0.0130	480.575	0.006	CTL	PD:STD AHTD MON STAMPED PN 44
45	315805.7213	0.0180	948027.7664	0.0150	472.240	0.007	CTL	PD:STD AHTD MON STAMPED PN 45
46	316152.7728	0.0190	948690.9794	0.0160	450.296	0.007	CTL	PD:STD AHTD MON STAMPED PN 46
47	316556.8498	0.0210	949264.4943	0.0190	458.882	0.007	CTL	PD:STD AHTD MON STAMPED PN 47
48	316733.0794	0.0210	949688.3058	0.0190	466.472	0.007	CTL	PD:STD AHTD MON STAMPED PN 48
49	317218.5531	0.0160	950348.8199	0.0150	452.084	0.084	CTL	PD:STD AHTD MON STAMPED PN 49
50	317799.6508	0.0130	950735.4757	0.0130	432.955	0.008	CTL	PD:STD AHTD MON STAMPED PN 50
51	318500.7234	0.0140	951077.1195	0.0130	425.516	0.008	CTL	PD:STD AHTD MON STAMPED PN 51
52	318961.5316	0.0110	951779.0919	0.0110	419.227	0.000	CTL	PD:STD AHTD MON STAMPED PN 52
53	319403.9640	0.0130	952333.8923	0.0120	414.404	0.008	CTL	PD:STD AHTD MON STAMPED PN 53
54	319691.3717	0.0150	952729.5140	0.0120	415.359	0.008	CTL	PD:STD AHTD MON STAMPED PN 54
55	320571.0756	0.0140	953664.9123	0.0110	393.440	0.009	CTL	PD:STD AHTD MON STAMPED PN 55
56	320963.2526	0.0110	954064.1813	0.0080	381.955	0.009	CTL	PD:STD AHTD MON STAMPED PN 56
57	321817.0946	0.0130	954892.3420	0.0110	369.801	0.009	CTL	PD:STD AHTD MON STAMPED PN 57
58	322217.3060	0.0130	955513.0972	0.0100	367.308	0.009	CTL	PD:STD AHTD MON STAMPED PN 58
59	322559.1937	0.0130	956154.6814	0.0110	361.464	0.009	CTL	PD:STD AHTD MON STAMPED PN 59
60	322871.6687	0.0140	956851.1208	0.0120	358.620	0.093	CTL	PD:STD AHTD MON STAMPED PN 60
61	323109.9995	0.0160	957573.9675	0.0140	355.847	0.009	CTL	PD:STD AHTD MON STAMPED PN 61
62	323393.3515	0.0160	958185.3767	0.0140	350.428	0.010	CTL	PD:STD AHTD MON STAMPED PN 62
63	323678.9072	0.0160	958599.7636	0.0150	350.557	0.010	CTL	PD:STD AHTD MON STAMPED PN 63
64	324034.9550	0.0160	959143.1199	0.0150	348.671	0.010	CTL	PD:STD AHTD MON STAMPED PN 64
65	324208.2793	0.0210	959743.6361	0.0200	340.816	0.010	CTL	PD:STD AHTD MON STAMPED PN 65
66	324347.3132	0.0170	960233.3089	0.0170	345.717	0.010	CTL	PD:STD AHTD MON STAMPED PN 66
67	323483.6994	0.0150	956847.5166	0.0130	364.976	0.009	CTL	PD:STD AHTD MON STAMPED PN 67
68	324090.2986	0.0160	956834.3280	0.0140	372.033	0.010	CTL	PD:STD AHTD MON STAMPED PN 68
100	327222.3421	0.0000	969992.7031	0.0000	323.011	0.000	GPS	PD:AHTD GPS 580012
101	328312.5613	0.0000	971214.8895	0.0000	339.688	0.000	GPS	PD:AHTD GPS 580012A
102	267290.4643	0.0000	894626.3110	0.0000	337.526	0.000	GPS	PD:AHTD GPS 750001
103	268467.3737	0.0000	894401.8424	0.0000	337.485	0.000	GPS	PD:AHTD GPS 750001A
104	311629.2013	0.0000	940105.4618	0.0000	475.625	0.000	GPS	PD:AHTD GPS 750018
105	311029.4284	0.0000	938375.3401	0.0001	456.546	0.000	GPS	PD:AHTD GPS 750018A
106	305377.9853	0.0000	928422.3781	0.0000	378.373	0.000	GPS	PD:AHTD GPS 750019
107	304592.2256	0.0000	926795.9701	0.0000	359.942	0.000	GPS	PD:AHTD GPS 750019A
108	295048.4717	0.0000	913936.5716	0.0000	401.221	0.000	GPS	PD:AHTD GPS 750020
109	294687.1517	0.0000	912792.3922	0.0000	401.561	0.000	GPS	PD:AHTD GPS 750020A
110	280966.6637	0.0000	904041.3329	0.0000	389.481	0.000	GPS	PD:AHTD GPS 750021
111	281936.8572	0.0000	903217.3062	0.0000	373.308	0.000	GPS	PD:AHTD GPS 750021A
112	320169.2983	0.0000	953134.9646	0.0000	414.064	0.000	GPS	PD:AHTD GPS 750022
113	321359.0410	0.0000	954504.9955	0.0000	374.349	0.000	GPS	PD:AHTD GPS 750022A
900	269415.2651	0.0300	895271.9950	0.0280	328.979	0.003	TBM	PD:CHISELED SQ IN NE COR OF HW N.SIDE HWY.27
901	271760.3157	0.0260	896230.4165	0.0220	396.074	0.004	TBM	PD:CHISELED SQ IN S.COR OF 12"RCP W.SIDE OF HWY.27
902	274973.8489	0.0460	895669.9083	0.0400	331.921	0.005	TBM	PD:CHISELED SQ IN TOP NE END OF 10" HW W.SIDE HWY.27
903	277286.5019	0.0470	896725.7342	0.0390	334.935	0.005	TBM	PD:CHISELED SQ IN TOP SW COR OF BR WINGWALL SE SIDE HWY27
904	277950.5159	0.0430	897622.9168	0.0410	354.314	0.005	TBM	PD:CHISELED SQ IN NW COR OF 8"HW NW SIDE OF HWY.27
905	279246.3390	0.0330	899371.9097	0.0340	378.658	0.005	TBM	PD:CHISELED SQ IN CONC SW NEAR ENT TO AHTD MAINTENANCE YARD NW SIDE OF HWY.27
906	279718.0268	15.0000	900175.9796	15.0000	347.785	0.005	TBM	PD:CHISELED SQ IN NE COR OF 8" CONC HW NW SIDE OF HWY.27
907	280562.0176	0.0350	901394.4889	0.0250	334.468	0.006	TBM	PD:CHISELED SQ IN TOP OF NW COR OF BR WINGWALL NW SIDE OF HWY 27
908	281348.0575	0.0210	902508.0517	0.0170	349.288	0.005	TBM	PD:CHISELED SQ IN NW COR.OF 8" CONC HW NW SIDE HWY.27
909	281845.4300	0.0200	903228.2946	0.0170	370.747	0.005	TBM	PD:CHISELED SQ IN CONC.PARKING LOT NEAR NE RADIUS @ ARKWEST COMMUNICATIONS SE SIDE OF HWY.27
910	281079.0064	0.0230	902525.4411	0.0180	341.443	0.006	TBM	PD:CHISELED SQ IN NW COR.OF 8" CONC.HW. N.SIDE OF HWY.154
911	284270.2222	15.0000	906596.6162	15.0000	359.665	0.005	TBM	PD:CHISELED SQ IN NE COR.OF 10" CONC.HW. NW SIDE OF HWY.27
912	286029.4337	15.0000	908822.7898	15.0000	367.367	0.005	TBM	PD:5/8"REBAR/AHTD AL CAP @ S.SIDE DW
913	286783.1299	15.0000	909165.4770	15.0000	361.298	0.005	TBM	PD:CHISELED SQ IN NW COR.OF 10" CONC.HW
914	289246.9488	0.0550	910211.3973	0.0410	373.685	0.004	TBM	PD:CHISELED SQ IN NW COR.OF 8" CONC.HW
915	290336.9485	0.0340	910877.5593	0.0310	395.284	0.004	TBM	PD:CHISELED SQ IN SE COR. OF 8" CONC.HW
916	292880.6802	15.0000	912123.2745	15.0000	377.020	0.003	TBM	PD:CHISELED SQ IN SW COR.OF 10" CONC.HW
917	324464.1479	0.0000	966045.9578	0.0000	328.700	0.011	TBM	PD:CHISELED SQ IN SW COR.OF 4'X4' CONC.VAULT SW SIDE OF 4 WAY INTERSECTIN OF N.5TH ST & QUAY
918	324553.4662	0.0000	964492.8988	0.0000	326.792	0.011	TBM	PD:CHISELED SQ IN SW COR.OF 8" CONC.HW NW OF HWY 7 & 27 INTERSECTION
919	324394.9408	0.0290	963087.3671	0.0330	338.059	0.010	TBM	PD:AHTD 4"ALUM.DISK IN CONC WALL OF BRIDGE SE CORNER
920	324549.8610	0.0280	961136.0289	0.0320	337.939	0.010	TBM	PD:CHISELED SQ SE COR OF 6"CONC HW
921	324151.6877	0.0310	959582.1769	0.0290	342.014	0.010	TBM	PD:CHISELED SQ IN SW COR OF 8" HW
922	323555.6916	0.0290	958344.8449	0.0220	350.585	0.010	TBM	PD:CHISELED SQ IN NW COR. OF 8"CONC.HW
923	322880.6734	0.0200	956758.5853	0.0160	357.572	0.009	TBM	PD:CHISELED SQ.IN TOP CENTER OF 24"RCP
924	322681.1900	0.0250	956461.9345	0.0210	359.385	0.009	TBM	PD:CHISELED SQ.IN SE COR. OF 8"CONC.HW
925	321779.1380	0.0210	954935.1795	0.0180	369.604	0.001	TBM	PD:CHISELED SQ IN SE COR. OF 10"CONC.HW
926	319981.7567	0.0190	952963.7078	0.0170	413.088	0.008	TBM	PD:CHISELED SQ IN NE COR. OF 8"CONC.HW
927	319422.7795	0.0160	952428.2905	0.0170	412.889	0.008	TBM	PD:CHISELED SQ IN SW COR. OF 10"CONC.HW
928	318638.1915	0.0190	951262.1308	0.0200	422.525	0.008	TBM	PD:CHISELED SQ IN SE COR. OF 10"CONC.HW
929	317021.4295	0.0210	950138.2303	0.0220	450.267	0.007	TBM	PD:CHISELED SQ IN SE COR. OF 8"CONC.HW
930	316254.0059	0.0310	948787.5944	0.0230	448.898	0.007	TBM	PD:CHISELED SQ IN NE COR. OF 8"CONC.HW
931	315240.5171	0.0170	947171.9912	0.0140	481.415	0.006	TBM	PD:CHISELED SQ IN NE COR. OF 8" CONC. HW
932	314158.3571	15.0000	946098.3612	15.0000	467.813	0.006	TBM	PD:CHISELED SQ IN NW COR.
933	313312.9648	15.0000	944967.1729	15.0000	483.844	0.005	TBM	PD:CHISELED SQ IN SE COR. AT FLAT SPOT ON WINGWALL
934	312490.2208	15.0000	942840.0288	15.0000	513.336	0.004	TBM	PD:CHISELED SQ IN SE COR. OF 8"CONC.HW
994	316178.7002	15.0000	948704.9351	15.0000	447.606	0.000	TBM	PD:DEPT-OF-INTERIOR
995	274968.6116	15.0000	895637.4488	15.0000	332.689	0.000	TBM	PD:DEPT-OF-INTERIOR
996	310912.9745	15.0000	938131.0753	15.0000	454.564	0.000	TBM	PD:CHISELED SQ ON TOP OF HW
997	324090.5310	0.0410	967819.9768	0.0400	335.507	0.011	TBM	PD:TOP FIRE HYDRANT LOCATED

SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TIMOTHY D. SMITH
2-21-19

DATE REVISED	DATE PLOTTED	DATE REVISED	DATE PLOTTED

(2) SURVEY CONTROL DETAILS

FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	080495	36	60

JOB NO.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	37	60

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

998	326098.1454	0.0320	966943.8104	0.0350	333.207	0.081	TBM	PD:CHISELED SQUARE IN BASE
999	295214.9218	15.0000	914308.6779	15.0000	394.078	0.009	TBM	PD:CHISELED SQ ON TOP OF HW

*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:100-113*
	Horizontal - Primary (2.0cm± 20PPM):	*PN:1-68 (in the above example)*
	Horizontal - Secondary (3 cm ± 50PPM):	*PN:N/A*
	Vertical - NGS 1st Order (±4mm x √dist in km)	*PN:N/A*
	Vertical - NGS 2nd Order (±6mm x √dist in km)	*PN:N/A*
	Vertical - NGS 3rd Order (±8mm x √dist in km)	*PN:1-68, 100-113, 900-999 (in the above example)*

Horizontal Datum:	NAD 1983 (1997) State Plane Zone: 0301 - North Zone
	The adjustment year is based on metadata in the SDMS Control file
	A project CAF of: 0.999944028 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: 0.9999817810 has been computed and incorporated in the above CAF.
	This is based on the average elevation of the project: 380.89 Feet
	3-Wire Leveling techniques have been used to establish elevations on
	Points: 1-68, 900-999 From NGS BM: N/A
Basis of Bearing:	Grid Bearings based on AHTD GPS points: *580012 - 580012A, 750001 - 750001A, 750018 - 750018A, 750019 - 750020, 750020A - 750021, 750021A - 750022, 750022A*
	Convergence Angle is: 00-46-38 LEFT at PN: 744 (X: 913098.0575, Y: 294782.8937)
	LT: 35-08-08N LG: 093-20-07W
	Grid Azimuth = Astronomical Azimuth - Convergence Angle

Note: Information in Italics is for clarification only. It is not to be part of the actual Control Table or Control Detail Sheets.

2/21/2019

R080495.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.		080495	38	60

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

HWY. 27

POINT NO.	TYPE	STATION	NORTHING	EASTING
8001	PC	636+22.98	322779.1036	956614.1662
8002	PT	640+80.69	322959.6373	957034.2334

LIBERTY ROAD

POINT NO.	TYPE	STATION	NORTHING	EASTING
8003	POB	1000+00.00	322327.7603	956821.6530
8004	PC	1003+62.44	322690.1837	956824.7045
8005	PT	1004+87.60	322811.6244	956798.8165
8006	PC	1005+74.95	322891.0747	956762.5250
8007	PT	1007+86.23	323095.0191	956768.2070
8008	PC	1008+61.04	323161.2358	956803.0332
8009	PT	1009+69.64	323265.5018	956829.6166
8010	POE	1011+93.13	323488.9722	956832.9894

MAINTENANCE OF TRAFFIC TEMP. WIDENING

POINT NO.	TYPE	STATION	NORTHING	EASTING
8011	POB	800+00.00	322485.5696	956822.9817
8012	PC	801+71.93	322657.4676	956826.1108
8013	PT	802+16.87	322702.1579	956830.4435
8014	PC	802+46.58	322731.4085	956835.6180
8015	PT	802+92.47	322777.0502	956839.9664
8016	PC	807+61.48	323246.0032	956846.9446
8017	PT	807+99.90	323284.3417	956844.9425
8018	PC	808+92.94	323376.7179	956833.8760
8019	PT	809+31.42	323415.1173	956831.8747
8020	POE	810+05.28	323488.9722	956832.9894

2/21/2019

R080495.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.		080495	39	60

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19

STA. 633+44.55
BEGIN HWY. 27 WIDENING
LOG MILE 16.77

PC 1008+61.91
8008
8016
PI 1007+80.72
PI 1009+16.36
N 27°44'31" E
800' 74.82'
PI 1006+88.59
PT 100Y+86.23
PI 1638+52.32
805
N 0°51'50" E
469.00'
8006
PC 1005+74.95
640
635
8001
SURVEY BASELINE N65°50'07"E
763.33'
N 62°09'58" E
931.39'
8002
N 71°19'13" E
516.16'
SURVEY BASELINE N71°45'07"E
761.12'
PN:60
PD:STD AHTD MON STAMPED PN 60 27
PT 640+80.69
1005
N 124°33'00" W
871.35'
8005
PT 1004+87.60
PT 802+92.47
PC 802+46.58
8015
PC 636+22.98
PI1004+26.03
PI802+69.58
PC 1003+62.44
PI801+94.45
8004
N 0°15'50" E
329.70'
8017
8014
PT 802+16.87
8012
PC 801+71.93
N 0°28'57" EN 1°02'34" E
171.93'
362.44'
POB 800+00.00
8000

HWY. 27
P.I. = 638+52.32
Δ = 9°09'15" RT.
D = 2°00'00"
T = 229.34'
L = 457.71'
P.C. = 636+22.98
P.T. = 640+80.69
e = 0.048 '/'
Ls = 360'

STA. 642+64.55
END HWY. 27 WIDENING

2/21/2019
R080495.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.		080495	40	60

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-7-19

LIBERTY ROAD
P. I. = 1004+26.03
Δ = 25°01'57" LT.
D = 20°00'00"
T = 63.60'
L = 125.16'
P.C. = 1003+62.43
P.T. = 1004+87.59
e = 0.097 '/'
Ls = 250'

LIBERTY ROAD
P. I. = 1009+16.36
Δ = 26°52'38" LT.
D = 24°45'00"
T = 55.32'
L = 108.61'
P.C. = 1008+61.04
P.T. = 1009+69.65
e = 0.100 '/'
Ls = 250'

LIBERTY ROAD
P. I. = 1006+88.59
Δ = 52°17'31" RT.
D = 24°45'00"
T = 113.64'
L = 211.28'
P.C. = 1005+74.95
P.T. = 1007+86.23
e = 0.100 '/'
Ls = 250'

STA. 1002+75.00
BEGIN LIBERTY ROAD

STA. 1010+93.13
END LIBERTY ROAD

STA. 801+71.93 =
1003+29.73 C.L. CONST.
BEGIN TEMP. WIDENING

TEMPORARY WIDENING
P. I. = 802+69.58
Δ = 9°10'46" LT.
D = 20°00'00"
T = 23.00'
L = 45.85'
P.C. = 802+46.58
P.T. = 802+92.47
NO SUPERELEVATION

STA. 809+31.42 =
1011+19.27 C.L. CONST.
END TEMP. WIDENING
Δ = 90° 0' 0"

TEMPORARY WIDENING
P. I. = 807+80.72
Δ = 7°41'02" LT.
D = 20°00'00"
T = 19.24'
L = 38.39'
P.C. = 807+61.48
P.T. = 807+99.89
NO SUPERELEVATION

TEMPORARY WIDENING
P. I. = 801+94.44
Δ = 8°59'21" RT.
D = 20°00'00"
T = 22.52'
L = 44.95'
P.C. = 801+71.93
P.T. = 802+16.87
NO SUPERELEVATION

LIBERTY ROAD
P. I. = 809+12.21
Δ = 7°41'45" RT.
D = 20°00'00"
T = 19.27'
L = 38.48'
P.C. = 808+92.94
P.T. = 809+31.42
NO SUPERELEVATION

SURVEY CONTROL DETAILS

2/21/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	41	60

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-1-19

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
632+44.40	638+52.00	LT.	608
632+44.55	634+81.08	RT.	295
639+20.00	643+15.00	LT.	415
638+78.41	643+15.00	RT.	430

STA. 637+82 IN PLACE
24" X 57' R.C. PIPE CULVERT
REMOVE

STA. 637+50 CONSTRUCT
24" X 72' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 5.08 CFS D.A. = 8.25 ACRES
24" R.C PIPE = 72 LIN. FT.
24" FES = 2 EACH

STA. 638+95 IN PLACE
24" X 67' R.C. PIPE CULVERT
REMOVE

STA. 641+90 CONSTRUCT
APPROACH ON LT. = 70 CU. YD.

STA. 634+16 IN PLACE
DBL. 36" X 48' R.C. PIPE CULVERT
ON A 15° RT. FWD. SKEW
WITH HDWLS LT. & RT.
REMOVE HDWLS. AND EXTEND R.C. PIPE
26' LT. AND 34' RT.
TO A COMPLETED LENGTH OF 100'
(CLASS III) (TYPE 3 BEDDING) WITH FES LT. & RT.
Q50 = 315 CFS D.A. = 0.30 SQ. MI.
36" R.C. PIPE = 120 LIN. FT.
36" FES = 4 EACH

STA. 638+04.54 HWY. 27 =
STA. 1005+39.39 LIBERTY ROAD
Δ = 90°08'15"

STA. 633+44.55 TO STA. 634+54.55 ON RT.
CONC. DITCH PAVING (TYPE B) = 73.33 SQ. YD.

WIRE FENCE (TYPE D)

STA.	STA.	SIDE	LIN. FT.
632+44.55	634+81.08	RT.	237
632+68.40	638+43.55	LT.	576

HWY. 27
P.I. = 638+52.32
Δ = 9°09'15" RT.
D = 2°00'00"
T = 229.34'
L = 457.71'
P.C. = 636+22.98
P.T. = 640+80.69
e = 0.048 '/'
Ls = 360'

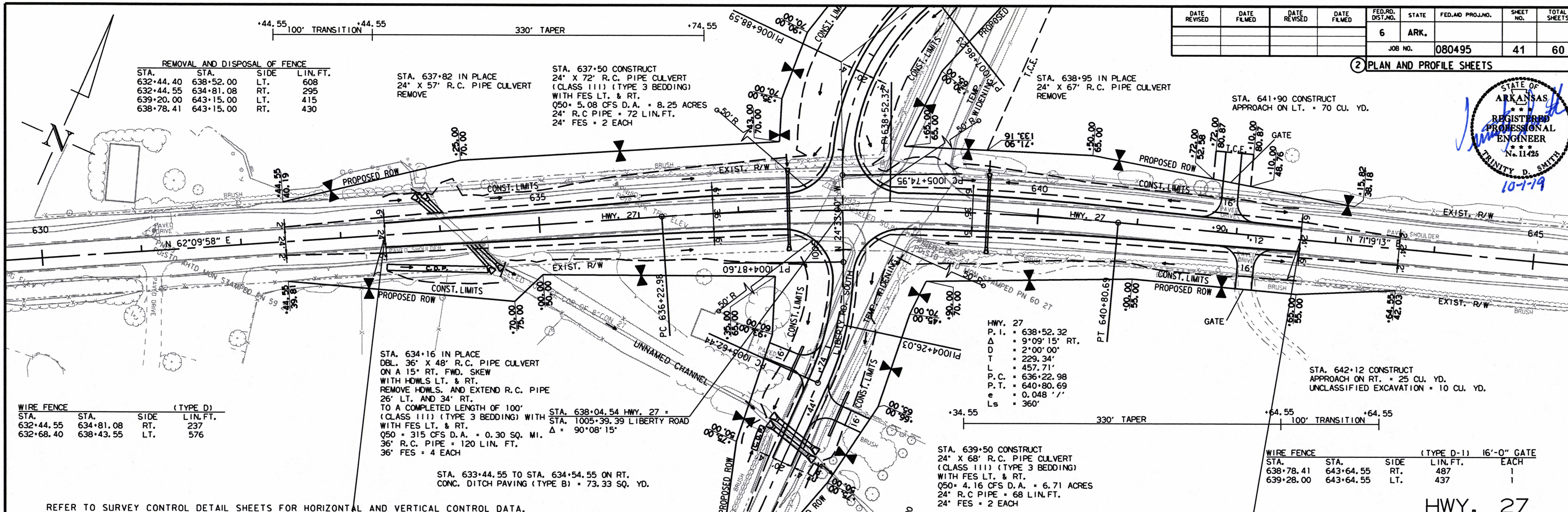
STA. 642+12 CONSTRUCT
APPROACH ON RT. = 25 CU. YD.
UNCLASSIFIED EXCAVATION = 10 CU. YD.

STA. 639+50 CONSTRUCT
24" X 68' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 4.16 CFS D.A. = 6.71 ACRES
24" R.C PIPE = 68 LIN. FT.
24" FES = 2 EACH

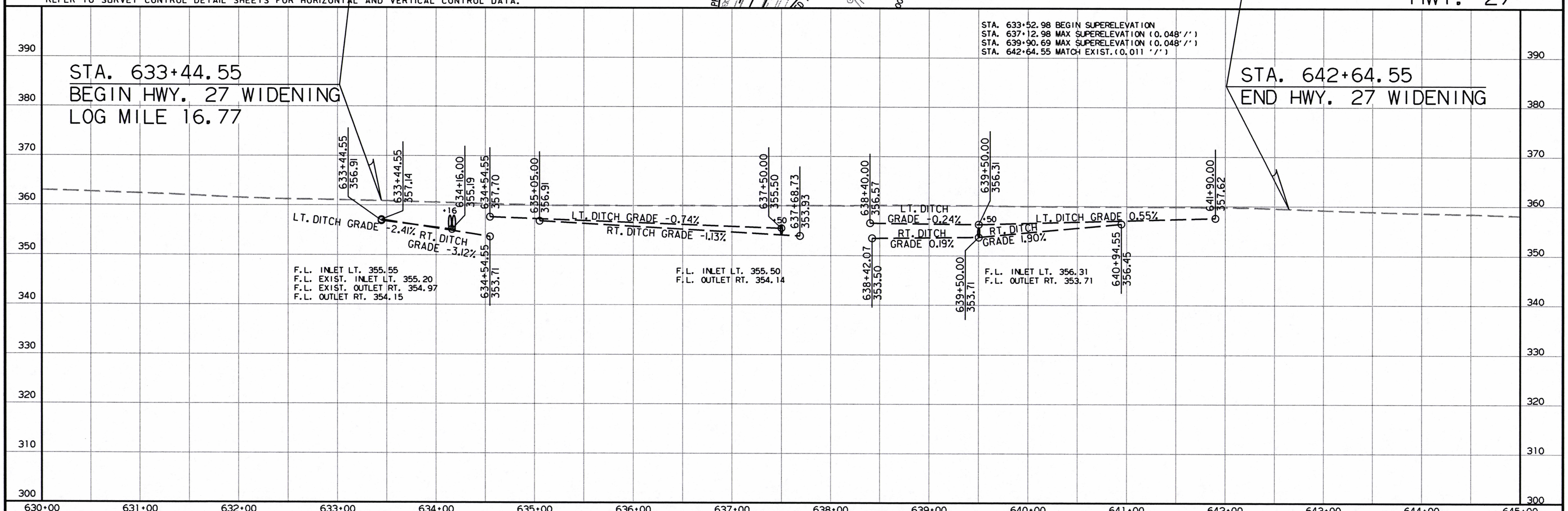
WIRE FENCE

STA.	STA.	SIDE	(TYPE D-1) LIN. FT.	16'-0" GATE EACH
638+78.41	643+64.55	RT.	487	1
639+28.00	643+64.55	LT.	437	1

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.



HWY. 27



R080495.DGN 9/25/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	42	60

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
* * *
REGISTERED PROFESSIONAL ENGINEER
* * *
No. 11425
TRINITY D. SMITH
10-1-19

STA. 1003+02 IN PLACE
DBL. 48" x 30' C.M. PIPE CULVERT
REMOVE AND INSTALL
DBL. 48" x 42' R.C. PIPE CULVERT
ON A 15° RT. FWD. SKEW
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q25 = 330 CFS D.A. = 0.44 SQ. MI.
48" R.C. PIPE = 84 LIN. FT.
48" FES = 4 EACH

STA. 1003+74 IN PLACE
24" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YD.

LIBERTY ROAD
P.I. = 1004+26.03
Δ = 25°01'57" LT.
D = 20°00'00"
T = 63.60'
L = 125.16'
P.C. = 1003+62.44
P.T. = 1004+87.60
e = 0.097 '/'
Ls = 250'

STA. 1002+75.00 TO STA. 1002+93.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 16.67 SQ. YD.

STA. 1002+75.00 TO STA. 1002+93.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 8.00 SQ. YD.

STA. 1003+44 IN PLACE
24" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 155 CU. YD.

STA. 638+04.54 HWY. 27 =
STA. 1005+39.39 LIBERTY ROAD
Δ = 90°08'15"

LIBERTY ROAD
P.I. = 1006+88.59
Δ = 52°17'31" RT.
D = 24°45'00"
T = 113.64'
L = 211.28'
P.C. = 1005+74.95
P.T. = 1007+86.23
e = 0.100 '/'
Ls = 250'

LIBERTY ROAD
P.I. = 1009+16.36
Δ = 26°52'38" LT.
D = 24°45'00"
T = 55.32'
L = 108.60'
P.C. = 1008+61.04
P.T. = 1009+69.64
e = 0.100 '/'
Ls = 250'

STA. 1011+58 IN PLACE
18" x 28' R.C. PIPE CULVERT
LT. SIDE DRAIN
RETAIN
CONSTRUCT APPROACH = 5 CU. YD.

