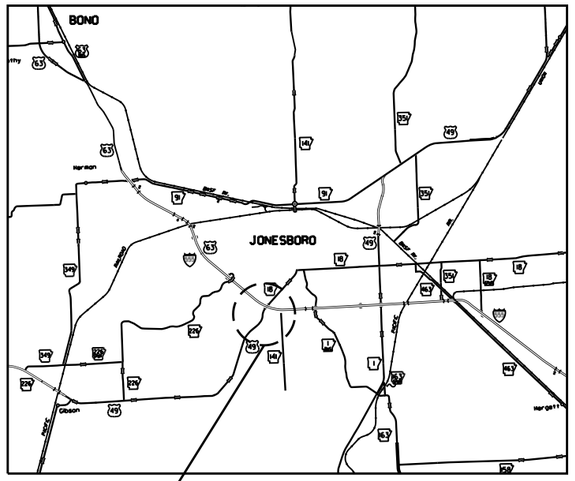
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	1	97
		HWY. 49 / PARKER RD. INTERS. IMPVTS. (JONESBORO) (S)				

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY



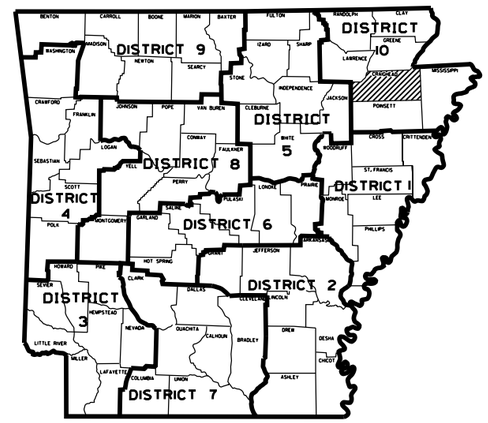
PROJECT LOCATION

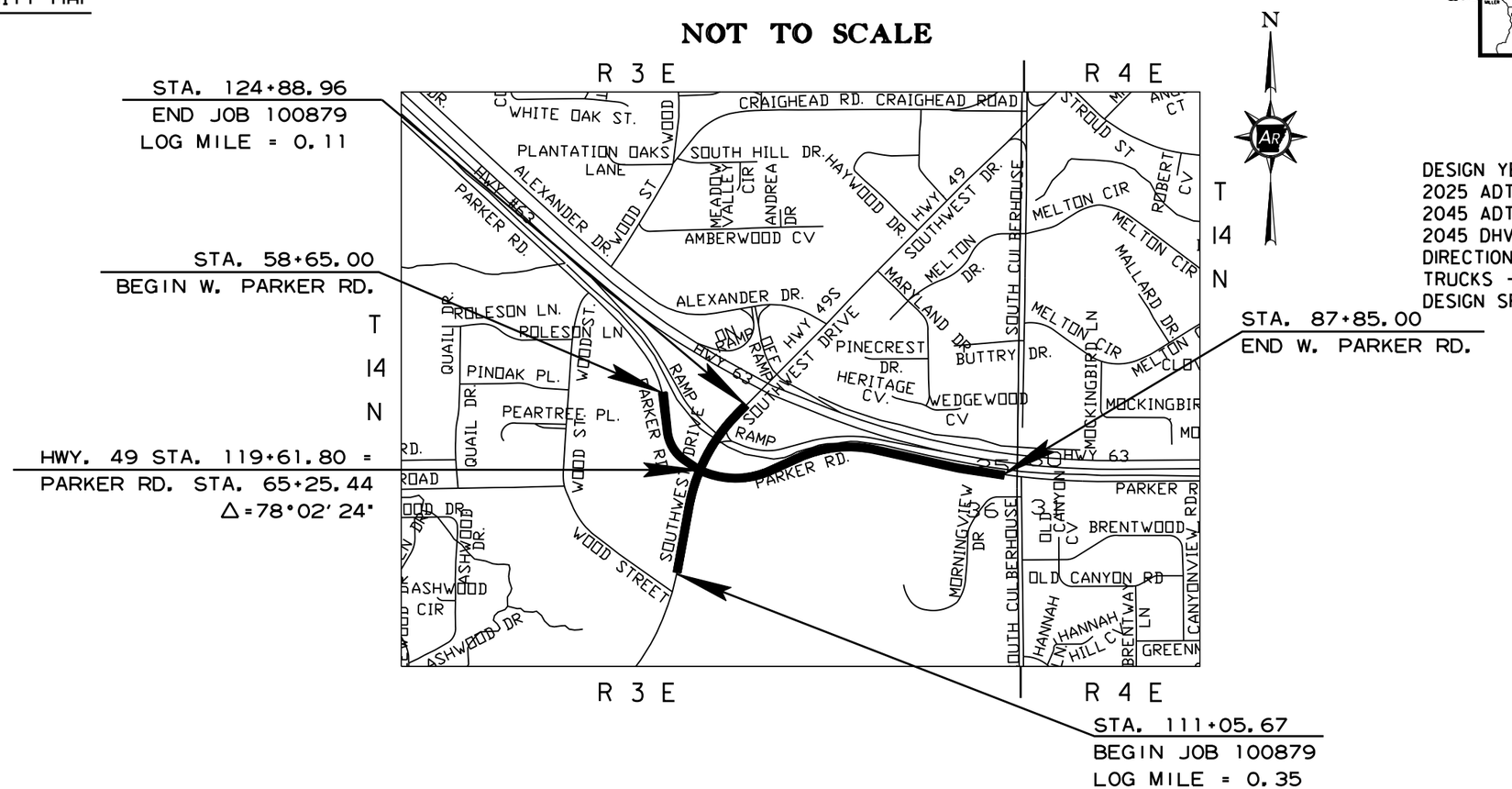
VICINITY MAP

HWY. 49 / PARKER RD.
INTERS. IMPVTS. (JONESBORO) (S)

CRAIGHEAD COUNTY
ROUTE 49 SECTION 4
JOB 100879
F.A.P. NHPP-9227(67)

NOT TO SCALE





DESIGN TRAFFIC DATA

DESIGN YEAR	2045
2025 ADT	24,619
2045 ADT	32,982
2045 DHV	3,628
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	5%
DESIGN SPEED	40 MPH

PROJECT LOCATION

	BEGIN	MID-POINT	END
LATITUDE	N35°48' 18"	N35°48' 25"	N35°48' 31"
LONGITUDE	W90°43' 21"	W90°43' 19"	W90°43' 14"

GROSS LENGTH OF PROJECT	4,303.29	FEET OR 0.815	MILES
NET LENGTH OF ROADWAY	4,303.29	FEET OR 0.815	MILES
NET LENGTH OF BRIDGES	000.00	FEET OR 0.000	MILES
NET LENGTH OF PROJECT	4,303.29	FEET OR 0.815	MILES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	2	97
		INDEX OF SHEETS AND STANDARD DRAWINGS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

INDEX OF SHEETS

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	05-19-22
DR-2	DETAILS OF DRIVEWAYS & STREET TURNOUTS	05-19-22
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	08-22-02
FPC-9S	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	07-26-12
MB-1	MAILBOX DETAILS	11-18-04
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
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
SD-5	CONTROLLER CABINET UTILITY DRAWER	09-12-13
SD-6	HEAVY DUTY PULL BOX	02-13-24
SD-7	SPAN WIRE ASSEMBLY WOOD POLE	02-13-24
SD-8	SIGNAL HEAD PLACEMENT	12-08-16
SD-9	SERVICE POINT	11-07-19
SD-11	STEEL POLE WITH MAST ARM	02-13-24
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
SI-2	REINFORCED CONCRETE RETAINING WALL (WITHOUT LIVE LOAD SURCHARGE)	05-14-20
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WR-1	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	11-10-05
W-X003-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	03-29-63
R-100X-X1	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	11-16-62

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	3	97
		GOVERNING SPECS. AND GENERAL NOTES				

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
102-3_____	PREQUALIFICATION OF BIDDERS
103-2_____	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
105-4_____	MAINTENANCE DURING CONSTRUCTION
107-2_____	RESTRAINING CONDITIONS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____	UNCLASSIFIED EXCAVATION
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
400-7_____	TRACKLESS TACK
404-3_____	DESIGN OF ASPHALT MIXTURES
409-2_____	ASPHALT LABORATORY FACILITY
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
410-4_____	EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
416-1_____	RECYCLED ASPHALT PAVEMENT
501-3_____	PORTLAND CEMENT CONCRETE PAVEMENT
502-1_____	WELDED WIRE REINFORCEMENT
505-1_____	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2_____	INCIDENTAL CONSTRUCTION
603-1_____	LANE CLOSURE NOTIFICATION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1_____	CONCRETE DITCH PAVING
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
617-1_____	GUARDRAIL TERMINAL (TYPE 2)
617-2_____	GUARDRAIL DELINEATORS
620-1_____	MULCH COVER
621-1_____	FILTER SOCKS
632-1_____	CONCRETE ISLAND
633-1_____	CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1_____	CURBING
637-1_____	MAILBOXES
700-2_____	TRAFFIC CONTROL FACILITIES
800-1_____	STRUCTURES
802-5_____	CONCRETE FOR STRUCTURES
804-2_____	REINFORCING STEEL FOR STRUCTURES
JOB 100879__	ACCESSIBLE PEDESTRIAN SIGNAL (APS)
JOB 100879__	ACHM CURE FOR ASPHALT SURFACE TREATMENT
JOB 100879__	ACTUATED CONTROLLER
JOB 100879__	ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)
JOB 100879__	ASPHALT MIXTURES WITH PG 76-22 BINDER
JOB 100879__	ASSESSMENT OF WORKING DAYS – MAINTENANCE OF TRAFFIC
JOB 100879__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 100879__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 100879__	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 100879__	CABINET DRAWER ASSEMBLY
JOB 100879__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 100879__	COLD MILLING – COUNTY PROPERTY
JOB 100879__	DESIGN AND QUALITY CONTROL ASPHALT MIXTURES
JOB 100879__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 100879__	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 100879__	ELECTRICAL CONDUCTORS IN CONDUIT
JOB 100879__	EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION
JOB 100879__	FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT
JOB 100879__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 100879__	HYBRID VIDEO/RADAR DETECTION SYSTEM
JOB 100879__	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 100879__	LED LUMINAIRE ASSEMBLY (BUG U0 TYPE)
JOB 100879__	LED TRAFFIC SIGNAL HEAD
JOB 100879__	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 100879__	LOCAL RADIO WITH ANTENNA RELOCATION
JOB 100879__	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 100879__	MAINTENANCE OF TRAFFIC
JOB 100879__	MANDATORY ELECTRONIC CONTRACT
JOB 100879__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 100879__	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 100879__	PARTNERING REQUIREMENTS
JOB 100879__	PLASTIC PIPE
JOB 100879__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 100879__	PRICE ADJUSTMENT FOR FUEL
JOB 100879__	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 100879__	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 100879__	RETROREFLECTIVE BACKPLATES
JOB 100879__	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB 100879__	SHORING FOR CULVERTS
JOB 100879__	SOIL STABILIZATION
JOB 100879__	STORM WATER POLLUTION PREVENTION PLAN
JOB 100879__	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 100879__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 100879__	SYSTEM LOCAL CONTROLLER
JOB 100879__	TEXTURED COATING FINISH (CAST-IN PLACE RETAINING WALLS)
JOB 100879__	UTILITY ADJUSTMENTS
JOB 100879__	VALUE ENGINEERING
JOB 100879__	WARM MIX ASPHALT
JOB 100879__	WELLHEAD PROTECTION

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

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 ENSURE 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. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. 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.
11. 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.

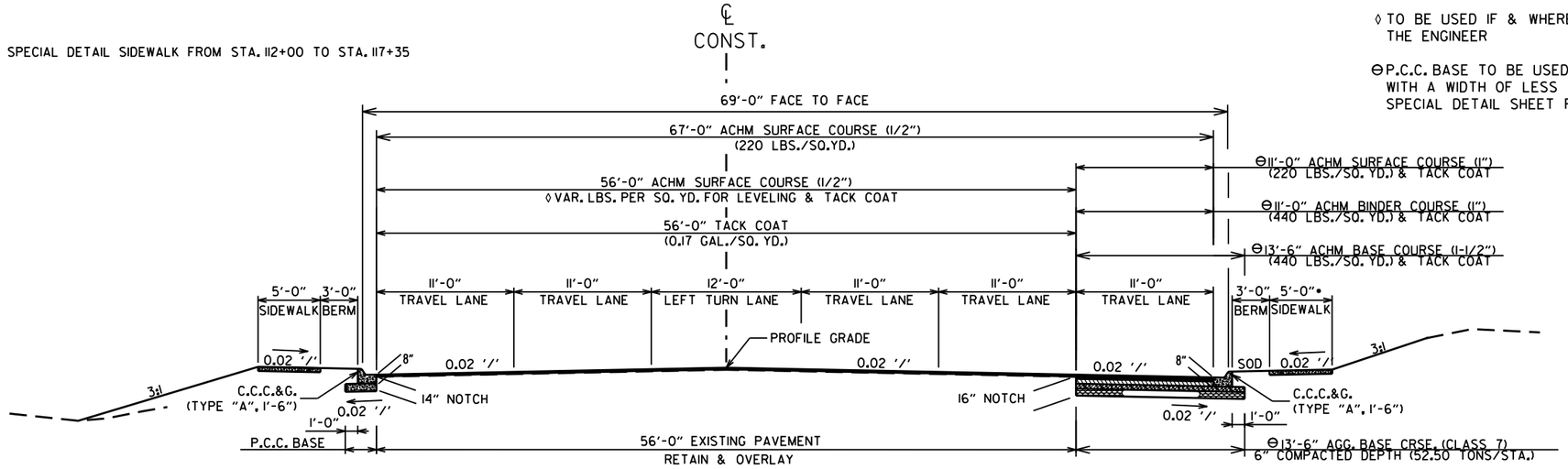
GOVERNING SPECIFICATIONS AND GENERAL NOTES

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	4	97
		TYPICAL SECTIONS OF IMPROVMENT				

• SPECIAL DETAIL SIDEWALK FROM STA. 112+00 TO STA. 117+35

◊ TO BE USED IF & WHERE DIRECTED BY THE ENGINEER

⊖ P.C.C. BASE TO BE USED IN LOCATIONS WITH A WIDTH OF LESS THAN 4'-0" (SEE SPECIAL DETAIL SHEET FOR DETAILS)

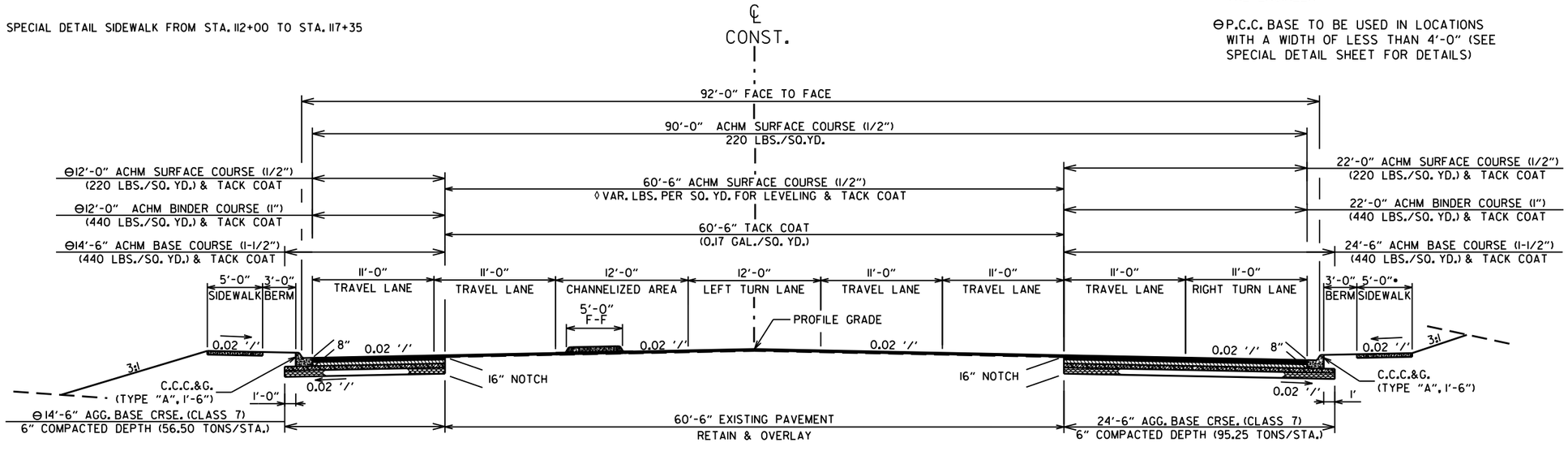


HWY. 49 - NOTCH AND WIDEN
W/56' EXISTING NOTCH
NORTHBOUND
STA. 111+24.19 - STA. 115+70.00

• SPECIAL DETAIL SIDEWALK FROM STA. 112+00 TO STA. 117+35

◊ TO BE USED IF & WHERE DIRECTED BY THE ENGINEER

⊖ P.C.C. BASE TO BE USED IN LOCATIONS WITH A WIDTH OF LESS THAN 4'-0" (SEE SPECIAL DETAIL SHEET FOR DETAILS)



HWY. 49 - NOTCH AND WIDEN
W/VAR. EXISTING NOTCH
NORTHBOUND AND SOUTHBOUND
STA. 115+70.00 - STA. 119+61.80

STATE OF ARKANSAS
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No. 14044
JASON MacDONALD
04/23/25

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

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

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

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.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED IN THE PRICE BID FOR VARIOUS CONTRACT ITEMS.

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.

BLEEDER DITCHES - PRIOR TO AND CURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

TYPICAL SECTIONS OF IMPROVEMENT

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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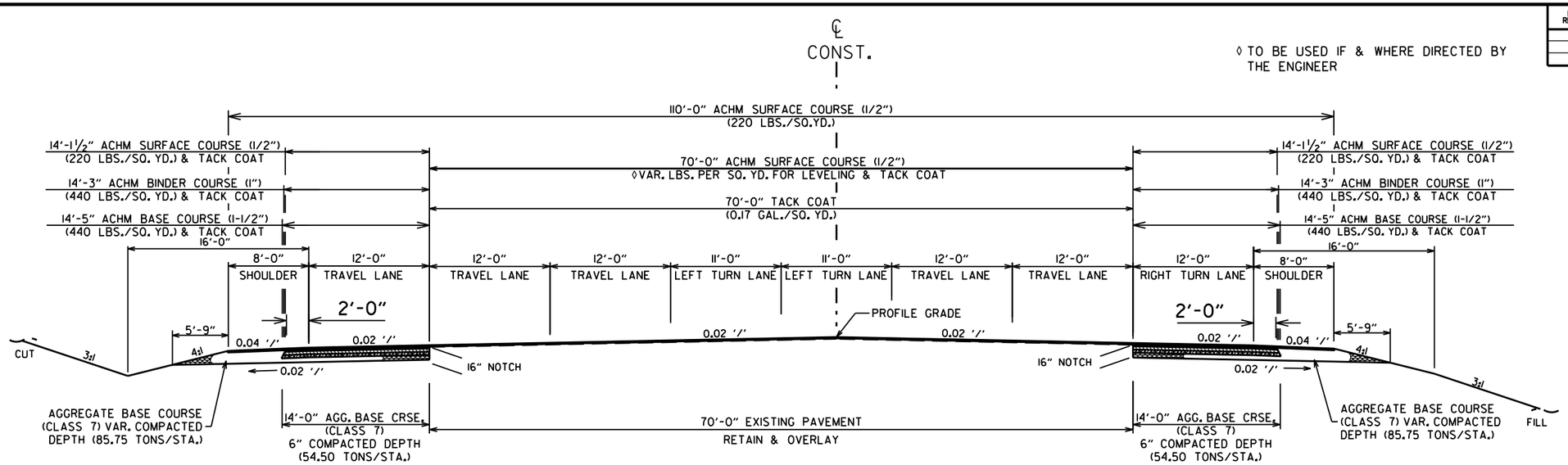
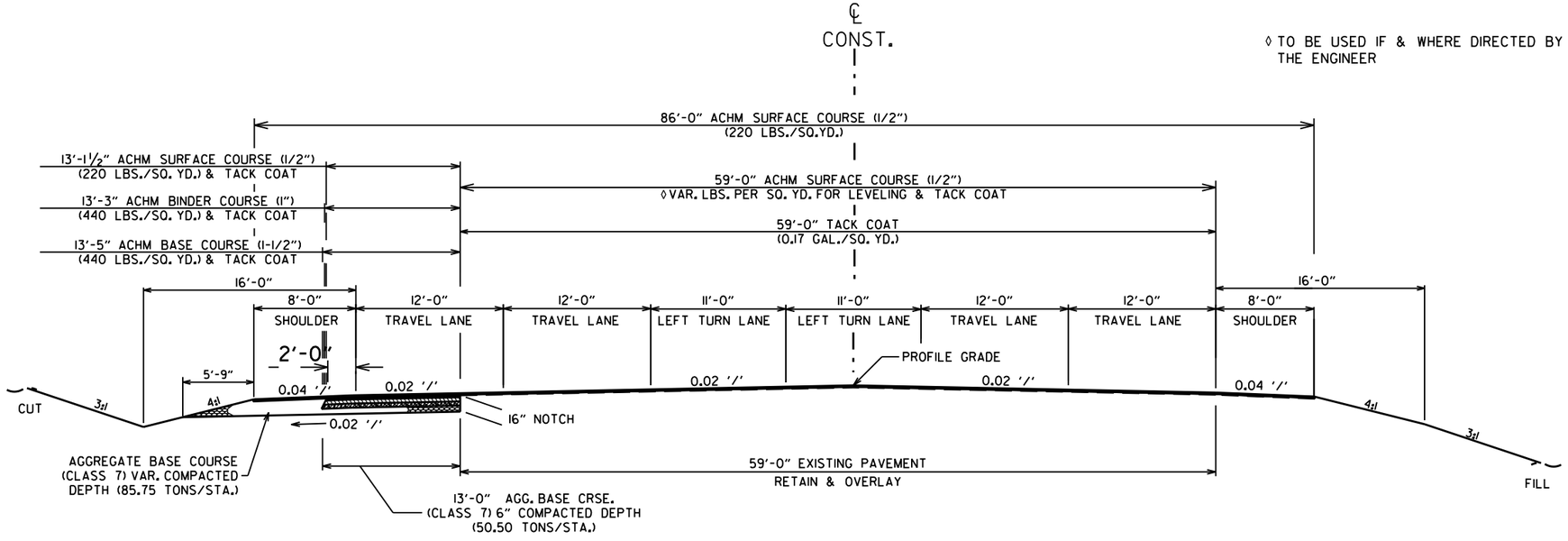


HWY. 49 - NOTCH AND WIDEN
W/70' EXISTING NOTCH
NORTHBOUND AND SOUTHBOUND
STA. 119+61.80 - STA. 122+23.84



HWY. 49 - NOTCH AND WIDEN
W/59' EXISTING NOTCH
SOUTHBOUND
STA. 122+23.84 - STA. 125+31.95

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

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

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

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PRIOR TO AND DURING PLACEMENT OF PAVEMENT, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED IN THE PRICE BID FOR VARIOUS CONTRACT ITEMS.

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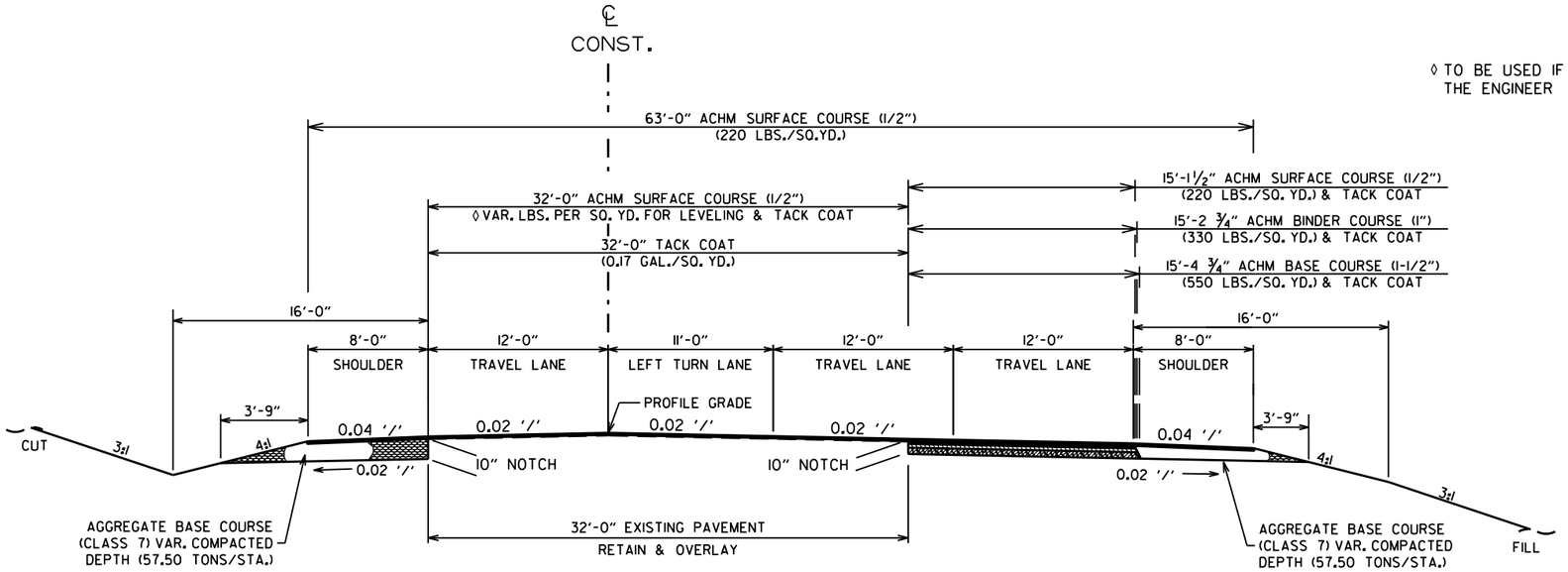
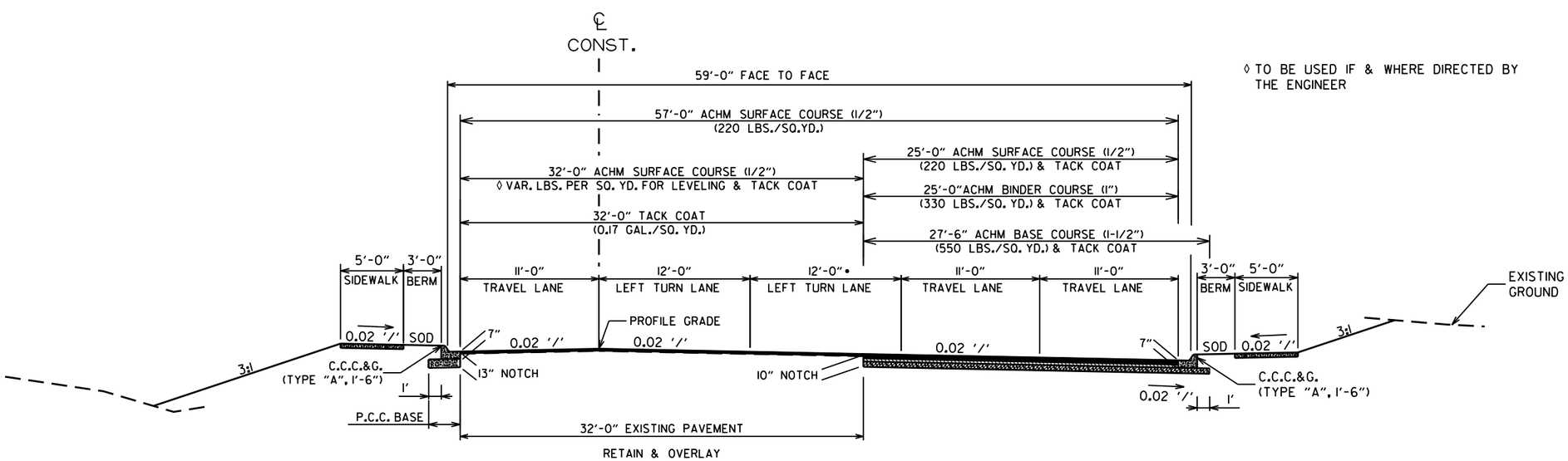
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	6	97
		TYPICAL SECTIONS OF IMPROVMENT				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25



WEST PARKER ROAD - NOTCH AND WIDEN
W/ VAR. EXISTING NOTCH
EASTBOUND
STA. 58+65.00 - STA. 59+65.00



WEST PARKER ROAD - NOTCH AND WIDEN
W/ 32' EXISTING NOTCH
EASTBOUND
STA. 59+65.00 - STA. 65+25.44

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESSS 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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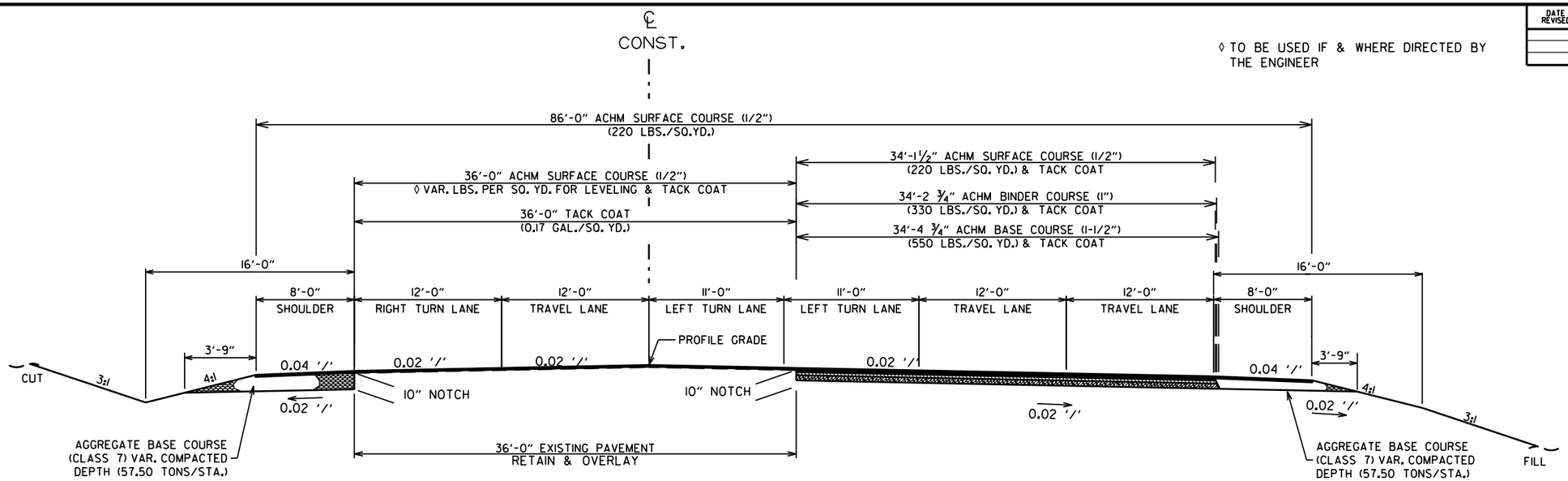
TYPICAL SECTIONS OF IMPROVEMENT

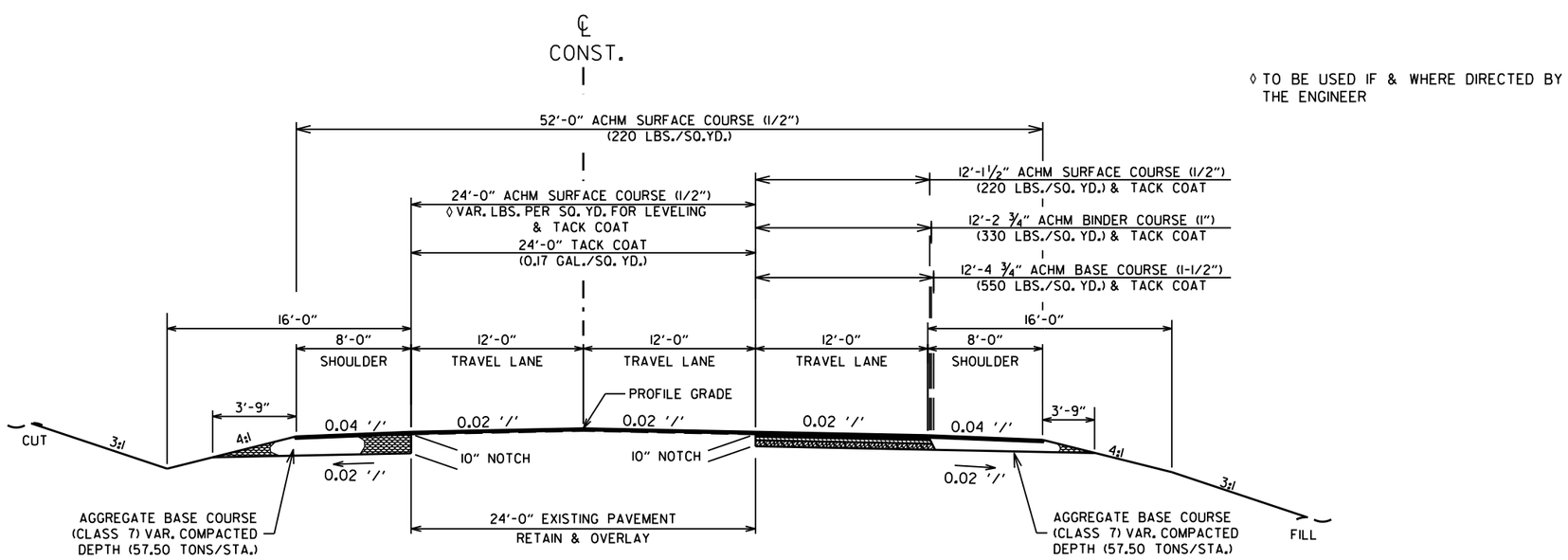
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	7	97
		TYPICAL SECTIONS OF IMPROVMENT				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25



WEST PARKER ROAD - NOTCH AND WIDEN
W/36' EXISTING NOTCH
EASTBOUND
STA. 65+25.44 - STA. 72+15.00



WEST PARKER ROAD - NOTCH AND WIDEN
W/24' EXISTING NOTCH
EASTBOUND
STA. 72+15.00 - STA. 87+88.86

TYP. SECTION OF FILL

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESSS 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

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		6	ARK.	100879	8	97
		TYPICAL SECTIONS OF IMPROVMENT				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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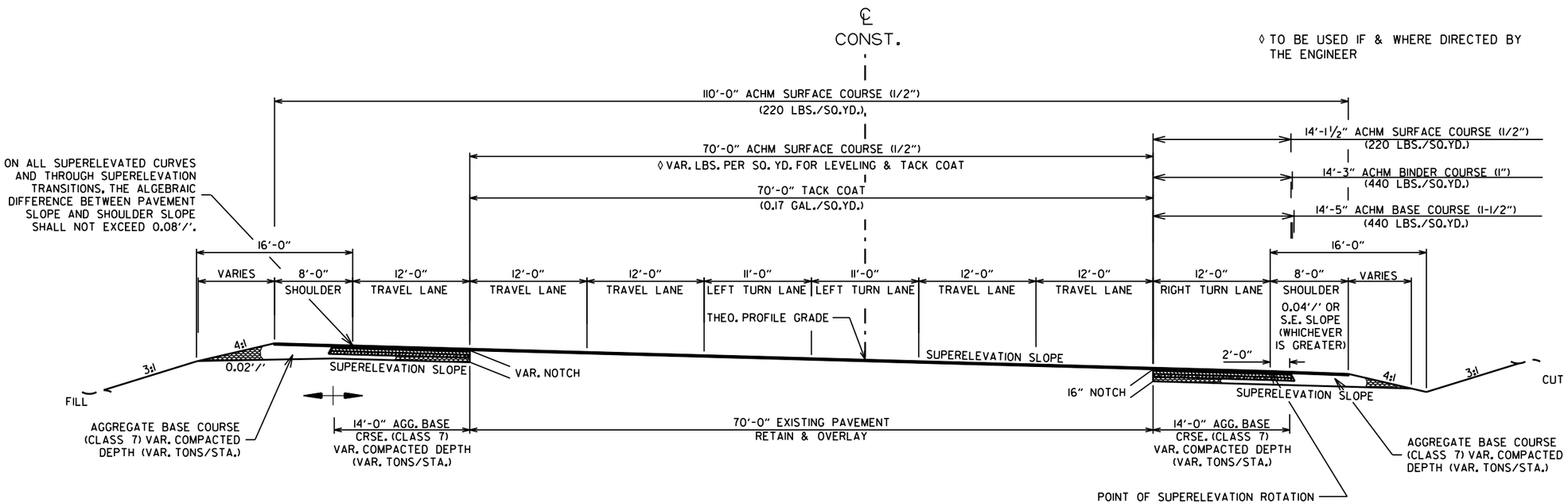
JASON MacDONALD
04/23/25



HWY 49 - NOTCH AND WIDEN
SUPERELEVATION SECTION

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TYPICAL SECTIONS OF IMPROVEMENT

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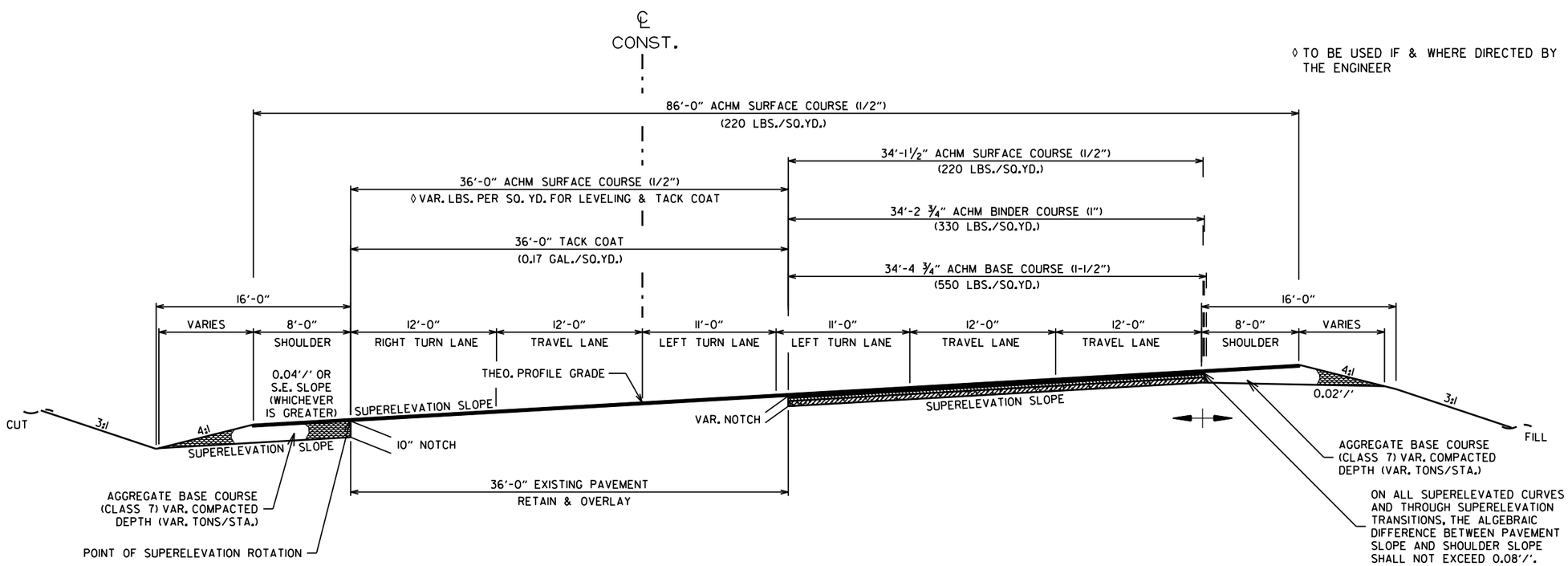
		6	ARK.	100879	9	97
		TYPICAL SECTIONS OF IMPROVMENT				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25



WEST PARKER ROAD - NOTCH AND WIDEN
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TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	10	97
		SPECIAL DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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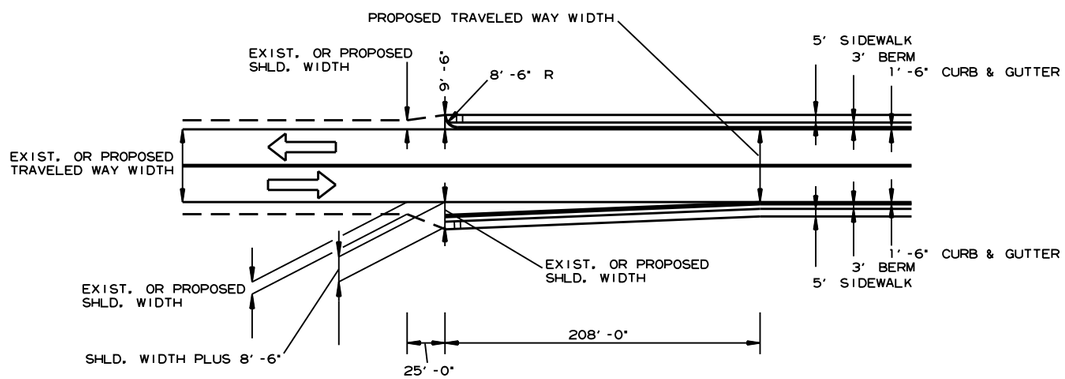
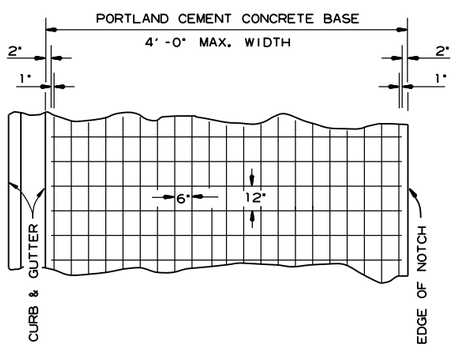
JASON MacDONALD
04/23/25



TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION

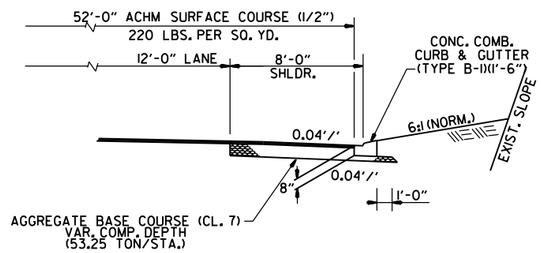


6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ. YD.

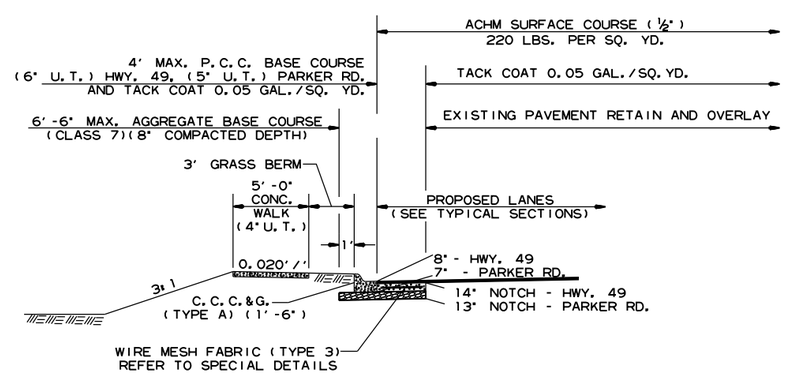
NOTES:

1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY. BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (6" U.T.)

DETAIL OF REINFORCING STEEL FOR PAVEMENT (MESH FABRIC TYPE 3)



DETAIL FOR CONCRETE CURB AND GUTTER



P.C.C. BASE WIDENING DETAIL

P.C.C. BASE WIDENING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

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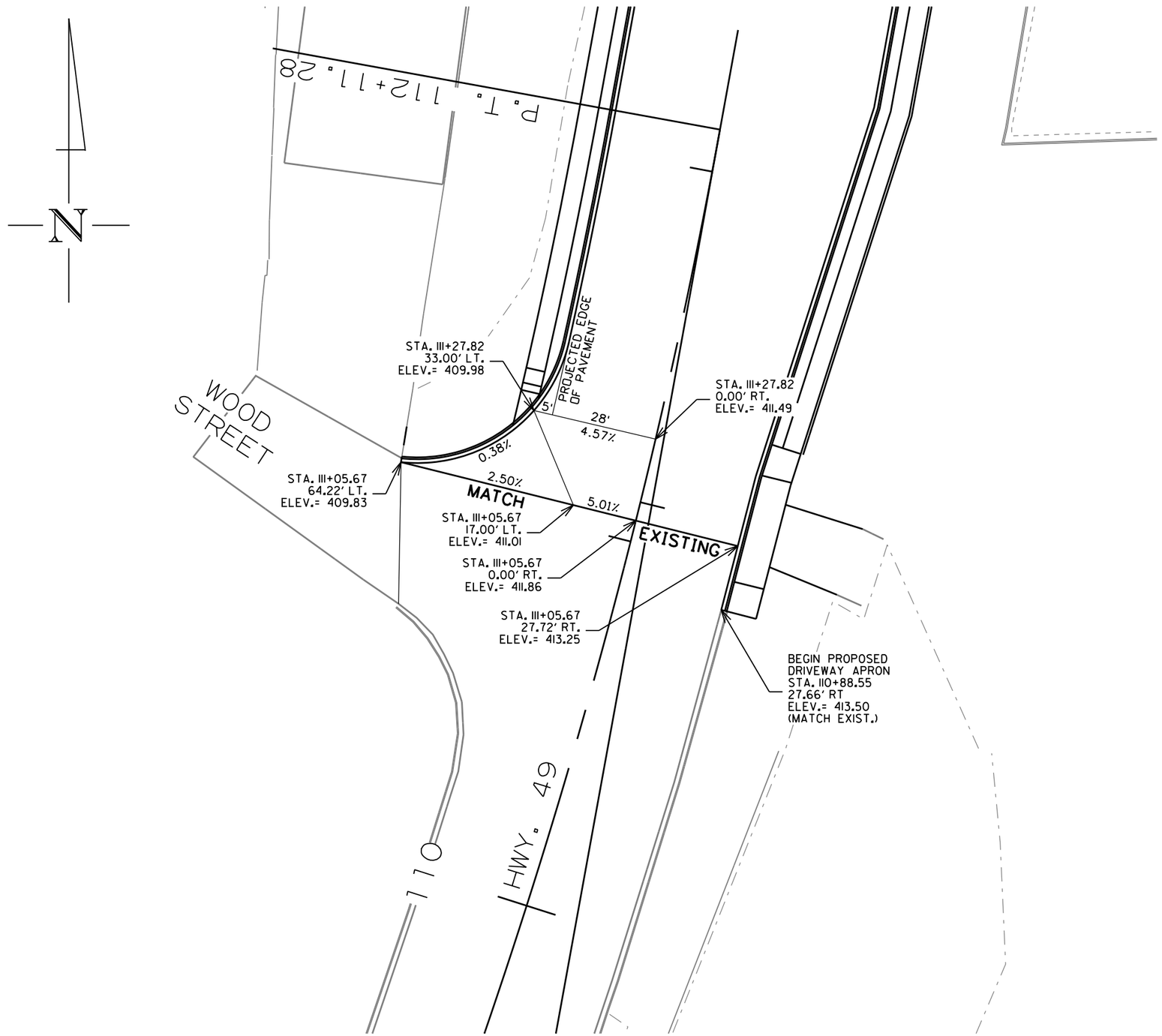
SPECIAL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	11	97
		SPECIAL DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25



SPECIAL DETAILS
INTERSECTION LAYOUT

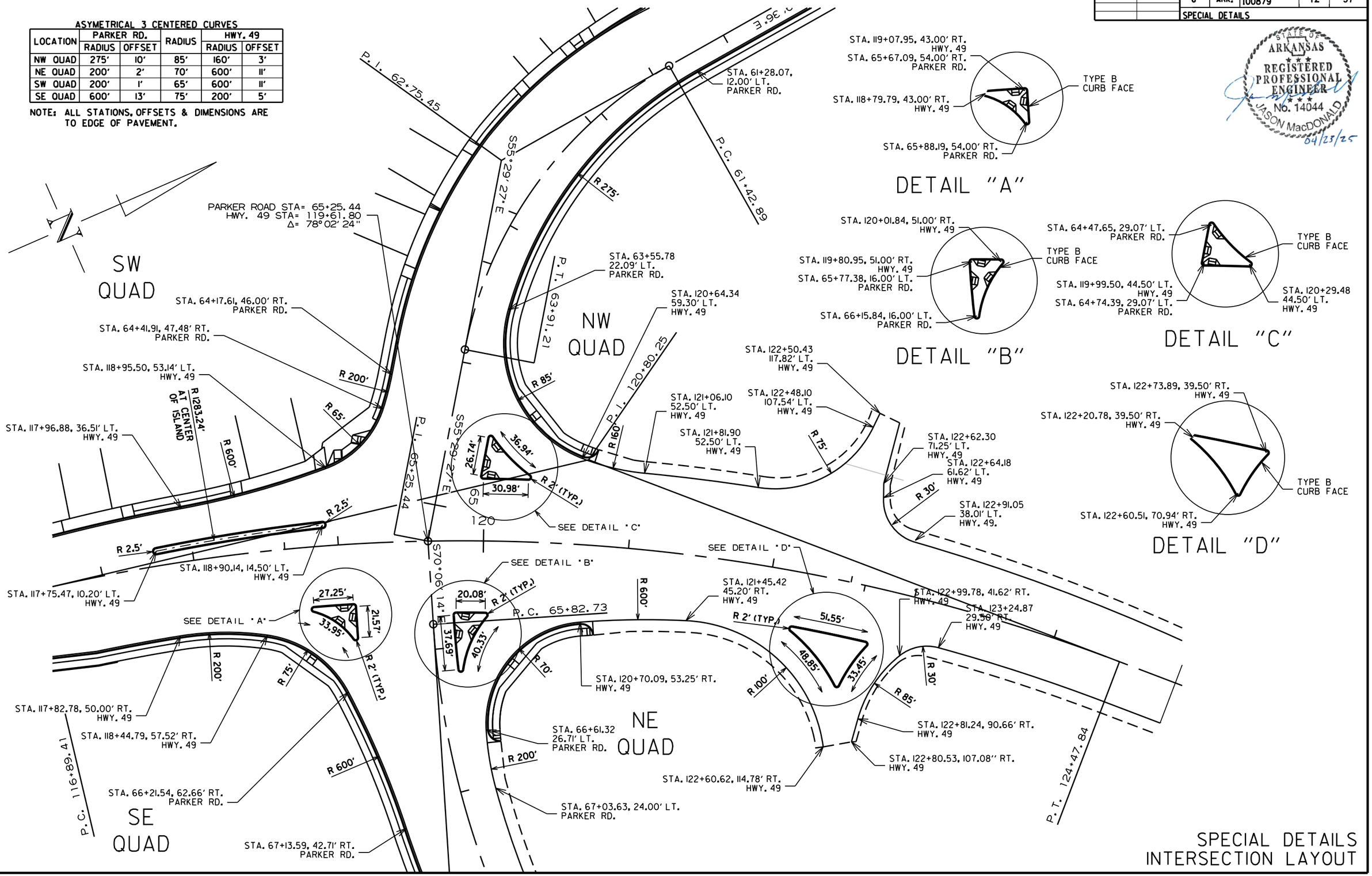
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	12	97
		SPECIAL DETAILS				

ASYMETRICAL 3 CENTERED CURVES

LOCATION	PARKER RD.		RADIUS	HWY. 49	
	RADIUS	OFFSET		RADIUS	OFFSET
NW QUAD	275'	10'	85'	160'	3'
NE QUAD	200'	2'	70'	600'	11'
SW QUAD	200'	1'	65'	600'	11'
SE QUAD	600'	13'	75'	200'	5'

NOTE: ALL STATIONS, OFFSETS & DIMENSIONS ARE TO EDGE OF PAVEMENT.



STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

SPECIAL DETAILS
INTERSECTION LAYOUT

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	13	97
		SPECIAL DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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JASON MacDONALD
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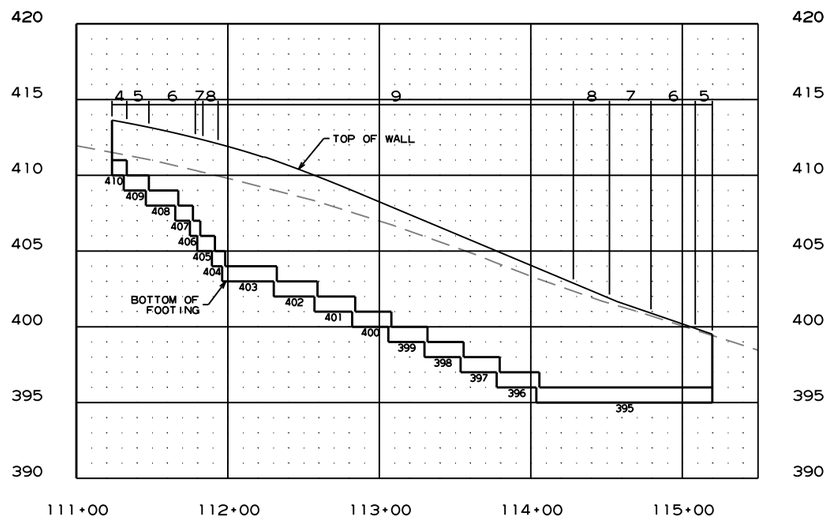
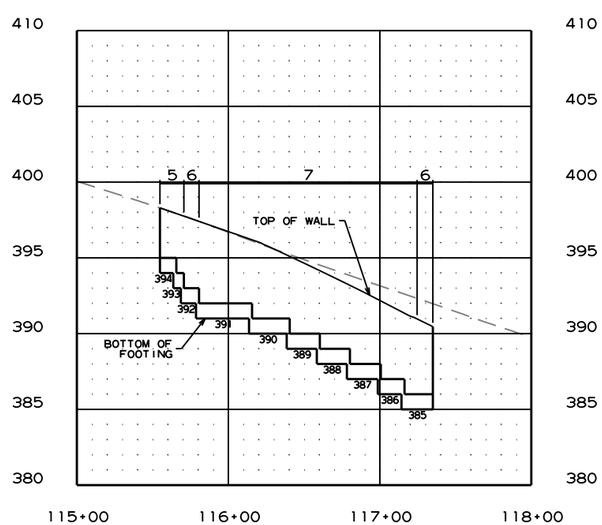


RETAINING WALL DETAILS - HWY. 49
STA. 111+23.53 - STA. 115+19.82 RT.



RETAINING WALL DETAILS - HWY. 49
STA. 115+54.84 - STA. 117+35.00 RT.

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	14	97
		TEMPORARY EROSION CONTROL DETAILS				

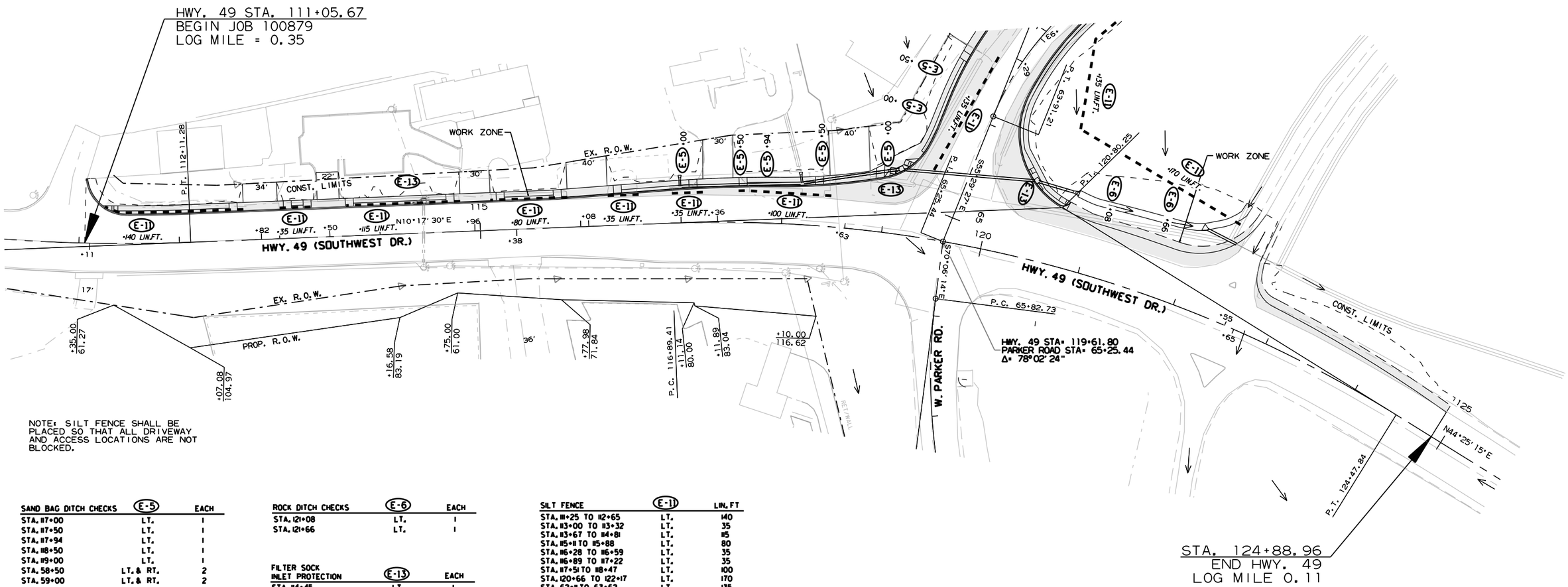
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

LEGEND

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

REVISIONS

DATE OF REVISION	REVISION



NOTE: SILT FENCE SHALL BE PLACED SO THAT ALL DRIVEWAY AND ACCESS LOCATIONS ARE NOT BLOCKED.

SAND BAG DITCH CHECKS	E-5	EACH
STA. 117+00	LT.	1
STA. 117+50	LT.	1
STA. 117+94	LT.	1
STA. 118+50	LT.	1
STA. 119+00	LT.	1
STA. 58+50	LT. & RT.	2
STA. 59+00	LT. & RT.	2
STA. 59+50	LT. & RT.	2
STA. 60+00	LT. & RT.	2
STA. 60+50	LT. & RT.	2
STA. 61+00	LT. & RT.	2
STA. 61+50	LT.	1
STA. 62+00	RT.	1
STA. 62+50	RT.	1
STA. 63+50	RT.	1
STA. 64+00	RT.	1

ROCK DITCH CHECKS	E-6	EACH
STA. 121+08	LT.	1
STA. 121+66	LT.	1

FILTER SOCK INLET PROTECTION	E-13	EACH
STA. 114+45	LT.	1
STA. 119+12	LT.	1
STA. 120+37	LT.	1

SILT FENCE	E-11	LIN. FT
STA. 111+25 TO 112+65	LT.	140
STA. 113+00 TO 113+32	LT.	35
STA. 113+67 TO 114+81	LT.	115
STA. 115+11 TO 115+88	LT.	80
STA. 116+28 TO 116+59	LT.	35
STA. 116+89 TO 117+22	LT.	35
STA. 117+51 TO 118+47	LT.	100
STA. 120+66 TO 122+17	LT.	170
STA. 62+11 TO 63+62	LT.	135

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	15	97
		TEMPORARY EROSION CONTROL DETAILS				

LEGEND

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- (E-6) = ROCK DITCH CHECK
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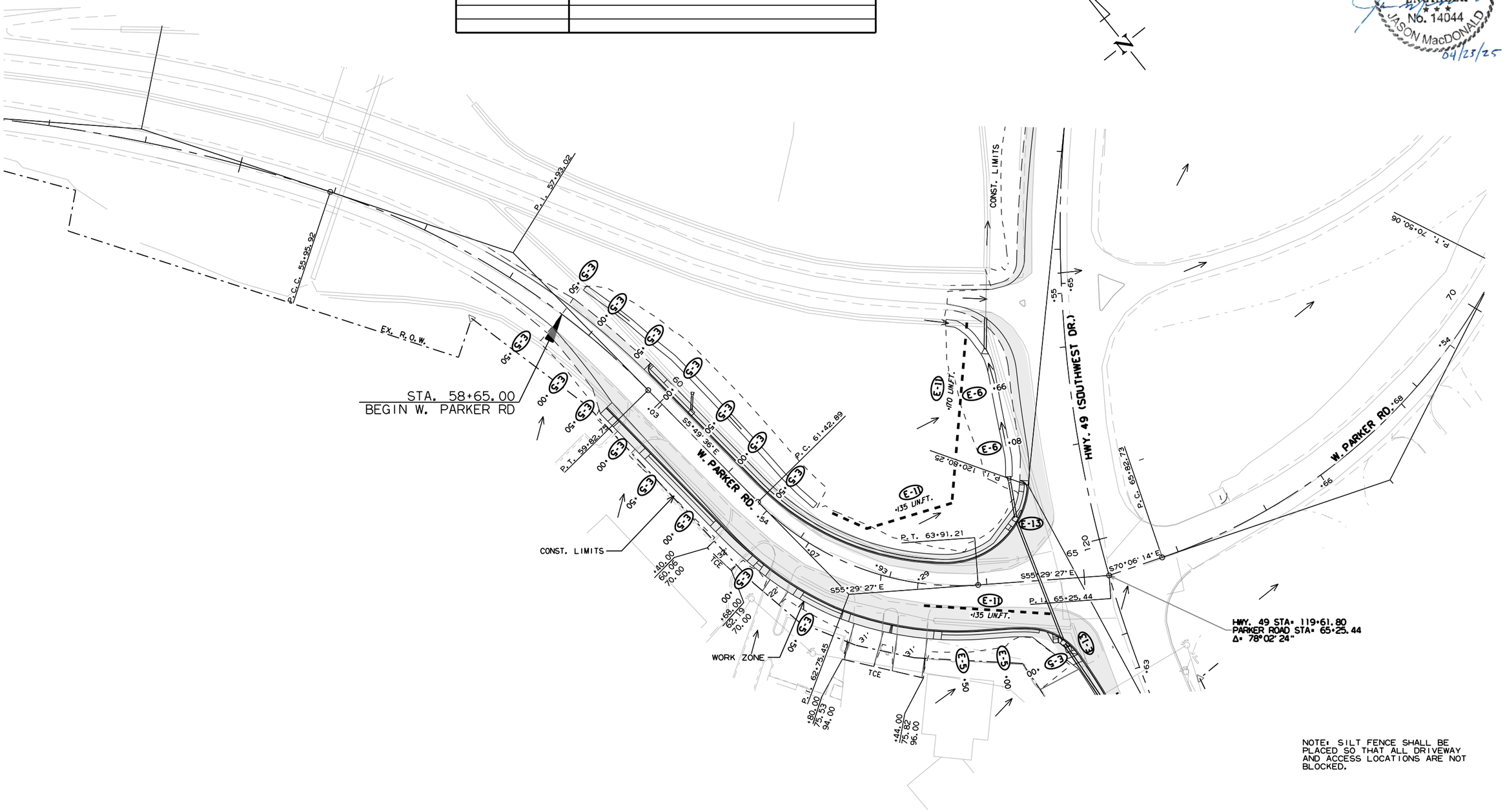
- = WORK ZONE

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25



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TEMPORARY EROSION CONTROL DETAILS
STAGE 1

tholt 4/23/2025
R100879.DGN

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		6	ARK.	100879	16	97
		TEMPORARY EROSION CONTROL DETAILS				

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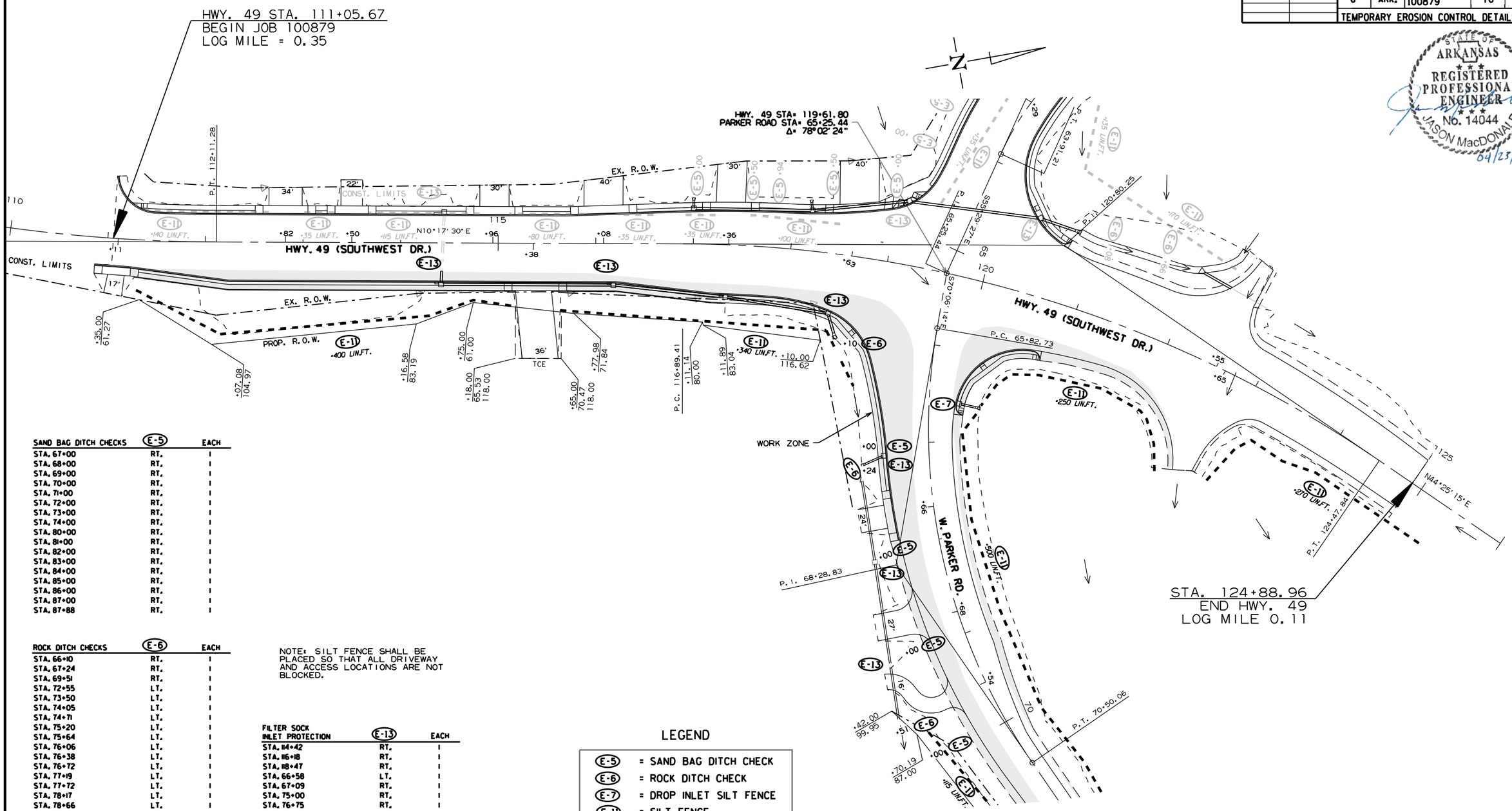

SAND BAG DITCH CHECKS	(E-5)	EACH
STA. 67+00	RT.	1
STA. 68+00	RT.	1
STA. 69+00	RT.	1
STA. 70+00	RT.	1
STA. 71+00	RT.	1
STA. 72+00	RT.	1
STA. 73+00	RT.	1
STA. 74+00	RT.	1
STA. 80+00	RT.	1
STA. 81+00	RT.	1
STA. 82+00	RT.	1
STA. 83+00	RT.	1
STA. 84+00	RT.	1
STA. 85+00	RT.	1
STA. 86+00	RT.	1
STA. 87+00	RT.	1
STA. 87+88	RT.	1

ROCK DITCH CHECKS	(E-6)	EACH
STA. 66+10	RT.	1
STA. 67+24	RT.	1
STA. 69+51	RT.	1
STA. 72+55	LT.	1
STA. 73+50	LT.	1
STA. 74+05	LT.	1
STA. 74+71	LT.	1
STA. 75+20	LT.	1
STA. 75+64	LT.	1
STA. 76+06	LT.	1
STA. 76+38	LT.	1
STA. 76+72	LT.	1
STA. 77+19	LT.	1
STA. 77+72	LT.	1
STA. 78+17	LT.	1
STA. 78+66	LT.	1
STA. 79+15	LT.	1
STA. 79+55	LT.	1
STA. 79+58	RT.	1
STA. 79+95	LT.	1
STA. 80+27	LT.	1
STA. 80+50	LT.	1
STA. 81+30	LT.	1
STA. 81+75	LT.	1
STA. 82+30	LT.	1
STA. 82+82	LT.	1
STA. 83+46	LT.	1
STA. 84+12	LT.	1
STA. 84+95	LT.	1
STA. 85+81	LT.	1
STA. 86+80	LT.	1
STA. 88+00	LT.	1

NOTE: SILT FENCE SHALL BE PLACED SO THAT ALL DRIVEWAY AND ACCESS LOCATIONS ARE NOT BLOCKED.

FILTER SOCK INLET PROTECTION	(E-13)	EACH
STA. 114+42	RT.	1
STA. 116+18	RT.	1
STA. 118+47	RT.	1
STA. 66+58	LT.	1
STA. 67+09	RT.	1
STA. 75+00	RT.	1
STA. 76+75	RT.	1
STA. 78+50	RT.	1
STA. 79+58	RT.	1

SILT FENCE	(E-11)	LIN. FT
STA. 111+30 TO 115+16	RT.	400
STA. 115+64 TO 118+86	RT.	340
STA. 120+32 TO 122+42	RT.	250
STA. 123+00 TO 125+32	RT.	270
STA. 66+70 TO 71+90	LT.	500
STA. 69+73 TO 70+76	RT.	115
STA. 70+97 TO 75+38	RT.	430
STA. 75+63 TO 77+09	RT.	135
STA. 77+37 TO 78+74	RT.	140
STA. 79+04 TO 81+17	RT.	215
STA. 81+36 TO 87+90	RT.	670

LEGEND

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

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

tholt 4/23/2025
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		6	ARK.	100879	17	97

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

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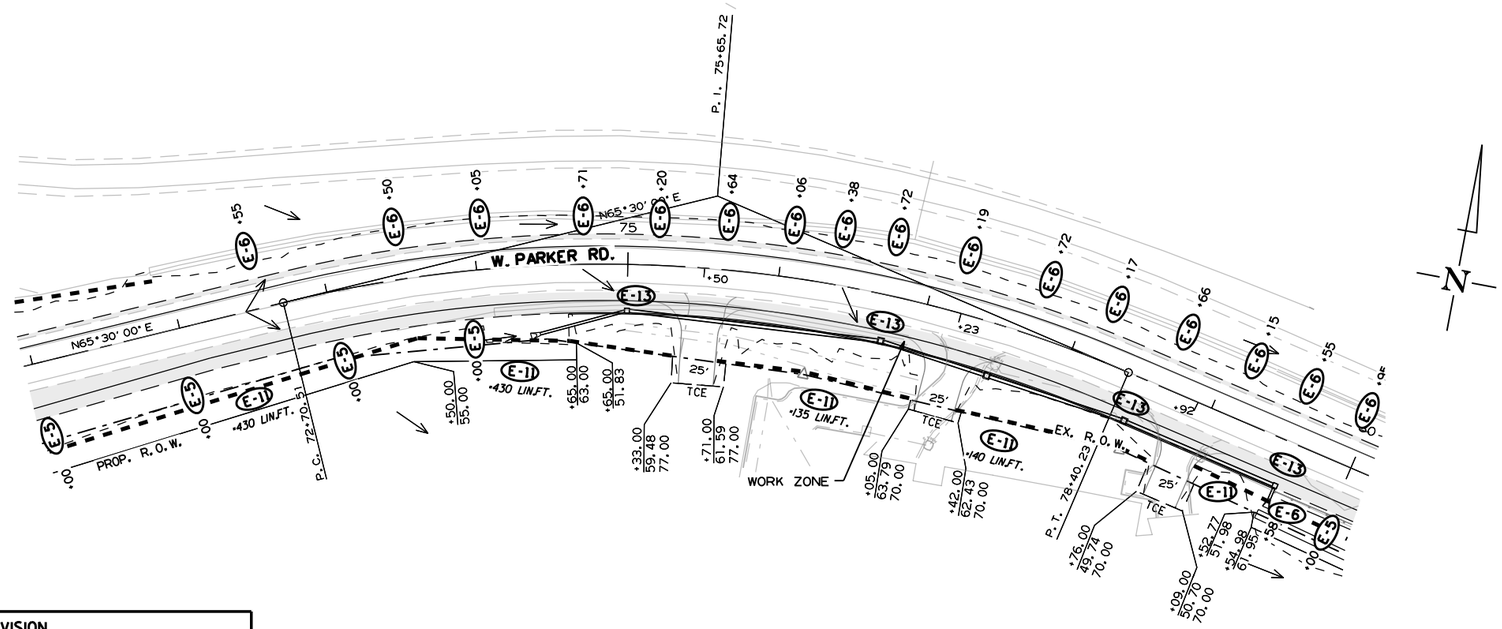
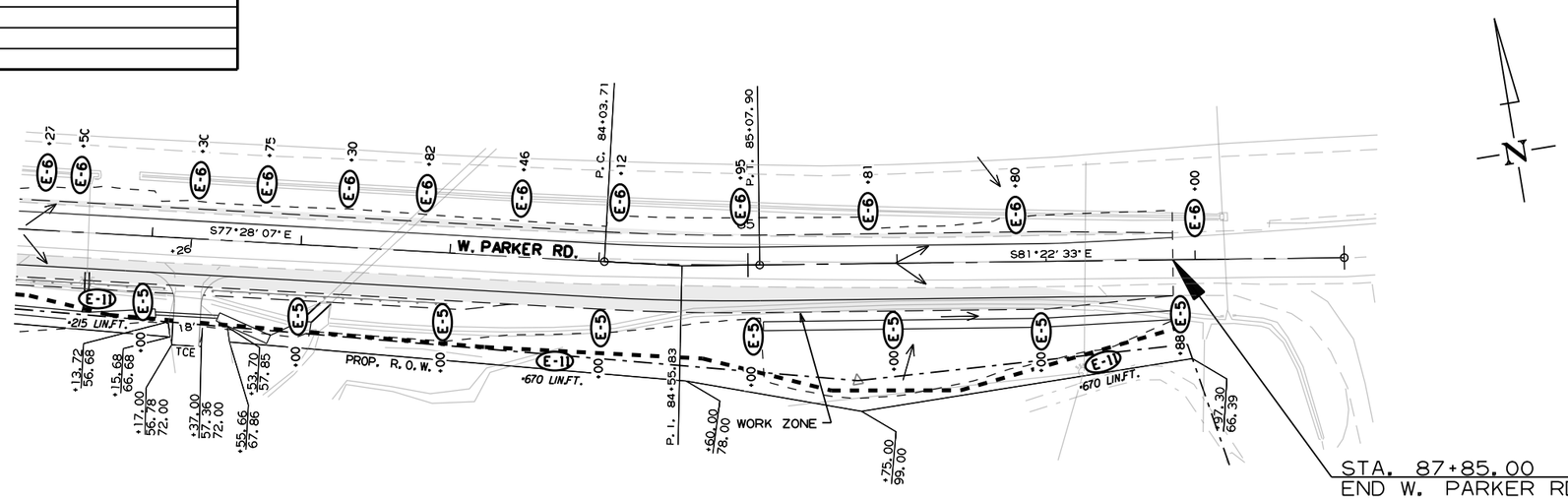
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- = WORK ZONE



REVISIONS

DATE OF REVISION	REVISION



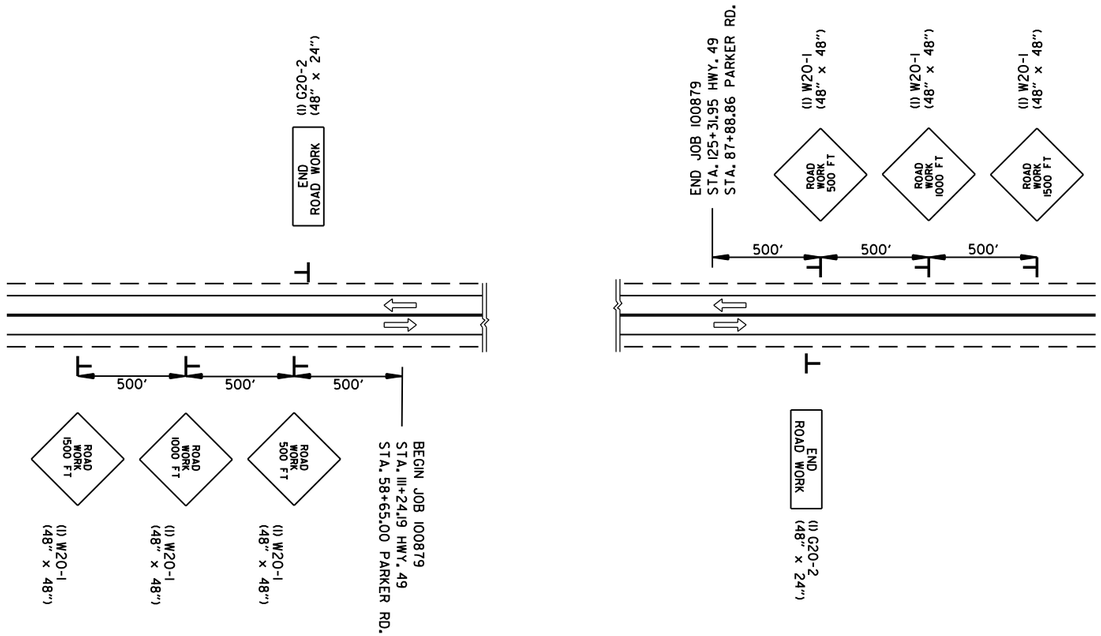
NOTE: SILT FENCE SHALL BE PLACED SO THAT ALL DRIVEWAY AND ACCESS LOCATIONS ARE NOT BLOCKED.

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

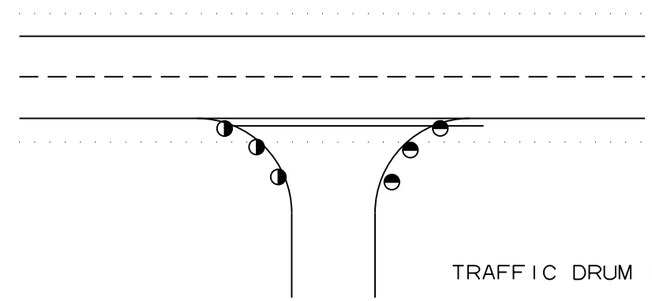
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	18	97
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

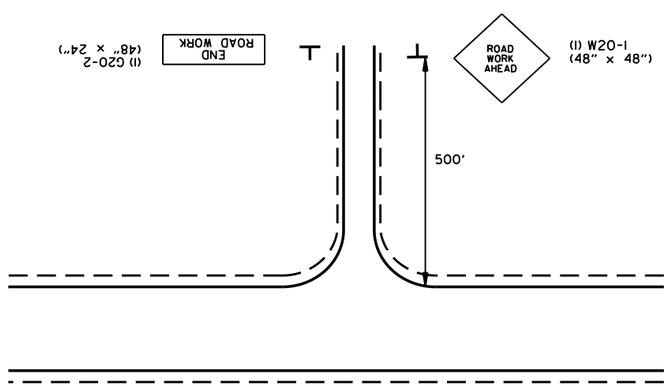


ADVANCE WARNING JOB 100879 (ALL STAGES)



TRAFFIC DRUM = 6 EACH @ 10' O.C.

DRIVEWAY/TRAFFIC DRUM DETAIL



ADVANCE WARNING - SIDE ROADS
(ALL STAGES)

STA. 110+88 (HWY. 49), WOOD STREET

RIGHT SHOULDER CLOSED	(6) W21-5a (36" x 36")	ALL STAGES IF AND WHERE DIRECTED BY THE ENGINEER
DO NOT PASS	(6) R4-1 (24" X 30")	ALL STAGES SPACES AT 1/4 MILE INTERVALS
BUMP	(4) W8-1 (30" X 30")	IF AND WHERE DIRECTED BY THE ENGINEER

ADVANCED WARNING
MAINTENANCE OF TRAFFIC DETAILS

lholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	19	97
		MAINTENANCE OF TRAFFIC DETAILS				

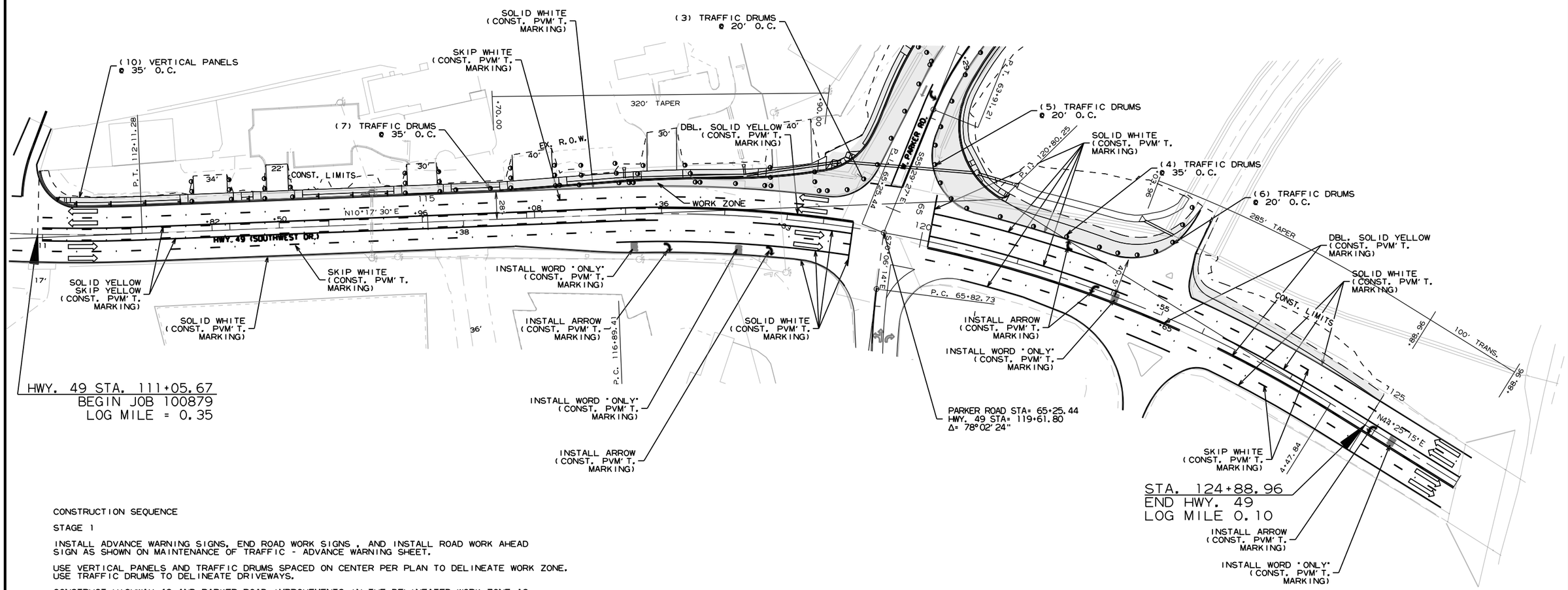
MAINTENANCE OF TRAFFIC STAGE 1 QUANTITIES

SIGNS = 397 SQ. FT.
TRAFFIC DRUMS = 127 EACH
VERTICAL PANELS = 10 EACH

LEGEND

= TRAFFIC DRUMS
= VERTICAL PANEL
= WORK ZONE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25



CONSTRUCTION SEQUENCE

STAGE 1

INSTALL ADVANCE WARNING SIGNS, END ROAD WORK SIGNS , AND INSTALL ROAD WORK AHEAD SIGN AS SHOWN ON MAINTENANCE OF TRAFFIC - ADVANCE WARNING SHEET.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED ON CENTER PER PLAN TO DELINEATE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT HIGHWAY 49 AND PARKER ROAD IMPROVEMENTS IN THE DELINEATED WORK ZONE AS SHOWN IN PLAN.

MAINTENANCE OF TRAFFIC DETAILS STAGE 1

tholt 4/23/2025
R100879.DGN

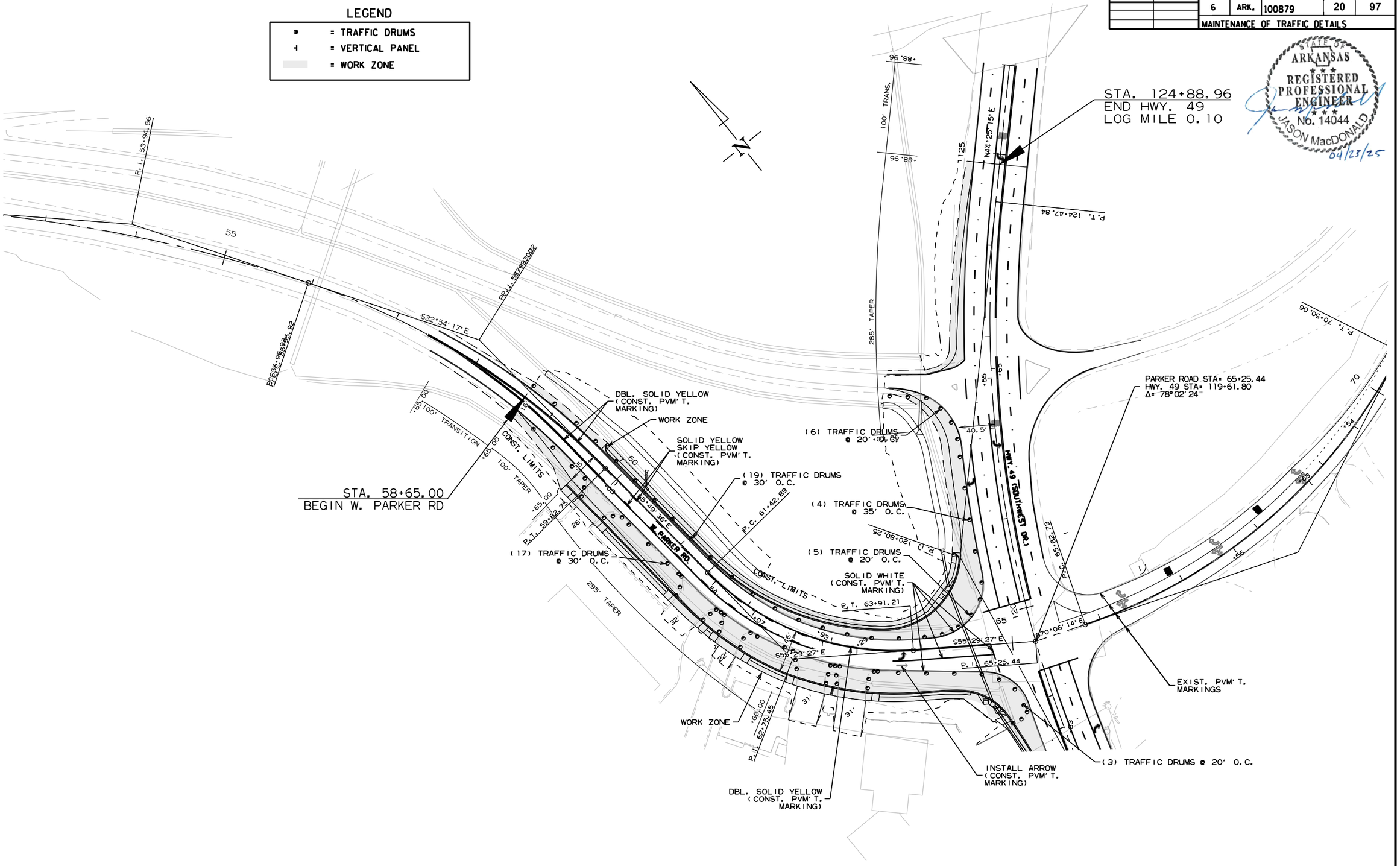
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	20	97

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

LEGEND

- = TRAFFIC DRUMS
- = VERTICAL PANEL
- = WORK ZONE



MAINTENANCE OF TRAFFIC DETAILS
STAGE I

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	21	97
		MAINTENANCE OF TRAFFIC DETAILS				

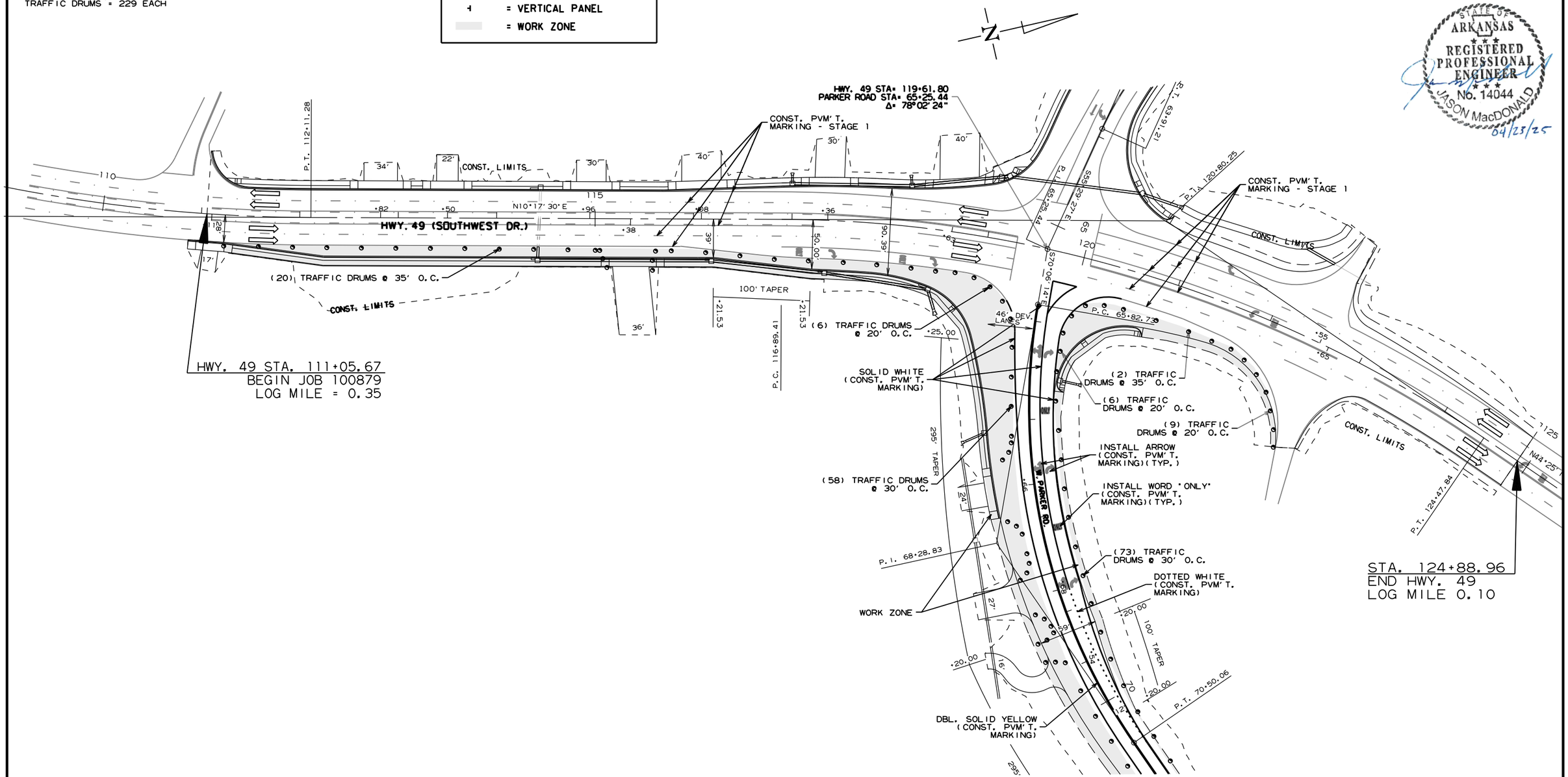
MAINTENANCE OF TRAFFIC STAGE 2 QUANTITIES

SIGNS = 397 SQ. FT.
TRAFFIC DRUMS = 229 EACH

LEGEND

- = TRAFFIC DRUMS
- = VERTICAL PANEL
- = WORK ZONE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25



STAGE 2 CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS, END ROAD WORK SIGNS, AND INSTALL ROAD WORK AHEAD SIGN AS SHOWN ON THE MAINTENACE OF TRAFFIC - ADVANCE WARNING SHEET.

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

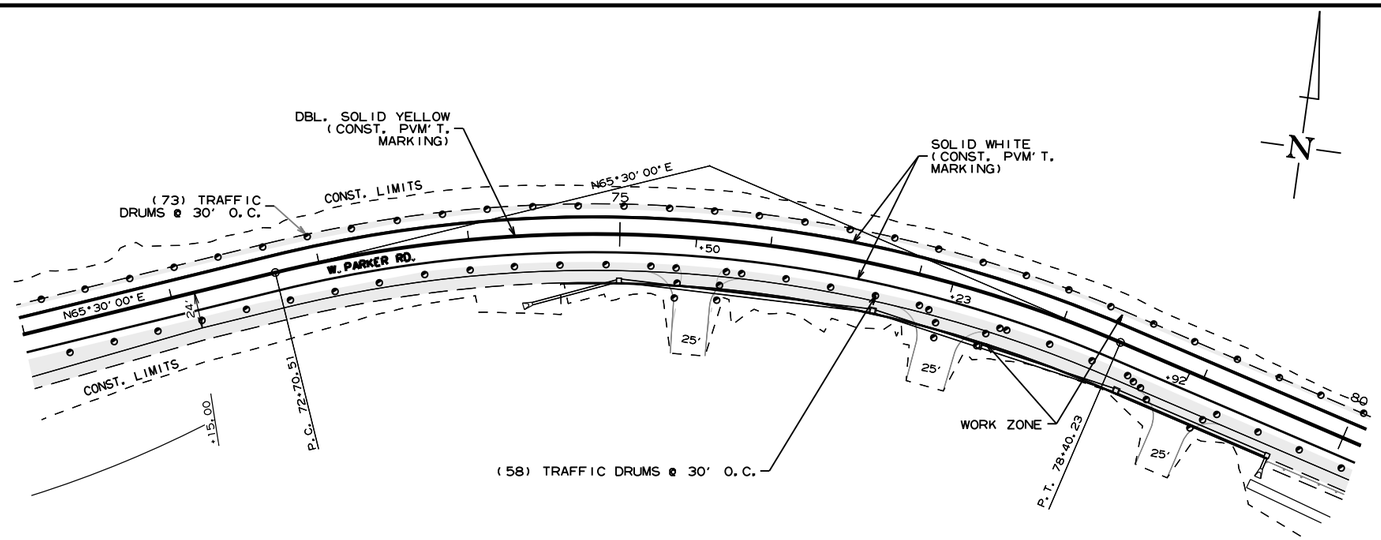
CONSTRUCT HIGHWAY 49 AND PARKER ROAD IMPROVEMENT IN THE DELINEATED WORK ZONE, AS SHOW PER PLAN.

MAINTENANCE OF TRAFFIC DETAILS STAGE 2

tholt 4/23/2025
R100879.DGN

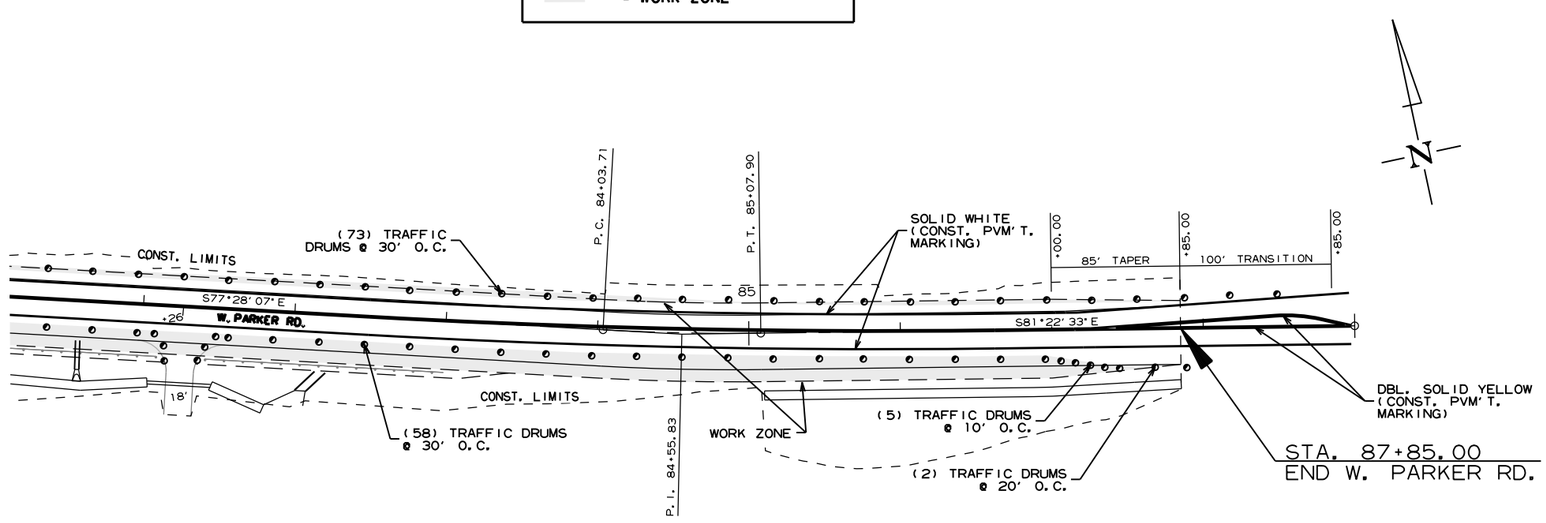
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	22	97
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25



LEGEND

⊕	= TRAFFIC DRUMS
⊣	= VERTICAL PANEL
	= WORK ZONE



MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	23	97
		MAINTENANCE OF TRAFFIC DETAILS				

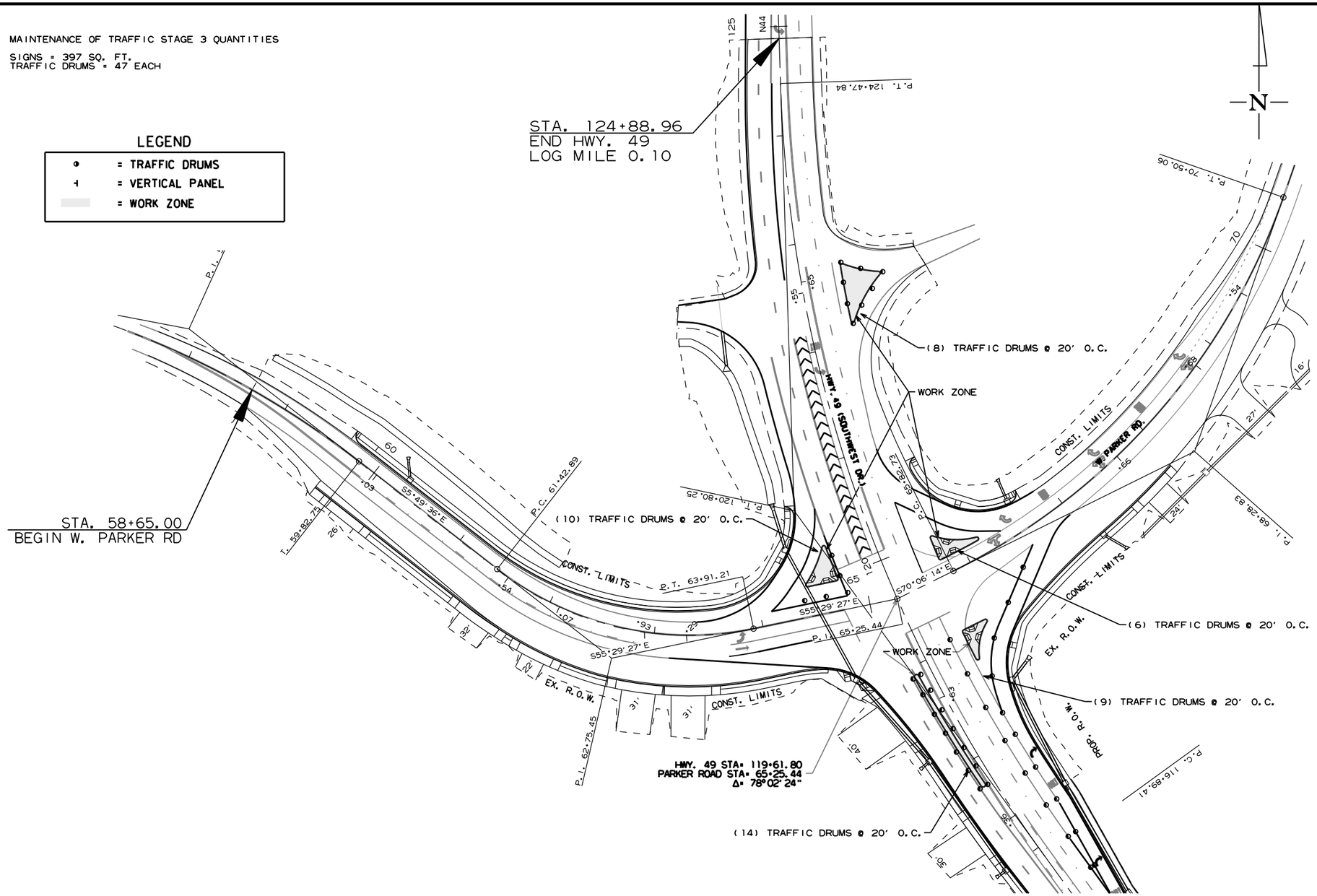
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

MAINTENANCE OF TRAFFIC STAGE 3 QUANTITIES

SIGNS = 397 SQ. FT.
TRAFFIC DRUMS = 47 EACH

LEGEND

- = TRAFFIC DRUMS
- = VERTICAL PANEL
- = WORK ZONE



STAGE 3 CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS, END ROAD WORK SIGNS, AND INSTALL ROAD WORK AHEAD SIGN AS SHOWN ON THE MAINTENANCE OF TRAFFIC - ADVANCEE WARNING SIGN SHEET.

USE TRAFFIC DRUMS WITH SPACING ON CENTER PER PLAN TO DELINEATE THE WORK ZONE.

CONSTRUCT HIGHWAY 49 AND PARKER ROAD CONCRETE ISLANDS AS SHOWN.

MAINTENANCE OF TRAFFIC DETAILS STAGE 3

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	24	97
		PERMENANT PAVEMENT MARKING DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
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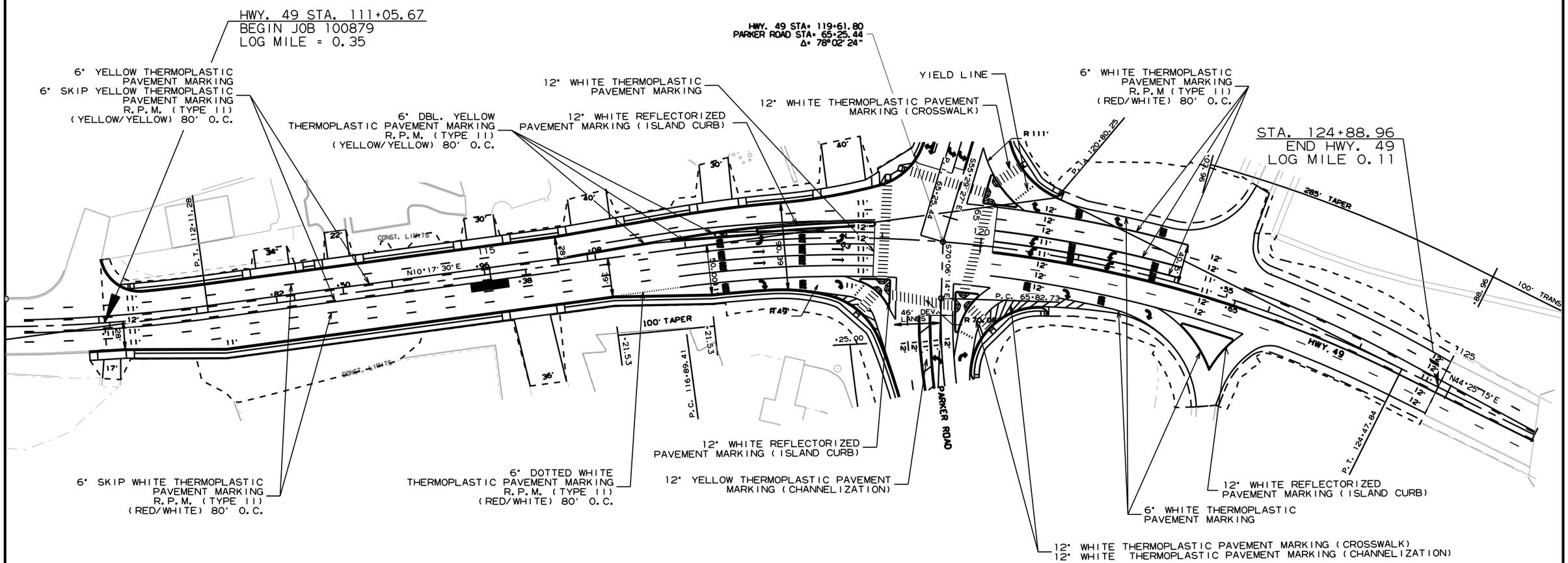
04/23/25



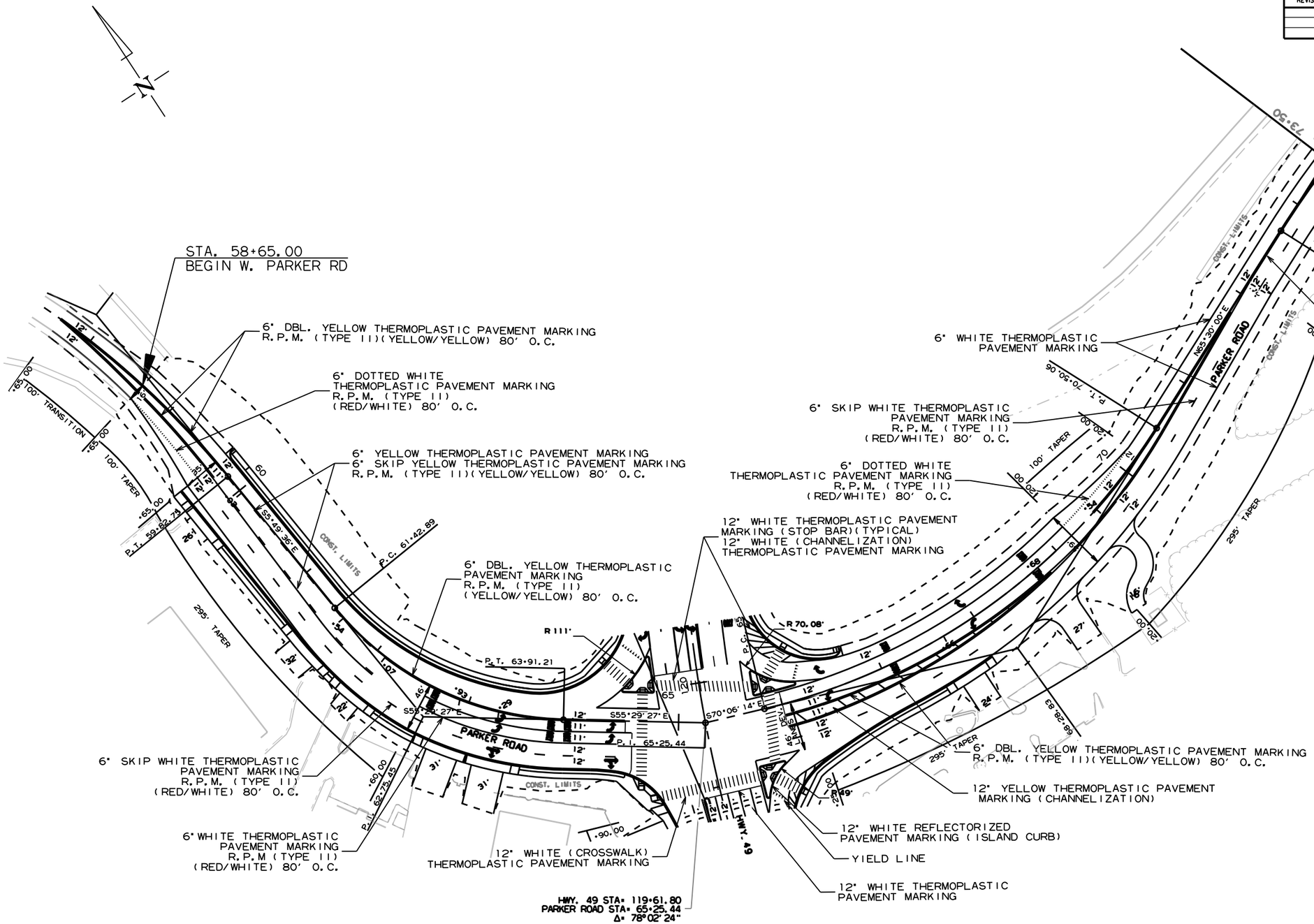
HWY. 49
PERMENANT PAVEMENT MARKING DETAILS

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	25	97

PERMENANT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

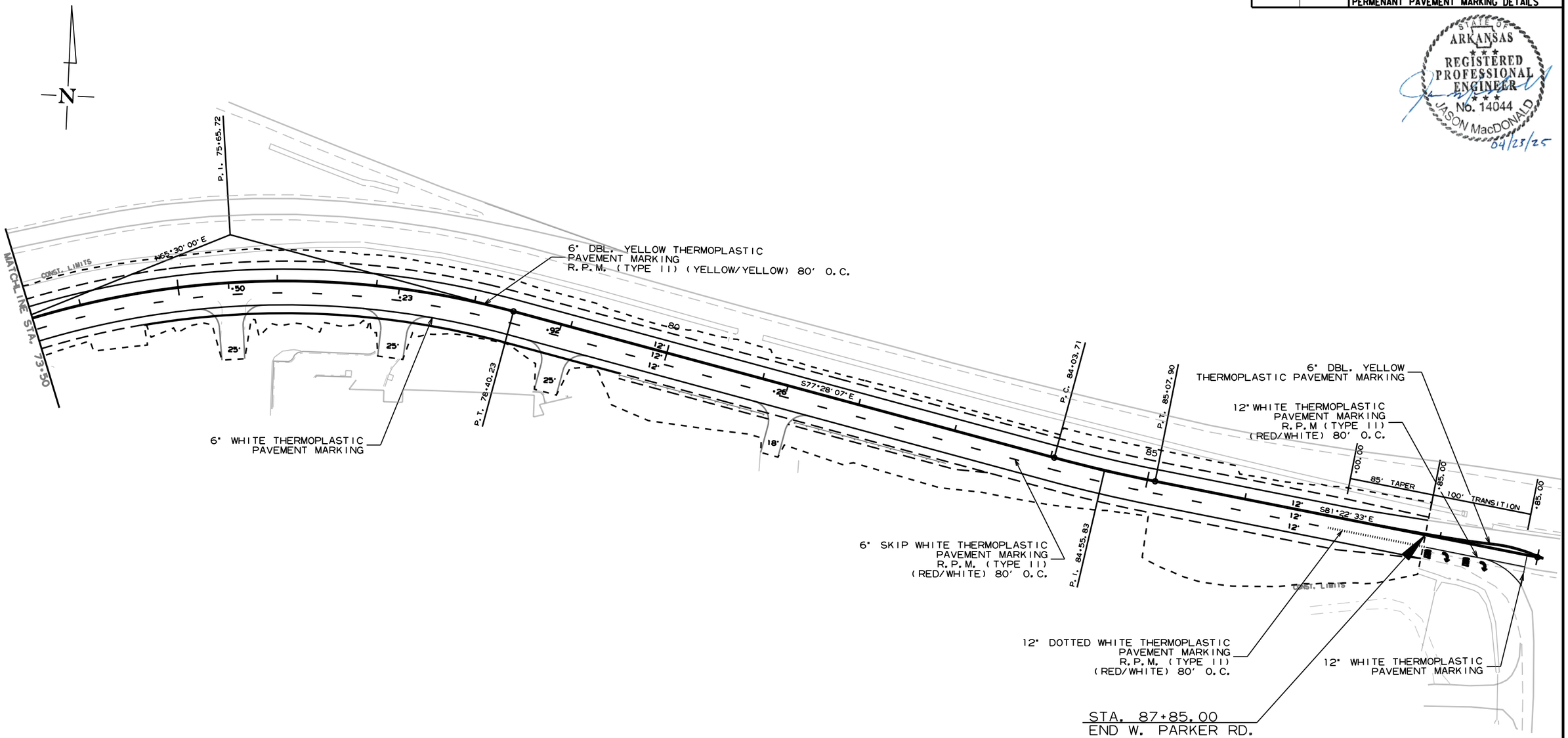


PARKER ROAD
PERMENANT PAVEMENT MARKING DETAILS

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	26	97
		PERMENANT PAVEMENT MARKING DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25



PARKER ROAD
PERMENANT PAVEMENT MARKING DETAILS

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	27	97
		QUANTITIES				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS
			LIN. FT. - EACH					NO.	SQ. FT.	EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4		4	4	64.0		
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4		4	4	64.0		
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4		4	4	64.0		
W20-1	ROAD WORK AHEAD	48"x48"	1	1	1		1	1	16.0		
G20-2	END ROAD WORK	48"x24"	5	5	5		5	5	40.0		
G20-1	ROAD WORK NEXT xx MILES	60"x24"	4	4	4		4	4	40.0		
R4-1	DO NOT PASS	24"x30"	6	6	6		6	6	30.0		
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	6	6	6		6	6	54.0		
W8-1	BUMP	30"x30"	4	4	4		4	4	25.0		
	VERTICAL PANELS		10				10			10	
	TRAFFIC DRUMS		127	229	47		229				229
TOTALS:									**397.0**	**10**	**229**

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING						REFLECTORIZED PAINT PAVEMENT MARKING	
								TYPE II	TYPE II	6"		12"	12"	WORDS	ARROWS	12"	
						WORDS	ARROWS	(WHITE/RED)	(YELLOW/YELLOW)	WHITE	YELLOW	WHITE	YELLOW			WHITE	YELLOW
	LIN. FT. - EACH				LIN. FT.	EACH		EACH		LIN. FT.				EACH		LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	12514	9898	4563		26975												
CONSTRUCTION PAVEMENT MARKINGS (WORDS)	4	1	1			6											
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	6	4	1				11										
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				109				109									
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)				78					78								
THERMOPLASTIC PAVEMENT MARKING WHITE (6")				11479						11479							
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")				11436							11436						
THERMOPLASTIC PAVEMENT MARKING WHITE (12")				1796								1796					
THERMOPLASTIC PAVEMENT MARKING YELLOW (12")				85									85				
THERMOPLASTIC PAVEMENT MARKING (WORDS)				26										26			
THERMOPLASTIC PAVEMENT MARKING (ARROWS)				28											28		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (12")				464												464	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (12")				247													247
TOTALS:					**26975**	**6**	**11**	**109**	**78**	**11479**	**11436**	**1796**	**85**	**26**	**28**	**464**	**247**

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

tholt 4/23/2025
R100879.DGN

QUANTITIES

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	28	97
		QUANTITIES				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	CONCRETE DITCH PAVEMENT	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	WALKS	MAILBOXES	SIGNS
			LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH
110+97	111+23	HWY 49, RT.				14			
111+05	114+34	HWY 49, LT.	407						
111+05	112+65	HWY 49, LT.					108		
110+85	114+34	HWY 49, RT.	353						
112+20	114+40	HWY 49, RT.	250						
112+20		HWY 49, RT.							1
112+65	113+00	HWY 49, LT.				30			
113+00	113+26	HWY 49, LT.					16		
113+26	113+73	HWY 49, LT.				30			
113+72	114+80	HWY 49, LT.					64		
114+45	118+30	HWY 49, RT.	385						
114+47	119+45	HWY 49, LT.	815						
114+80	115+12	HWY 49, LT.				96			
115+06	115+60	HWY 49, RT.				36			
115+12	115+75	HWY 49, LT.					40		
115+75	116+38	HWY 49, LT.				135			
116+25		HWY 49, RT.							2
116+38	117+00	HWY 49, LT.					38		
117+00	117+74	HWY 49, LT.				222			
117+74	118+18	HWY 49, LT.					26		
118+00		HWY 49, LT.							1
118+26		HWY 49, LT.							1
118+44	119+42	HWY 49, RT.	115						
118+40	118+90	HWY 49, LT.				316			
118+83	119+23	HWY 49, LT.		27					
120+10		HWY 49, RT.							1
120+35	122+35	HWY 49, LT.		154					
120+47		HWY 49, RT.							1
120+77		HWY 49, LT.							1
121+15		HWY 49, RT.							2
122+19		HWY 49, LT.							1
122+20		HWY 49, RT.							1
122+35	122+73	HWY 49, RT.			55				
122+44	122+50	HWY 49, LT.			2				
122+50		HWY 49, RT.							1
122+50		HWY 49, LT.							1
122+85		HWY 49, LT.							1
123+20		HWY 49, LT.							1
58+59	64+10	W. PARKER, LT.		336					
58+59	59+77	W. PARKER, RT.		74					
59+76	60+32	W. PARKER, RT.	102						
60+03		W. PARKER, LT.							1
60+28	61+30	W. PARKER, RT.		62					
61+05		W. PARKER, RT.							1
61+25	62+18	W. PARKER, RT.	159						
61+70		W. PARKER, RT.						1	
61+86	62+17	W. PARKER, RT.				53			
62+20	62+72	W. PARKER, RT.		37					
62+30		W. PARKER, RT.							1
62+75	63+48	W. PARKER, RT.	171						
62+67	63+48	W. PARKER, RT.				566			
63+08		W. PARKER, RT.						2	
63+48	64+82	W. PARKER, RT.		93					
65+70	66+54	W. PARKER, LT.	111						
66+12		W. PARKER, LT.							1
67+08		W. PARKER, RT.							1
67+40		W. PARKER, LT.							1
68+43	69+05	W. PARKER, RT.	149						
69+13		W. PARKER, RT.							1
69+30		W. PARKER, LT.							1
73+17		W. PARKER, LT.							1
74+09	76+93	W. PARKER, RT.		177					
75+38	75+76	W. PARKER, RT.				107			
75+41	75+70	W. PARKER, RT.	66						
77+05	77+60	W. PARKER, RT.	115						
77+50		W. PARKER, LT.							1
78+55	79+11	W. PARKER, RT.	86						
78+75		W. PARKER, LT.							1
80+20	81+12	W. PARKER, RT.		59					
81+14	81+55	W. PARKER, RT.				101			
81+43	81+95	W. PARKER, RT.		31					
82+22	87+85	W. PARKER, RT.		340					
TOTALS:			3284	1390	57	1706	292	3	27

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	DROP INLETS
		EACH	EACH
114+42	HWY 49, RT.		1
114+45	HWY 49, LT.		1
117+55	HWY 49, LT.	1	
118+38	HWY 49, RT.		1
118+49	HWY 49, RT.	1	
118+65	HWY 49, LT.	1	
119+64	HWY 49, LT.	1	
120+01	HWY 49, LT.	1	
120+16	HWY 49, LT.	1	
60+03	W. PARKER, RT	1	
61+56	W. PARKER, RT	1	
62+00	W. PARKER, RT	1	
63+10	W. PARKER, RT	1	
68+09	W. PARKER, RT		1
69+04	W. PARKER, RT		1
75+56	W. PARKER, RT	1	
77+34	W. PARKER, RT	1	
77+55	W. PARKER, RT		1
78+42	W. PARKER, RT		1
79+06	W. PARKER, RT		1
79+64	W. PARKER, RT	1	
81+27	W. PARKER, RT	1	
TOTALS:		14	8

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
71+00	73+00	PARKER RD. RT	2	2
81+50	84+50	PARKER RD. RT	3	3
TOTALS:			5	5

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
ENTIRE	PROJECT	STAGE 1-MAIN LANES	2945	1811
ENTIRE	PROJECT	STAGE 2-MAIN LANES	4021	6336
ENTIRE	PROJECT	APPROACHES	270	270
ENTIRE	PROJECT	TEMPORARY APPROACHES		200
122+55		HWY. 49 LT. - I-555 OFF RAMP		50
122+65		HWY. 49 RT. - I-555 ON RAMP		10
TOTALS:			7236	8677

NOTE: EARTHWORK QUANTITIES SHALL BE PAID AS PLAN QUANTITY.

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE	50
		DIRECTED BY THE ENGINEER	
TOTAL:			50

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

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

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)	DROP INLET FILTER SOCK (12") (E-13)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING											1000		37
ENTIRE	PROJECT	STAGE 1	0.91	1.82	0.91	92.8	0.91	0.91	0.91	18.6	484	6	845	69	58
ENTIRE	PROJECT	STAGE 2	1.96	3.92	1.96	199.9	1.96	1.96	1.96	40.0	374	96	3465	207	185
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.															
TOTALS:			**2.87**	**5.74**	**2.87**	**292.7**	**2.87**	**2.87**	**2.87**	**58.6**	**858**	**102**	**5310**	**276**	**280**

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
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION
FILTER SOCKS.....23 LIN. FT./ 4' DIA. INLET
27 LIN. FT. / 5' DIA. INLET
30 LIN. FT. / 6' DIA. INLET

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.

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.
121+07.00	122+12.00	HWY. 49, LT.	105.00	6.75	78.75	46.67	0.59
58+65.00	61+93.00	PARKER RD., LT	328.00	6.00	218.67	145.78	1.84
79+55.00	81+05.00	PARKER RD., RT	150.00	6.00	100.00	66.67	0.84
81+47.00	81+82.00	PARKER RD., RT	35.00	6.00	23.33	15.56	0.20
85+10.00	88+05.00	PARKER RD., RT	295.00	6.00	196.67	131.11	1.65
TOTALS:					**617.42**	**405.79**	**5.12**

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

CONCRETE WALKS & HAND RAILING

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	HAND RAILING
			LIN. FT.	SQ.YD.	LIN. FT.
111+24	112+51	HWY. 49 LT	127	71	
111+24	115+06	HWY. 49 RT	382	212	393
113+13	113+25	HWY. 49 LT	12	7	
113+75	114+67	HWY. 49 LT	92	51	
115+25	115+74	HWY. 49 LT	49	27	
115+70	118+57	HWY. 49 RT	287	159	180
116+42	117+07	HWY. 49 LT	65	36	
117+65	118+07	HWY. 49 LT	42	23	
118+27	118+29	HWY. 49 LT	2	1	
59+88	64+07	PARKER RD. LT	419	233	
60+30	61+26	PARKER RD. RT	96	53	
61+80	61+86	PARKER RD. RT	6	3	
62+29	62+68	PARKER RD. RT	39	22	
63+56	64+48	PARKER RD. RT	92	51	
66+13	67+21	PARKER RD. RT	108	60	
66+32	66+71	PARKER RD. LT	39	22	
TOTALS:				**1031**	**573**

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH
79+60.00	81+10.00	PARKER RD. RT SIDE	150	2
81+50.00	83+00.00	PARKER RD. RT SIDE	150	2
TOTALS:			**300**	**4**

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	30	97
		QUANTITIES				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")	TYPE B (9")
			LIN. FT.	LIN. FT.
111+24	119+16	HWY. 49 LT	792	
111+24	118+78	HWY. 49 RT	754	
120+20	120+73	HWY. 49 LT	53	
120+21	120+79	HWY. 49 RT	58	
59+65	64+69	PARKER RD. RT	504	
59+65	64+17	PARKER RD. LT	452	
65+96	67+21	PARKER RD. RT	125	
66+11	66+71	PARKER RD. LT	60	
74+60	79+60	PARKER RD. RT		500
TOTAL:			2798	500

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
			SQ.YD.
118+33	HWY. 49 LT	B	67
119+00	HWY. 49 RT	B	30
119+90	HWY. 49 RT	B	41
120+10	HWY. 49 LT	B	48
122+50	HWY. 49 RT	B	109
TOTAL:			295

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 1	TYPE 2	TYPE 3	TYPE 4
		SQ.YD.			
111+26	HWY. 49 LT			6.6	
118+78	HWY. 49 RT		3.6		
118+96	HWY. 49 RT				4.7
119+01	HWY. 49 RT				4.8
119+10	HWY. 49 RT				5.7
119+10	HWY. 49 LT	76.5			
119+80	HWY. 49 RT				5.8
119+88	HWY. 49 RT				5.2
119+95	HWY. 49 RT				5.1
120+20	HWY. 49 RT		3.7		
119+99	HWY. 49 LT				4.8
120+04	HWY. 49 LT				5.6
120+10	HWY. 49 LT				4.8
120+30	HWY. 49 LT		3.6		
120+74	HWY. 49 LT			5.9	
120+80	HWY. 49 RT			4.1	
59+65	PARKER RD. LT			13.1	
66+71	PARKER RD. LT			3.7	
TOTALS:		76.5	10.9	33.4	46.5

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (DOUBLE)
	EACH	
ENTIRE PROJECT	2	1
TOTALS:	2	1

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	120
ENGINEER	
TOTAL:	120

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT		PIPE CULVERT STORM DRAIN ALTERNATES 1, 2, 3, 4 & 5		FLARED END SECTIONS FOR R.C. PIPE CULVERTS	FLARED END SECTION ALTERNATES FOR PIPE CULVERT ALTERNATES		DROP INLETS					JUNCT. BOXES	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
												EXT.											
		24"	30"	18"	24"	30"	18"	24"	E	MO	ST	4'	8'	(TYPE ST)									
		LIN. FT.				EACH									LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
114+42	HWY. 49, 38.50' RT	8			174					1		1											FPC-9S, PCC-1, PCM-1, PCC-1, PCM-1
114+45	HWY. 49, 29.00' LT									1			1										FPC-9M
116+18	HWY. 49, 38.50' RT				114					1		1											FPC-9S, PCC-1, PCM-1
117+00	HWY. 49, 33.88' LT			8	120		1			1													FPC-9, PCC-1, PCM-1
117+35	HWY. 49, 49.50' RT				104					1		1											FPC-9S, PCC-1, PCM-1
118+17	HWY. 49, 50.20' LT			8	98		1			1													FPC-9, PCC-1, PCM-1
118+47	HWY. 49, 59.10' RT				26			1		1			1								8	0.10	FPC-9M, FES-1, FES-2, PCC-1, PCM-1
119+13	HWY. 49, 62.92' LT				132					1		1											FPC-9M, PCC-1, PCM-1
120+37	HWY. 49, 76.55' LT				42			1		1			1								8	0.10	FPC-9M, FES-1, FES-2, PCC-1, PCM-1
122+35	HWY. 49, 79.15' LT				22			1													8	0.10	FPC-9S, FES-1, FES-2, PCC-1, PCM-1
60+30	PARKER ROAD, 13.00' LT			18			1			1											5	0.06	FPC-9M, FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
66+59	PARKER ROAD, 28.15' LT			16			1			1											5	0.06	FPC-9M, FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
67+12	PARKER ROAD, 43.79' RT			22			1			1											5	0.06	FPC-9M, FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
75+00	PARKER ROAD, 32.00' RT			224			1				1										5	0.06	FPC-9S, FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
76+75	PARKER ROAD, 32.00' RT			72							1												FPC-9S, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
77+51	PARKER ROAD, 34.60' RT			94										1									FPC-9S, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
78+50	PARKER ROAD, 32.00' RT			106							1												FPC-9S, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
79+59	PARKER ROAD, 32.00' RT			8			1				1										5	0.06	FPC-9S, FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
80+58	PARKER ROAD, 26.00' RT.		20			1															13	0.16	FES-1, FES-2, PCC-1
82+10	PARKER ROAD, 38.00' RT.														5	4	20	13	1167	16	8	0.10	R-100X-X1, W-X003-1, RCB-1, RCB-2, RCB-3
TOTALS:		8	20	576	832	1	7	3		12	4	4	3	1				13.00	1167	16	70	0.86	

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

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

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

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QUANTITIES

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	31	97
		QUANTITIES				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS 24"	STANDARD DRAWINGS
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.	
111+11	RT	HWY. 49	17	110+89	111+34	40.00	40.31	4.43	16.46		DR-1
112+82	LT	HWY. 49	34	112+51	113+13	126.89					DR-1
113+50	LT	HWY. 49	22	113+25	113+75	44.44	66.00	7.26	26.95		DR-1
114+96	LT	HWY. 49	30	114+67	115+25	124.89					DR-1
115+38	RT	HWY. 49	36	115+06	115+70	56.89	276.00	30.36	112.70		DR-1
116+08	LT	HWY. 49	40	115+74	116+42	176.00					DR-1
117+36	LT	HWY. 49	30	117+07	117+65	181.56					DR-1
118+63	LT	HWY. 49	40	118+29	118+97	242.66					DR-1
122+55	LT	HWY. 49	15				138.86	15.27	56.70	34	DR-2, PCC-1
122+65	RT	HWY. 49	19				202.66	22.29	82.75		DR-2
60+03	RT	PARKER ROAD	26	59+76	60+30	48.00	8.67	0.95	3.54		DR-1
61+54	RT	PARKER ROAD	32	61+24	61+84	53.33	63.89	7.03	26.09		DR-1
62+07	RT	PARKER ROAD	22	61+82	62+32	44.44	40.75	4.48	16.64		DR-1
62+93	RT	PARKER ROAD	31	62+64	63+23	185.77					DR-1
63+29	RT	PARKER ROAD	31	63+00	63+59	183.02					DR-1
67+66	RT	PARKER ROAD	24				71.88	7.91	29.35		DR-2
68+68	RT	PARKER ROAD	27				90.40	9.94	36.91		DR-2
69+54	RT	PARKER ROAD	16				113.62	12.50	46.39		DR-2
75+50	RT	PARKER ROAD	25				155.06	17.06	63.32		DR-2
77+23	RT	PARKER ROAD	25				134.76	14.82	55.03		DR-2
78+92	RT	PARKER ROAD	25				135.06	14.86	55.15		DR-2
81+26	RT	PARKER ROAD	18				101.68	11.18	41.52	42	DR-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
TOTALS:						**1467.89**	**1599.29**	**175.91**	**653.04**	**76**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER

THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

* 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.

CONCRETE BASE

STATION	STATION	LOCATION	LENGTH	TACK COAT 0.05 GAL. PER SQ. YD.			PORTLAND CEMENT CONCRETE BASE		
				AVG. WID.	SQ. YD.	GAL.	AVG. WID.	5" U.T.	6" U.T.
			FEET	FEET			FEET	SQ. YD.	SQ. YD.
111+05.67	116+70.00	HWY 49 - LT. SIDE	564.33	0.52	32.61	1.63	0.52		32.61
110+88.55	111+60.42	HWY 49 - RT. SIDE	71.87	2.00	15.97	0.80	2.00		15.97
58+65.00	62+20.00	W. PARKER	355.00	1.43	56.41	2.82	1.43	56.41	
TOTALS:					**104.99**	**5.25**		**56.41**	**48.58**

BASIS OF ESTIMATE:
CEMENT STABILIZED CRUSHED STONE BASE COURSE = 94.0% AGGR. 6.0% CEMENT
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULISIFED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
119+73	HWY. 49 LT.	8.50	57	53
TOTAL:				**53**

AVG. DEPTH = 18"

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
57+65.00	58+65.00	PARKER RD	25.90	287.78
87+88.86	89+06.86	PARKER RD	53.43	700.53
111+05.67	112+05.67	HWY. 49	58.97	655.22
124+88.96	126+07.94	HWY. 49	55.32	731.33
TOTAL:				**2374.86**

NOTE: COORDINATE COLD MILLING STOCKPILE LOCATIONS WITH DISTRICT ENGINEER.

RETAINING WALLS

STATION	STATION	LOCATION	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	ARCHITECTURAL FINISH	TEXTURED COATING FINISH
			CU.YDS.	POUNDS	CU.YDS.	SQ.FT.	SQ.YD.
111+24	115+21	HWY. 49 - RT SIDE	190.13	19204	413	2510	279
115+51	117+35	HWY. 49 - RT SIDE	68.04	6786	144	815	815
TOTALS:			258.17	25990	557	3325	1094

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QUANTITIES

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	32	97
		QUANTITIES				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

BASE AND SURFACING (HWY. 49) (1 OF 2)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BASE COURSE (1 1/2")			
						(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)							
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22
			FEET			FEET			FEET				FEET			TON
MAIN LANES																
111+24.42	111+60.42	HWY 49	36.00	26.25	9.45	68.33	273.32	13.67	57.31	229.24	38.97	52.64				
111+60.42	112+24.42	HWY 49	64.00	38.89	24.89	77.78	553.10	27.66	55.70	396.09	67.34	95.00	10.00	71.11	440.00	15.64
112+24.42	115+70.00	HWY 49	345.58	52.50	181.43	89.62	3441.21	172.06	55.70	2138.76	363.59	535.65	13.50	518.37	440.00	114.04
115+70.00	118+00.00	HWY 49	230.00	70.25	161.58	106.48	2721.16	136.06	62.74	1603.36	272.57	408.63	18.07	461.79	440.00	101.59
118+00.00	119+61.80	HWY 49	161.80	200.26	324.02	227.10	4082.75	204.14	85.17	1531.17	260.30	464.44	51.51	926.04	440.00	203.73
119+61.80	122+23.84	HWY 49	262.04	280.50	735.02	190.36	5542.44	277.12	91.05	2650.97	450.66	727.78	34.30	998.66	440.00	219.71
122+23.84	125+31.95	HWY 49	308.11	165.75	510.69	95.05	3253.98	162.70	81.67	2795.93	475.31	638.01	5.14	175.97	440.00	38.71
ADDITIONAL FOR LEVELING																
111+24.42	125+31.95	HWY 49	1407.53			67.41	10542.40	527.12				527.12				
TOTALS:					1947.08		30410.36	1520.53		11345.52	1928.74	3449.27		3151.94		693.42

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
ACHM BINDER COURSE (1").....96.0% MIN. AGGR.....4.0% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.1% MIN. AGGR.....3.9% ASPHALT BINDER
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

BASE AND SURFACING (HWY. 49) (2 OF 2)

STATION	STATION	LOCATION	LENGTH	ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	TOTAL PG 76-22
			FEET	FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																
111+24.42	111+60.42	HWY 49	36.00	2.00	8.00	440.00	1.76	58.00	232.00	220.00	25.52	2.00	8.00	220.00	0.88	26.40
111+60.42	112+24.42	HWY 49	64.00	7.50	53.33	440.00	11.73	61.50	437.33	220.00	48.11	7.50	53.33	220.00	5.87	53.98
112+24.42	115+70.00	HWY 49	345.58	11.00	422.38	440.00	92.92	67.00	2572.65	220.00	282.99	11.00	422.38	220.00	46.46	329.45
115+70.00	118+00.00	HWY 49	230.00	14.90	380.78	440.00	83.77	78.80	2013.78	220.00	221.52	14.90	380.78	220.00	41.89	263.41
118+00.00	119+61.80	HWY 49	161.80	47.34	851.07	440.00	187.24	129.98	2336.75	220.00	257.04	47.34	851.07	220.00	93.62	350.66
119+61.80	122+23.84	HWY 49	262.04	33.16	965.47	440.00	212.40	133.03	3873.24	220.00	426.06	33.16	965.47	220.00	106.20	532.26
122+23.84	125+31.95	HWY 49	308.11	5.14	175.97	440.00	38.71	103.10	3529.57	220.00	388.25	5.14	175.97	220.00	19.36	407.61
ADDITIONAL FOR LEVELING																
111+24.42	125+31.95	HWY 49	1407.53					85.39	13354.33	110.00	734.49					734.49
TOTALS:					2857.00		628.53		28349.65		2383.98		2857.00		314.28	2698.26

BASE AND SURFACING (PARKER RD.) (1 OF 2)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BASE COURSE (1 1/2")			
						(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)							
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22
			FEET			FEET			FEET				FEET			TON
MAIN LANES																
58+65.00	59+65.00	W. PARKER	100.00	115.00	115.00	51.91	576.78	28.84	29.75	330.56	56.20	85.04	6.35	70.56	550.00	19.40
59+65.00	64+41.91	W. PARKER	476.91			126.82	6720.19	336.01	33.17	1757.68	298.81	634.82	33.78	1790.00	550.00	492.25
66+21.54	72+15.00	W. PARKER	593.46	115.00	682.48	107.73	7103.72	355.19	30.56	2015.13	342.57	697.76	25.55	1684.77	550.00	463.31
72+15.00	87+88.86	W. PARKER	1573.86	115.00	1809.94	61.68	10786.19	539.31	23.16	4050.07	688.51	1227.82	12.52	2189.41	550.00	602.09
ADDITIONAL FOR LEVELING																
58+65.00	64+92.92	W. PARKER	627.92			35.77	2495.63	124.78				124.78				
65+65.92	87+88.86	W. PARKER	2222.94			26.15	6458.88	322.94				322.94				
TOTALS:					2607.42		34141.39	1707.07		8153.44	1386.09	3093.16		5734.74		1577.05

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.3% MIN. AGGR.....3.7% ASPHALT BINDER
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

BASE AND SURFACING (PARKER RD.) (2 OF 2)

STATION	STATION	LOCATION	LENGTH	ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	TOTAL PG 70-22
			FEET	FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																
58+65.00	59+65.00	W. PARKER	100.00	6.35	70.56	330.00	11.64	37.32	414.67	220.00	45.61	6.35	70.56	220.00	7.76	53.37
59+65.00	64+41.91	W. PARKER	476.91	30.09	1594.47	330.00	263.09	64.39	3412.03	220.00	375.32	30.09	1594.47	220.00	175.39	550.71
66+21.54	72+15.00	W. PARKER	593.46	24.94	1644.54	330.00	271.35	70.43	4644.15	220.00	510.86	24.94	1644.54	220.00	180.90	691.76
72+15.00	87+88.86	W. PARKER	1573.86	12.52	2189.41	330.00	361.25	51.98	9089.92	220.00	999.89	12.52	2189.41	220.00	240.84	1240.73
ADDITIONAL FOR LEVELING																
58+65.00	64+92.92	W. PARKER	627.92					96.95	6764.09	220.00	744.05					744.05
65+65.92	87+88.86	W. PARKER	2222.94					28.84	7123.29	110.00	391.78					391.78
TOTALS:					5498.98		907.33		31448.15		3067.51		5498.98		604.89	3672.40

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R100879.DGN

QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

SUMMARY OF QUANTITIES (BOX 1 OF 3)

	ITEM NUMBER	ITEM		QUANTITY	UNIT
	201	CLEARING		5	STATION
	201	GRUBBING		5	STATION
	202	REMOVAL AND DISPOSAL OF CURB AND GUTTER		3284	LIN. FT.
	202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS		57	SQ. YD.
	202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		1706	SQ. YD.
	202	REMOVAL AND DISPOSAL OF WALKS		292	SQ. YD.
	202	REMOVAL AND DISPOSAL OF DROP INLETS		8	EACH
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		14	EACH
	202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING		1390	SQ. YD.
	202	REMOVAL AND DISPOSAL OF SIGNS		27	EACH
	202	REMOVAL AND DISPOSAL OF MAILBOXES		3	EACH
	SP, SS, & 210	UNCLASSIFIED EXCAVATION		7236	CU. YD.
	SP & 210	COMPACTED EMBANKMENT		8677	CU. YD.
	SP & 210	SOIL STABILIZATION		50	TON
	SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)		5208	TON
	SP, SS, & 309	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS)		56	SQ. YD.
	SP, SS, & 309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)		49	SQ. YD.
	SS & 401	TACK COAT		6548	GAL.
	SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		2185	TON
	SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")		58	TON
	SP, SS, & 405	ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2")		27	TON
	SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		1473	TON
	SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		38	TON
	SP, SS, & 406	ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1")		25	TON
	SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		6193	TON
	SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		10	TON
	SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		198	TON
	SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		146	TON
	SP & 412	COLD MILLING ASPHALT PAVEMENT		2375	SQ. YD.
	SP, SS, & 505	PORTLAND CEMENT CONCRETE DRIVEWAY		1467.89	SQ. YD.
	601	MOBILIZATION		1.00	LUMP SUM
	SP & 602	FURNISHING FIELD OFFICE		1	EACH
	SP, SS, & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
	SS & 604	SIGNS		397	SQ. FT.
	SS & 604	TRAFFIC DRUMS		229	EACH
	604	CONSTRUCTION PAVEMENT MARKINGS		26975	LIN. FT.
	604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)		6	EACH
	604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)		11	EACH
	SS & 604	VERTICAL PANELS		10	EACH
	SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)		617	SQ. YD.
*	SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	576	LIN. FT.
	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		8	LIN. FT.
*	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	832	LIN. FT.
	SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		20	LIN. FT.
*	SS & 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	576	LIN. FT.
*	SS & 606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	832	LIN. FT.
*	SP, SS, & 606	18" POLYPROPYLENE PIPE	(ALTERNATE NO. 3)	576	LIN. FT.
*	SP, SS, & 606	18" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 4)	576	LIN. FT.
*	SP, SS, & 606	18" PVC PIPE	(ALTERNATE NO. 5)	576	LIN. FT.
*	SS & 606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	7	EACH
*	SS & 606	18" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	7	EACH
*	SS & 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	3	EACH
*	SS & 606	24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	3	EACH
	SS & 606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		1	EACH
	SP, SS, & 606	24" SIDE DRAIN		76	LIN. FT.
	SS & 606	SELECTED PIPE BEDDING		120	CU. YD.
	SS & 609	DROP INLETS (TYPE MO)		12	EACH
	SS & 609	DROP INLETS (TYPE ST)		4	EACH
	SS & 609	JUNCTION BOXES (TYPE ST)		1	EACH
	SS & 609	DROP INLET EXTENSIONS (4')		4	EACH
	SS & 609	DROP INLET EXTENSIONS (8')		3	EACH

* DENOTES ALTERNATE BID ITEMS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

SUMMARY OF QUANTITIES (BOX 2 OF 3)

ITEM NUMBER	ITEM	QUANTITY	UNIT
SS & 615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	53	TON
SS & 617	GUARDRAIL (TYPE A)	300	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	4	EACH
620	LIME	6	TON
620	SEEDING	2.87	ACRE
SS & 620	MULCH COVER	5.74	ACRE
620	WATER	357.3	M. GAL.
621	TEMPORARY SEEDING	2.87	ACRE
621	SILT FENCE	5310	LIN. FT.
621	SAND BAG DITCH CHECKS	858	BAG
621	SEDIMENT REMOVAL AND DISPOSAL	280	CU. YD.
621	ROCK DITCH CHECKS	102	CU. YD.
SS & 621	FILTER SOCK (12")	276	LIN. FT.
623	SECOND SEEDING APPLICATION	2.87	ACRE
624	SOLID SODDING	476	SQ. YD.
SP, SS, & 632	CONCRETE ISLAND	295	SQ. YD.
SP, SS, & 633	CONCRETE WALKS	1031	SQ. YD.
SS & 633	HAND RAILING	573	LIN. FT.
SS & 634	CONCRETE CURB (TYPE B)	500	LIN. FT.
SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	2798	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	2	EACH
SS & 637	MAILBOX SUPPORTS (DOUBLE)	1	EACH
SP, SS, & 641	WHEELCHAIR RAMPS (TYPE 1)	77	SQ. YD.
SP, SS, & 641	WHEELCHAIR RAMPS (TYPE 2)	11	SQ. YD.
SP, SS, & 641	WHEELCHAIR RAMPS (TYPE 3)	33	SQ. YD.
SP, SS, & 641	WHEELCHAIR RAMPS (TYPE 4)	47	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	2	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	2	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)	225	LIN. FT.
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	1	EACH
SP	LOCAL RADIO WITH ANTENNA RELOCATION	1	EACH
SP	BATTERY BACKUP SYSTEM	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	23	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
SP & 707	CENTRAL CONTROL UNIT	1	EACH
SP & 707	POLE MOUNTED ASSEMBLY	8	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.)	1536	LIN. FT.
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2725	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	1810	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	167	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	756	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	828	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	378	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	130	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1067	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	60	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	66	LIN. FT.
710	NON-METALLIC CONDUIT (2")	200	LIN. FT.
710	NON-METALLIC CONDUIT (3")	732	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 3)	2	EACH
SS & 711	CONCRETE PULL BOX (TYPE 1 HD)	1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	5	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	1	EACH
SS & 713	SPAN WIRE ASSEMBLY	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	1	EACH

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 06/23/25

SUMMARY OF QUANTITIES (BOX 3 OF 3)

ITEM NUMBER	ITEM	QUANTITY	UNIT
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (60')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (64')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (70')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	3	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
716	TREATED WOOD POLE (CLASS 2, 45')	4	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (12")	464	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (12")	247	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	11479	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	1796	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	11436	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (12")	85	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	26	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	28	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	187	EACH
SP	18" STREET NAME SIGN	4	EACH
SP & 733	VIDEO DETECTOR (IP)	6	EACH
SP & 733	HYBRID VIDEO/RADAR DETECTOR	2	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	2277	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	2	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	573	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	271.17	CU. YD.
SP	ARCHITECTURAL FINISH	3325	SQ. FT.
SP	TEXTURED COATING FINISH	1094	SQ. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	27157	POUND

REVISIONS

DATE	REVISION	SHEET NUMBER
06-23-2025	REVISED "UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY", "CLASS S CONCRETE-ROADWAY", AND "REINFORCING STEEL-ROADWAY (GRADE 60)" QUANTITIES. REVISED NOTE ON SHEET 44.	35, 44

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

SURVEY CONTROL COORDINATES

Project Name: s100879
Date: 8/3/2017
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, 160012-160040A
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	537850.3624	1691190.6392	413.028	CTL	STD AHTD MON. STAMPED PN: 1
2	538386.1899	1691340.6149	405.091	CTL	STD AHTD MON. STAMPED PN: 2
3	538917.0823	1691476.4328	383.821	CTL	STD AHTD MON. STAMPED PN: 3
4	539502.7285	1691760.4222	378.219	CTL	STD AHTD MON. STAMPED PN: 4
5	539717.5906	1692099.0623	372.046	CTL	STD AHTD MON. STAMPED PN: 5
6	539149.1990	1692908.2029	338.306	CTL	STD AHTD MON. STAMPED PN: 6
7	539116.2098	1692012.7677	372.339	CTL	STD AHTD MON. STAMPED PN: 7
8	539552.2716	1691226.5285	378.893	CTL	STD AHTD MON. STAMPED PN: 8
9	539985.8746	1690947.2564	370.486	CTL	STD AHTD MON. STAMPED PN: 9
10	538879.7610	1694422.1534	322.902	CTL	STD AHTD MON. STAMPED PN: 10
11	538974.7191	1693769.1329	318.960	CTL	STD AHTD MON. STAMPED PN: 11
100	539250.4704	1691464.1300	387.703	GPS	AHTD GPS MON 160012
101	545421.5091	1704353.6964	282.610	GPS	AHTD GPS MON 160040A
990	538920.7026	1698283.2945	305.700	BM	NGS BM M330
991	539475.5847	1691855.5754	382.316	BM	NGS BM N330
992	538291.0527	1698005.7595	275.871	BM	NGS BM SCRAPE
999	538935.6442	1695586.3301	296.624	TBM	SQ. CUT IN TOP OF RCP

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999349540 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s100879gi.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

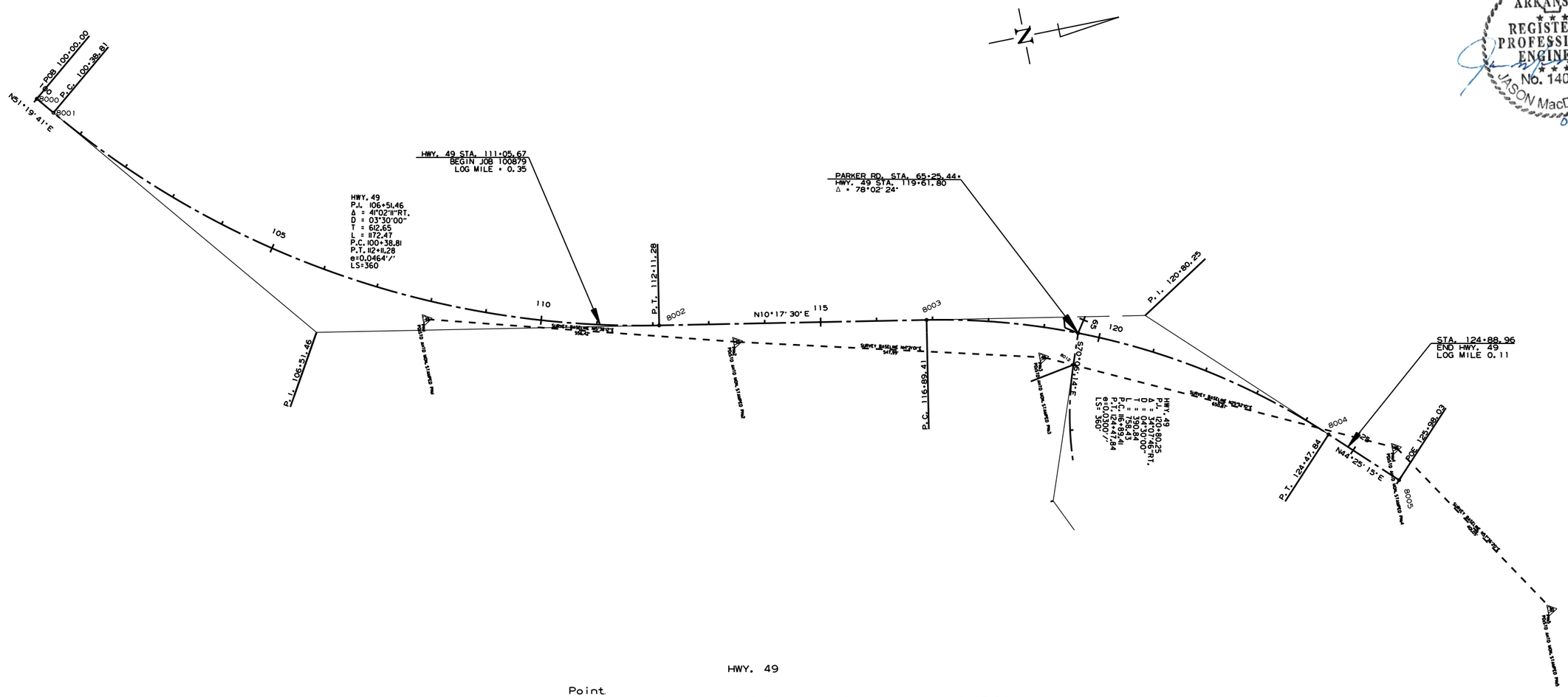
REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL
IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 160012-160040A
CONVERGENCE ANGLE: 00-44-42 RIGHT AT PN: 5 LT: 35-48-33N LG: 90-43-10W
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	37	97

SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25



HWY. 49

Point Name	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	537244.2504	1690665.5161
8001	PC	100+38.81	537268.5019	1690695.8175
8002	PT	112+11.28	538254.1194	1691283.5936
8003	PC	116+89.41	538724.5494	1691369.0140
8004	PT	124+47.84	539388.2458	1691712.3988
8005	POE	125+98.03	539495.5149	1691817.5211

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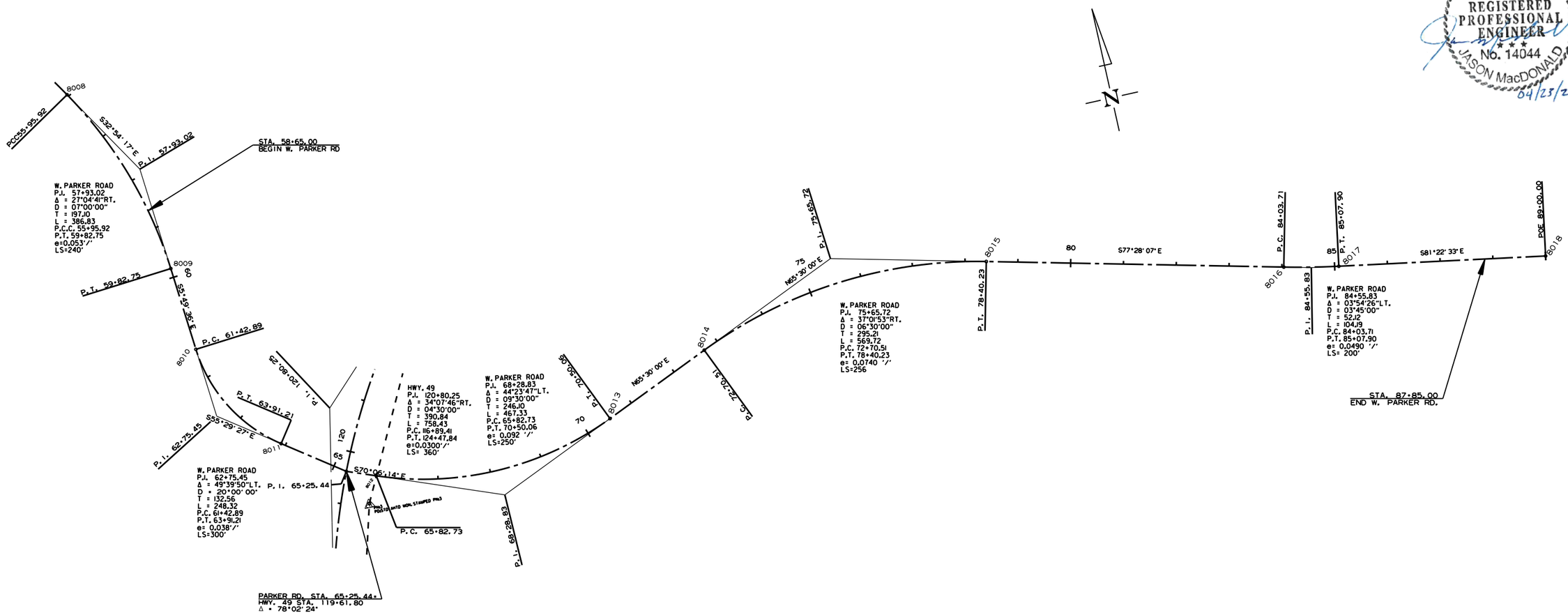
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	38	97

SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25



PARKER ROAD

Point Name	TYPE	STATION	NORTHING	EASTING
8006	POB	50+00.00	540228.7585	1690669.7973
8007	PC	51+91.13	540098.5868	1690809.7440
8008	PCC	55+95.92	539789.2357	1691069.2159
8009	PT	59+82.75	539427.6806	1691196.2968
8010	PC	61+42.89	539268.3696	1691212.5543
8011	PT	63+91.21	539061.3845	1691335.2519
8012	PC	65+82.73	538965.8386	1691499.7351
8013	PT	70+50.06	538984.1426	1691955.0907
8014	PC	72+70.51	539075.5645	1692155.6984
8015	PT	78+40.23	539133.9315	1692712.4964
8016	PC	84+03.71	539011.6704	1693262.5525
8017	PT	85+07.90	538992.5467	1693364.9590
8018	POE	89+00.00	538933.7519	1693752.6210

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	39	97
		PLAN AND PROFILE SHEETS				

STA. 114+45 LT. IN PLACE DROP INLET
REMOVE AND CONSTRUCT
DROP INLET 29.00' LT.
WITH 8' EXTENSION AND CONNECT TO
EXIST. 18" R.C. PIPE INLET AND
EXIST. 24" R.C. PIPE OUTLET
DROP INLET H= 5'-2"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"

STA. 112+82 CONSTRUCT
APPROACH ON LT. = 10 CU. YD. EXC.

STA. 113+50 CONSTRUCT
APPROACH ON LT. = 10 CU. YD. EXC.

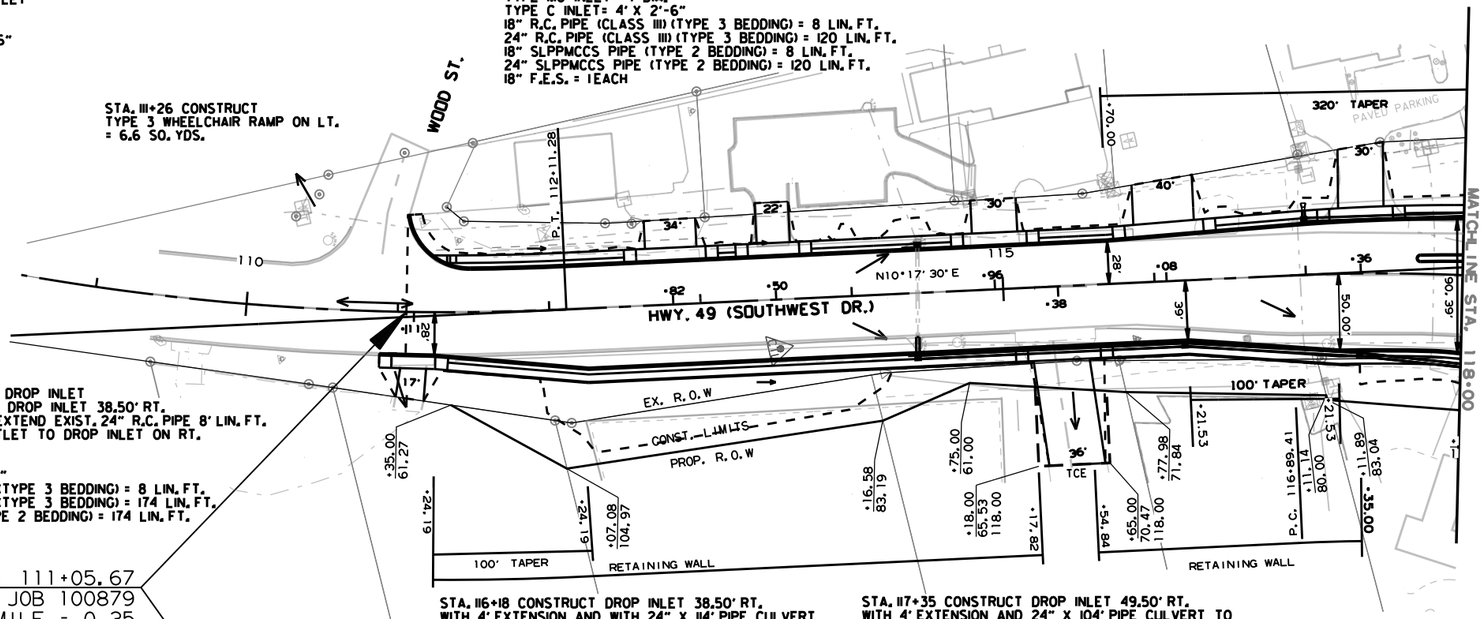
STA. 117+00 CONSTRUCT DROP INLET 47.87' LT.
WITH 18" X 8' PIPE CULVERT FROM F.E.S. ON LT
AND 24" X 120' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 118+77 LT.
DROP INLET H= 5'-3"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 8 LIN. FT.
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 120 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 8 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 120 LIN. FT.
18" F.E.S. = 1EACH

STA. 114+96 CONSTRUCT
APPROACH ON LT. = 10 CU. YD. EXC.