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN.FT.
1001+75.00	1003+05.00	LT.	155
1001+75.00	1004+96.64	RT.	350
1005+77.98	1011+43.00	LT.	583
1005+75.00	1011+43.58	RT.	568

WIRE FENCE (TYPE D) 16'-0" GATE

STA.	STA.	SIDE	LIN.FT.	EACH
1001+75.00	1003+05.00	LT.	130	
1005+77.98	1011+30.93	LT.	553	1
1006+05.00	1011+33.58	RT.	529	

WIRE FENCE (TYPE D-2) 16'-0" GATE

STA.	STA.	SIDE	LIN.FT.	EACH
1001+75.00	1003+05.00	RT.	130	1
1003+05.40	1004+96.64	RT.	192	

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

LIBERTY ROAD

STA. 1002+75.00
BEGIN LIBERTY ROAD

STA. 1010+93.13
END LIBERTY ROAD

STA. 1003+28.63 BEGIN SUPERELEVATION
STA. 1004+25.01 MAX SUPERELEVATION (0.037'/')
STA. 1005+21.39 END SUPERELEVATION

(ALL LIBERTY ROAD NORTH SUPERELEVATION ABOUT CENTERLINE)
STA. 1005+57.39 BEGIN SUPERELEVATION
STA. 1006+80.59 MAX SUPERELEVATION (0.049'/')
STA. 1007+00.44 MAX SUPERELEVATION (0.049'/')
STA. 1008+23.64 END SUPERELEVATION

(ALL LIBERTY ROAD NORTH SUPERELEVATION ABOUT CENTERLINE)
STA. 1008+23.64 BEGIN SUPERELEVATION
STA. 1009+15.35 MAX SUPERELEVATION (0.037'/')
STA. 1009+89.68 MAX SUPERELEVATION (0.037'/')
STA. 1010+81.39 END SUPERELEVATION

STA. 638+04.66, 18' RT. OF C.L. HWY. 27 =
STA. 1005+21.39, C.L. OF LIBERTY RD.
ELEV. = 359.40

STA. 638+04.66, 18' LT. OF C.L. HWY. 27 =
STA. 1005+57.39, C.L. OF LIBERTY RD.
ELEV. = 361.13

P.V.I. 1001+75.00 359.08
-0.44%
1002+75.00 LT. P.V.C. 1002+50.00 358.97
1002+75.00 RT. 354.75
P.V.I. 1003+00.00 358.53
K-262.76 VC-100' e=-0.04'
1002+93.00 LT. 352.66
1002+93.00 RT. 352.30
1003+11.00 LT. 352.66
1003+11.00 RT. 352.30
P.V.C. 1003+79.52 357.92
K-35.92 VC-100' e=-0.35'
P.V.T. 1003+50.00 358.15
0.76%
P.V.I. 1004+29.52 357.54
P.V.T. 1004+79.52 358.55
2.03%
1004+94.44 RT. 353.50
1004+96.61 LT. 353.93
P.V.I. 1005+21.39 359.40
P.V.I. 1005+57.39 361.13
P.V.C. 1005+70.00 361.48
2.80%
1005+82.43 LT. 355.54
1005+80.23 RT. 356.57
K-30.41 VC-100' e=-0.41'
P.V.I. 1006+20.00 362.94
P.V.T. 1006+70.00 362.75
-0.49%
P.V.C. 1008+00.00 362.11
K-109.68 VC-200' e=0.46'
P.V.I. 1009+00.00 361.62
1009+25.00 LT. 358.11
1009+25.00 RT. 358.11
P.V.T. 1010+00.00 362.95
1.33%
P.V.I. 1010+93.13 364.19

RT. DITCH GRADE -13.6%
LT. DITCH GRADE -11.6%
LT. DITCH GRADE 0.68%
RT. DITCH GRADE 0.65%
RT. DITCH GRADE 0.45%
LT. DITCH GRADE 0.75%

F.L. INLET LT. 352.66
F.L. EXIST. INLET LT. 353.09
F.L. EXIST. OUTLET RT. 352.89
F.L. OUTLET RT. 352.30

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM, STA. 1002+95 TO STA. 1003+07, IS CLASSIFIED AS AN INTERMITTENT STREAM. THE TOP OF CHANNEL ELEVATION IS 355 FT. MSL. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

410 400 390 380 370 360 350 340 330 320

1000+00 1001+00 1002+00 1003+00 1004+00 1005+00 1006+00 1007+00 1008+00 1009+00 1010+00 1011+00 1012+00 1013+00 1014+00 1015+00

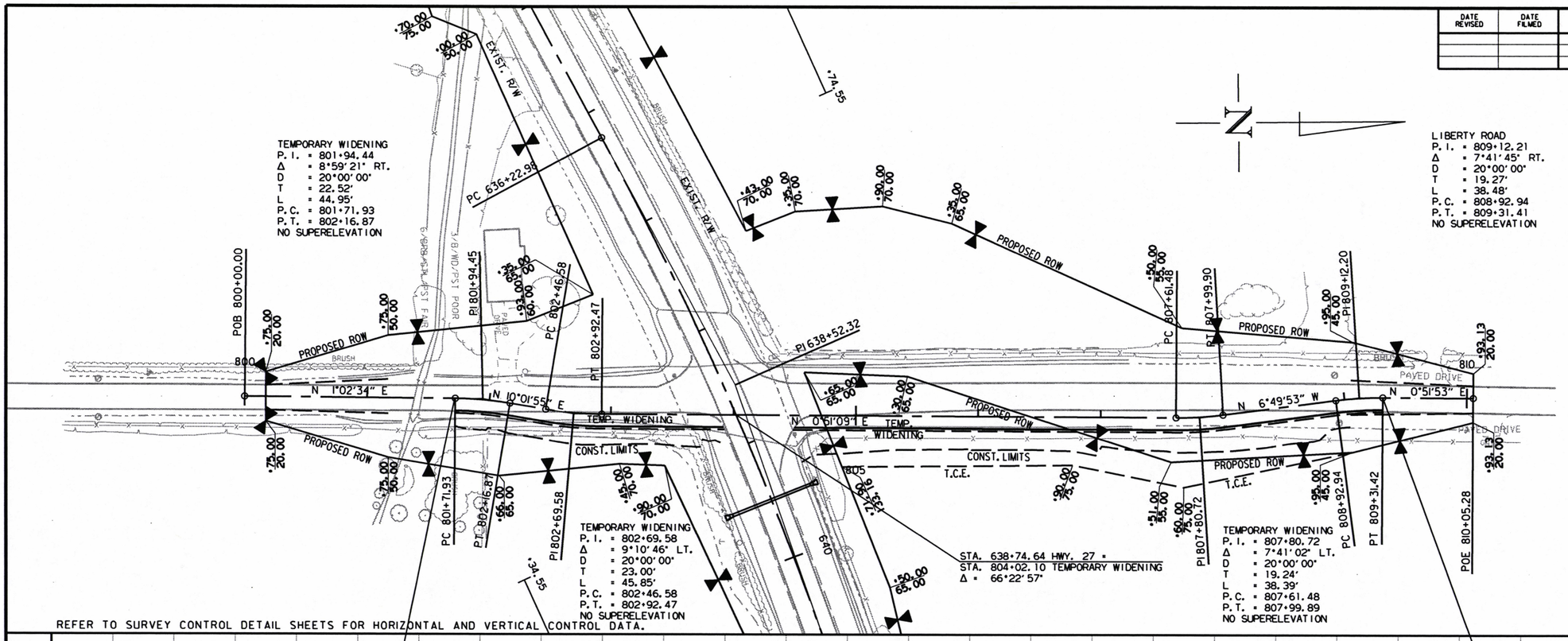
9/25/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	43	60

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-19



TEMP. WIDENING

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 801+71.93 =
1003+29.73 C.L. CONST.
BEGIN TEMP. WIDENING

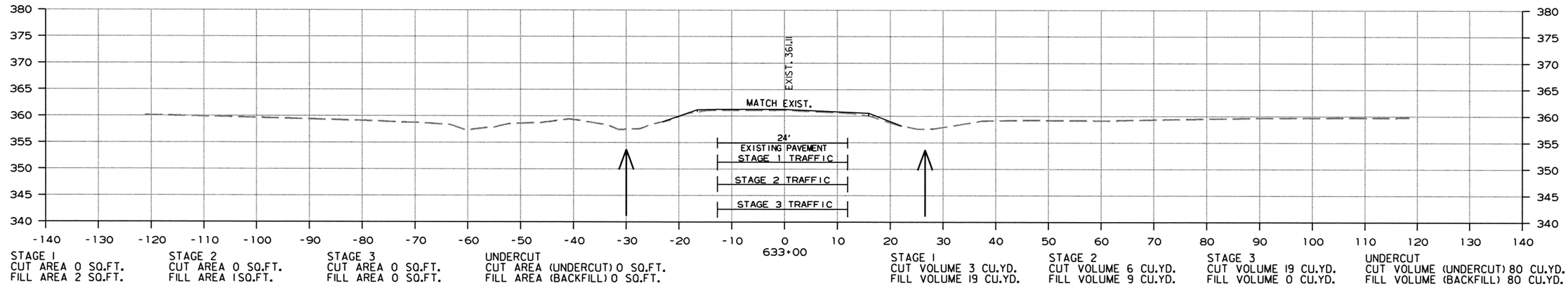
STA. 809+31.42 =
1011+19.27 C.L. CONST.
END TEMP. WIDENING

9/25/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	44	60

(2) CROSS SECTIONS



STAGE 1
CUT AREA 0 SQ.FT.
FILL AREA 2 SQ.FT.

STAGE 2
CUT AREA 0 SQ.FT.
FILL AREA 1SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

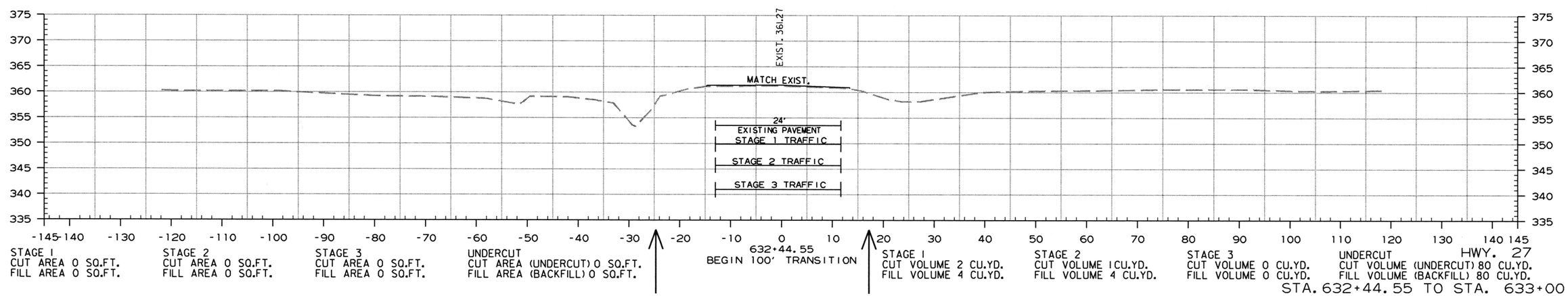
UNDERCUT
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

STAGE 1
CUT VOLUME 3 CU.YD.
FILL VOLUME 19 CU.YD.

STAGE 2
CUT VOLUME 6 CU.YD.
FILL VOLUME 9 CU.YD.

STAGE 3
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 80 CU.YD.
FILL VOLUME (BACKFILL) 80 CU.YD.



STAGE 1
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 2
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

UNDERCUT
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

STAGE 1
CUT VOLUME 2 CU.YD.
FILL VOLUME 4 CU.YD.

STAGE 2
CUT VOLUME 1CU.YD.
FILL VOLUME 4 CU.YD.

STAGE 3
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

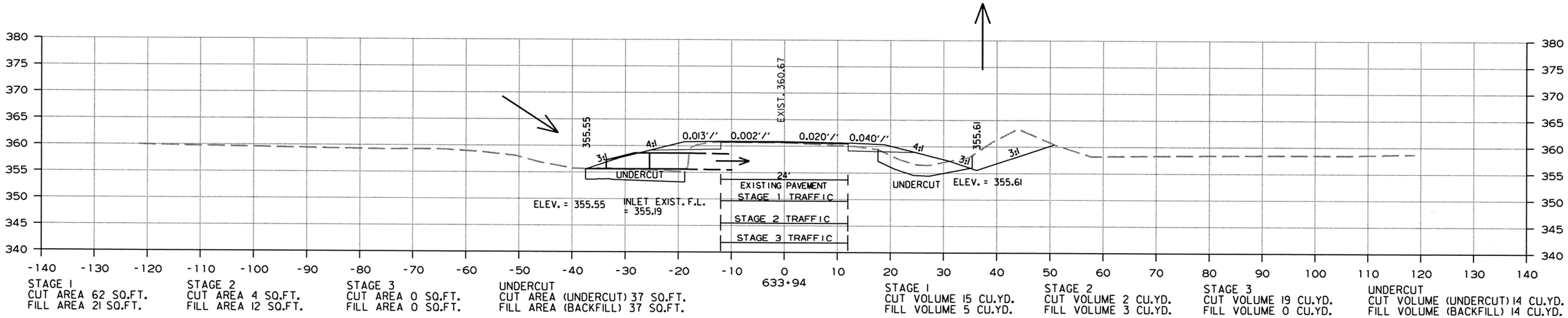
UNDERCUT
CUT VOLUME (UNDERCUT) 80 CU.YD.
FILL VOLUME (BACKFILL) 80 CU.YD.

HWY. 27
STA. 632+44.55 TO STA. 633+00

mh39735 9/24/2019
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	45	60

(2) CROSS SECTIONS



HWY. 27

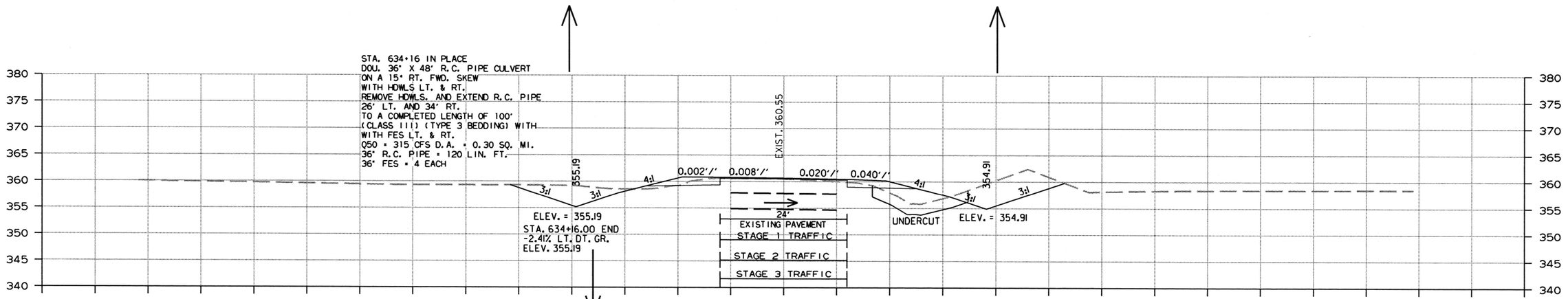
CROSS SECTION STA. 633+45 TO STA. 633+94

9/24/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	46	60

(2) CROSS SECTIONS



CROSS SECTION STA. 634+00 TO STA. 634+16

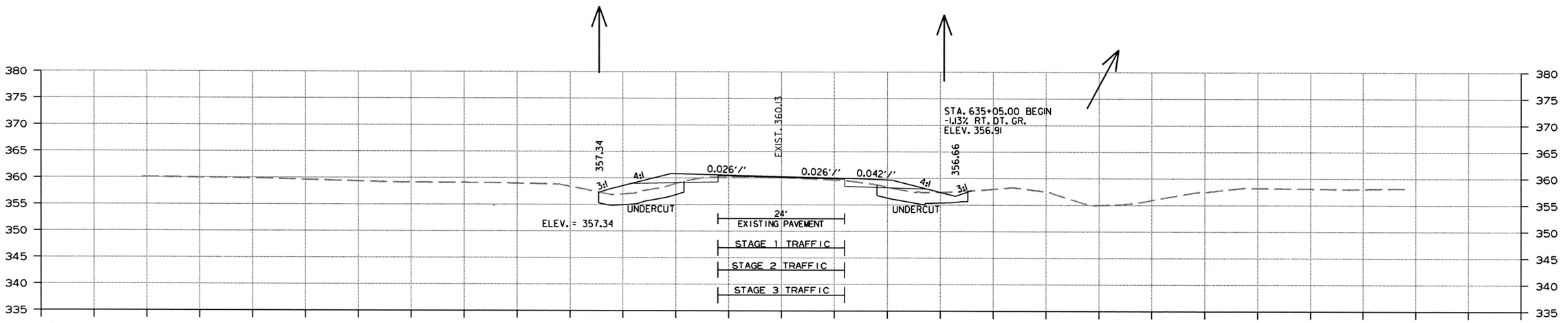
HWY. 27

9/24/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	47	60

(2) CROSS SECTIONS



STAGE 1
CUT AREA 5 SQ.FT.
FILL AREA 7 SQ.FT.

STAGE 2
CUT AREA 3 SQ.FT.
FILL AREA 20 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

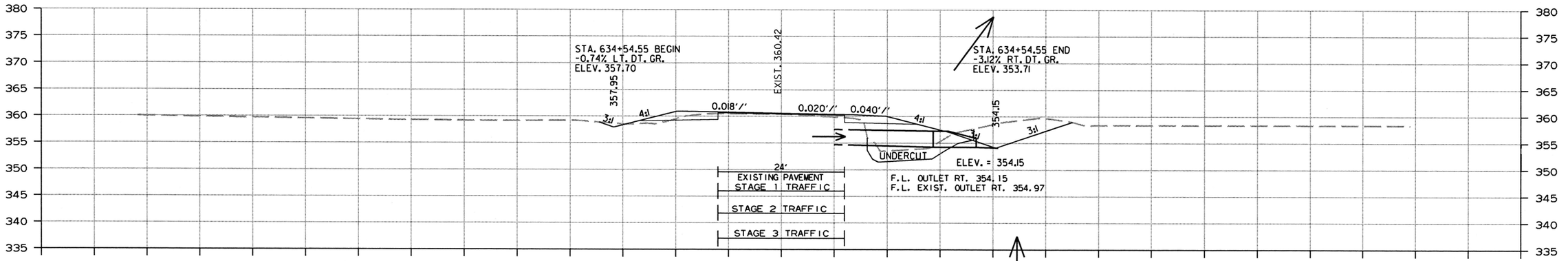
UNDERCUT
CUT AREA (UNDERCUT) 68 SQ.FT.
FILL AREA (BACKFILL) 68 SQ.FT.

STAGE 1
CUT VOLUME 33 CU.YD.
FILL VOLUME 34 CU.YD.

STAGE 2
CUT VOLUME 16 CU.YD.
FILL VOLUME 106 CU.YD.

STAGE 3
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 288 CU.YD.
FILL VOLUME (BACKFILL) 288 CU.YD.



STAGE 1
CUT AREA 61 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 2
CUT AREA 5 SQ.FT.
FILL AREA 6 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

UNDERCUT
CUT AREA (UNDERCUT) 46 SQ.FT.
FILL AREA (BACKFILL) 46 SQ.FT.

STAGE 1
CUT VOLUME 73 CU.YD.
FILL VOLUME 9 CU.YD.

STAGE 2
CUT VOLUME 8 CU.YD.
FILL VOLUME 32 CU.YD.

STAGE 3
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 127 CU.YD.
FILL VOLUME (BACKFILL) 127 CU.YD.

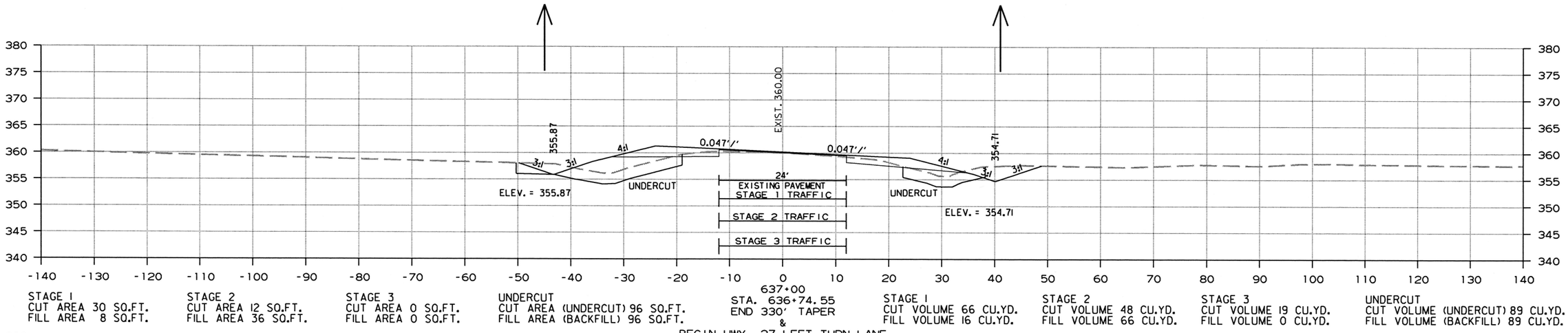
HWY. 27
CROSS SECTION STA. 634+40 TO STA. 635+00

9/24/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	48	60

(2) CROSS SECTIONS



	STAGE 1	STAGE 2	STAGE 3	UNDERCUT
637+00	CUT AREA 30 SQ.FT. FILL AREA 8 SQ.FT.	CUT AREA 12 SQ.FT. FILL AREA 36 SQ.FT.	CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.	CUT AREA (UNDERCUT) 96 SQ.FT. FILL AREA (BACKFILL) 96 SQ.FT.
	CUT VOLUME 66 CU.YD. FILL VOLUME 16 CU.YD.	CUT VOLUME 48 CU.YD. FILL VOLUME 66 CU.YD.	CUT VOLUME 19 CU.YD. FILL VOLUME 0 CU.YD.	CUT VOLUME (UNDERCUT) 89 CU.YD. FILL VOLUME (BACKFILL) 89 CU.YD.
636+00	CUT AREA 13 SQ.FT. FILL AREA 10 SQ.FT.	CUT AREA 6 SQ.FT. FILL AREA 32 SQ.FT.	CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.	CUT AREA (UNDERCUT) 87 SQ.FT. FILL AREA (BACKFILL) 87 SQ.FT.
	CUT VOLUME 80 CU.YD. FILL VOLUME 37 CU.YD.	CUT VOLUME 34 CU.YD. FILL VOLUME 137 CU.YD.	CUT VOLUME 19 CU.YD. FILL VOLUME 0 CU.YD.	CUT VOLUME (UNDERCUT) 340 CU.YD. FILL VOLUME (BACKFILL) 340 CU.YD.

HWY. 27

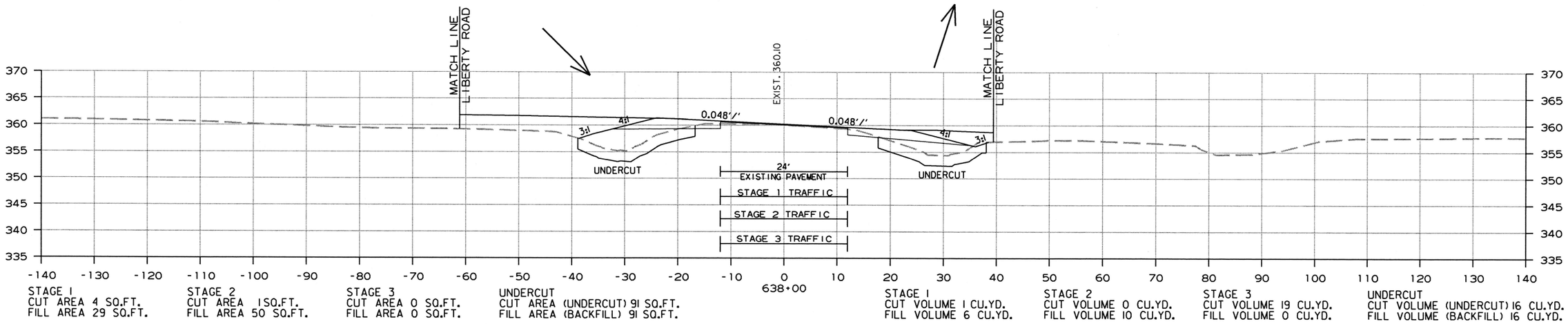
CROSS SECTION STA. 636+00 TO STA. 637+00

9/24/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	49	60

(2) CROSS SECTIONS



STAGE 1
CUT AREA 4 SQ.FT.
FILL AREA 29 SQ.FT.

STAGE 2
CUT AREA 1 SQ.FT.
FILL AREA 50 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

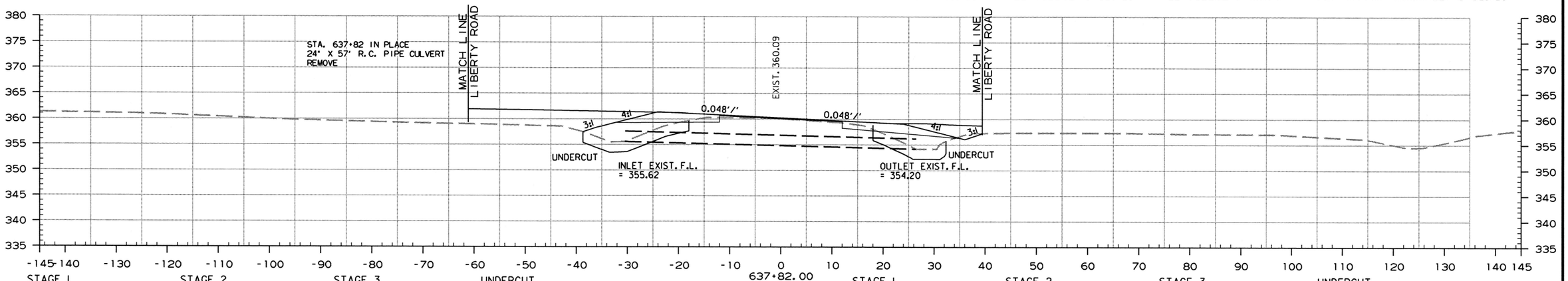
UNDERCUT
CUT AREA (UNDERCUT) 91 SQ.FT.
FILL AREA (BACKFILL) 91 SQ.FT.

STAGE 1
CUT VOLUME 1 CU.YD.
FILL VOLUME 6 CU.YD.

STAGE 2
CUT VOLUME 0 CU.YD.
FILL VOLUME 10 CU.YD.

STAGE 3
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 16 CU.YD.
FILL VOLUME (BACKFILL) 16 CU.YD.



STAGE 1
CUT AREA 3 SQ.FT.
FILL AREA 22 SQ.FT.

STAGE 2
CUT AREA 6 SQ.FT.
FILL AREA 45 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

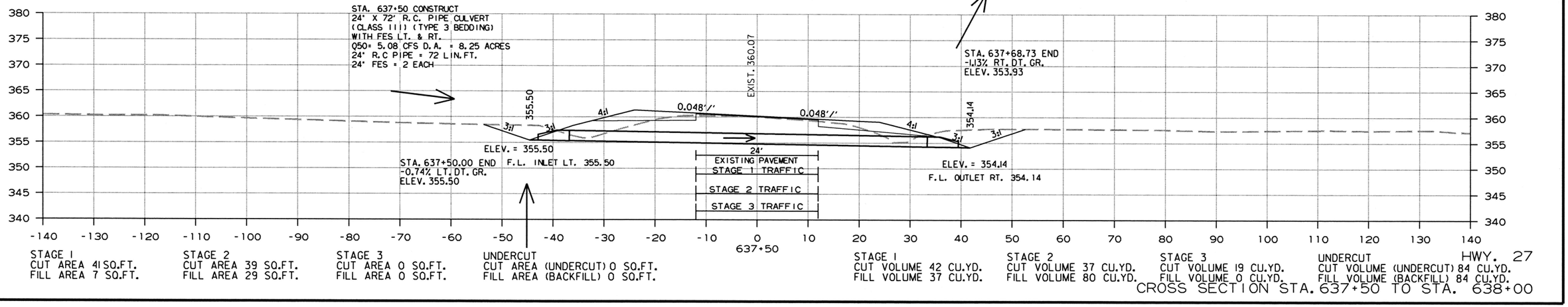
UNDERCUT
CUT AREA (UNDERCUT) 91 SQ.FT.
FILL AREA (BACKFILL) 91 SQ.FT.

STAGE 1
CUT VOLUME 1 CU.YD.
FILL VOLUME 4 CU.YD.

STAGE 2
CUT VOLUME 2 CU.YD.
FILL VOLUME 9 CU.YD.