STA. 116+08 CONSTRUCT
APPROACH ON LT. = 10 CU. YD. EXC.

STA. 117+36 CONSTRUCT
APPROACH ON LT. = 15 CU. YD. EXC.

STA. 111+26 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 6.6 SQ. YDS.



HWY. 49
P.I. 106+51.46
Δ = 41°02'11"RT.
D = 03°30'00"
T = 612.65
L = 1172.47
P.C. 100+38.81
P.T. 112+11.28
e=0.0464'/'
LS=360

HWY. 49
P.I. 120+80.25
Δ = 34°07'46"RT.
D = 04°30'00"
T = 390.84
L = 758.43
P.C. 116+89.41
P.T. 124+47.84
e=0.0300'/'
LS= 360'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
04/23/25

STA. 114+42 RT. IN PLACE DROP INLET
REMOVE AND CONSTRUCT DROP INLET 38.50' RT.
WITH 4' EXTENSION AND EXTEND EXIST. 24" R.C. PIPE 8' LIN. FT.
WITH 24" X 174' PIPE OUTLET TO DROP INLET ON RT.
DROP INLET H= 5'-8"
TYPE MO INLET= 6' DIA.
TYPE C INLET= 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 8 LIN. FT.
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 174 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 174 LIN. FT.

HWY. 49 STA. 111+05.67
BEGIN JOB 100879
LOG MILE = 0.35

STA. 111+11 CONSTRUCT
APPROACH ON RT. = 5 CU. YD. EMB.

STA. 116+18 CONSTRUCT DROP INLET 38.50' RT.
WITH 4' EXTENSION AND WITH 24" X 114' PIPE CULVERT
TO DROP INLET ON RT.
DROP INLET H= 5'-10"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 114 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 114 LIN. FT.

STA. 117+35 CONSTRUCT DROP INLET 49.50' RT.
WITH 4' EXTENSION AND 24" X 104' PIPE CULVERT TO
DROP INLET ON RT.
DROP INLET H= 5'-10"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 104 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 104 LIN. FT.

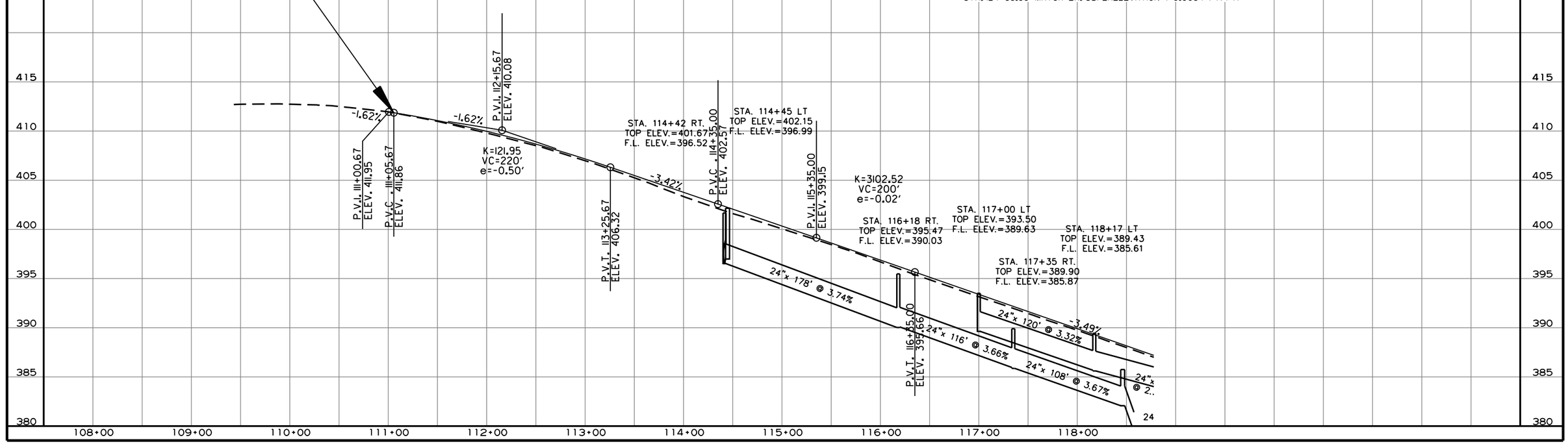
STA. 115+38 CONSTRUCT
APPROACH ON RT. = 120 CU. YD. EMB.

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

HWY. 49

SUPERELEVATION REVOLVES AROUND CENTERLINE
STA. 111+05.67 MATCH EXISTING SUPERELEVATION (0.0500 FT/FT)
STA. 114+56.91 END SUPERELEVATION TRANSITION

SUPERELEVATION REVOLVES AROUND CENTERLINE
STA. 114+56.91 BEGIN SUPERELEVATION TRANSITION
STA. 117+66.91 MAX SUPERELEVATION (0.0530 FT/FT)
STA. 119+00.00 MAX SUPERELEVATION (0.0530 FT/FT)
STA. 119+55.21 MAX SUPERELEVATION (0.0400 FT/FT)
STA. 123+26.42 MAX SUPERELEVATION (0.0400 FT/FT)
STA. 124+88.96 MATCH EX. SUPERELEVATION (-0.0084 FT/FT)



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R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	40	97
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

STA. 118+17 CONSTRUCT DROP INLET 50.20' LT.
WITH 18" X 8' PIPE CULVERT TO F.E.S. ON LT
AND 24" X 98' PIPE CULVERT TO DROP INLET ON LT.
DROP INLET H= 5'-4"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 98 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 98 LIN. FT.
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 8 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 8 LIN. FT.
18" F.E.S. = 1EACH

STA. 118+63 CONSTRUCT
APPROACH ON LT. = 15 CU. YD. EXC.

STA. 119+10 CONSTRUCT
TYPE 1 WHEELCHAIR RAMP ON LT.
= 76.5 SQ. YDS.

STA. 119+99 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT.
= 4.8 SQ. YDS.

STA. 120+04 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT.
= 5.6 SQ. YDS.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ.YD.
121+07	122+12	LT.	6'-9"	79

STA. 120+10 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT.
= 4.8 SQ. YDS.

STA. 120+30 CONSTRUCT
TYPE 2 WHEELCHAIR RAMP ON LT.
= 3.6 SQ. YDS.

STA. 120+74 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 5.9 SQ. YDS.

STA. 120+37 CONSTRUCT DROP INLET 76.55' LT.
WITH 8' EXTENSION AND 24" X 42' PIPE
CULVERT TO DROP INLET ON LT.
DROP INLET H= 5'-3"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 42 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 42 LIN. FT.

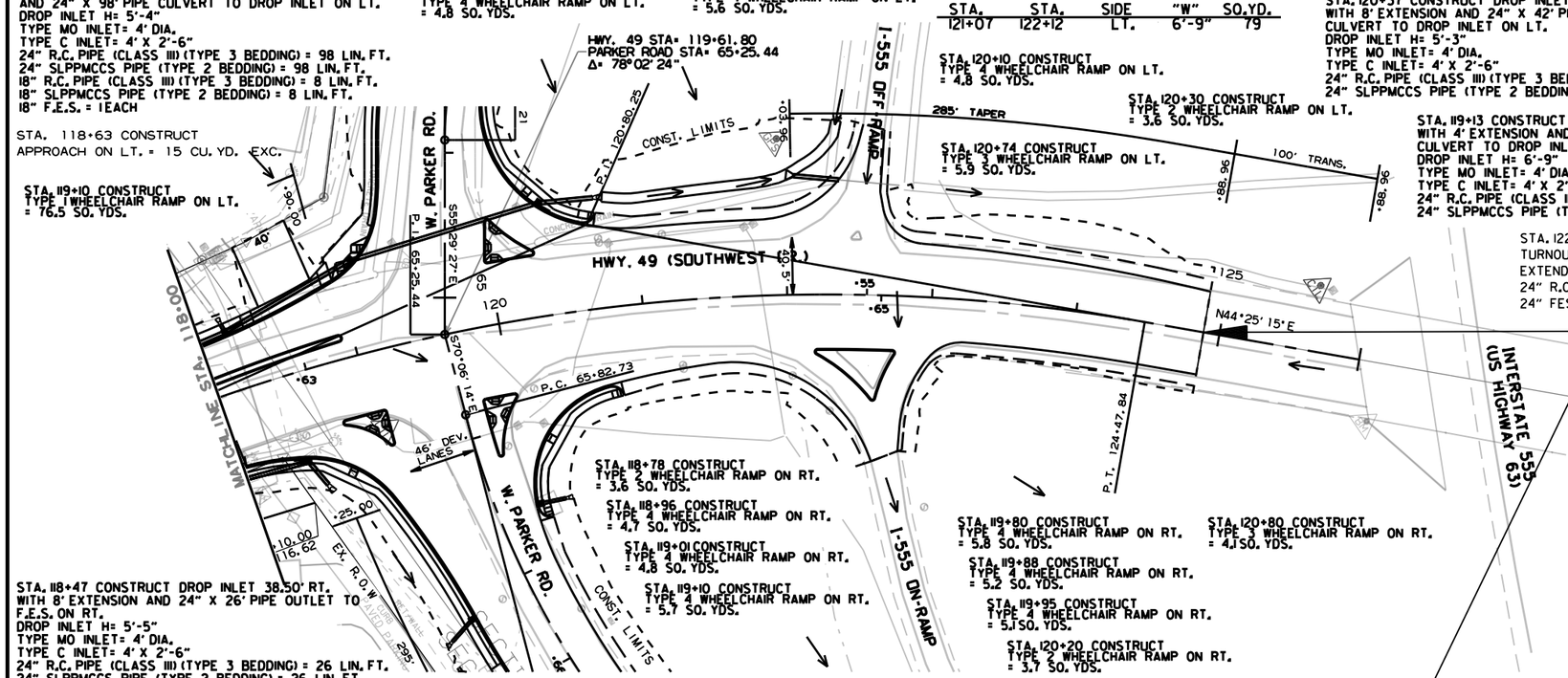
STA. 119+13 CONSTRUCT DROP INLET 62.92' LT.
WITH 4' EXTENSION AND 24" X 132' PIPE
CULVERT TO DROP INLET ON LT.
DROP INLET H= 6'-9"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 132 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 132 LIN. FT.

STA. 122+55 WIDEN
TURNOUT ON LT.= 50 CU.YD. EMB.
EXTEND 24" R.C. PIPE CULVERT
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 34 LIN. FT.
24" FES= 1EA.

STA. 124+88.96
END HWY. 49
LOG MILE 0.11

HWY. 49
P.I. 120+80.25
Δ = 34°07'46"RT.
D = 04°30'00"
T = 390.84
L = 758.43
P.C. 116+89.41
P.T. 124+47.84
e=0.053'/'
LS= 310'

STA. 122+65 WIDEN
TURNOUT ON RT.= 10 CU.YD. EMB.



STA. 118+78 CONSTRUCT
TYPE 2 WHEELCHAIR RAMP ON RT.
= 3.6 SQ. YDS.

STA. 118+96 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT.
= 4.7 SQ. YDS.

STA. 119+01 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT.
= 4.8 SQ. YDS.

STA. 119+10 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT.
= 5.7 SQ. YDS.

STA. 119+80 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT.
= 5.8 SQ. YDS.

STA. 119+88 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT.
= 5.2 SQ. YDS.

STA. 119+95 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT.
= 5.1 SQ. YDS.

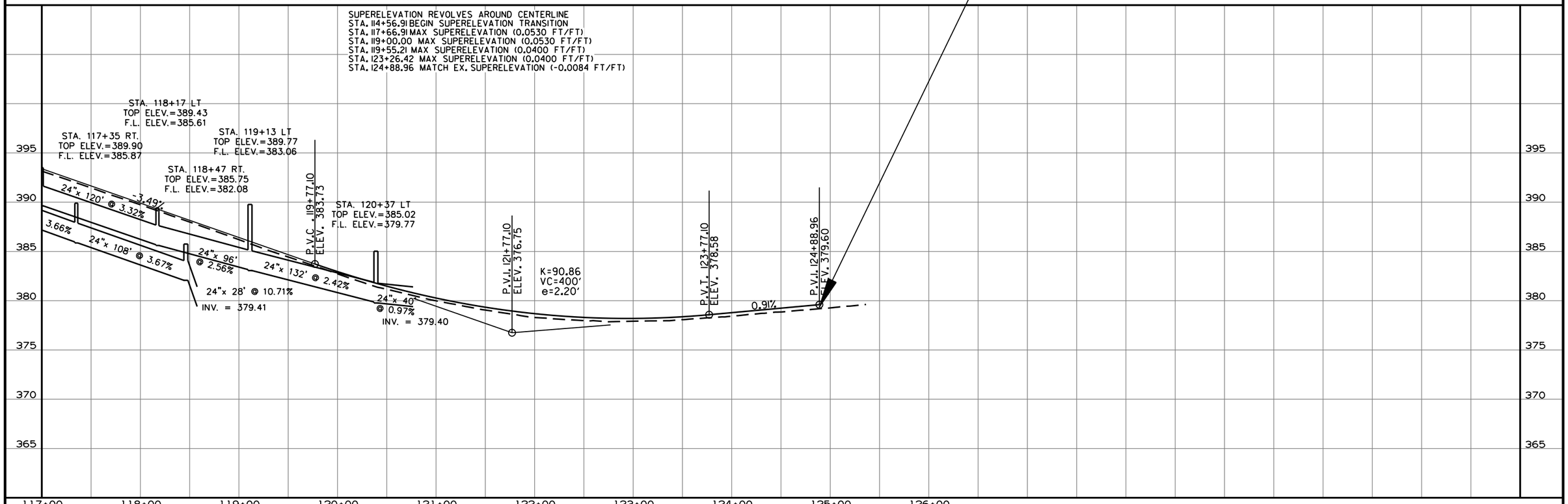
STA. 120+20 CONSTRUCT
TYPE 2 WHEELCHAIR RAMP ON RT.
= 3.7 SQ. YDS.

STA. 120+80 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 4.1 SQ. YDS.

STA. 118+47 CONSTRUCT DROP INLET 38.50' RT.
WITH 8' EXTENSION AND 24" X 26' PIPE OUTLET TO
F.E.S. ON RT.
DROP INLET H= 5'-5"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 26 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 26 LIN. FT.

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

SUPERELEVATION REVOLVES AROUND CENTERLINE
STA. 114+56.91 BEGIN SUPERELEVATION TRANSITION
STA. 117+66.91 MAX SUPERELEVATION (0.0530 FT/FT)
STA. 119+00.00 MAX SUPERELEVATION (0.0530 FT/FT)
STA. 119+55.21 MAX SUPERELEVATION (0.0400 FT/FT)
STA. 123+26.42 MAX SUPERELEVATION (0.0400 FT/FT)
STA. 124+88.96 MATCH EX. SUPERELEVATION (-0.0084 FT/FT)



HWY. 49

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	41	97
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

CONCRETE DITCH PAVING (TYPE B)

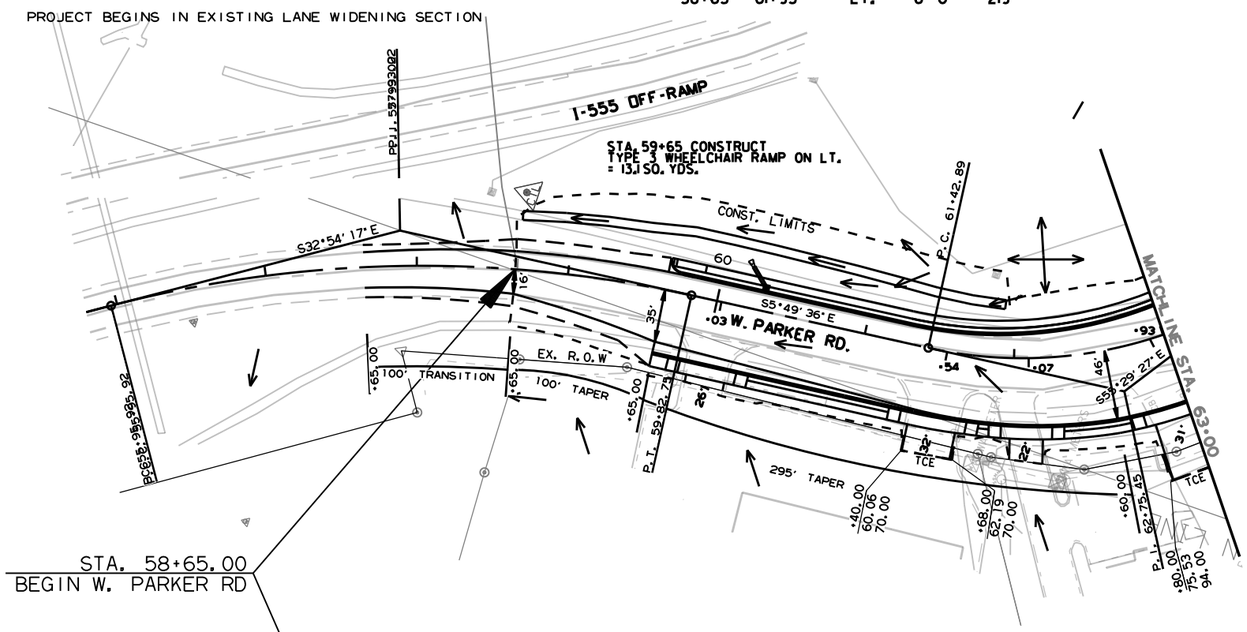
STA.	STA.	SIDE	"W"	SQ.YD.
58+65	61+93	LT.	6'-0"	219

STA. 60+30 CONSTRUCT DROP INLET 13.00' LT.
WITH 18" X 18' PIPE OUTLET TO F.E.S. ON LT.
DROP INLET H= 4'-5"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 18 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 18 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 18 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 18 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 18 LIN. FT.

W. PARKER ROAD
P.I. 57+93.02
Δ = 27°04'41"RT.
D = 07°00'00"
T = 197.10
L = 386.83
P.C.C. 55+95.92
P.T. 59+82.75
e=0.053'/'
LS=240'

W. PARKER ROAD
P.I. 62+75.45
Δ = 49°39'50"LT.
D = 20°00'00"
T = 132.56
L = 248.32
P.C. 61+42.89
P.T. 63+91.21
e= 0.038'/'
LS=300'

NOTE: CURVE APPROACHES SIGNALIZED INTERSECTION



STA. 60+03 CONSTRUCT
APPROACH ON RT. = 5 CU. YD. EMB.

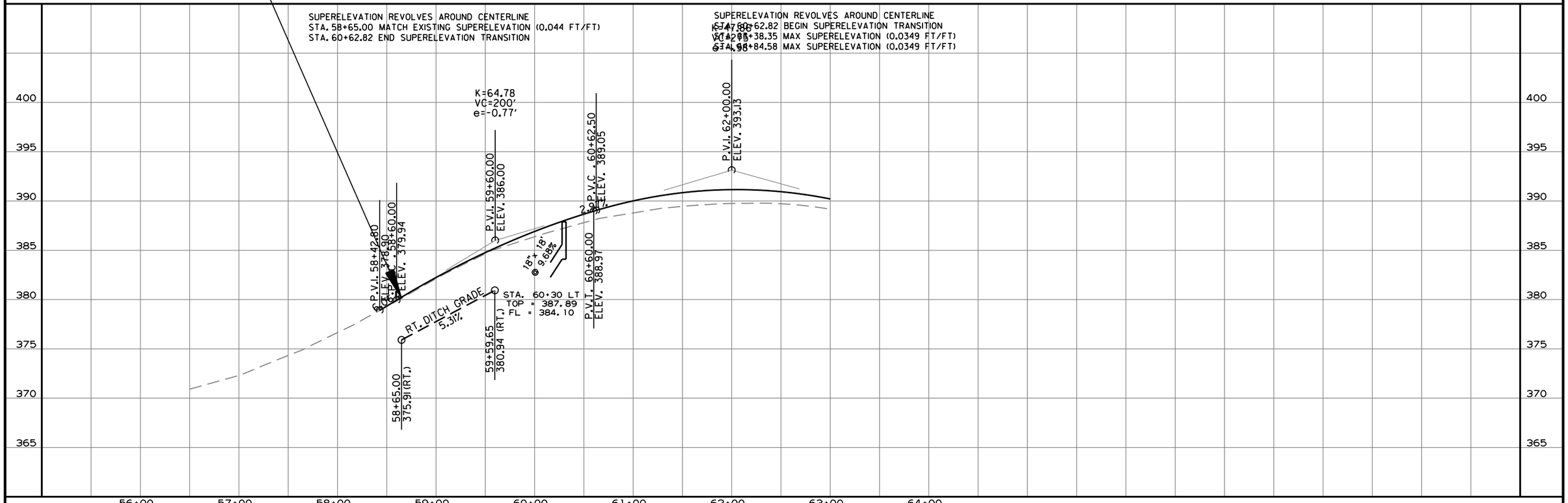
STA. 61+54 CONSTRUCT
APPROACH ON RT. = 15 CU. YD. EMB.

STA. 62+07 CONSTRUCT
APPROACH ON RT. = 10 CU. YD. EXC.

STA. 62+93 CONSTRUCT
APPROACH ON RT. = 65 CU. YD. EXC.

PARKER ROAD

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



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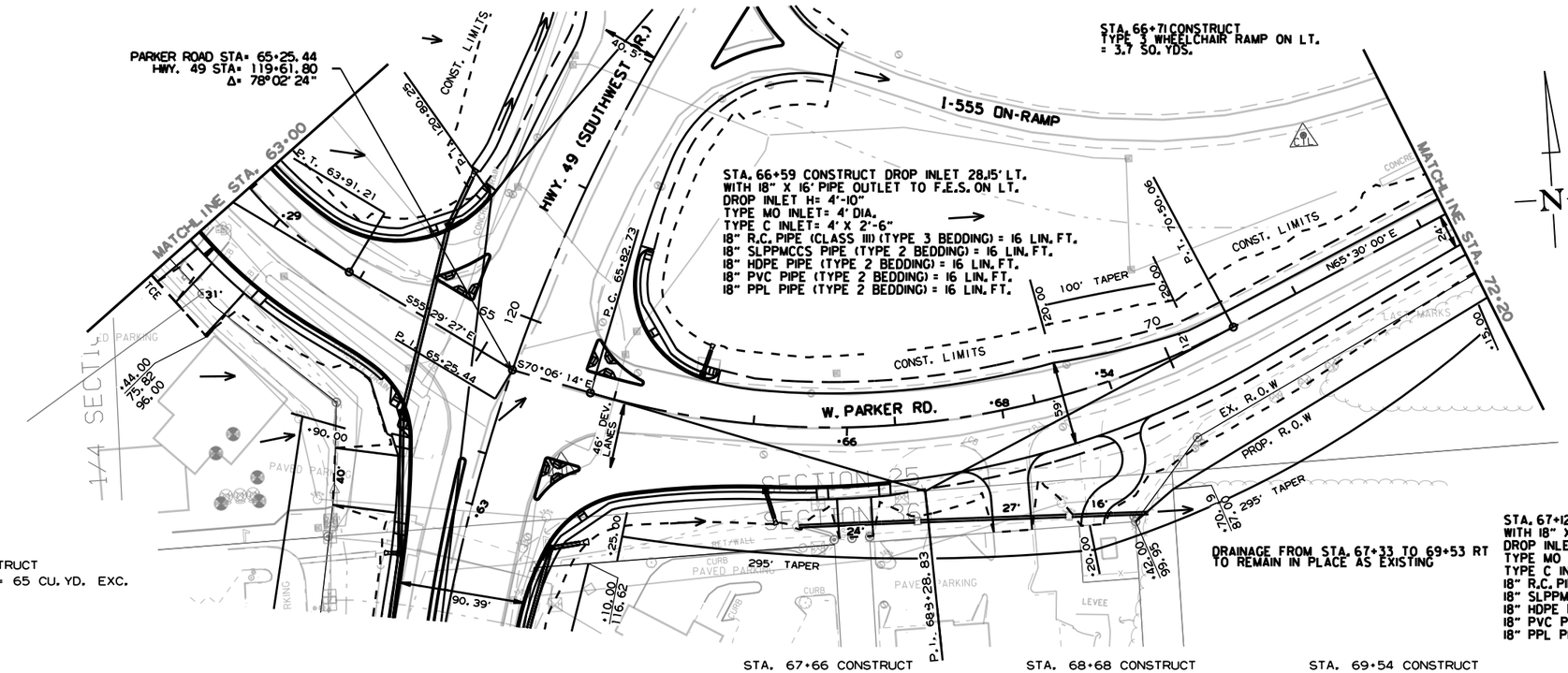
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	42	97
		PLAN AND PROFILE SHEETS				



W. PARKER ROAD
P.I. 62+75.45
Δ = 49°39'50"LT.
D = 20°00'00"
T = 132.56
L = 248.32
P.C. 61+42.89
P.T. 63+91.21
e= 0.038 '/'
LS=300'

NOTE: CURVE APPROACHES SIGNALIZED INTERSECTION

W. PARKER ROAD
P.I. 68+28.83
Δ = 44°23'47"LT.
D = 09°30'00"
T = 246.10
L = 467.33
P.C. 65+82.73
P.T. 70+50.06
e= 0.042 '/'
LS=176'

STA. 63+29 CONSTRUCT
APPROACH ON RT. = 65 CU. YD. EXC.

DRAINAGE FROM STA. 67+33 TO 69+53 RT TO REMAIN IN PLACE AS EXISTING

STA. 67+12 CONSTRUCT DROP INLET 43.79' RT.
WITH 18" X 22' PIPE OUTLET TO F.E.S. ON RT.
DROP INLET H= 4'-5"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 22 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 22 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 22 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 22 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 22 LIN. FT.

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JASON MacDONALD
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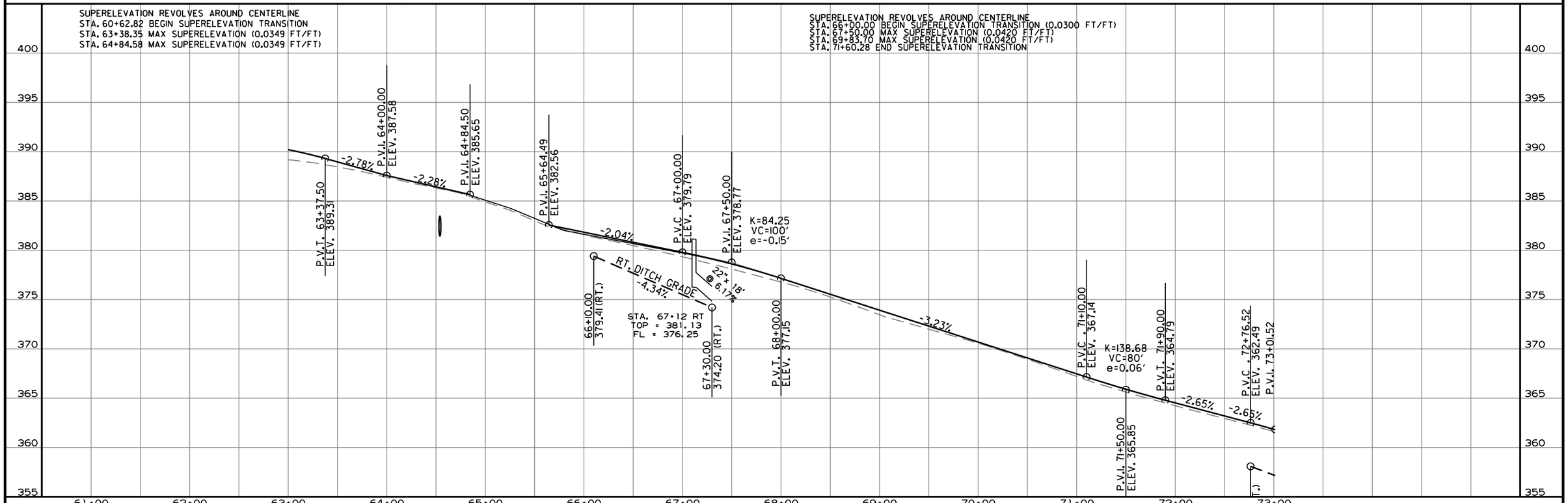
STA. 67+66 CONSTRUCT
APPROACH ON RT. = 5 CU. YD. EMB.

STA. 68+68 CONSTRUCT
APPROACH ON RT. = 5 CU. YD. EMB.

STA. 69+54 CONSTRUCT
APPROACH ON RT. = 10 CU. YD. EMB.

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

PARKER ROAD



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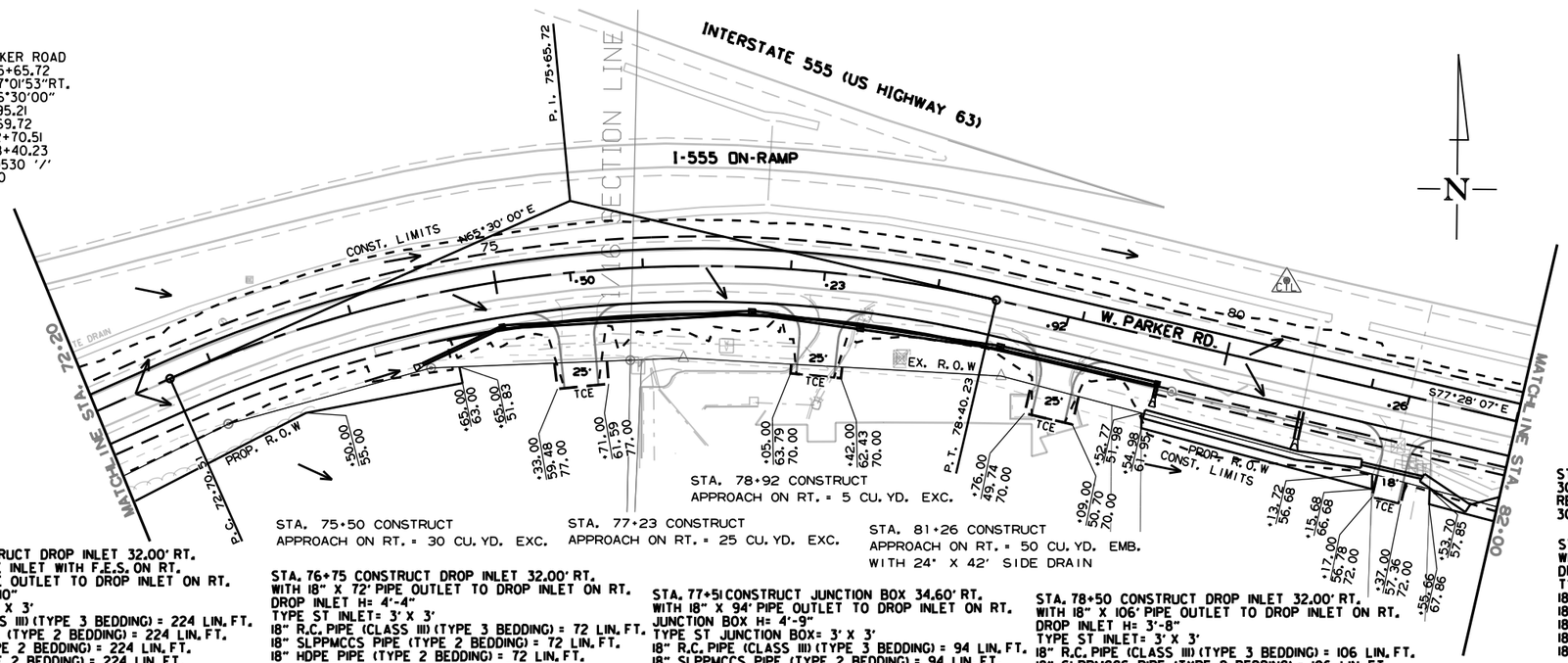
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	43	97
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14044 JASON MacDONALD 04/23/25

W. PARKER ROAD
P.I. 75+65.72
Δ = 37°01'53"RT.
D = 06°30'00"
T = 295.21
L = 569.72
P.C. 72+70.51
P.T. 78+40.23
e= 0.0530 '/'
LS=200



STA. 75+50 CONSTRUCT
APPROACH ON RT. = 30 CU. YD. EXC.

STA. 77+23 CONSTRUCT
APPROACH ON RT. = 25 CU. YD. EXC.

STA. 78+92 CONSTRUCT
APPROACH ON RT. = 5 CU. YD. EXC.

STA. 81+26 CONSTRUCT
APPROACH ON RT. = 50 CU. YD. EMB.
WITH 24' X 42' SIDE DRAIN

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ.YD.
79+55	81+05	RT.	6'-0"	100
81+47	81+82	RT.	6'-0"	24

STA. 80+58 IN PLACE
30" X 58' R.C. PIPE CULVERT
RETAIN AND EXTEND 20' TO F.E.S. ON RT.
30" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 20 LIN. FT.

STA. 75+00 CONSTRUCT DROP INLET 32.00' RT.
WITH 18" X 58' PIPE INLET WITH F.E.S. ON RT.
AND 18" X 166' PIPE OUTLET TO DROP INLET ON RT.
DROP INLET H= 3'-10"
TYPE ST INLET= 3' X 3'
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 224 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 224 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 224 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 224 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 224 LIN. FT.

STA. 76+75 CONSTRUCT DROP INLET 32.00' RT.
WITH 18" X 72' PIPE OUTLET TO DROP INLET ON RT.
DROP INLET H= 4'-4"
TYPE ST INLET= 3' X 3'
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 72 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 72 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 72 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 72 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 72 LIN. FT.

STA. 77+51 CONSTRUCT JUNCTION BOX 34.60' RT.
WITH 18" X 94' PIPE OUTLET TO DROP INLET ON RT.
JUNCTION BOX H= 4'-9"
TYPE ST JUNCTION BOX= 3' X 3'
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 94 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 94 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 94 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 94 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 94 LIN. FT.

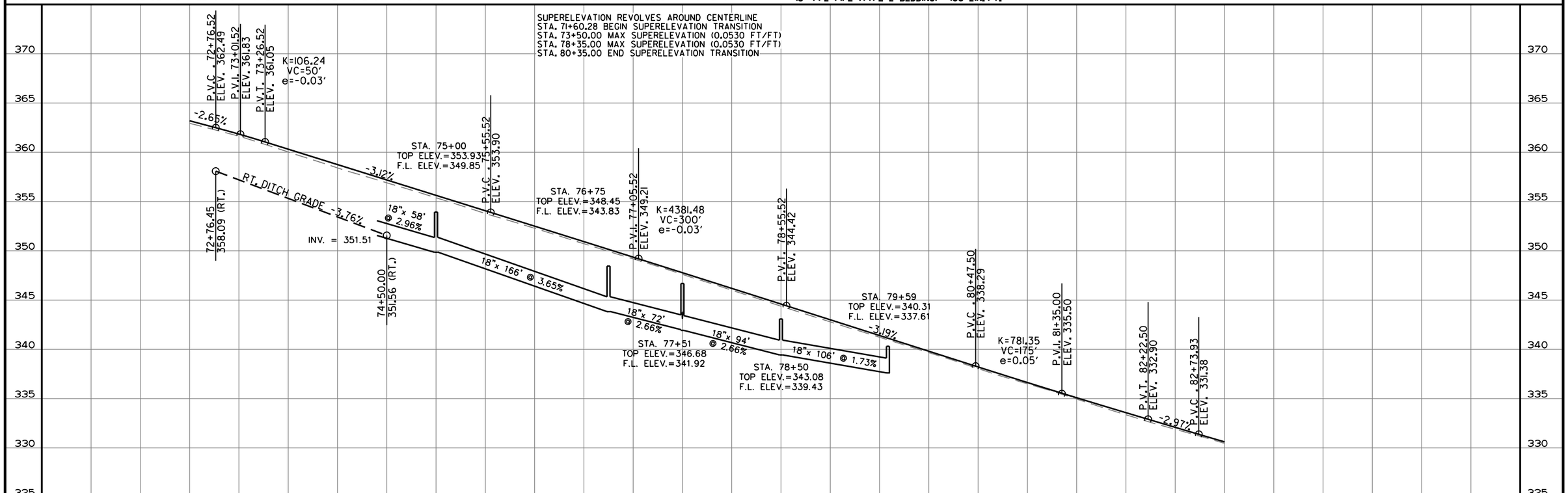
STA. 78+50 CONSTRUCT DROP INLET 32.00' RT.
WITH 18" X 106' PIPE OUTLET TO DROP INLET ON RT.
DROP INLET H= 3'-8"
TYPE ST INLET= 3' X 3'
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 106 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 106 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 106 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 106 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 106 LIN. FT.

STA. 79+59 CONSTRUCT DROP INLET 32.00' RT.
WITH 18" X 8' PIPE OUTLET TO F.E.S. ON RT.
DROP INLET H= 2'-10"
TYPE ST INLET= 3' X 3'
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 8 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 8 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 8 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 8 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 8 LIN. FT.

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

PARKER ROAD

SUPERELEVATION REVOLVES AROUND CENTERLINE
STA. 71+60.28 BEGIN SUPERELEVATION TRANSITION
STA. 73+50.00 MAX SUPERELEVATION (0.0530 FT/FT)
STA. 78+35.00 MAX SUPERELEVATION (0.0530 FT/FT)
STA. 80+35.00 END SUPERELEVATION TRANSITION



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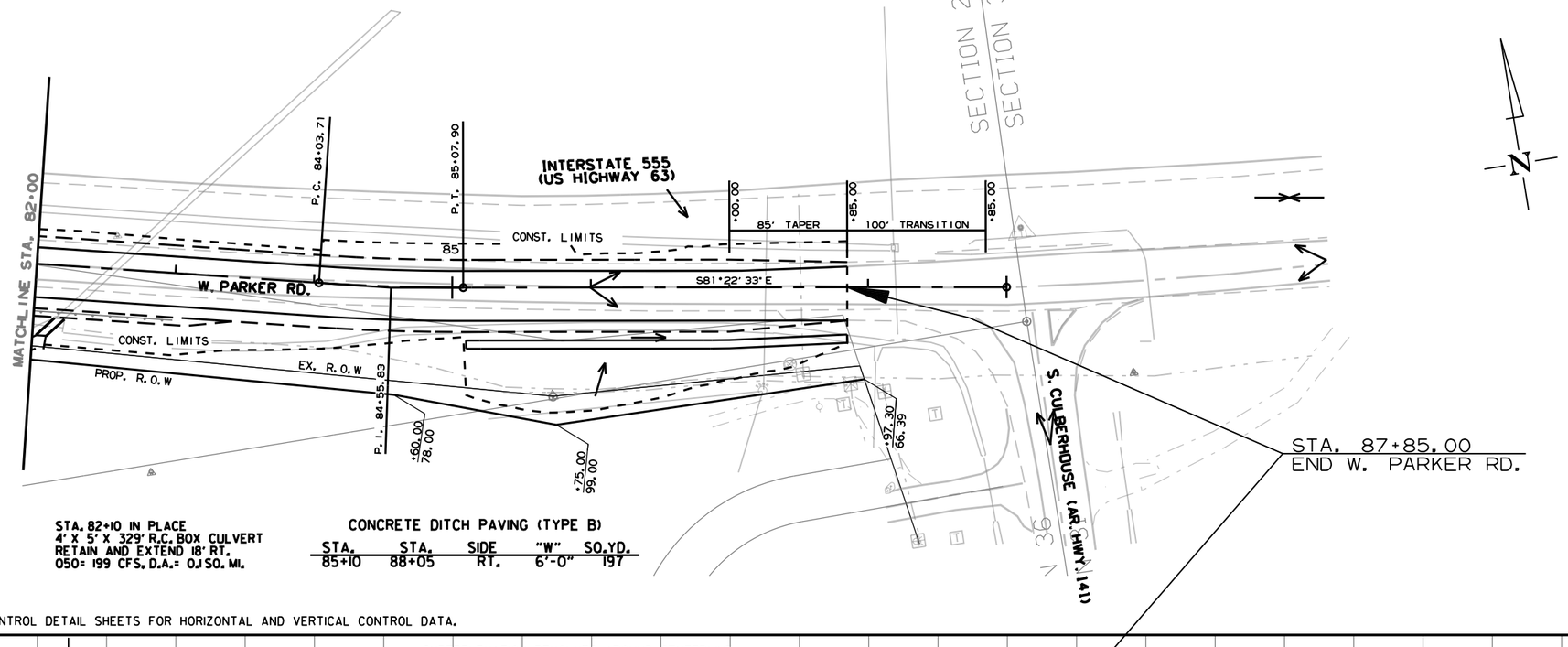
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06-23-25		6	ARK.	100879	44	97
		PLAN AND PROFILE SHEETS				



W. PARKER ROAD
P.I. 84+55.83
Δ = 03°54'26"LT.
D = 03°45'00"
T = 52.12
L = 104.19
P.C. 84+03.71
P.T. 85+07.90
e= 0.0200 '/'
LS= 200'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14044
JASON MacDONALD
06/23/25

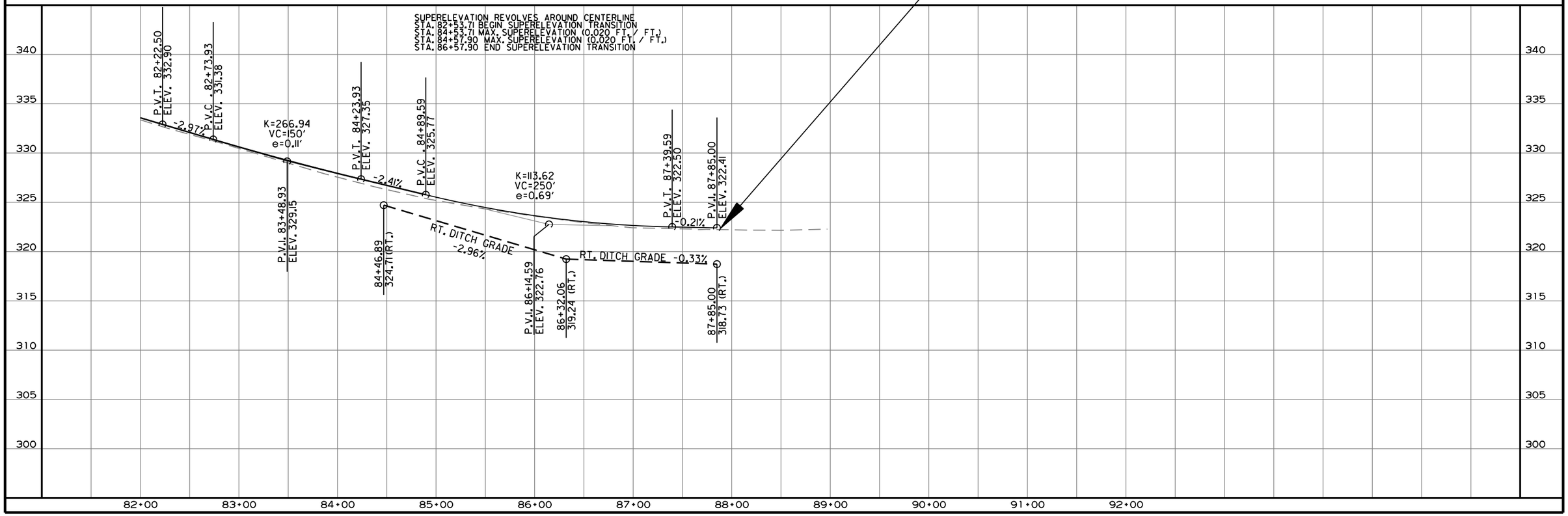
STA. 82+10 IN PLACE
4' X 5' X 329' R.C. BOX CULVERT
RETAIN AND EXTEND 18' RT.
Q50= 199 CFS, D.A.= 0.1 SQ. MI.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ.YD.
85+10	88+05	RT.	6'-0"	197

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

PARKER ROAD



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STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	2	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	2	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)	225	LIN. FT.
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	1	EACH
SP	LOCAL RADIO WITH ANTENNA RELOCATION	1	EACH
SP	BATTERY BACKUP SYSTEM	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	23	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
SP & 707	CENTRAL CONTROL UNIT	1	EACH
SP & 707	POLE MOUNTED ASSEMBLY	8	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.)	1536	LIN. FT.
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2725	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	1810	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	167	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	756	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	828	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	378	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	130	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1067	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	60	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	66	LIN. FT.
710	NON-METALLIC CONDUIT (2")	200	LIN. FT.
710	NON-METALLIC CONDUIT (3")	732	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 3)	2	EACH
SS & 711	CONCRETE PULL BOX (TYPE 1 HD)	1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	5	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	1	EACH
SS & 713	SPAN WIRE ASSEMBLY	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (60')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (64')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (70')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	3	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
716	TREATED WOOD POLE (CLASS 2, 45')	4	EACH
SP	18" STREET NAME SIGN	4	EACH
SP & 733	VIDEO DETECTOR (IP)	6	EACH
SP & 733	HYBRID VIDEO/RADAR DETECTOR	2	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	2277	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	2	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	EACH

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25

TRAFFIC SIGNAL NOTES:

1. THE TRAFFIC SIGNAL SHALL NOT BE PUT INTO OPERATION OR SWITCHED TO THE NEXT CONSTRUCTION STAGE PRIOR TO THE FOLLOWING:

   A. ALL TRAFFIC SIGNAL EQUIPMENT HAS BEEN INSTALLED ACCORDING TO THE PLANS, SPECIAL PROVISIONS, AND PROPERLY FUNCTIONAL. THIS INCLUDES BUT NOT LIMITED TO: CABINETS, PULL BOXES, JUNCTION BOXES, POLES, MAST ARMS, FOUNDATIONS, LUMINAIRES, SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS, PUSH BUTTONS, DETECTION SYSTEM, CONDUITS, CONDUCTORS, CABLES, TRAFFIC CONTROLLER, CONFLICT MONITOR, COMMUNICATION SYSTEM, SERVICE POINT, AND RAILROAD INTERCONNECT SYSTEM.

   B. THE DETECTION SYSTEM SHALL BE INSTALLED, SETUP, AND CONFIGURED BY THE CONTRACTOR OR THEIR SUPPLIER PER PLANS. A TRAFFIC OPERATIONS INSPECTOR SHALL INSPECT AND PROVIDE APPROVAL IN ORDER TO PUT THE TRAFFIC SIGNAL INTO OPERATION.

   C. THE TRAFFIC CONTROLLER AND CONFLICT MONITOR SHALL BE PROGRAMMED TO OPERATE AS REQUIRED PER THE PLANS (PHASING DIAGRAM, INTERVAL CHART, AND ANY ADDITIONAL NOTES), SPECIAL PROVISIONS AND ARDOT SPECIFICATIONS.

   D. TIMING SETTINGS HAVE BEEN PROGRAMMED AND APPROVED AS REQUIRED BY TSMO DIVISION.

   E. THE TRAFFIC SIGNAL HAS BEEN INSPECTED AND APPROVED BY A TRAFFIC OPERATIONS INSPECTOR.

   F. ALL REQUIRED DOCUMENTS RELATED TO THE TRAFFIC SIGNAL EQUIPMENT, THIS INCLUDES BUT NOT LIMITED TO: TEST RESULTS, CONFIGURATION/DATA REPORTS, WARRANTIES, AND ANY OTHER DOCUMENTATION REQUIRED PER PLANS AND SPECIAL PROVISIONS.

2. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.

3. TRAFFIC SIGNAL CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.

4. THE CONTRACTOR SHALL PERFORM ALL WORK POSSIBLE THAT WILL MINIMIZE THE TIME THAT THE TRAFFIC SIGNAL IS OUT OF OPERATION. IF, IN THE OPINION OF THE ENGINEER, TRAFFIC CONDITIONS WARRANT, THE CONTRACTOR SHALL PROVIDE FLAGMEN TO DIRECT TRAFFIC WHILE THE TRAFFIC SIGNAL IS OUT OF OPERATION.

5. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (CURRENT EDITION) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.

6. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND E.G.C. TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.

7. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 A.W.G. USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S/ COUNTY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT, ARE NEEDED WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.

8. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.

9. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.

10. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.

11. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, STANDARD DRAWINGS, AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.

12. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.

13. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.

14. ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.

15. ONE VIDEO PROGRAMMNG MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.

16. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.

17. THE LOCAL RADIO WITH ANTENNA AND TRAFFIC SIGNAL CONTROLLER SHALL BE COMPATIBLE WITH THE EXISTING COORDINATION SYSTEM IN THE CITY/COUNTY.

18. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHOD OR AS DIRECTED BY THE ENGINEER. PVC OR HDPE CONDUIT SHALL BE USED AND SHALL BE UL LISTED. PVC CONDUIT SHALL BE MARKED "DIR. BORING" OR "DIRECTIONAL BORING" PER NEC. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED. THE ENGINEER SHALL GRANT A WRITTEN APPROVAL PRIOR TO USING THE TRENCHING METHOD.

19. ALL CONDUIT SHALL BE THREE (3") INCH DIAMETER UNLESS SPECIFIED ON PLANS. ALL CONDUIT UNDER THE ROADWAY, SIDEWALKS, AND DRIVEWAYS SHALL HAVE A MINIMUM DEPTH OF 24" FROM THE TOP OF THE CONDUIT TO THE FINISHED GRADE. CONDUIT DEPTH MAY NEED TO INCREASE NEAR DRAINAGE STRUCTURES.

20. CONDUIT BELL END FITTINGS SHALL BE INSTALLED ON ALL TERMINATING ENDS OF NON-METALLIC CONDUIT RUNS. THIS INCLUDES PULL BOXES, POLE BASES, AND TRAFFIC SIGNAL CABINETS. THE COST OF THE FITTINGS SHALL BE CONSIDERED SUBSIDARY TO THE PAY ITEM. ALL NON-METALLIC CONDUIT SHALL USE LONG SWEEP 90 DEGREE ELBOWS ON ALL CONDUIT BENDS.

21. ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. PULL BOX LIDS SHALL CLOSE FLUSH WITHOUT PINCHING ANY CONDUCTORS. CONDUIT LENGTHS IN PULL BOXES SHALL BE SET ACCORDINGLY. ANY CONDUCTORS THAT HAVE BEEN DAMAGED BY PINCHING SHALL BE COMPLETELY REPLACED AT THE CONTRACTOR'S EXPENSE.

22. ALL CONCRETE PULL BOXES SHALL BE SET ON A GRAVEL OR CRUSHED STONE BEDDING AS SPECIFIED IN SECTION 711, CONCRETE PULL BOX, OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

23. CONTRACTOR SHALL ATTACH A PERMANENT TAG OF RIGID PLASTIC OR NON-FERROUS METAL TO EACH CONDUIT AT PULLBOXES, POLE BASES, JUNCTION BOXES AND CONTROLLER CABINETS. TAGS SHALL BE EMBOSSED, STAMPED OR ENGRAVED WITH LETTERS 1/4" OR GREATER IN HEIGHT AND SECURED TO THE CONDUIT WITH NYLON OR PLASTIC TIES. EACH TAG SHALL INDICATE THE END LOCATION OF CONDUIT RUN. THE COST OF THE TAGS SHALL BE SUBSIDIARY TO THE CONDUIT PAY ITEM.
    EXAMPLES FOR CONDUIT IN SIDE CABINET: "TO POLE A AND B" OR "TO POLE C"
    EXAMPLES FOR CONDUIT IN PULL BOX: "TO POLE A" OR "TO TRAFFIC CABINET"

24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4th EDITION (2001) WITH 2003 AND 2006 INTERIMS.

25. ALL TRAFFIC SIGNAL POLES SHALL BE GALVANIZED.

26. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

27. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON STANDARD DRAWING). PAYMENT WILL BE INCLUDED IN SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

28. TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, THIRTY-EIGHT (38') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF TWENTY-ONE (21') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL SIX (6') FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.

29. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS SIX (6') FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.

30. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.

31. LED LUMINAIRE ASSEMBLIES SHALL HAVE A BUG RATING OF U0.

32. BACKPLATES SHALL BE SUPPLIED FOR ALL TRAFFIC SIGNAL HEADS, REFER TO THE RETROREFLECTIVE BACKPLATES SPECIAL PROVISION FOR REQUIREMENTS.

33. PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.

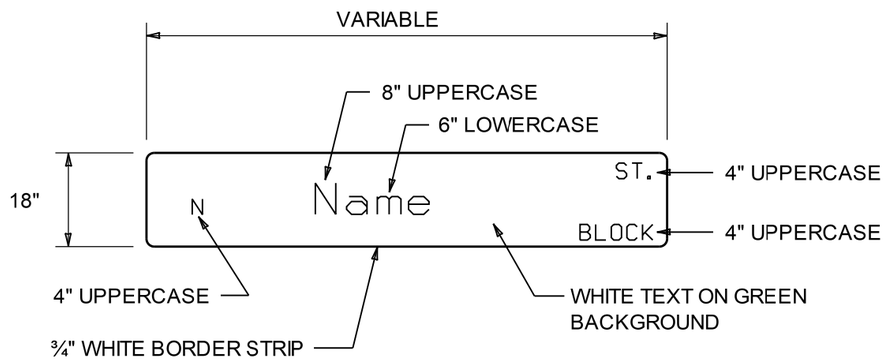
34. BEFORE FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL, THE CONTRACTOR SHALL PROVIDE TWO (2) SETS OF LEDGER SIZE (11" X 17") AS-BUILT TRAFFIC SIGNAL PLANS TO THE MAINTENANCE AUTHORITY AND ARDOT.

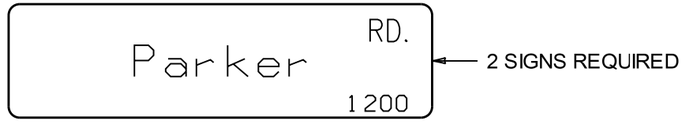
35. ALL SIGNAL HEADS AND SIGNS ON THE TEMPORARY SPAN WIRE SHALL HAVE AN ADDITIONAL TETHER WIRE (NOT SHOWN ON SD-7) AT THE BOTTOM CHORD TO MINIMIZE MOVEMENT DUE TO WIND EFFECTS. THE BOTTOM TETHER, HARDWARE, BRACKETS, AND MATERIALS FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE TEMPORARY SIGNAL. THE BOTTOM TETHER SHALL BE INSTALLED BETWEEN THE MINIMUM AND MAXIMUM HEIGHT CLEARANCE ABOVE THE ROADWAY.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	47	97
		TRAFFIC SIGNAL STREET NAME SIGNS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/2025

OVERHEAD STREET NAME MARKER
STANDARD MAST ARM MOUNTED





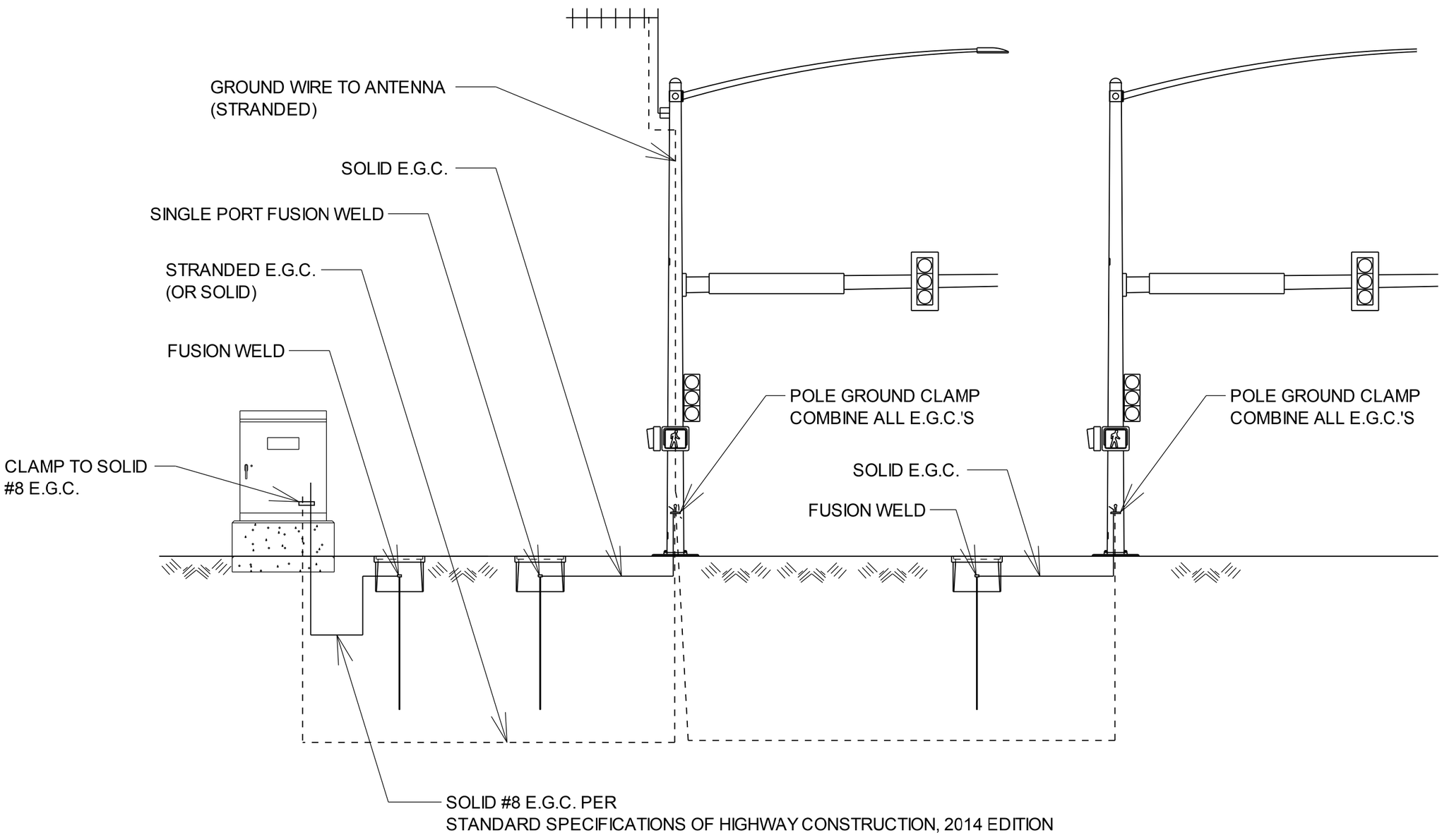
NOTES:

1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.
2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL BE ALSO ALODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY/ COUNTY.
3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM ON THE NEARSIDE LEFT POLE. SEE STANDARD DRAWING SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.
4. THE SERIES C 2000 STANDARD ALPHABET SHALL BE USED FOR ALL LETTERS.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	48	97
		GROUNDING ARRAY DETAIL				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/2025

GROUNDING ARRAY
SINGLE-PORT FUSION WELDS



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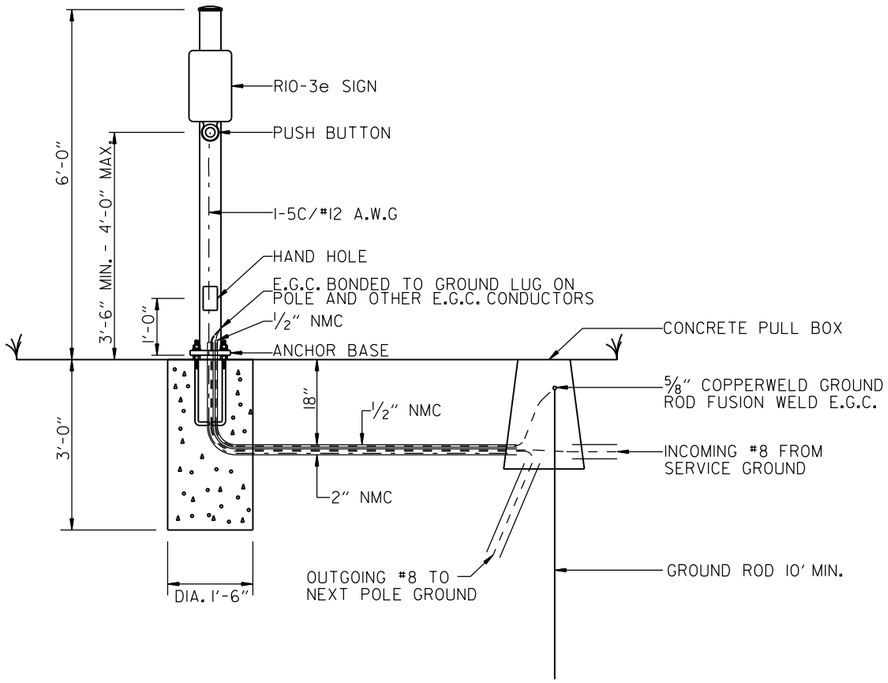
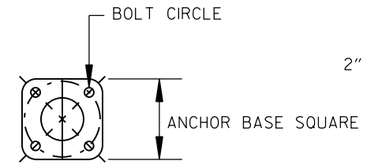
D100879-SIGNAL QUANTITIES NOTES DETAILS.DGN

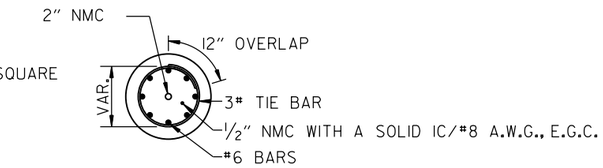
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	49	97
		PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL				

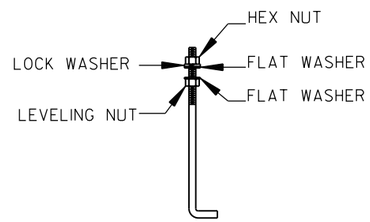
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25



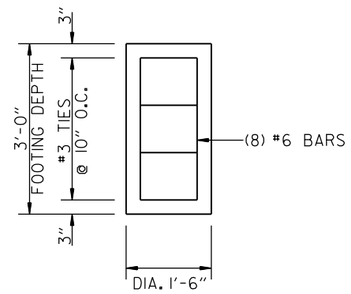


ANCHOR BASE
N.T.S.





ANCHOR BOLT
N.T.S.



PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL

NOTES:

EACH PEDESTRIAN PUSH BUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

CONSTRUCTION SPECIFICATIONS:
STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

POLE CAP - POLE CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

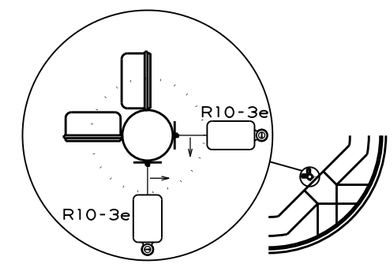
HAND HOLE - HAND HOLES SHALL BE 3 IN. X 5 IN. FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL.

NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.

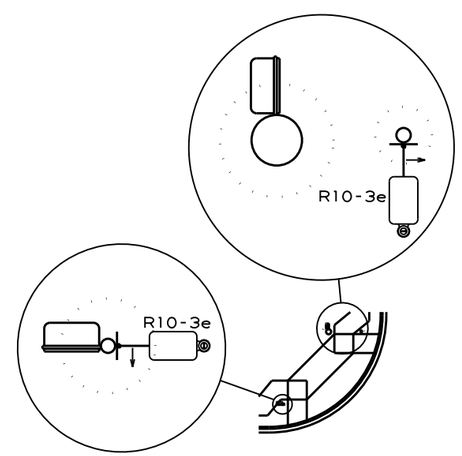
GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPARATELY.

POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

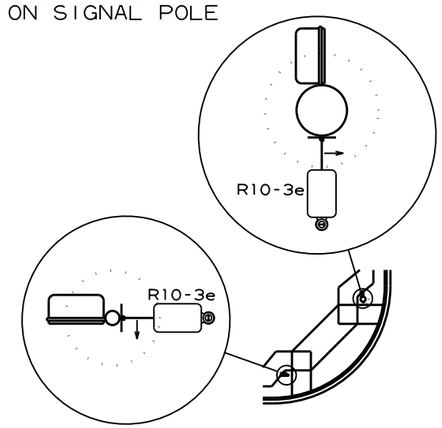
CONCRETE - ALL CONCRETE POLE FOUNDATION SHALL BE CLASS "S" OR GREATER.



TYPICAL MOUNTING PUSH BUTTON ON SIGNAL POLE



TYPICAL MOUNTING PUSH BUTTON ON PEDESTRIAN POLE AND PEDESTRIAN PUSH BUTTON POLE

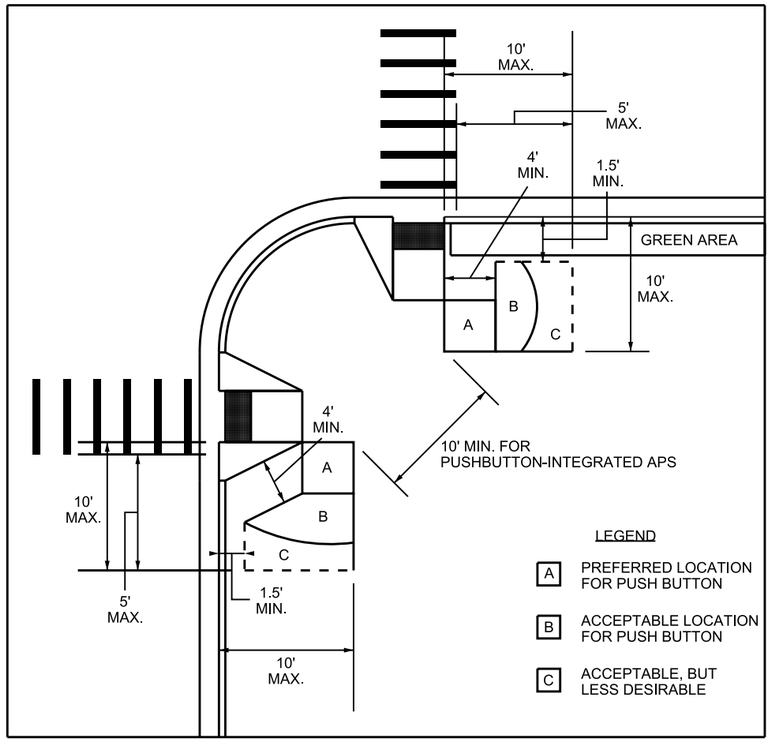


TYPICAL MOUNTING PUSH BUTTON ON PEDESTRIAN POLE AND SIGNAL POLE

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	50	97
		PUSH BUTTON PLACEMENT DETAIL				

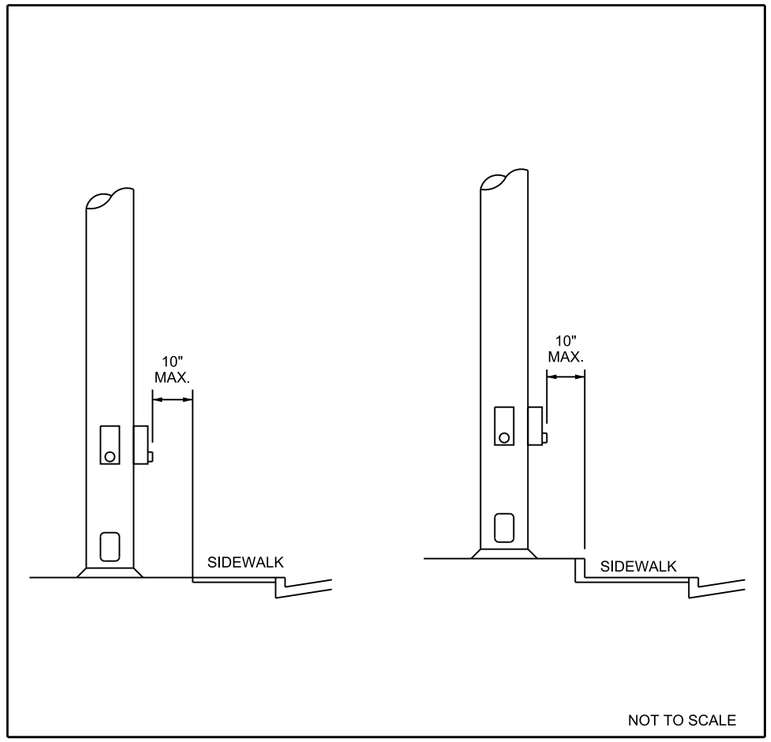
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/2025

PUSH BUTTON LOCATION DETAIL



NOTES:
1. THE PUSH BUTTON DETECTOR SHOULD BE LOCATED 5 FEET OR LESS FROM THE OUTSIDE EDGE OF THE MARKED CROSSWALK FARTHEST FROM THE INTERSECTION.
2. THE PUSH BUTTON DETECTOR SHOULD BE LOCATED NO FARTHER FROM THE CROSSWALK THAN THE STOP LINE, IF ONE IS PRESENT.
3. A 4-FOOT MINIMUM UNOBSTRUCTED PEDESTRIAN ACCESS ROUTE SHOULD BE MAINTAINED.
4. THE MAXIMUM (MAX.) AND MINIMUM (MIN.) DIMENSIONS SHOWN IN THIS FIGURE ARE RECOMMENDATIONS.
5. TWO PEDESTRAIN PUSH BUTTONS ON THE SAME CORNER SHOULD BE SEPARATED BY AT LEAST 10 FEET. THE 10-FOOT DIMENSION SHOWN IN THIS FIGURE IS IN REFERENCE TO THE PLACEMENT OF THE PUSH BUTTONS WITHIN THEIR RESPECTIVE AREAS.
6. THE FIGURE SHOWS TYPICAL PUSH BUTTON LOCATIONS.
7. THIS FIGURE IS NOT DRAWN TO SCALE.

SIDE REACH DETAIL



NOTES:
IN THE EVENT THAT A PLAN TRAFFIC SIGNAL POLE LOCATION MUST BE ADJUSTED DUE TO UTILITY CONFLICT, CONSULT WITH PROJECT ENGINEER PRIOR TO MAKING ADJUSTMENTS.

tholt 4/23/2025
DI00879-SIGNAL QUANTITIES NOTES DETAILS.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	51	97
		TRAFFIC SIGNAL QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25

TEMPORARY TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	1	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)	60	LIN. FT.
SP	LOCAL RADIO WITH ANTENNA RELOCATION	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	600	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	1810	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	50	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	50	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	40	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	66	LIN. FT.
710	NON-METALLIC CONDUIT (2")	30	LIN. FT.
710	NON-METALLIC CONDUIT (3")	12	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 1 HD)	1	EACH
SS & 713	SPAN WIRE ASSEMBLY	1	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	LUMP SUM
716	TREATED WOOD POLE (CLASS 2, 45')	4	EACH
SP & 733	VIDEO DETECTOR (IP)	4	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	1210	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	1	EACH

TEMPORARY TRAFFIC SIGNAL NOTES:
EXISTING SIGNAL TO REMAIN IN OPERATION UNTIL TEMPORARY SIGNAL IS INSTALLED. INSTALL TEMPORARY TRAFFIC SIGNAL, WHICH IS TO OPERATE FOR ALL STAGES OF CONSTRUCTION. INSTALL FULLY FUNCTIONING VIDEO DETECTION SYSTEM. REMOVE EXISTING TRAFFIC SIGNAL AFTER TEMPORARY TRAFFIC SIGNAL IS OPERATIONAL.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 1 TRAFFIC SIGNAL PLANS.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

PERMANENT TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	1	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)	165	LIN. FT.
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	1	EACH
SP	BATTERY BACKUP SYSTEM	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	17	EACH
SP & 707	CENTRAL CONTROL UNIT	1	EACH
SP & 707	POLE MOUNTED ASSEMBLY	8	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.)	1536	LIN. FT.
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2125	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	167	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	756	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	778	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	378	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	80	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1067	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	170	LIN. FT.
710	NON-METALLIC CONDUIT (3")	720	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 3)	2	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	5	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (60')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (64')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (70')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	3	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	LUMP SUM
SP	18" STREET NAME SIGN	4	EACH
SP & 733	VIDEO DETECTOR (IP)	2	EACH
SP & 733	HYBRID VIDEO/RADAR DETECTOR	2	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	1067	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	1	EACH

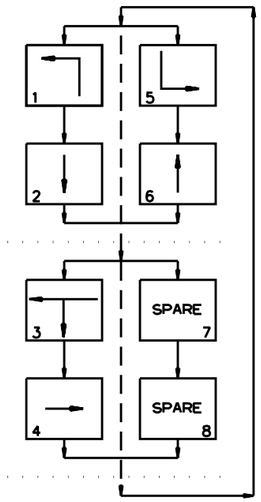
PERMANENT TRAFFIC SIGNAL:
TEMPORARY TRAFFIC SIGNAL TO REMAIN IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL IS COMPLETE AND OPERATIONAL. PERMANENT TRAFFIC SIGNAL TO UTILIZE THE SERVICE POINT ASSEMBLY THAT WAS INSTALLED WITH THE TEMPORARY TRAFFIC SIGNAL.
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS.)

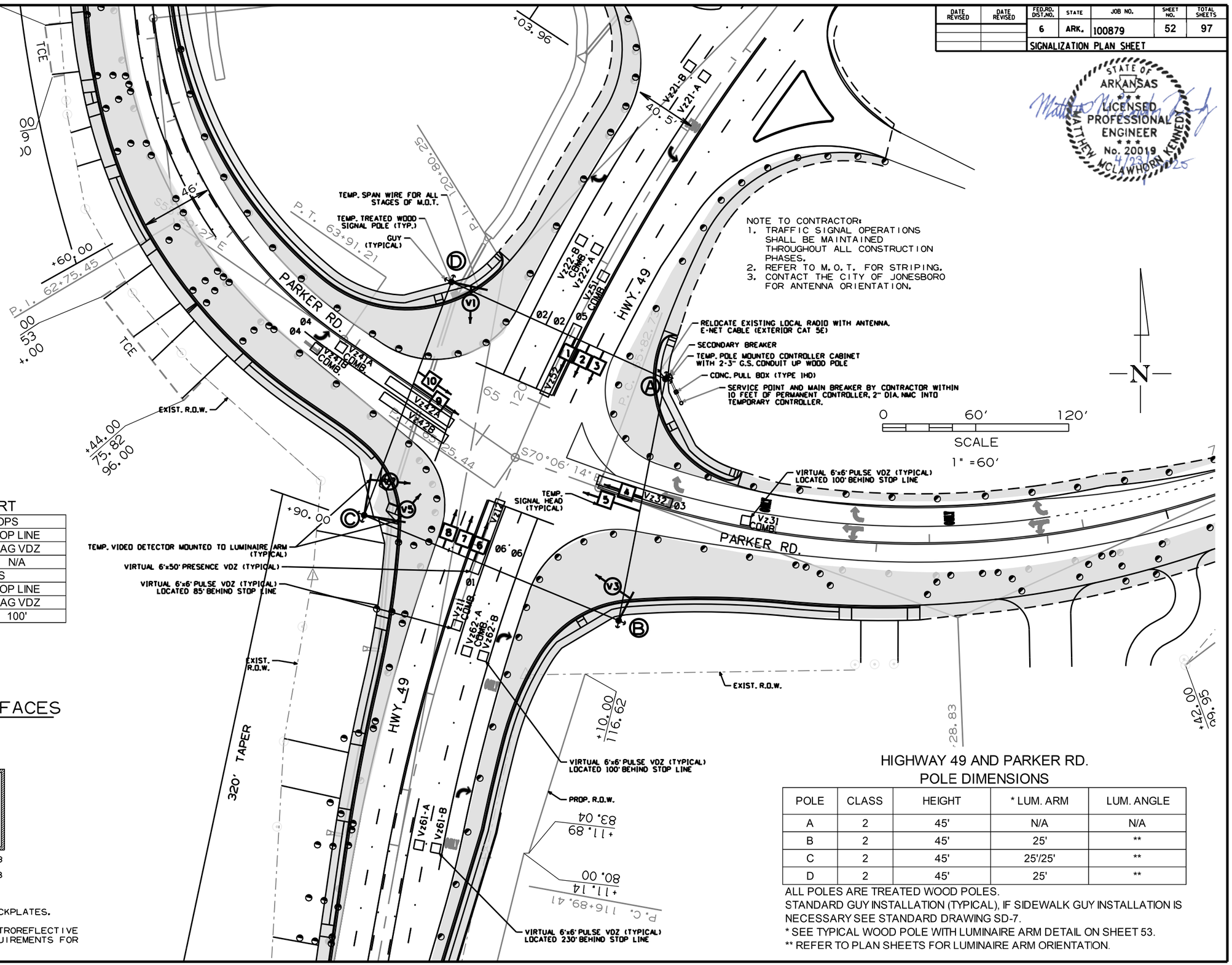
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	52	97

SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/2025

TEMPORARY PHASING DIAGRAM





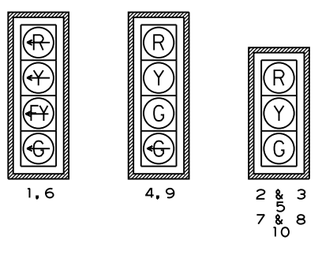
NOTE TO CONTRACTOR:
1. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
2. REFER TO M.O.T. FOR STRIPING.
3. CONTACT THE CITY OF JONESBORO FOR ANTENNA ORIENTATION.

TEMPORARY DETECTOR SPACING CHART

EB & WB PARKER RD. VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	100'	N/A
NB & SB HWY. 49 VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	230'	100'

TEMPORARY SIGNAL FACES

12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

HIGHWAY 49 AND PARKER RD. POLE DIMENSIONS

POLE	CLASS	HEIGHT	* LUM. ARM	LUM. ANGLE
A	2	45'	N/A	N/A
B	2	45'	25'	**
C	2	45'	25'/25'	**
D	2	45'	25'	**

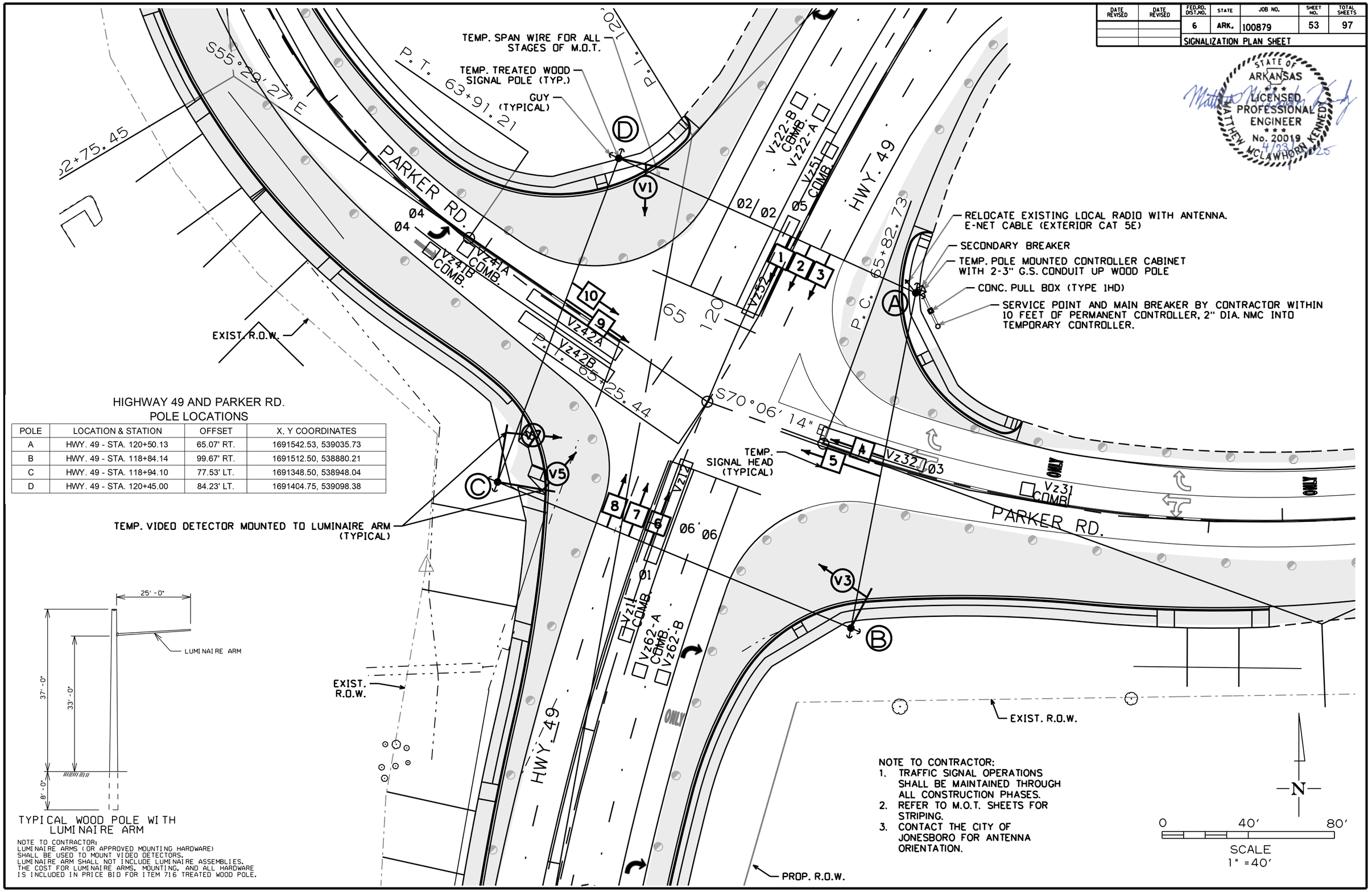
ALL POLES ARE TREATED WOOD POLES.
STANDARD GUY INSTALLATION (TYPICAL), IF SIDEWALK GUY INSTALLATION IS NECESSARY SEE STANDARD DRAWING SD-7.
* SEE TYPICAL WOOD POLE WITH LUMINAIRE ARM DETAIL ON SHEET 53.
** REFER TO PLAN SHEETS FOR LUMINAIRE ARM ORIENTATION.

tholt 4/23/2025
D100879-SIGNALIZATION-MOT1-60SCALE.SHT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	53	97

SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25



HIGHWAY 49 AND PARKER RD.
POLE LOCATIONS

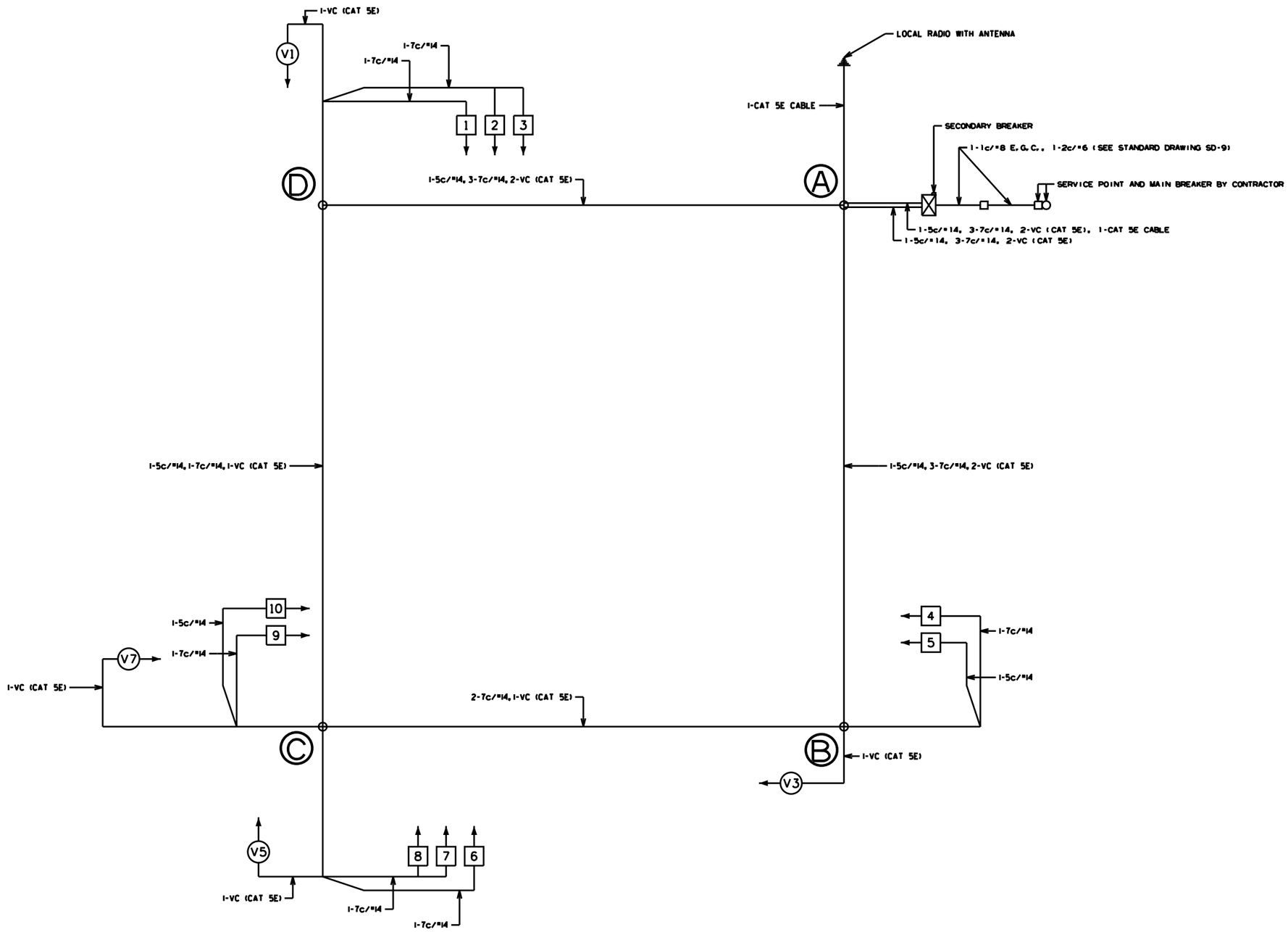
POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 49 - STA. 120+50.13	65.07' RT.	1691542.53, 539035.73
B	HWY. 49 - STA. 118+84.14	99.67' RT.	1691512.50, 538880.21
C	HWY. 49 - STA. 118+94.10	77.53' LT.	1691348.50, 538948.04
D	HWY. 49 - STA. 120+45.00	84.23' LT.	1691404.75, 539098.38

tholt 4/23/2025
D100879-SIGNALIZATION-MOT1-40SCALE.SHT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	54	97

SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25



TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR:

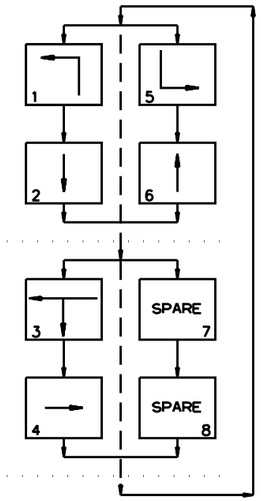
1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

tholt 4/23/2025
D100879-SIGNALIZATION-MOT1-WIRING.SHT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	55	97
		SIGNALIZATION PLAN SHEET				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25

TEMPORARY PHASING DIAGRAM



TEMPORARY DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 100879

HIGHWAY 49 AND PARKER RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM DETECTOR NUMBERS		
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz11	NB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23"
Vz12	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23"
Vz21 A&B	SB ADVANCE	LOCAL			5	V2	2			CAMERA V5	23"
Vz22 A&B	SB NEAR	COMB.			6	V10	2	2		CAMERA V5	23"
Vz31	WB ADVANCE	COMB.			9	V11	3	3		CAMERA V7	23"
Vz32	WB NEAR	LOCAL			10	V3	3			CAMERA V7	23"
Vz41 A&B	EB ADVANCE	COMB.			13	V4	4	4		CAMERA V3	23"
Vz42 A&B	EB NEAR	LOCAL			14	V12	4			CAMERA V3	23"
Vz51	SB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23"
Vz52	SB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	23"
Vz61 A&B	NB ADVANCE	LOCAL			3	V6	6			CAMERA V1	23"
Vz62 A&B	NB NEAR	COMB.			4	V14	6	6		CAMERA V1	23"
					SPARE: 11-12 & 15-16						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

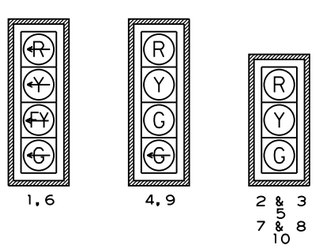
TEMPORARY INTERVAL CHART

SIGNAL FACES	HIGHWAY 49 AND PARKER RD. 1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3	CLR.	4	CLR.		FLASH SEQUENCE
1	~~← G~~	*	~~← G~~	*	~~← FY~~	***	~~← FY~~	***	~~← R~~	~~← R~~	~~← R~~	~~← R~~		~~← R~~
2 & 3	R	R	G	**	R	R	G	**	R	R	R	R		R
4	R	R	R	R	R	R	R	R	R	R	G / ~~← G~~	Y		R
5	R	R	R	R	R	R	R	R	R	R	G	Y		R
6	~~← G~~	*	~~← FY~~	***	~~← G~~	*	~~← FY~~	***	~~← R~~	~~← R~~	~~← R~~	~~← R~~		~~← R~~
7 & 8	R	R	R	R	G	**	G	**	R	R	R	R		R
9	R	R	R	R	R	R	R	R	G / ~~← G~~	Y	R	R		R
10	R	R	R	R	R	R	R	R	G	Y	R	R		R

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

TEMPORARY SIGNAL FACES

12" LENSES



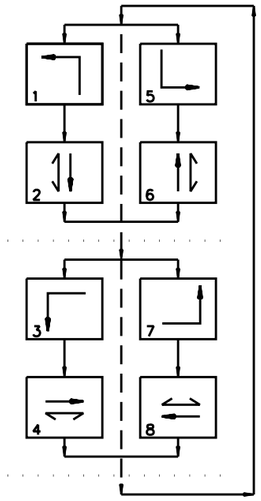
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	56	97

SIGNALIZATION PLAN SHEET

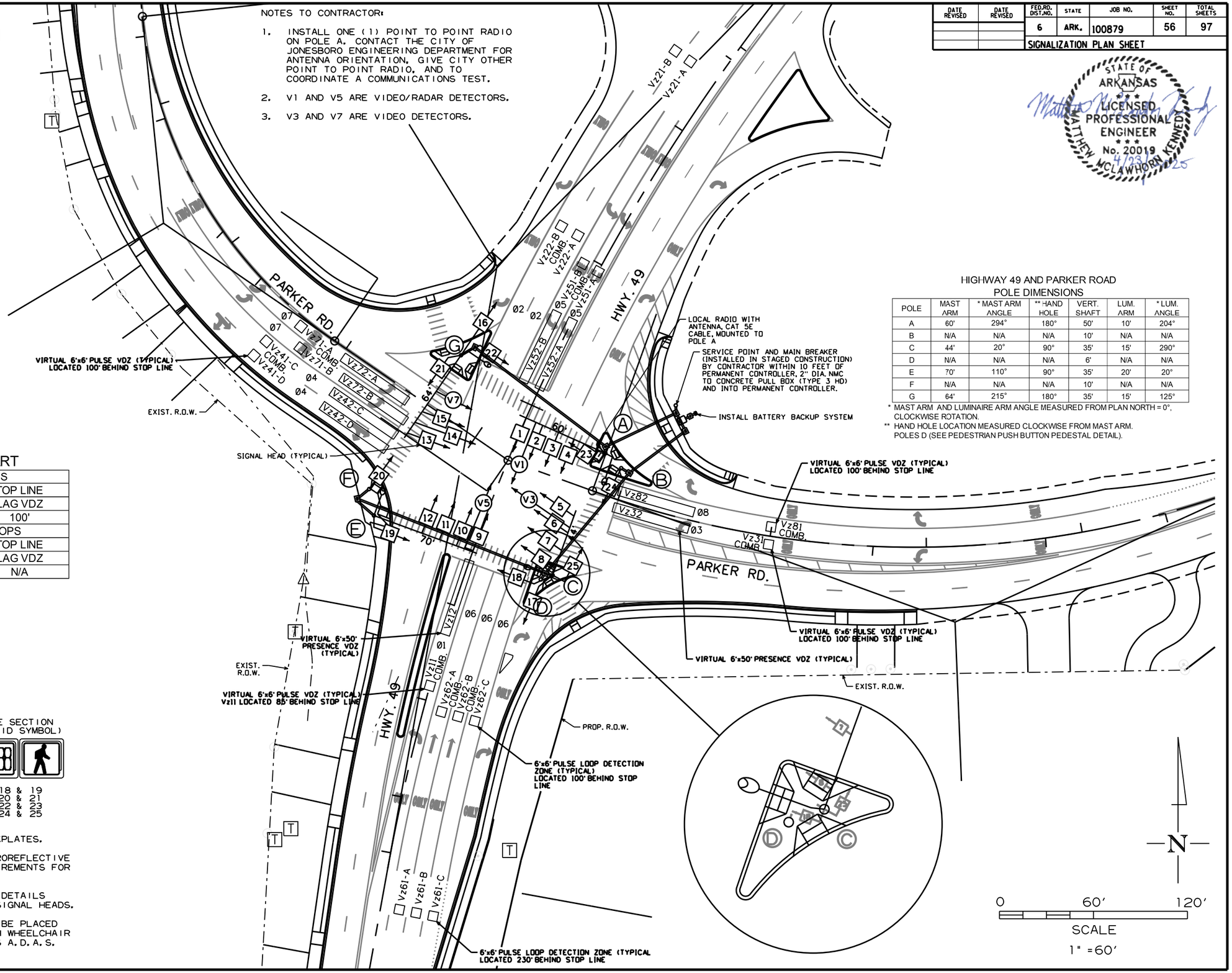
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25

PHASING DIAGRAM



NOTES TO CONTRACTOR:

1. INSTALL ONE (1) POINT TO POINT RADIO ON POLE A. CONTACT THE CITY OF JONESBORO ENGINEERING DEPARTMENT FOR ANTENNA ORIENTATION. GIVE CITY OTHER POINT TO POINT RADIO, AND TO COORDINATE A COMMUNICATIONS TEST.
2. V1 AND V5 ARE VIDEO/RADAR DETECTORS.
3. V3 AND V7 ARE VIDEO DETECTORS.



HIGHWAY 49 AND PARKER ROAD POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	** HAND HOLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	60'	294°	180°	50'	10'	204°
B	N/A	N/A	N/A	10'	N/A	N/A
C	44'	20°	90°	35'	15'	290°
D	N/A	N/A	N/A	6'	N/A	N/A
E	70'	110°	90°	35'	20'	20°
F	N/A	N/A	N/A	10'	N/A	N/A
G	64'	215°	180°	35'	15'	125°

* MAST ARM AND LUMINAIRE ARM ANGLE MEASURED FROM PLAN NORTH = 0°, CLOCKWISE ROTATION.

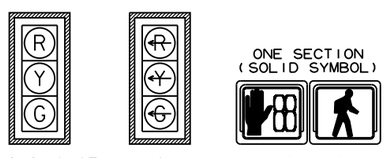
** HAND HOLE LOCATION MEASURED CLOCKWISE FROM MAST ARM. POLES D (SEE PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL).

DETECTOR SPACING CHART

NB & SB HWY. 49 VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	230'	100'
EB & WB PARKER RD. VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	100'	N/A

SIGNAL FACES

12" LENSES



2, 3, 4, & 17	1	18 & 19
7 & 8	5 & 6	20 & 21
11, 12 & 16	9 & 10	22 & 23
14 & 15	13	24 & 25

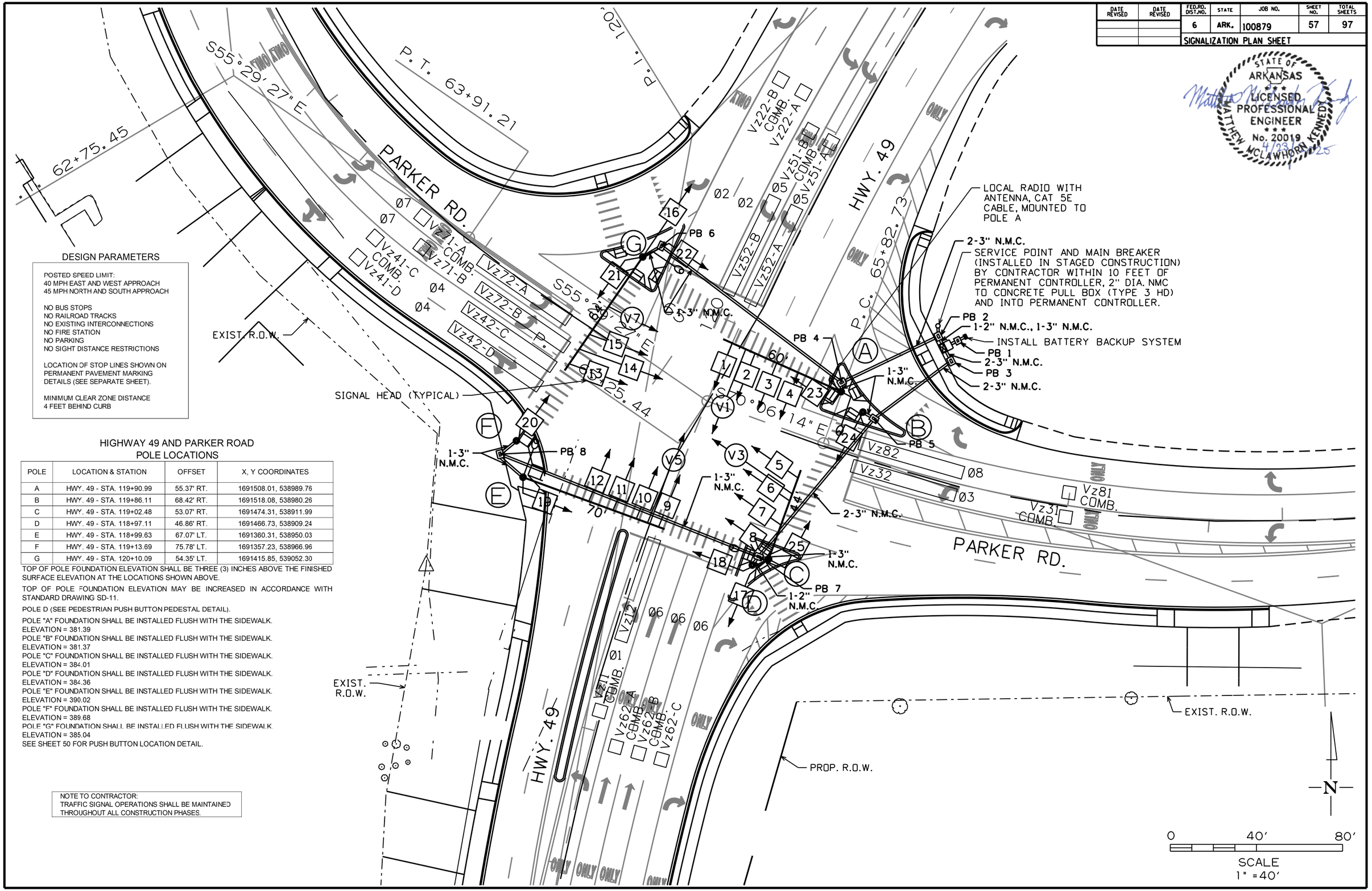
NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	57	97

SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25



DESIGN PARAMETERS

POSTED SPEED LIMIT:
40 MPH EAST AND WEST APPROACH
45 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON PERMANENT PAVEMENT MARKING DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

HIGHWAY 49 AND PARKER ROAD POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 49 - STA. 119+90.99	55.37' RT.	1691508.01, 538989.76
B	HWY. 49 - STA. 119+86.11	68.42' RT.	1691518.08, 538980.26
C	HWY. 49 - STA. 119+02.48	53.07' RT.	1691474.31, 538911.99
D	HWY. 49 - STA. 118+97.11	46.86' RT.	1691466.73, 538909.24
E	HWY. 49 - STA. 118+99.63	67.07' LT.	1691360.31, 538950.03
F	HWY. 49 - STA. 119+13.69	75.78' LT.	1691357.23, 538966.96
G	HWY. 49 - STA. 120+10.09	54.35' LT.	1691415.85, 539052.30

TOP OF POLE FOUNDATION ELEVATION SHALL BE THREE (3) INCHES ABOVE THE FINISHED SURFACE ELEVATION AT THE LOCATIONS SHOWN ABOVE.

TOP OF POLE FOUNDATION ELEVATION MAY BE INCREASED IN ACCORDANCE WITH STANDARD DRAWING SD-11.

POLE D (SEE PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL).

POLE "A" FOUNDATION SHALL BE INSTALLED FLUSH WITH THE SIDEWALK.
ELEVATION = 381.39
POLE "B" FOUNDATION SHALL BE INSTALLED FLUSH WITH THE SIDEWALK.
ELEVATION = 381.37
POLE "C" FOUNDATION SHALL BE INSTALLED FLUSH WITH THE SIDEWALK.
ELEVATION = 384.01
POLE "D" FOUNDATION SHALL BE INSTALLED FLUSH WITH THE SIDEWALK.
ELEVATION = 384.36
POLE "E" FOUNDATION SHALL BE INSTALLED FLUSH WITH THE SIDEWALK.
ELEVATION = 390.02
POLE "F" FOUNDATION SHALL BE INSTALLED FLUSH WITH THE SIDEWALK.
ELEVATION = 389.68
POLE "G" FOUNDATION SHALL BE INSTALLED FLUSH WITH THE SIDEWALK.
ELEVATION = 385.04
SEE SHEET 50 FOR PUSH BUTTON LOCATION DETAIL.

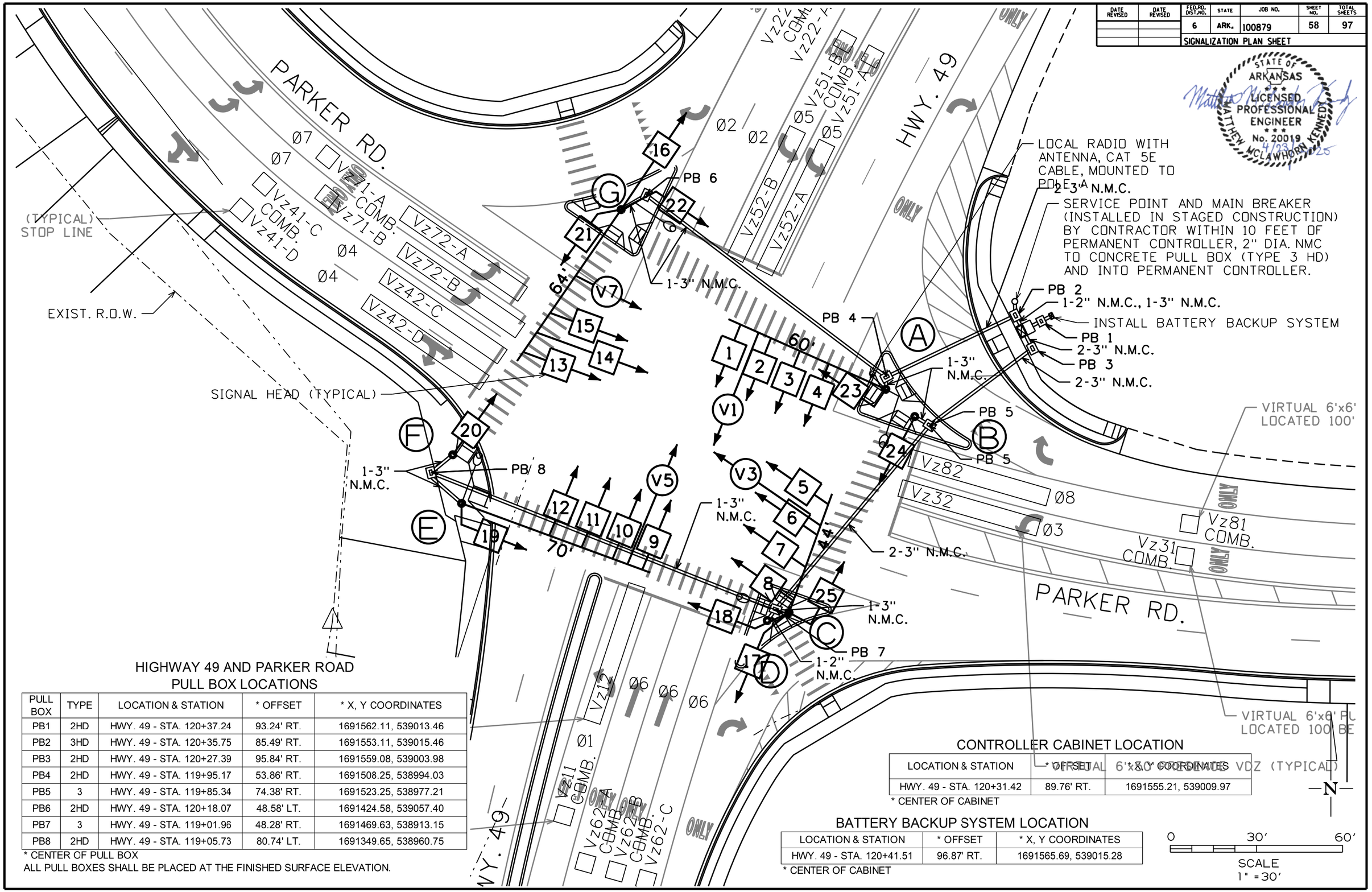
NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

tholt 4/23/2025
DI00879-SIGNALIZATION-PERMANENT-40SCALE.SHT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	58	97

SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW KENNEDY MCLAWHORN
4/23/25



HIGHWAY 49 AND PARKER ROAD PULL BOX LOCATIONS

PULL BOX	TYPE	LOCATION & STATION	* OFFSET	* X, Y COORDINATES
PB1	2HD	HWY. 49 - STA. 120+37.24	93.24' RT.	1691562.11, 539013.46
PB2	3HD	HWY. 49 - STA. 120+35.75	85.49' RT.	1691553.11, 539015.46
PB3	2HD	HWY. 49 - STA. 120+27.39	95.84' RT.	1691559.08, 539003.98
PB4	2HD	HWY. 49 - STA. 119+95.17	53.86' RT.	1691508.25, 538994.03
PB5	3	HWY. 49 - STA. 119+85.34	74.38' RT.	1691523.25, 538977.21
PB6	2HD	HWY. 49 - STA. 120+18.07	48.58' LT.	1691424.58, 539057.40
PB7	3	HWY. 49 - STA. 119+01.96	48.28' RT.	1691469.63, 538913.15
PB8	2HD	HWY. 49 - STA. 119+05.73	80.74' LT.	1691349.65, 538960.75

* CENTER OF PULL BOX

ALL PULL BOXES SHALL BE PLACED AT THE FINISHED SURFACE ELEVATION.

CONTROLLER CABINET LOCATION

LOCATION & STATION	* OFFSET	* X, Y COORDINATES
HWY. 49 - STA. 120+31.42	89.76' RT.	1691555.21, 539009.97

* CENTER OF CABINET

BATTERY BACKUP SYSTEM LOCATION

LOCATION & STATION	* OFFSET	* X, Y COORDINATES
HWY. 49 - STA. 120+41.51	96.87' RT.	1691565.69, 539015.28

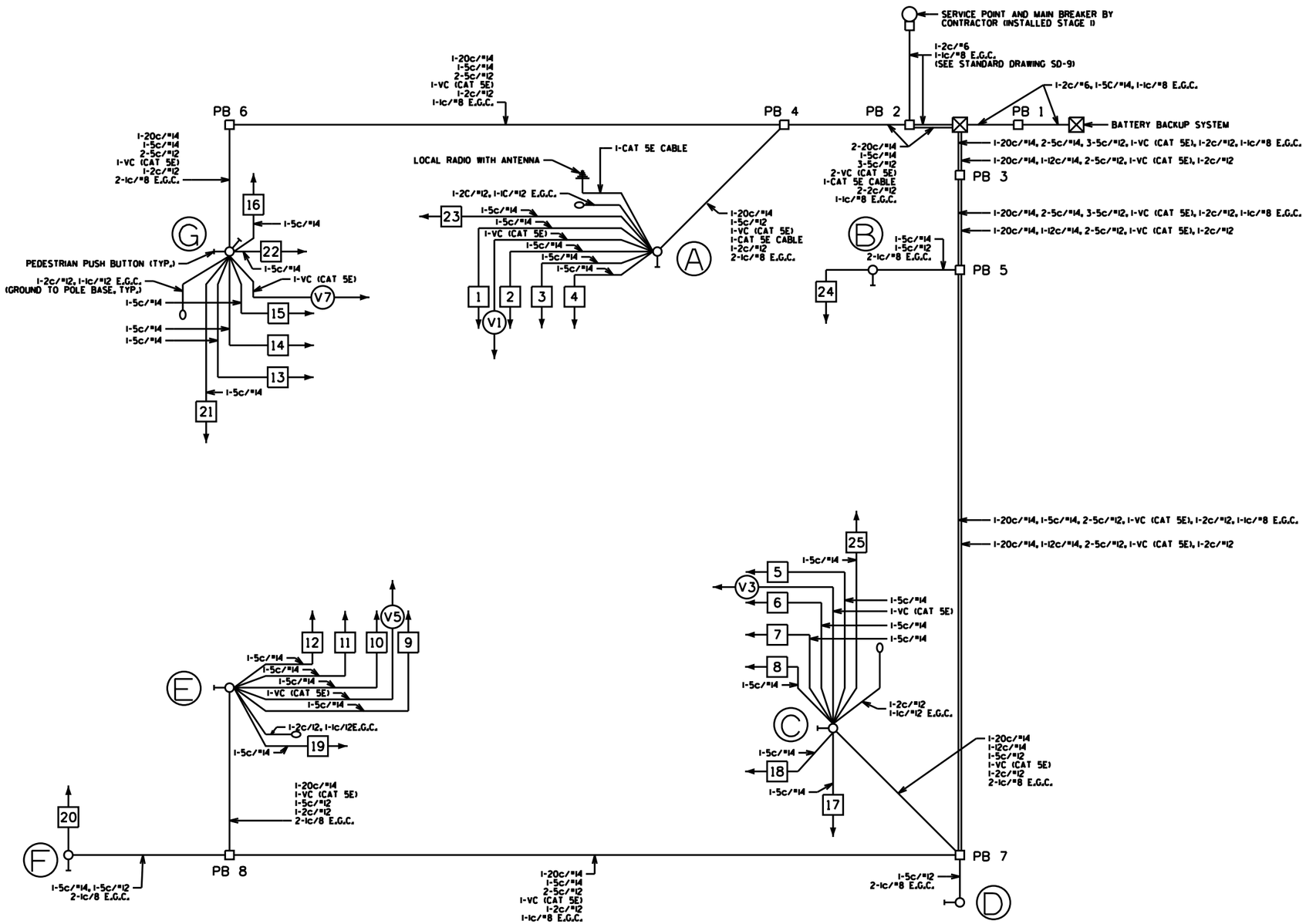
* CENTER OF CABINET

0 30' 60'
SCALE 1" =30'

tholt 4/23/2025
DI00879-SIGNALIZATION-PERMANENT-30SCALE.SHT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	59	97
		SIGNALIZATION PLAN SHEET				

MATTHEW MCLAWHORN KENNEDY
No. 20019
4/23/25



WIRING DIAGRAM

NOTES TO CONTRACTOR:

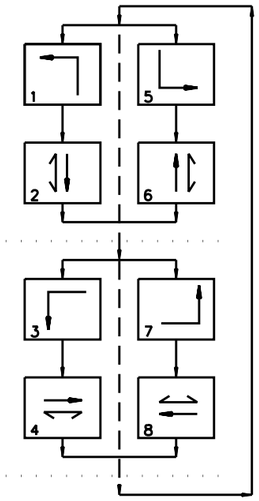
1. ONE SEPARATE 1-5c/#12 IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. SEE GROUNDING ARRAY DETAIL ON SHEET 48

tholt
D100879-SIGNALIZATION-PERMANENT-WIRING.SHT
4/23/2025

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	60	97
		SIGNALIZATION PLAN SHEET				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20019
MATTHEW MCLAWHORN KENNEDY
4/23/25

PHASING DIAGRAM



DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 100879

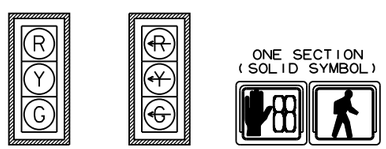
HIGHWAY 49 AND PARKER RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM DETECTOR NUMBERS		
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz11	NB LEFT TURN FAR	COMB.				V9	1	1		CAMERA V1	MAST ARM
Vz12	NB LEFT TURN	LOCAL				V1	1			CAMERA V1	MOUNTED
Vz21 A&B	SB ADVANCE	LOCAL				V2	2			CAMERA V5	MAST ARM
Vz22 A&B	SB NEAR	COMB.				V10	2	2		CAMERA V5	MOUNTED
Vz31	WB LEFT TURN FAR	COMB.				V11	3	3		CAMERA V7	74"
Vz32	WB LEFT TURN	LOCAL				V3	3			CAMERA V7	74"
Vz41 C&D	EB ADVANCE	COMB.				V4	4	4		CAMERA V3	74"
Vz42 C&D	EB NEAR	LOCAL				V12	4			CAMERA V3	74"
Vz51 A&B	SB LEFT TURN FAR	COMB.				V13	5	5		CAMERA V5	MAST ARM
Vz52 A&B	SB LEFT TURN	LOCAL				V5	5			CAMERA V5	MOUNTED
Vz61 A,B,&C	NB ADVANCE	LOCAL				V6	6			CAMERA V1	MAST ARM
Vz62 A,B,&C	NB NEAR	COMB.				V14	6	6		CAMERA V1	MOUNTED
Vz71 A&B	EB LEFT TURN FAR	COMB.				V15	7	7		CAMERA V3	74"
Vz72 A&B	EB LEFT TURN	LOCAL				V7	7			CAMERA V3	74"
Vz81	WB ADVANCE	COMB.				V16	8	8		CAMERA V7	74"
Vz82	WB NEAR	LOCAL				V8	8			CAMERA V7	74"
PB2 A&B	PARKER W. LEG	PED.				P2	2				
PB4 A&B	HWY. 49 S. LEG	PED.				P4	4				
PB6 A&B	PARKER E. LEG	PED.				P6	6				
PB8 A&B	HWY. 49 N. LEG	PED.				P8	8				
					SPARE:						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

SIGNAL FACES

12" LENSES



2, 3, 4, & 17
7 & 8
11, 12, & 16
14 & 15

1
5 & 6
9 & 10
13

18 & 19
20 & 21
22 & 23
24 & 25

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.

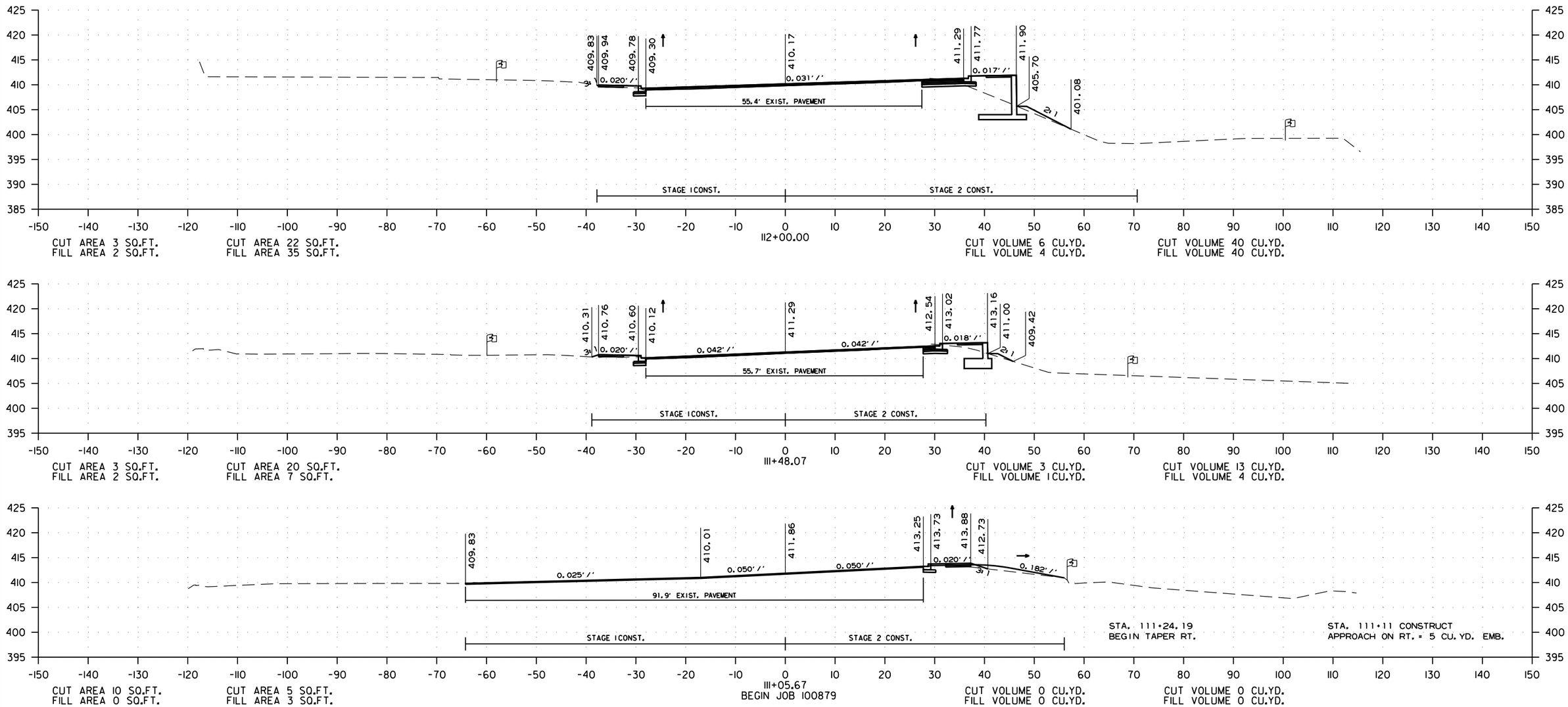
INTERVAL CHART

SIGNAL FACES	HIGHWAY 49 AND PARKER RD.																FLASH SEQUENCE
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+7	CLR.	3+8	CLR.	4+7	CLR.	4+8	CLR.	
1	~~G~~	*	~~G~~	*	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
2, 3, 4, & 17	R	R	G	**	R	R	G	**	R	R	R	R	R	R	R	R	R
5 & 6	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~R~~	~~R~~	~~G~~	*	~~R~~	~~R~~	~~R~~
7 & 8	R	R	R	R	R	R	R	R	R	R	R	R	G	**	G	**	R
9 & 10	~~G~~	*	~~R~~	~~R~~	~~G~~	*	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
11, 12, & 16	R	R	R	R	G	**	G	**	R	R	R	R	R	R	R	R	R
13	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~G~~	*	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
14 & 15	R	R	R	R	R	R	R	R	R	R	G	**	R	R	G	**	R
18 & 19	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	W	FDW	BLK
20 & 21	DW	DW	DW	DW	W	FDW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
22 & 23	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	W	FDW	BLK
24 & 25	DW	DW	W	FDW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	61	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

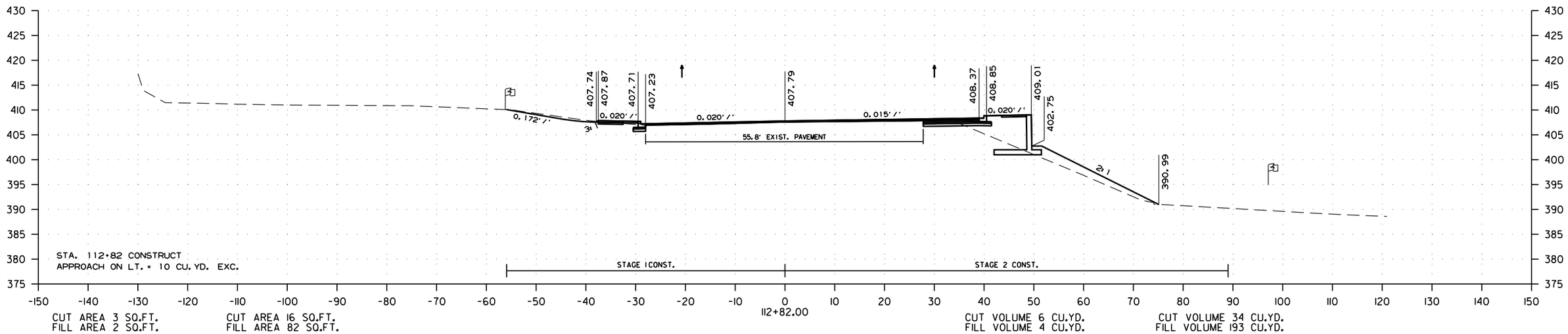


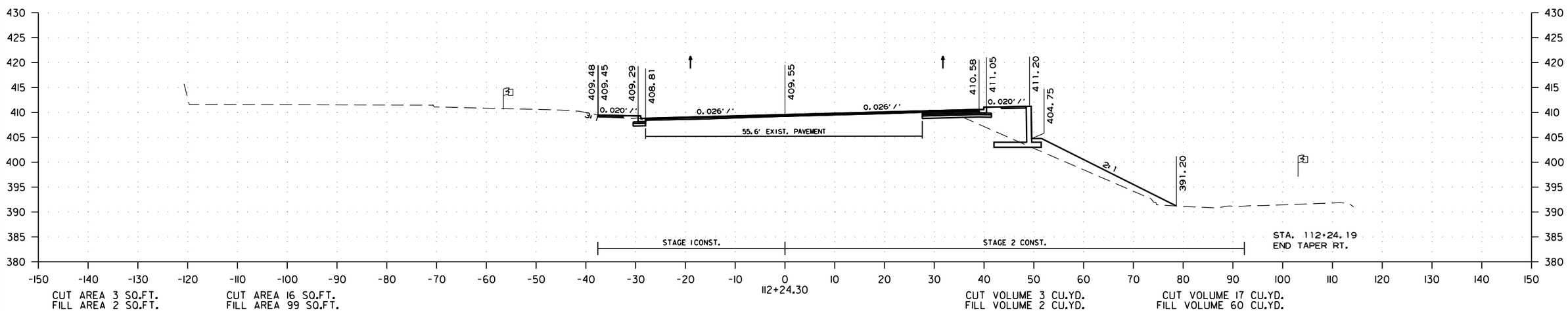
HWY. 49 - CROSS SECTION FROM STA111+24.19 TO STA. 112+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	62	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



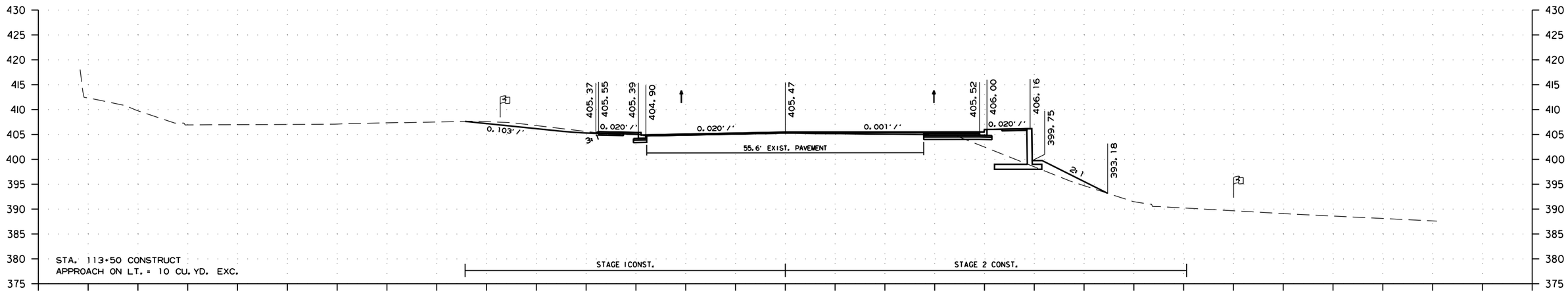


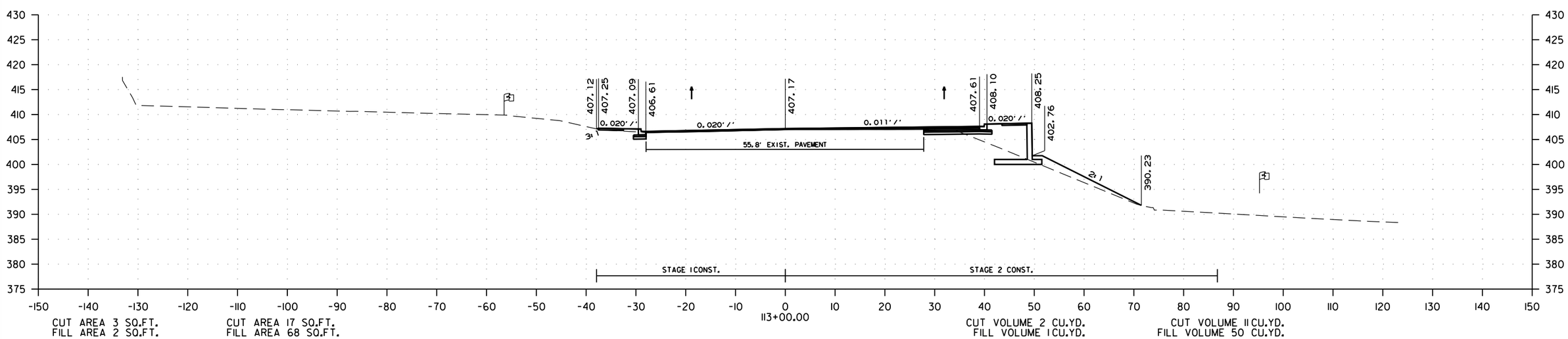
HWY. 49 - CROSS SECTION FROM STA112+24.30 TO STA. 112+82.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	63	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



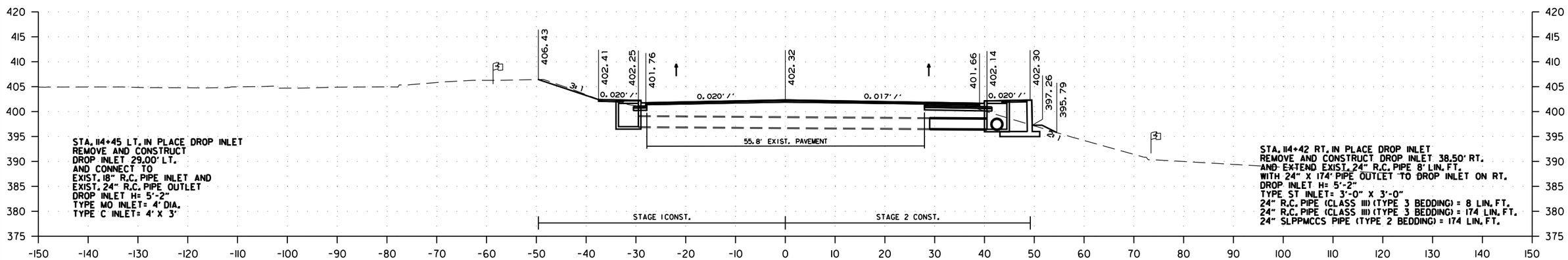


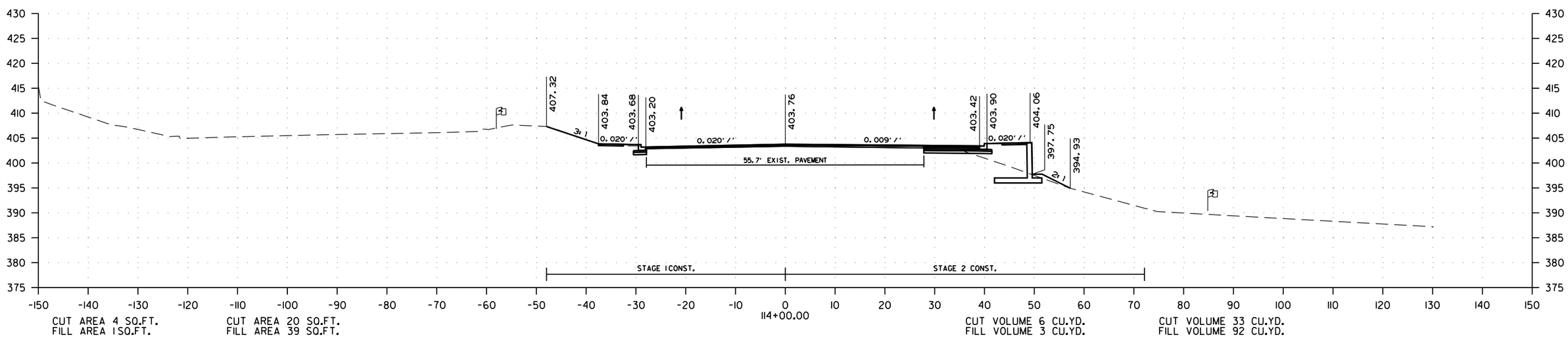
HWY. 49 - CROSS SECTION FROM STA113+00.00 TO STA. 113+50.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	64	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



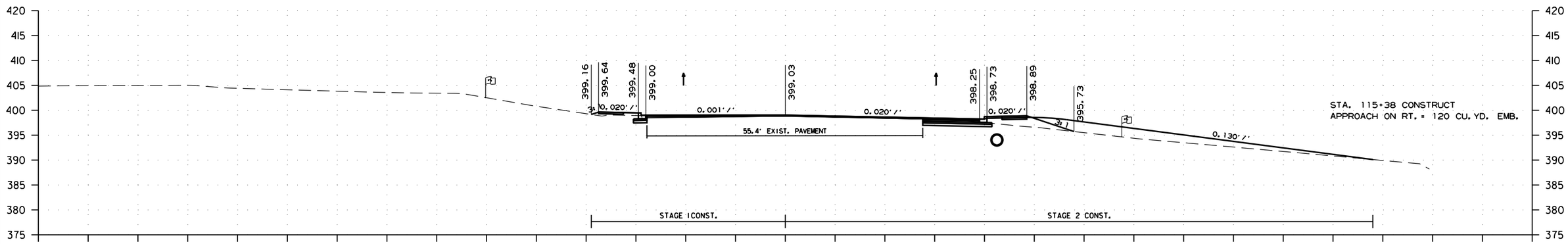


HWY. 49 - CROSS SECTION FROM STA114+00.00 TO STA. 114+42.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	65	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

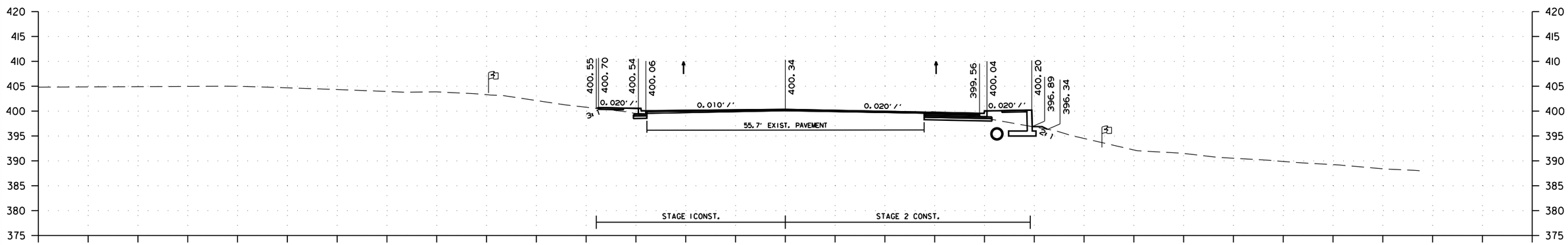


CUT AREA 3 SQ.FT.
FILL AREA 4 SQ.FT.

CUT AREA 15 SQ.FT.
FILL AREA 22 SQ.FT.

CUT VOLUME 4 CU.YD.
FILL VOLUME 5 CU.YD.

CUT VOLUME 26 CU.YD.
FILL VOLUME 27 CU.YD.

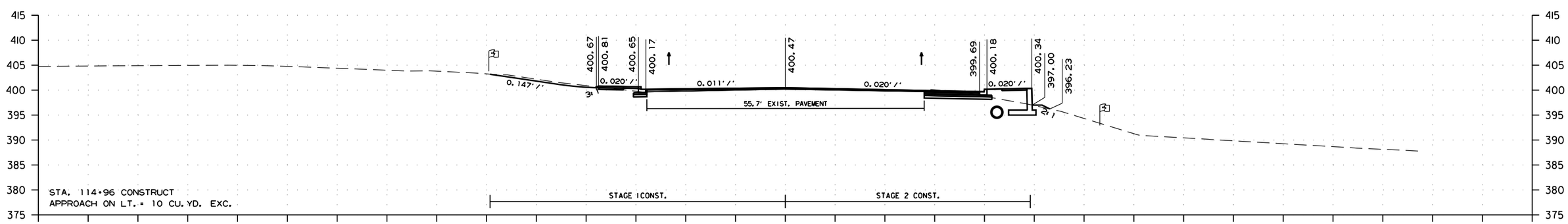


CUT AREA 3 SQ.FT.
FILL AREA 3 SQ.FT.

CUT AREA 22 SQ.FT.
FILL AREA 17 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 3 CU.YD.
FILL VOLUME 3 CU.YD.



CUT AREA 3 SQ.FT.
FILL AREA 3 SQ.FT.

CUT AREA 23 SQ.FT.
FILL AREA 17 SQ.FT.

CUT VOLUME 8 CU.YD.
FILL VOLUME 6 CU.YD.

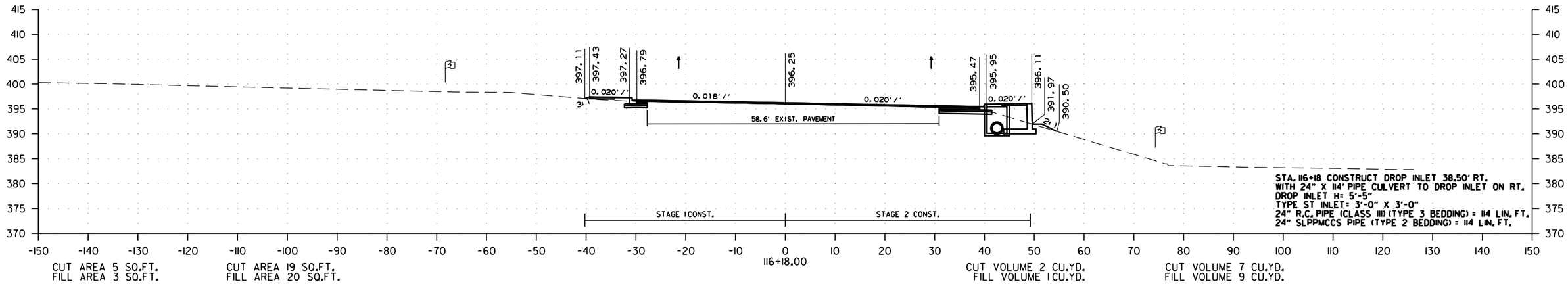
CUT VOLUME 44 CU.YD.
FILL VOLUME 44 CU.YD.

HWY. 49 - CROSS SECTION FROM STA114+96.00 TO STA. 115+38.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	66	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

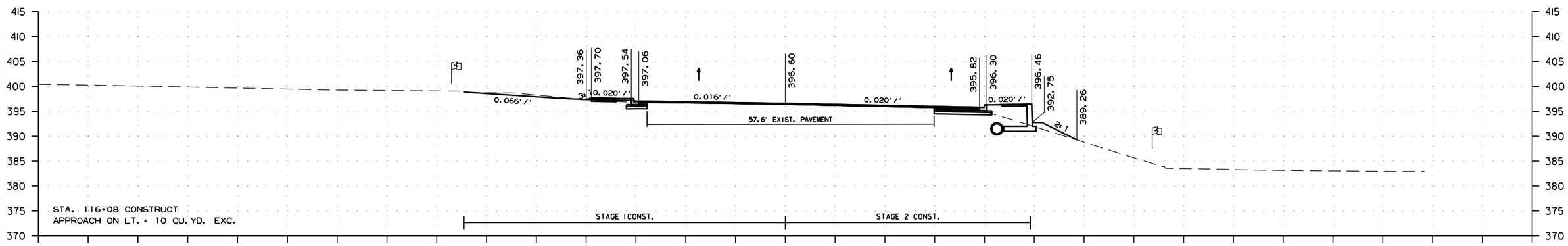


CUT AREA 5 SQ.FT.
FILL AREA 3 SQ.FT.

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

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

CUT VOLUME 7 CU.YD.
FILL VOLUME 9 CU.YD.

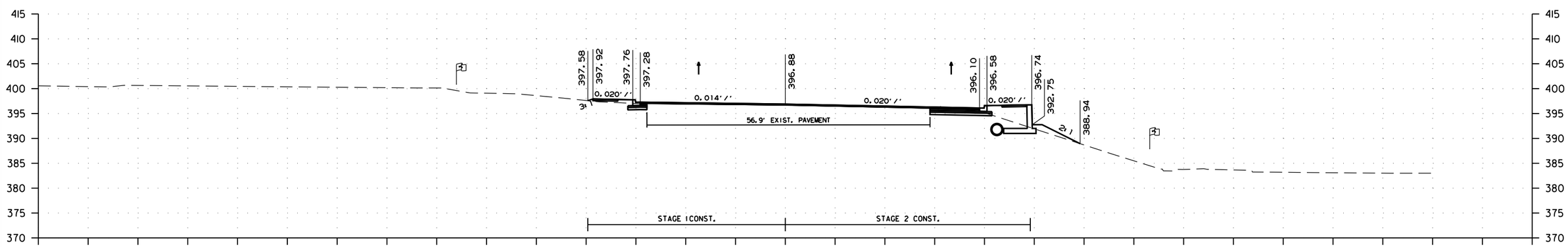


CUT AREA 5 SQ.FT.
FILL AREA 3 SQ.FT.

CUT AREA 19 SQ.FT.
FILL AREA 27 SQ.FT.

CUT VOLUME 1 CU.YD.
FILL VOLUME 1 CU.YD.

CUT VOLUME 6 CU.YD.
FILL VOLUME 8 CU.YD.



CUT AREA 4 SQ.FT.
FILL AREA 3 SQ.FT.

CUT AREA 20 SQ.FT.
FILL AREA 29 SQ.FT.

CUT VOLUME 8 CU.YD.
FILL VOLUME 8 CU.YD.

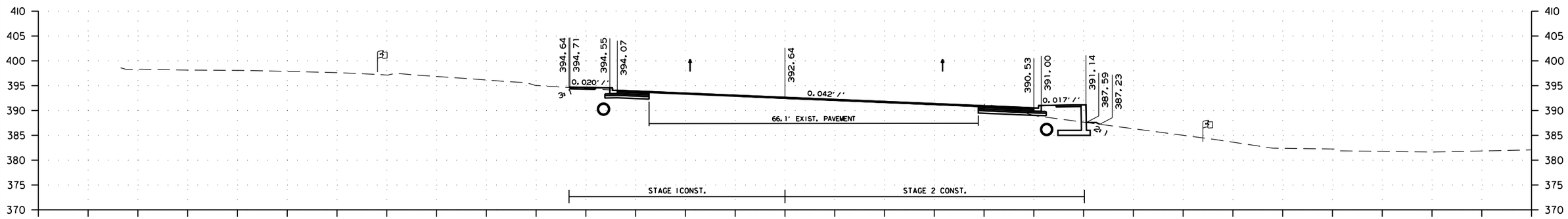
CUT VOLUME 40 CU.YD.
FILL VOLUME 59 CU.YD.

HWY. 49 - CROSS SECTION FROM STA116+00.00 TO STA. 116+18.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	67	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



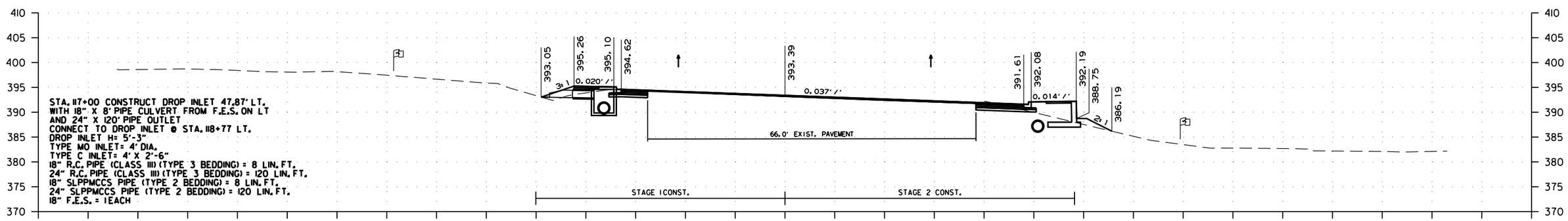
CUT AREA 13 SQ.FT.
FILL AREA 1 SQ.FT.

CUT AREA 20 SQ.FT.
FILL AREA 21 SQ.FT.

117+21.53
END TAPER RT.

CUT VOLUME 10 CU.YD.
FILL VOLUME 6 CU.YD.

CUT VOLUME 15 CU.YD.
FILL VOLUME 19 CU.YD.



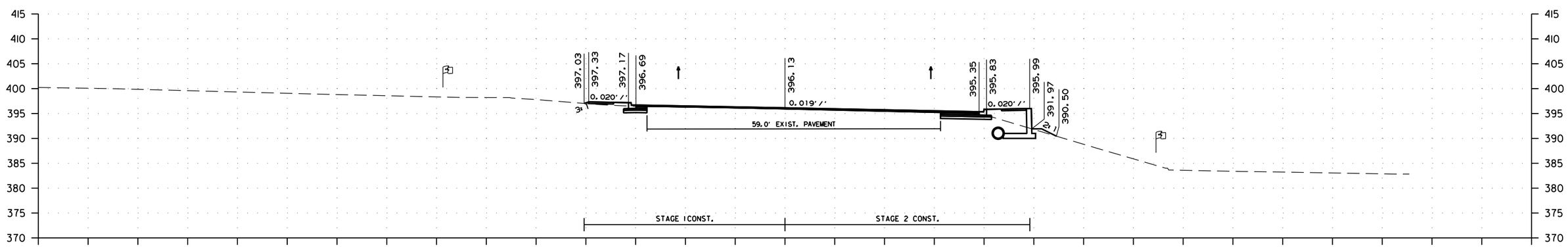
CUT AREA 11 SQ.FT.
FILL AREA 15 SQ.FT.

CUT AREA 18 SQ.FT.
FILL AREA 27 SQ.FT.

117+00.00

CUT VOLUME 25 CU.YD.
FILL VOLUME 26 CU.YD.

CUT VOLUME 54 CU.YD.
FILL VOLUME 68 CU.YD.



CUT AREA 6 SQ.FT.
FILL AREA 3 SQ.FT.

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

116+21.53
BEGIN TAPER RT.

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

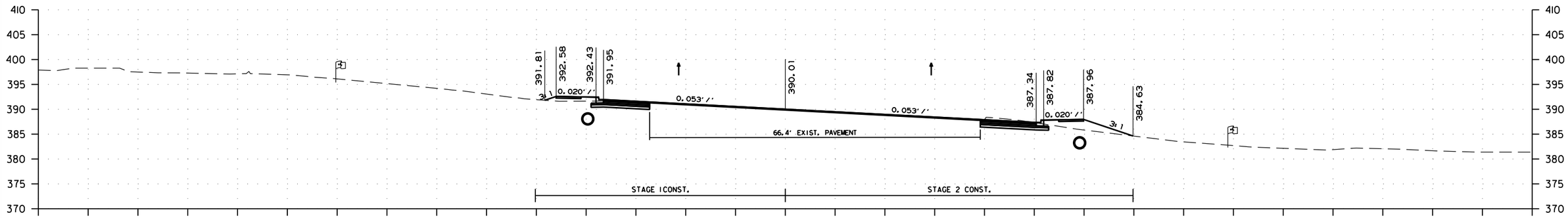
CUT VOLUME 2 CU.YD.
FILL VOLUME 3 CU.YD.

HWY. 49 - CROSS SECTION FROM STA 116+21.53 TO STA. 117+21.53

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	68	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

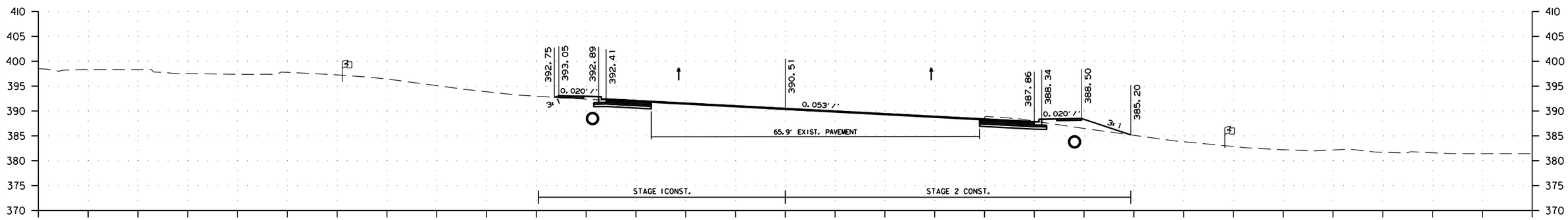


CUT AREA 16 SQ.FT.
FILL AREA 6 SQ.FT.

CUT AREA 23 SQ.FT.
FILL AREA 21 SQ.FT.

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

CUT VOLUME 12 CU.YD.
FILL VOLUME 10 CU.YD.

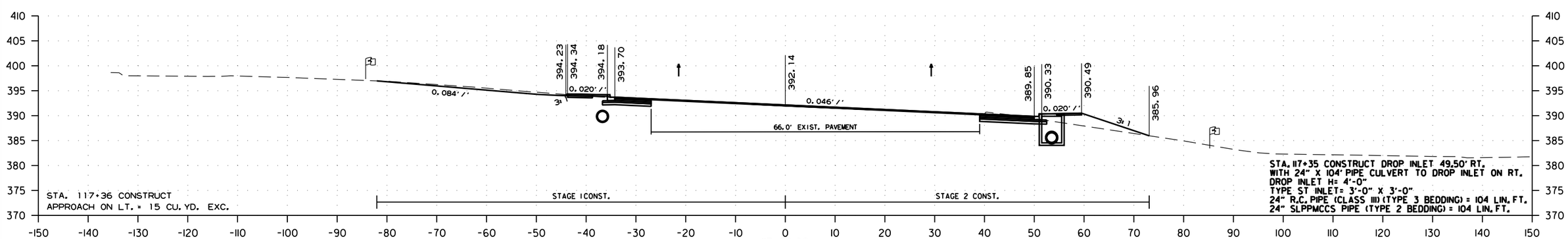


CUT AREA 15 SQ.FT.
FILL AREA 3 SQ.FT.

CUT AREA 24 SQ.FT.
FILL AREA 18 SQ.FT.

CUT VOLUME 24 CU.YD.
FILL VOLUME 4 CU.YD.

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



STA. 117+36 CONSTRUCT
APPROACH ON LT. = 15 CU. YD. EXC.

STA. 117+35 CONSTRUCT DROP INLET 49.50' RT.
WITH 24" X 104' PIPE CULVERT TO DROP INLET ON RT.
DROP INLET H= 4'-0"
TYPE ST INLET= 3'-0" X 3'-0"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 104 LIN. FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 104 LIN. FT.

CUT AREA 13 SQ.FT.
FILL AREA 2 SQ.FT.

CUT AREA 19 SQ.FT.
FILL AREA 30 SQ.FT.

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

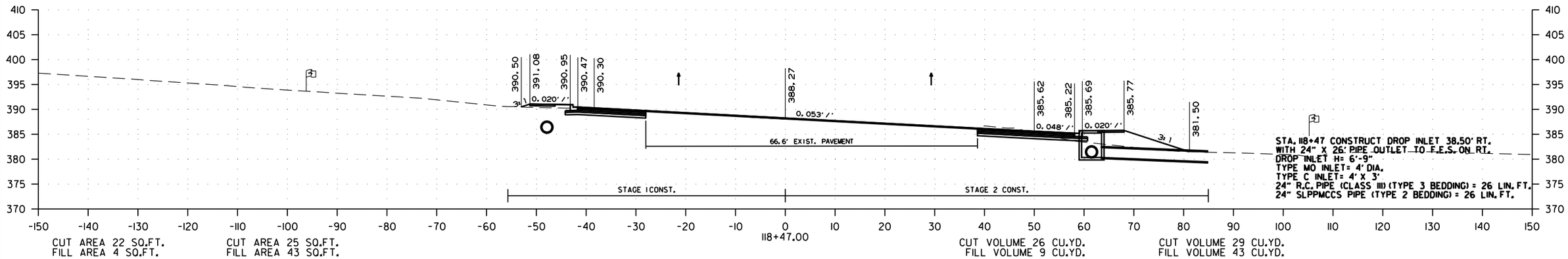
CUT VOLUME 9 CU.YD.
FILL VOLUME 13 CU.YD.

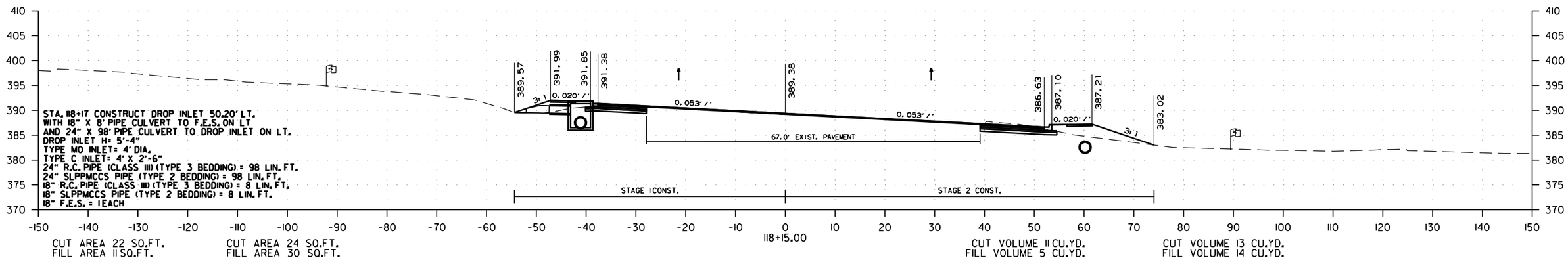
HWY. 49 - CROSS SECTION FROM STA 117+36.00 TO STA. 117+96.88

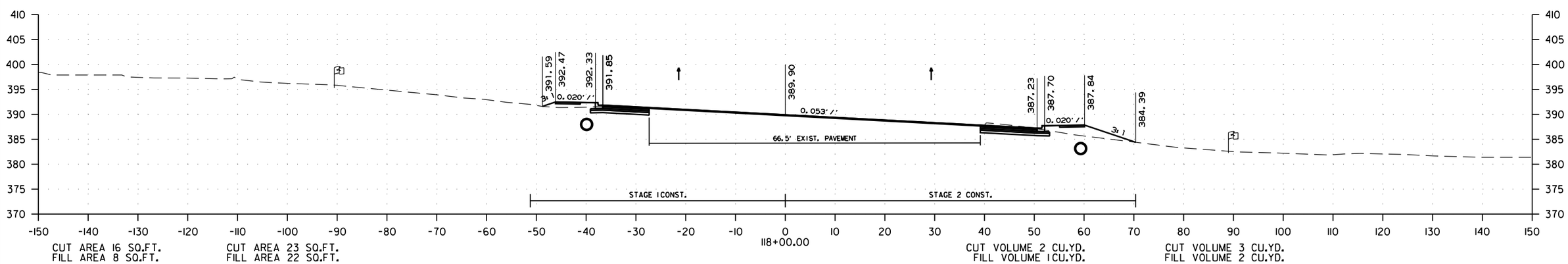
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	69	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



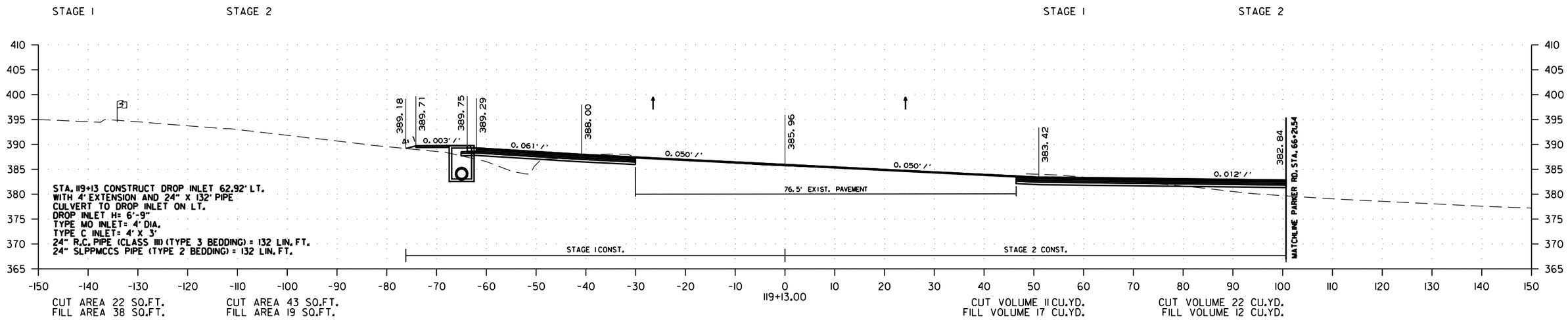


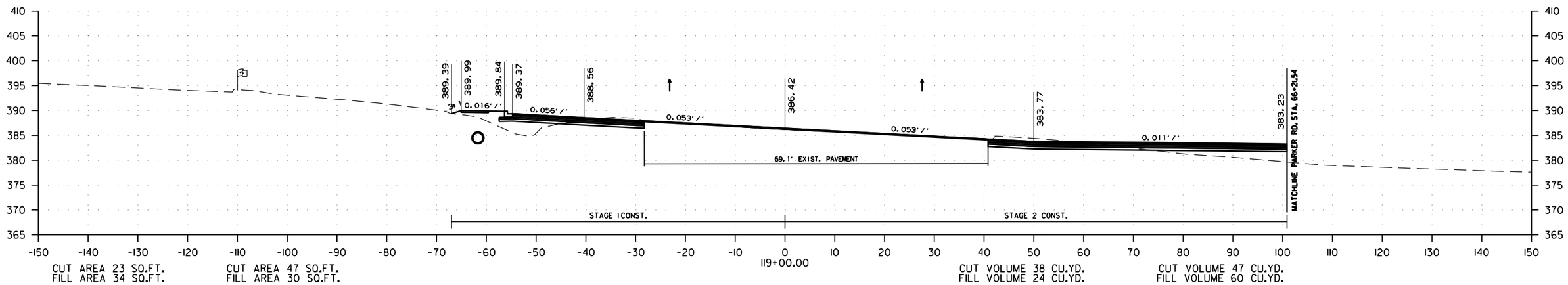


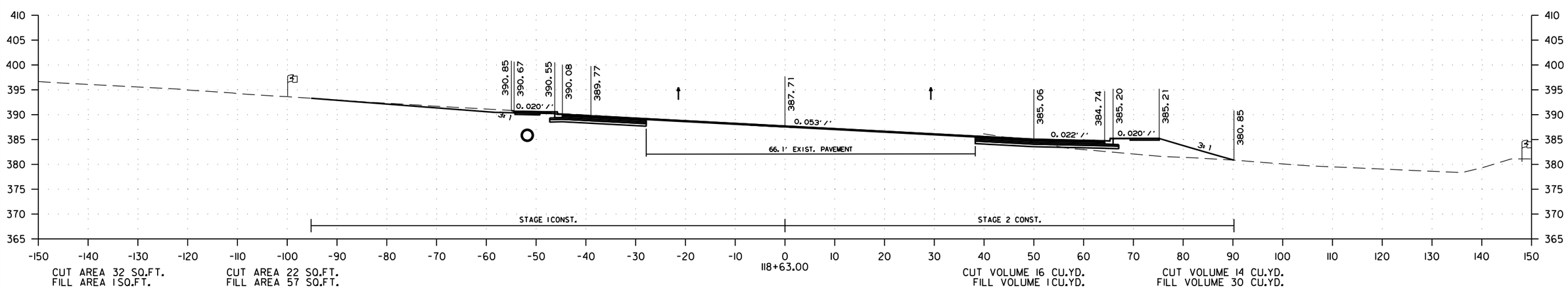
HWY. 49 - CROSS SECTION FROM STA118+00.00 TO STA. 118+47.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	70	97
		CROSS SECTIONS				





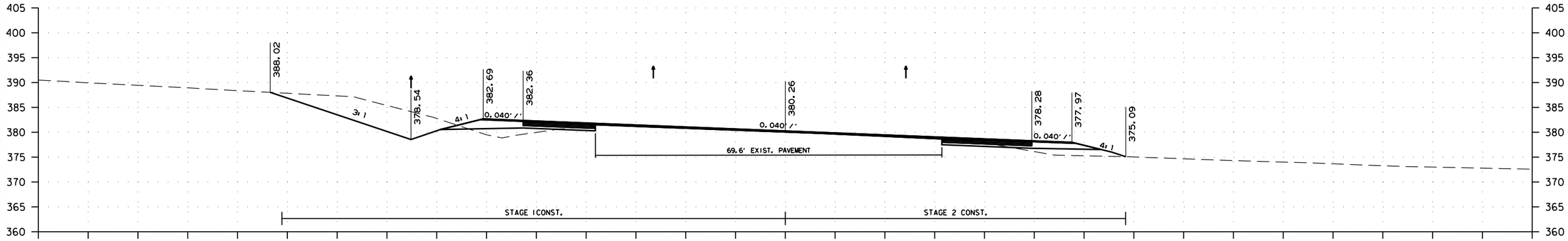


HWY. 49 - CROSS SECTION FROM STA118+63.00 TO STA. 119+13.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	71	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

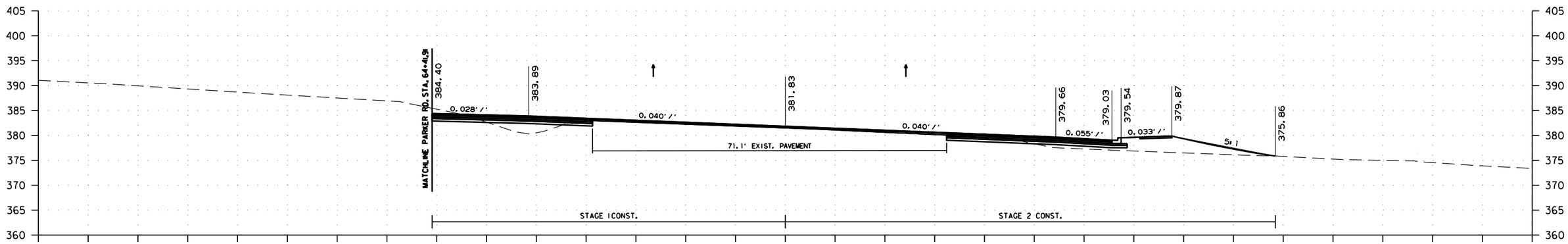


CUT AREA 118 SQ.FT.
FILL AREA 18 SQ.FT.