STAGE 3
CUT VOLUME 16 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 18 CU.YD.
FILL VOLUME (BACKFILL) 18 CU.YD.



STAGE 1
CUT AREA 41 SQ.FT.
FILL AREA 7 SQ.FT.

STAGE 2
CUT AREA 39 SQ.FT.
FILL AREA 29 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

UNDERCUT
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

STAGE 1
CUT VOLUME 42 CU.YD.
FILL VOLUME 37 CU.YD.

STAGE 2
CUT VOLUME 37 CU.YD.
FILL VOLUME 80 CU.YD.

STAGE 3
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 84 CU.YD.
FILL VOLUME (BACKFILL) 84 CU.YD.

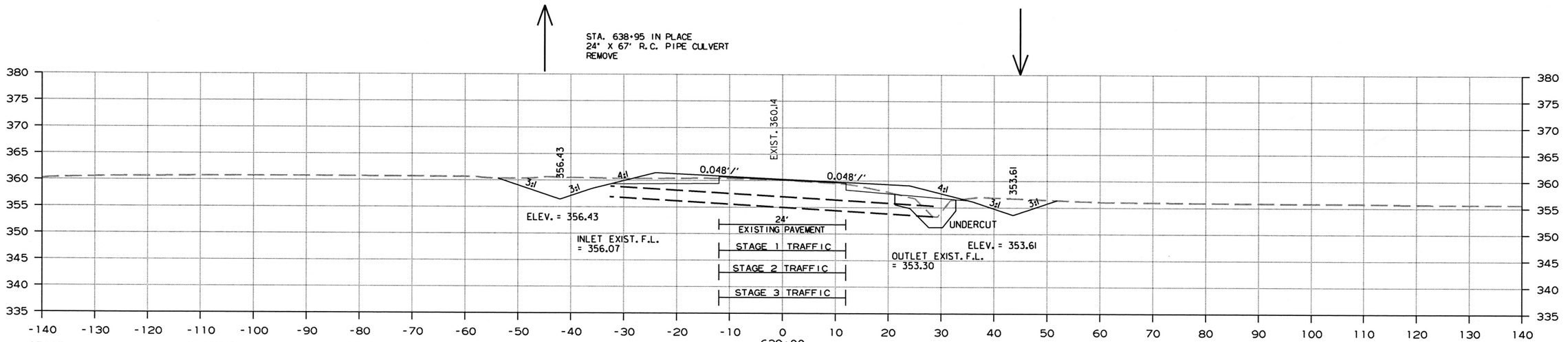
HWY. 27
CROSS SECTION STA. 637+50 TO STA. 638+00

9/24/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	50	60

(2) CROSS SECTIONS



STAGE 1
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 2
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 3
CUT AREA 95 SQ.FT.
FILL AREA 18 SQ.FT.

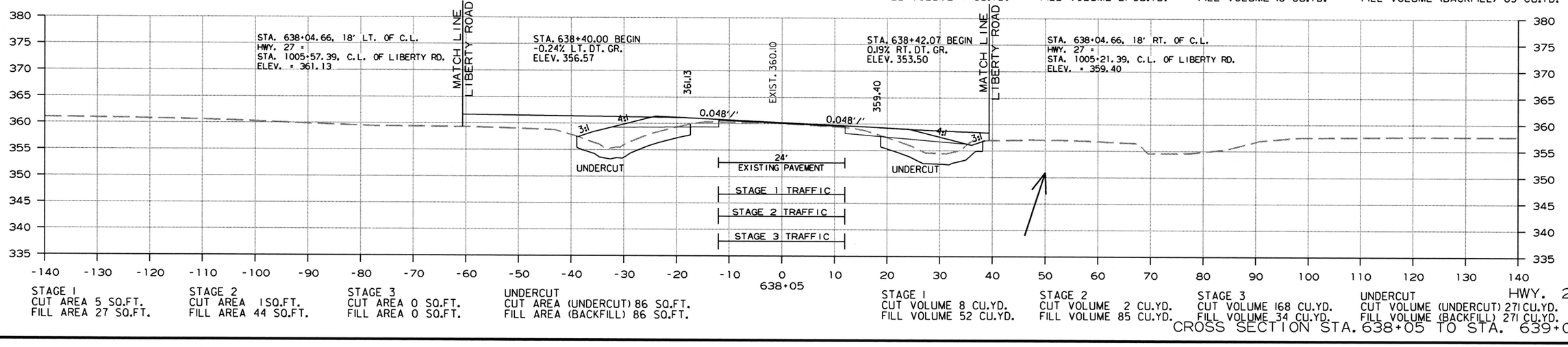
UNDERCUT
CUT AREA (UNDERCUT) 68 SQ.FT.
FILL AREA (BACKFILL) 68 SQ.FT.

STAGE 1
CUT VOLUME 28 CU.YD.
FILL VOLUME 7 CU.YD.

STAGE 2
CUT VOLUME 14 CU.YD.
FILL VOLUME 21 CU.YD.

STAGE 3
CUT VOLUME 88 CU.YD.
FILL VOLUME 18 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 63 CU.YD.
FILL VOLUME (BACKFILL) 63 CU.YD.



STAGE 1
CUT AREA 5 SQ.FT.
FILL AREA 27 SQ.FT.

STAGE 2
CUT AREA 1SQ.FT.
FILL AREA 44 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

UNDERCUT
CUT AREA (UNDERCUT) 86 SQ.FT.
FILL AREA (BACKFILL) 86 SQ.FT.

STAGE 1
CUT VOLUME 8 CU.YD.
FILL VOLUME 52 CU.YD.

STAGE 2
CUT VOLUME 2 CU.YD.
FILL VOLUME 85 CU.YD.

STAGE 3
CUT VOLUME 168 CU.YD.
FILL VOLUME 34 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 271 CU.YD.
FILL VOLUME (BACKFILL) 271 CU.YD.

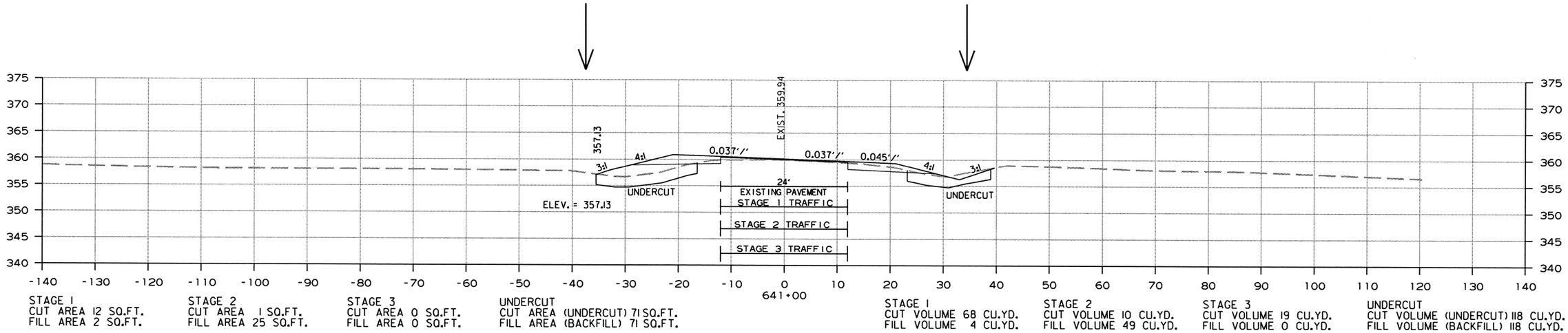
HWY. 27
CROSS SECTION STA. 638+05 TO STA. 639+00

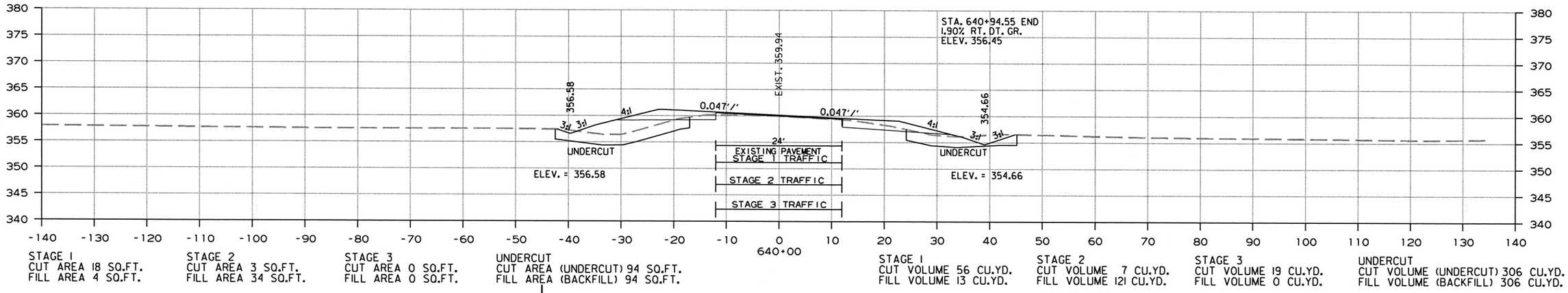
9/24/2019

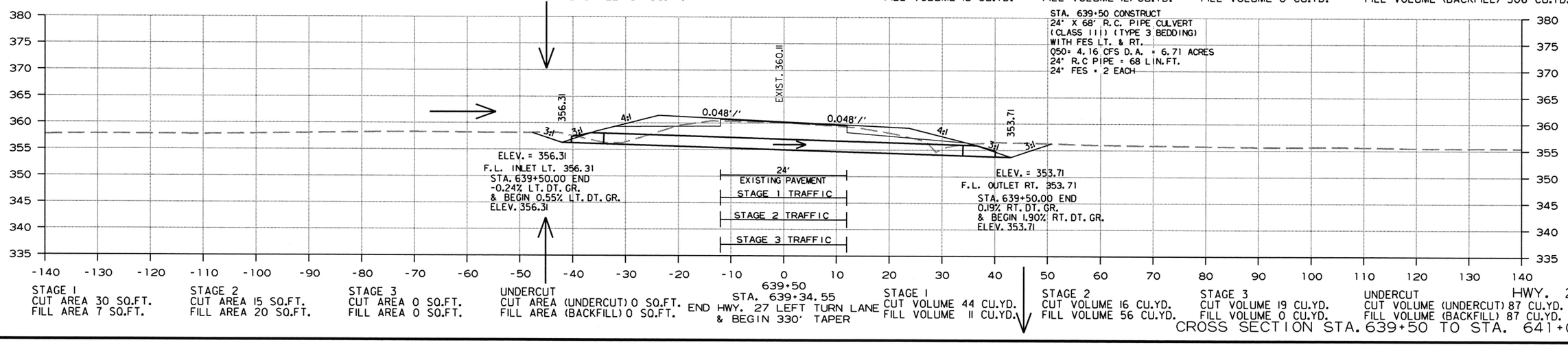
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	51	60

(2) CROSS SECTIONS







HWY. 27

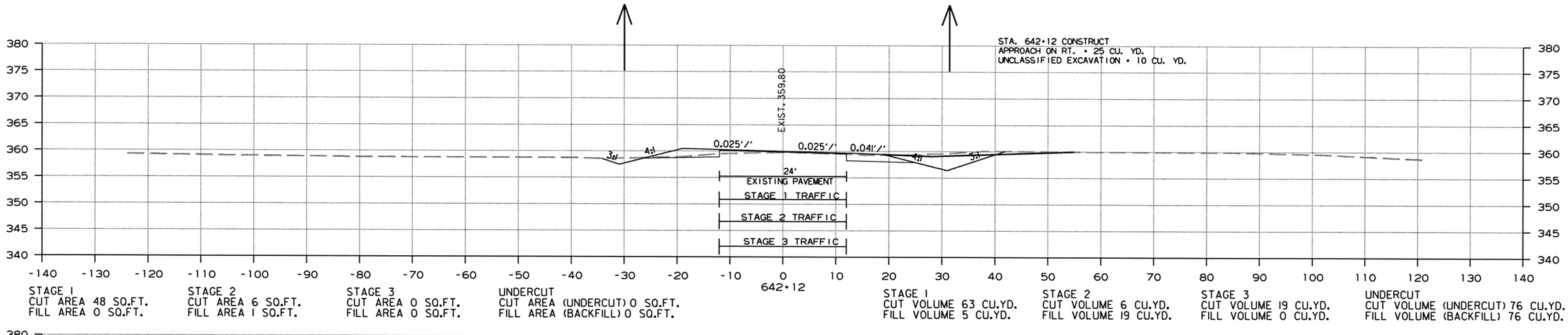
CROSS SECTION STA. 639+50 TO STA. 641+00

9/24/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	52	60

(2) CROSS SECTIONS



STAGE 1
CUT AREA 48 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 2
CUT AREA 6 SQ.FT.
FILL AREA 1 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

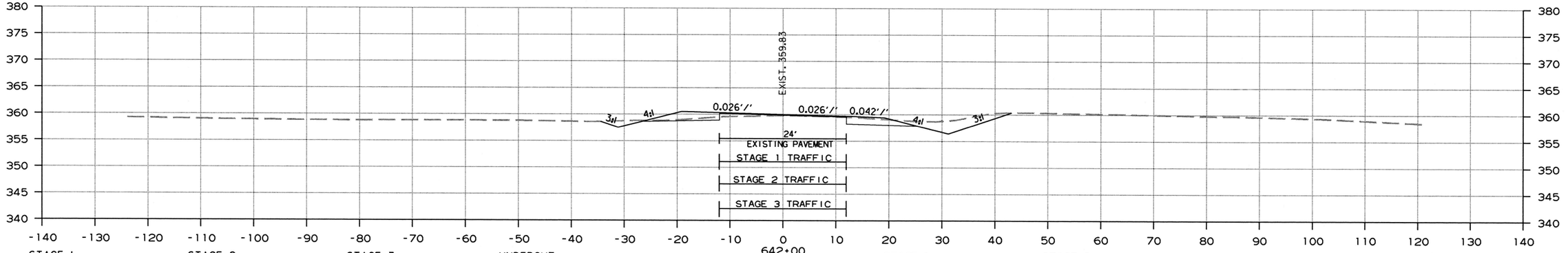
UNDERCUT
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

STAGE 1
CUT VOLUME 63 CU.YD.
FILL VOLUME 5 CU.YD.

STAGE 2
CUT VOLUME 6 CU.YD.
FILL VOLUME 19 CU.YD.

STAGE 3
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 76 CU.YD.
FILL VOLUME (BACKFILL) 76 CU.YD.



STAGE 1
CUT AREA 36 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 2
CUT AREA 6 SQ.FT.
FILL AREA 1 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

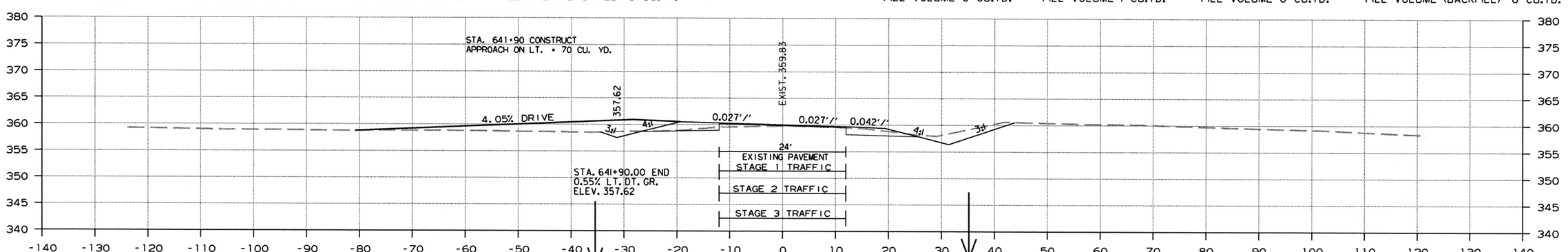
UNDERCUT
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

STAGE 1
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 2
CUT VOLUME 3 CU.YD.
FILL VOLUME 1 CU.YD.

STAGE 3
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 0 CU.YD.
FILL VOLUME (BACKFILL) 0 CU.YD.



STAGE 1
CUT AREA 28 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 2
CUT AREA 5 SQ.FT.
FILL AREA 1SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

UNDERCUT
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

STAGE 1
CUT VOLUME 12 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 2
CUT VOLUME 2 CU.YD.
FILL VOLUME 1 CU.YD.

STAGE 3
CUT VOLUME 19 CU.YD.
FILL VOLUME 0 CU.YD.

UNDERCUT
CUT VOLUME (UNDERCUT) 0 CU.YD.
FILL VOLUME (BACKFILL) 0 CU.YD.

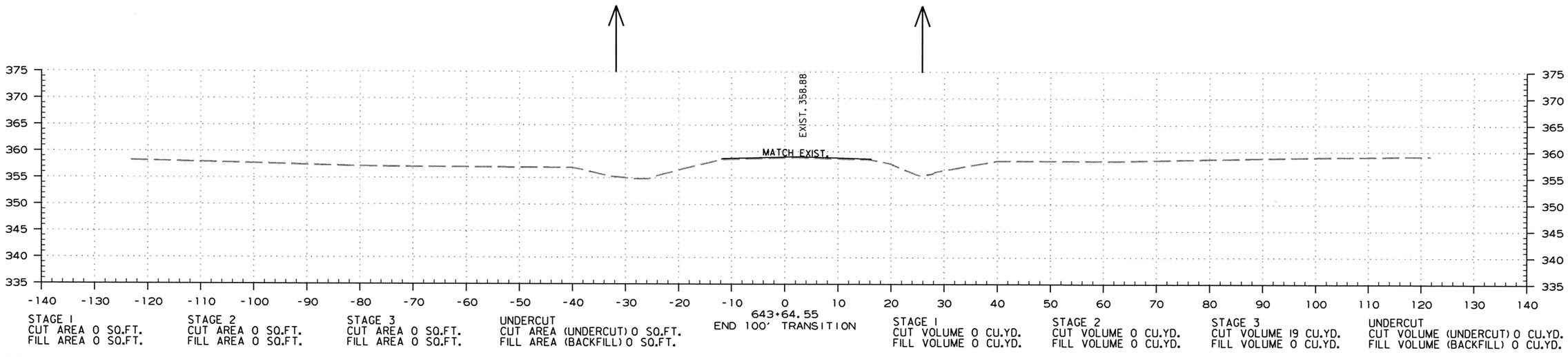
HWY. 27
CROSS SECTION STA. 641+90 TO STA. 642+12

9/24/2019

R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	53	60

(2) CROSS SECTIONS



HWY. 27

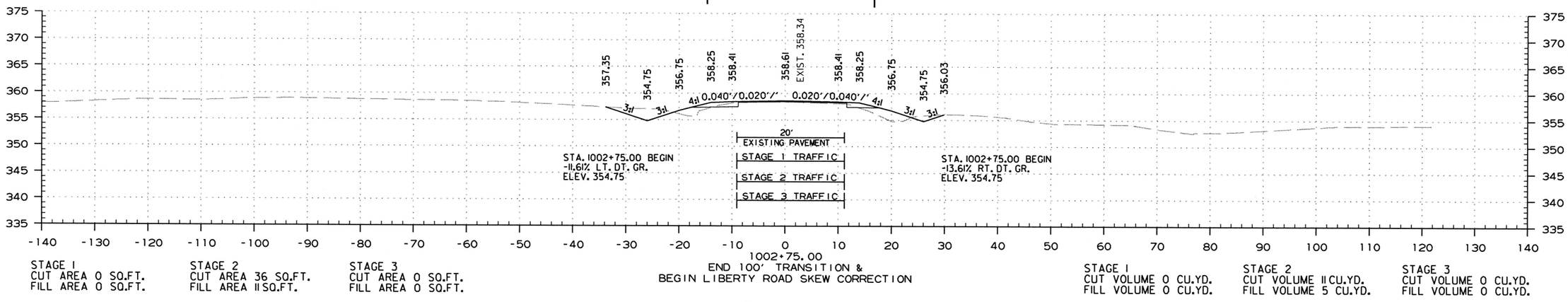
CROSS SECTION STA. 642+65 TO STA. 643+64.55

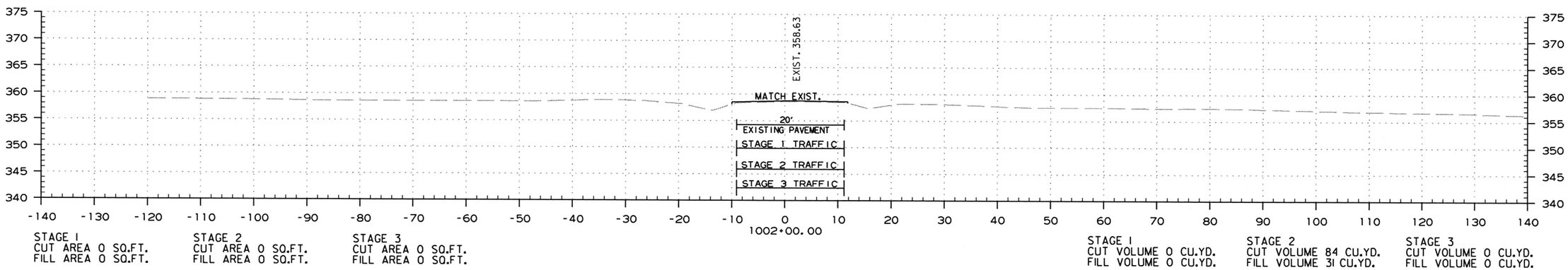
9/24/2019

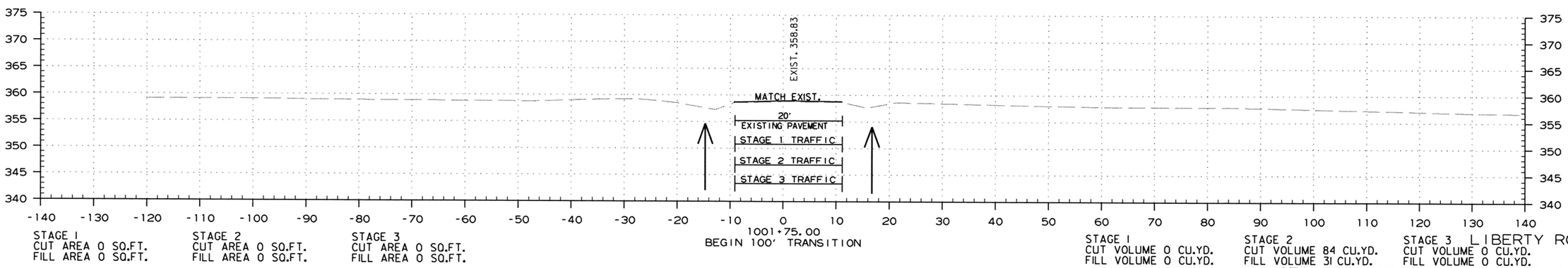
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	54	60

(2) CROSS SECTIONS





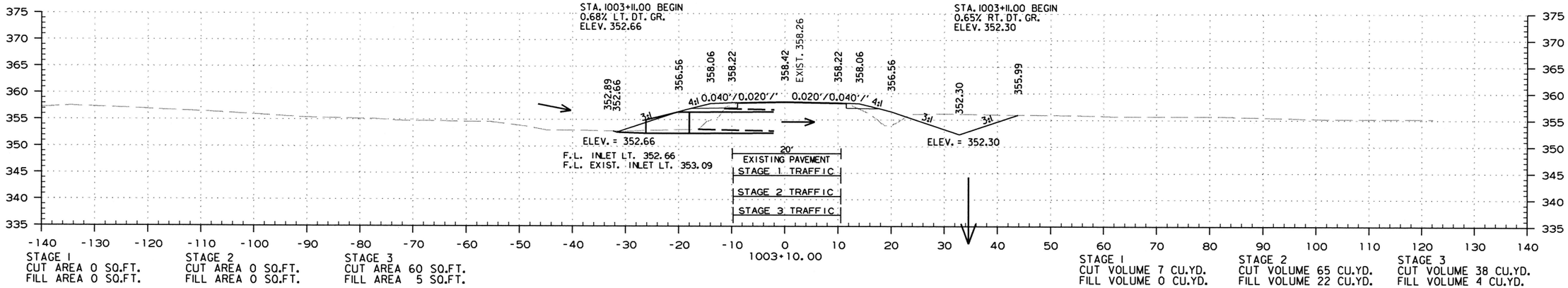


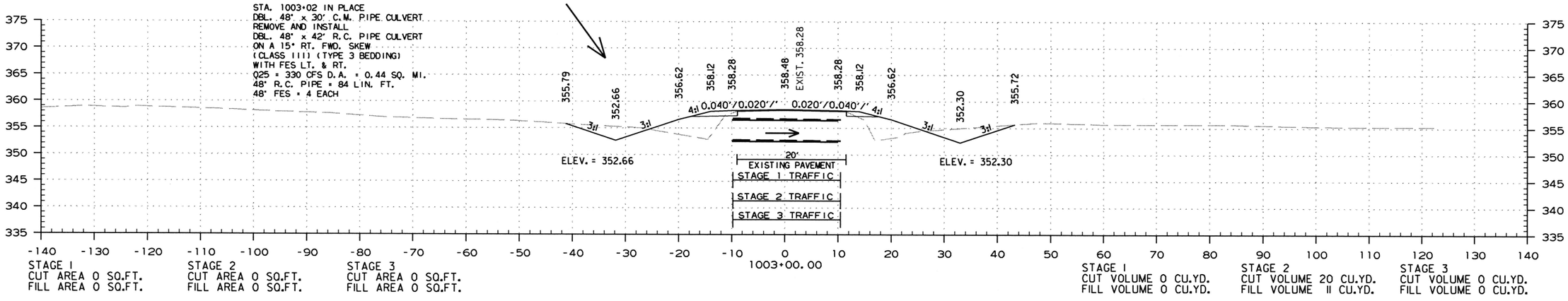
LIBERTY ROAD
STA. 1001+75.00 TO STA. 1002+75.00

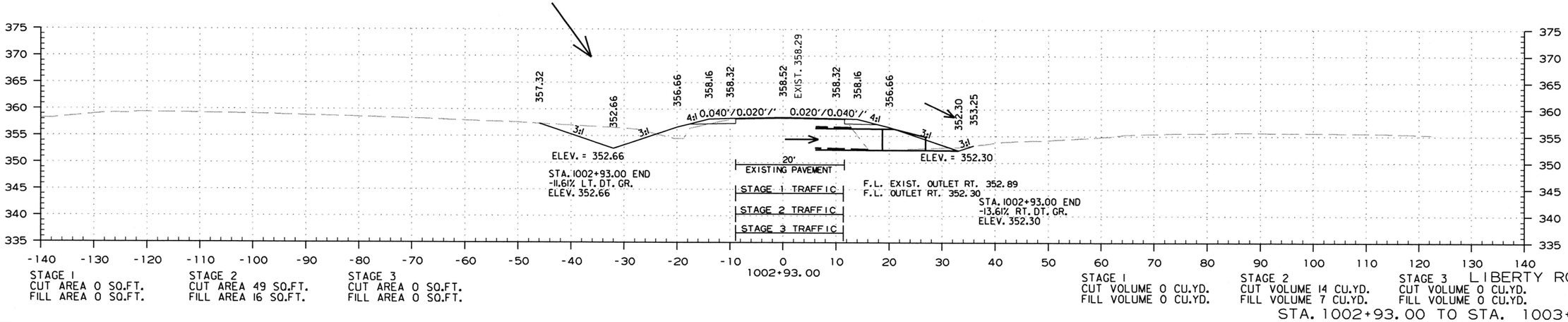
mh39735 9/24/2019
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	55	60