CUT AREA 11 SQ.FT.
FILL AREA 21 SQ.FT.

CUT VOLUME 161 CU.YD.
FILL VOLUME 42 CU.YD.

CUT VOLUME 32 CU.YD.
FILL VOLUME 106 CU.YD.

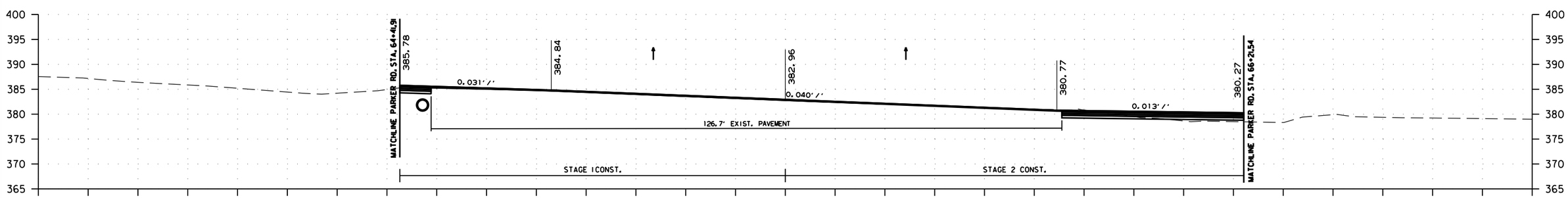


CUT AREA 20 SQ.FT.
FILL AREA 18 SQ.FT.

CUT AREA 16 SQ.FT.
FILL AREA 70 SQ.FT.

CUT VOLUME 19 CU.YD.
FILL VOLUME 12 CU.YD.

CUT VOLUME 25 CU.YD.
FILL VOLUME 51 CU.YD.



CUT AREA 7 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 20 SQ.FT.
FILL AREA 4 SQ.FT.

CUT VOLUME 47 CU.YD.
FILL VOLUME 61 CU.YD.

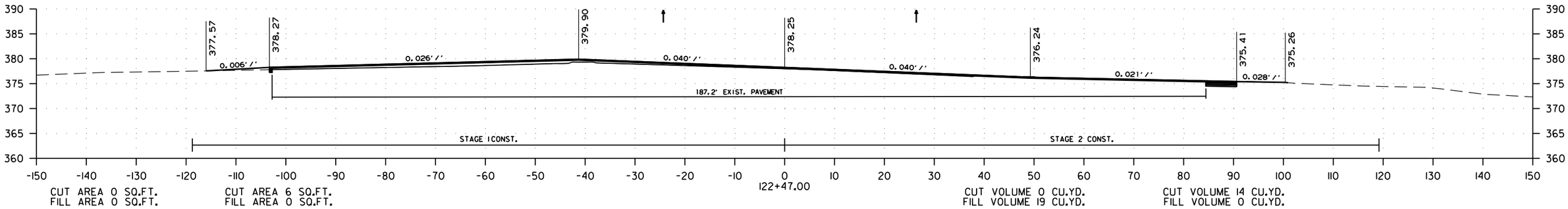
CUT VOLUME 102 CU.YD.
FILL VOLUME 37 CU.YD.

HWY. 49 - CROSS SECTION FROM STA 120+00.00 TO STA. 121+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	72	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

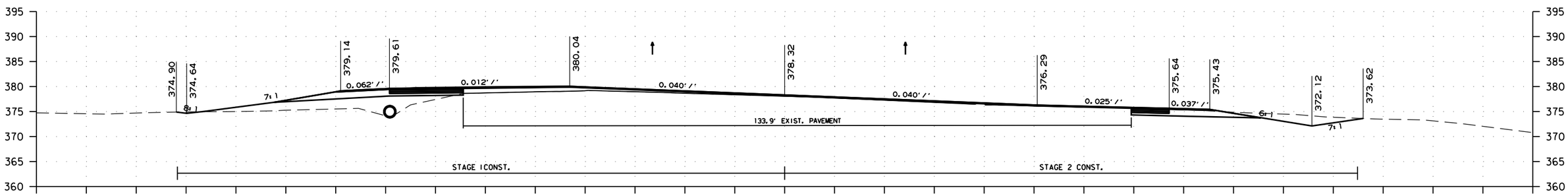


CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 6 SQ.FT.
FILL AREA 0 SQ.FT.

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

CUT VOLUME 14 CU.YD.
FILL VOLUME 0 CU.YD.

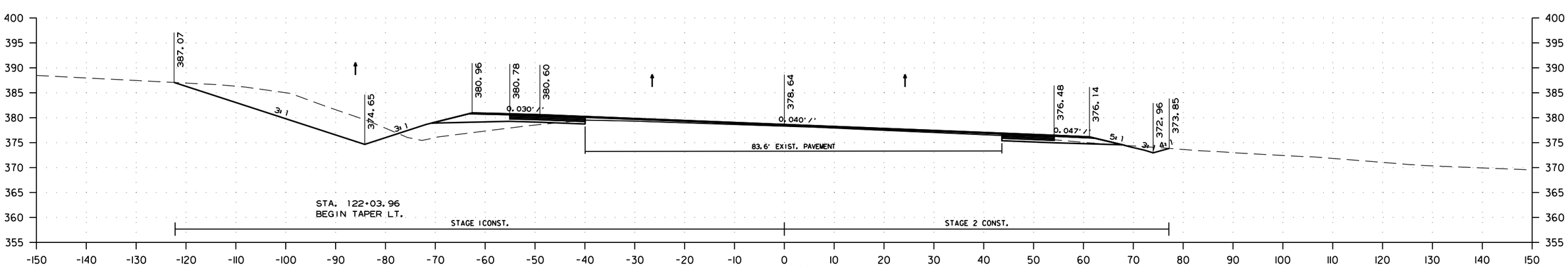


CUT AREA 1 SQ.FT.
FILL AREA 84 SQ.FT.

CUT AREA 58 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 105 CU.YD.
FILL VOLUME 86 CU.YD.

CUT VOLUME 49 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 161 SQ.FT.
FILL AREA 49 SQ.FT.

CUT AREA 18 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 517 CU.YD.
FILL VOLUME 124 CU.YD.

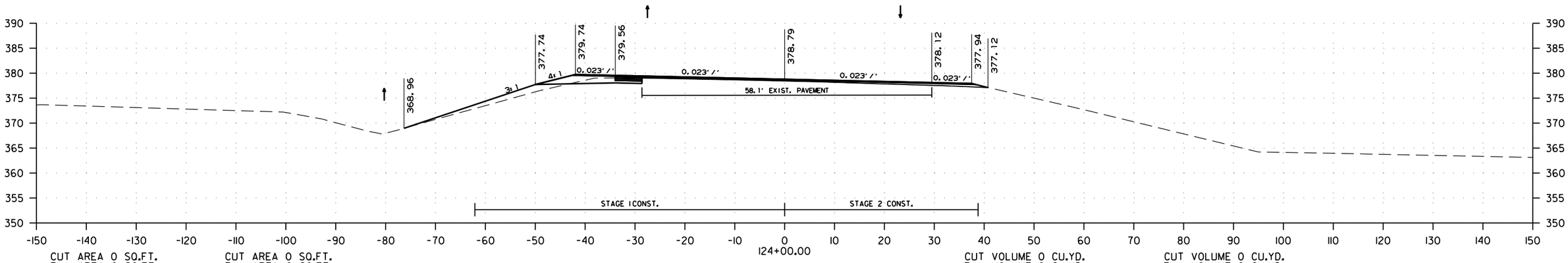
CUT VOLUME 54 CU.YD.
FILL VOLUME 39 CU.YD.

HWY. 49 - CROSS SECTION FROM STA122+00.00 TO STA. 122+47.00

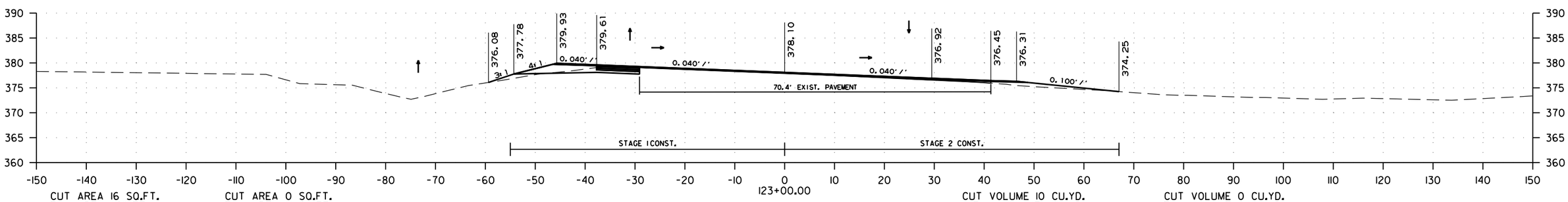
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	73	97
		CROSS SECTIONS				

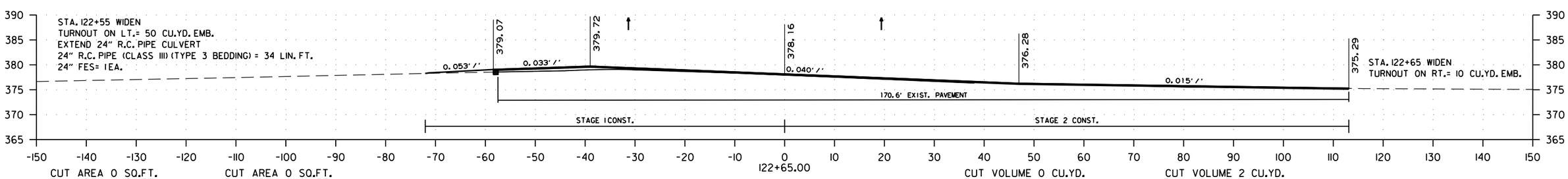
STAGE 1 STAGE 2 STAGE 1 STAGE 2



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. | CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. | CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. | CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.



CUT AREA 16 SQ.FT. FILL AREA 1 SQ.FT. | CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. | CUT VOLUME 10 CU.YD. FILL VOLUME 1 CU.YD. | CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.



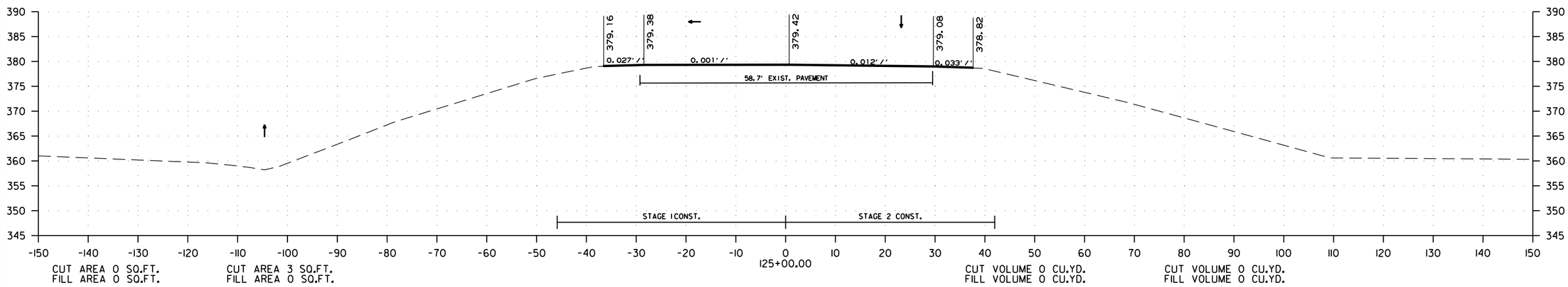
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. | CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. | CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. | CUT VOLUME 2 CU.YD. FILL VOLUME 0 CU.YD.

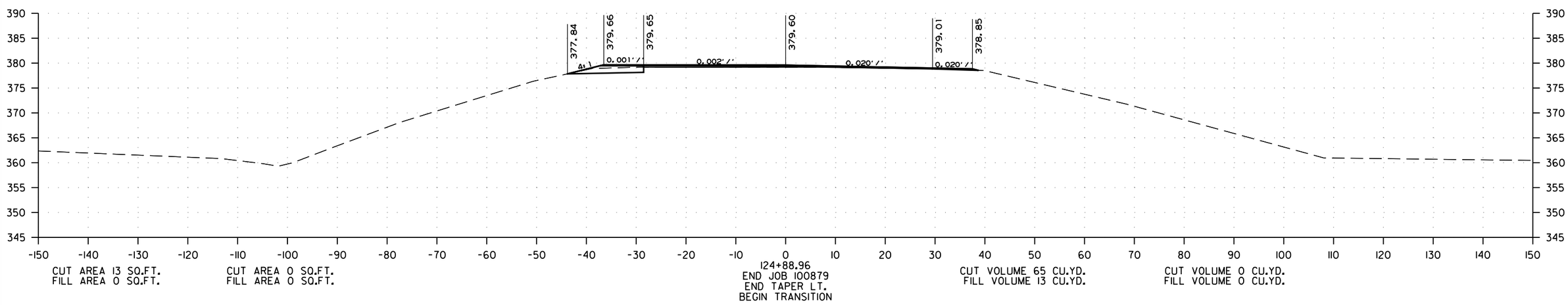
HWY. 49 - CROSS SECTION FROM STA122+65.00 TO STA. 124+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	74	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



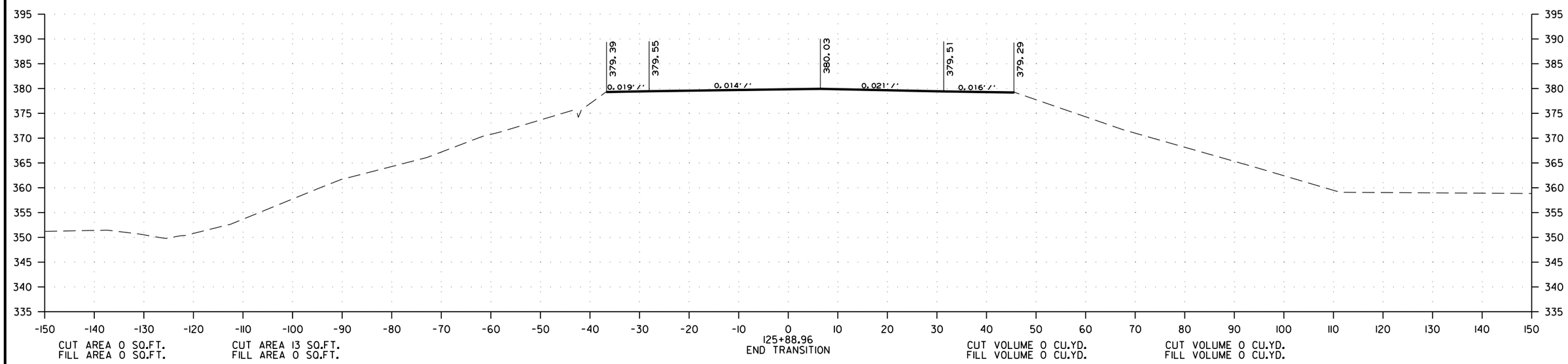


HWY. 49 - CROSS SECTION FROM STA 124+88.56 TO STA. 125+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	75	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

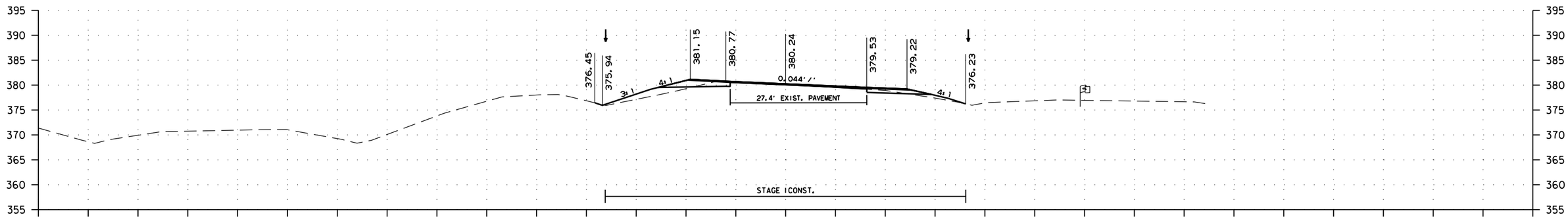


HWY. 49 - CROSS SECTION STA. 125+88.96 TO STA. 125+88.96

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	76	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



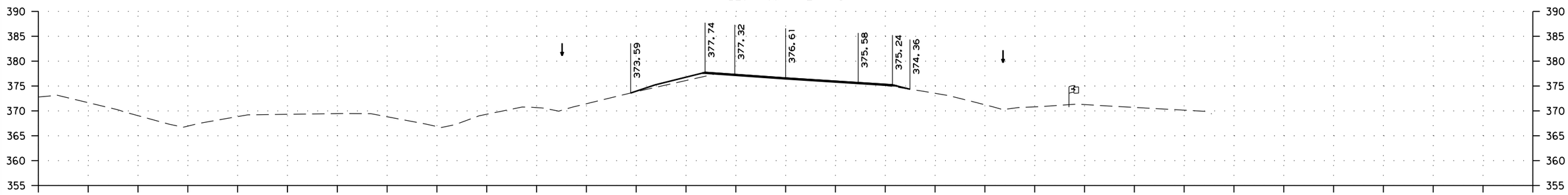
CUT AREA 8 SQ.FT.
FILL AREA 15 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

58+65.00
BEGIN W. PARKER RD.
END TRANSITION
BEGIN 100' TAPER RT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



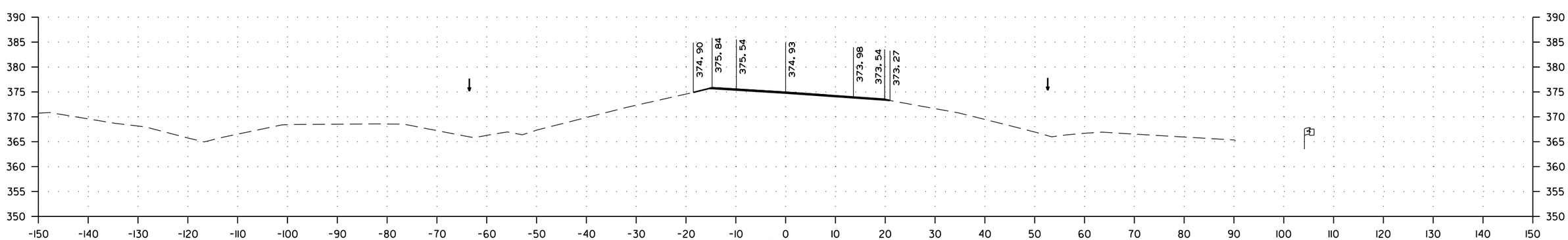
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

58+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

57+65.00
BEGIN TRANSITION

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

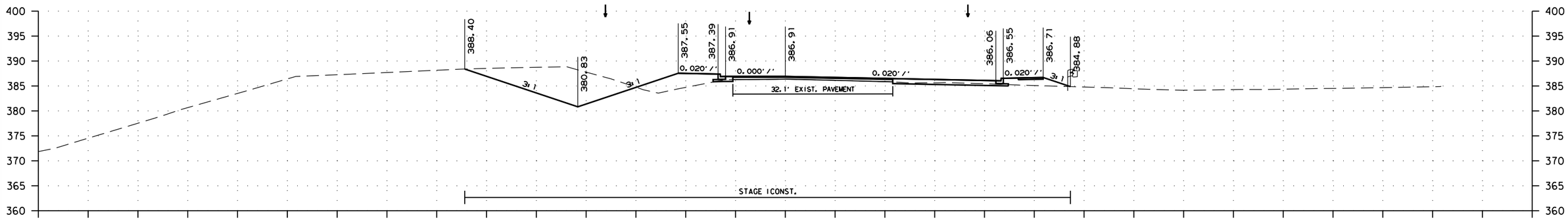
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 57+65.00 TO STA. 58+65.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	77	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

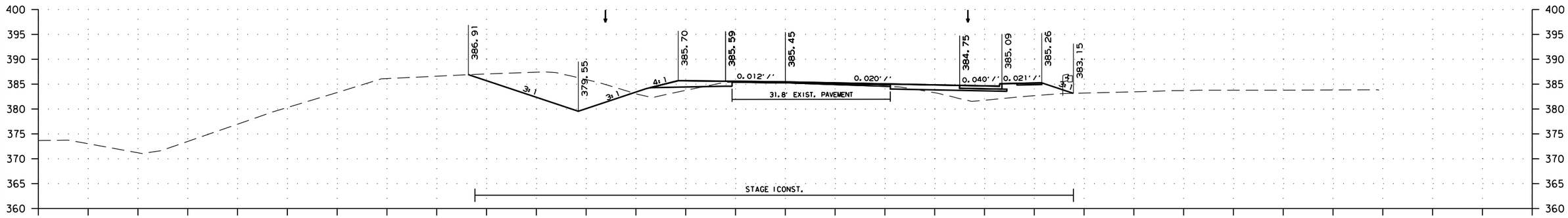


CUT AREA 144 SQ.FT.
FILL AREA 50 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 173 CU.YD.
FILL VOLUME 73 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

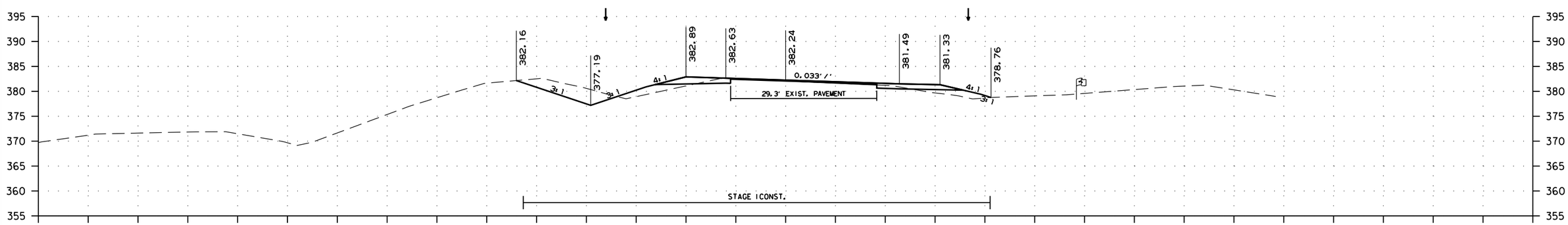


CUT AREA 123 SQ.FT.
FILL AREA 62 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 197 CU.YD.
FILL VOLUME 101 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 41 SQ.FT.
FILL AREA 22 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 32 CU.YD.
FILL VOLUME 24 CU.YD.

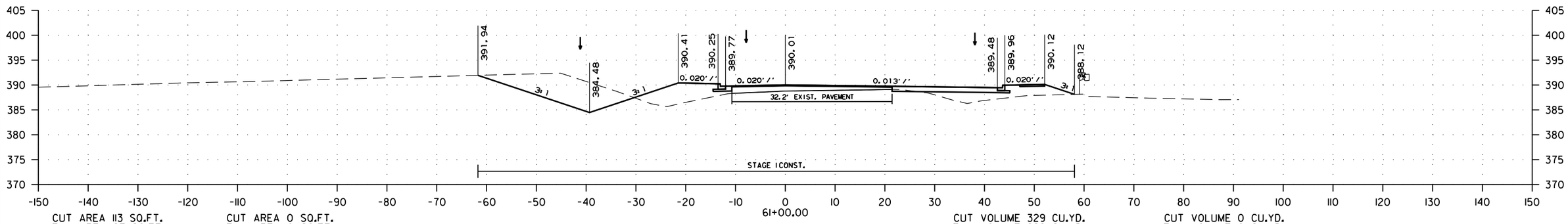
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 59+00.00 TO STA. 60+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	78	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



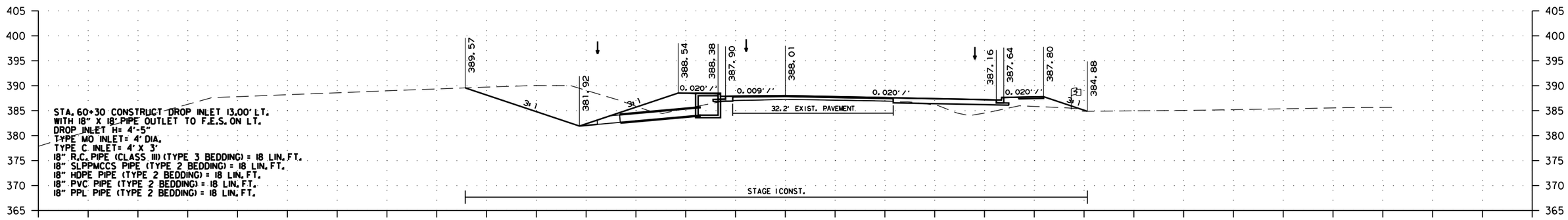
CUT AREA 113 SQ.FT.
FILL AREA 97 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

61+00.00

CUT VOLUME 329 CU.YD.
FILL VOLUME 229 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



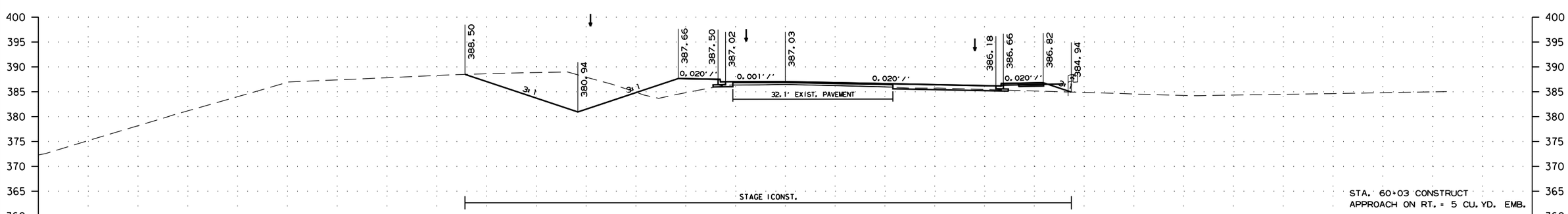
CUT AREA 141 SQ.FT.
FILL AREA 80 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

60+30.00

CUT VOLUME 142 CU.YD.
FILL VOLUME 66 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 143 SQ.FT.
FILL AREA 51 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

60+03.00

CUT VOLUME 16 CU.YD.
FILL VOLUME 6 CU.YD.

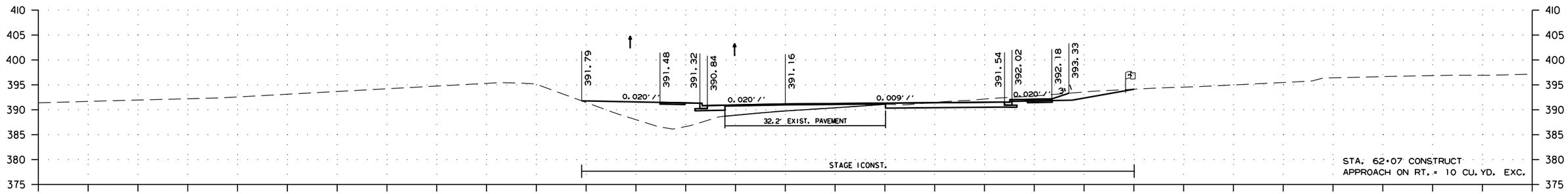
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 60+03.00 TO STA. 61+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	79	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

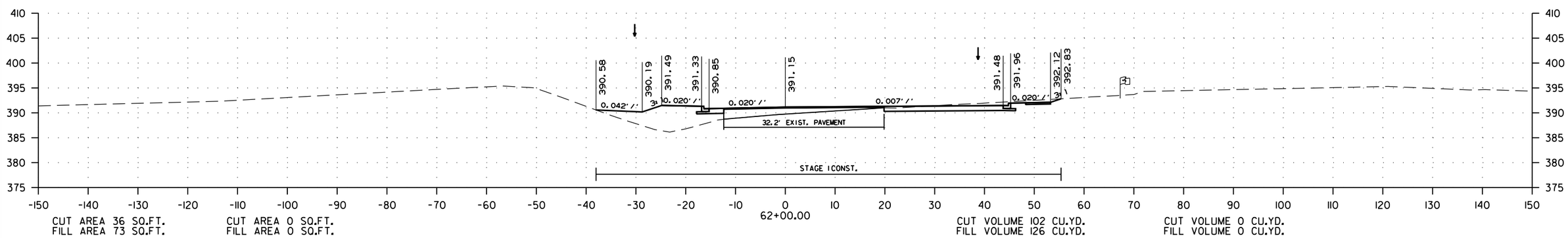


CUT AREA 40 SQ.FT.
FILL AREA 86 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 10 CU.YD.
FILL VOLUME 21 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

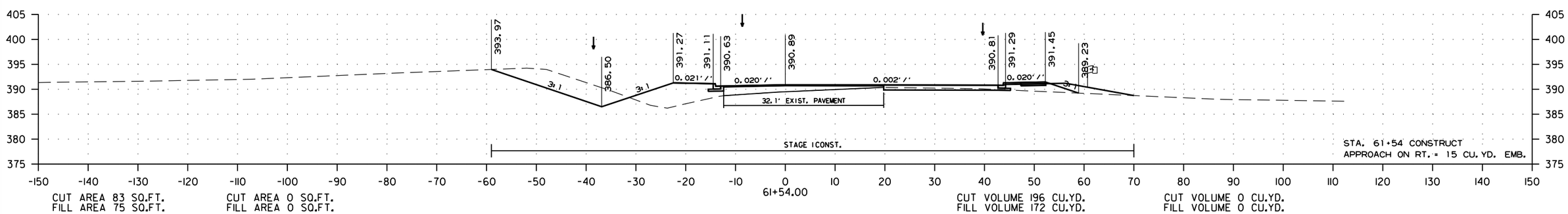


CUT AREA 36 SQ.FT.
FILL AREA 73 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 102 CU.YD.
FILL VOLUME 126 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 83 SQ.FT.
FILL AREA 75 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 196 CU.YD.
FILL VOLUME 172 CU.YD.

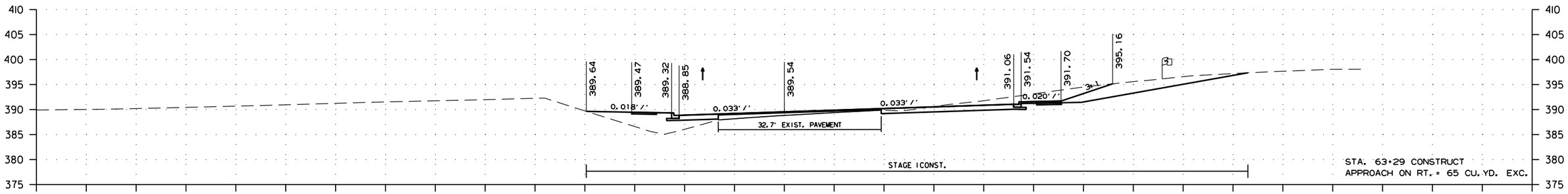
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 61+54.00 TO STA. 62+07.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	80	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

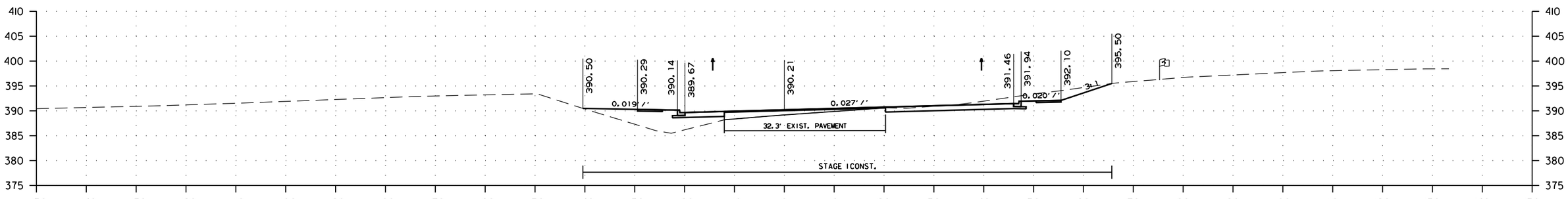


CUT AREA 67 SQ.FT.
FILL AREA 52 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 68 CU.YD.
FILL VOLUME 62 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

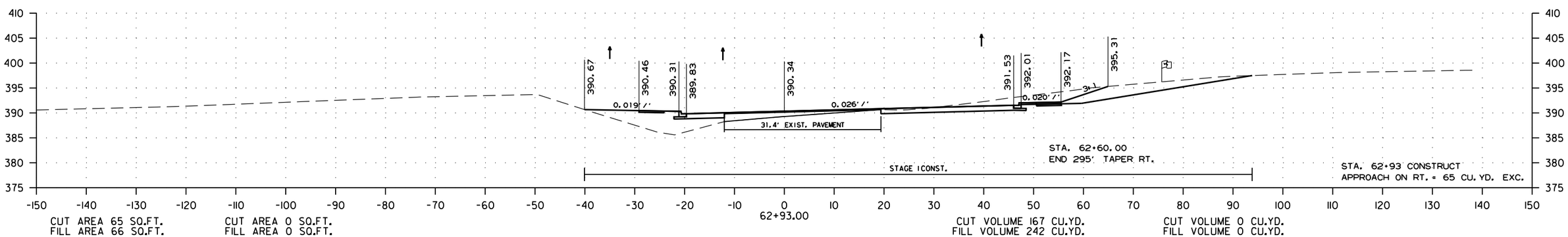


CUT AREA 60 SQ.FT.
FILL AREA 64 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 16 CU.YD.
FILL VOLUME 17 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 65 SQ.FT.
FILL AREA 66 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 167 CU.YD.
FILL VOLUME 242 CU.YD.

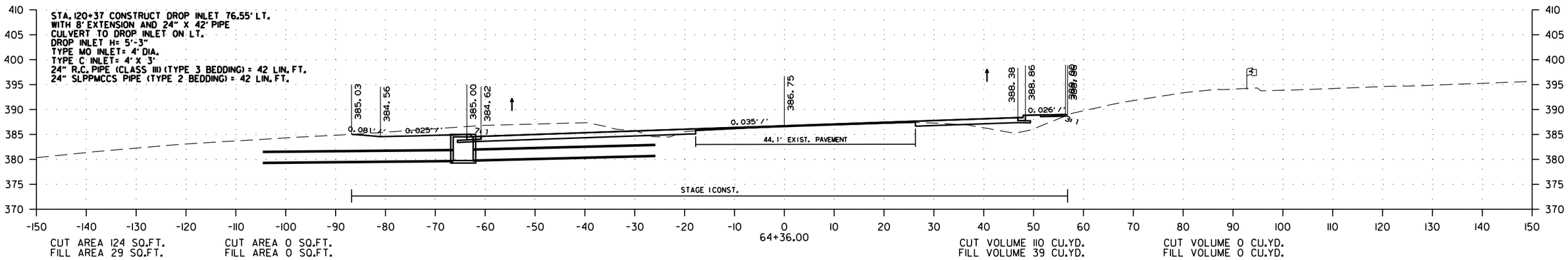
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 62+93.00 TO STA. 63+29.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	81	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

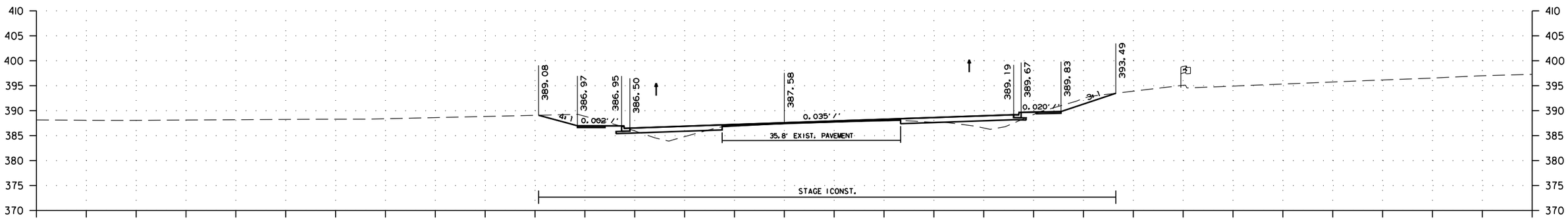


CUT AREA 124 SQ.FT.
FILL AREA 29 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 110 CU.YD.
FILL VOLUME 39 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

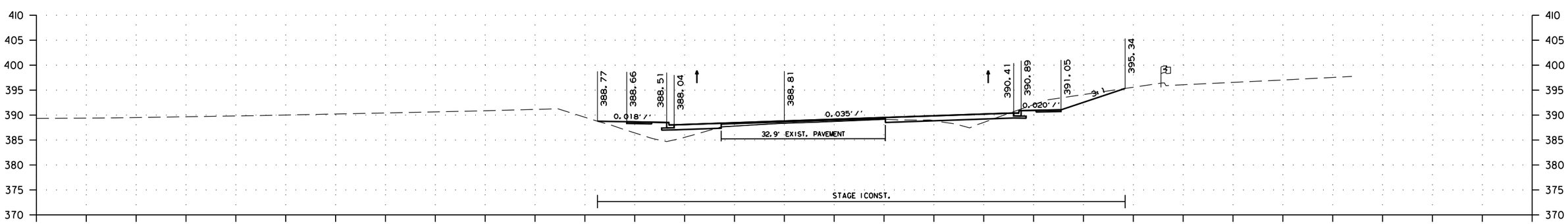


CUT AREA 41 SQ.FT.
FILL AREA 30 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 65 CU.YD.
FILL VOLUME 63 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 38 SQ.FT.
FILL AREA 47 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 52 CU.YD.
FILL VOLUME 49 CU.YD.

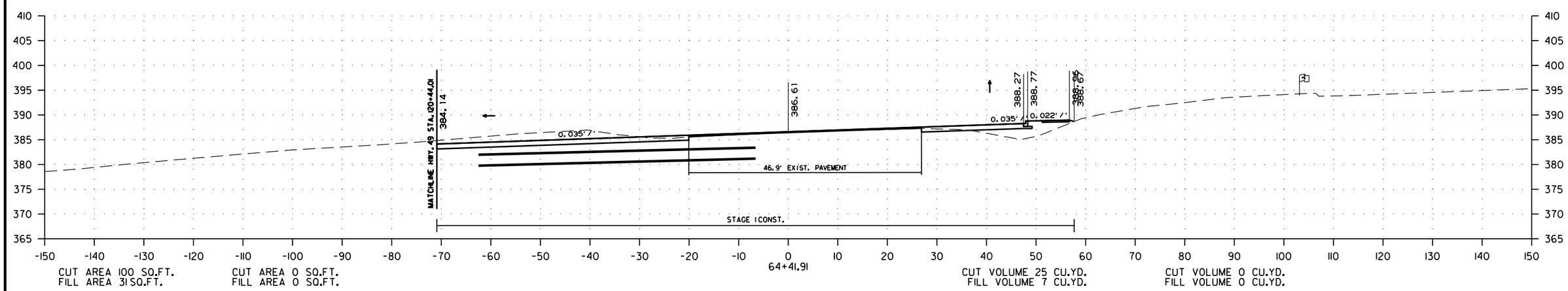
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 63+55.78 TO STA. 64+36.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	82	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

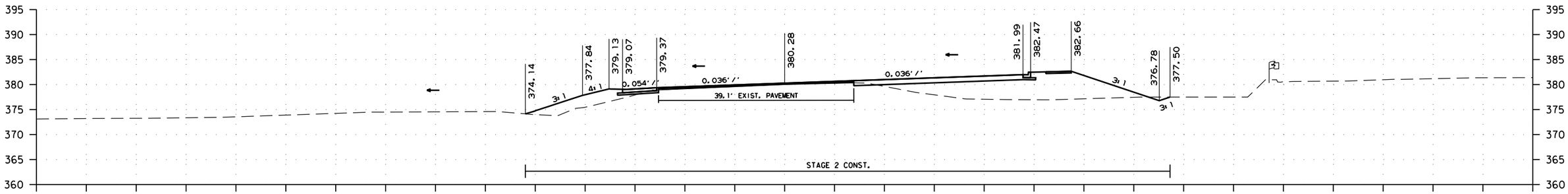


PARKER ROAD - CROSS SECTION FROM STA. 64+41.91 TO STA. 64+41.91

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	83	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



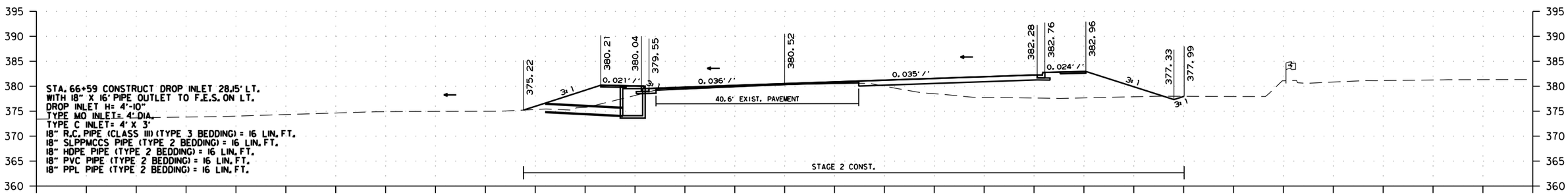
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 4.72 SQ.FT.
FILL AREA 208.17 SQ.FT.

66+70.58

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 2 CU.YD.
FILL VOLUME 99 CU.YD.



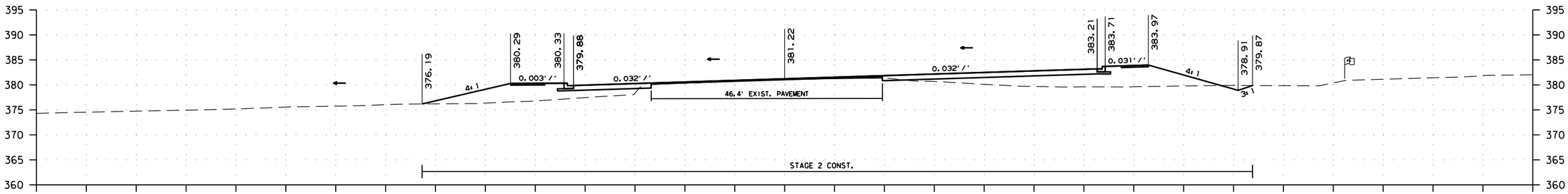
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 3.84 SQ.FT.
FILL AREA 216.19 SQ.FT.

66+58.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 7 CU.YD.
FILL VOLUME 293 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 6.07 SQ.FT.
FILL AREA 217.54 SQ.FT.

66+21.54

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

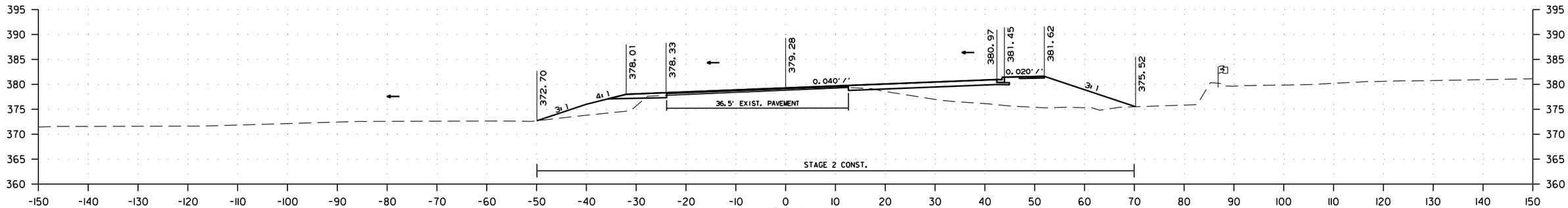
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 66+21.54 TO STA. 66+70.58

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	84	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



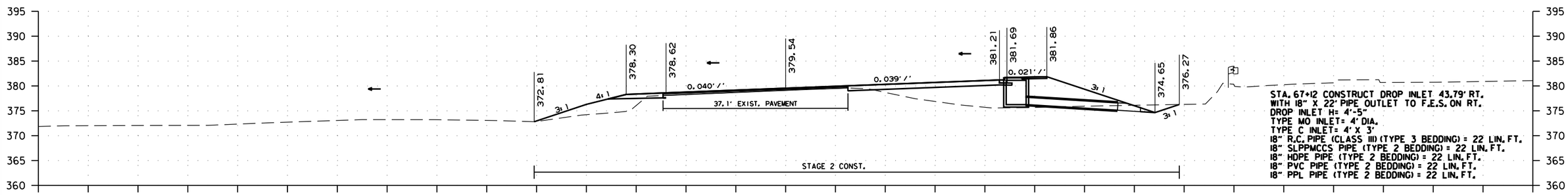
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 3.43 SQ.FT.
FILL AREA 206.50 SQ.FT.

67+21.41

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 3 CU.YD.
FILL VOLUME 96 CU.YD.



STA. 67+12 CONSTRUCT DROP INLET 43.79' RT.
WITH 18" X 22' PIPE OUTLET TO F.E.S. ON RT.
DROP INLET H= 4'-5"
TYPE MO INLET= 4' DIA.
TYPE C INLET= 4' X 3'
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 22 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 22 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 22 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 22 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 22 LIN. FT.

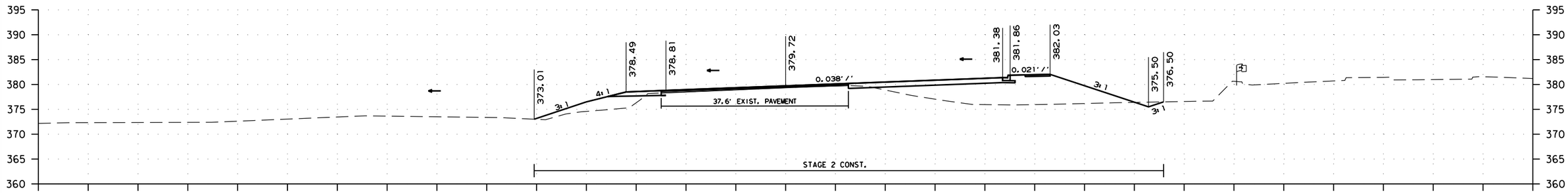
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 10.43 SQ.FT.
FILL AREA 211.94 SQ.FT.

67+09.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 3 CU.YD.
FILL VOLUME 70 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 5.89 SQ.FT.
FILL AREA 210.39 SQ.FT.

67+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

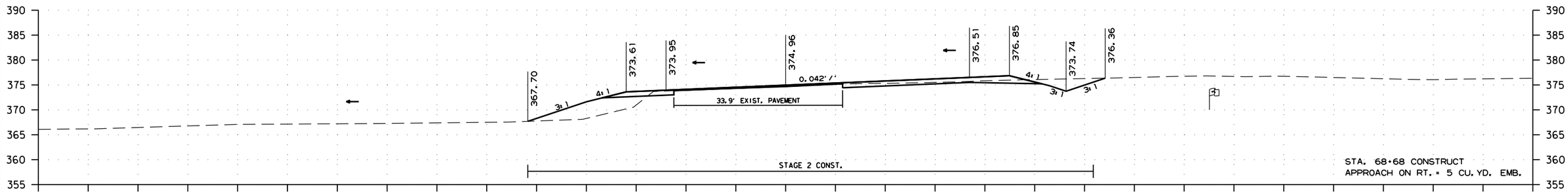
CUT VOLUME 6 CU.YD.
FILL VOLUME 228 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 67+00.00 TO STA. 67+21.41

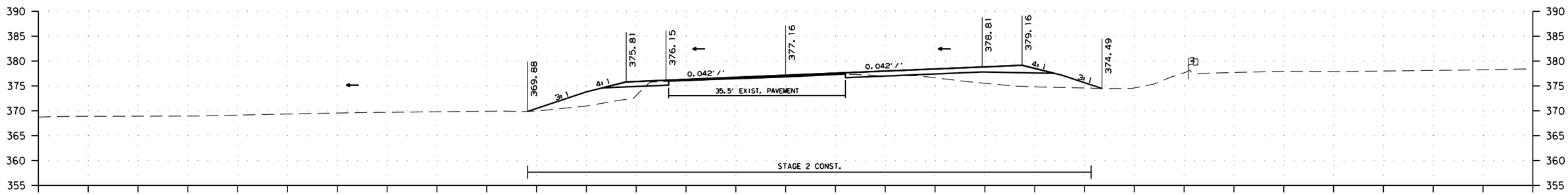
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	85	97
		CROSS SECTIONS				

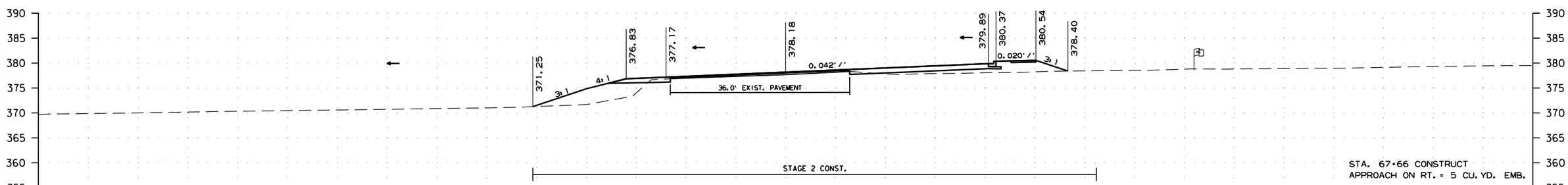
STAGE 1 STAGE 2 STAGE 1 STAGE 2



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. | CUT AREA 41.04 SQ.FT. FILL AREA 51.40 SQ.FT. | 68+68.00 | CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. | CUT VOLUME 59 CU.YD. FILL VOLUME 209 CU.YD.



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. | CUT AREA 6.22 SQ.FT. FILL AREA 115.43 SQ.FT. | 68+00.00 | CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. | CUT VOLUME 6 CU.YD. FILL VOLUME 128 CU.YD.



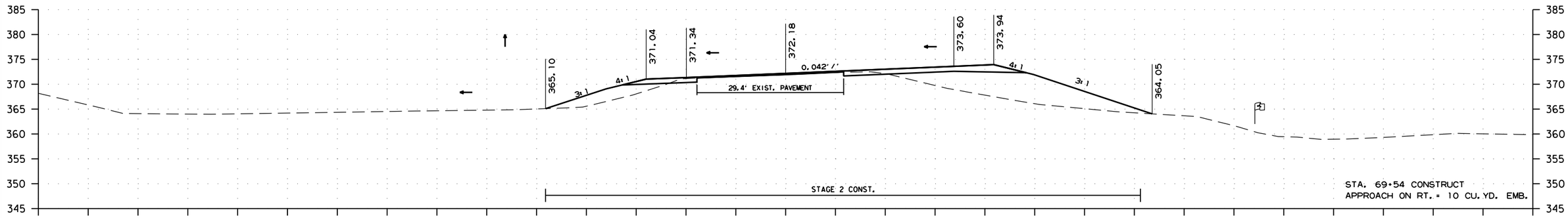
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. | CUT AREA 4.07 SQ.FT. FILL AREA 87.62 SQ.FT. | 67+66.00 | CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. | CUT VOLUME 6 CU.YD. FILL VOLUME 244 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 67+66.00 TO STA. 68+68.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	86	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



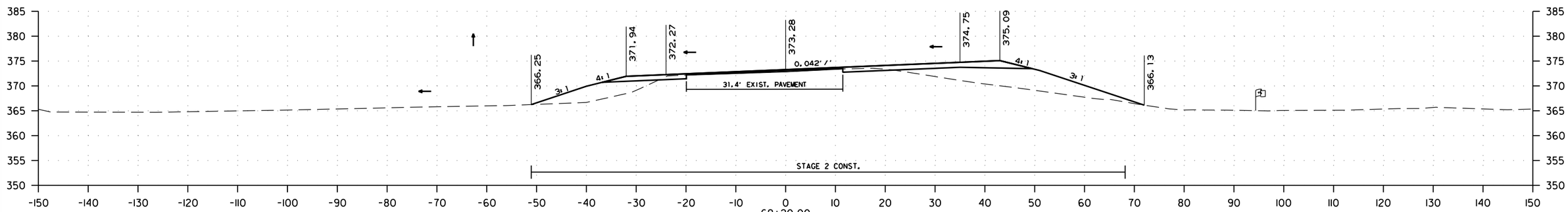
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 8.24 SQ.FT.
FILL AREA 215.72 SQ.FT.

69+54.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 10 CU.YD.
FILL VOLUME 242 CU.YD.



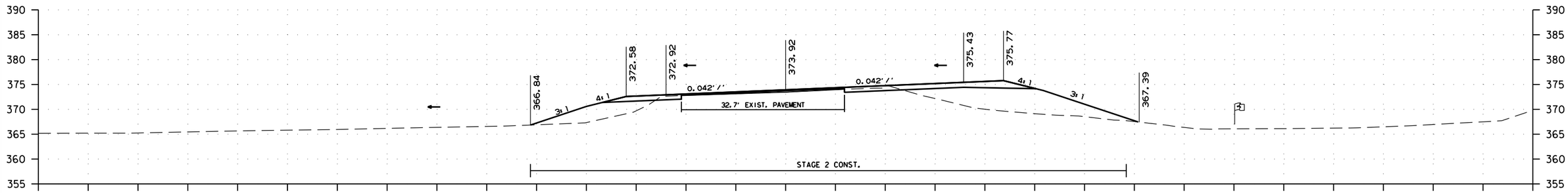
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 8.13 SQ.FT.
FILL AREA 168.44 SQ.FT.

69+20.00
BEGIN 100' TAPER LT.
END 295' TAPER RT.
BEGIN 295' TAPER RT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 7 CU.YD.
FILL VOLUME 133 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 9.95 SQ.FT.
FILL AREA 191.53 SQ.FT.

69+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

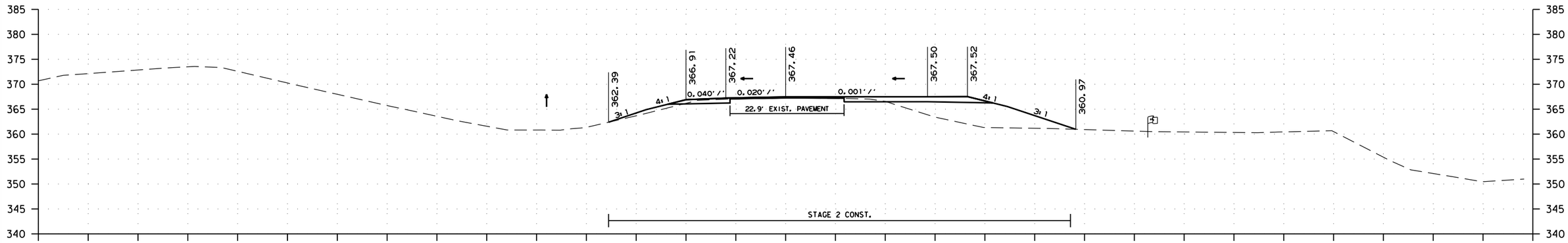
CUT VOLUME 30 CU.YD.
FILL VOLUME 144 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 69+00.00 TO STA. 69+54.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	87	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



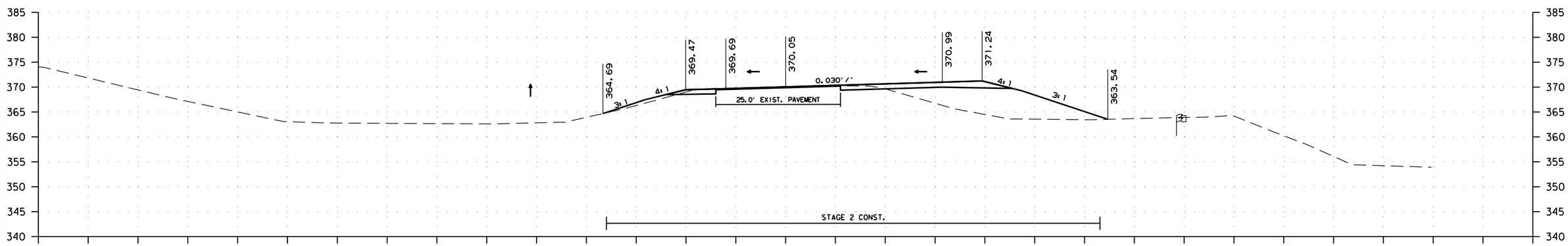
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 9.85 SQ.FT.
FILL AREA 113.13 SQ.FT.

71+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 31 CU.YD.
FILL VOLUME 404 CU.YD.



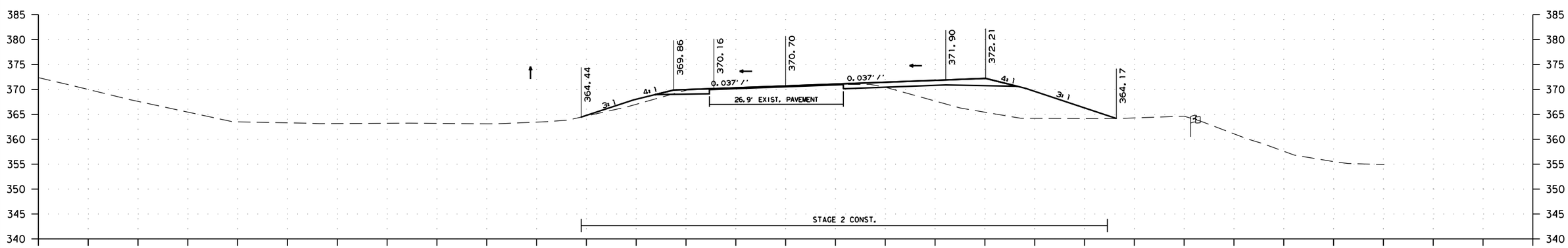
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 10.98 SQ.FT.
FILL AREA 159.52 SQ.FT.

70+20.00
END 100' TAPER LT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 8 CU.YD.
FILL VOLUME 124 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 10.66 SQ.FT.
FILL AREA 174.72 SQ.FT.

70+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

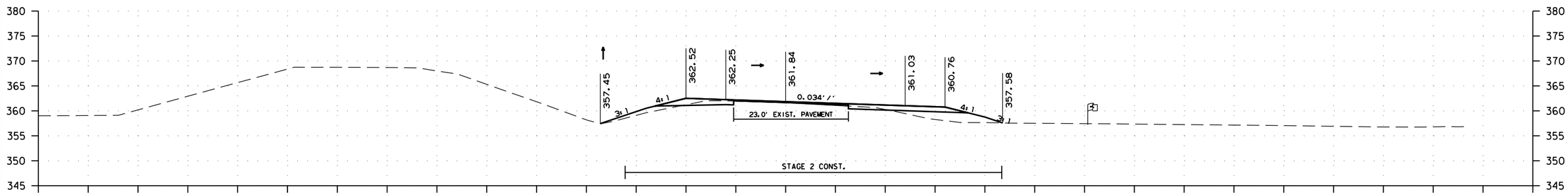
CUT VOLUME 16 CU.YD.
FILL VOLUME 333 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 70+00.00 TO STA. 71+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	88	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



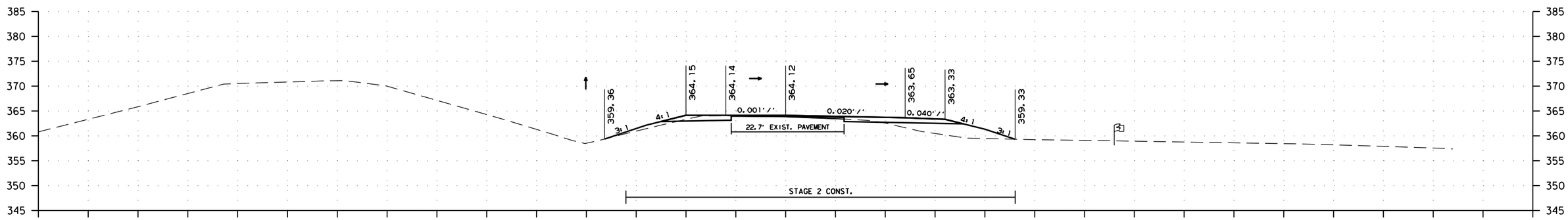
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 9.78 SQ.FT.
FILL AREA 36.07 SQ.FT.

73+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 31 CU.YD.
FILL VOLUME 132 CU.YD.



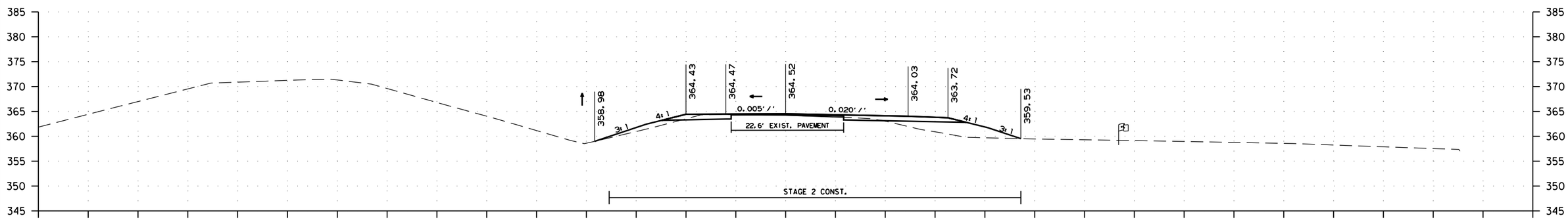
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 10.15 SQ.FT.
FILL AREA 47.54 SQ.FT.

72+15.00
END 295' TAPER RT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 6 CU.YD.
FILL VOLUME 29 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 10.24 SQ.FT.
FILL AREA 54.96 SQ.FT.

72+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

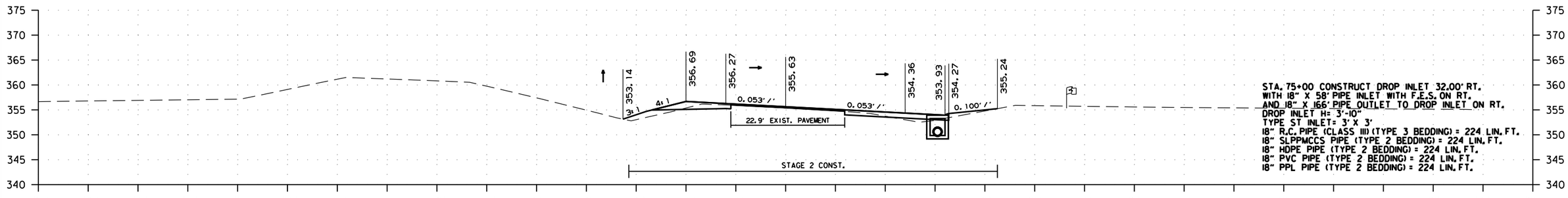
CUT VOLUME 37 CU.YD.
FILL VOLUME 311 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 72+00.00 TO STA. 73+00.00

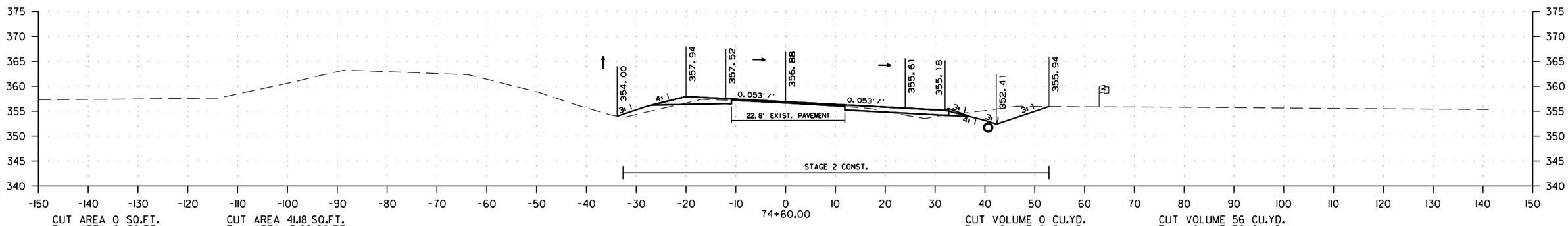
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	89	97
		CROSS SECTIONS				

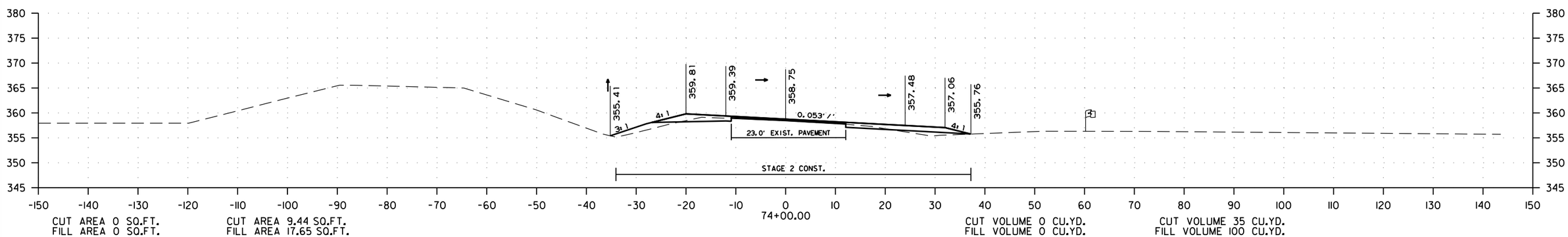
STAGE 1 STAGE 2 STAGE 1 STAGE 2



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. CUT AREA 12.03 SQ.FT. FILL AREA 16.17 SQ.FT. CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. CUT VOLUME 39 CU.YD. FILL VOLUME 22 CU.YD.



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. CUT AREA 41.18 SQ.FT. FILL AREA 13.62 SQ.FT. CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. CUT VOLUME 56 CU.YD. FILL VOLUME 36 CU.YD.



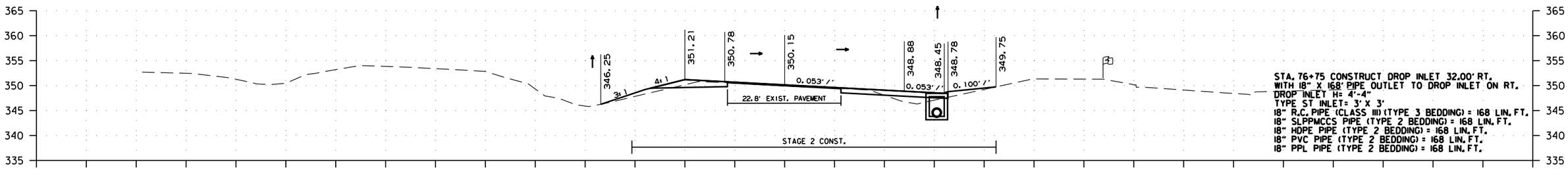
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. CUT AREA 9.44 SQ.FT. FILL AREA 17.65 SQ.FT. CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. CUT VOLUME 35 CU.YD. FILL VOLUME 100 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 74+00.00 TO STA. 75+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	90	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



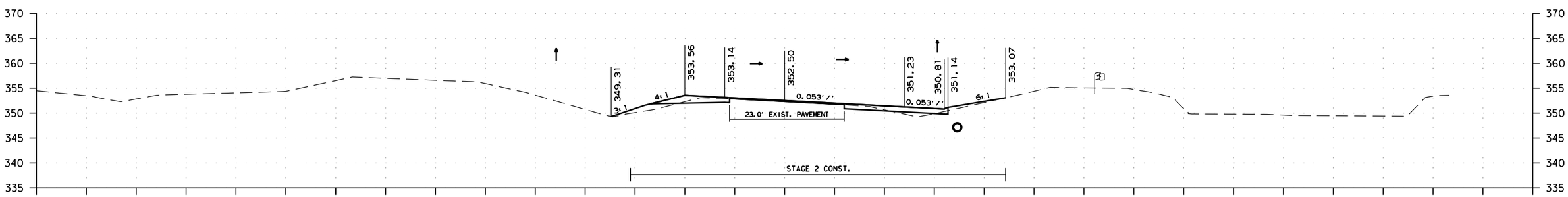
76+75.00

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 14.81SQ.FT.
FILL AREA 21.80SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 40 CU.YD.
FILL VOLUME 54 CU.YD.



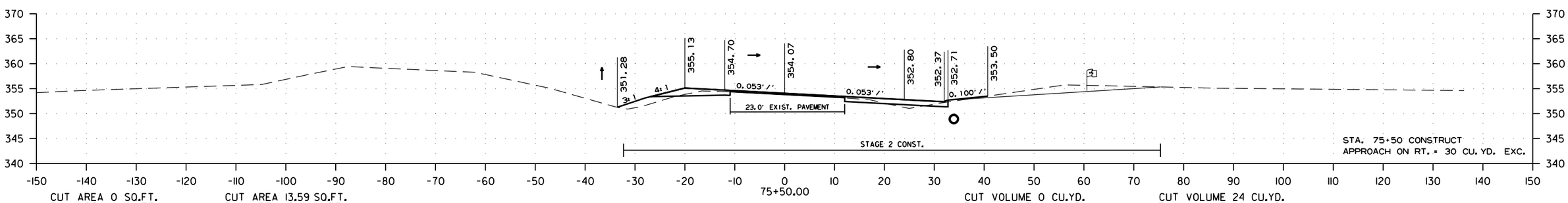
76+00.00

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 13.68 SQ.FT.
FILL AREA 16.75 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 26 CU.YD.
FILL VOLUME 30 CU.YD.



75+50.00

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 13.59 SQ.FT.
FILL AREA 15.10 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

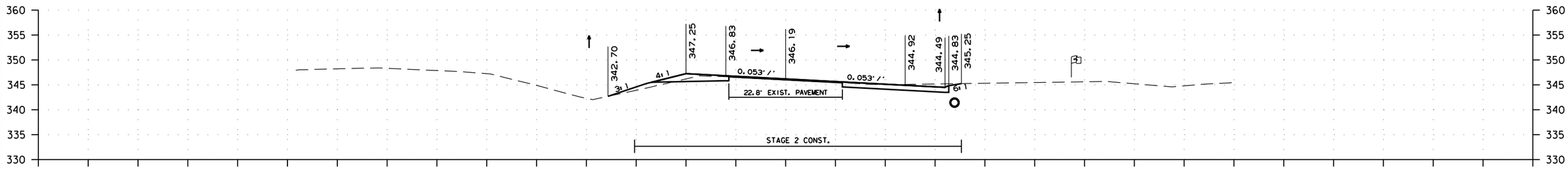
CUT VOLUME 24 CU.YD.
FILL VOLUME 29 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 75+50.00 TO STA. 76+75.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	91	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

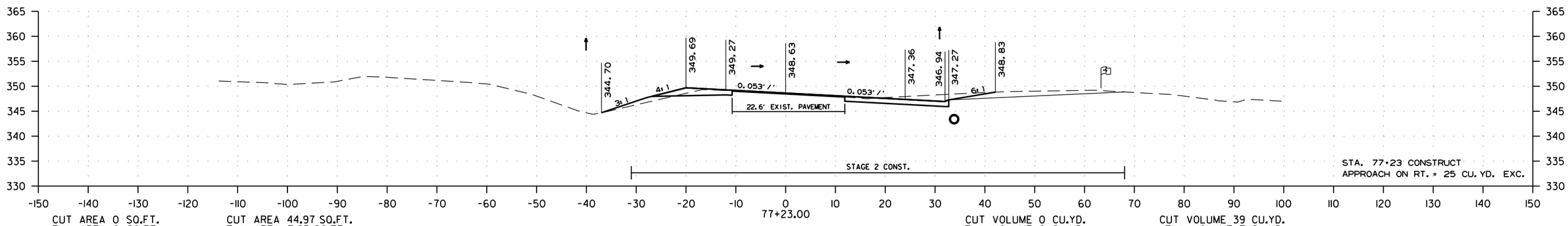


CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 33.08 SQ.FT.
FILL AREA 6.55 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 111 CU.YD.
FILL VOLUME 21 CU.YD.



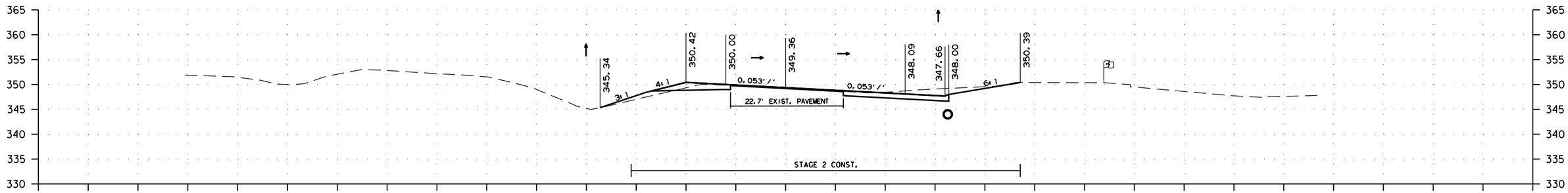
STA. 77+23 CONSTRUCT
APPROACH ON RT. = 25 CU. YD. EXC.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 44.97 SQ.FT.
FILL AREA 7.65 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 39 CU.YD.
FILL VOLUME 7 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 47.19 SQ.FT.
FILL AREA 7.66 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

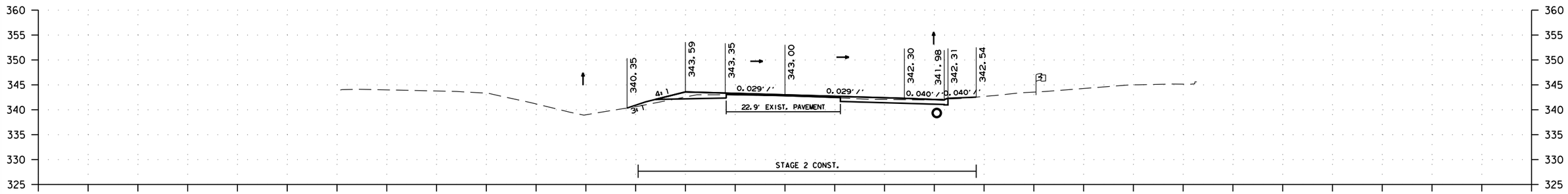
CUT VOLUME 29 CU.YD.
FILL VOLUME 14 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 77+00.00 TO STA. 78+00.00

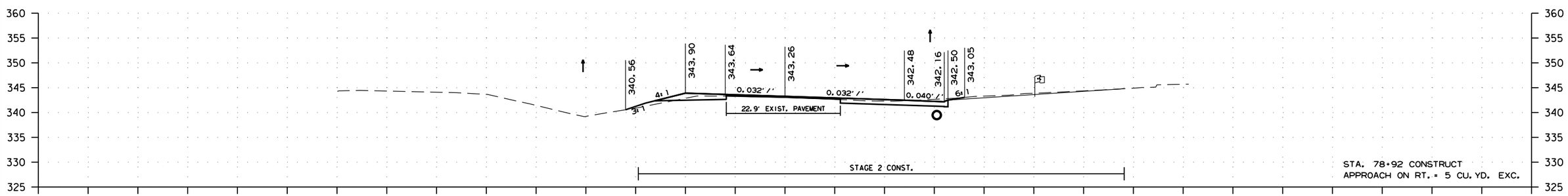
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	92	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

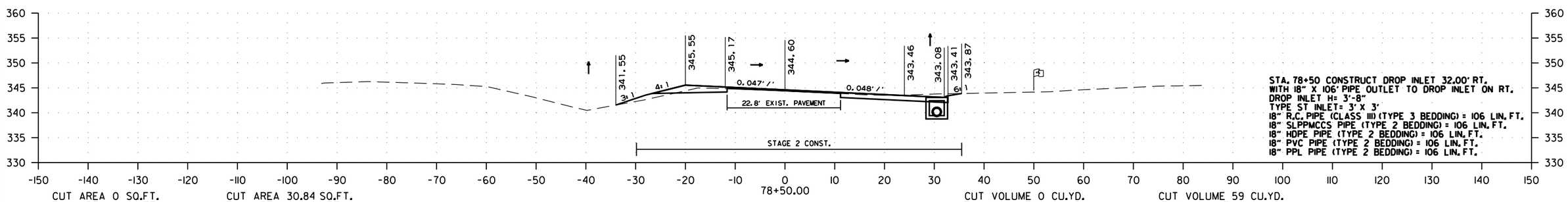


CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 22.06 SQ.FT. FILL AREA 4.38 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 7 CU.YD. FILL VOLUME 1 CU.YD.



STA. 78+92 CONSTRUCT APPROACH ON RT. = 5 CU. YD. EXC.

CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 26.28 SQ.FT. FILL AREA 3.99 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 44 CU.YD. FILL VOLUME 8 CU.YD.



STA. 78+50 CONSTRUCT DROP INLET 32.00' RT.
WITH 18" X 106' PIPE OUTLET TO DROP INLET ON RT.
DROP INLET H= 3'-8"
TYPE ST INLET= 3' X 3'
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 106 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 106 LIN. FT.
18" HDPE PIPE (TYPE 2 BEDDING) = 106 LIN. FT.
18" PVC PIPE (TYPE 2 BEDDING) = 106 LIN. FT.
18" PPL PIPE (TYPE 2 BEDDING) = 106 LIN. FT.

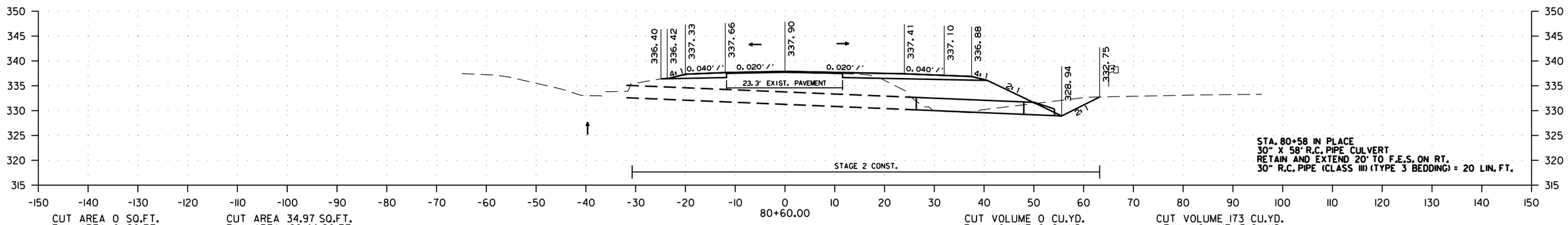
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 30.84 SQ.FT. FILL AREA 6.16 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 59 CU.YD. FILL VOLUME 12 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 78+50.00 TO STA. 79+00.00

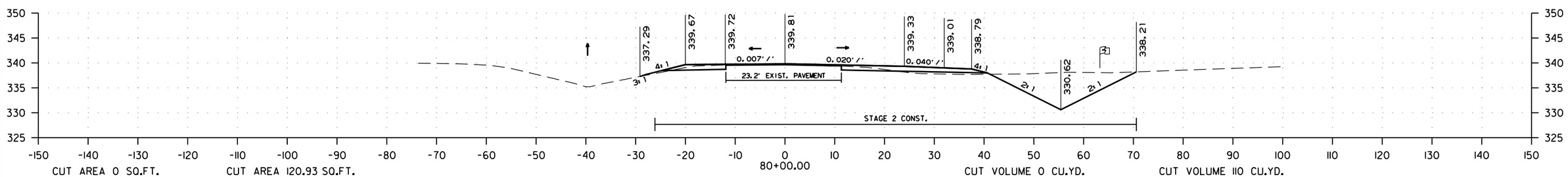
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	93	97
		CROSS SECTIONS				

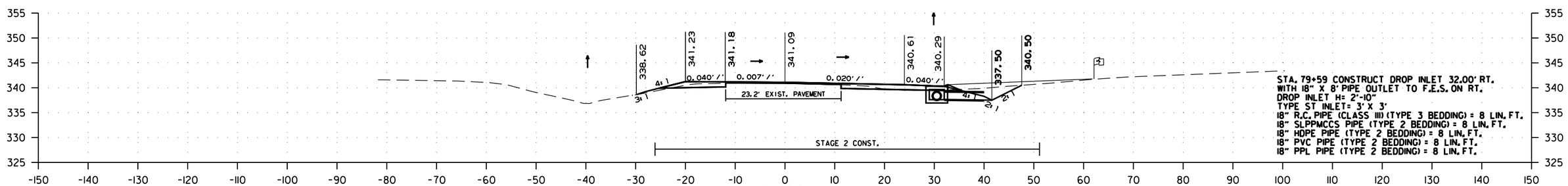
STAGE 1 STAGE 2 STAGE 1 STAGE 2



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 34.97 SQ.FT. FILL AREA 129.44 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 173 CU.YD. FILL VOLUME 151 CU.YD.



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 120.93 SQ.FT. FILL AREA 7.38 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 110 CU.YD. FILL VOLUME 7 CU.YD.



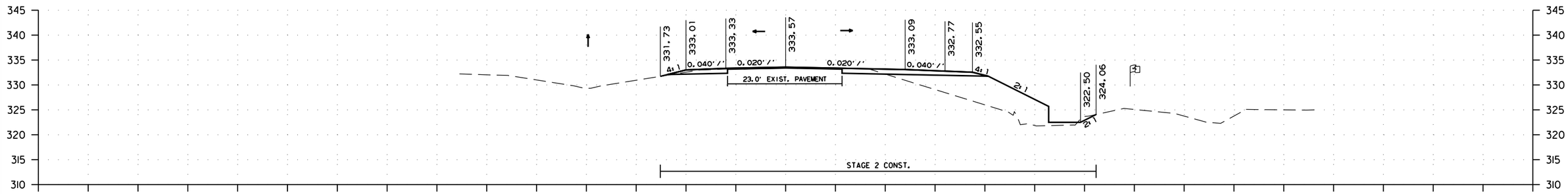
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 26.91 SQ.FT. FILL AREA 2.39 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 54 CU.YD. FILL VOLUME 7 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 79+60.00 TO STA. 80+60.00

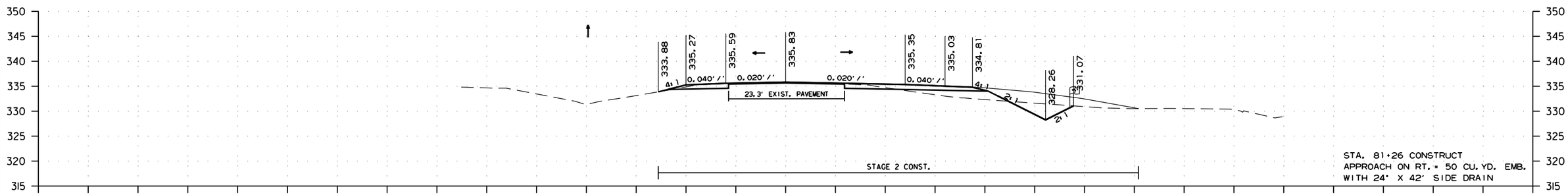
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	94	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2

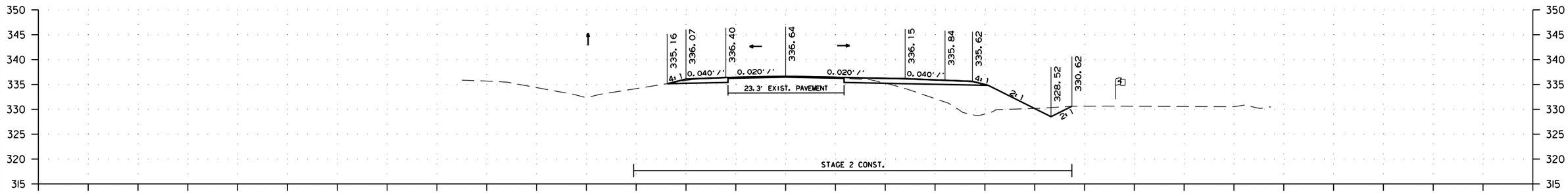


CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 15.34 SQ.FT. FILL AREA 129.86 SQ.FT.
82+00.00
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 69 CU.YD. FILL VOLUME 208 CU.YD.



STA. 81+26 CONSTRUCT
APPROACH ON RT. = 50 CU.YD. EMB.
WITH 24" X 42' SIDE DRAIN

CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 34.55 SQ.FT. FILL AREA 22.31SQ.FT.
81+26.00
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 26 CU.YD. FILL VOLUME 53 CU.YD.



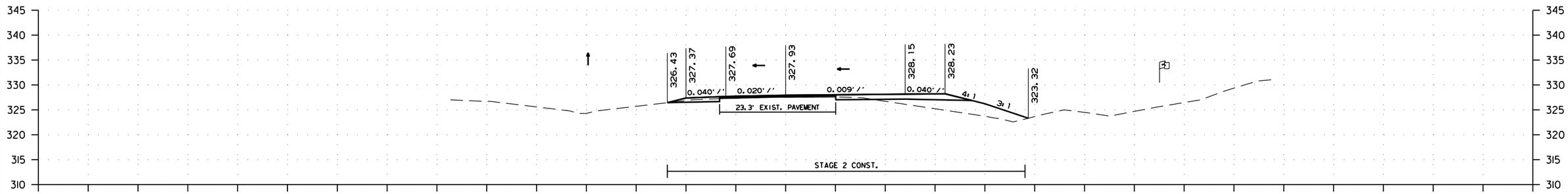
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 20.29 SQ.FT. FILL AREA 89.16 SQ.FT.
81+00.00
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 41CU.YD. FILL VOLUME 161CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 81+00.00 TO STA. 82+00.00

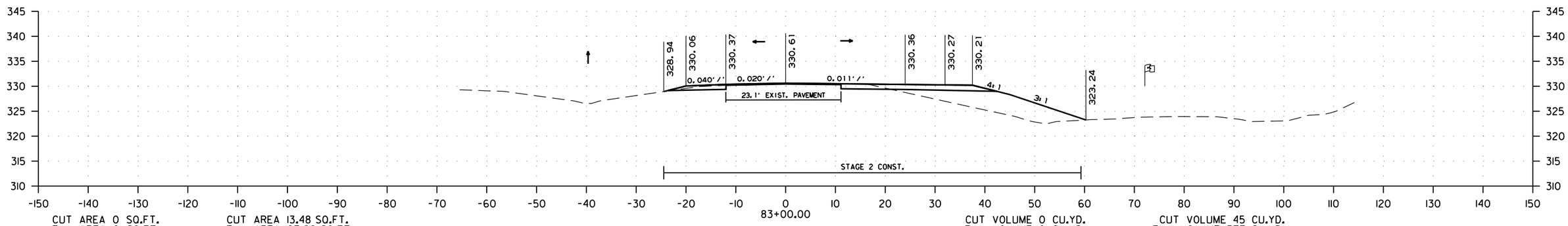
tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	95	97
		CROSS SECTIONS				

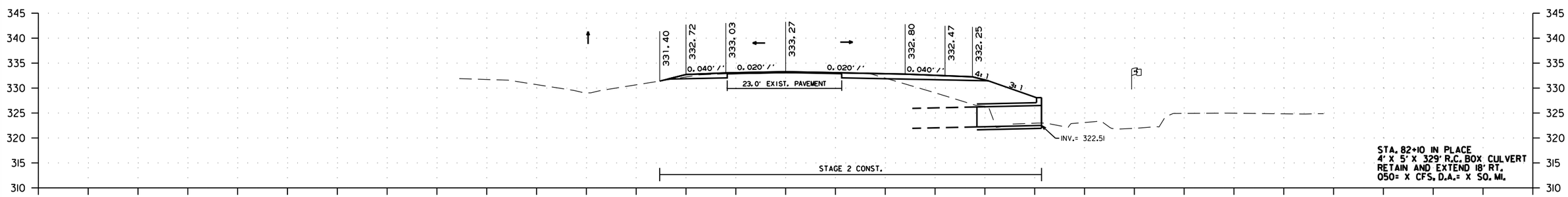
STAGE 1 STAGE 2 STAGE 1 STAGE 2



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 6.81SQ.FT. FILL AREA 50.30 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 37 CU.YD. FILL VOLUME 274 CU.YD.



CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 13.48 SQ.FT. FILL AREA 97.86 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 45 CU.YD. FILL VOLUME 377 CU.YD.



STA. 82+10 IN PLACE
4' X 5' X 329' R.C. BOX CULVERT
RETAIN AND EXTEND 18' RT.
050= X CFS. D.A.= X SQ. MI.

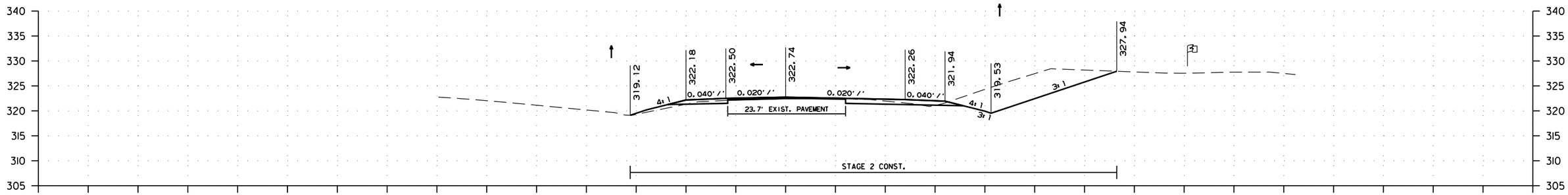
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 13.86 SQ.FT. FILL AREA 127.87 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 5 CU.YD. FILL VOLUME 48 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 82+10.00 TO STA. 84+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	96	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



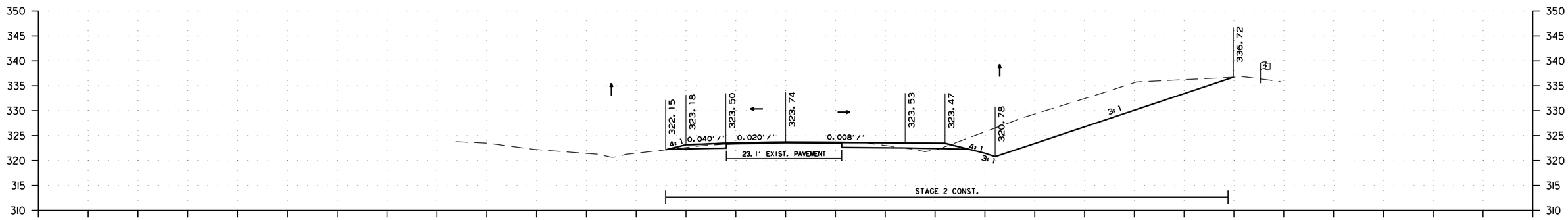
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 129.98 SQ.FT.
FILL AREA 5.08 SQ.FT.

87+00.00
BEGIN 85' TAPER

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 719 CU.YD.
FILL VOLUME 13 CU.YD.



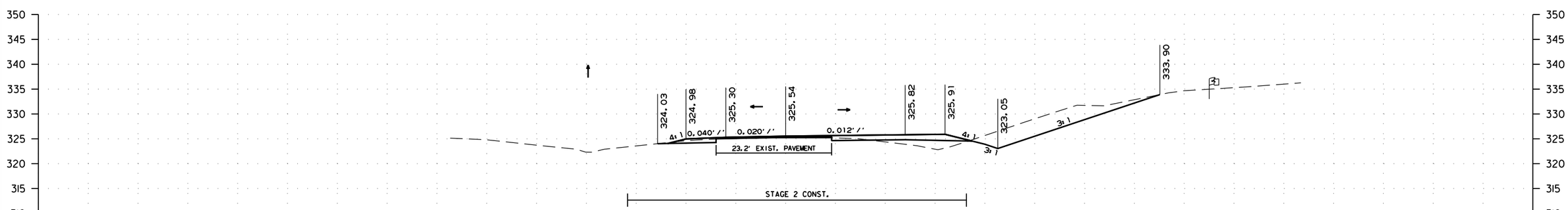
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 257.60 SQ.FT.
FILL AREA 2.47 SQ.FT.

86+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 652 CU.YD.
FILL VOLUME 37 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 94.24 SQ.FT.
FILL AREA 18.20 SQ.FT.

85+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

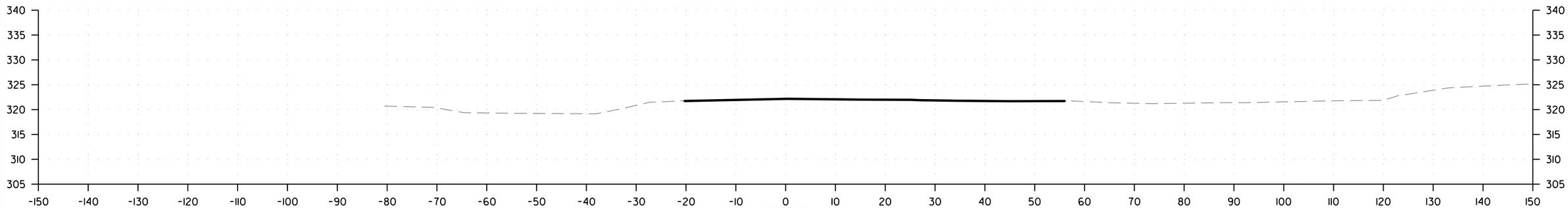
CUT VOLUME 187 CU.YD.
FILL VOLUME 126 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 85+00.00 TO STA. 87+00.00

tholt 4/23/2025
R100879.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100879	97	97
		CROSS SECTIONS				

STAGE 1 STAGE 2 STAGE 1 STAGE 2



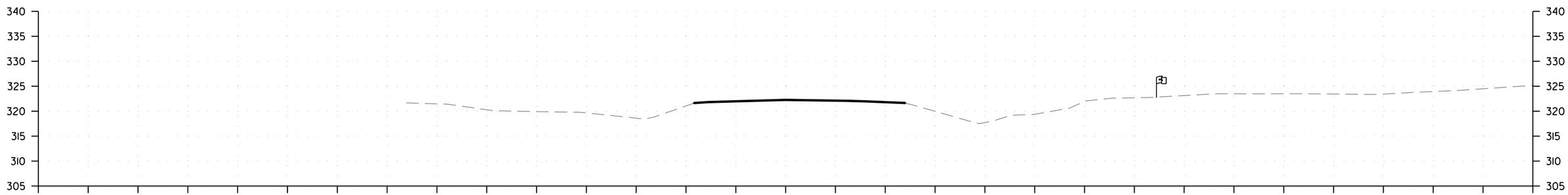
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 12.76 SQ.FT.
FILL AREA 0 SQ.FT.

88+85.00
END TRANSSITION

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 22 CU.YD.
FILL VOLUME 0 CU.YD.



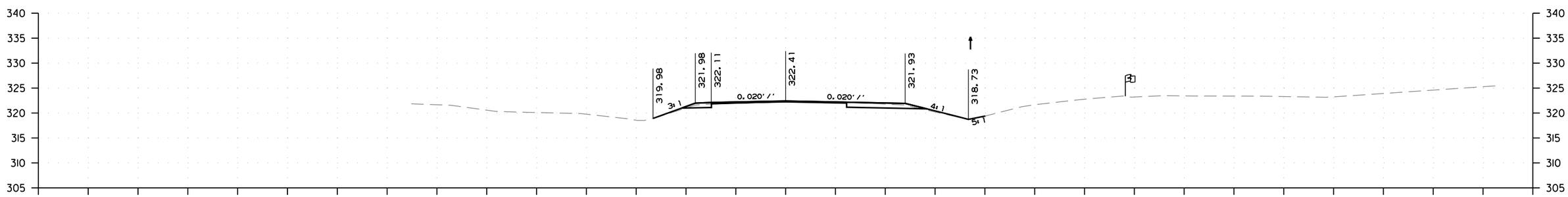
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 1.44 SQ.FT.
FILL AREA 0 SQ.FT.

88+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

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



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 13.00 SQ.FT.
FILL AREA 2.34 SQ.FT.

87+85.00
END W. PARKER RD.
END 85' TAPER
BEGIN TRANSITION

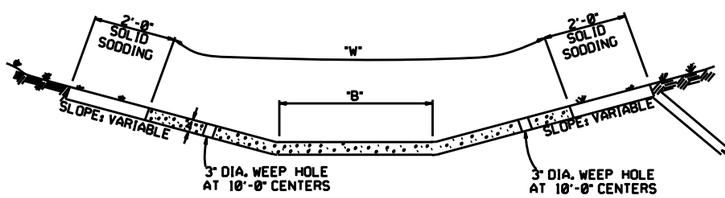
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 225 CU.YD.
FILL VOLUME 12 CU.YD.

PARKER ROAD - CROSS SECTION FROM STA. 87+88.86 TO STA. 87+88.86

tholt 4/23/2025
R100879.DGN

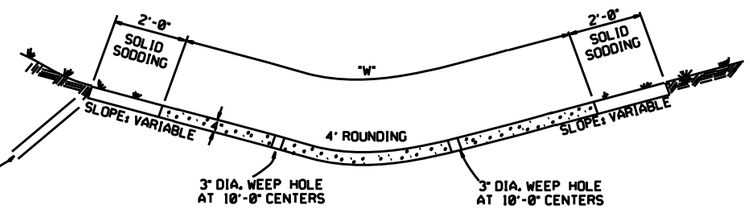
REFER TO TABULATION OF QUANTITIES FOR "W" & "B" DIMENSIONS



TYPE A

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

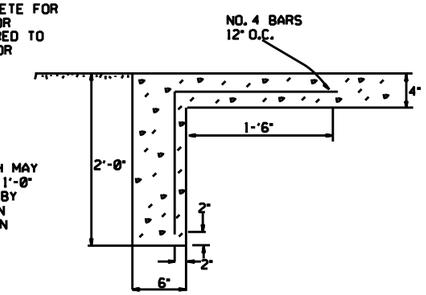
REFER TO TABULATION OF QUANTITIES FOR "W" DIMENSIONS



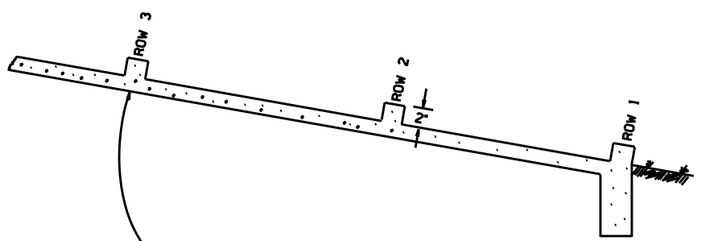
TYPE B

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

TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

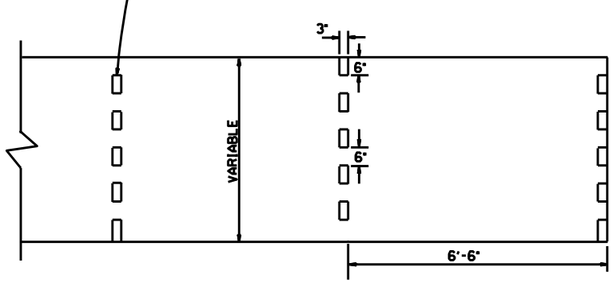


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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

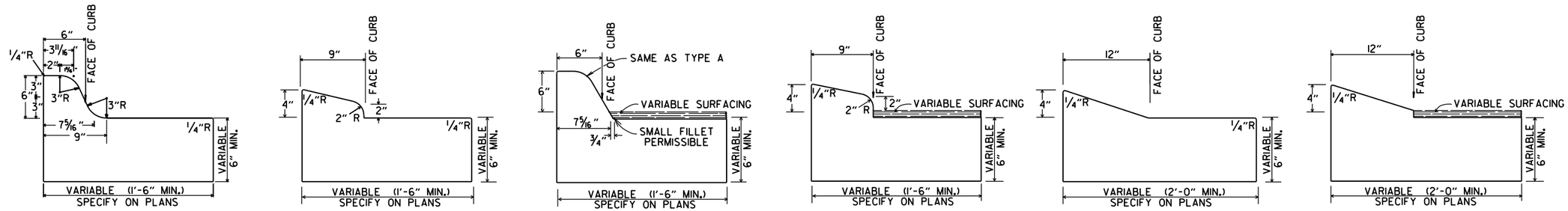
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILMED
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

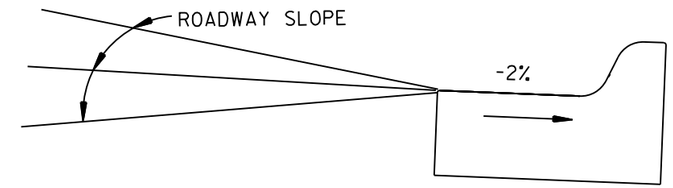
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1

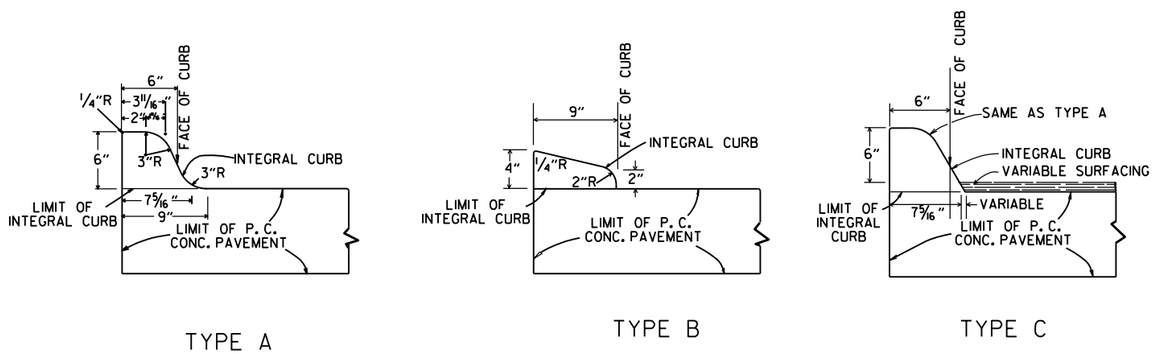


CONCRETE COMBINATION CURB AND GUTTER

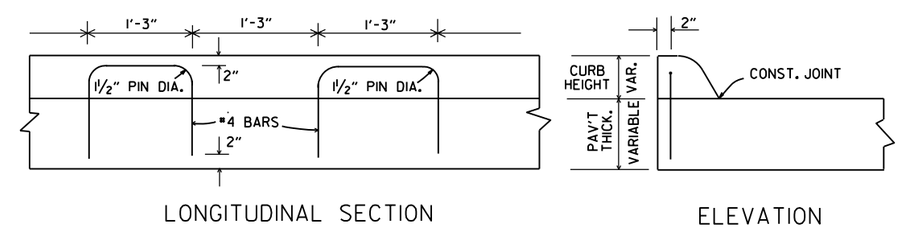


DETAIL OF GUTTER SLOPE

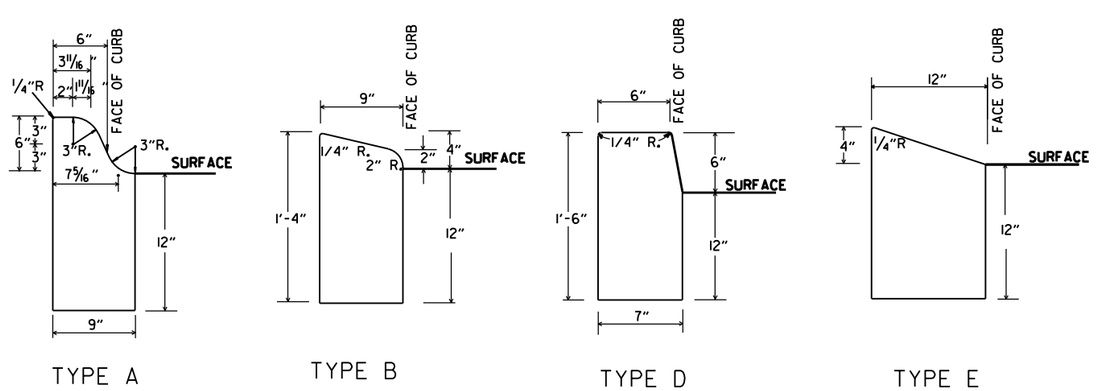
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



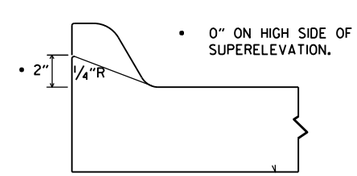
INTEGRAL CURB



ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



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.

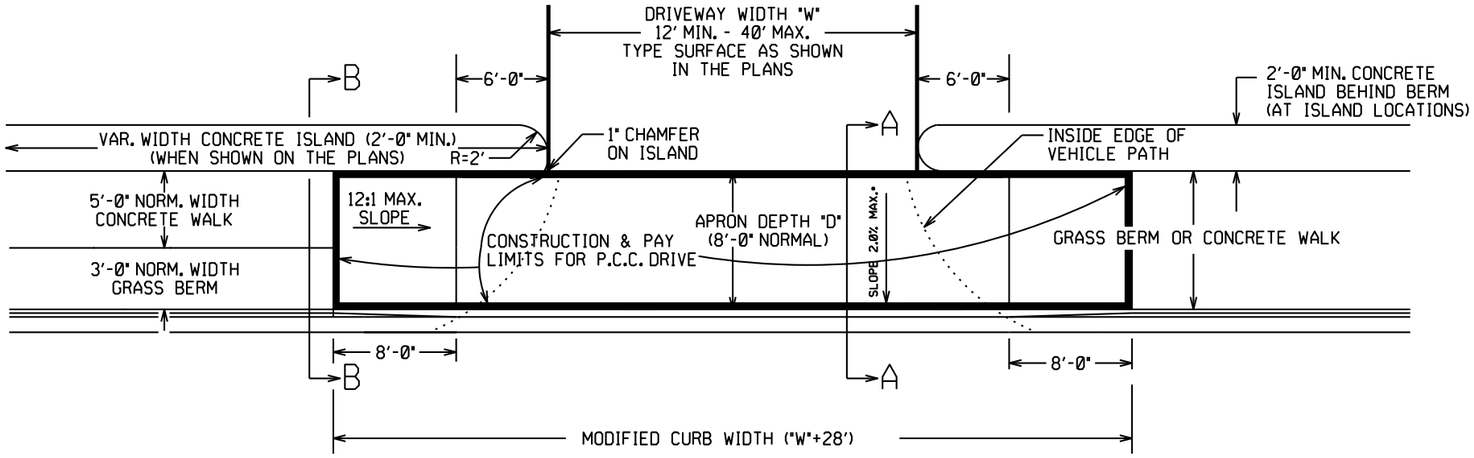
DETAILS OF MODIFIED CURB

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

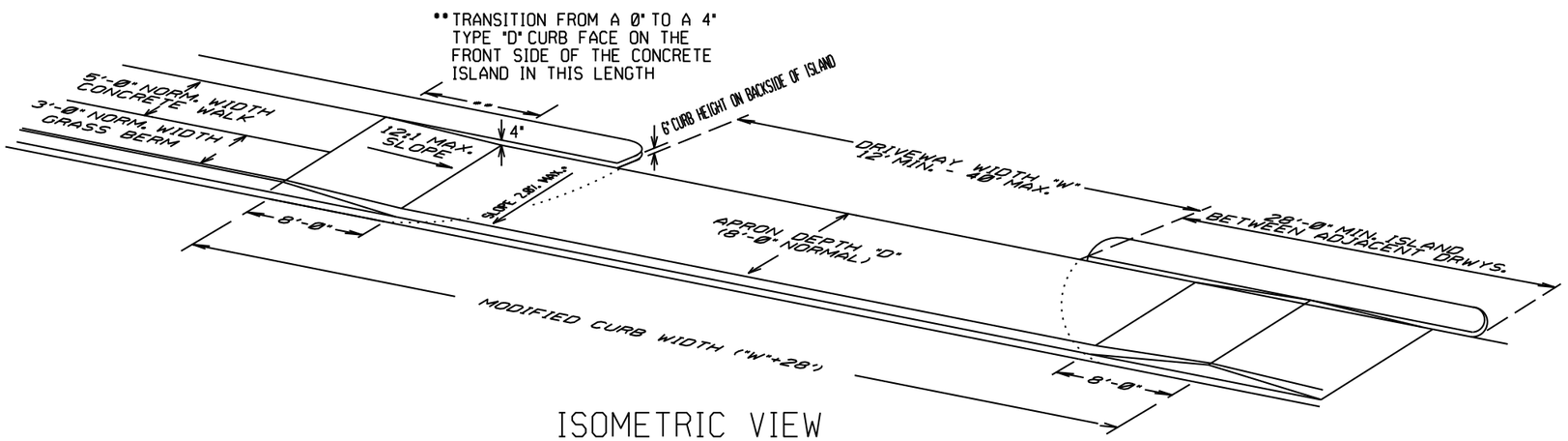
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

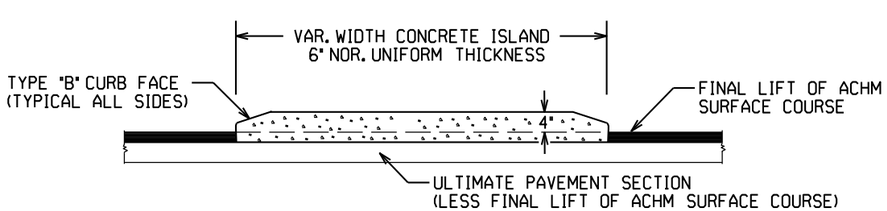
STANDARD DRAWING CG-1

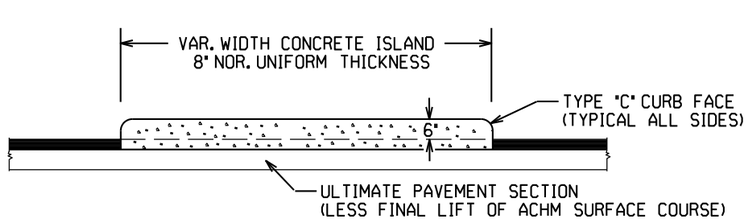


PLAN VIEW



ISOMETRIC VIEW



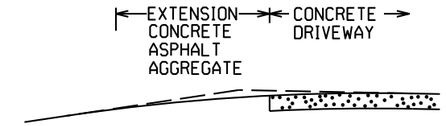


CURBED ISLANDS FOR CHANNELIZATION

CONCRETE ISLAND NOTES:

1. 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".

2. TRANSVERSE EXPANSION JOINTS, NOT LESS THAN 1/2" WIDE, SHALL BE PLACED AT MINIMUM INTERVAL OF 45'. TRANSVERSE JOINT SHALL BE CONSTRUCTED USING A JOINT FILLER COMPLYING WITH AASHTO M213.



EXTENSION TYPICAL SECTIONS

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

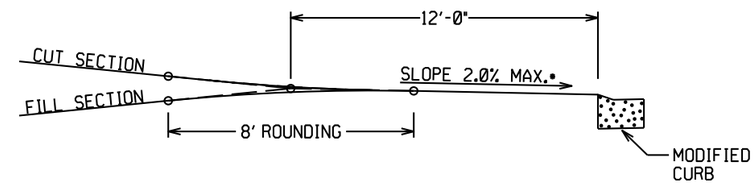
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

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

4: AGGREGATE - 6" AGGREGATE BASE COURSE

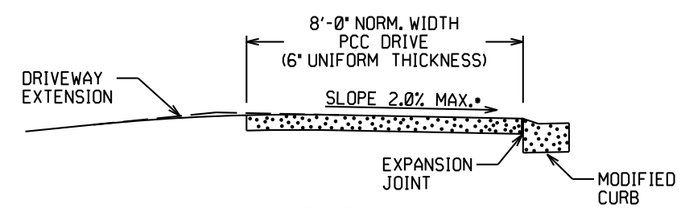
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

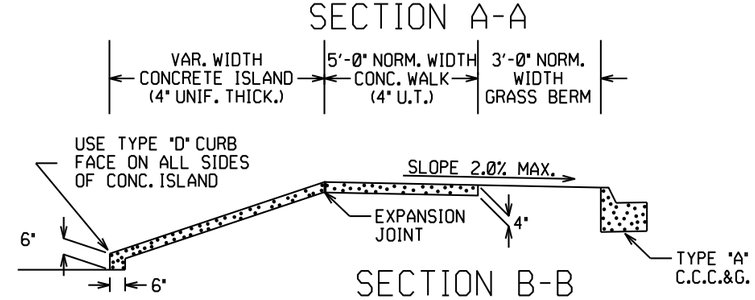


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



SECTION B-B

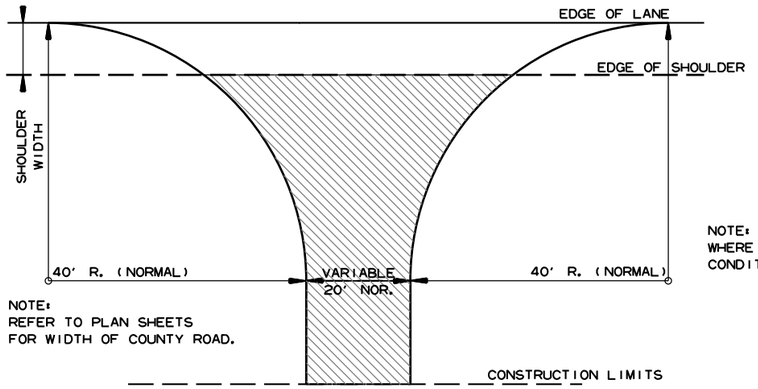
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		REVISED ISLAND NOTES
11-07-19		REVISED WALK DETAILS
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

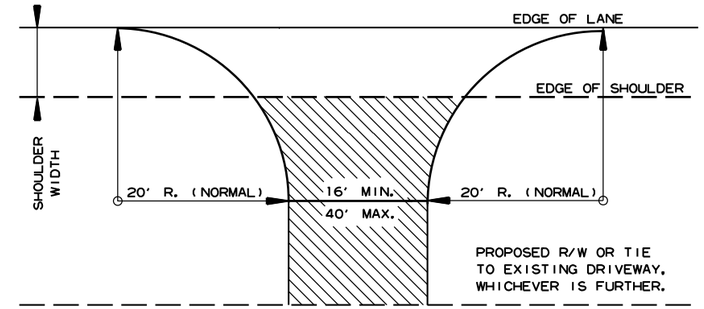


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

NOTE: TURNOUTS 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, UNLESS OTHERWISE SPECIFIED IN PLANS.

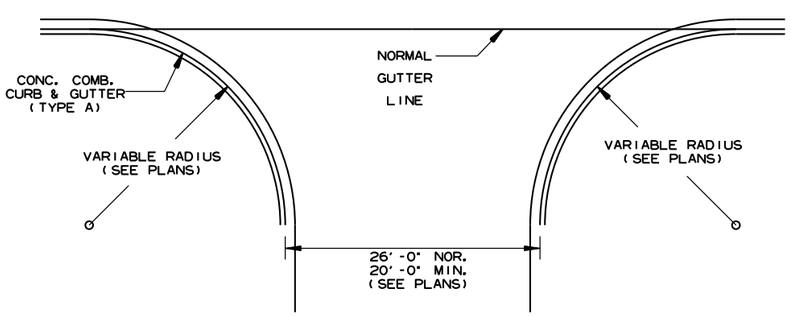
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



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

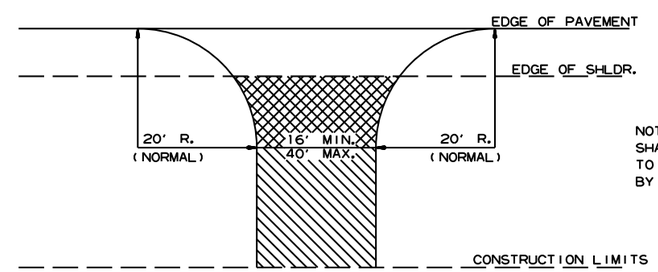
ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING; OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)



NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS, & COUNTY ROADS TO BE SAME AS MAIN LANES.

DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS CURB & GUTTER SECTION



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

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

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

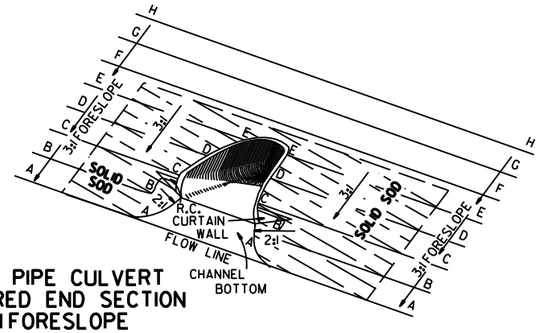
DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		ISSUED

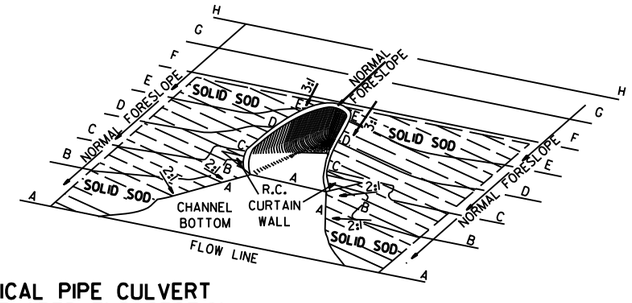
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

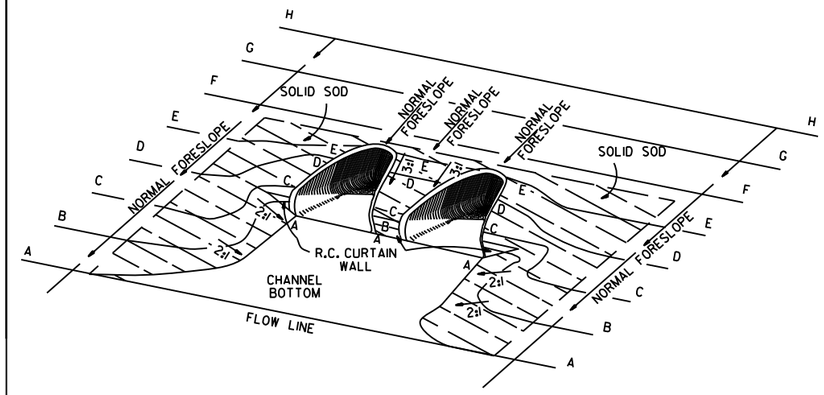
STANDARD DRAWING DR-2



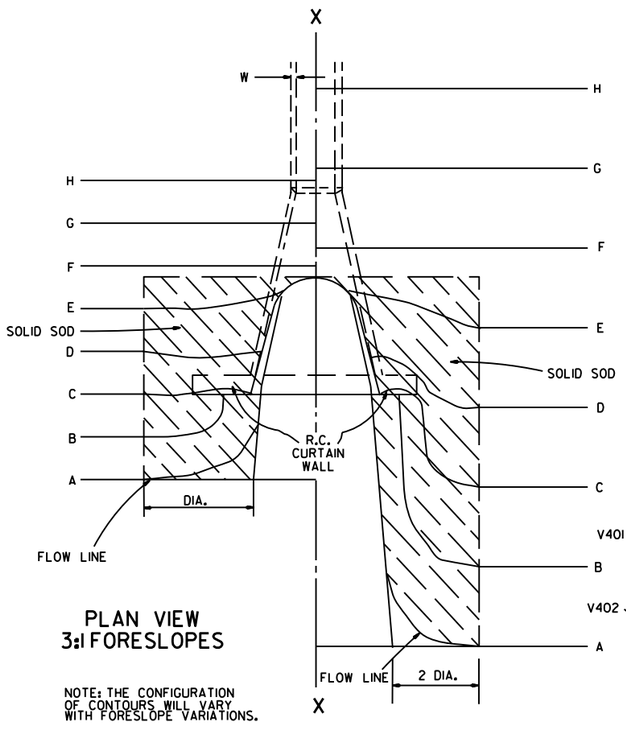
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

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

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

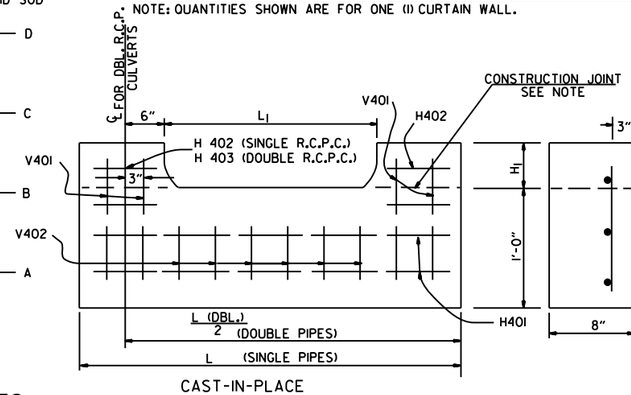
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0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

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

REINFORCING STEEL SCHEDULE

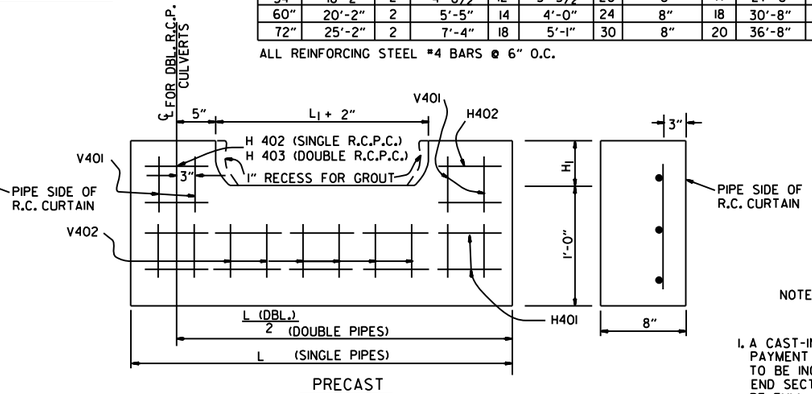
PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	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.



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

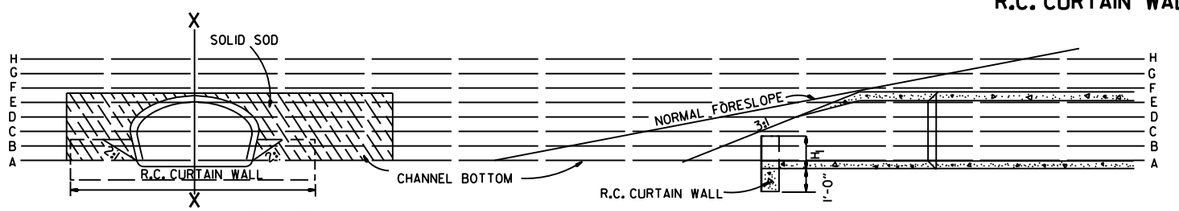
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	SINGLE R.C.P.C. 4:1	SINGLE R.C.P.C. 6:1	DOUBLE R.C.P.C. 3:1	DOUBLE R.C.P.C. 4:1	DOUBLE R.C.P.C. 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	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

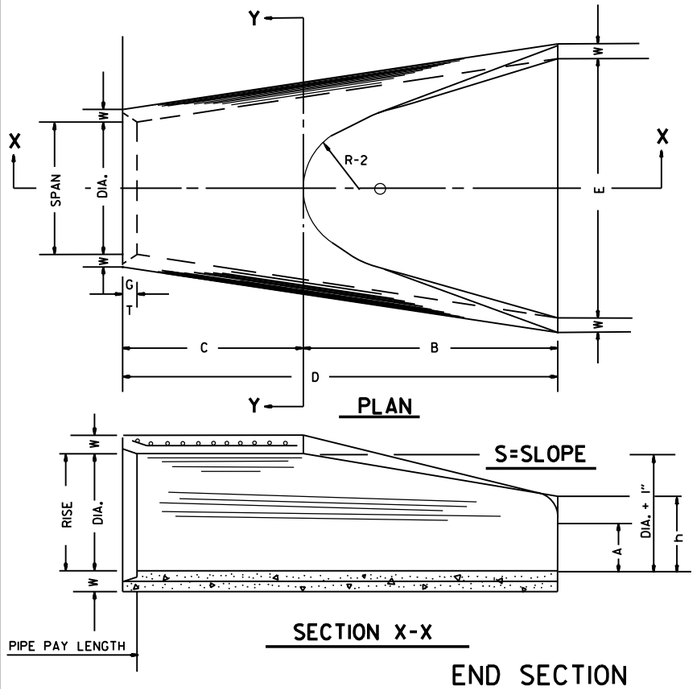


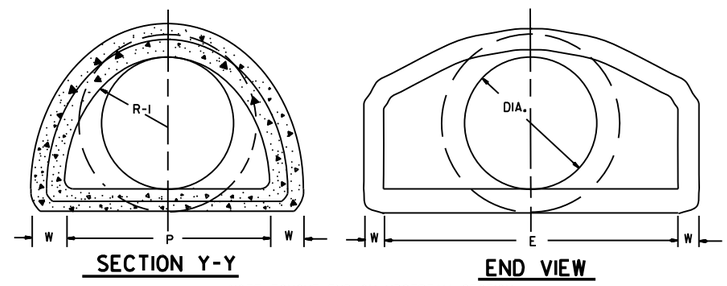
TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 15/16"	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 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

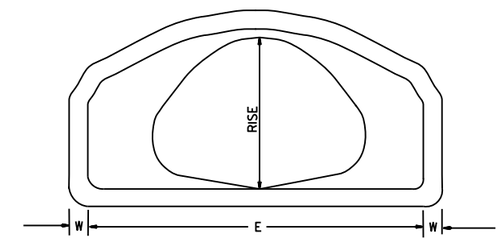
ARCH PIPE

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 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 11/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54 5/16"	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 13/16"	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.

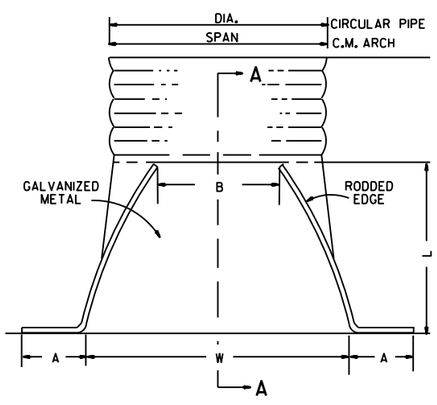


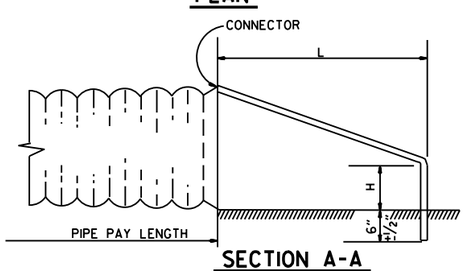
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

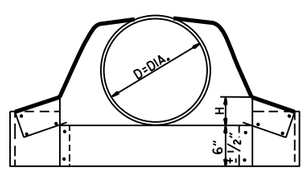


END VIEW
CONCRETE ARCH PIPE

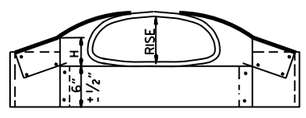
END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS







CIRCULAR PIPE



C.M. ARCH PIPE

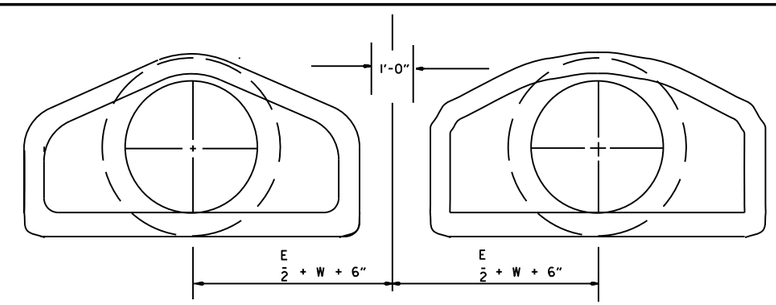
CIRCULAR PIPE

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

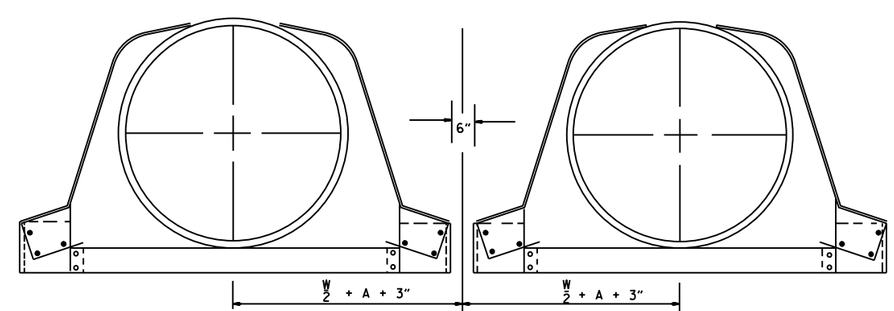
C.M. ARCH PIPE

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

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



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

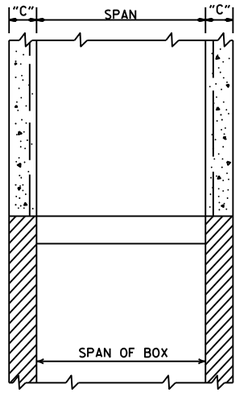
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

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

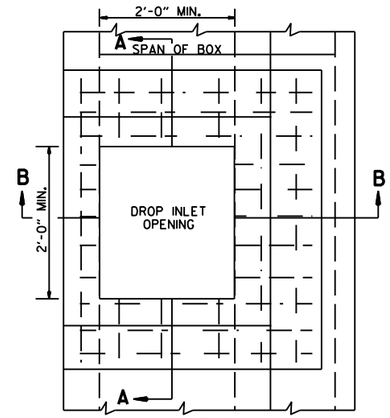
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

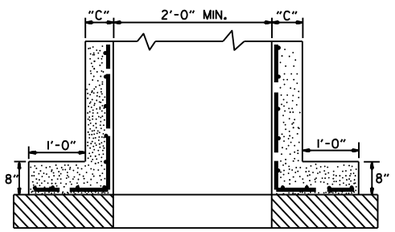
STANDARD DRAWING FES-2



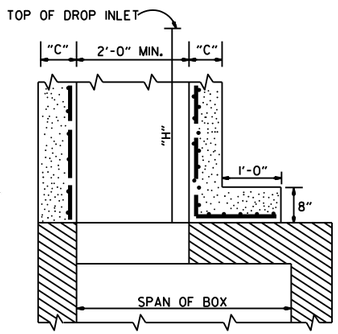
SECTION B-B



PLAN

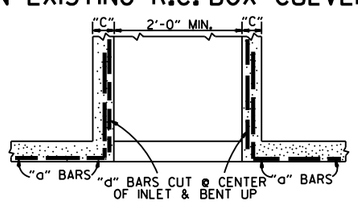


SECTION A-A

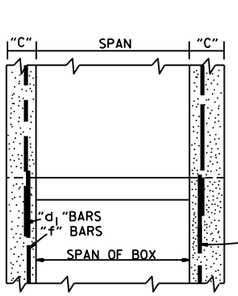


SECTION B-B

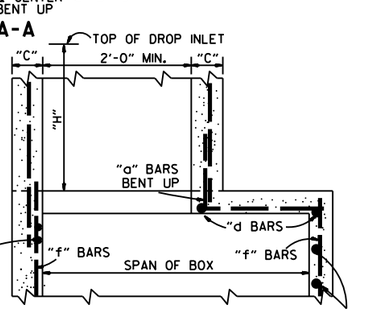
METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



SECTION A-A



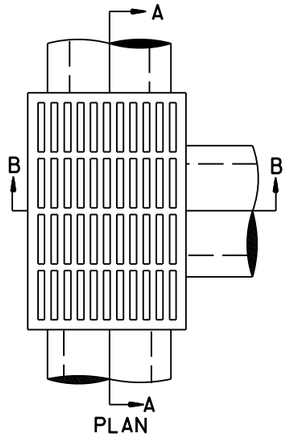
SECTION B-B



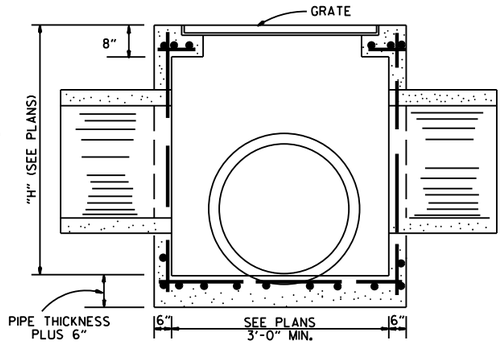
SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

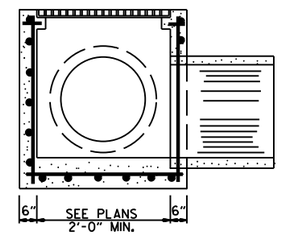


PLAN



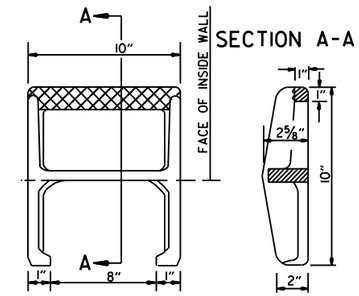
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)



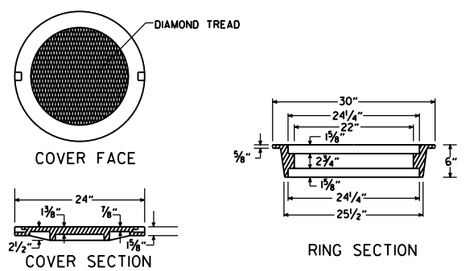
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

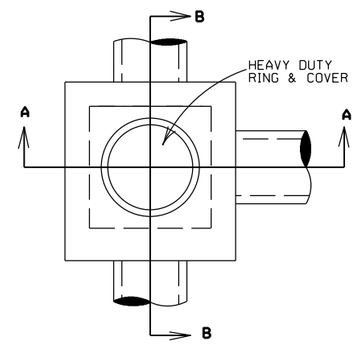
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

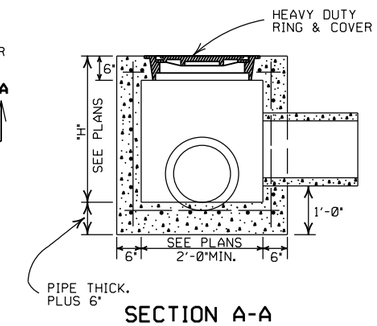


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

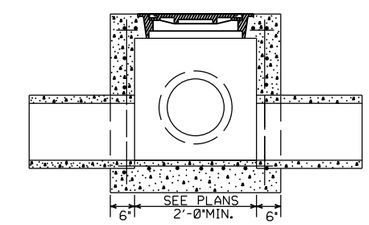


PLAN



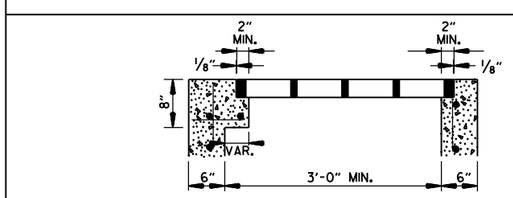
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

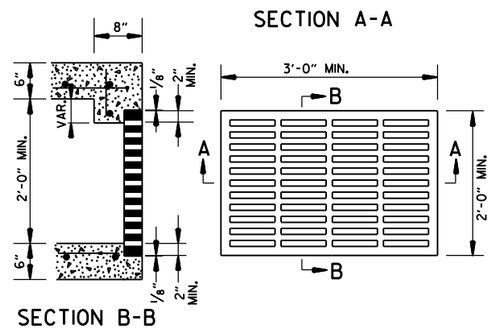


SECTION B-B

JUNCTION BOX (TYPE E)



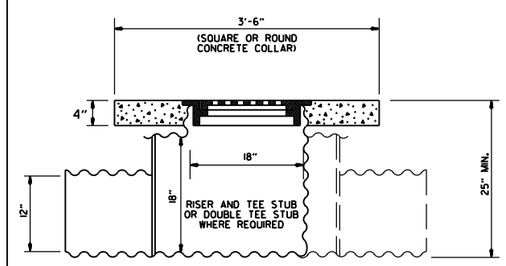
SECTION A-A



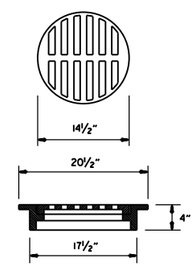
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

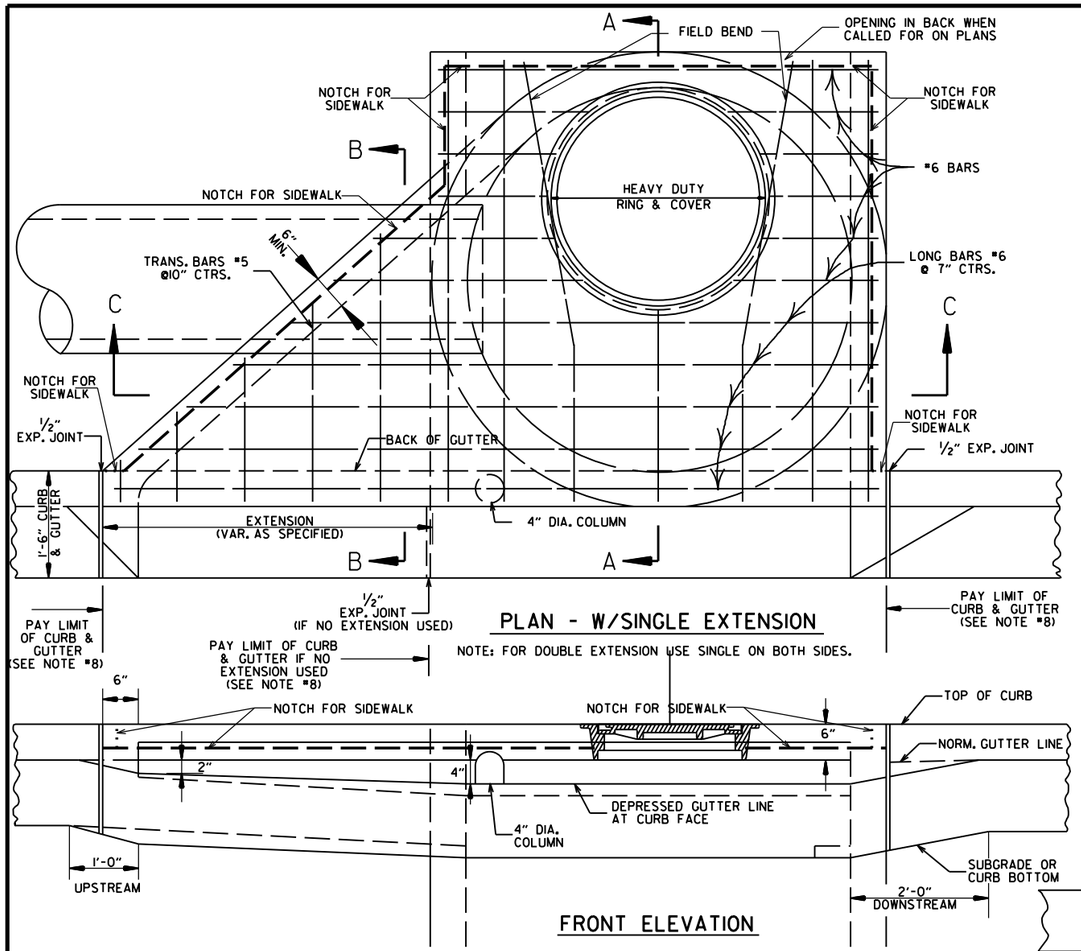
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL. DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

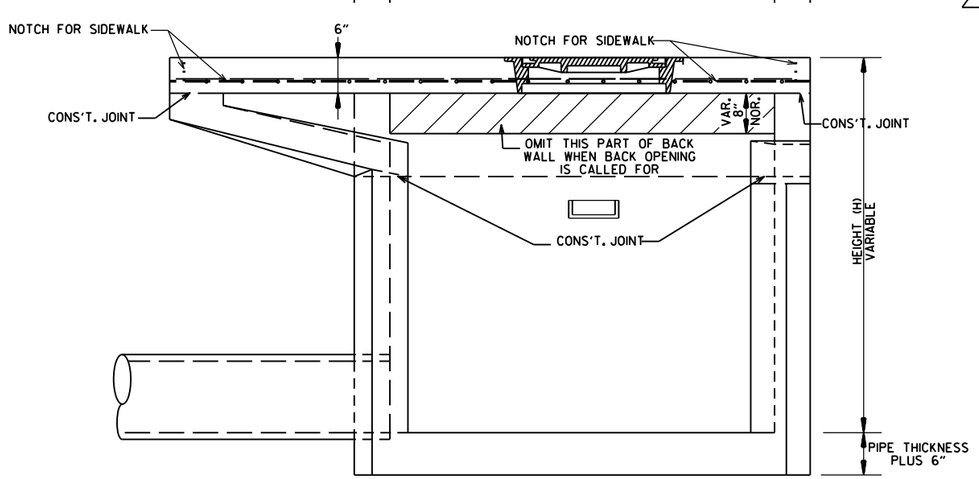
STANDARD DRAWING FPC-9



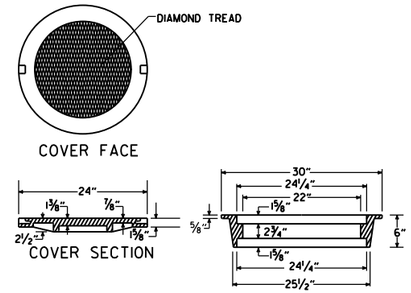
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



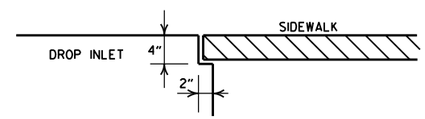
SECTION C-C



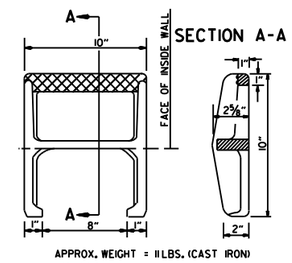
APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS

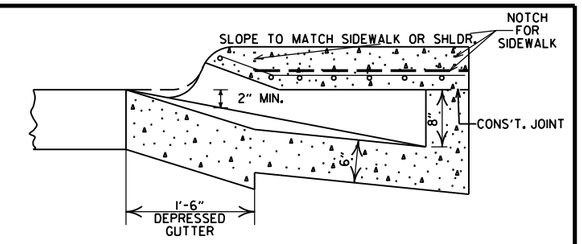


APPROX. WEIGHT = 11 LBS. (CAST IRON)

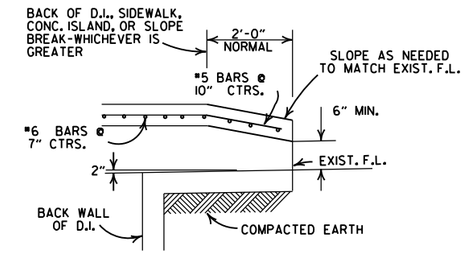
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B

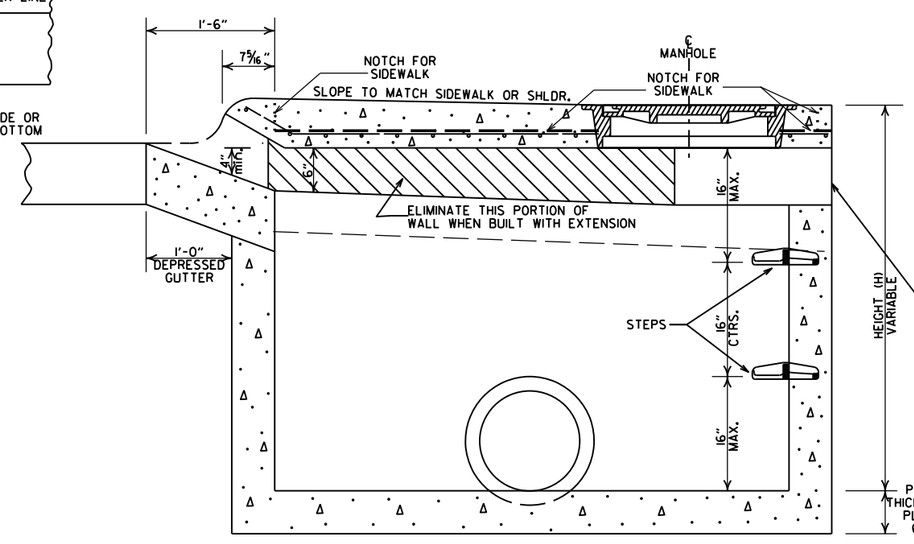


BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



SECTION A-A

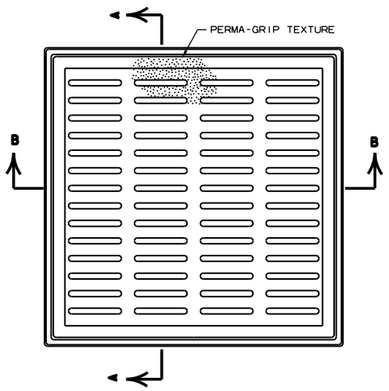
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS CAST IN PLACE	MINIMUM WALL THICKNESS PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

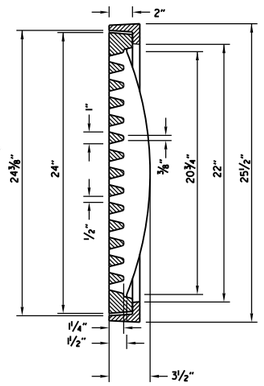
DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11, ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN. BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN. DETAIL & NOTE	4-1-93
8-16-91	REVISED NOTES 1,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
3-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	513-3-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	629-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	4-6-12-87

ARKANSAS STATE HIGHWAY COMMISSION

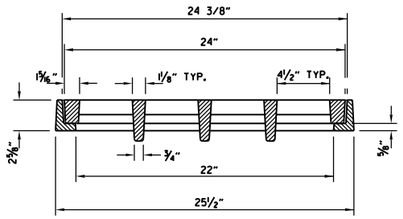
DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M





SECTION A-A

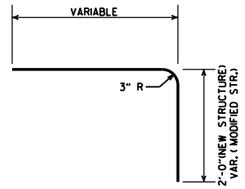


SECTION B-B

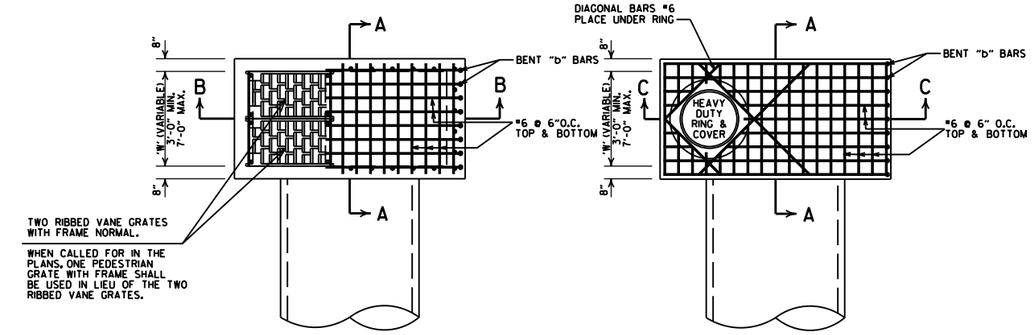
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

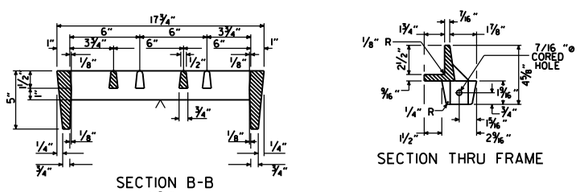
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 218 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

DETAILS OF PEDESTRIAN GRATE AND FRAME



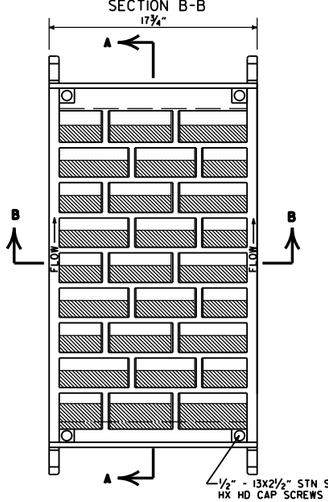
DETAIL OF BENT "b" BAR

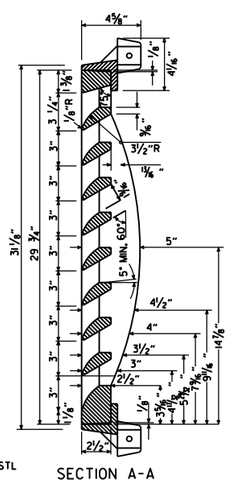




SECTION B-B

SECTION THRU FRAME





SECTION A-A

DETAILS OF RIBBED VANE GRATE AND FRAME

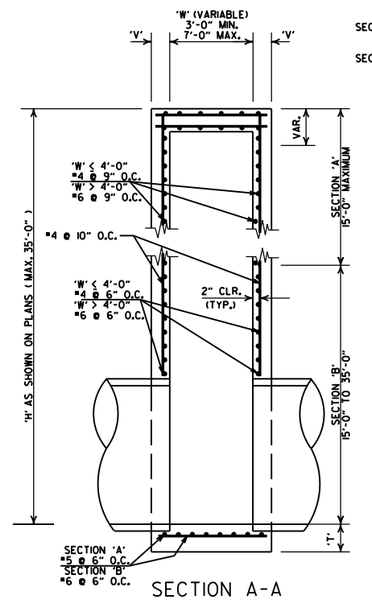
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

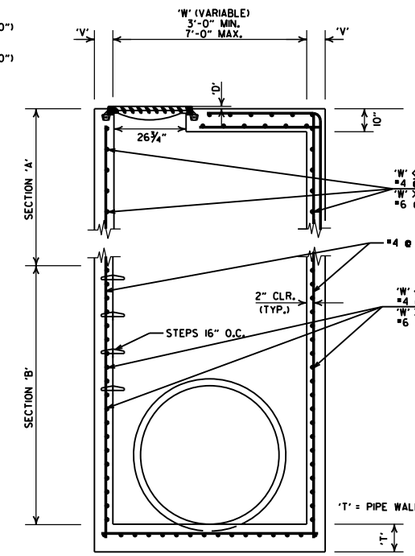
SECTION 'A'
'V' = 8"

SECTION 'B' (W≤4'-0")
'V' = 8"

SECTION 'B' (W>4'-0")
'V' = 10"



SECTION A-A



SECTION B-B

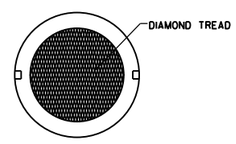
SECTION C-C

DETAILS OF JUNCTION BOX (TYPE ST)

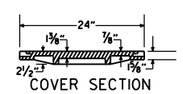
GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.

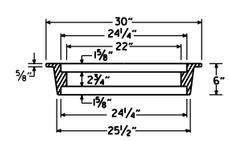
DETAILS OF DROP INLET (TYPE ST)



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

GENERAL NOTES (HEAVY DUTY RING & COVER):

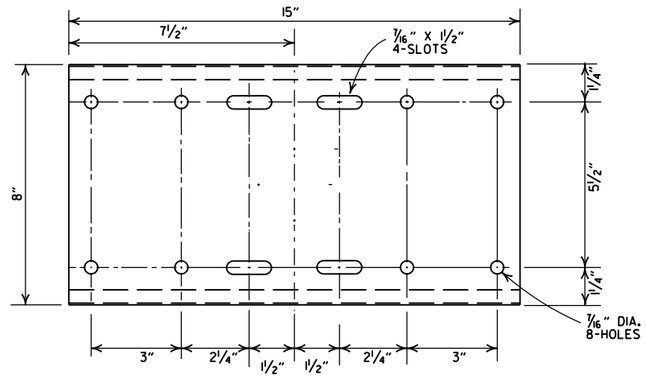
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER, REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

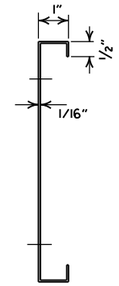
ARKANSAS STATE HIGHWAY COMMISSION

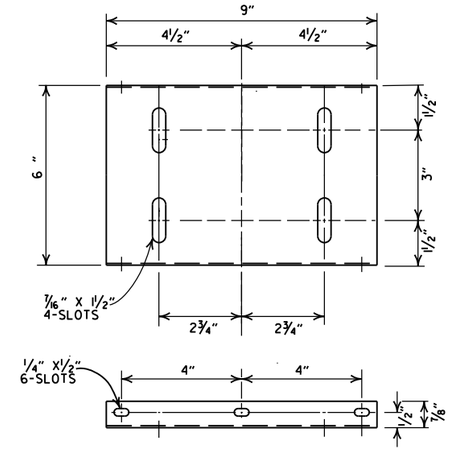
DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

STANDARD DRAWING FPC-9S

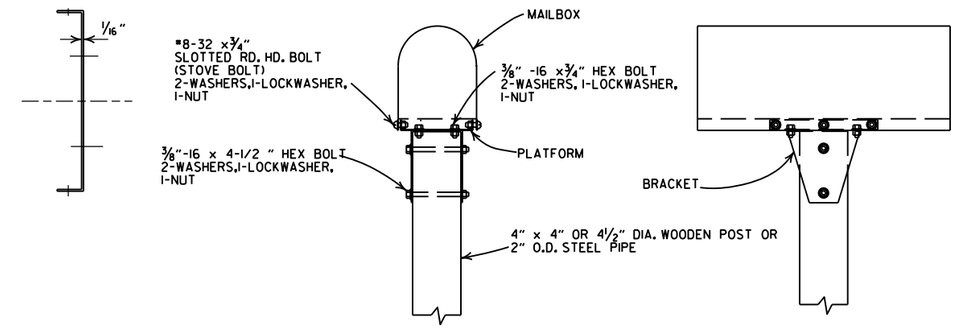


SHELF

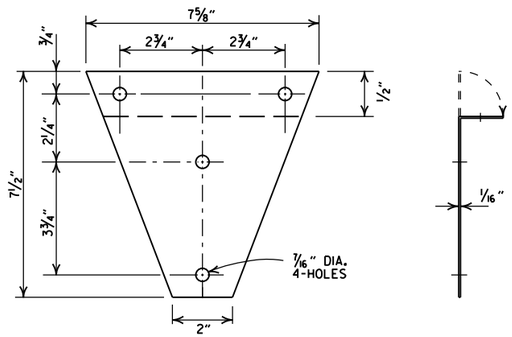




PLATFORM



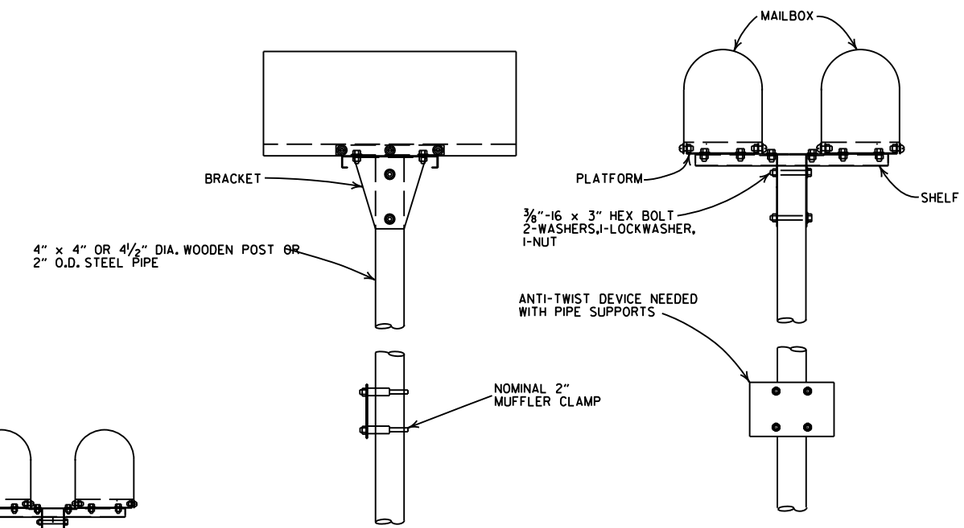
SINGLE INSTALLATION



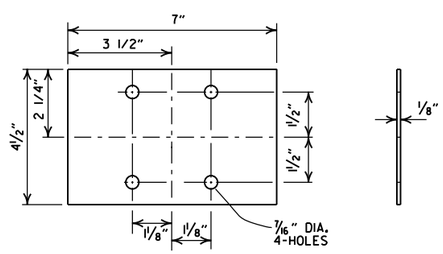
BRACKET

GENERAL NOTES

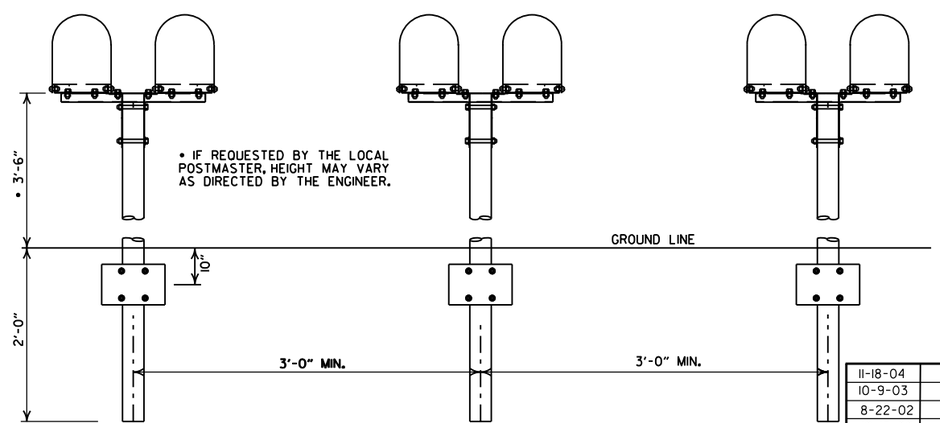
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X ¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



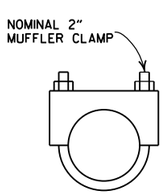
DOUBLE INSTALLATION



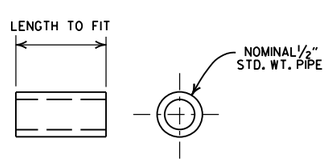
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



SPACER

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT 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	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

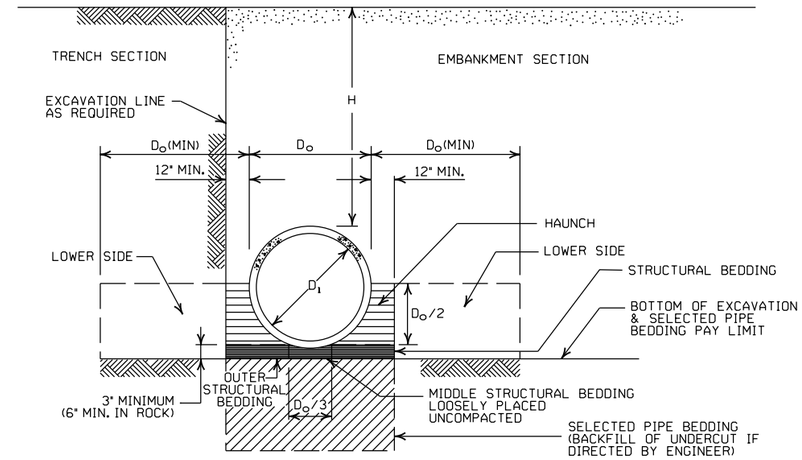
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

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 DEPARTMENT OF TRANSPORTATION 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

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			

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

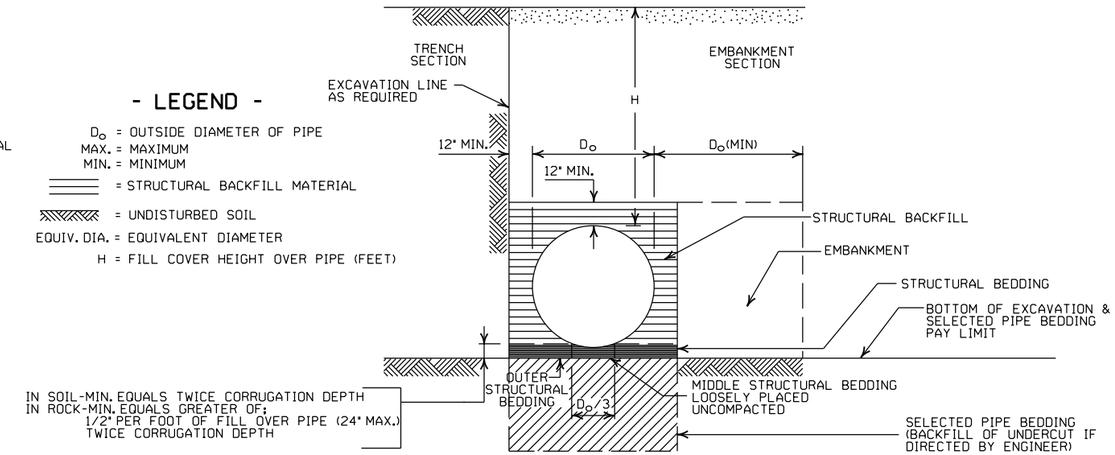
③ SM-3 WILL NOT BE ALLOWED.