(2) CROSS SECTIONS







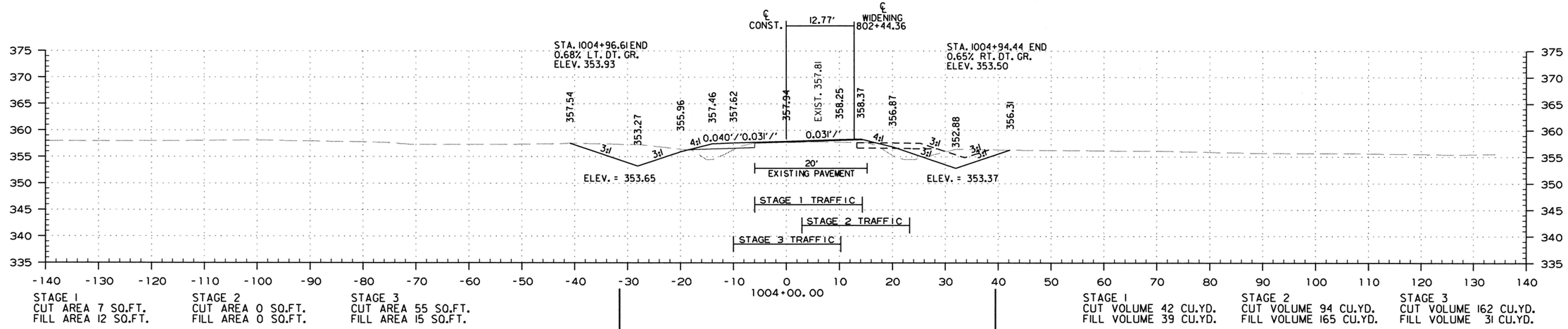
LIBERTY ROAD

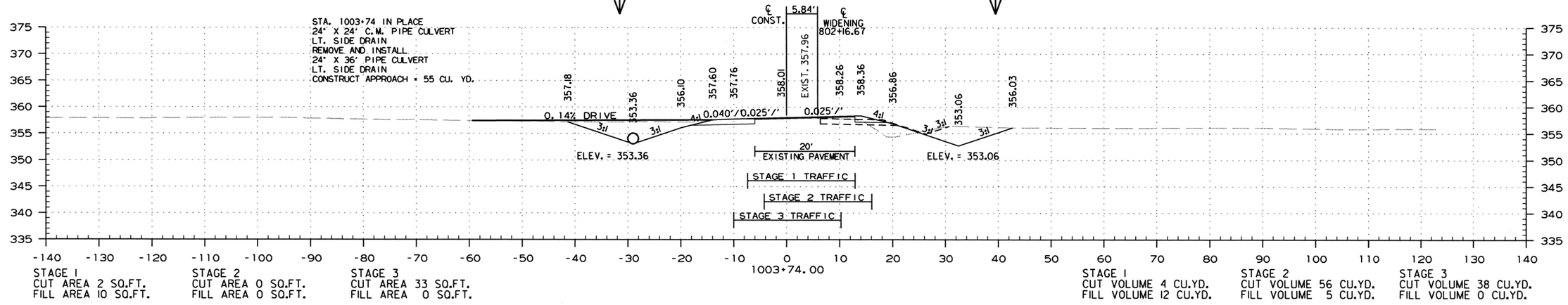
STA. 1002+93.00 TO STA. 1003+10.00

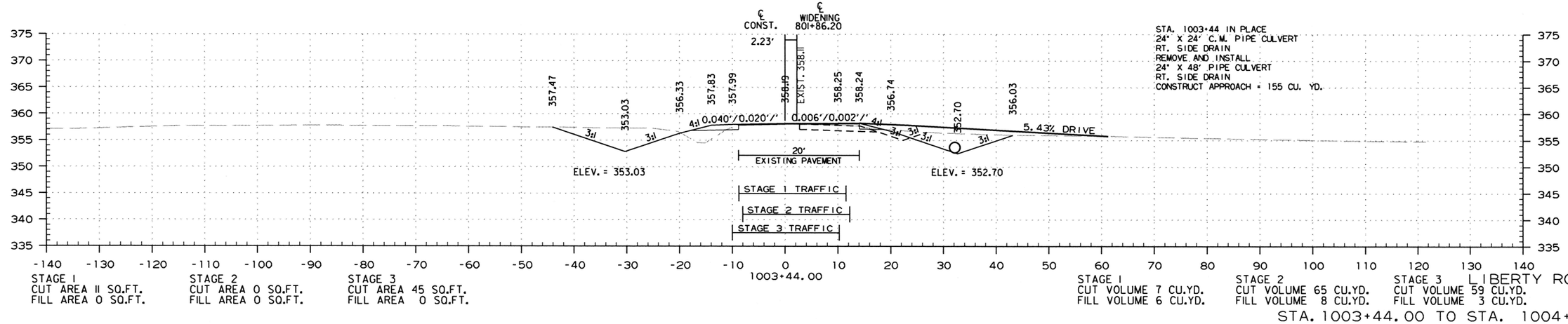
mh39735 9/24/2019
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	56	60

(2) CROSS SECTIONS







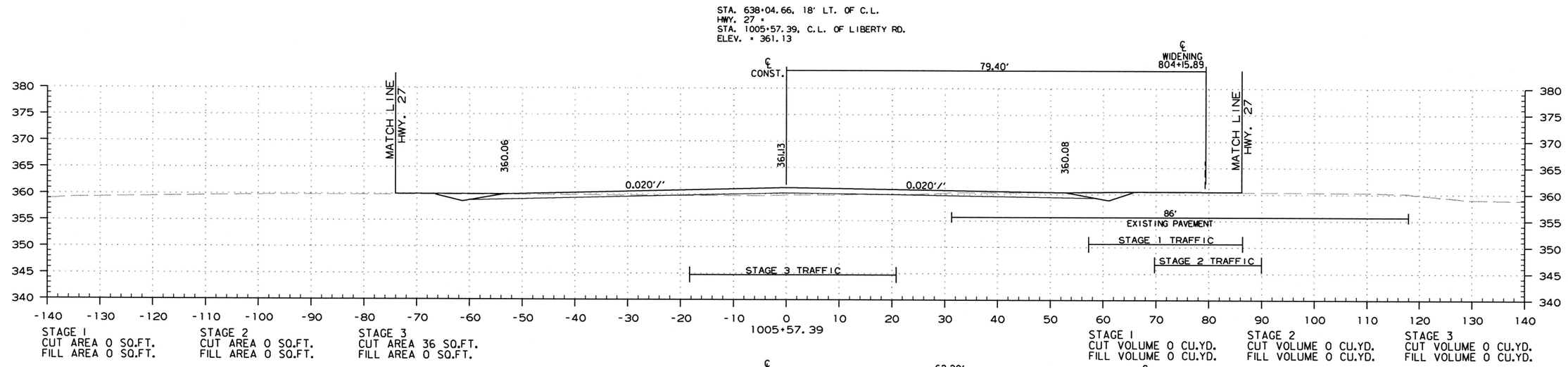
LIBERTY ROAD

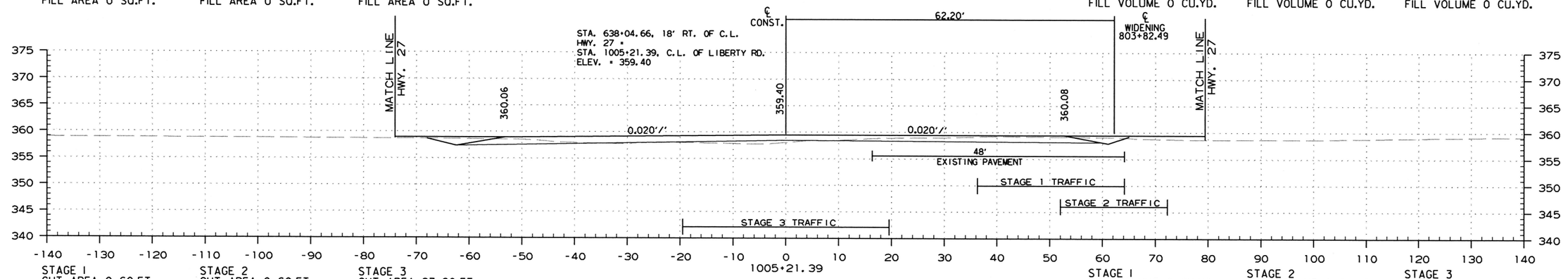
STA. 1003+44.00 TO STA. 1004+00.00

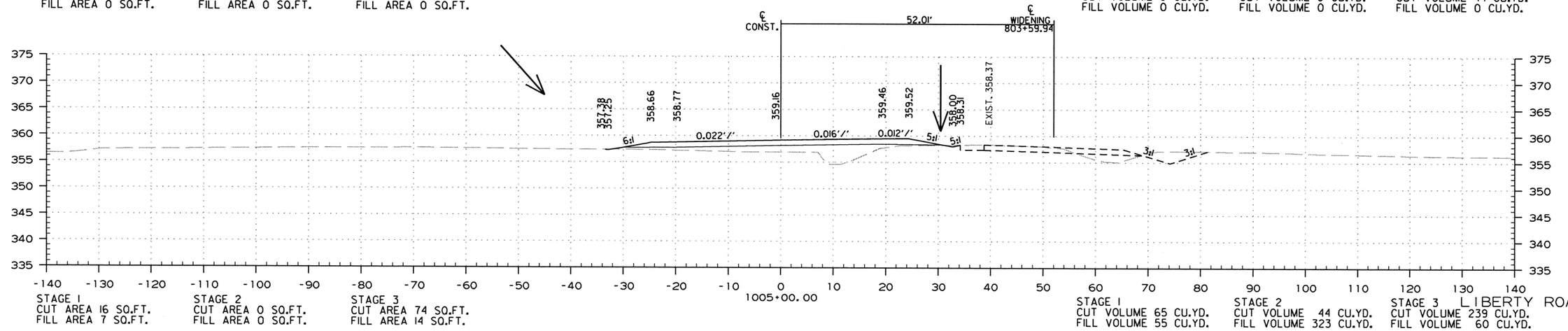
mh39735 9/24/2019
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	57	60

(2) CROSS SECTIONS







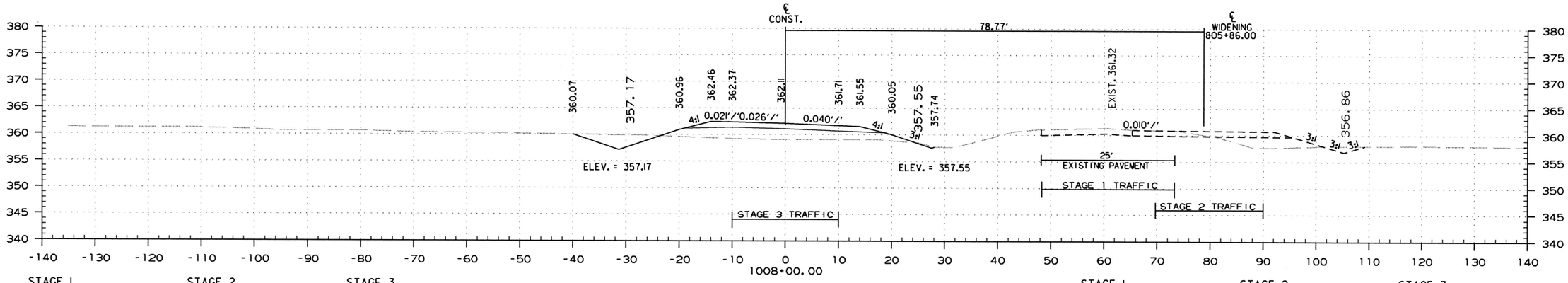
LIBERTY ROAD

STA. 1005+00.00 TO STA. 1005+57.39

mh39735 9/24/2019
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	58	60

(2) CROSS SECTIONS



STAGE 1
CUT AREA 5 SQ.FT.
FILL AREA 23 SQ.FT.

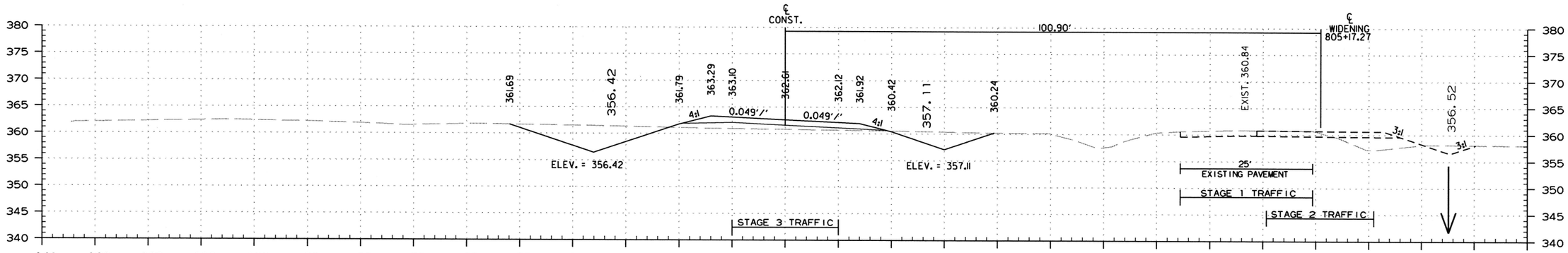
STAGE 2
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 3
CUT AREA 69 SQ.FT.
FILL AREA 5 SQ.FT.

STAGE 1
CUT VOLUME 40 CU.YD.
FILL VOLUME 75 CU.YD.

STAGE 2
CUT VOLUME 72 CU.YD.
FILL VOLUME 195 CU.YD.

STAGE 3
CUT VOLUME 240 CU.YD.
FILL VOLUME 44 CU.YD.



STAGE 1
CUT AREA 8 SQ.FT.
FILL AREA 21 SQ.FT.

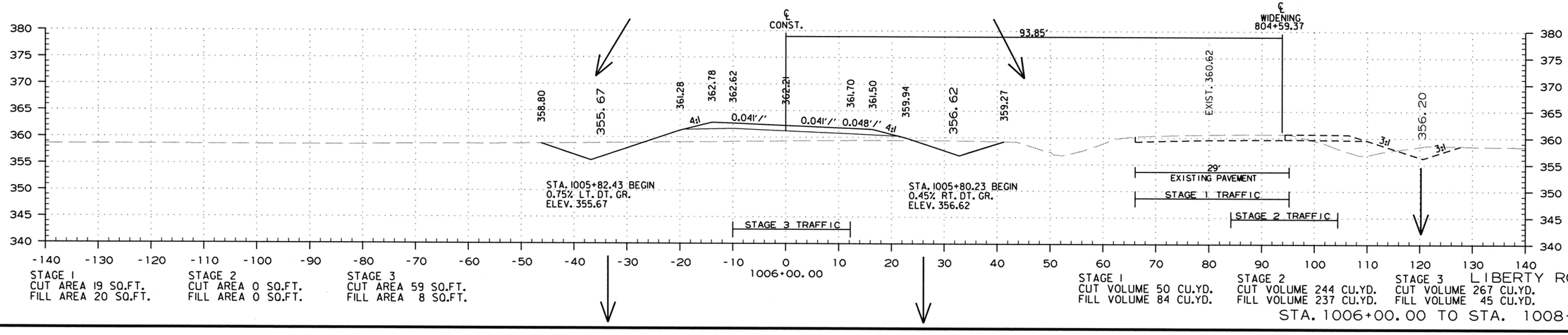
STAGE 2
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 3
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 1
CUT VOLUME 23 CU.YD.
FILL VOLUME 90 CU.YD.

STAGE 2
CUT VOLUME 244 CU.YD.
FILL VOLUME 215 CU.YD.

STAGE 3
CUT VOLUME 238 CU.YD.
FILL VOLUME 26 CU.YD.



STAGE 1
CUT AREA 19 SQ.FT.
FILL AREA 20 SQ.FT.

STAGE 2
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 3
CUT AREA 59 SQ.FT.
FILL AREA 8 SQ.FT.

STAGE 1
CUT VOLUME 50 CU.YD.
FILL VOLUME 84 CU.YD.

STAGE 2
CUT VOLUME 244 CU.YD.
FILL VOLUME 237 CU.YD.

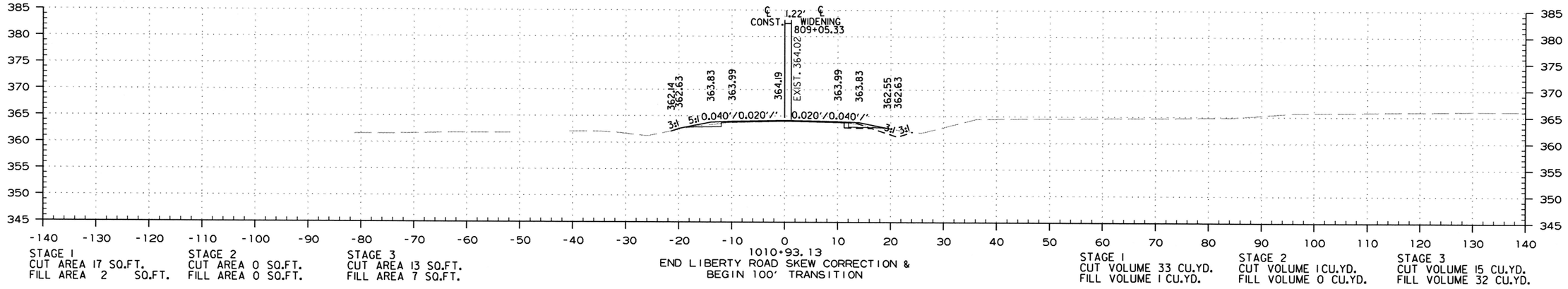
STAGE 3
CUT VOLUME 267 CU.YD.
FILL VOLUME 45 CU.YD.

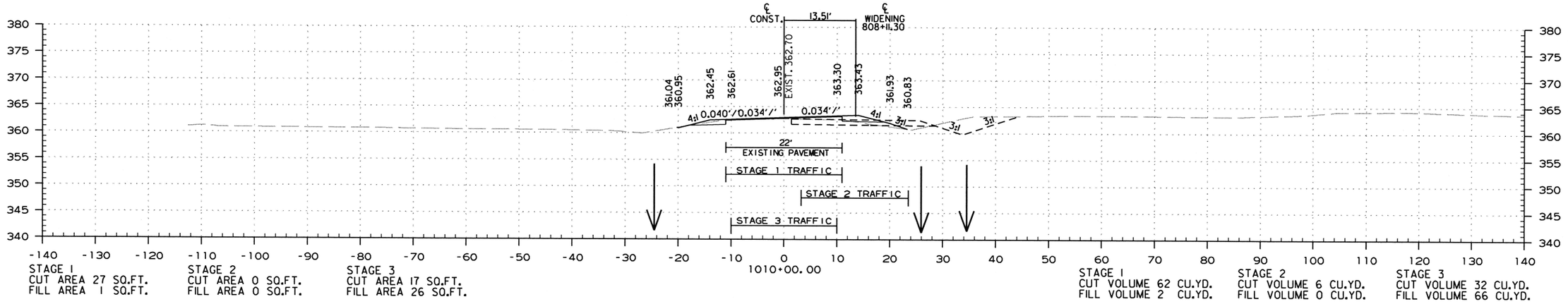
LIBERTY ROAD
STA. 1006+00.00 TO STA. 1008+00.00

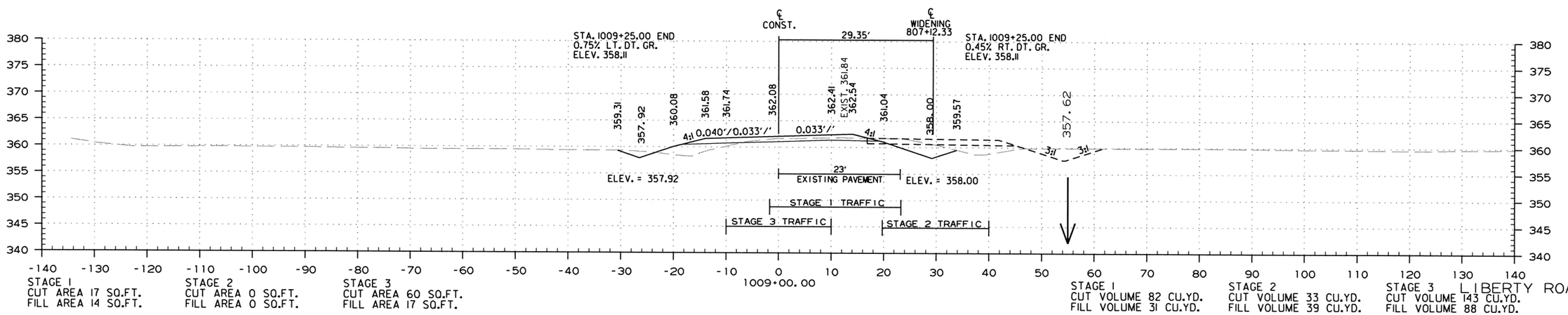
mh39735 9/24/2019
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	59	60

(2) CROSS SECTIONS







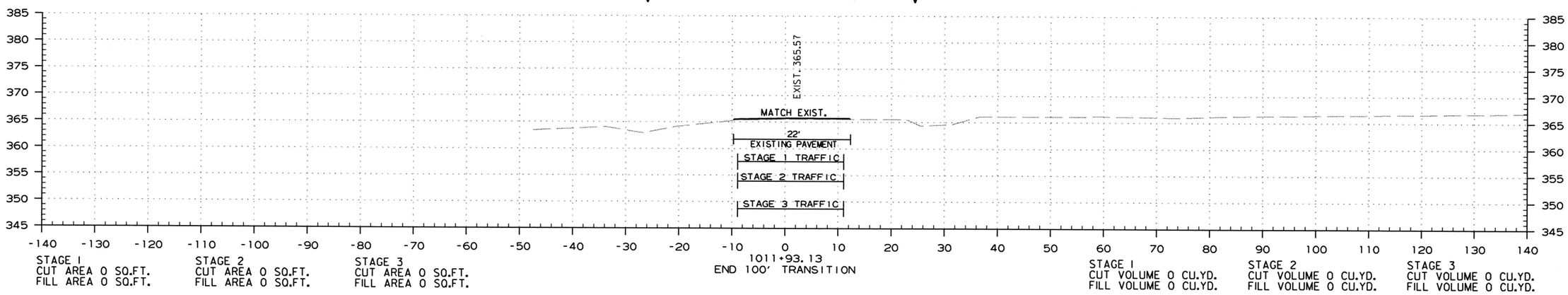
LIBERTY ROAD

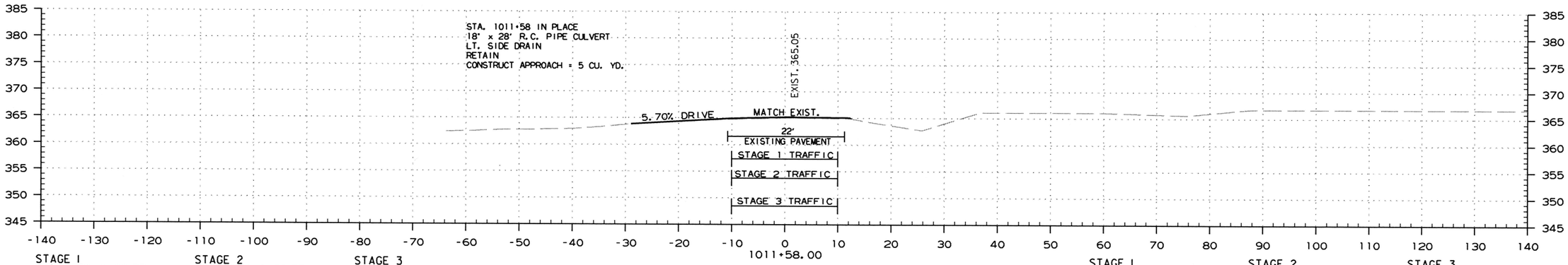
STA. 1009+00.00 TO STA. 1010+93.13

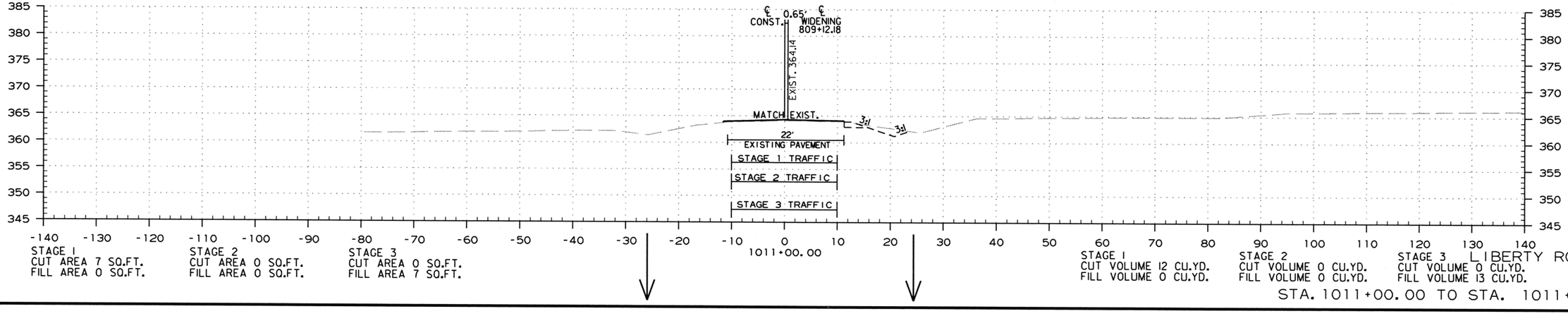
mh39735 9/24/2019
R080495.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080495	60	60

(2) CROSS SECTIONS



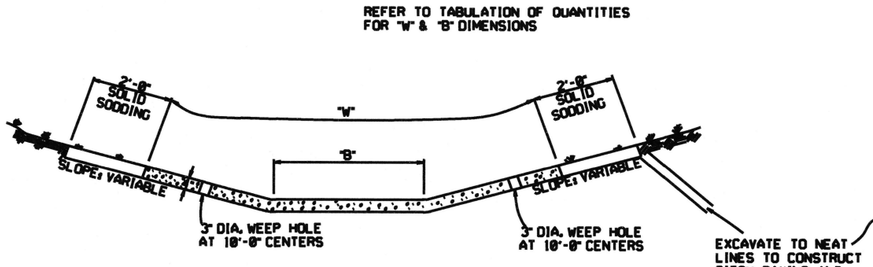




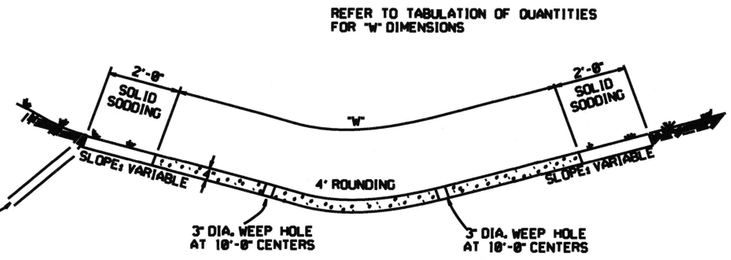
LIBERTY ROAD

STA. 1011+00.00 TO STA. 1011+93.13

mh39735 9/24/2019
R080495.DGN

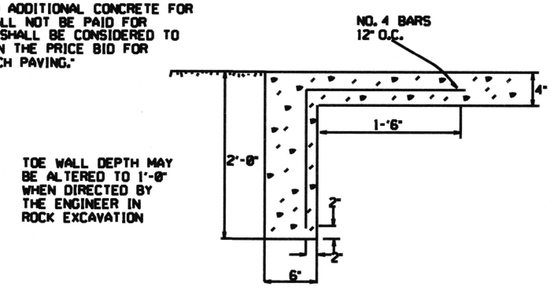


TYPE A

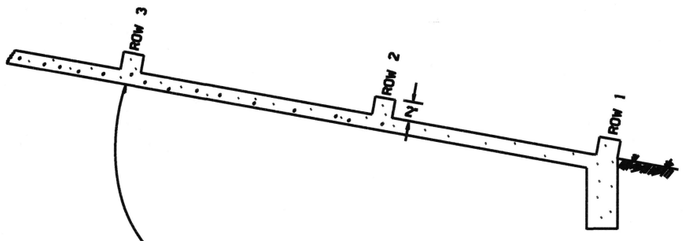


TYPE B

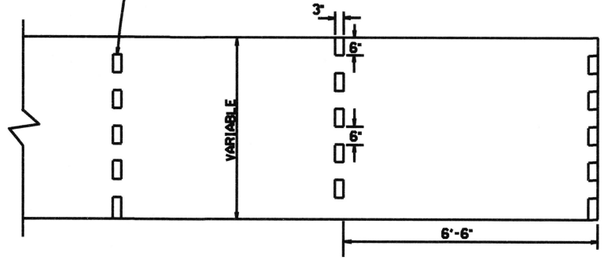
THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

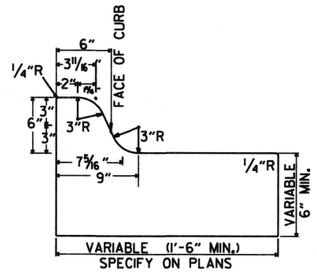
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
10-30-89	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	853-7-15-88
4-1-87	REVISED ENERGY DISSIPATOR	871-4-1-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	832-1-9-87
11-1-86	ADDED NOTE TO ENERGY DISS.	799-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

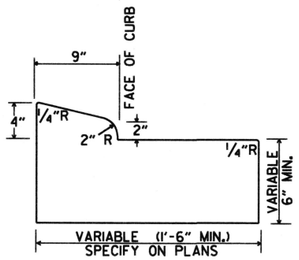
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