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

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



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 DEPARTMENT OF TRANSPORTATION 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."

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

② WHERE THE STANDARD 2 2/3"× ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" × 1" OR 5" × 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.

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 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

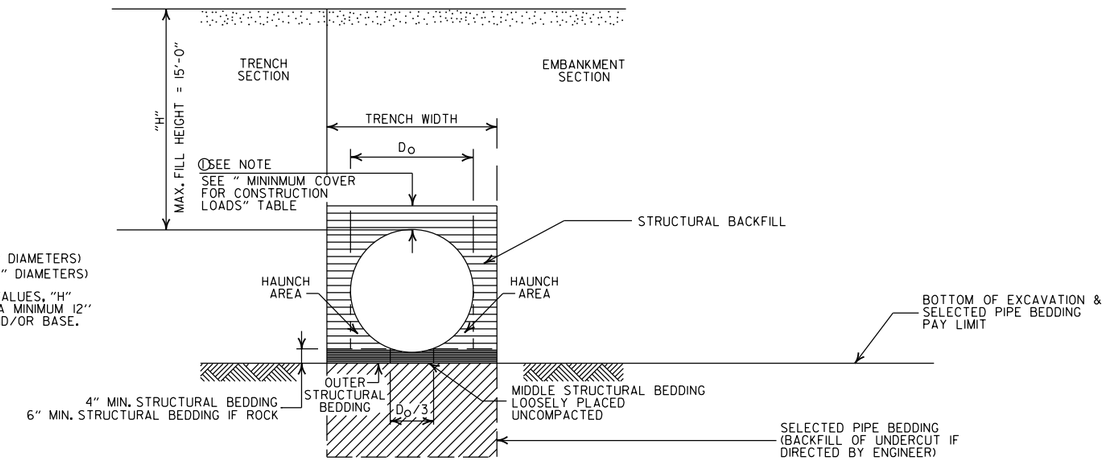
STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET) "H" < 10'-0"	TRENCH WIDTH (FEET) "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.



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.

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 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.

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 CONFORM 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.)
Ø = 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 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 PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET) "H" < 10'-0"	TRENCH WIDTH (FEET) "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

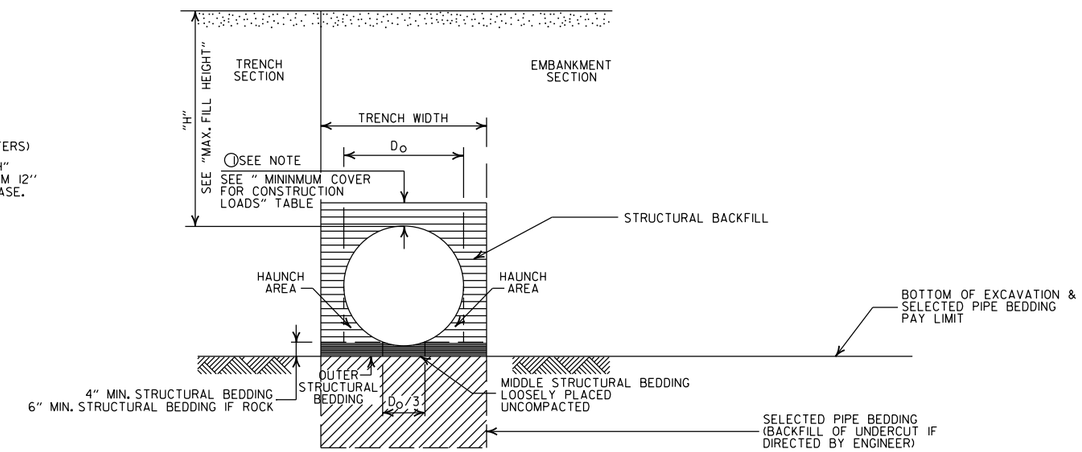
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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 CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS 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

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

*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.

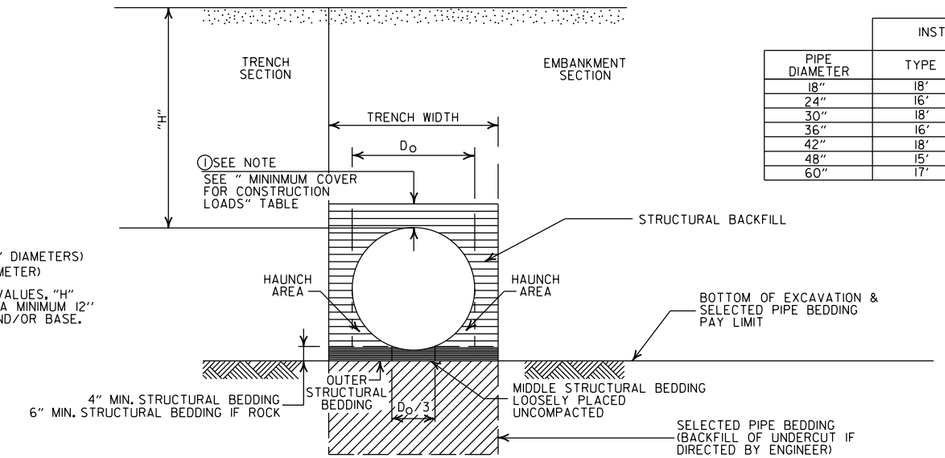
STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF POLYPROPYLENE PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET) "H" < 10'-0"	TRENCH WIDTH (FEET) "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"
60"	10'-0"	15'-0"

(1) NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

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



MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE TYPE 1	INSTALLATION TYPE TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

MULTIPLE INSTALLATION OF POLYPROPYLENE 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"
60"	5'-0"

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)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

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

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 M330, TYPE S. INSTALLATION SHALL CONFORM 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, SIXTH EDITION (2012) WITH 2013 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. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. 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
02-27-20	REVISED	
11-07-19	ISSUED	

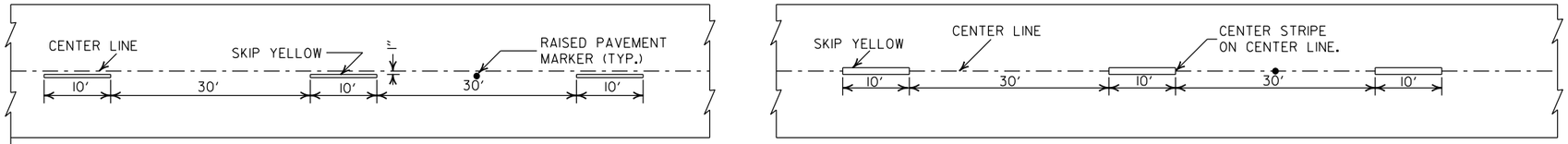
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

NOTES:

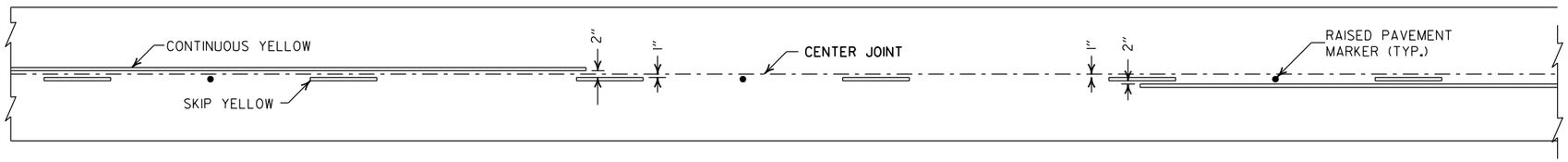
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



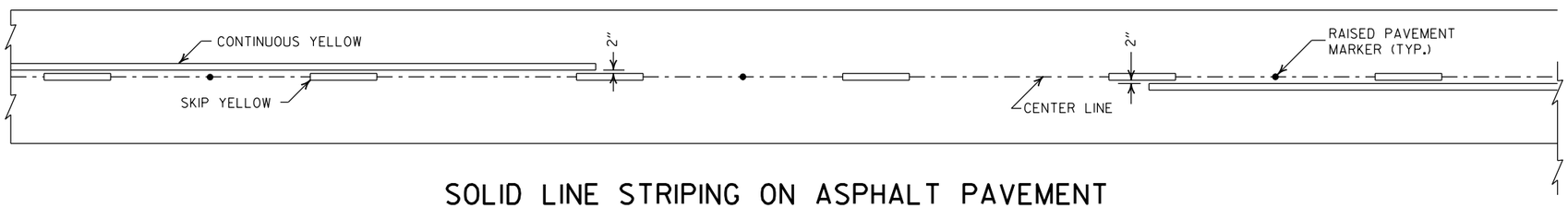
CONCRETE PAVEMENT

ASPHALT PAVEMENT

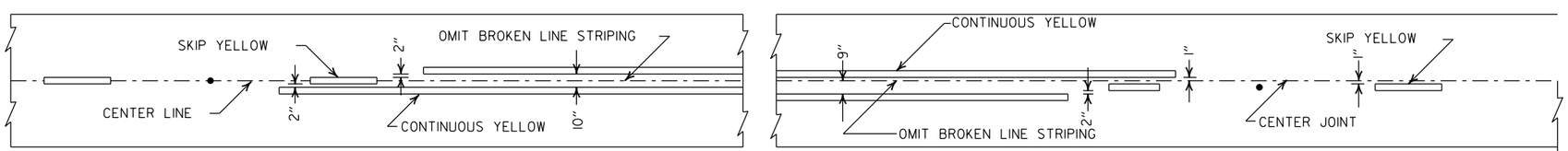
BROKEN LINE STRIPING



SOLID LINE STRIPING ON CONCRETE PAVEMENT



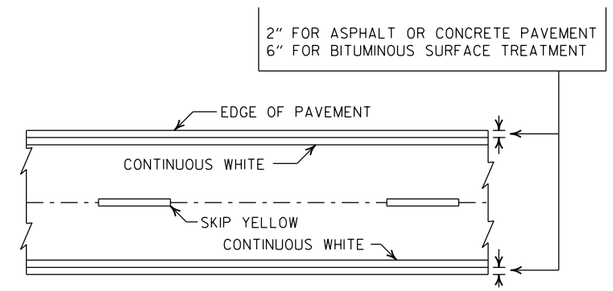
SOLID LINE STRIPING ON ASPHALT PAVEMENT



ASPHALT PAVEMENT

CONCRETE PAVEMENT

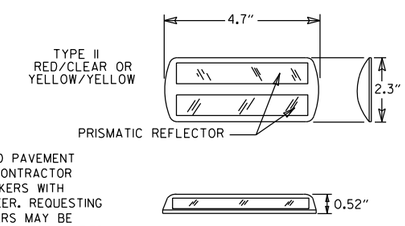
STRIPING AT ADJACENT NO PASSING LANES



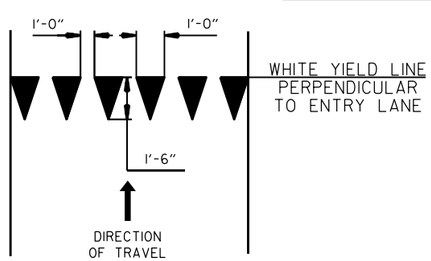
PAVEMENT EDGE LINE MARKING

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

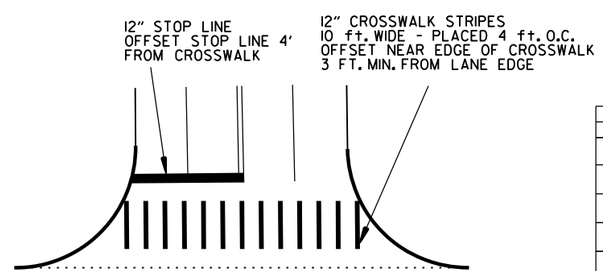
NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS



YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
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	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

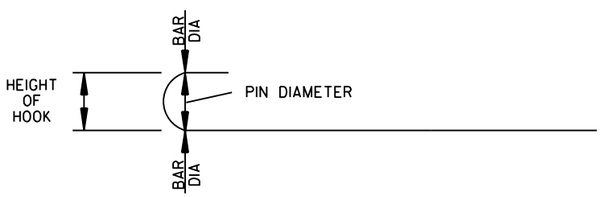
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

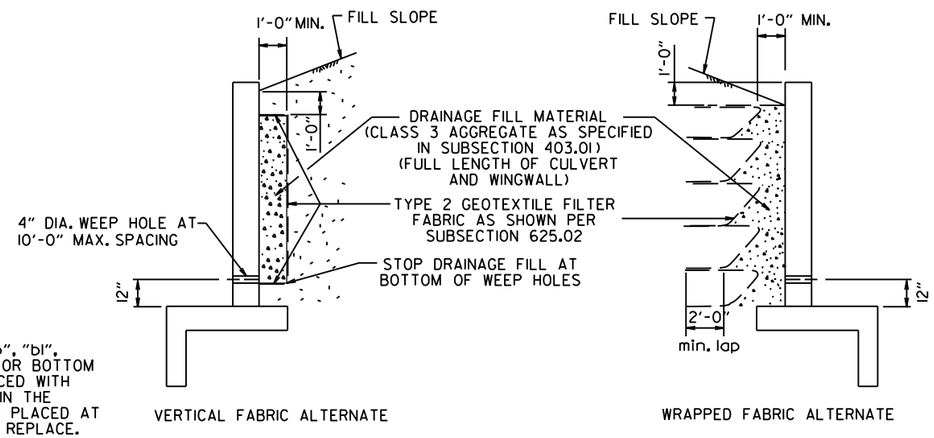
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

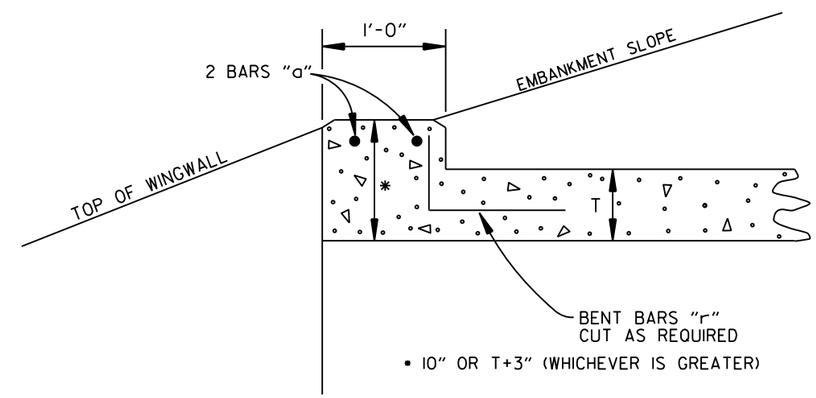
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

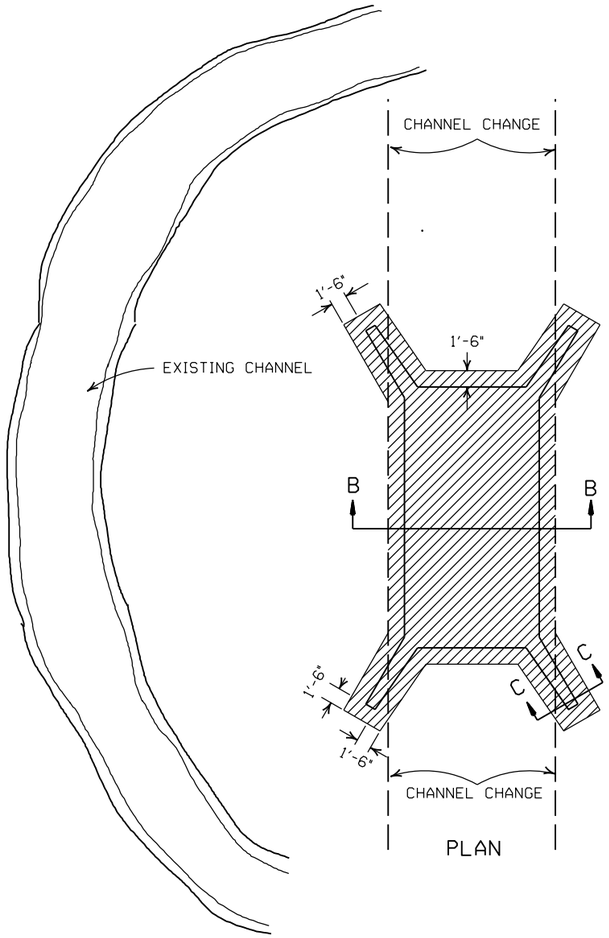
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

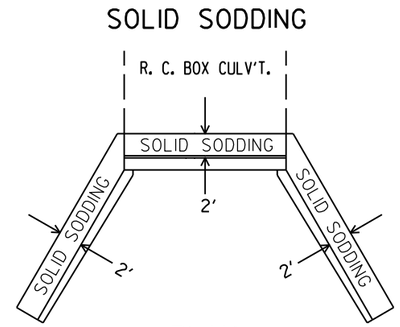
ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



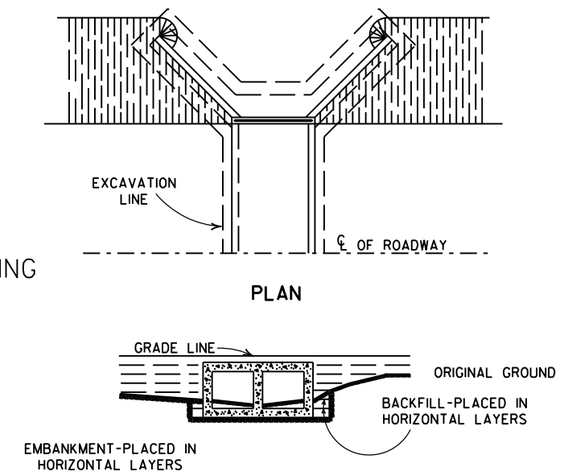
PLAN



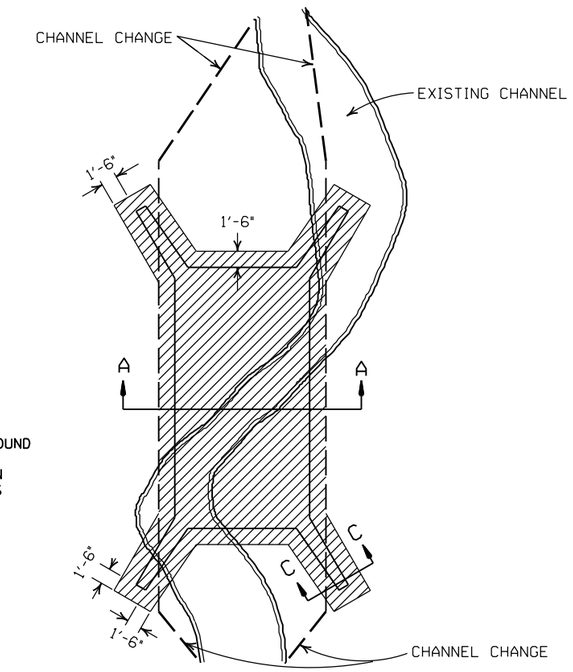
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

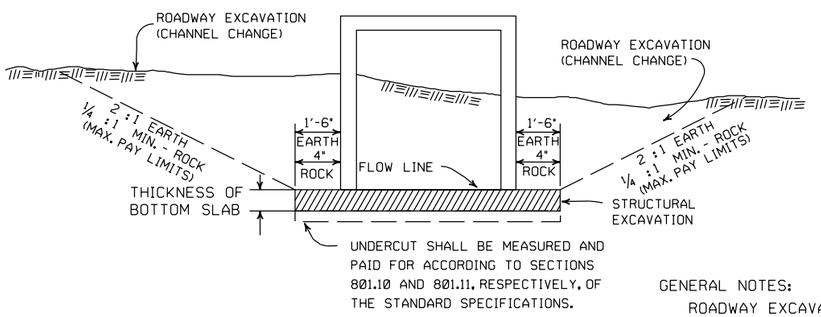
NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.



BACKFILL DETAILS FOR BOX CULVERT

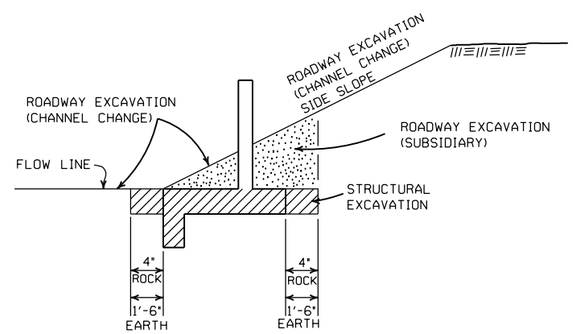


PLAN

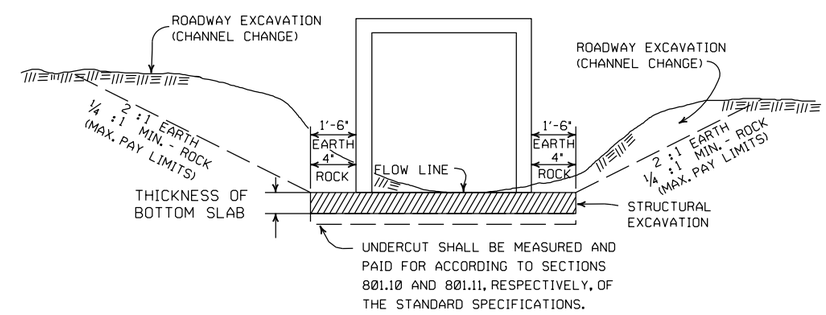


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

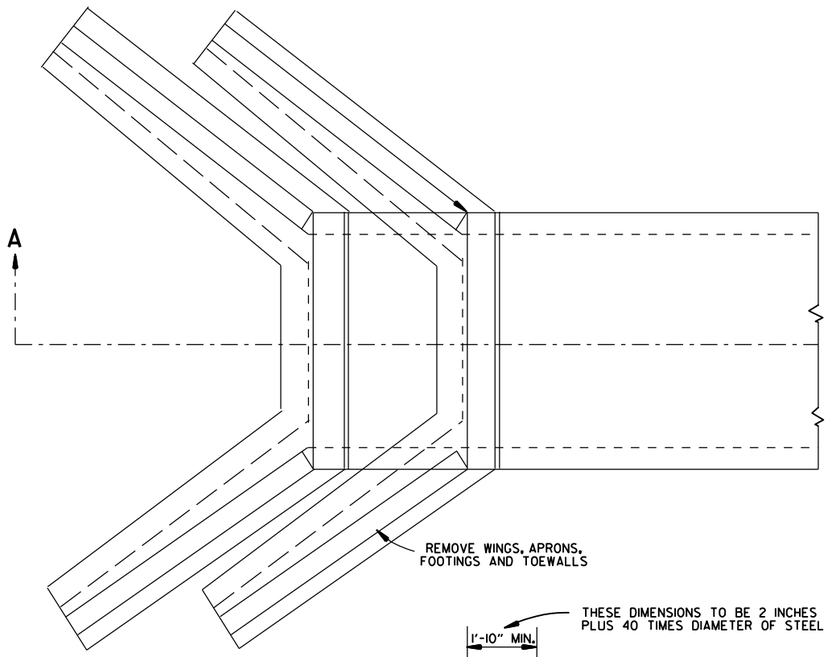
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

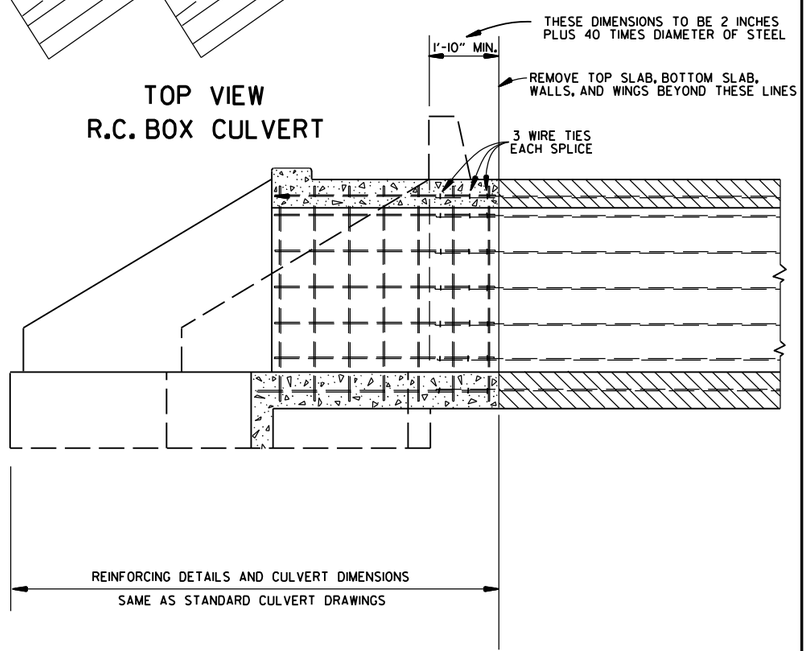
ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

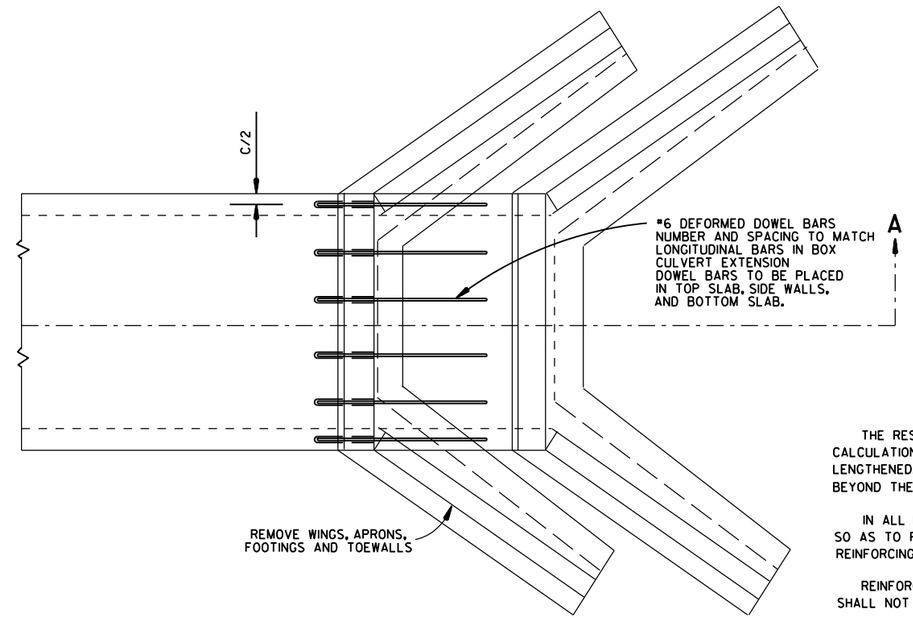


TOP VIEW
R.C. BOX CULVERT

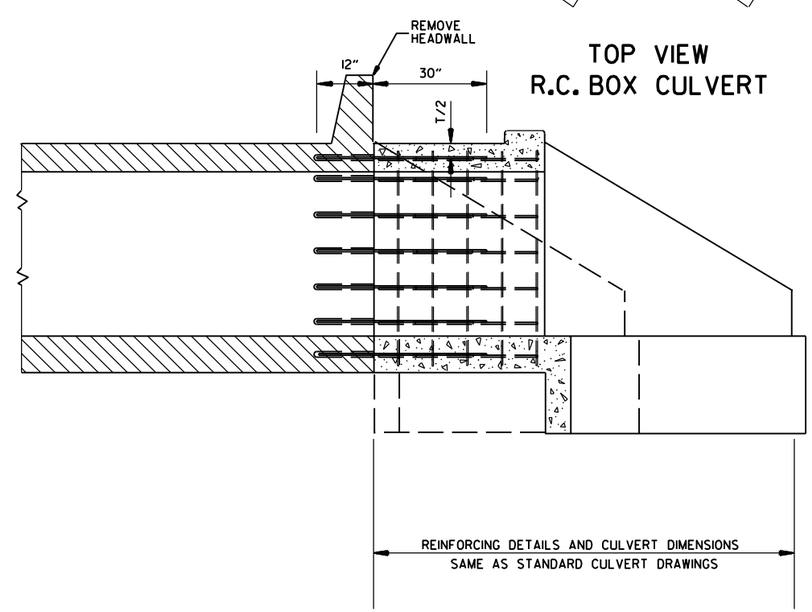


SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT



SECTION A-A

METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER. THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER, AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2. REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

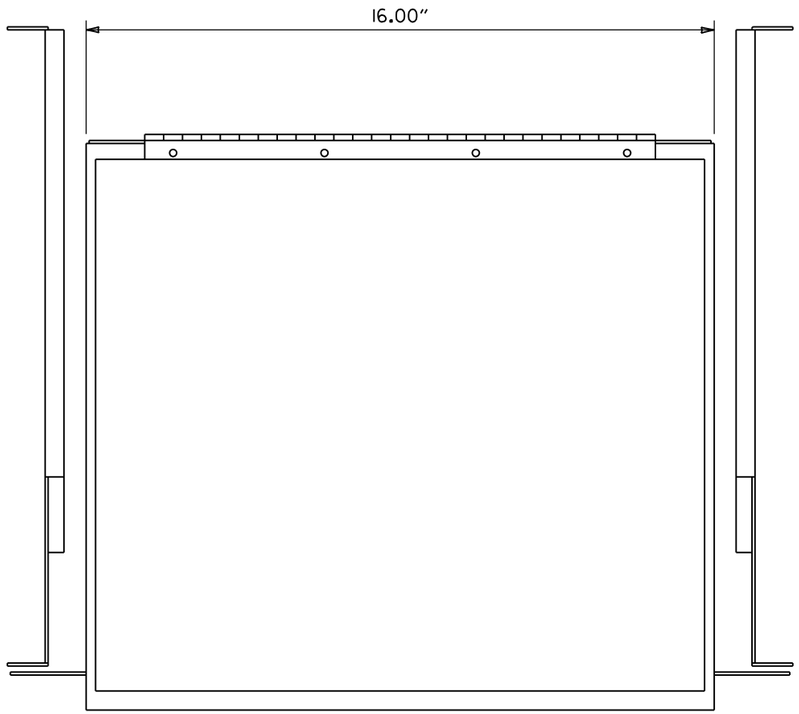
DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

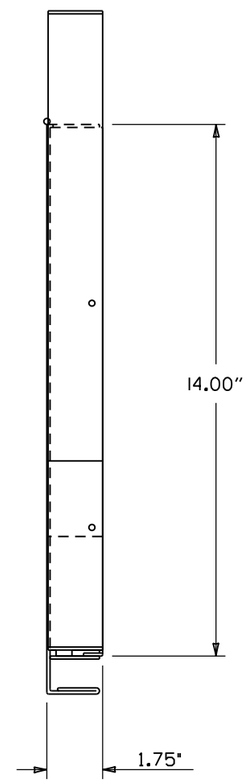
ARKANSAS STATE HIGHWAY COMMISSION

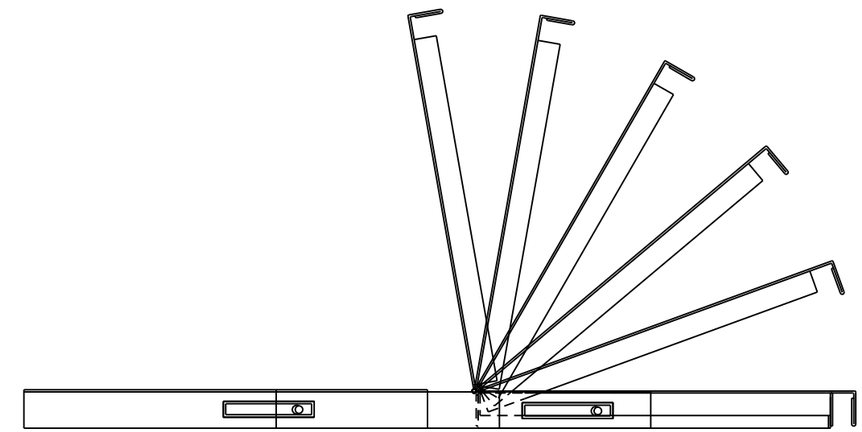
METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

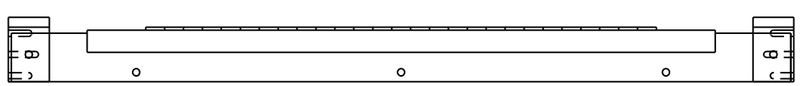
DRAWER PLAN VIEW



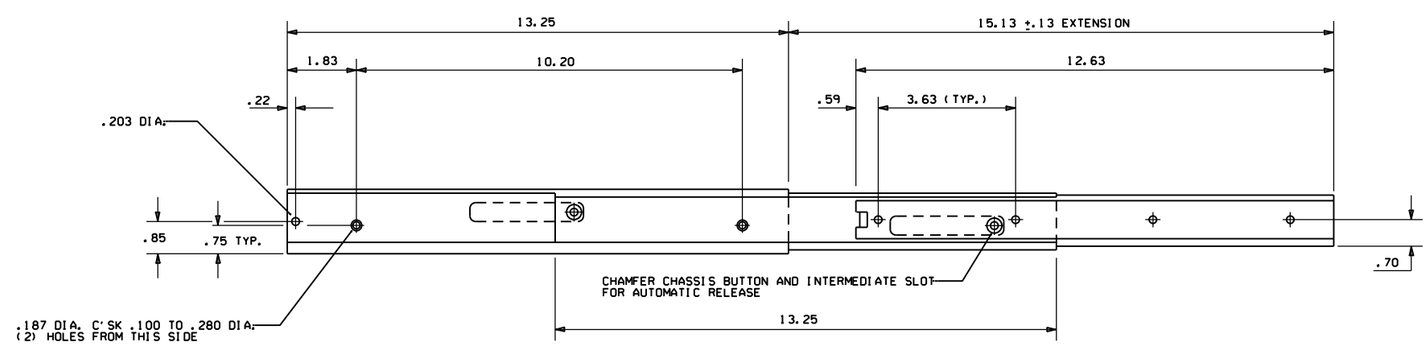




NOTES:
1. RIGHT HAND SLIDE SHOWN. LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
6-15-05	ISSUED	

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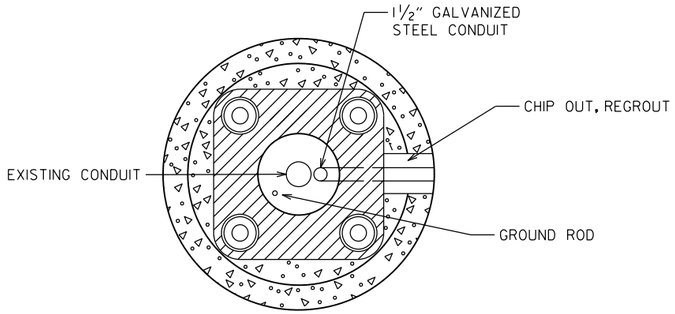
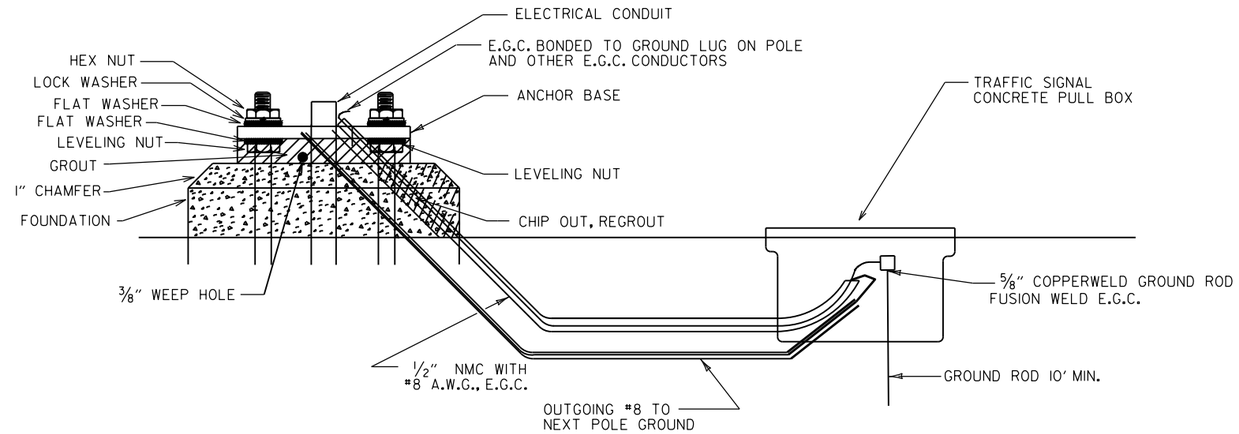
CONTROLLER CABINET UTILITY DRAWER

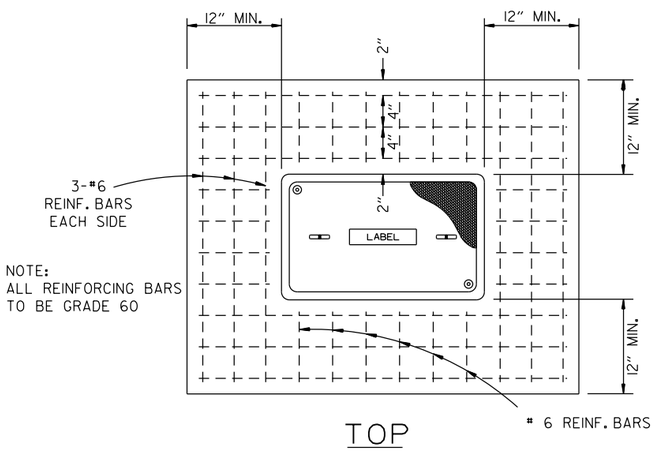
STANDARD DRAWING SD-5

CONDUIT ENTRY TO EXISTING POLE BASE



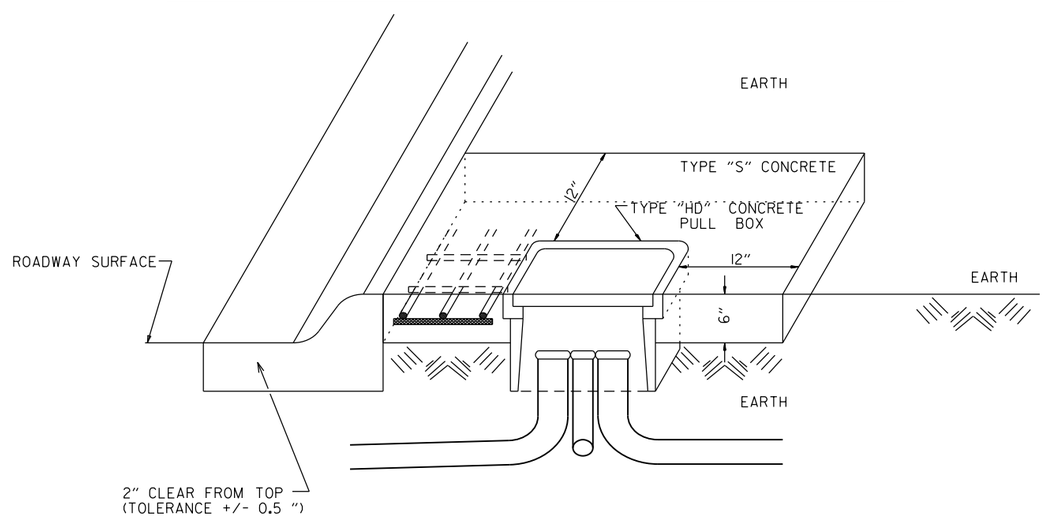
ANCHOR BASE



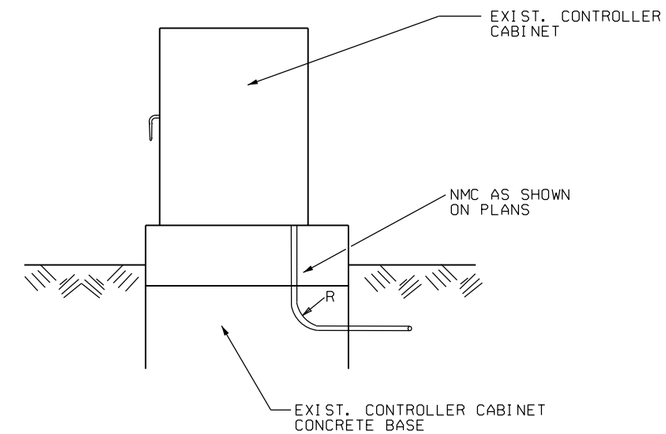


TOP

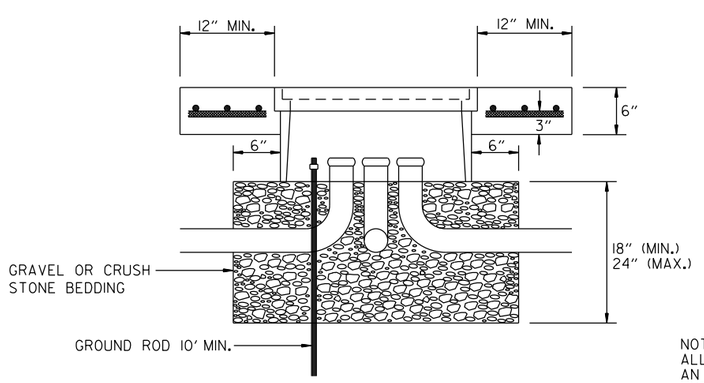
TYPE "HD" CONCRETE PULL BOX DETAIL



CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



ELEVATION

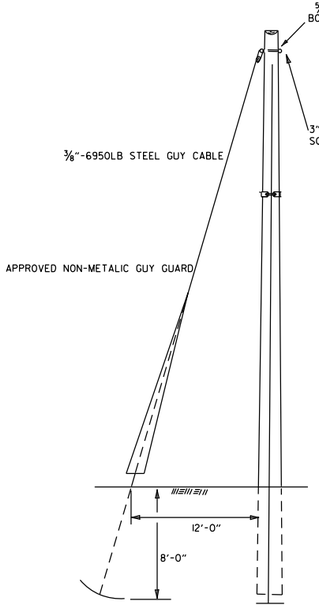
NOTE:
ALL TYPE 1 HD, TYPE 2 HD, AND TYPE 3 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 6" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S". THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE CONCRETE PULL BOX IS REQUIRED IN CONCRETE.

DATE	REVISION	FILMED
02-13-24	REVISED NOTES AND TYPE "HD" CONCRETE PULL BOX DETAILS	
11-16-17	REVISED NOTES	
09-02-15	REVISED PULL BOX DEPTH	
09-12-13	ISSUED AS STANDARD DRAWING	
05-21-09	REVISED GROUNDING	
07-31-08	ADDED & REVISED CONDUIT ENTRY	
06-23-04	REVISED CLEARANCE AT CURB ENTRY	
01-04-02	ADDED REINFORCING TO BOX APRON	
07-02-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

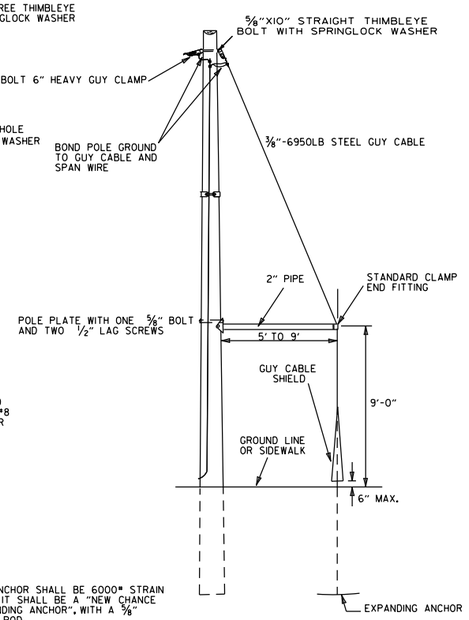
HEAVY DUTY PULL BOX

STANDARD DRAWING SD-6



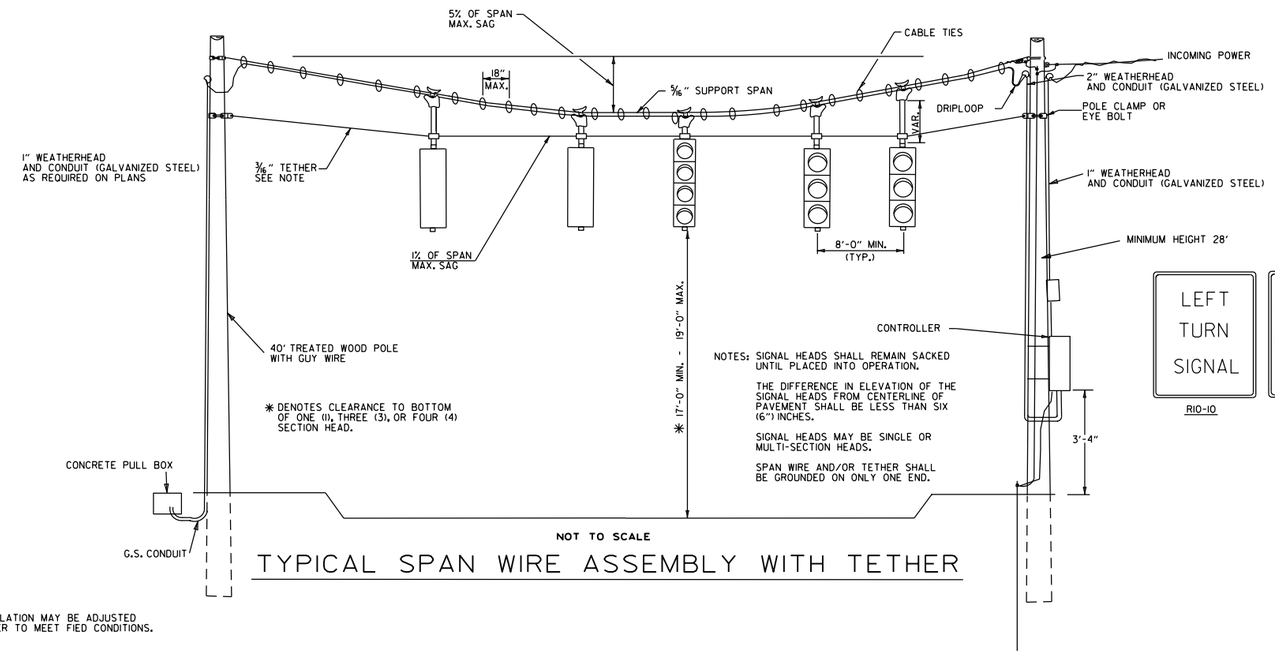
NOTE:
EXPANDING ANCHOR SHALL BE 6000# STRAIN OR GREATER. IT SHALL BE A "NEW CHANCE 8-WAY EXPANDING ANCHOR", WITH A 5/8" MINIMUM GUY ROD.

STANDARD GUY INSTALLATION



SIDEWALK GUY INSTALLATION

NOTE:
CONDUIT INSTALLATION MAY BE ADJUSTED BY THE ENGINEER TO MEET FIED CONDITIONS.



* DENOTES CLEARANCE TO BOTTOM OF ONE (1), THREE (3), OR FOUR (4) SECTION HEAD.

NOTES: SIGNAL HEADS SHALL REMAIN SACKED UNTIL PLACED INTO OPERATION.

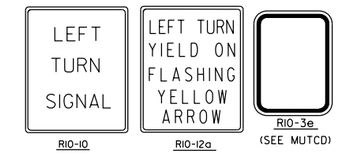
THE DIFFERENCE IN ELEVATION OF THE SIGNAL HEADS FROM CENTERLINE OF PAVEMENT SHALL BE LESS THAN SIX (6") INCHES.

SIGNAL HEADS MAY BE SINGLE OR MULTI-SECTION HEADS.

SPAN WIRE AND/OR TETHER SHALL BE GROUNDED ON ONLY ONE END.

NOT TO SCALE

TYPICAL SPAN WIRE ASSEMBLY WITH TETHER



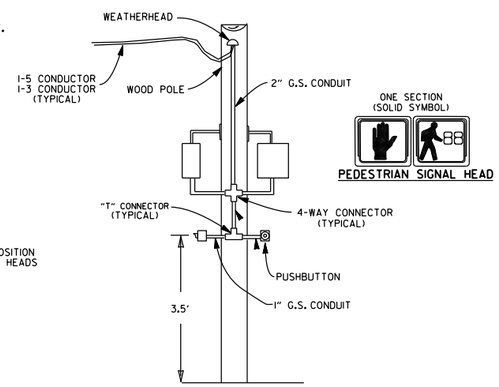
R10-10 R10-12a R10-3e (SEE MUTCD)

NOTES:
SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

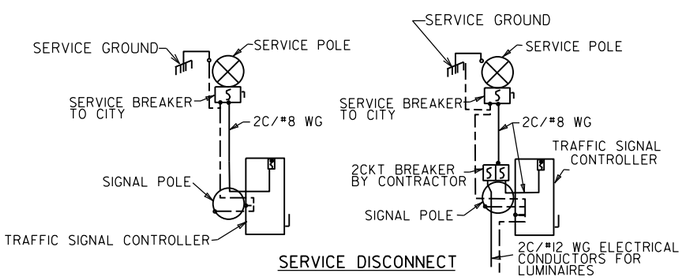
SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE FOUNDATION GROUND ROD WITH A #8 A.W.G. SOLID COPPER WIRE. ON EXISTING FOUNDATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X 5/8" COPPERWELD GROUND ROD.



WOODEN POLE INSTALLATION OF PED HEADS



SERVICE DISCONNECT

NO LUMINAIRE WITH LUMINAIRE

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

NOTES:

EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SIGN (R10-12a) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)", TO BE USED AS A LEFT TURN INDICATION ONLY, SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

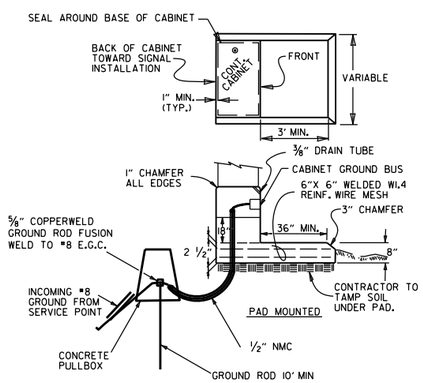
ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH A THICKNESS OF 0.100 INCH.

ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

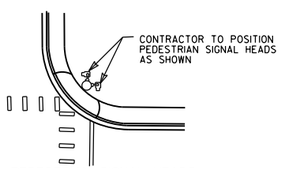
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.



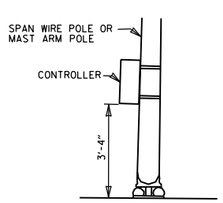
CONCRETE BASE MOUNTED CABINET DETAILS

CABINET NOTE:

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.



PEDESTRIAN SIGNAL HEADS



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED

MINIMUM STRUCTURAL REQUIREMENTS:

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

CONSTRUCTION SPECIFICATIONS: STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DATE	REVISION	FILMED
02-13-24	REVISED SPECIAL SIGN TO R10-12a SIGN	
11-16-17	REVISED NOTES. ADDED SPAN WIRE SUPPORT POLE DETAIL. ADDED PEDESTRIAN SIGNAL HEAD DETAIL	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
07-21-11	REVISED PEDESTRIAN SIGN & GROUNDING	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REV. CABINET ORIENTATION & SIGNAL OPERATION	
05-22-02	REV. TYP. SPAN WIRE ASSEMBLY	
12-27-99	REVISED	
11-18-98	REVISION TO NOTES	
11-21-95	ISSUED	

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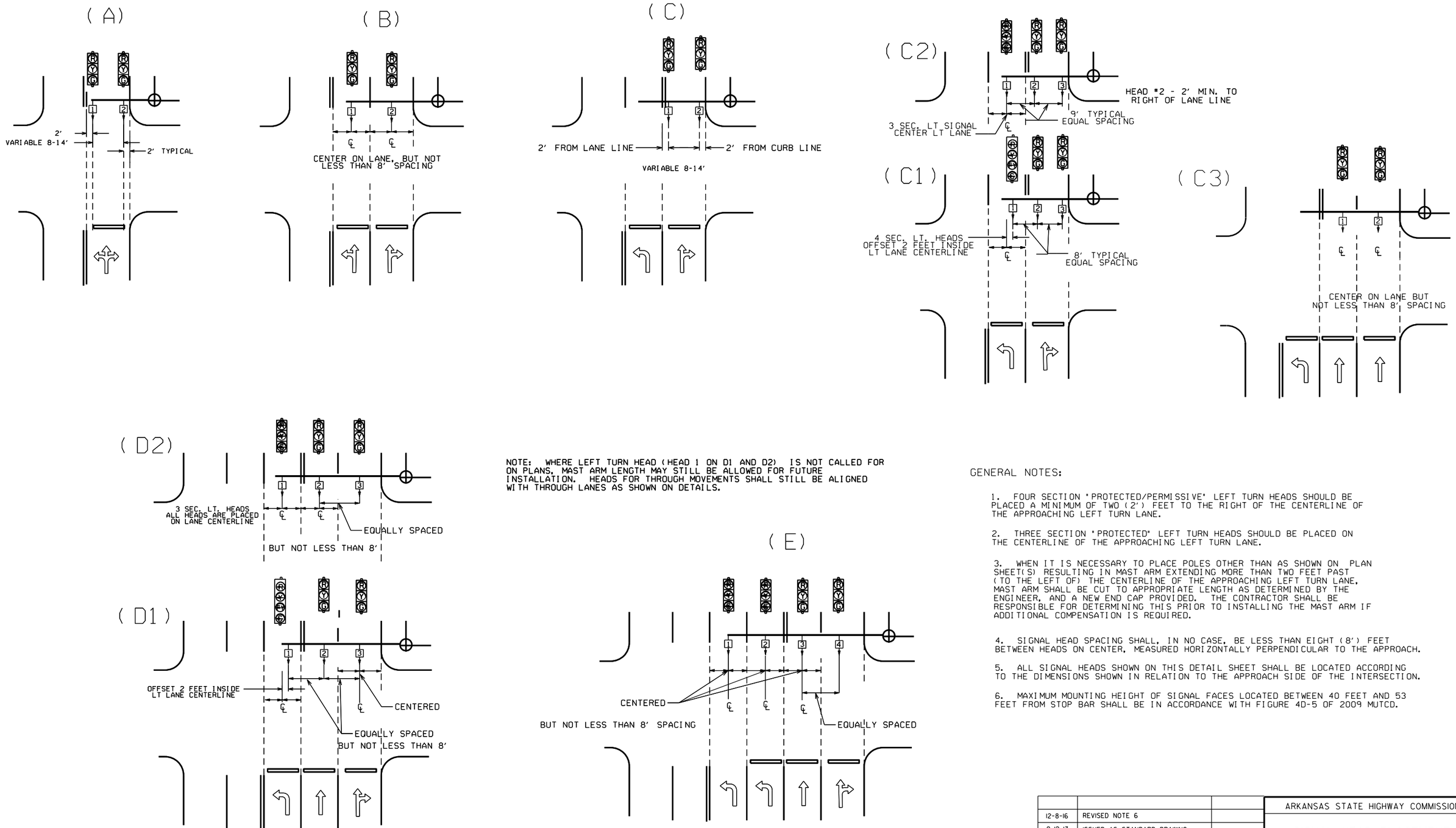
SPAN WIRE ASSEMBLY
WOOD POLE

STANDARD DRAWING SD-7



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION "PROTECTED/PERMISSIVE" LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION "PROTECTED" LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-5 OF 2009 MUTCD.

DATE	REVISION	DATE FILM
12-8-16	REVISED NOTE 6	
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

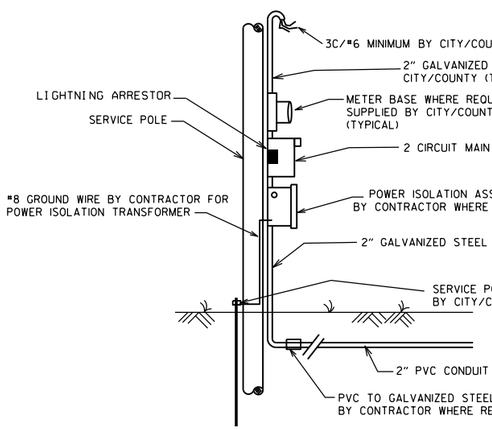
SIGNAL HEAD PLACEMENT

STANDARD DRAWING SD-8

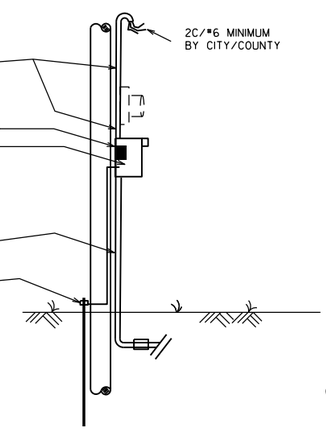
MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 701. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

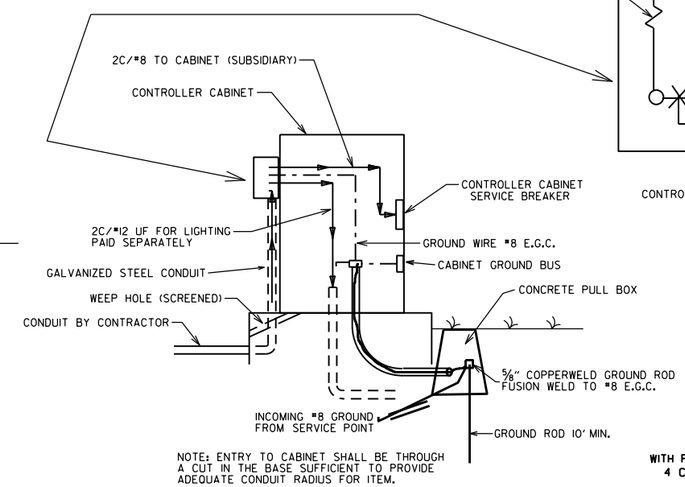
WITH POWER ISOLATION ASSEMBLY



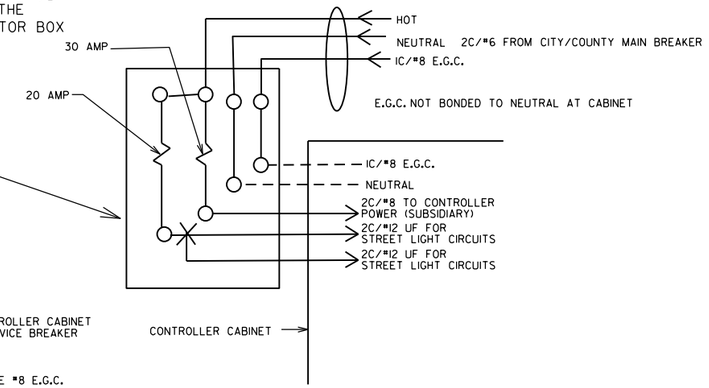
WITHOUT POWER ISOLATION ASSEMBLY



SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



MAIN BREAKER WIRING (TYPICAL)

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY):

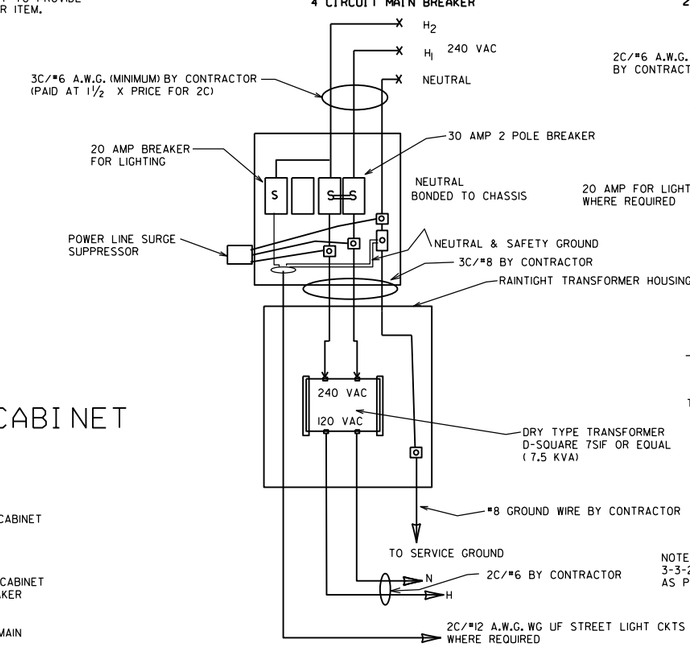
ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES:
MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S/COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

ALL SITUATIONS:
ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY COMPANY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION STREET LIGHTING CIRCUIT (2C/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT SEPARATE FROM THE CIRCUIT SERVING TRAFFIC SIGNAL. SERVICE WIRE AND WIRING FROM THE CONTROLLER TO MAIN BREAKER IS PROVIDED BY THE CONTRACTOR AS A PART OF THIS CONTRACT. WIRE AND WIRING FROM MAIN BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

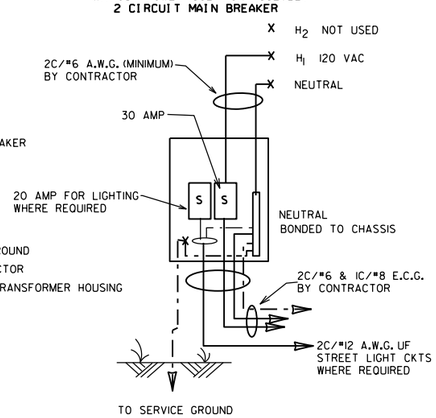
MAIN BREAKER NOT NEAR CONTROLLER CABINET:
THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT. WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

MAIN BREAKER NEAR CONTROLLER CABINET:
ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

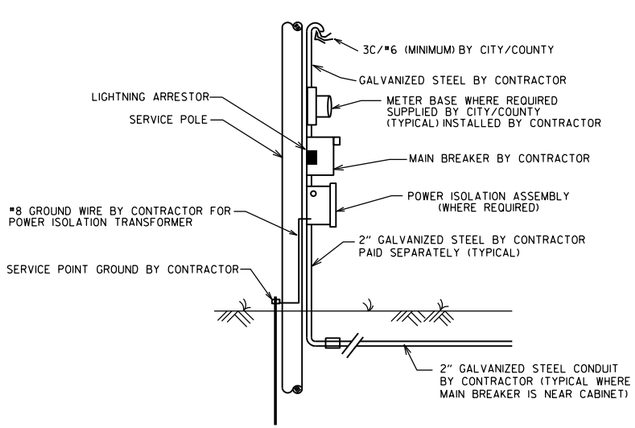


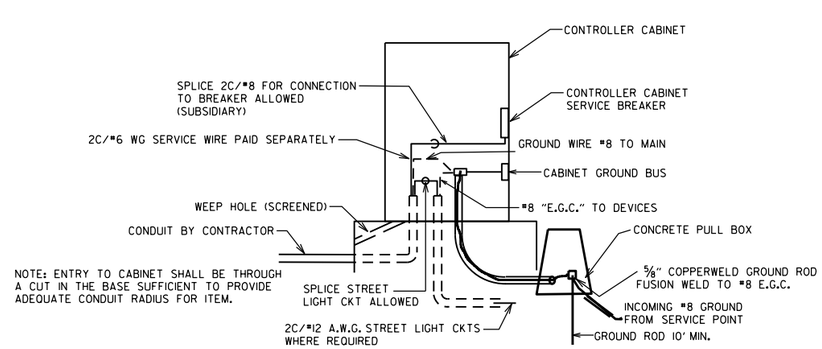
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (E.C.G.) ADDED 3-3-2003, CONSISTING OF A IC/#8 A.W.G. CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED





NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

DATE	REVISION	FILMED
11-07-19	REVISED	
11-16-17	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
04-18-13	ADDED LIGHTNING ARRESTOR	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
03-03-03	ADDED EGC NOTE	
09-26-01	REVISED	
12-27-99	REVISED	
07-28-99	REVISED	
02-05-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

NOTES:
PEDESTRIAN AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SIGN (R10-12a) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE THE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY II FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH MAST ARMS LESS THAN 60' AND ON ROUTES WHERE THE SPEED LIMITS OF 45 MPH AND LESS WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE THE SPEED LIMIT IS 45 MPH AND LESS AND MAST ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS:
STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, TWELVE (12") INCH AND HAVE FIVE (5") INCH BACK PLATES:

SIGNAL HEADS AT THE END OF MAST ARM - ONE 4 SEC., 85 LB., 14.5 SQ. FT., ONE SIGN MOUNTED 3 FEET FROM SIGNAL HEAD (2'-0" X 2'-6"; 20 LB.) REMAINING SIGNAL HEADS SPACED AT 8 FT. (3 SEC., 56 LB., 8.3 SQ. FT.):
DESIGN TO ACCOMMODATE:
2 SIGNAL HEADS FOR MAST ARMS 10 FT. TO 16 FT.
3 SIGNAL HEADS FOR MAST ARMS 18 FT. TO 24 FT.
4 SIGNAL HEADS FOR MAST ARMS OVER 26 FT.

STREET NAME SIGN - 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAT 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT.
ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) - VARIABLE ARM LENGTH (MAX. WT. 75 LB., 3.3 SQ. FT.)
PEDESTRIAN SIGNALS - TWO 1 SEC., 12 INCH MOUNTED 8 FT. FROM BASE OF POLE. POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

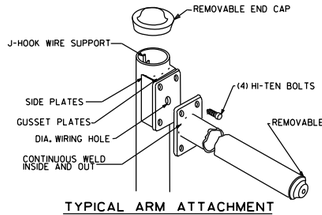
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE - HAND HOLES SHALL BE 4 IN. X 6 IN. FOR STANDARD, AND 3 IN. X 5 IN. FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACCUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDED A HAND HOLE WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

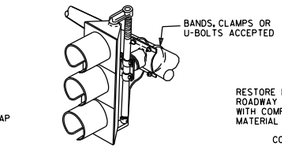
6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.125 TO 0.15 INCHES PER FOOT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE MAST ARM SHALL MAINTAIN A POSITIVE SLOPE AFTER IT IS PLACED UNDER LOAD.

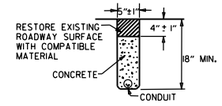
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



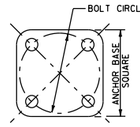
TYPICAL ARM ATTACHMENT



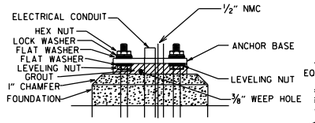
NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.

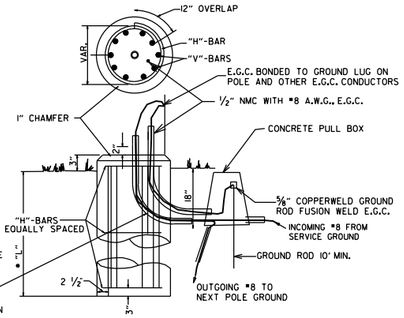


TRENCHING DETAIL
(FOR SAW CUT TRENCH IN ROADWAY)



ANCHOR BASE





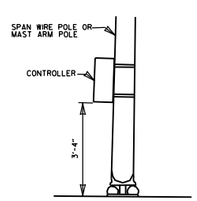
THE SWEEPING "L" IN THE FOUNDATION SHALL BE THE SAME SIZE AS THE CONDUIT FROM THE FOUNDATION TO THE PULL BOX AS SHOWN ON THE PLANS.

THE GROUND ROD SHALL BE FUSION WELDED TO A 10'/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE GROUND ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

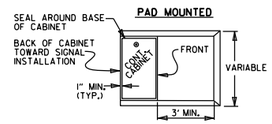
TYPICAL FOUNDATION DETAILS

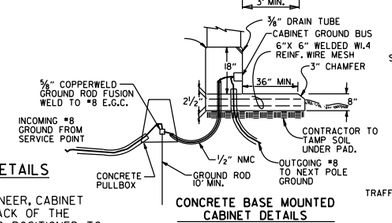
POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FOUNDATION DIAMETER	DEPTH "L"*	STEEL VERTICAL	STEEL HORIZONTAL	STEEL O.C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' TO 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
OVER 12' TO 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
OVER 20' TO 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
OVER 35' TO 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
OVER 50' TO 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
TWINS TO 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
TWINS OVER 20' TO 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
TWINS OVER 44' TO 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
TWINS OVER 50' TO 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED





CONCRETE BASE MOUNTED CABINET DETAILS

CONTROLLER CABINET MOUNTING DETAILS

NOTE:
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPERATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PEDESTRIAN PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM 707 PEDESTRIAN SIGNAL HEAD.

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS.

** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANIFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60" X 16" X 0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH THE HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OF SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

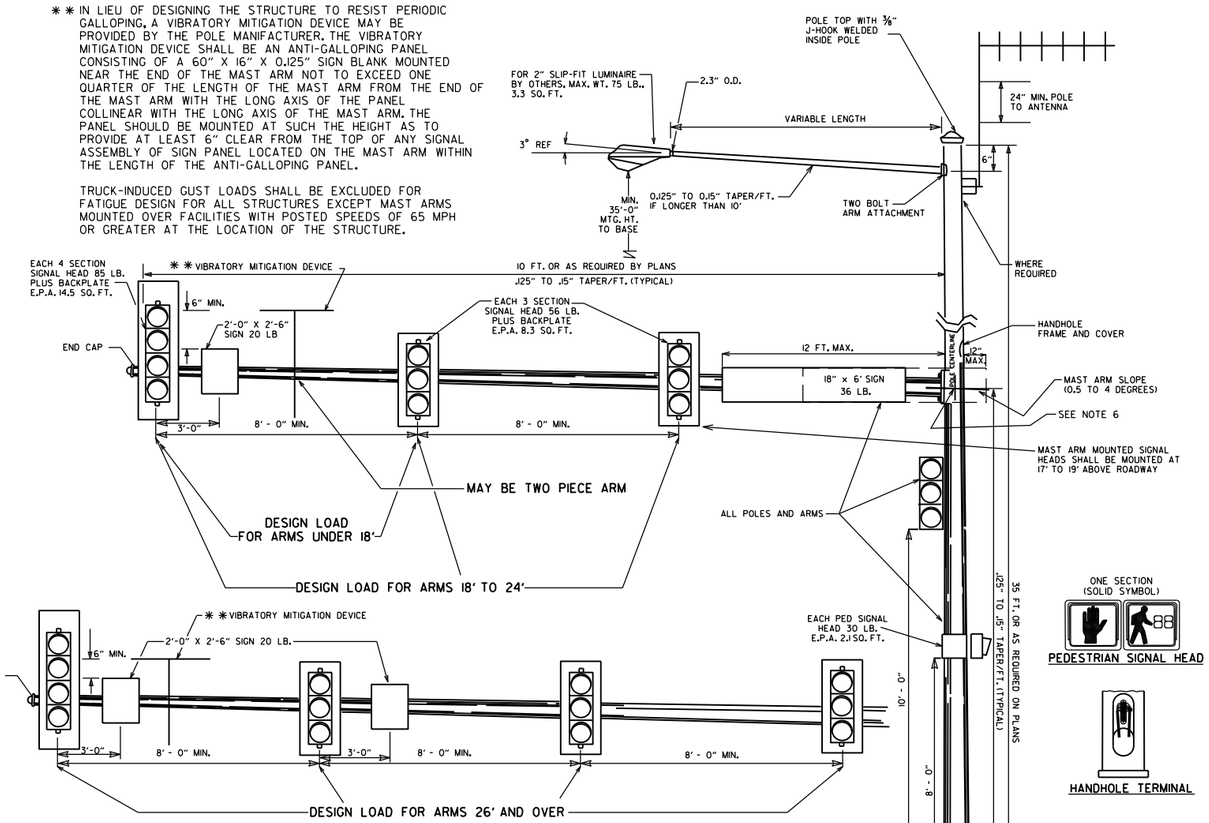
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.

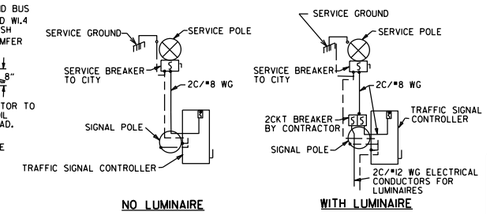
SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

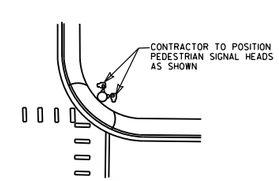




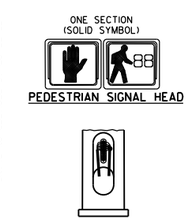
NO LUMINAIRE — WITH LUMINAIRE

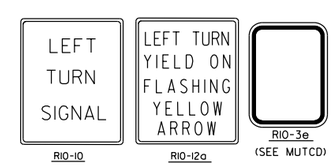
SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES



PEDESTRIAN SIGNAL HEADS





DATE	REVISION	FILMED
02-13-24	REVISED SPECIAL SIGN TO R10-12a SIGN	
11-16-17	REVISED NOTES, ADDED PEDESTRIAN SIGNAL HEAD DETAIL, ADDED HANDHOLE TERMINAL DETAIL, ADDED TRENCHING DETAIL	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
12-08-16	REVISED NOTES	
02-27-14	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
07-21-11	REVISED VMD, SIGNAL HEADS	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
04-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
04-18-08	REVISED AASHTO NOTES	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
06-23-04	REVISED	
05-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
06-11-01	REV. NOTES & POLE MAST ARM SLOPE	
04-11-01	REVISED POLE TAPERS	
04-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
11-22-99	REVISED FOUNDATION DETAILS	
11-17-98	REVISED DETAILS AND NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	35 MPH e	35 MPH Ls (FT) MINIMUM	35 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	45 MPH e	45 MPH Ls (FT) MINIMUM	45 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	65 MPH e	65 MPH Ls (FT) MINIMUM	65 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE	75 MPH e	75 MPH Ls (FT) MINIMUM	75 MPH Ls (FT) DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139		0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158	300	0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168		0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168	300	0.056	182	300	0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235		0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254	350	0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178	250	0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187		0.068	211		0.078	235		0.088	259		0.098	283		D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134	200	0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288	400			
3° 30'	0.030	90		0.038	113		0.046	139		0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254		0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100	200	0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104		0.048	133		0.060	168		0.070	203		0.082	245		0.092	269	350	0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283													
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288													
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278	300	D MAX = 6° 30'														
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283																
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252	300	0.100	288																
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		D MAX = 8° 25'																	
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																			
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																			
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																			
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																				
11° 00'	0.070	162		0.084	203		0.096	244																						
12° 00'	0.074	169		0.088	211	250	0.098	248																						
13° 00'	0.076	173		0.090	215		0.100	252	300																					
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																							
15° 00'	0.082	184		0.096	226																									
16° 00'	0.086	191		0.098	230																									
17° 00'	0.088	194		0.100	234																									
18° 00'	0.090	198	250	D MAX = 19° 30'																										
19° 00'	0.092	202																												
20° 00'	0.094	205																												
21° 00'	0.096	209																												
22° 00'	0.096	209																												
23° 00'	0.098	212																												
24° 00'	0.098	212																												
25° 00'	0.100	216																												
D MAX = 28° 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.)