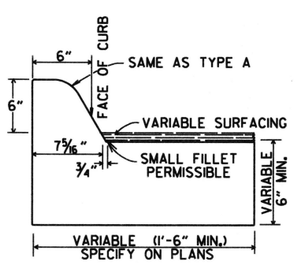
STANDARD DRAWING CDP-1



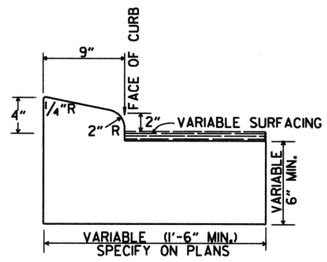
TYPE A



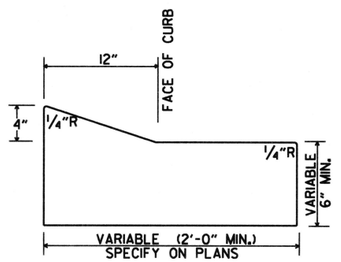
TYPE B-1



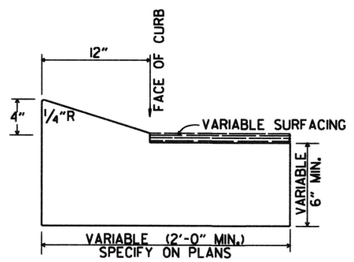
TYPE C



TYPE B-2

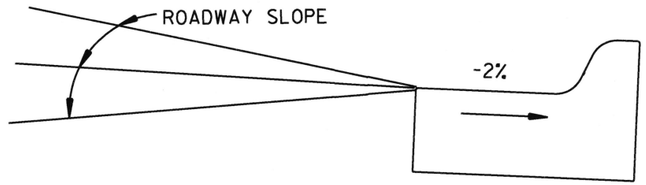


TYPE E-1



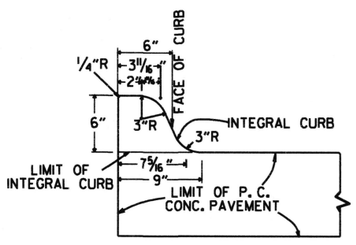
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

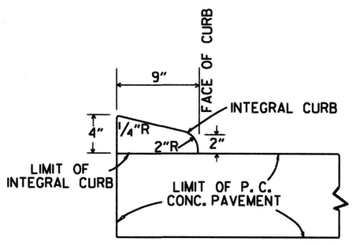


DETAIL OF GUTTER SLOPE

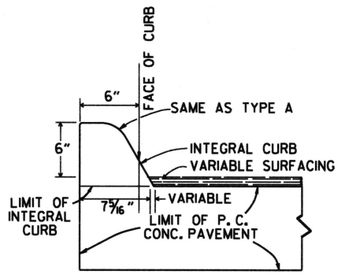
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

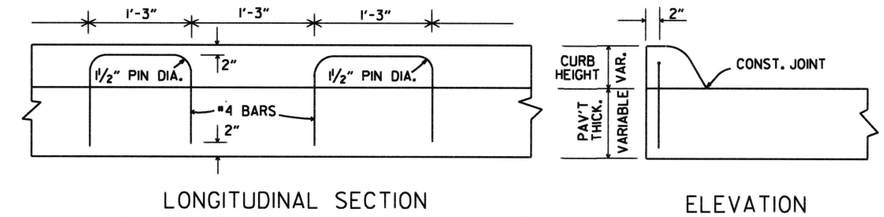


TYPE B

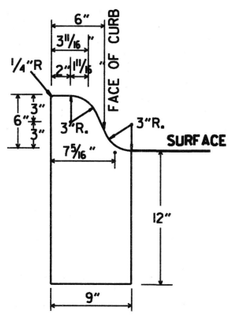


TYPE C

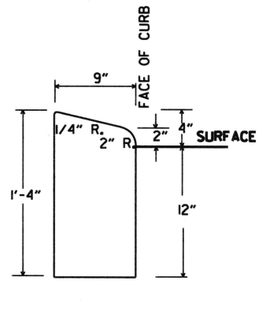
INTEGRAL CURB



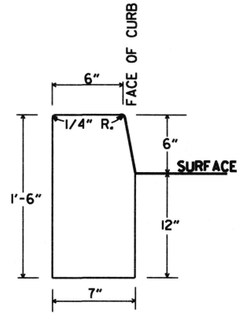
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



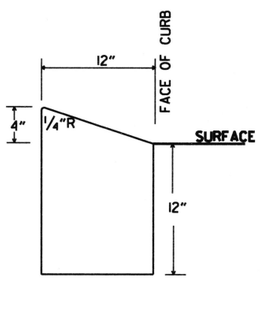
TYPE A



TYPE B

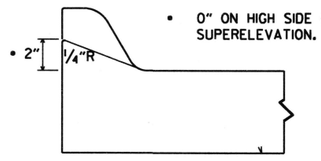


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B I	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

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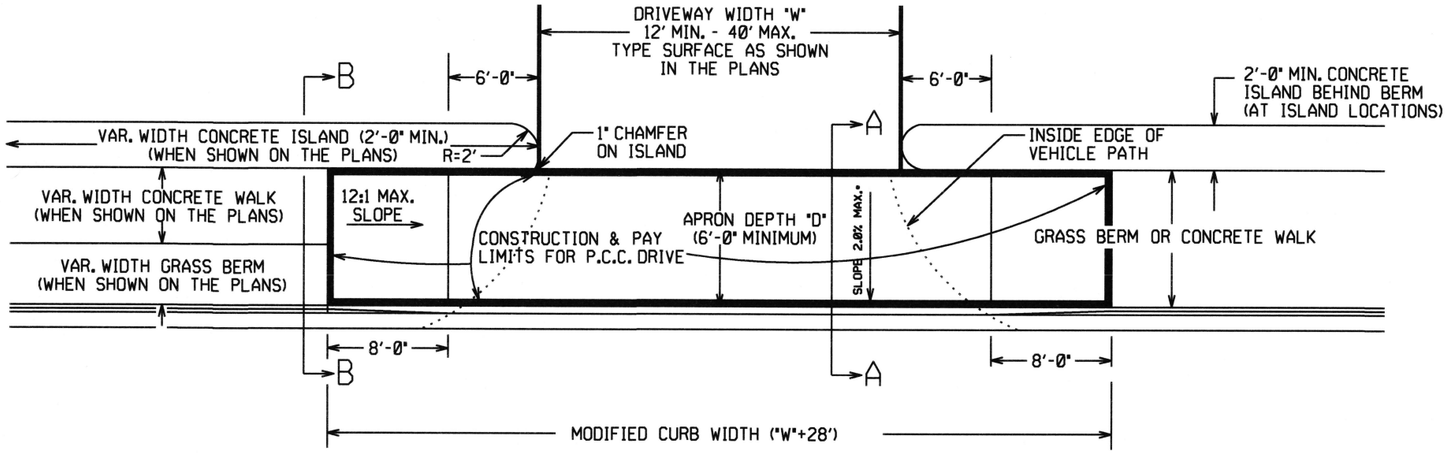
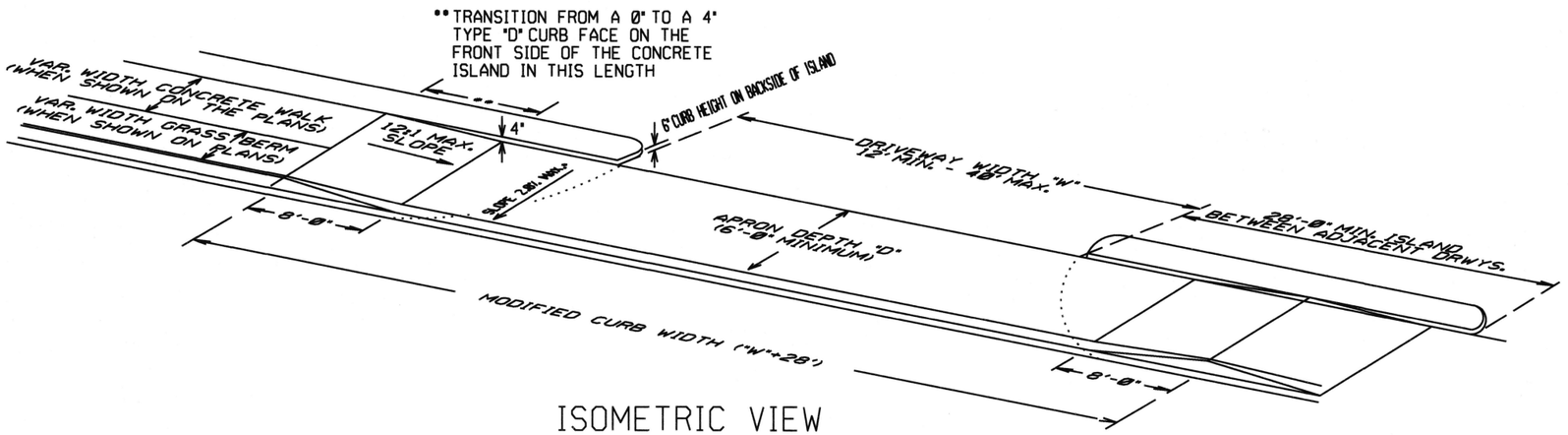
CURBING DETAILS

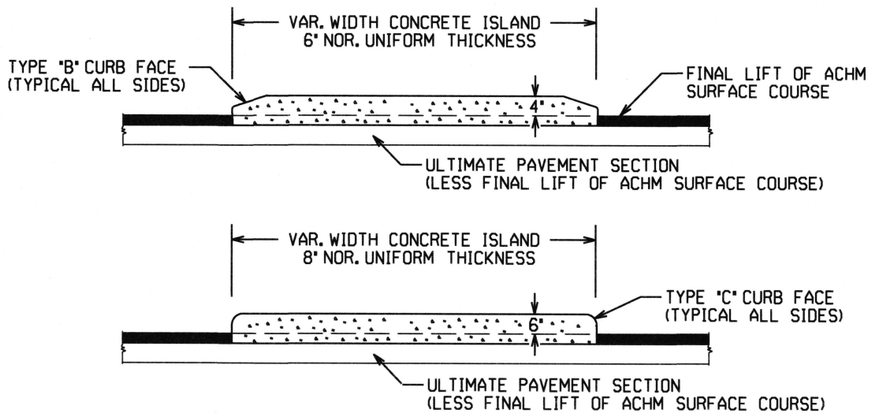
STANDARD DRAWING CG-1



PLAN VIEW

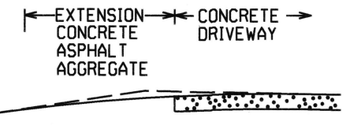


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

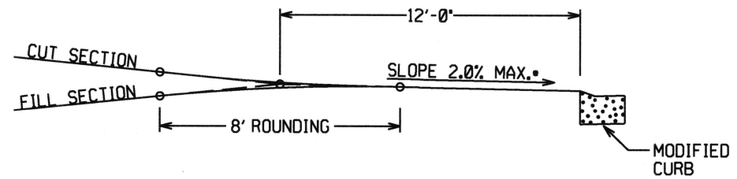
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

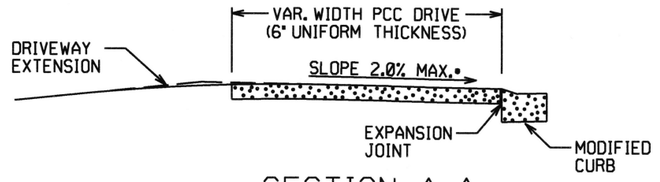
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

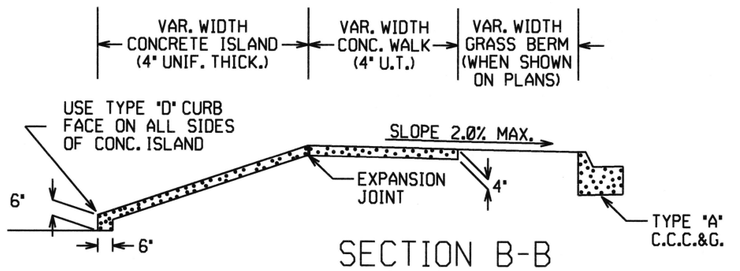


DRIVEWAY VERTICAL ALIGNMENT DETAILS

• NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



SECTION A-A



SECTION B-B

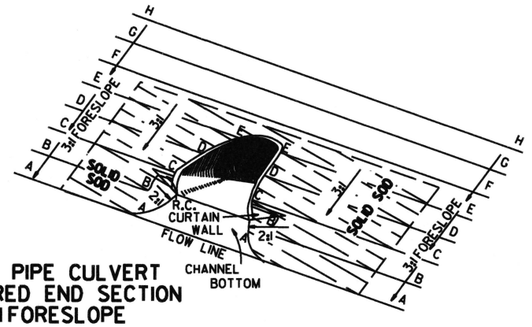
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

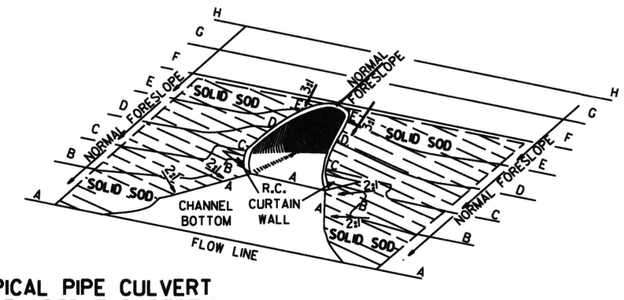
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

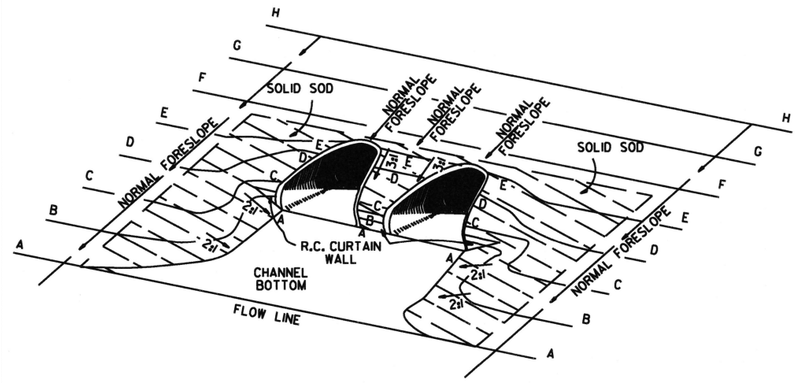
STANDARD DRAWING DR-1



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.

REINFORCING STEEL SCHEDULE

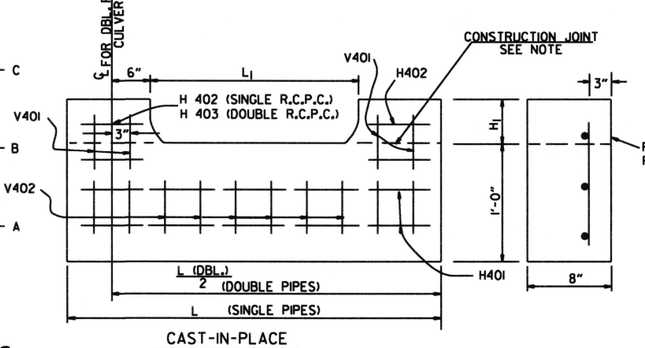
PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT											
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

ALL REINFORCING STEEL #4 BARS @ 6" O.C.

PLAN VIEW
3:1 FORESLOPES

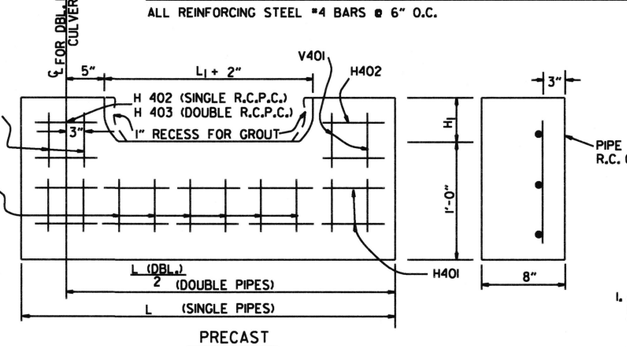
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

R.C. CURTAIN WALL DETAILS

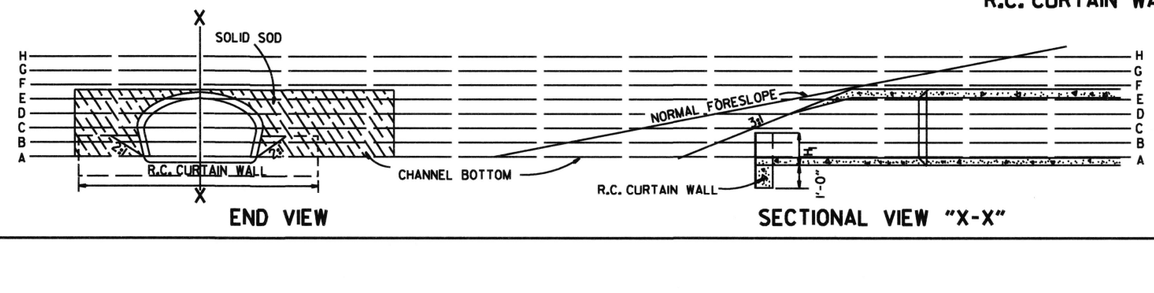
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
11- 3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

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FLARED END SECTION

STANDARD DRAWING FES-1

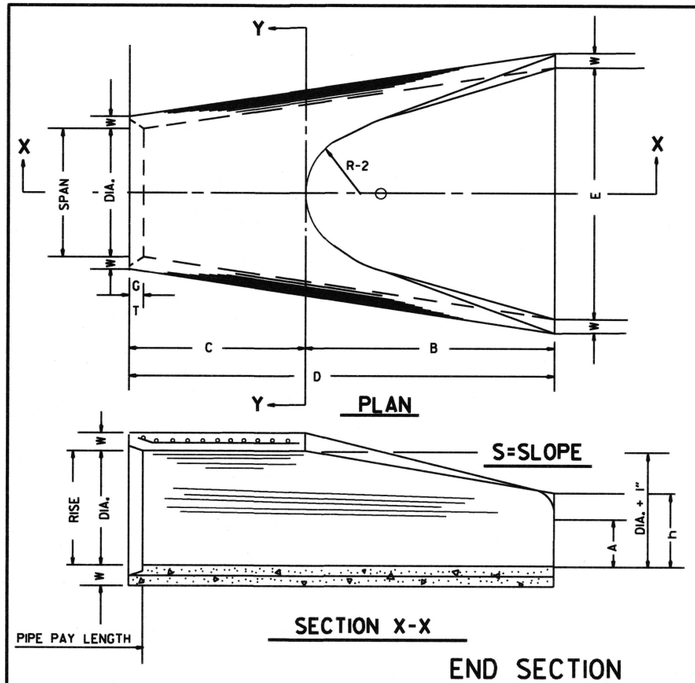
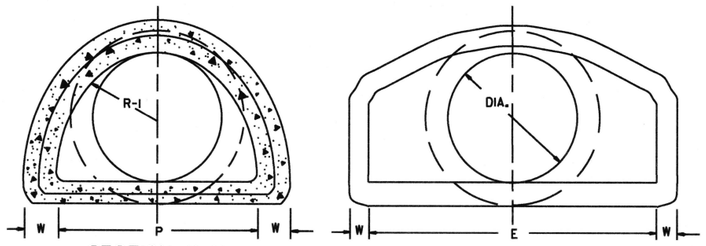


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	P	R-I	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 5/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47 15/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 5/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 15/16"	38 5/16"	24"	5"	13250	4'-6"

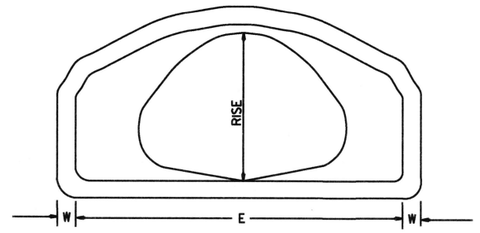


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

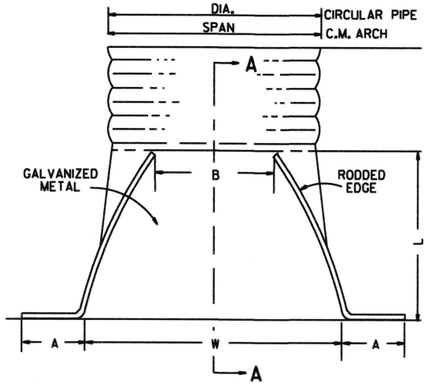
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 5/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 15/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 15/16"	24"	5"	2¼:1

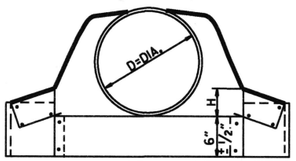
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



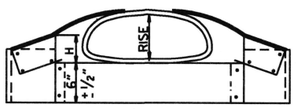
END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS





CIRCULAR PIPE



C.M. ARCH PIPE

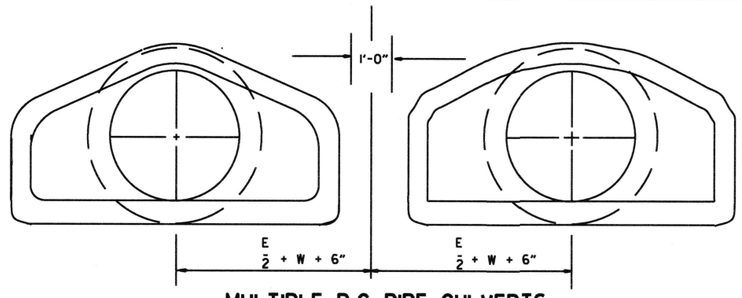
CIRCULAR PIPE

D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

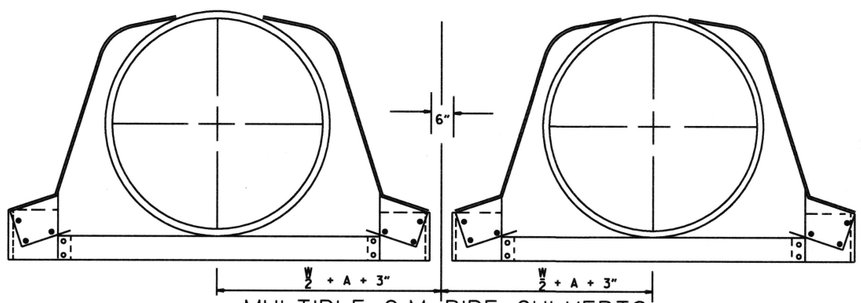
C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A I" ±	B MAX.	H I" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

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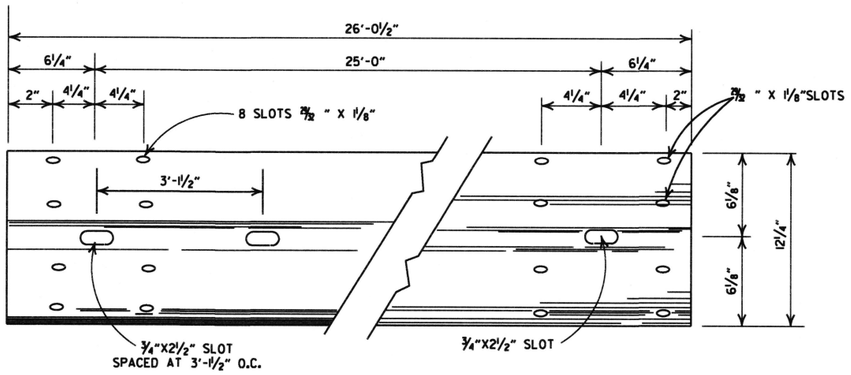
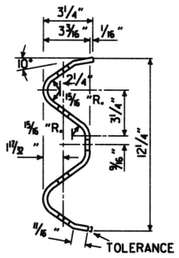
FLARED END SECTION

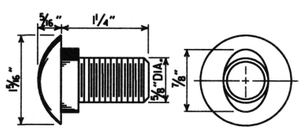
STANDARD DRAWING FES-2



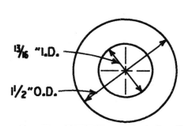


DETAILS OF
W-BEAM GUARD RAIL

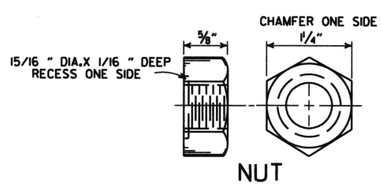
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



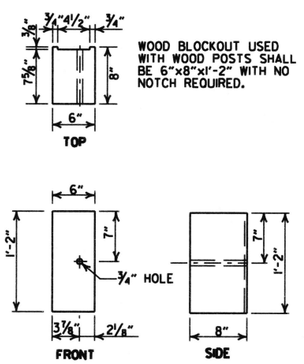
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



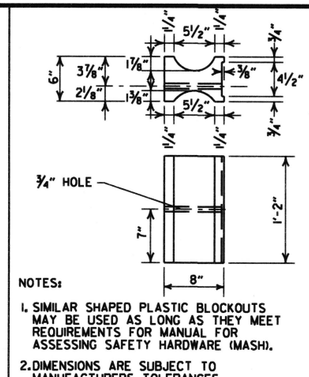
CUT STEEL WASHER



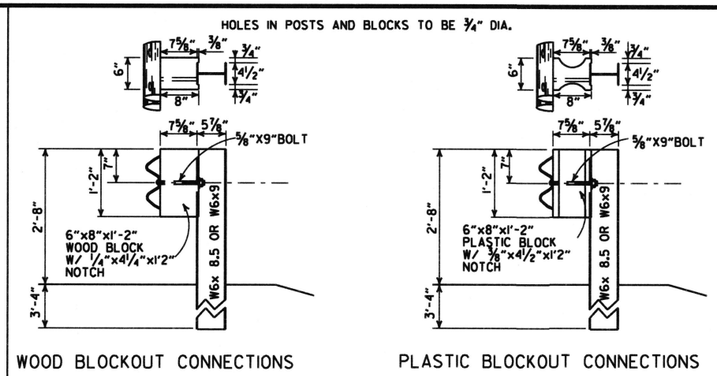
NUT



WOOD BLOCKOUT
(W-BEAM)



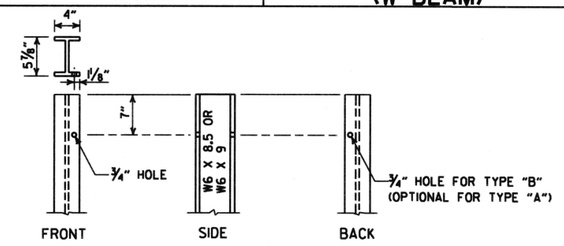
PLASTIC BLOCKOUT
(W-BEAM)



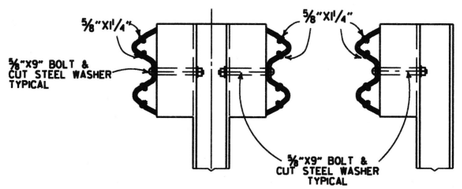
WOOD BLOCKOUT CONNECTIONS

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)

-GENERAL NOTES-

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

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

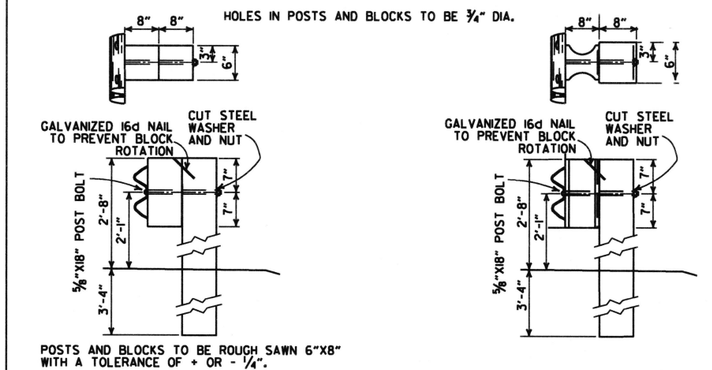
W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

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 REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.



WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

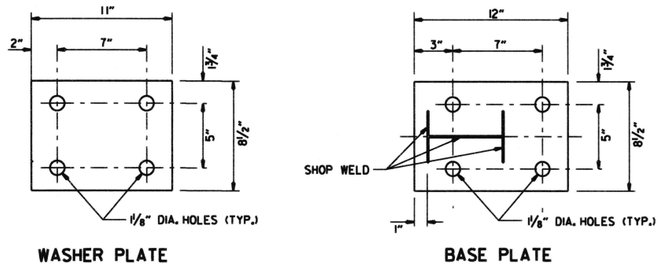
DETAILS OF WOOD LINE POST CONNECTIONS
(W-BEAM)

DATE	REVISION	FILMED
11-16-17	REVISED GENERAL NOTES AND RAISED GUARD RAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	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	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

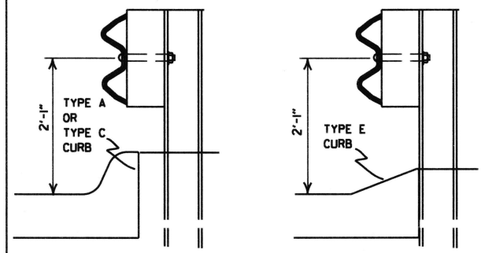
STANDARD DRAWING GR-8



WASHER PLATE

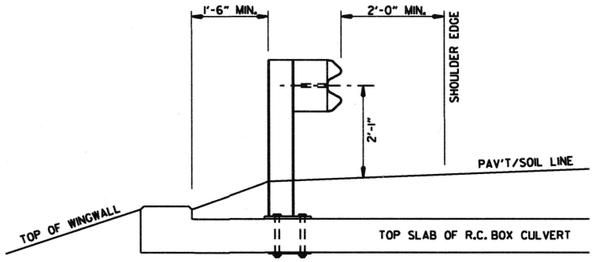
BASE PLATE

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

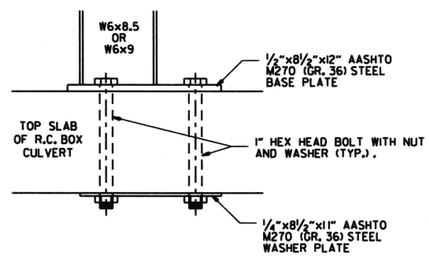


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

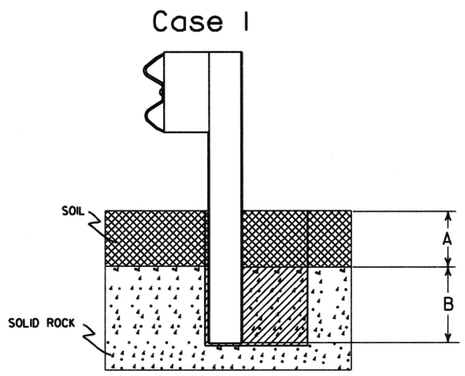
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

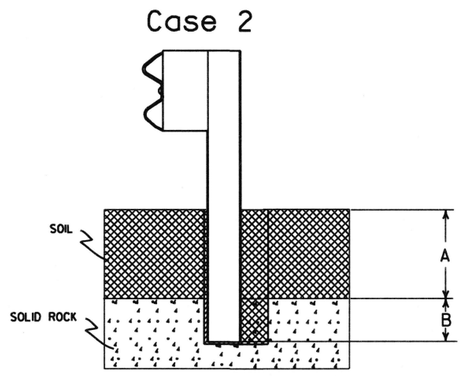


SECTION A-A



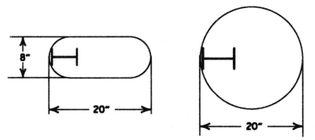
DETAIL OF CONNECTION

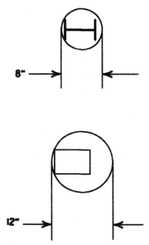




Plan View Steel Posts

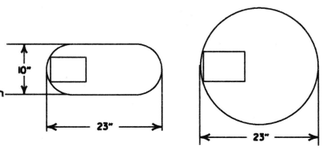
Either hole configuration acceptable





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".

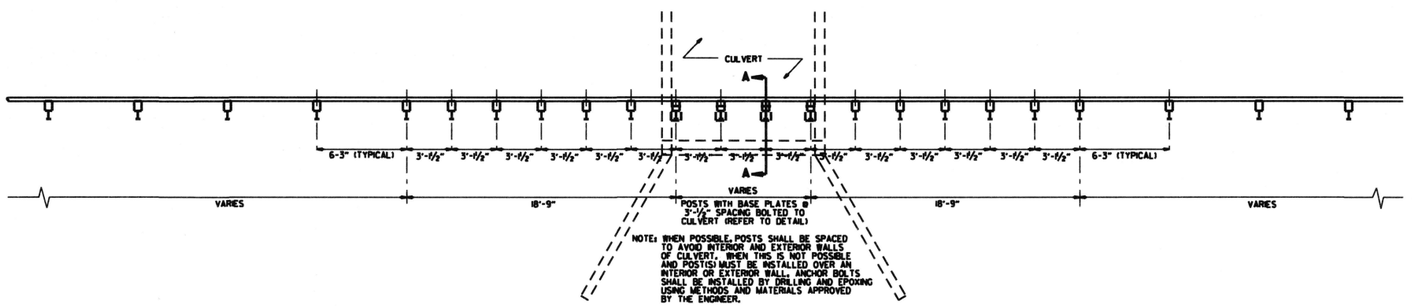
Zone A:
Backfill according to Section 617.03(a).

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)



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. DRG. GR-8.

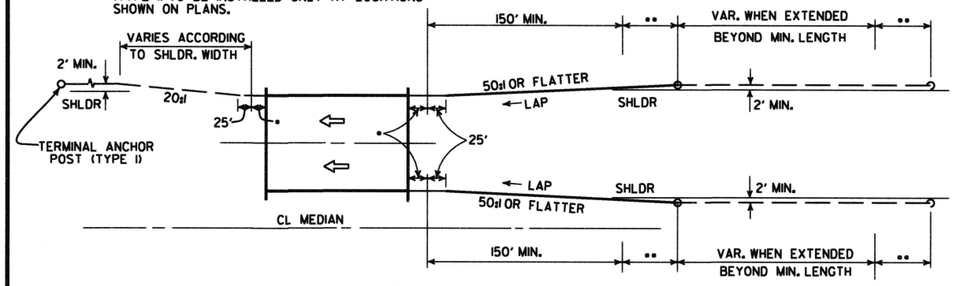
DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
04-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED 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 POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

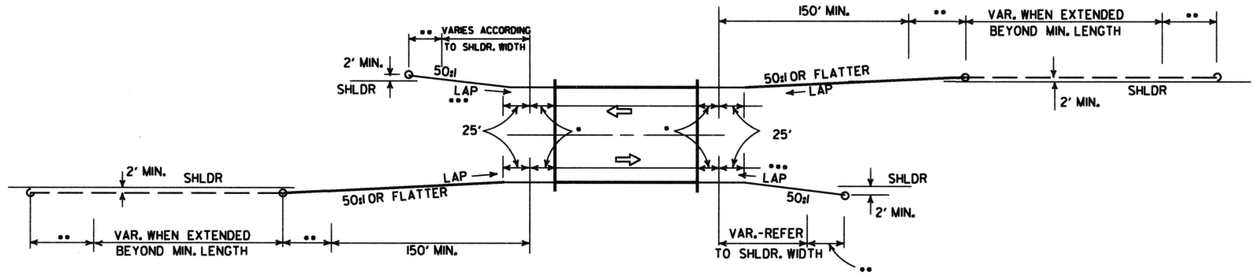
STANDARD DRAWING GR-8A

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



ONE-WAY TRAFFIC

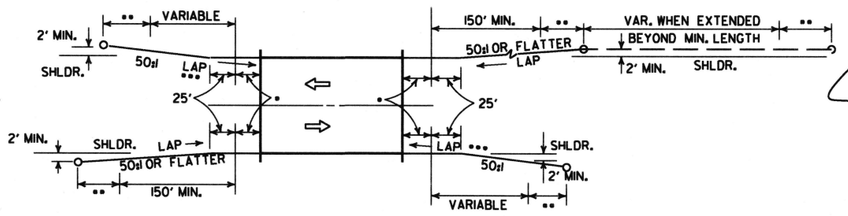
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

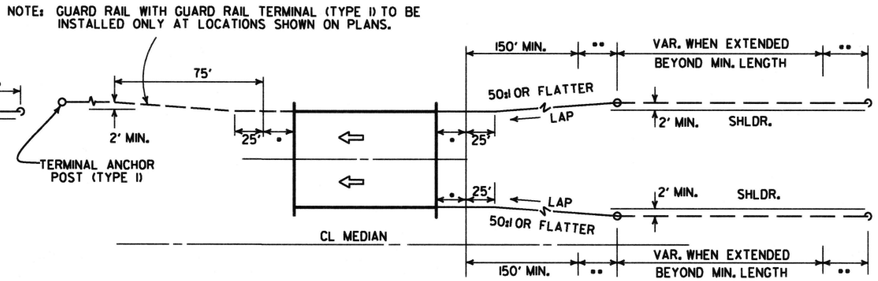
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

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



TWO-WAY TRAFFIC

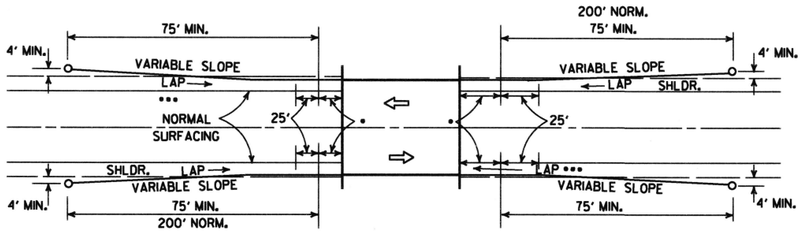
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

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

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



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

LEGEND

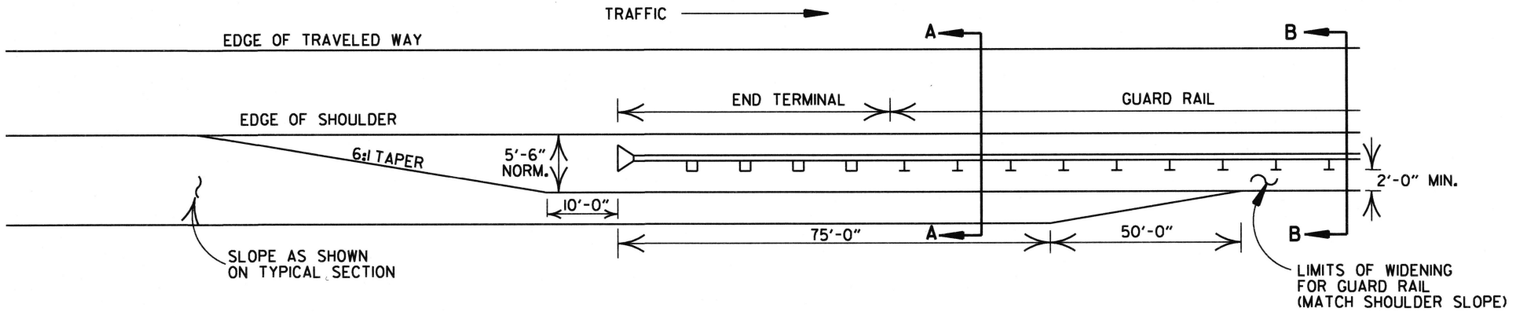
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

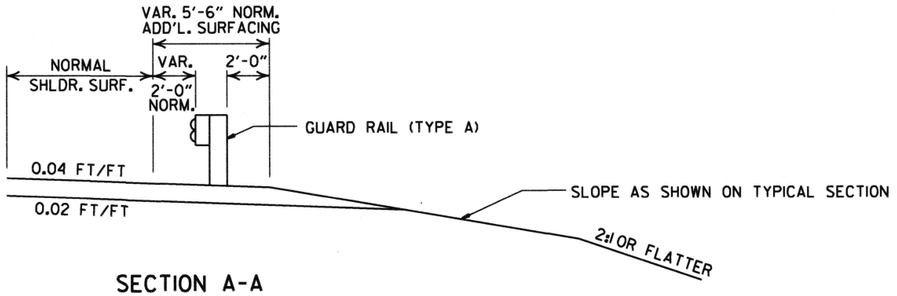
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87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

ARKANSAS STATE HIGHWAY COMMISSION

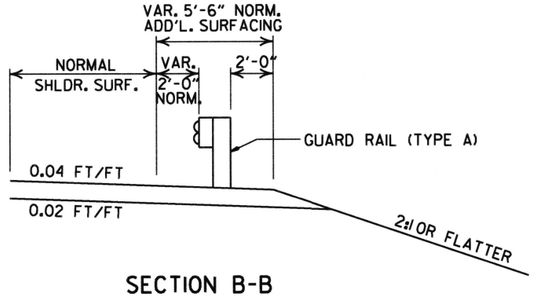
GUARD RAIL DETAILS

STANDARD DRAWING GR-9



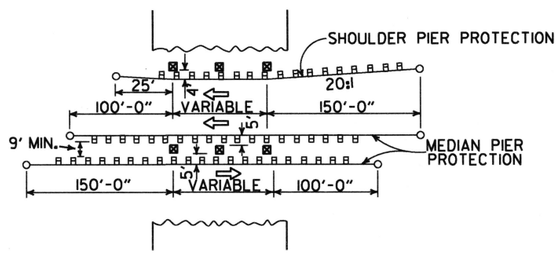


SECTION A-A



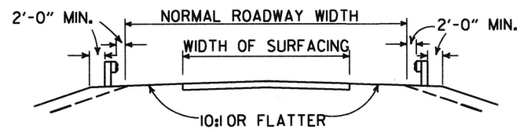
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

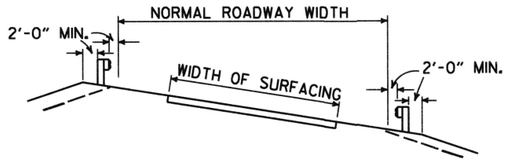


METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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



SECTION ON TANGENT



SECTION ON CURVE

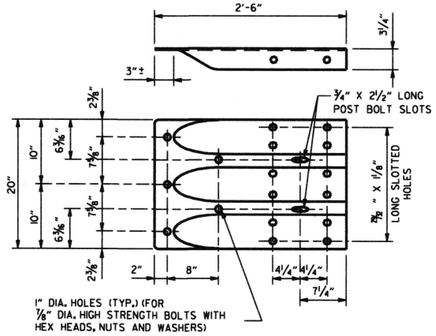
DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

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

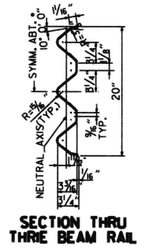
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

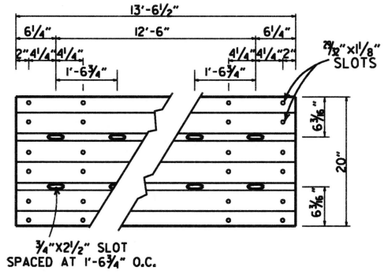
STANDARD DRAWING GR-9A



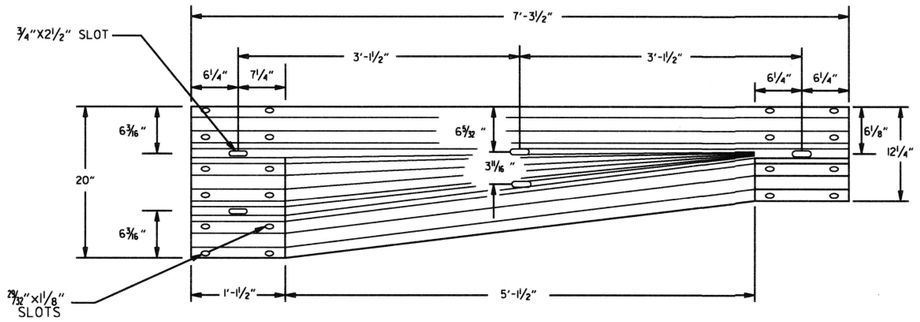
SPECIAL END SHOE



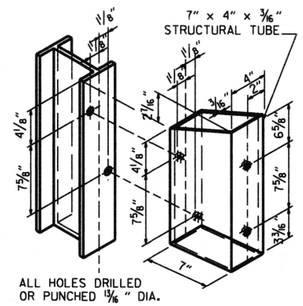
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

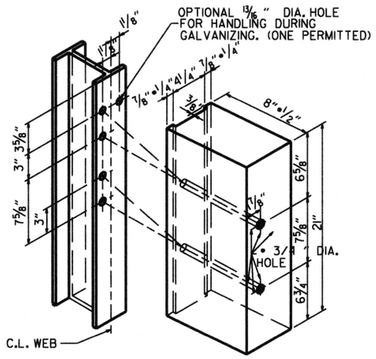


TRANSITION SECTION



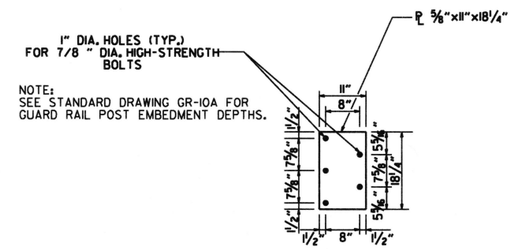
ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

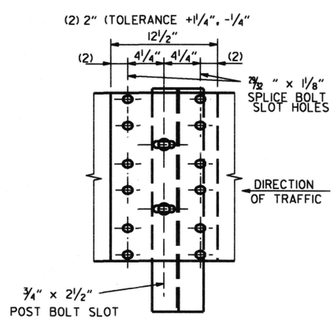
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



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

CONNECTOR PLATE

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



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

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

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

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

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 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.

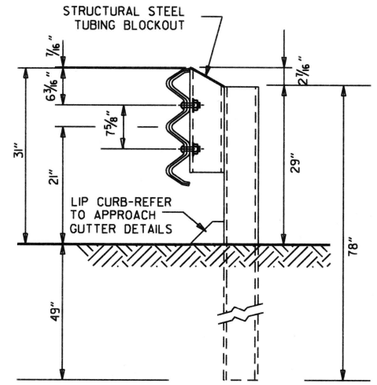
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 #) OR NO. 1 1350 # SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	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	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

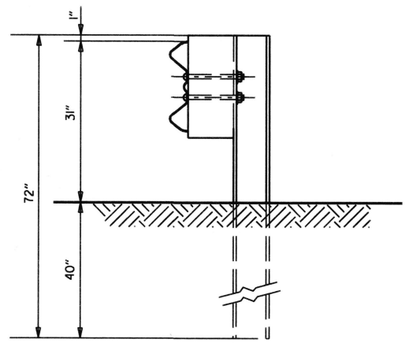
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

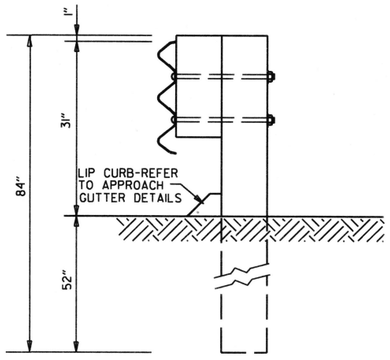
STANDARD DRAWING GR-10



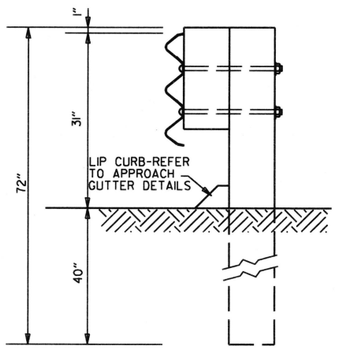
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



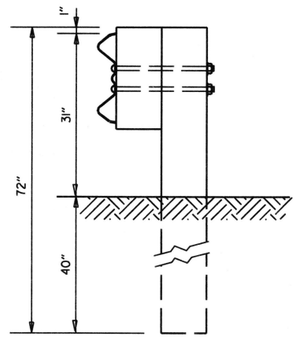
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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



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



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

GENERAL NOTES:

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

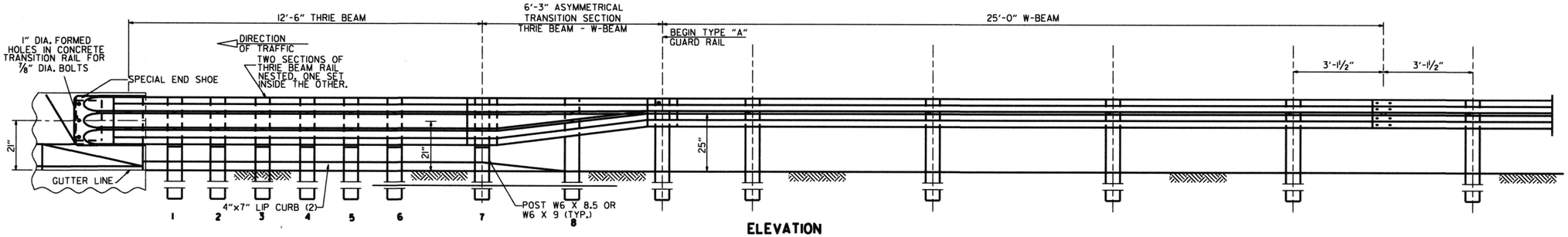
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST & DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

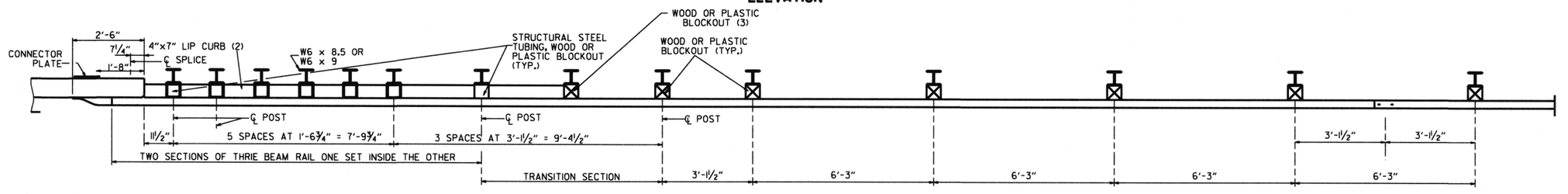
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

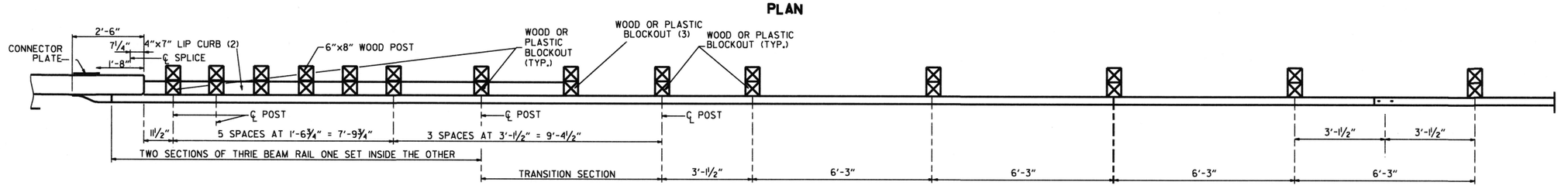
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

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

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

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

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

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

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 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.

POSTS SHALL BE PLACED AT THE MID-SPAN OF THE W-BEAM.

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

DATE	REVISION	FILMED
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-12

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅞	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

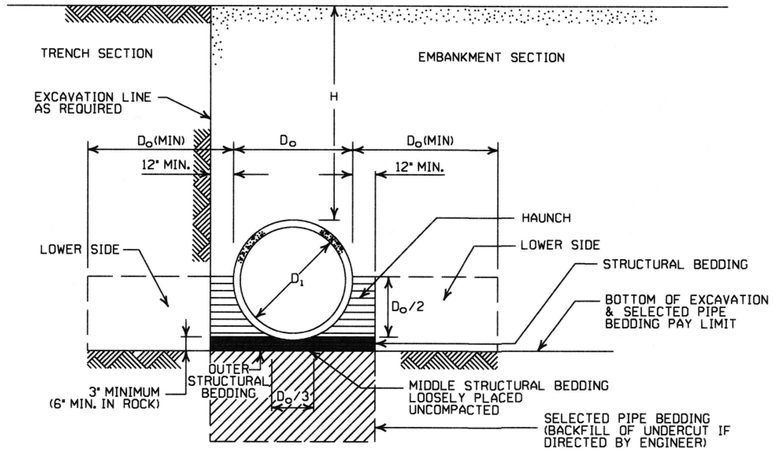
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

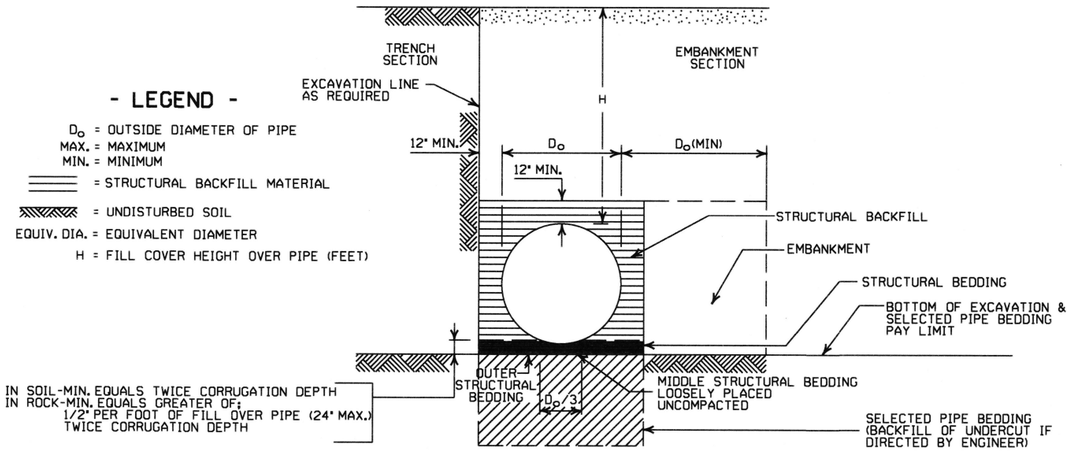
METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)
				INSTALLATION	INSTALLATION		INSTALLATION	INSTALLATION
				TYPE 1	TYPE 1		TYPE 1	TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION	INSTALLATION			
				TYPE 2 / TYPE 1	TYPE 2 / TYPE 1			
36	40x31	5	0.079	3 / 2	12 / 15			
42	46x36	6	0.079	3 / 2	13 / 15			
48	53x41	7	0.079	3 / 2	13 / 15			
54	60x46	8	0.079	3 / 2	13 / 15			
60	66x51	9	0.079	3 / 2	13 / 15			
66	73x55	12	0.079	3 / 2	15 / 15			
72	81x59	14	0.079	3 / 2	15 / 15			
78	87x63	14	0.079	3 / 2	15 / 15			
84	95x67	16	0.109	3 / 2	15 / 15			
90	103x71	16	0.109	3 / 2	15 / 15			
96	112x75	18	0.109	3 / 2	15 / 15			
102	117x79	18	0.109	3 / 2	15 / 15			
108	128x83	18	0.138	3 / 2	15 / 15			

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

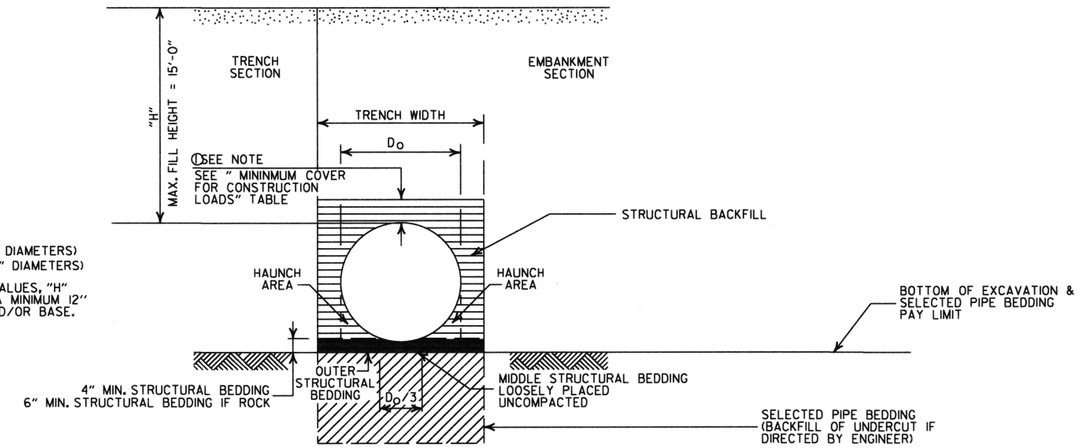
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
Do = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

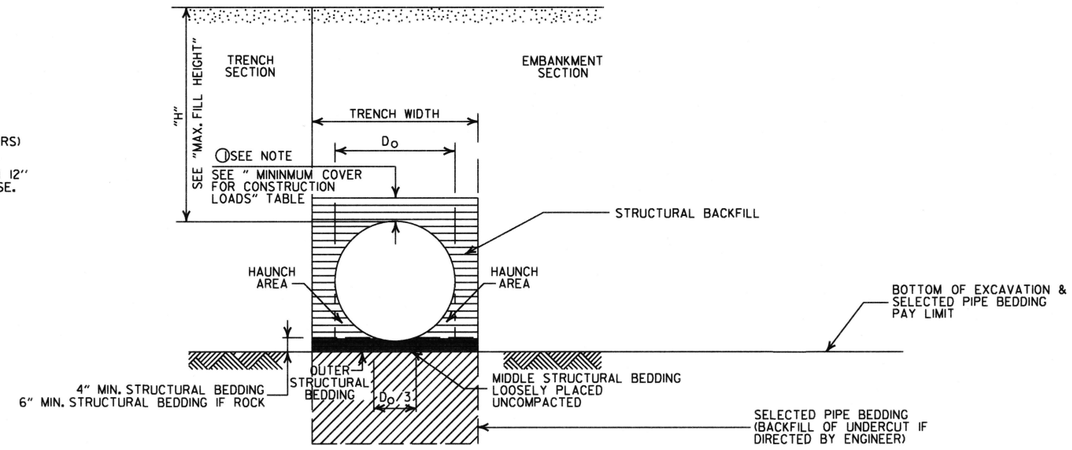
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

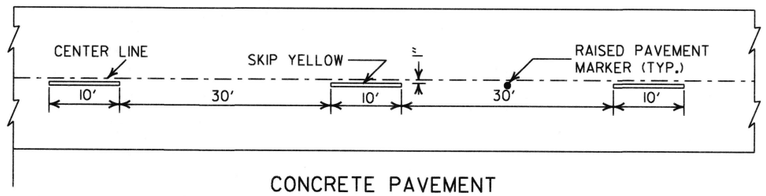
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

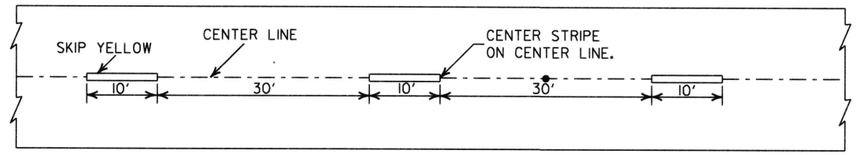
PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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.

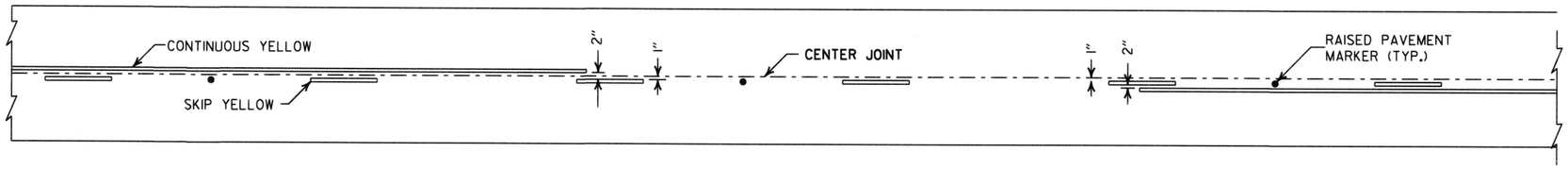


CONCRETE PAVEMENT

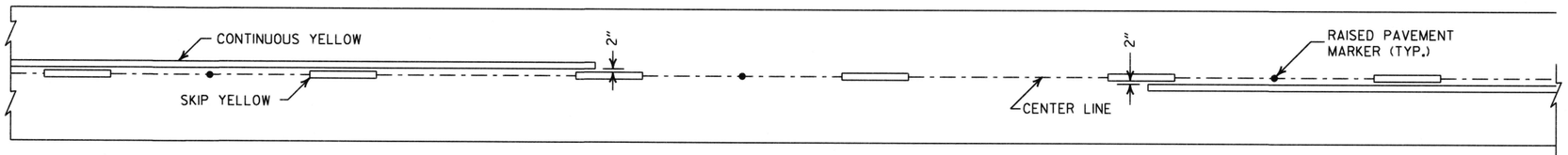


ASPHALT PAVEMENT

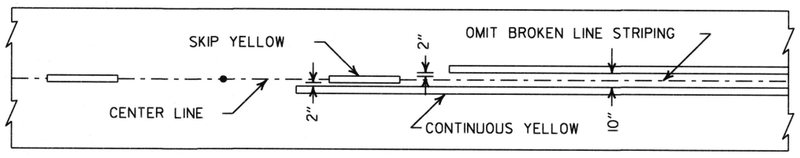
BROKEN LINE STRIPING



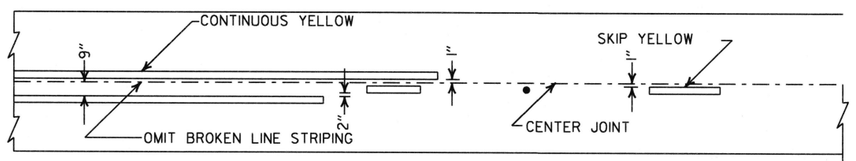
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

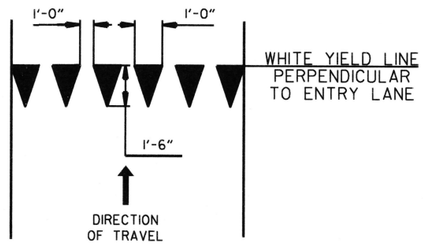


ASPHALT PAVEMENT

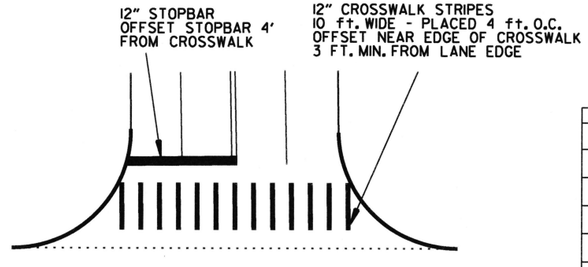


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

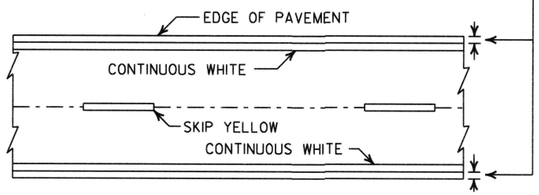


YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

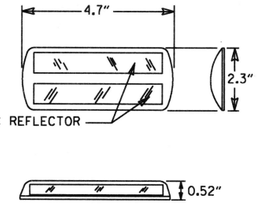
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
6-1-17	ADDED YIELD LINE DETAIL	
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	1-9-80

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

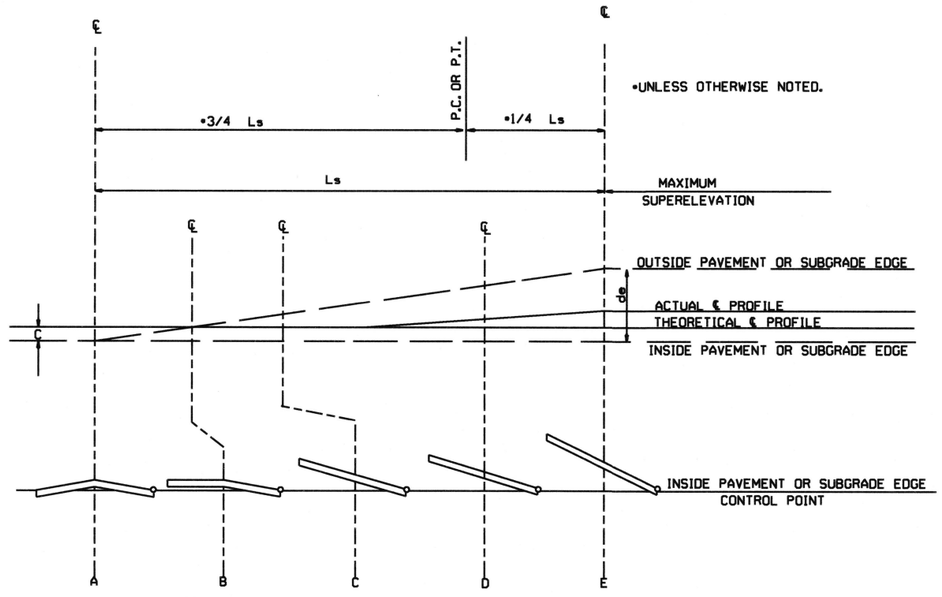
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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		
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	275	300
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			0.053			0.063			0.072			0.091	335	
3° 00′	0.025			0.040		200	0.057			0.067	230		0.077	260		0.096	350	400
3° 15′	0.027	150		0.043			0.061			0.072	245		0.082	275		0.098	360	
3° 30′	0.029			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		0.095	280		0.100	315							
7° 00′	0.053			0.078	210		0.098	285	300									
7° 30′	0.056			0.081	215		0.099	290										
8° 00′	0.058			0.084	220		0.100	290										
8° 30′	0.061			0.087	225	250												
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.

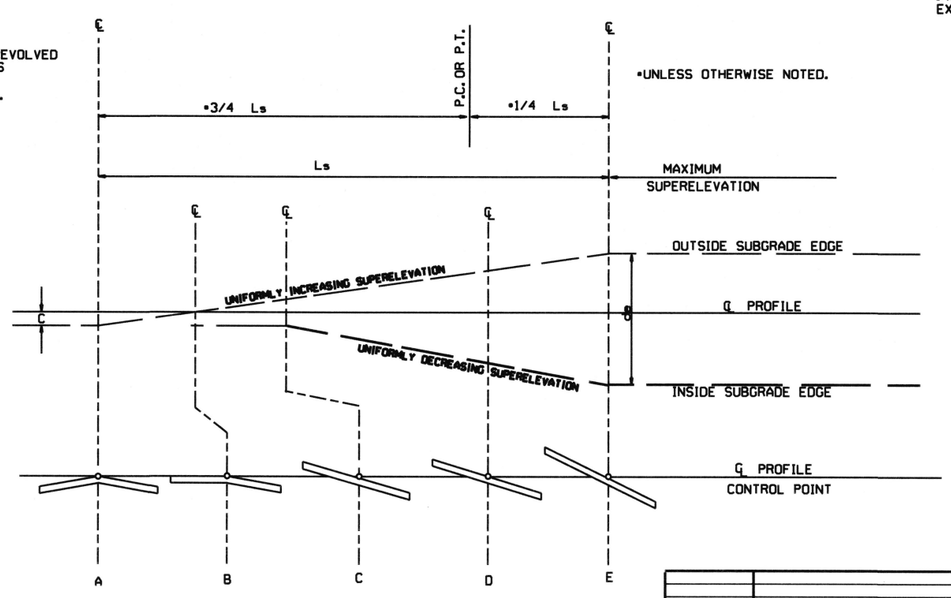
GENERAL NOTES

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

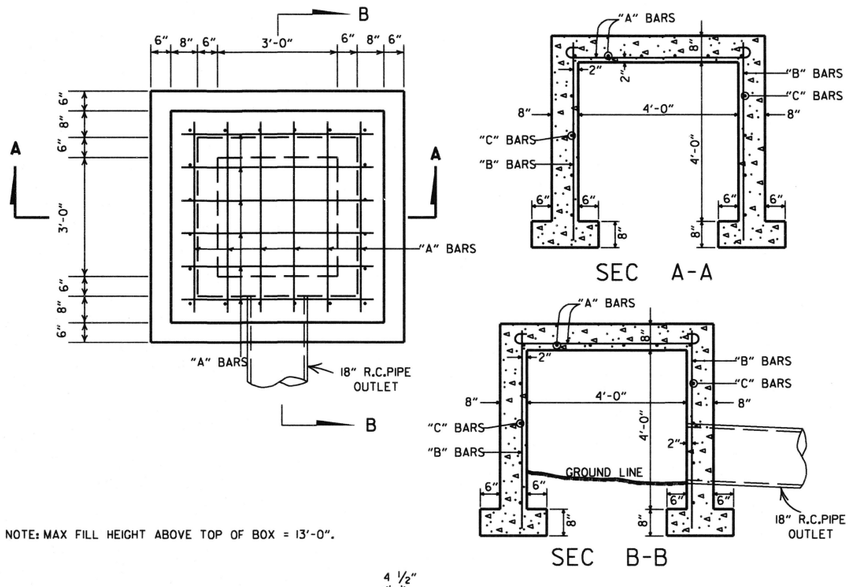
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	
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

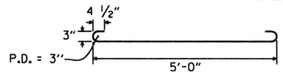


NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



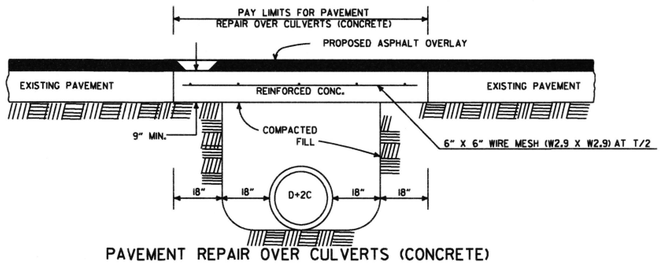
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

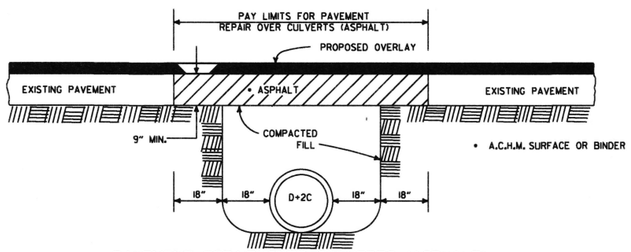
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



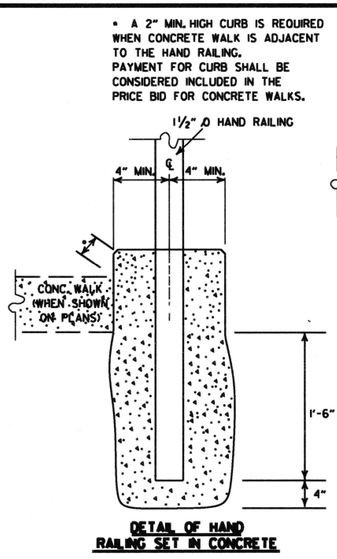
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



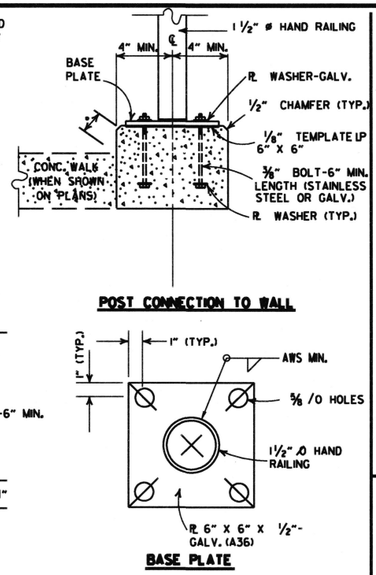
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



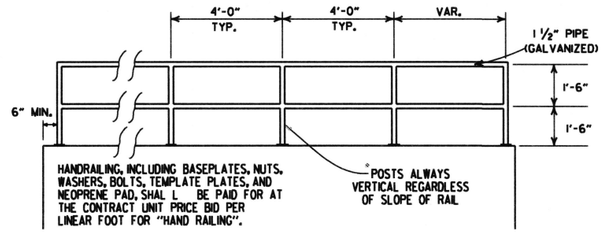
DETAIL OF HAND RAILING SET IN CONCRETE



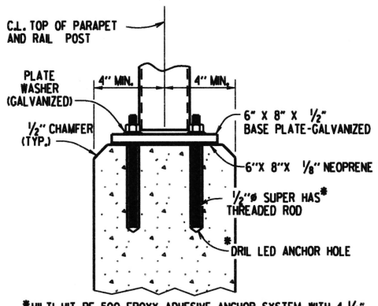
POST CONNECTION TO WALL

BASE PLATE

POST CONNECTION DETAILS



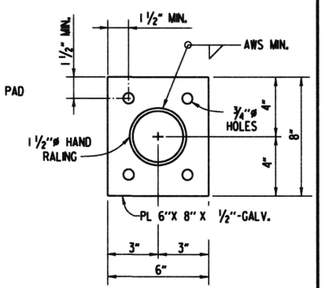
HAND RAILING SHAL L CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHAL L BE INSTAL LED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

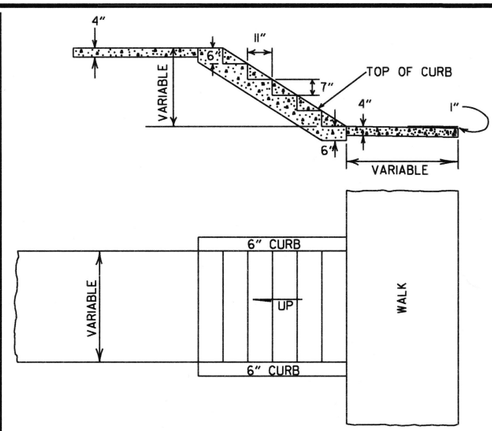
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	649-7-15-88
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1

R1-1

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

R1-2

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

R2-1

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

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"

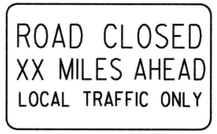
R5-1

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

RII-2

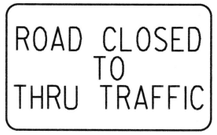
48"X30"

RII-3A



60"X30"

RII-4



60"X30"

W2I-5a

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

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-I

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"

W2I-2

STD. 30"X30"
SPECIAL 36"X36"

W2I-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

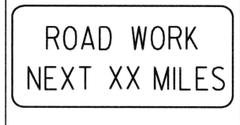
W8-II

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

W8-9

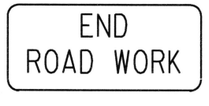
STD. 36"X36"
FWY. 48"X48"

G20-I



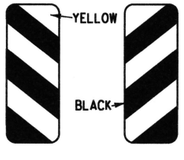
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

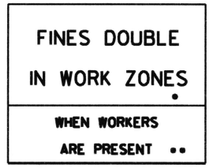
M4-9

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

M4-10

48"X18"

R55-I



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.

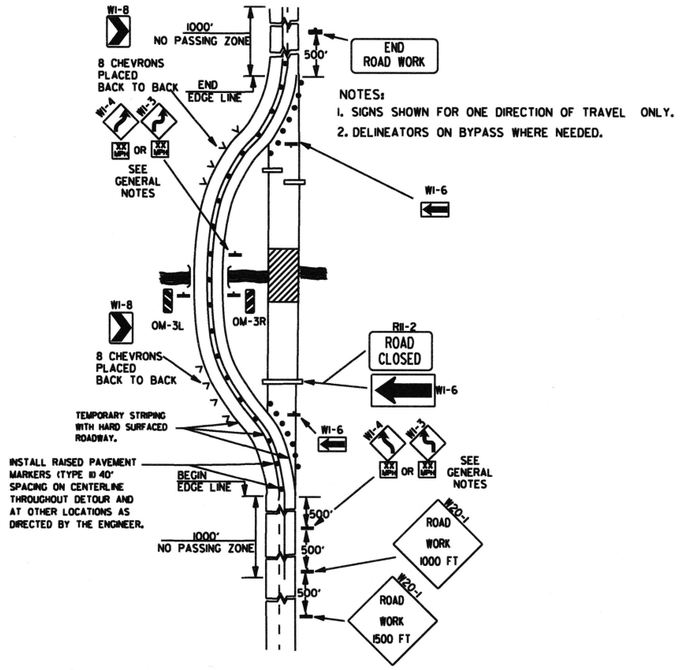
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

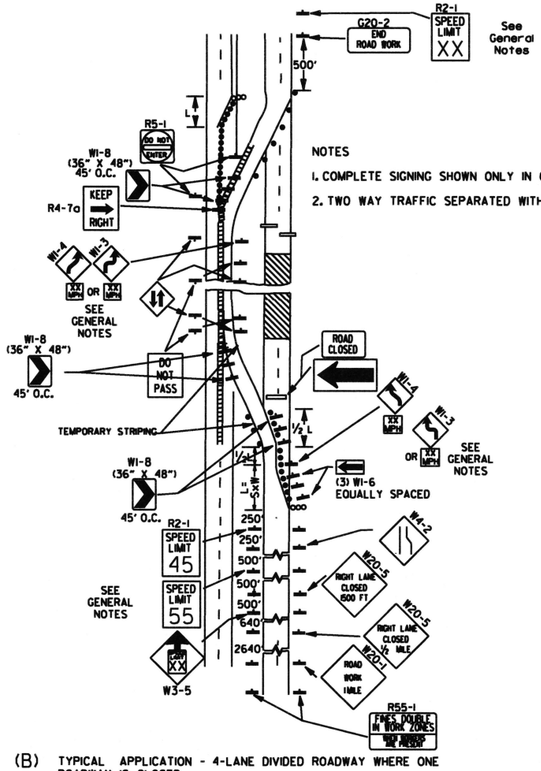
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



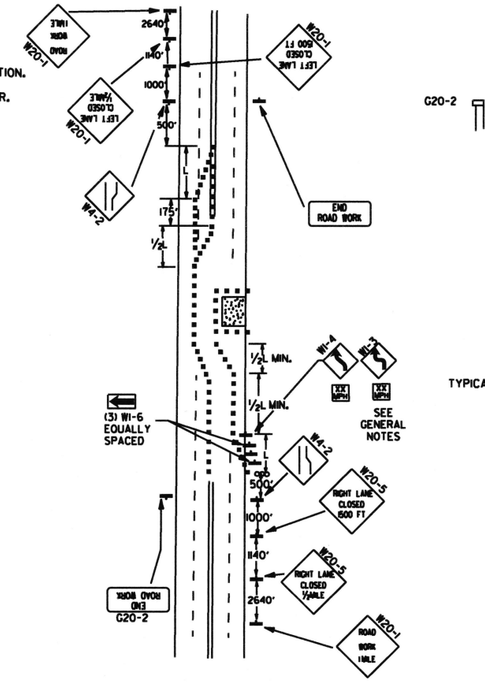
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

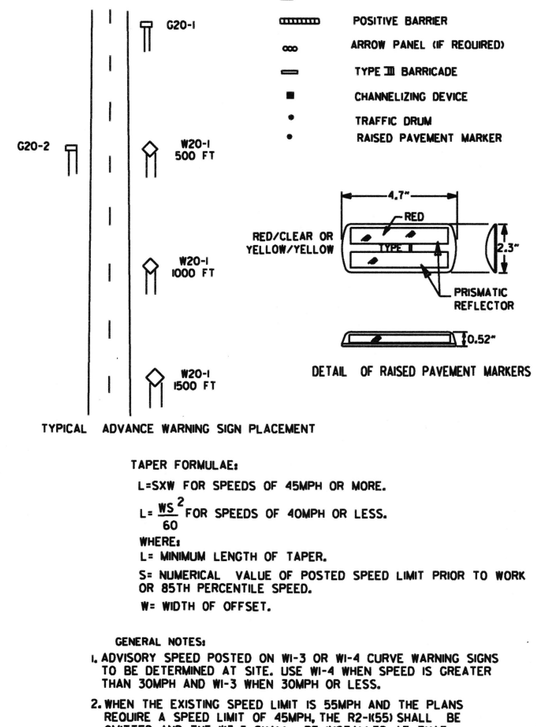


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

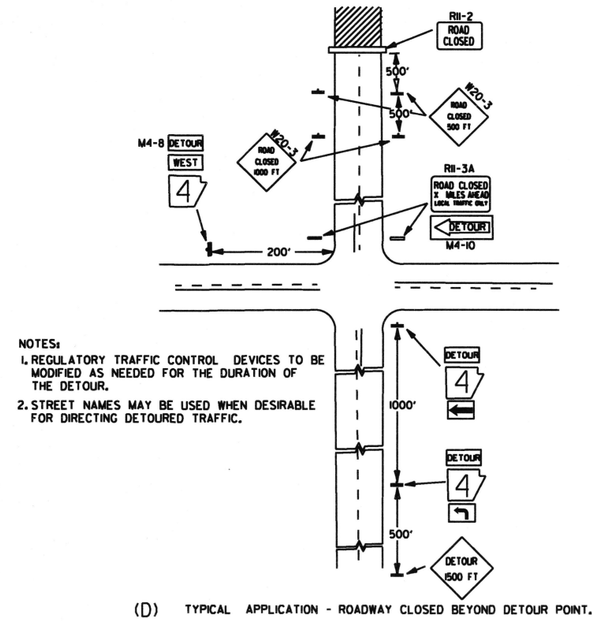
L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

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

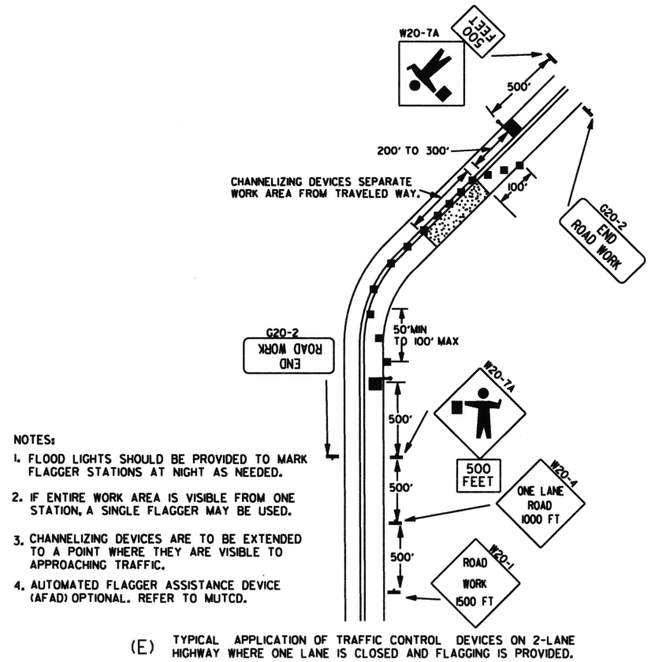
GENERAL NOTES:

1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



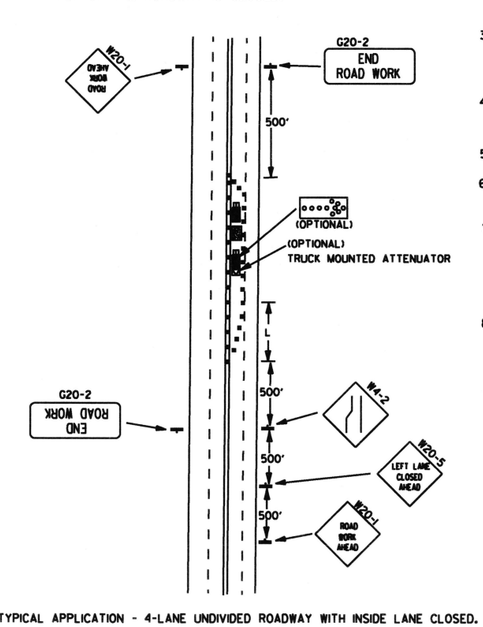
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



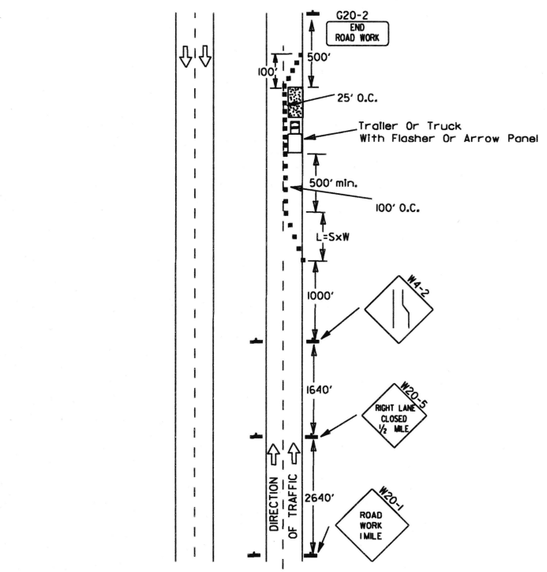
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

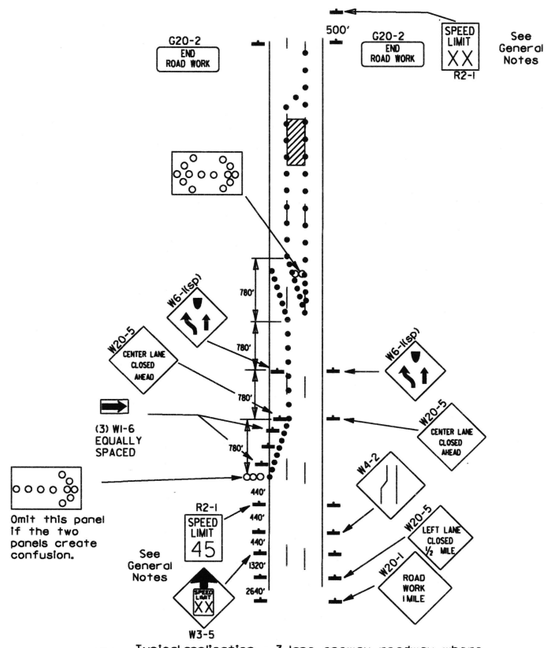
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

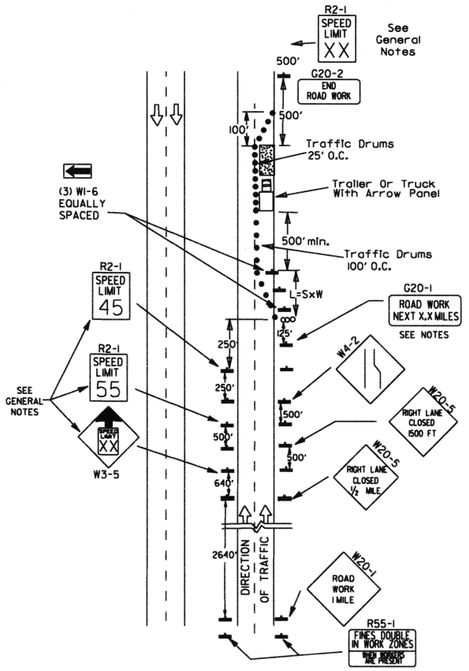
STANDARD DRAWING TC-2



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



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



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

KEY:

ooo Arrow Panel (If Required)

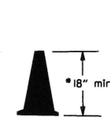
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

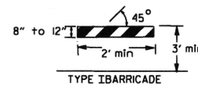
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional 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



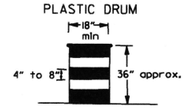
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

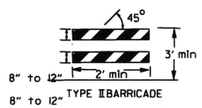
CONES



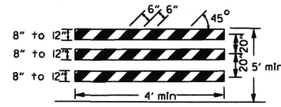
TYPE IBARRICADE

PLASTIC DRUM



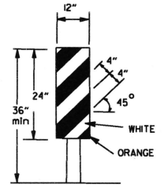


TYPE IIBARRICADE



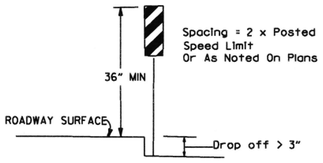
TYPE IIIBARRICADE

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

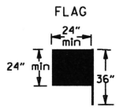


VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



FLAG



Flag shall be of good grade red material

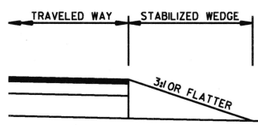
TRAFFIC CONTROL DEVICES

NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 12"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 12" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	PRECAST CONCRETE BARRIER[3] & EDGE LINES
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER[3] & EDGE LINES	PRECAST CONCRETE BARRIER[3] & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 2" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

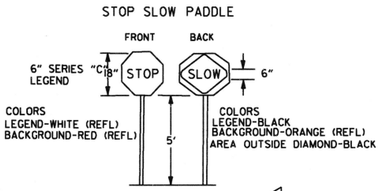
GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL. IF AND WHERE DIRECTED BY THE ENGINEER.
4. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.



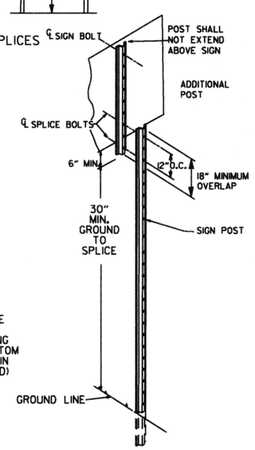
STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE



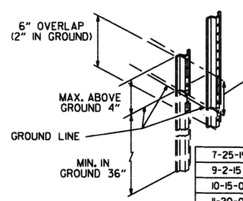
DETAIL OF SPLICES

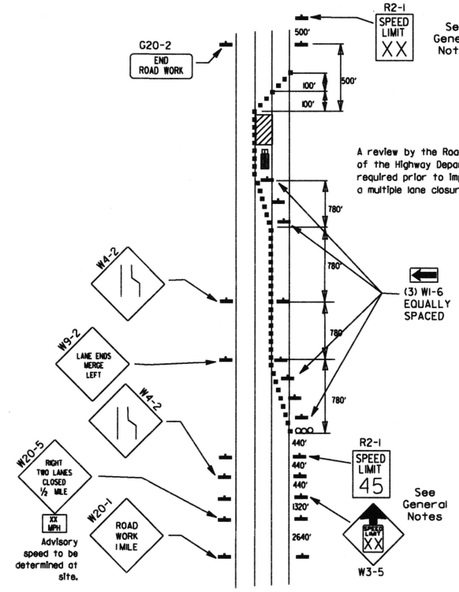


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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

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





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

7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
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	
DATE	REVISION	FILMED

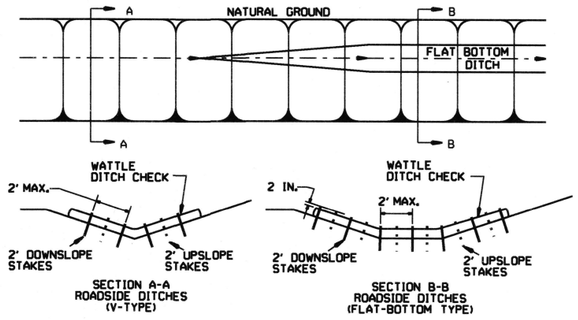
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

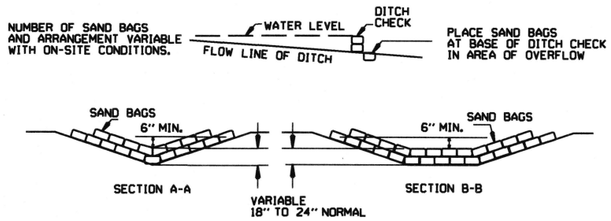
STANDARD DRAWING TC-3

GENERAL NOTES

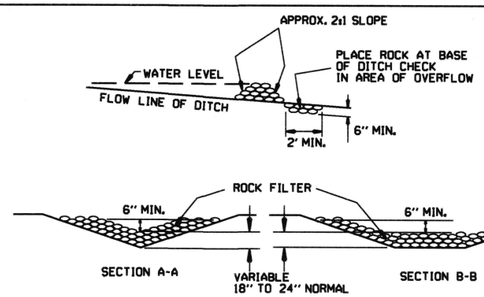
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

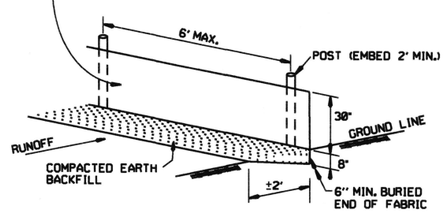


ROCK DITCH CHECK (E-6)

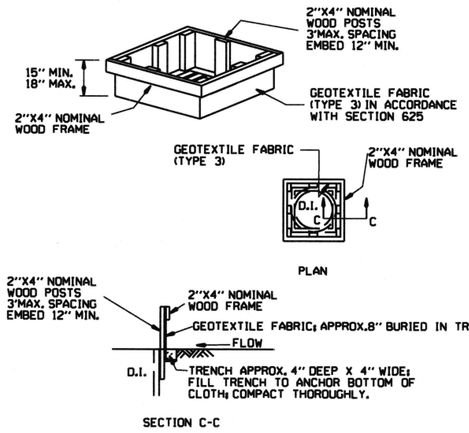
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

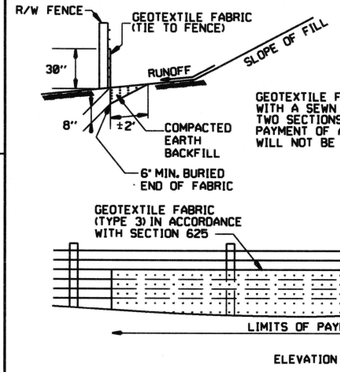
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

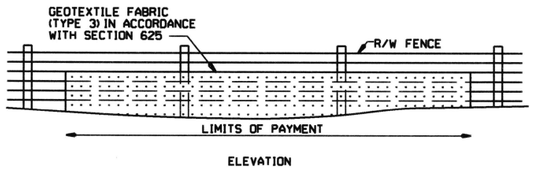


DROP INLET SILT FENCE (E-7)



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.



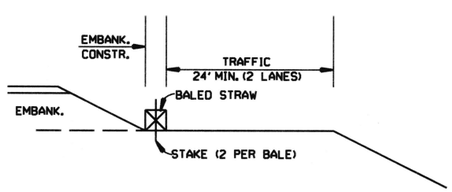
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

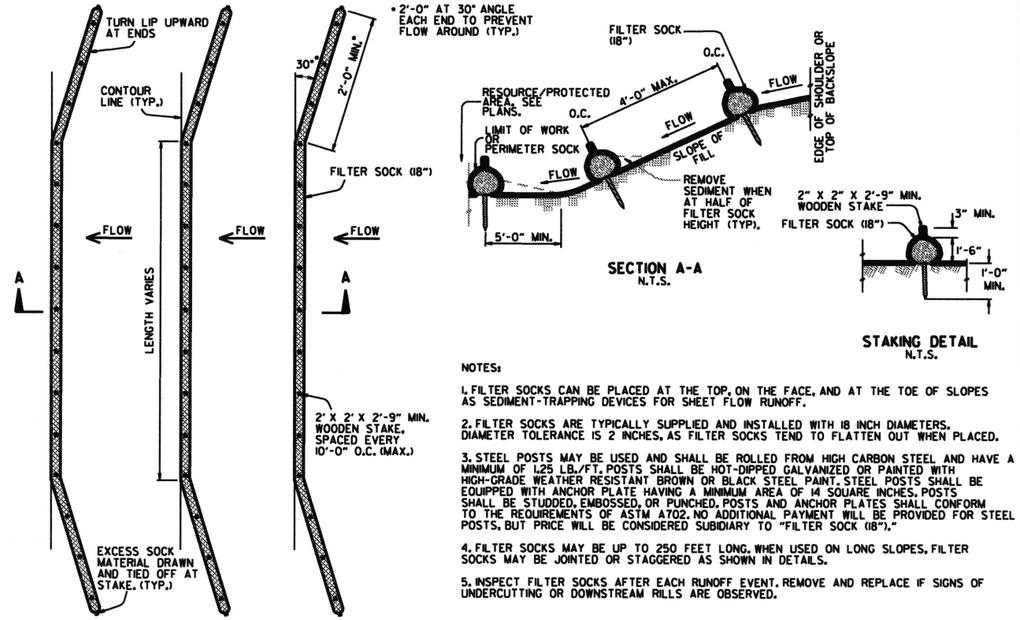
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

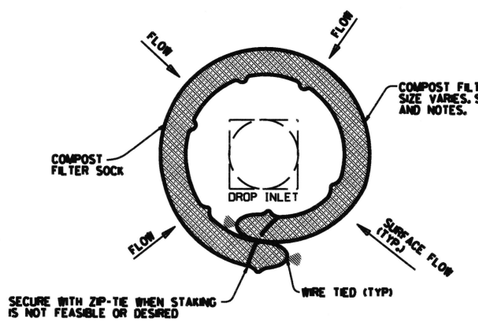
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

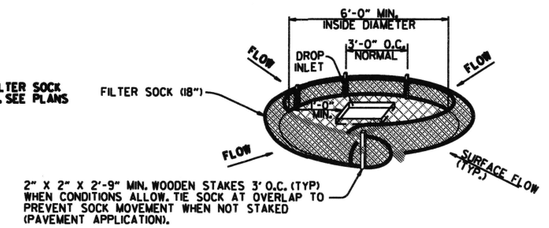
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



DROP INLET PLAN VIEW
N.T.S.



DROP INLET PERSPECTIVE VIEW
N.T.S.

NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

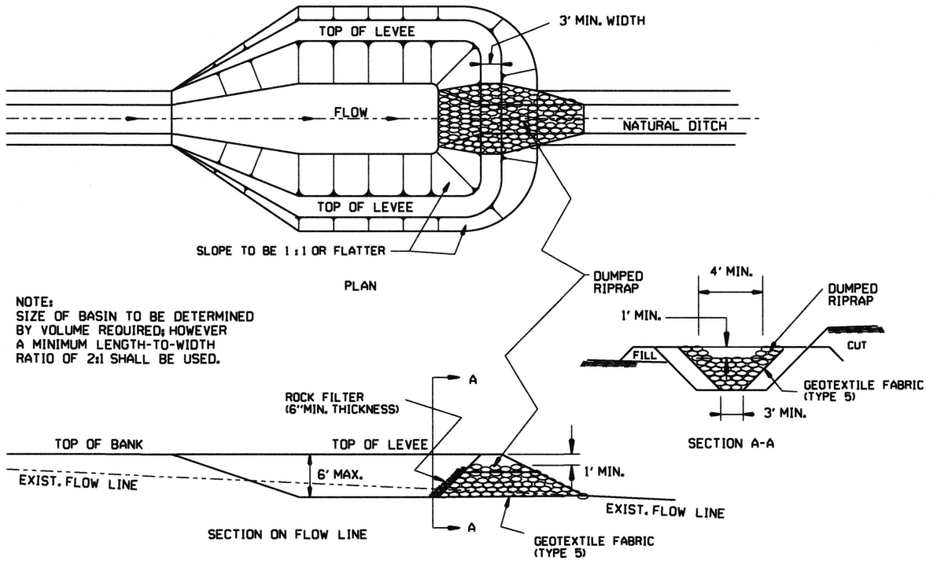
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

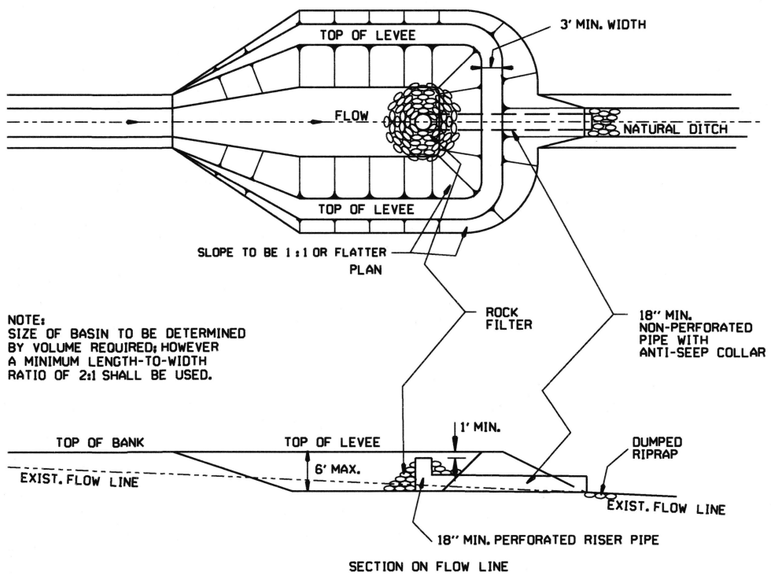
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

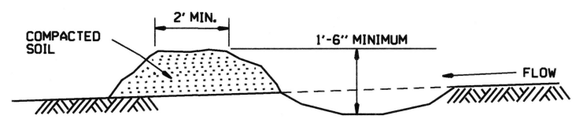
STANDARD DRAWING TEC-1



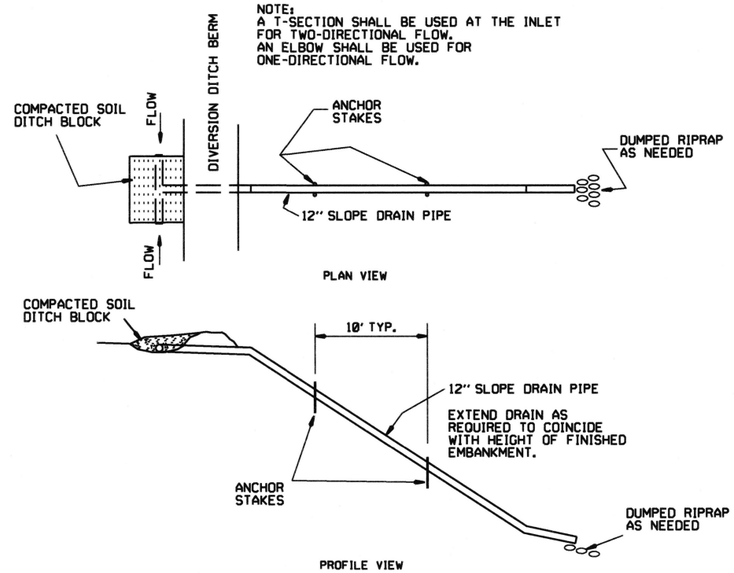
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



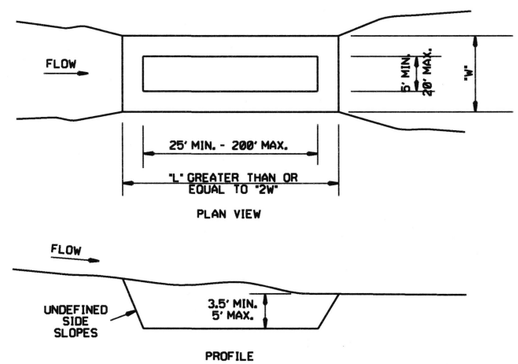
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

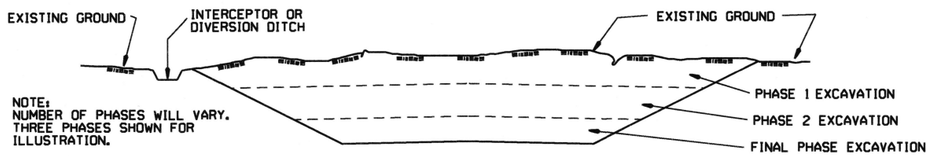
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



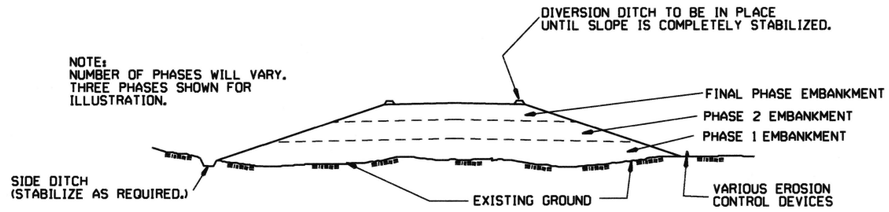
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

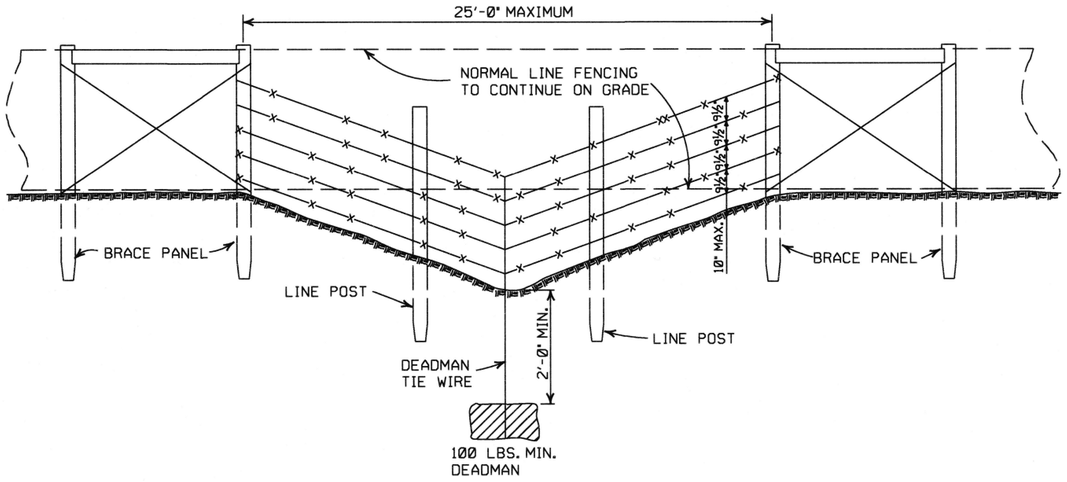
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

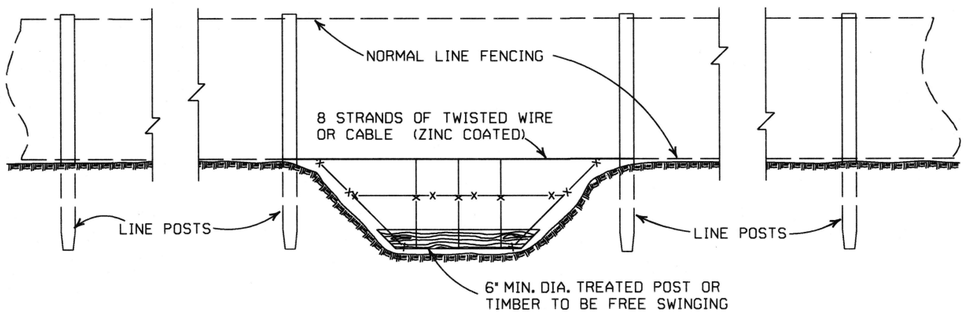
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

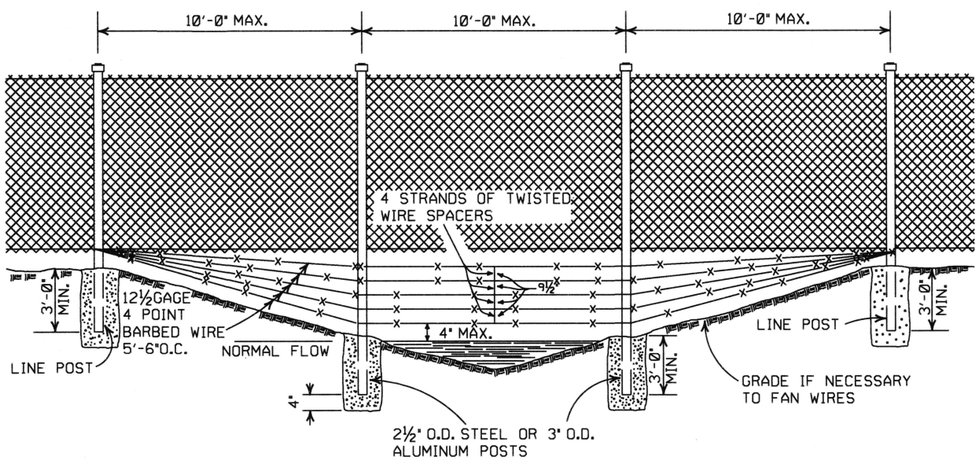
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

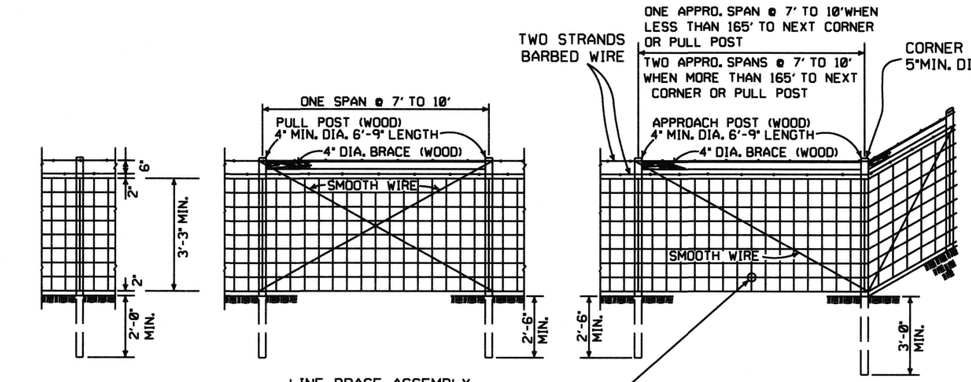
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

DATE	REVISION	FILMED
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED AND REDRAWN	529-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

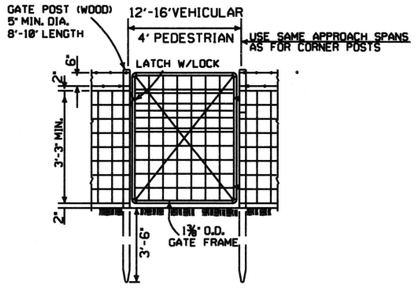
WIRE FENCE WATER GAPS

STANDARD DRAWING WF-2

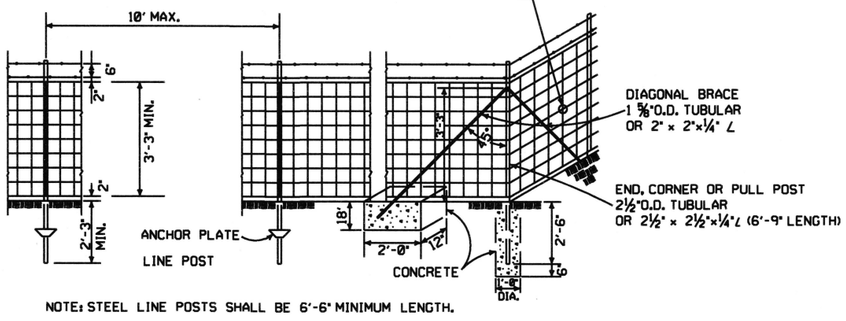


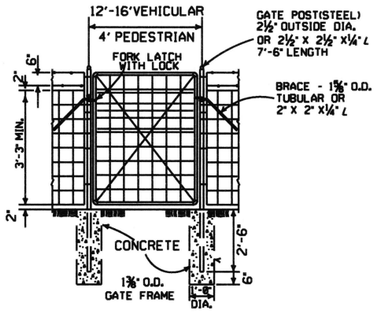
LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'



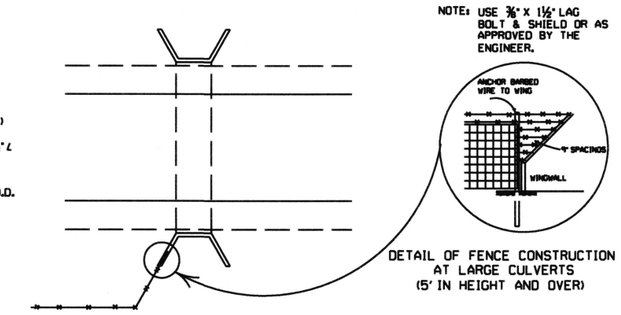
TYPE C FENCE (WOOD POSTS)





NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)



DETAIL OF FENCE CONSTRUCTION
AT LARGE CULVERTS
(5' IN HEIGHT AND OVER)

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

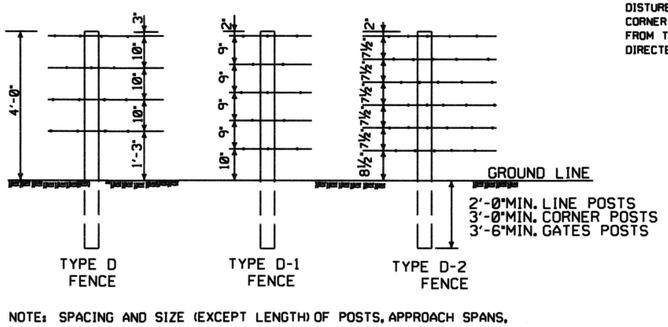
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

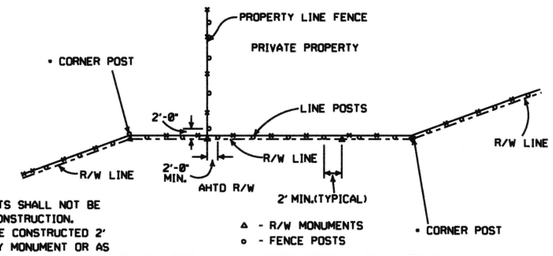
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

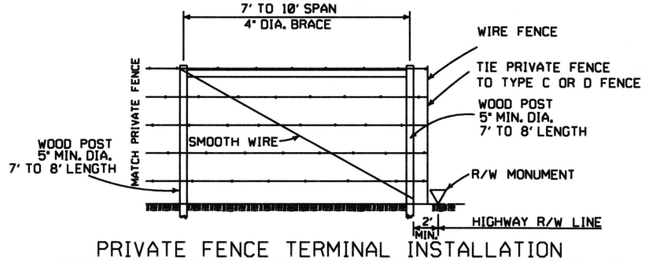


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



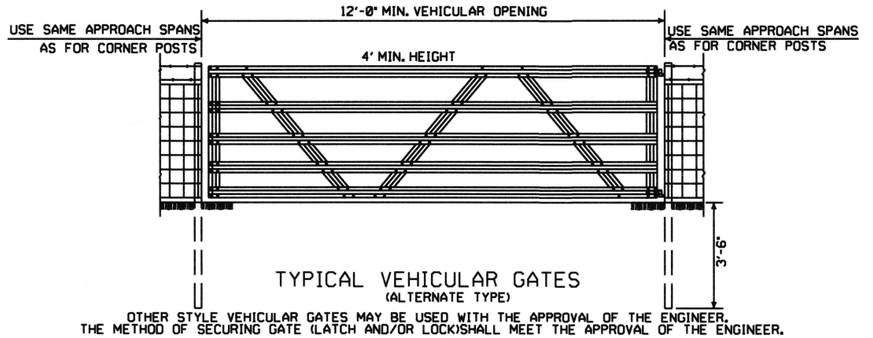
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

STANDARD DRAWING WF-4