GENERAL NOTES

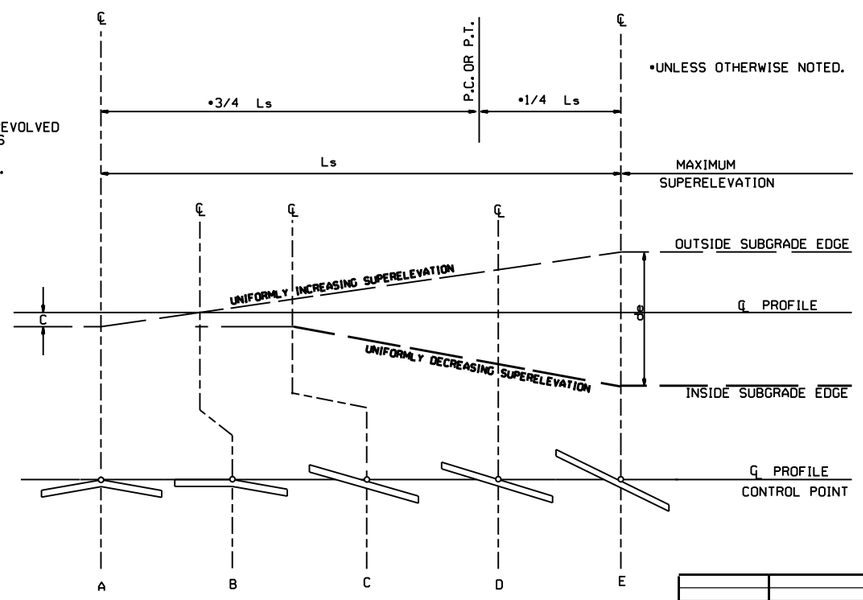
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED 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%

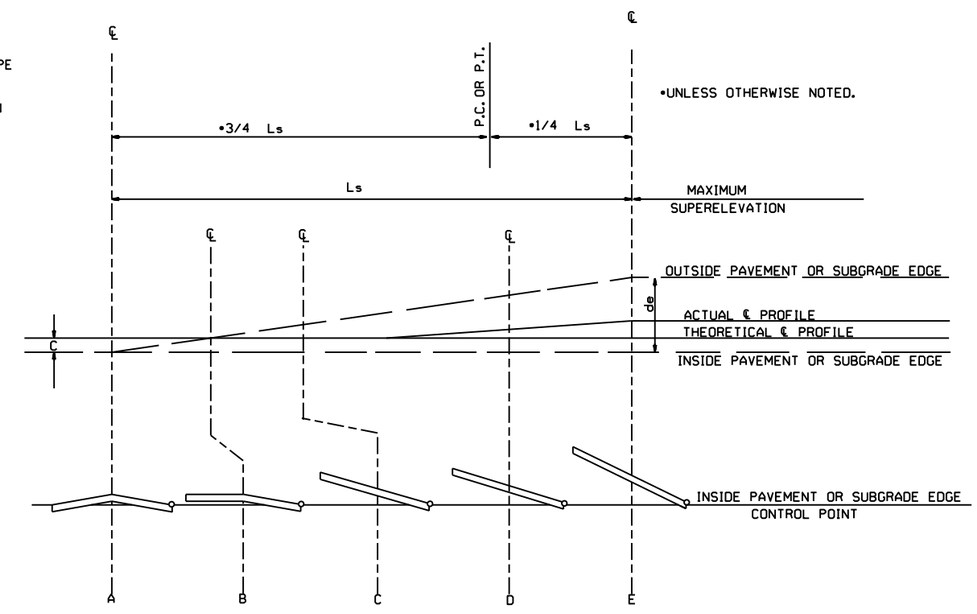
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

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

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

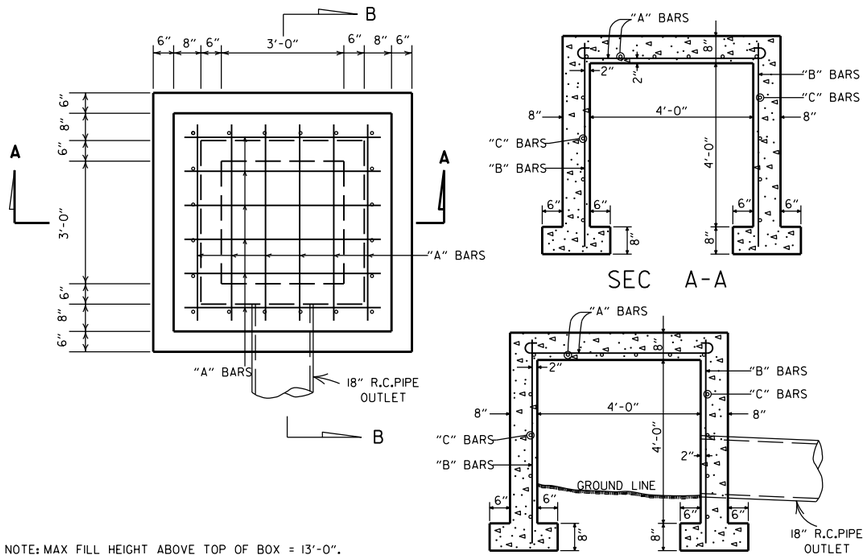
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

DATE	REVISION	DATE FILMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

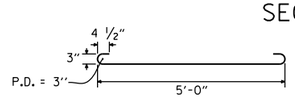
ARKANSAS STATE HIGHWAY COMMISSION

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 1/2"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS

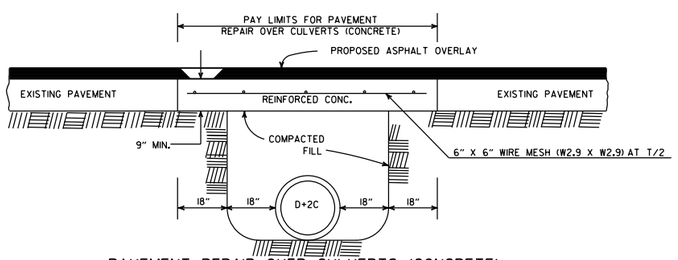
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

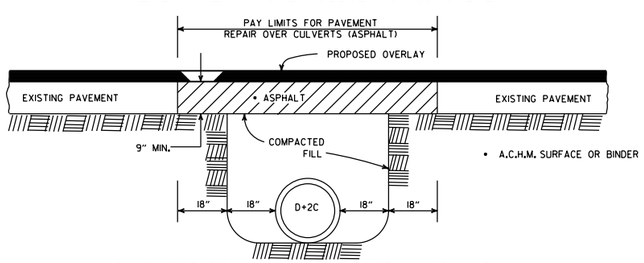
GENERAL NOTE:

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



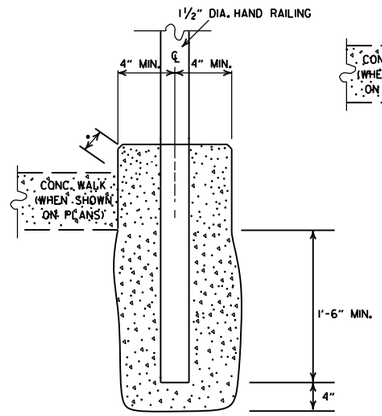
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



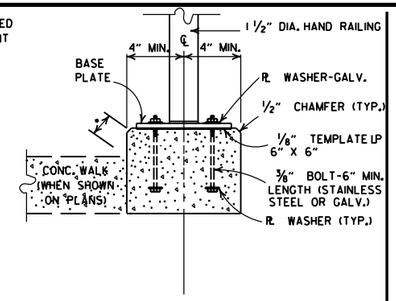
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

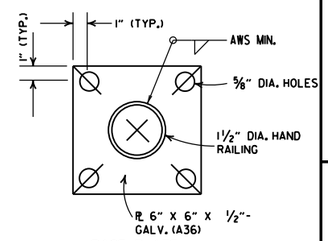
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

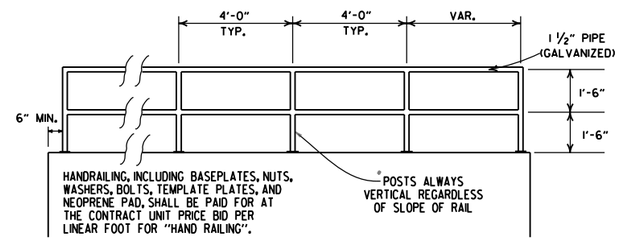


POST CONNECTION TO WALL

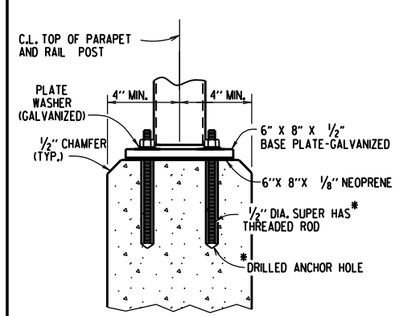


BASE PLATE

POST CONNECTION DETAILS



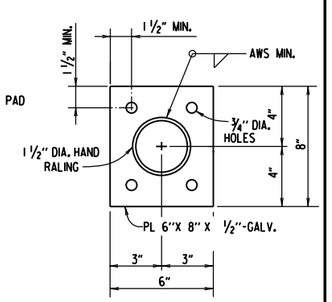
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 1/2" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

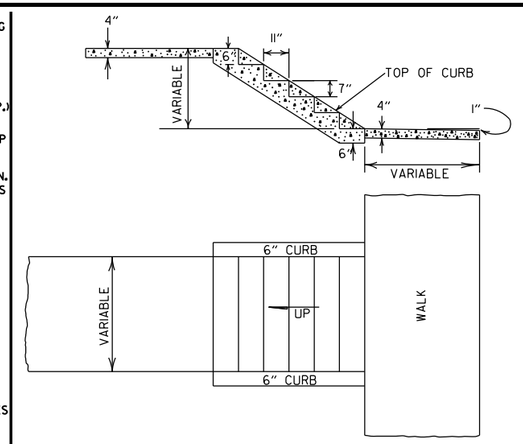
POST CONNECTION TO WALL



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.

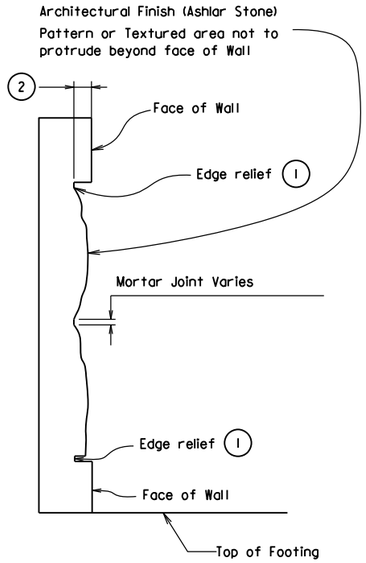
DETAILS OF CONCRETE STEPS & WALKS

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

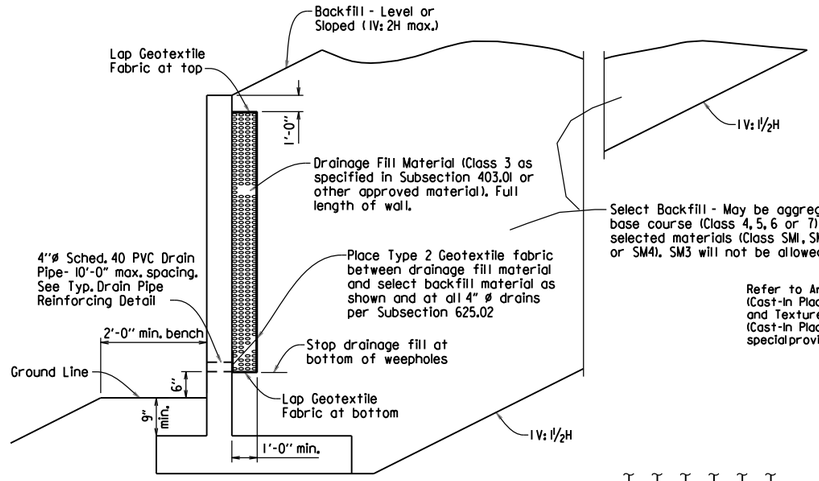
STANDARD DRAWING SI - 1



ARCHITECTURAL FINISH DETAILS

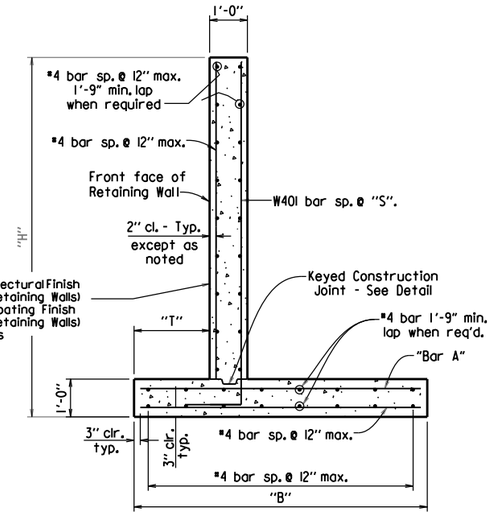
N.T.S.

1. Provide edge relief around perimeter of Texture. Edge relief dimensions shall match manufacturers edge distance.
2. Depth of Ashlar Stone pattern approx. 1 5/8". See SP "Architectural Finish".



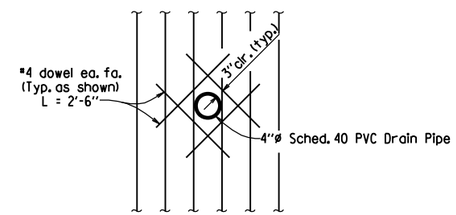
TYPICAL DRAINAGE & BACKFILL DETAILS

N.T.S



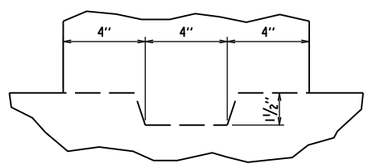
TYPICAL SECTION

N.T.S



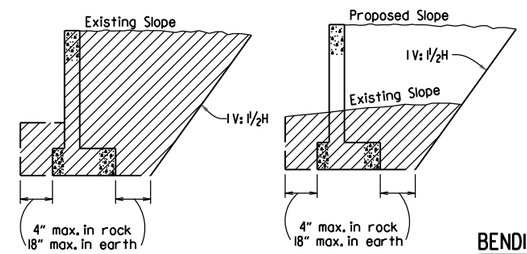
TYPICAL DRAIN PIPE REINFORCING DETAIL

N.T.S



KEYED CONSTRUCTION JOINT DETAIL

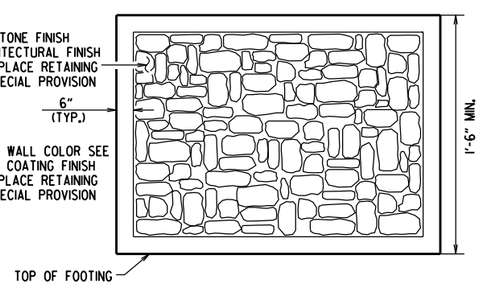
N.T.S



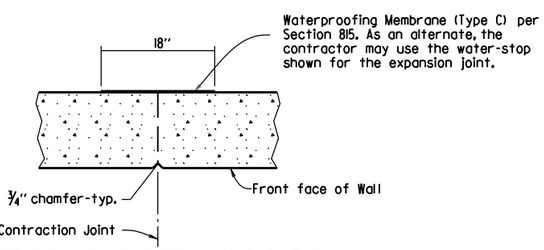
NOTE: Hatched area denotes maximum limits of pay excavation.

DETAILS OF EXCAVATION

N.T.S



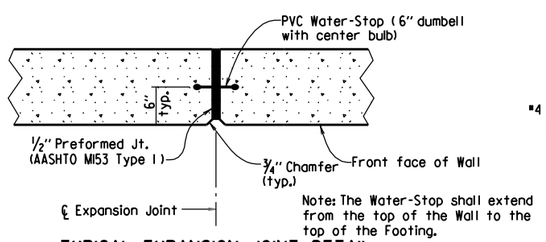
ASHLAR STONE FINISH DETAIL



TYPICAL CONTRACTION JOINT DETAIL

N.T.S.

Note: 20'-0" Max. Spacing between Contraction Joints. Horizontal reinforcement shall be continuous through Contraction joints.

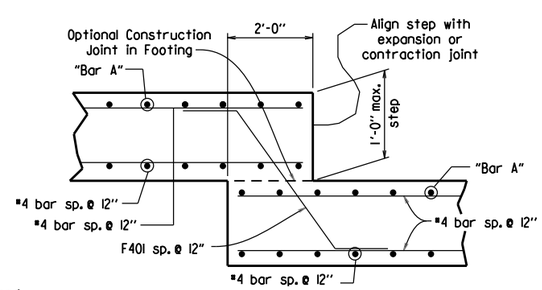


Note: The Water-Stop shall extend from the top of the Wall to the top of the Footing.

TYPICAL EXPANSION JOINT DETAIL

N.T.S.

Note: 60'-0" Max. Spacing between Expansion Joints. Horizontal reinforcing shall stop 2" from ℄ Expansion Joint.



FOOTING STEP DETAIL

N.T.S.

NOTES:

Wall pattern shall be applied to the exposed surfaces of wall in accordance with SP "Architectural Finish (Cast-in Place Retaining Walls)" and as shown in the plans. Care shall be taken with form liner handling and installation to ensure aesthetic quality of the wall texturing is maintained. Where form liner panels require modification to conform to the location, dimensions and lines shown in the plans, the Contractor shall provide edge relief matching that of the unaltered form liner. Payment for wall texturing shall be in accordance with SP "Architectural Finish (Cast-in Place Retaining Walls)".

No adjustments will be made in concrete volume due to the use of "Architectural Finish". Class "S" Concrete shall be measured in accordance with Subsection 802.24(a). Care shall be taken in placing concrete to avoid segregation and to eliminate flow lines.

Class 3 Textured Coating Finish shall be applied to wall surfaces as specified in SP "Textured Coating Finish (Cast-in Place Retaining Walls)" and in accordance with Subsection 802.19(b)(3).

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas Department of Transportation 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.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012).

LIVE LOAD: Live Load Surcharge is not included in the design of these walls. Vehicular Live Load shall not be allowed within a distance equal to one-half the height of the wall.

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered ½". All concrete shall be Class S with a minimum 28 day compressive strength f'c = 3,500 psi. A Class 2 Surface finish shall be used on all surfaces of the concrete unless otherwise noted. Refer to Architectural Finish (Cast-in Place Retaining Walls) and Textured Coating Finish (Cast-in Place Retaining Walls) special provisions.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.

Foundations for footings shall be prepared in accordance with subsection 801.04. Backfill for retaining walls shall be in accordance with subsection 801.08.

Waterproof Membrane (Type C), waterstops, preformed joints, weep holes & geotextile fabric shall not be paid for directly, but shall be considered subsidiary to Class S Concrete.

Drainage fill material (Class 3) and select backfill shall be measured and paid for as Compacted Embankment.

These details are not intended for use along streams or ditches without consideration for scour.

TABLE OF RETAINING WALL VARIABLES (SLOPED BACKFILL) (1V: 2H MAX.)

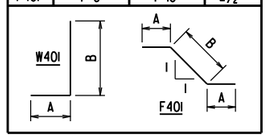
"H"	"T"	"B"	"S"	"Bar A" Size @ Spacing
3'-0"	9"	2'-6"	12"	#4 @ 12"
4'-0"	9"	3'-6"	12"	#4 @ 12"
5'-0"	9"	4'-6"	12"	#4 @ 12"
6'-0"	9"	5'-6"	12"	#4 @ 6"
7'-0"	9"	6'-6"	12"	#5 @ 6½"
8'-0"	1'-6"	8'-0"	7½"	#6 @ 6"
9'-0"	1'-11"	9'-6"	5"	#8 @ 6"

TABLE OF RETAINING WALL VARIABLES (LEVEL BACKFILL)

"H"	"T"	"B"	"S"	"Bar A" Size @ Spacing
3'-0"	9"	2'-6"	12"	#4 @ 12"
4'-0"	9"	3'-6"	12"	#4 @ 12"
5'-0"	9"	4'-0"	12"	#4 @ 12"
6'-0"	9"	4'-6"	12"	#4 @ 12"
7'-0"	9"	5'-6"	12"	#4 @ 10"
8'-0"	9"	6'-0"	12"	#5 @ 10"
9'-0"	1'-0"	7'-0"	12"	#5 @ 6½"

BENDING DIAGRAMS

MARK	A	B	P.D.
W401	8"	"H" - 6"	3"
F401	1'-6"	1'-10"	2½"



Dimensions are out to out of bars.

SEISMIC ZONE: These walls have been designed for the following site adjusted peak ground accelerations (A_S):
Level Backfill - $A_S \leq .40g$
Sloped Backfill (1V: 2H max.) - $A_S \leq .30g$

DATE	REVISION	DATE FILMED
5-14-20	ADDED ASHLAR STONE FINISH DETIAL AND NOTES. REVISED TYP. SECTION AND GEN. NOTES.	
5-12-16	REVISED SLOPES FOR SELECT BACKFILL	
2-27-14	REVISED GENERAL NOTES	
7-26-12	DRAWING ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

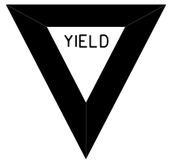
REINFORCED CONCRETE RETAINING WALL (WITHOUT LIVE LOAD SURCHARGE)

STANDARD DRAWING SI - 2

R1-1

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

R1-2



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

R2-1

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

W3-5

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

W3-5a

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

R4-1

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

R4-2

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

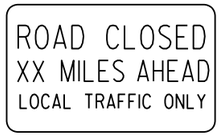
R5-1

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

R11-2

48"X30"

R11-3A



60"X30"

R11-4

60"X30"

W21-5a

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

W1-1

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

W1-2

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

W1-3

STD. 48"X48"

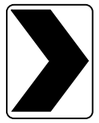
W1-4

STD. 48"X48"

W1-6

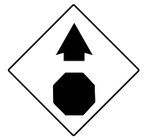
STD. 48"X24"
SPECIAL 60"X30"

W1-8



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

W3-1

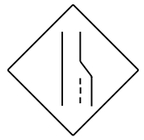


STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

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

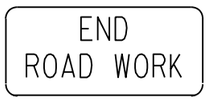
W8-9

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

G20-1

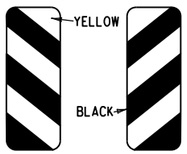
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

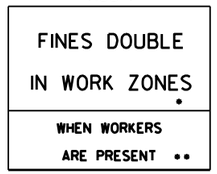
M4-9

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

M4-10

48"X18"

R55-1



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.

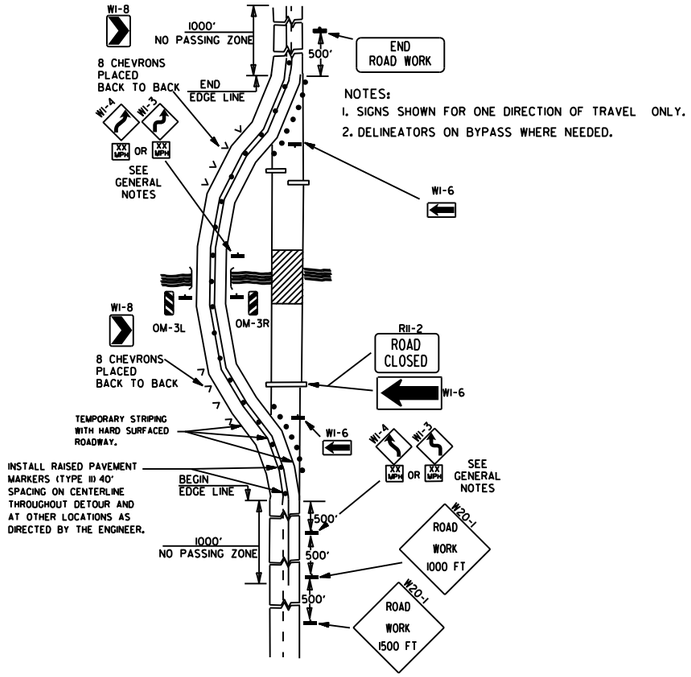
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
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

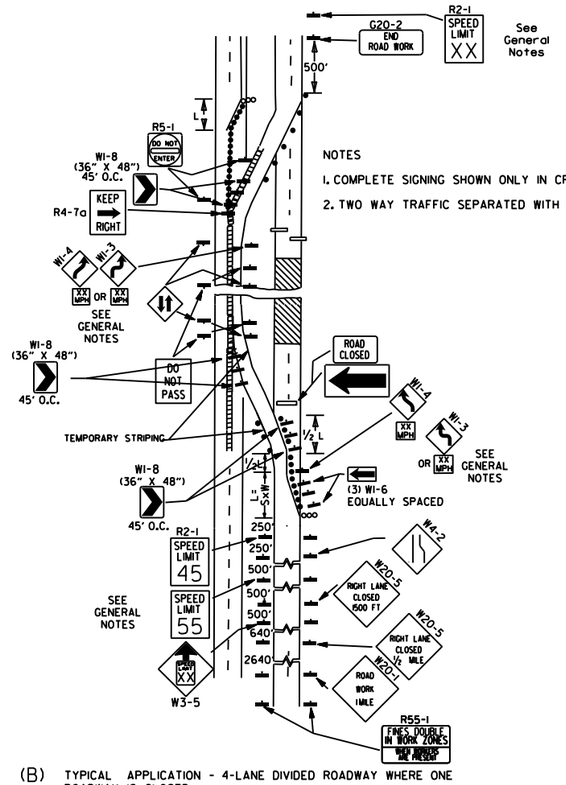
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



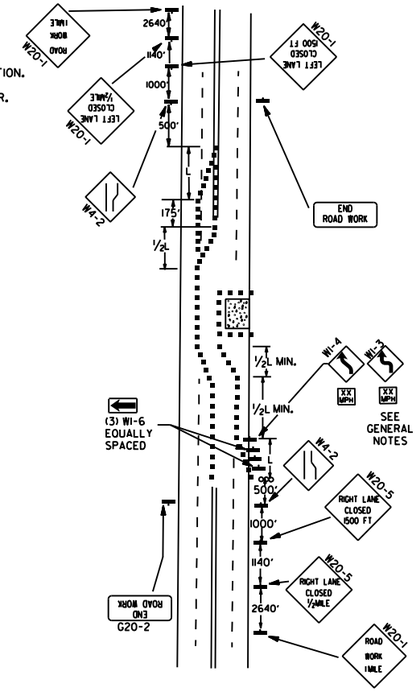
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

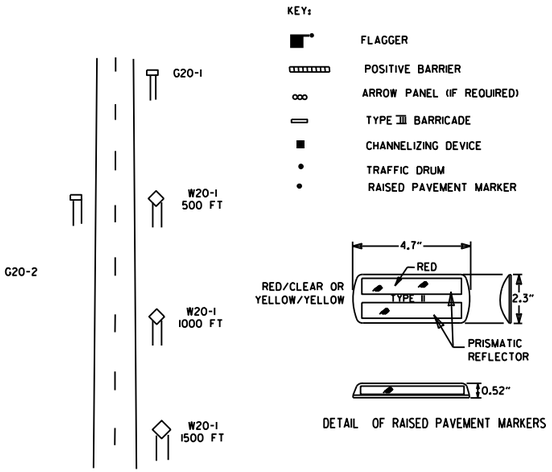


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.



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:

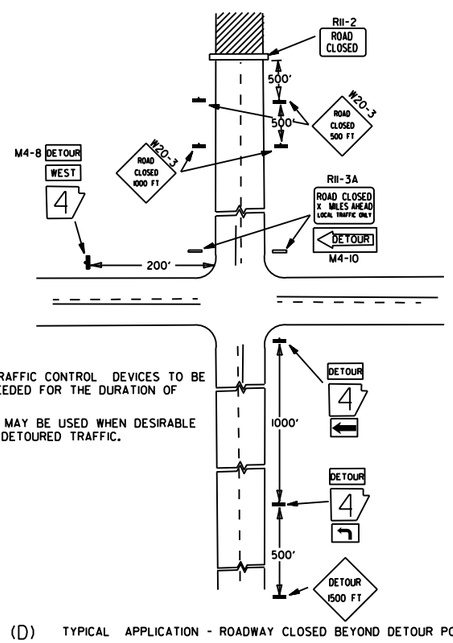
L= MINIMUM LENGTH OF TAPER.

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

W= WIDTH OF OFFSET.

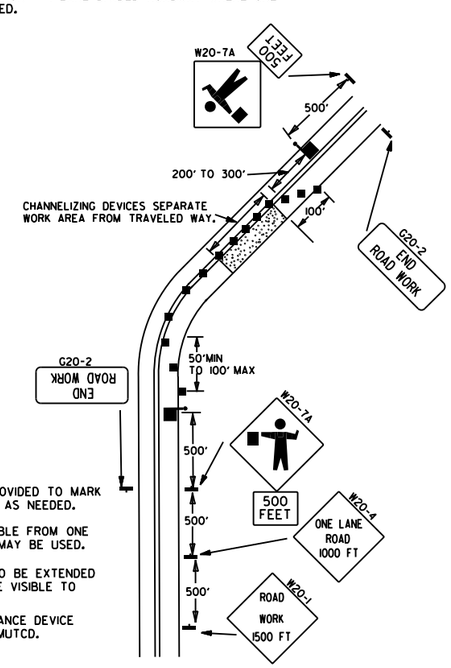
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. 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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
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 ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



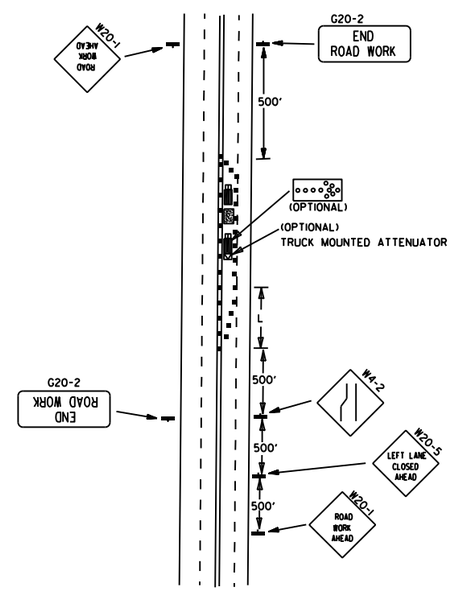
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



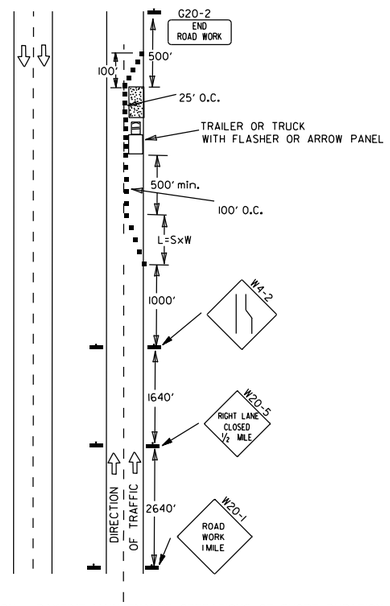
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
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 (c) 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	

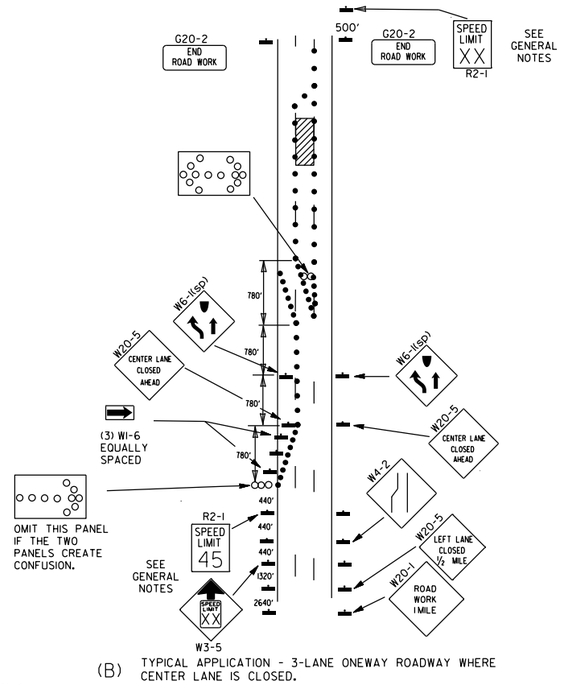
ARKANSAS STATE HIGHWAY COMMISSION

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.



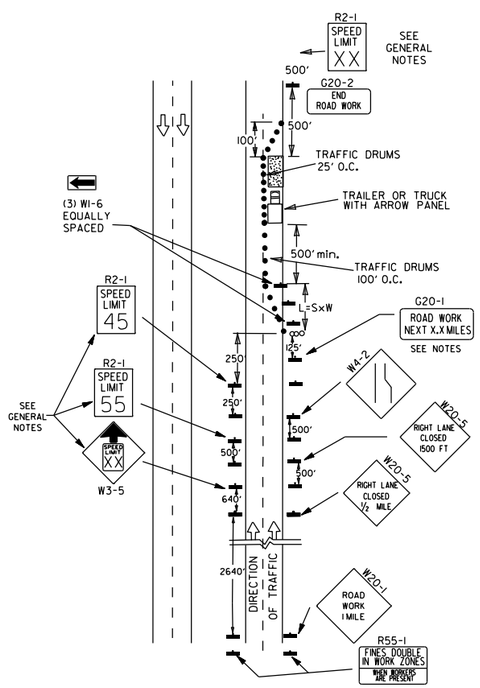
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

- ARROW PANEL (IF REQUIRED)
- ■ CHANNELIZING DEVICE
- ● TRAFFIC DRUM

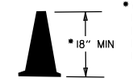
GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



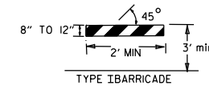
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES



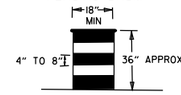
- WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

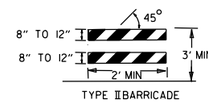
CONES



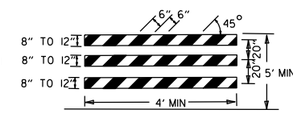
TYPE I BARRICADE

PLASTIC DRUM



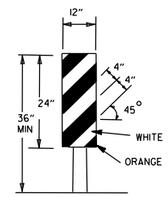


TYPE II BARRICADE



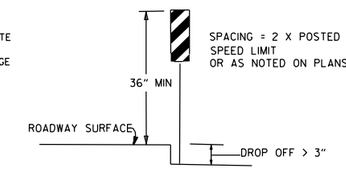
TYPE III BARRICADE

NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



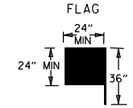
VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



SPACING = 2 X POSTED SPEED LIMIT OR AS NOTED ON PLANS

FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

TRAFFIC CONTROL DEVICES

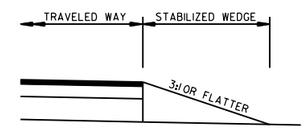
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE(6)	STANDARD LANE CLOSURE(6)
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS(1)	W8-9 AND TRAFFIC DRUMS(1)
> 3" ≤ 6"	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(1)
> 6" ≤ 18"	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)
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS(3)
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER(4) & EDGE LINES	PRECAST CONCRETE BARRIER(4) & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 3" ≤ 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:

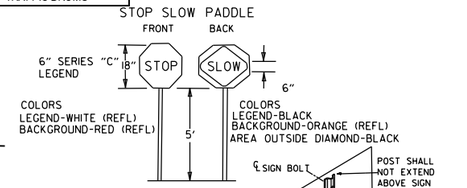
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. 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.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

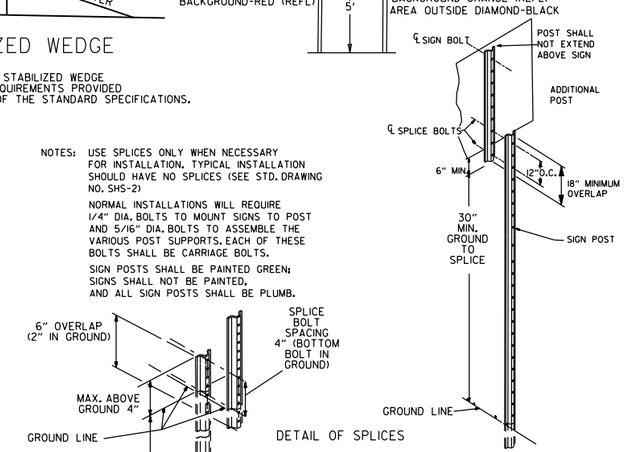


STABILIZED WEDGE

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

STOP SLOW PADDLE



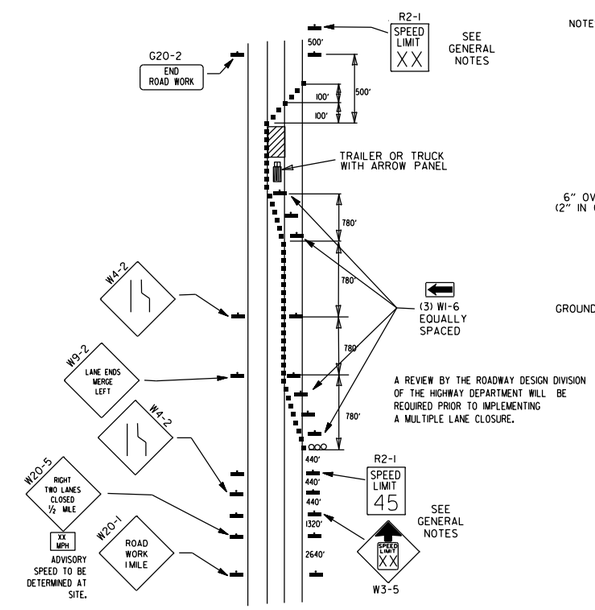


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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

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

DETAIL OF SPLICES



A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

DATE	REVISION	FILMED
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
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	

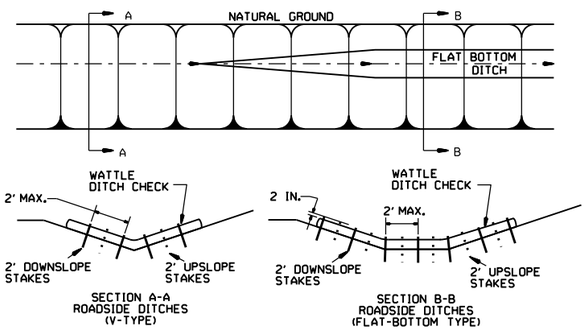
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

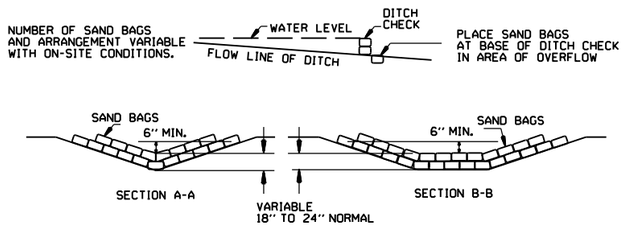
STANDARD DRAWING TC-3

GENERAL NOTES

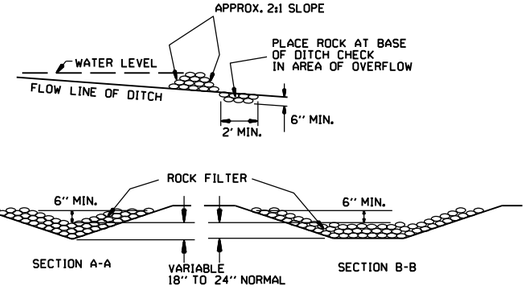
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

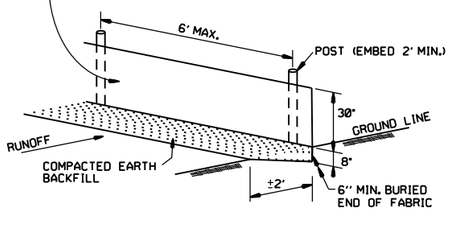


ROCK DITCH CHECK (E-6)

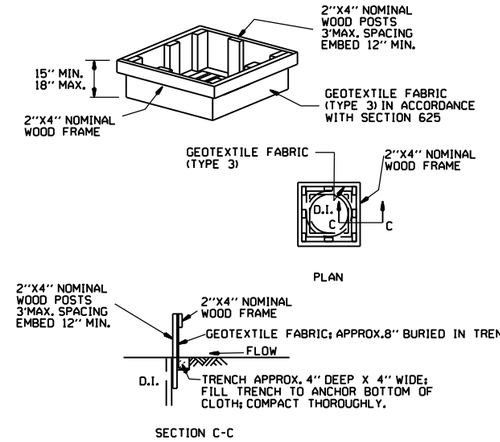
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

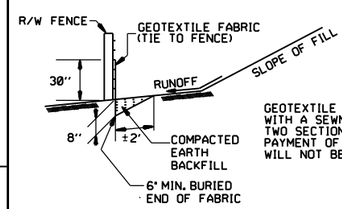
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

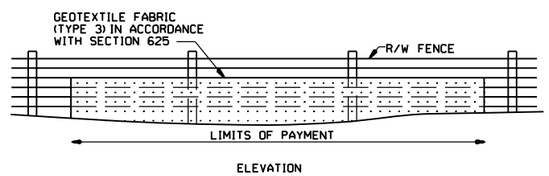


DROP INLET SILT FENCE (E-7)



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.



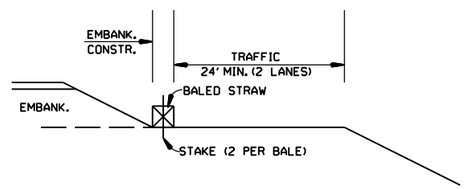
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

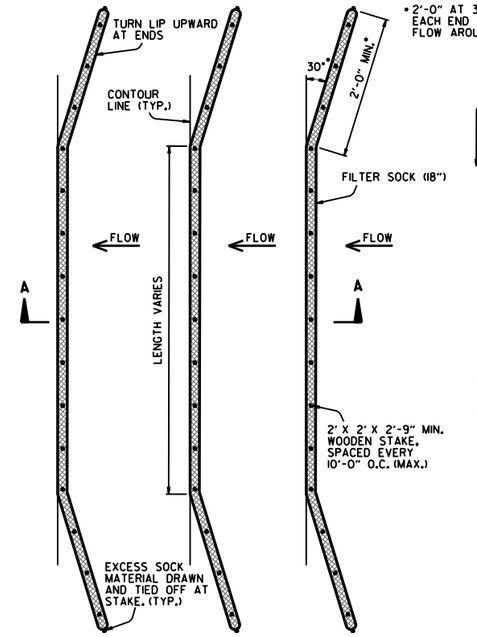
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

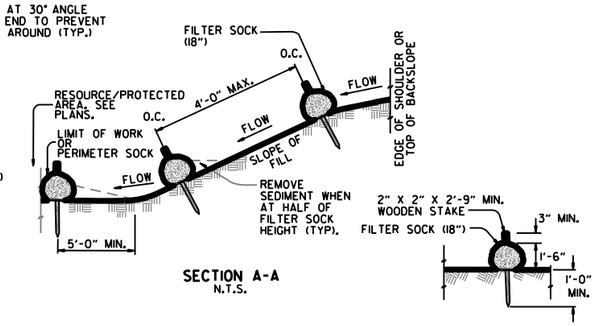
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



PLAN VIEW
N.T.S.



SECTION A-A
N.T.S.

STAKING DETAIL
N.T.S.

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.

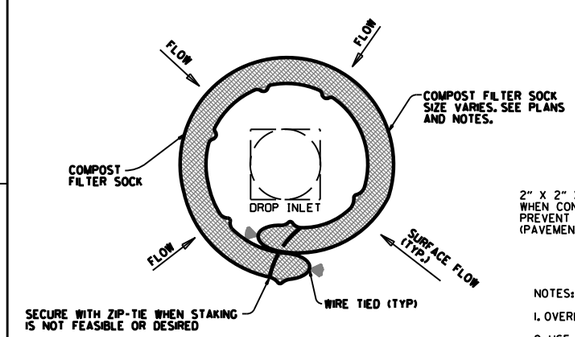
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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")."

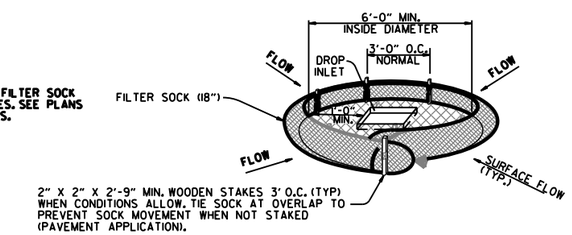
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

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

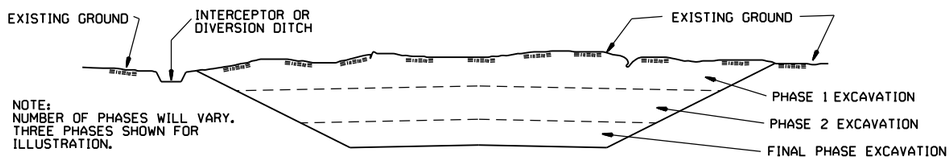
STANDARD DRAWING TEC-1

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



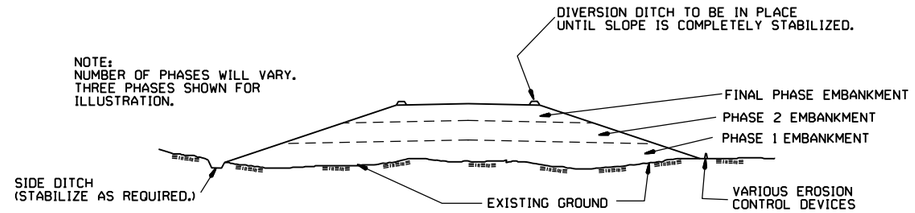
GENERAL NOTE

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

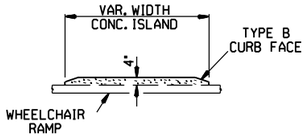
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

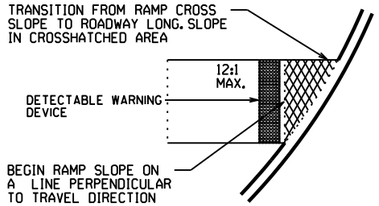
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



CONCRETE ISLAND DETAIL



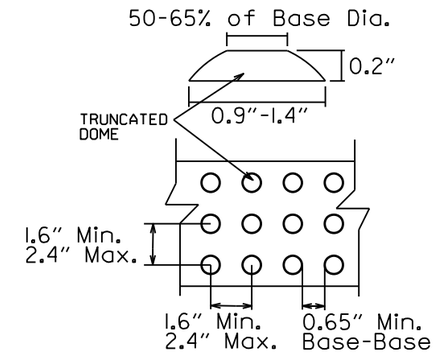
SLOPE TRANSITION DETAILS

TYPE 1 RAMP DIMENSIONS AND QUANTITIES

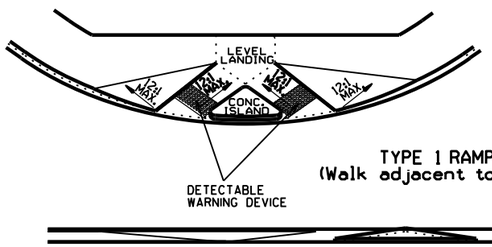
RADIUS "R"	DISTANCE "X"	DISTANCE "Y"	LENGTH "L"	RAMP AREA "A"
FEET	FEET	FEET	FEET	SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

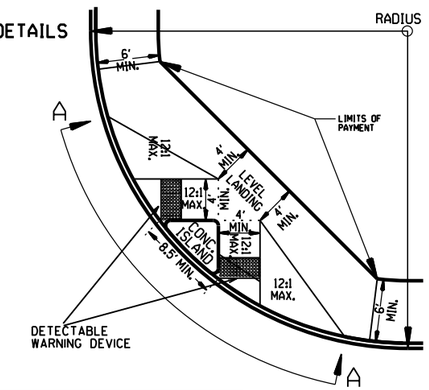
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).

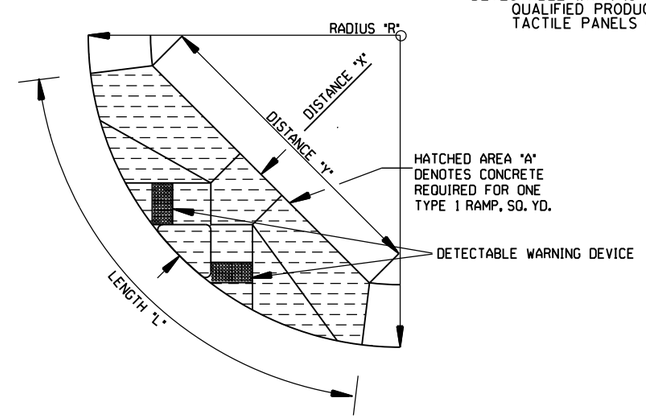


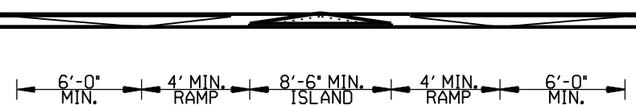
DETECTABLE WARNING DEVICE DETAIL



TYPE 1 RAMP
(Walk adjacent to curb)



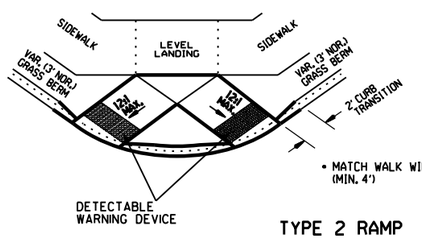




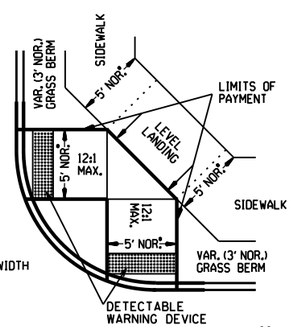
SECTION A-A

GENERAL NOTES:

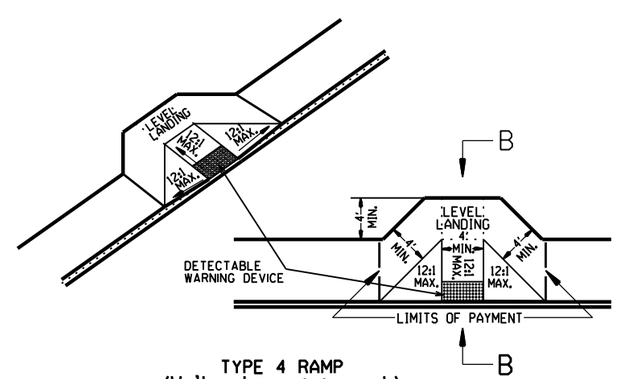
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.



TYPE 2 RAMP



NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.



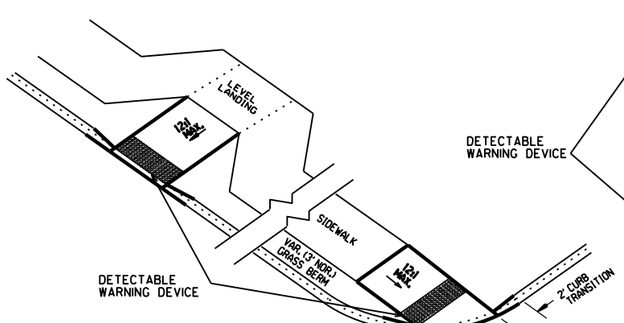
TYPE 4 RAMP
(Walk adjacent to curb)

RAMP SELECTION CRITERIA

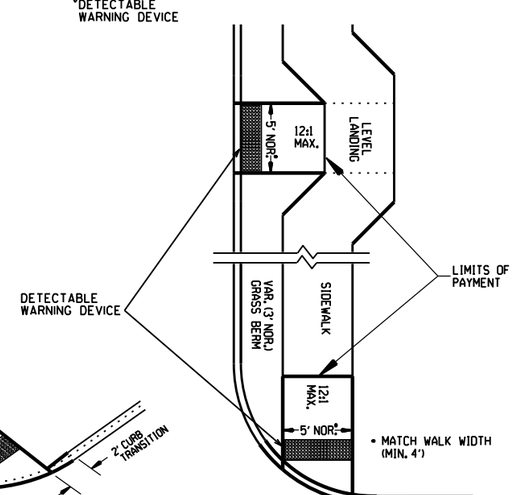
FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

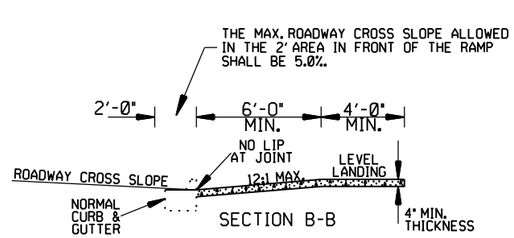
NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.



TYPE 3 RAMP





SECTION B-B

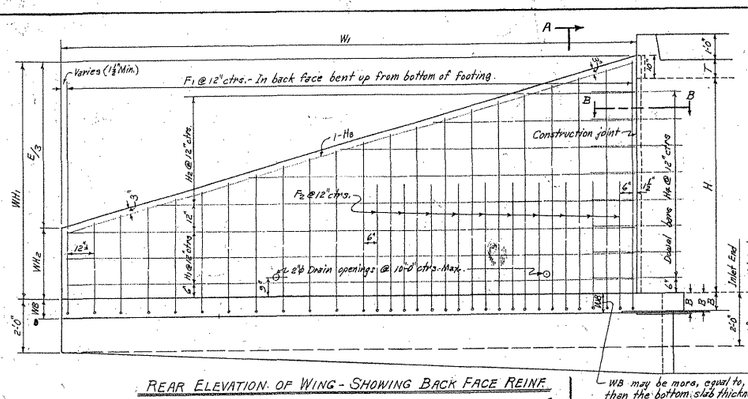
DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD. SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM 8 TO 12 MAX. SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD. "CONC. ISLD." IN PAY ITEM	------
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

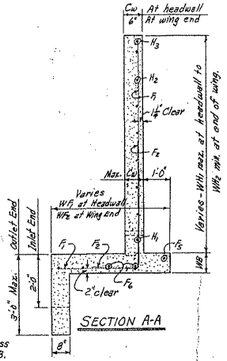
WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1

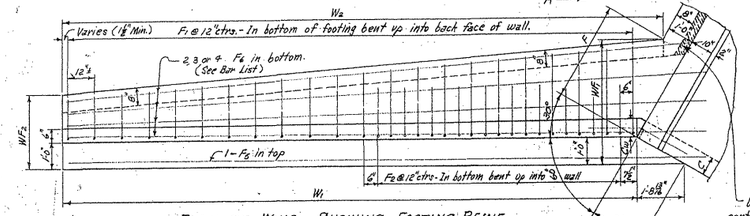
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

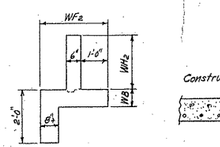


SECTION A-A

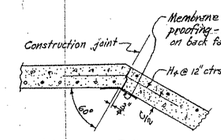


PLAN OF WING - SHOWING FOOTING REINF.

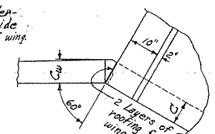
When B is more than WB, the shaded portion of the apron shall be the same thickness as the barrel base B.



END VIEW OF WING



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS: AT HEADWALL	WINGWALL HEIGHTS: AT END OF WING	WIDTHS OF WING FOOTINGS: AT HEADWALL	WIDTHS OF WING FOOTINGS: AT END OF WING	PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HEAD TO END OF WING	LENGTH OF WING WALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE: INLET END	* QUANTITY PER WING CLASS S CONCRETE: OUTLET END
H	WB	Cw	WH1	WH2	WF1	WF2	F	E	W1	W2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	0'-11 29/32"	6'-6"	7'-6"	7'-1½"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-4 3/32"	8'-6"	9'-3 3/32"	9'-2½"	1.338	1.466
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-8"	10'-6"	12'-1⅛"	12'-1⅛"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅜"	12'-6"	14'-5⅝"	14'-7½"	2.478	2.668
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅜"	12'-6"	14'-5⅝"	14'-7½"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6¼"	14'-6"	16'-9"	17'-1⅛"	3.440	3.661
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6¼"	14'-6"	16'-9"	17'-1⅛"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6¼"	14'-6"	16'-9"	17'-1⅛"	3.582	3.803
7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅞"	16'-6"	19'-0⅝"	19'-8⅜"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅞"	16'-6"	19'-0⅝"	19'-8⅜"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	18'-6"	21'-9⅝"	22'-4"	5.761	6.047

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.

APRON DIMENSION W3

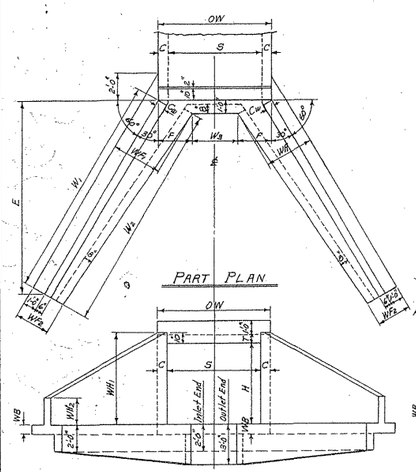
W3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	2" x FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	2F	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3
4'	2'	1'-11 15/16"	5'-0"	3'-0 1/16"	9'-8"	7'-8⅛"	14'-4"	12'-4 9/16"	19'-0"	17'-0 1/16"	23'-8"	21'-8⅛"
	3'	2'-8⅝"	5'-0"	2'-3⅜"	9'-8"	6'-11¼"	14'-4"	11'-7½"	19'-0"	16'-3⅜"	23'-8"	20'-11⅛"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	18'-6"	23'-8"	20'-2"
	5'	4'-3⅜"	5'-0"	0'-8⅝"	9'-8"	5'-4⅝"	14'-4"	10'-0⅝"	19'-0"	18'-8⅝"	23'-8"	19'-7⅝"
	6'	5'-0⅞"	5'-2"	0'-1½"	9'-11"	4'-10½"	14'-8"	9'-7½"	19'-5"	14'-3½"	24'-2"	19'-1⅞"
5'	3'	2'-8⅝"	6'-0"	3'-3⅜"	11'-8"	8'-11¼"	17'-4"	14'-7½"	23'-0"	20'-3⅜"	28'-8"	25'-11⅛"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3⅜"	6'-0"	1'-8⅝"	11'-8"	7'-4⅝"	17'-4"	13'-0⅝"	23'-0"	18'-8⅝"	28'-8"	24'-4⅝"
	6'	5'-0⅞"	6'-2"	1'-1½"	11'-11"	6'-10½"	17'-8"	12'-7½"	23'-5"	18'-3½"	29'-2"	24'-1⅞"
	7'	6'-2⅝"	6'-3"	0'-0⅜"	12'-1"	5'-10⅜"	17'-11"	11'-8⅜"	23'-9"	17'-11⅜"	29'-7"	23'-4⅝"
6'	3'	2'-8⅝"	7'-0"	4'-3⅜"	13'-8"	10'-11¼"	20'-4"	17'-7½"	27'-0"	24'-3⅜"	33'-8"	30'-11⅛"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-3⅜"	7'-0"	2'-8⅝"	13'-8"	9'-4⅝"	20'-4"	16'-0⅝"	27'-0"	22'-8⅝"	33'-8"	29'-4⅝"
	6'	5'-0⅞"	7'-2"	2'-1½"	13'-11"	8'-10½"	20'-8"	15'-7½"	27'-5"	22'-1½"	34'-2"	29'-1⅞"
	7'	6'-2⅝"	7'-3"	1'-0⅜"	14'-1"	7'-10⅜"	20'-11"	14'-8⅜"	27'-9"	21'-8⅜"	34'-7"	28'-8⅝"
	8'	7'-4"	7'-4"	0'-0"	14'-2"	6'-10"	21'-0"	13'-8"	27'-10"	20'-6"	34'-8"	27'-10"
7'	4'	3'-6"	8'-0"	4'-6"	15'-8"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-3⅜"	8'-0"	3'-8⅝"	15'-8"	11'-4⅝"	23'-4"	19'-0⅝"	31'-0"	26'-8⅝"	38'-8"	34'-4⅝"
	6'	5'-0⅞"	8'-2"	3'-1½"	15'-11"	10'-10½"	23'-8"	18'-7½"	31'-5"	26'-1½"	39'-2"	34'-1⅞"
	7'	6'-2⅝"	8'-3"	2'-0⅜"	16'-1"	9'-10⅜"	23'-11"	17'-8⅜"	31'-9"	25'-8⅜"	39'-7"	33'-4⅝"
	8'	7'-4"	8'-4"	1'-0"	16'-2"	8'-10"	24'-0"	16'-8"	31'-10"	24'-6"	39'-8"	32'-10"
8'	4'	3'-6"	9'-0"	5'-6"	17'-6"	14'-2"	26'-4"	22'-10"	35'-0"	31'-6"	43'-8"	40'-2"
	5'	4'-3⅜"	9'-2"	4'-10⅜"	17'-11"	13'-7⅜"	26'-8"	22'-0⅜"	35'-5"	31'-1⅜"	44'-2"	39'-10⅜"
	6'	5'-0⅞"	9'-2"	4'-1½"	17'-11"	12'-10½"	26'-8"	21'-7½"	35'-5"	30'-8½"	44'-2"	39'-1⅞"
	7'	6'-2⅝"	9'-3"	3'-0⅜"	18'-1"	11'-10⅜"	26'-11"	20'-8⅜"	35'-9"	29'-8⅜"	44'-7"	38'-8⅝"
	8'	7'-4"	9'-4"	2'-0"	18'-2"	10'-10"	27'-0"	19'-8"	35'-10"	28'-6"	44'-8"	37'-10"
9'	5'	4'-3⅜"	10'-2"	5'-10⅜"	19'-11"	15'-7⅜"	29'-8"	25'-4⅜"	39'-5"	35'-1⅜"	49'-2"	44'-10⅜"
	6'	5'-0⅞"	10'-3"	5'-2½"	20'-1"	15'-0½"	29'-11"	24'-10½"	39'-9"	34'-8½"	49'-7"	44'-1⅞"
	7'	6'-2⅝"	10'-3"	4'-0⅜"	20'-1"	13'-10⅜"	29'-11"	23'-8⅜"	39'-9"	33'-6⅜"	49'-7"	43'-4⅝"
	8'	7'-4"	10'-4"	3'-0"	20'-2"	12'-10"	30'-0"	22'-8"	39'-10"	32'-6"	49'-8"	42'-10"
10'	5'	4'-3⅜"	11'-2"	6'-10⅜"	21'-11"	17'-7⅜"	32'-8"	28'-4⅜"	43'-5"	39'-1⅜"	54'-2"	49'-10⅜"
	6'	5'-0⅞"	11'-3"	6'-2½"	22'-1"	17'-0½"	32'-11"	27'-10½"	43'-9"	38'-6½"	54'-7"	49'-1⅞"
	7'	6'-2⅝"	11'-3"	5'-0⅜"	22'-1"	15'-10⅜"	32'-11"	26'-8⅜"	43'-9"	37'-4⅜"	54'-7"	48'-4⅝"
	8'	7'-4"	11'-4"	4'-0"	22'-2"	14'-10"	33'-0"	25'-8"	43'-10"	36'-4"	54'-8"	47'-10"
11'	6'	5'-0⅞"	12'-4"	7'-3⅜"	24'-2"	19'-7⅜"	36'-0"	30'-11⅜"	47'-10"	42'-9⅜"		
	7'	6'-2⅝"	12'-4"	6'-1⅜"	24'-2"	17'-11⅜"	36'-0"	29'-9⅜"	47'-10"	41'-7⅜"		
	8'	7'-4"	12'-4"	5'-0"	24'-2"	16'-10"	36'-0"	28'-8"	47'-10"	40'-6"		
12'	6'	5'-0⅞"	13'-4"	8'-3½"	26'-2"	21'-1½"	39'-0"	33'-11½"	51'-10"	45'-9½"		
	7'	6'-2⅝"	13'-4"	7'-1½"	26'-2"	19'-11½"	39'-0"	32'-9½"	51'-10"	45'-7½"		
	8'	7'-4"	13'-4"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

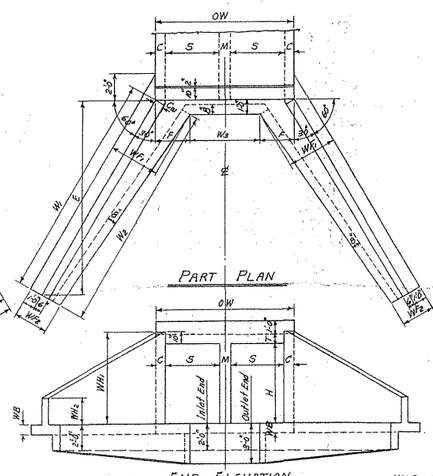
QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	⊛ REINFORCING STEEL - FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS: HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS: SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.46	6.42	7.38	8.34
	3'	6"	7"	164.4	6.26	7.21	8.17	9.13	10.09
	4'	6"	7"	259.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49
5'	3'	6"	7"	164.4	6.97	7.63	8.79	9.96	11.12
	4'	6"	7"	259.6	8.54	9.70	10.87	10.03	12.20
	5'	6"	7"	357.8	10.94	12.10	13.26	14.43	15.59
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54
	7'	7⅛"	8⅛"	1134.6	18.94	20.15	21.37	22.59	23.80
6'	3'	6"	7"	164.4	6.68	8.06	9.42	10.80	12.18
	4'	6"	7"	259.6	8.75	10.14	11.49	12.87	14.25
	5'	6"	7"	357.8	11.15	12.53	13.89	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7⅛"	8⅛"	1134.6	19.15	20.58	22.00	23.43	24.86
	8'	8"	9"	1425.6	24.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	259.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.59	16.15	17.78
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66
	7'	7⅛"	8⅛"	1134.6	19.38	21.02	22.69	24.28	25.92
	8'	8"	9"	1425.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	259.6	9.19	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.36
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7⅛"	8⅛"	1134.6	19.59	21.46	23.30	25.16	26.99
	8'	8"	9"	1425.6	24.54	26.41	28.29	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.39	16.87	18.45	20.47
	6'	7"	8"	583.1	15.94	18.04	20.09	22.19	24.23
	7'	7⅛"	8⅛"	1134.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1425.6	24.76	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.49	14.80	17.05	19.26	21.52
	6'	7½"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7⅛"	8⅛"	1134.6	20.04	22.37	24.64	26.87	29.15
	8'	8"	9"	1425.6	24.98	27.31	29.58	31.81	34.10
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.23	
	7'	8"	8⅛"	1134.6	20.64	23.22	25.71	28.18	
	8'	8"	9"	1425.6	25.19	27.77	30.27	32.74	
12'	6'	8"	8"	583.1	16.92	19.75	22.45	25.18	
	7'	8"	8⅛"	1134.6	20.87	23.69	26.40	29.18	
	8'	8"	9"	1425.6	25.42	28.25	30.96	33.69	

⊛ For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.

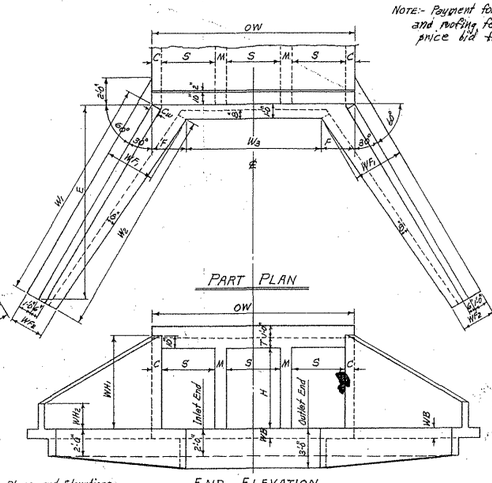


SINGLE BARREL CULVERT

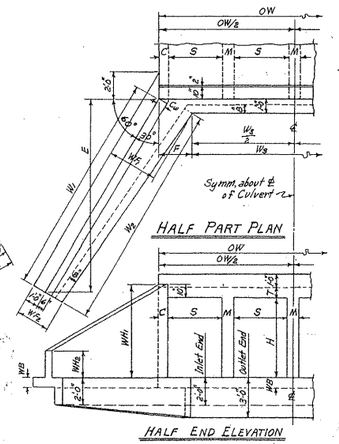


DOUBLE BARREL CULVERT

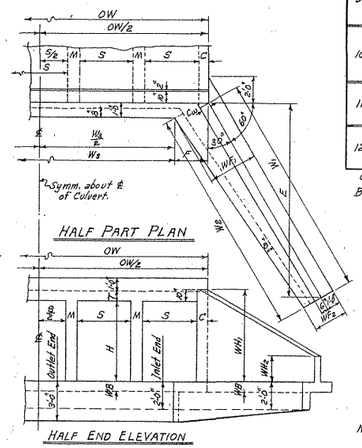
NOTE:- Plans and Elevations are not to scale.



TRIPLE BARREL CULVERT



QUADRUPLE BARREL CULVERT



QUINTUPLE BARREL CULVERT

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200#/□"

Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

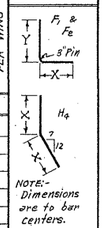
SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

CLASS S CONCRETE

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1 Bent: In bottom of footing, bent up into back face of wing. One bar of each length.						F2 Bent: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.					F5 Straight: Longitudinal in top of wing footing heel.		F4 Straight: Longitudinal in bottom of wing footing toe.			H1 Straight: Horizontal in back face of wing.			H2 Straight: Horizontal in back face of wing. One bar of each length.				H3 Straight: In back face of wing at top-on slope.		H4 Bent: Dowels thru construction joint at headwall.					QUANTITY REINFORCING STEEL PER WING
				LENGTHS VARY		X	Y															LENGTHS VARY										
H	SIZE	SPACING	No. REQD	MIN.	MAX.	MIN. MAX.	MIN. MAX	SIZE	SPACING	No. REQD	LENGTH	X	Y	SIZE	No. REQD	LENGTH	SIZE	No. REQD	LENGTH	SIZE	SPACING	No. REQD	LENGTH	MAX.	MIN.	SIZE	No. REQD	LENGTH	SIZE	SPACING	No. REQD	LENGTH	X	LB.
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	—	—	—	#3	1	3'-8"	#3	2	8'-6"	#3	12"	1	7'-2"	#3	12"	1	—	4'-0"	#3	1	7'-4"	#3	12"	2	2'-8"	1'-9"	27.0
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	1'-5"	4'-0"	—	—	—	—	—	—	—	#3	1	12'-0"	#3	2	11'-0"	#3	12"	1	9'-6"	#3	12"	2	7'-6"	4'-0"	#3	1	9'-9"	#3	12"	3	2'-8"	1'-9"	41.1
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"	—	—	—	—	—	—	—	#3	1	14'-4"	#3	3	13'-6"	#3	12"	1	11'-10"	#3	12"	3	10'-11"	4'-0"	#3	1	12'-2"	#3	12"	4	2'-8"	1'-9"	63.7
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	1'-11"	6'-0"	#3	12"	4	3'-6"	#3	1	16'-6"	#3	3	16'-0"	#3	2	14'-2"	#3	12"	3	10'-11"	4'-0"	#3	1	14'-2"	4'-0"	#3	1	17'-0"	#3	12"	5	2'-8"	1'-9"	89.5
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	#3	1	18'-0"	#3	3	18'-6"	#3	2	16'-6"	#3	12"	4	14'-4"	4'-0"	#3	1	17'-0"	4'-6"	#3	12"	6	2'-8"	1'-9"	145.8
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	2'-7"	8'-1"	#4	12"	7	5'-6"	#4	1	21'-4"	#4	4	21'-0"	#4	2	18'-9"	#4	12"	5	17'-9"	4'-0"	#4	1	19'-5"	4'-0"	#4	12"	7	3'-6"	1'-9"	283.7
8'	#4	12"	22	4'-4"	12'-3"	1'-5"	3'-12"	3'-0"	9'-2"	#4	12"	10	6'-6"	#4	1	23'-8"	#4	4	23'-9"	#4	2	21'-11"	#4	12"	5	17'-9"	4'-0"	#4	1	21'-0"	4'-0"	#4	12"	8	3'-6"	1'-9"	356.4

BAR BENDING DIAGRAMS



REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 8-20-62. Checked By:- RHS - 1-9-63
Drawn By:- W.C.H. 12-4-62. Checked By:- RHS - 1-31-63
Quantities By:- W.C.H. 12-14-62. Checked By:- RHS - 3-29-63
Rechecked By:-

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1

MYLAR

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR VARIOUS SECTIONS OF BARREL

SECTION & BAR GROUP	LENGTH OF SECTIONS	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars					"b" bars						"d" bars				"d_1" bars				"e" bars				"f" bars				
					STRAIGHT					BENT- See Diagram at Right						STRAIGHT												STRAIGHT				
					In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall- Each.					In Top and Bottom Slabs of Barrel Alternate with "a" bars.						Longitudinal in Top Slab of Barrel				Longitudinal in Sidewalls				Longitudinal in Bottom Slab of Barrel				Verticals in Sidewalls				
		D	S	H	SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	SIZE	SPACING	No. REQ'D	LENGTH	SIZE	SPACING	No. REQ'D	LENGTH	SIZE	SPACING	No. REQ'D	LENGTH	SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
SECTION "A" & BAR GROUP "A"	4:1 = 32'-0" 3:1 = 22'-0"	5'-0" TO 10'-0"	1 @ 4'	3'	#4	12"	48	68	4'-9"	#4	12"	44	64	5'-7"	4'-8½"	#4	12"	5	33'-3" for 32'-0" Section	#4	12"	6	33'-3" for 32'-0" Section	#4	12"	5	34'-3" for 32'-0" Section	#4	12"	44	64	3'-10"
				4'			48	68	4'-9"			44	64	5'-7"	4'-8½"			5				8				5				44	64	4'-10"
				5'			48	68	4'-9"			44	64	5'-7"	4'-8½"			5				10				5				44	64	5'-10"
				6'			48	68	4'-11"			44	64	5'-9"	4'-10½"			5				12				5				44	64	6'-10"
			1 @ 5'	3'	#5	12"	48	68	5'-9"	#5	12"	44	64	6'-8"	5'-8½"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	44	64	3'-11"
				4'			48	68	5'-9"			44	64	6'-8"	5'-8½"			6				8				6				44	64	4'-11"
				5'			48	68	5'-9"			44	64	6'-8"	5'-8½"			6				10				6				44	64	5'-11"
				6'			48	68	5'-11"			44	64	6'-10"	5'-10½"			6				12				6				44	64	6'-11"
				7'			48	68	6'-0"			44	64	6'-11"	5'-11½"			6				14				6			10"	54	78	7'-11"
			1 @ 6'	4'	#5	12"	48	68	6'-9"	#6	12"	44	64	7'-10"	6'-8"	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	44	64	5'-0"
				5'			48	68	6'-9"			44	64	7'-10"	6'-8"			7				10				7				44	64	6'-0"
				6'			48	68	6'-11"			44	64	8'-0"	6'-10"			7				12				7				44	64	7'-0"
				7'			48	68	7'-0"			44	64	8'-1"	6'-11"			7				14				7			10"	54	78	8'-0"
				8'			48	68	7'-1"			44	64	8'-2"	7'-0"			7				16				7		#5	11"	48	70	9'-0"
SECTION "B" & BAR GROUP "B"	4:1 = 16'-0" 3:1 = 11'-0"	10'-0" TO 15'-0"	1 @ 4'	3'	#4	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"	#4	12"	5	34'-3" for 33'-0" Length Section	#4	12"	6	34'-3" for 33'-0" Length Section	#4	12"	5	34'-3" for 33'-0" Length Section	#4	12"	22	32	3'-10"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				8				5				22	32	4'-10"
				5'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				10				5				22	32	5'-10"
				6'			22	32	4'-11"			22	32	5'-10"	4'-10½"			5				12				5			10"	28	40	6'-10"
			1 @ 5'	3'	#5	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	3'-11"
				4'			22	32	5'-9"			22	32	6'-10"	5'-8"			6				8				6				22	32	4'-11"
				5'			22	32	5'-9"			22	32	6'-10"	5'-8"			6				10				6				22	32	5'-11"
				6'			22	32	5'-11"			22	32	7'-0"	5'-10"			6				12				6			11"	24	36	6'-11"
				7'			22	32	6'-0"			22	32	7'-1"	5'-11"			6				14				6		#5	12"	22	32	7'-11"
			1 @ 6'	4'	#6	12"	22	32	6'-9"	#6	12"	22	32	7'-10"	6'-8"	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-1"
				5'			22	32	6'-9"			22	32	7'-10"	6'-8"			7				10				7				22	32	6'-1"
				6'			22	32	6'-11"			22	32	8'-0"	6'-10"			7				12				7			10"	28	40	7'-1"
				7'			22	32	7'-0"			22	32	8'-1"	6'-11"			7				14				7		#5	11"	24	34	8'-1"
				8'			22	32	7'-1"			22	32	8'-2"	7'-0"			7				16				7		#6	12"	22	32	9'-1"
SECTION "C" & BAR GROUP "C"	4:1 = 16'-0" 3:1 = 11'-0"	15'-0" TO 20'-0"	1 @ 4'	3'	#5	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	3'-10"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				8				5				22	32	4'-10"
				5'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				10				5			10"	28	40	5'-10"
				6'			22	32	4'-11"			22	32	5'-10"	4'-10½"			5				12				5		#5	12"	22	32	6'-10"
			1 @ 5'	3'	#5	11"	24	36	5'-9"	#6	11"	24	34	6'-10"	5'-8"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-0"
				4'			24	36	5'-9"			24	34	6'-10"	5'-8"			6				8				6				22	32	5'-0"
				5'			24	36	5'-9"			24	34	6'-10"	5'-8"			6				10				6			11"	24	36	6'-0"
				6'			24	36	5'-11"			24	34	7'-0"	5'-10"			6				12				6		#5	12"	22	32	7'-0"
				7'			24	36	6'-0"			24	34	7'-1"	5'-11"			6				14				6		#6	12"	22	32	8'-0"
			1 @ 6'	4'	#6	11"	24	36	6'-9"	#6	11"	24	34	7'-10"	6'-8"	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-2"
				5'			24	36	6'-9"			24	34	7'-10"	6'-8"			7				10				7				22	32	6'-2"
				6'			24	36	6'-11"			24	34	8'-0"	6'-10"			7				12				7		#5	12"	22	32	7'-2"
				7'			24	36	7'-0"			24	34	8'-1"	6'-11"			7				14				7		#6	12"	22	32	8'-2"
				8'			24	36	7'-1"			24	34	8'-2"	7'-0"			7				16				7			10"	26	38	9'-2"
SECTION "D" & BAR GROUP "D"	4:1 = 16'-0" 3:1 = 11'-0"	20'-0" TO 25'-0"	1 @ 4'	3'	#5	11"	24	36	4'-9"	#5	11"	24	34	5'-8"	4'-8½"	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	3'-11"
				4'			24	36	4'-9"			24	34	5'-8"	4'-8½"			5				8				5				22	32	4'-11"
				5'			24	36	4'-9"			24	34	5'-8"	4'-8½"			5				10				5		#5	12"	22	32	5'-11"
				6'			24	36	4'-11"			24	34	5'-10"	4'-10½"			5				12				5			10"	26	38	6'-11"
			1 @ 5'	3'	#6	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-1"
				4'			22	32	5'-9"			22	32	6'-10"	5'-8"			6				8				6				22	32	5'-1"
				5'			22	32	5'-9"			22	32	6'-11"	5'-9"			6				10				6			11"	24	34	6'-1"
				6'			22	32	5'-11"			22	32	7'-1"	5'-11"			6				12				6		#5	11"	24	34	7'-1"
				7'			22	32	6'-1"			22	32	7'-2"	6'-0"			6				14				6		#6	12"	22	32	8'-1"
			1 @ 6'	4'	#7	12"	22	32	6'-9"	#6	12"	22	32	7'-10"	6'-8"	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-4"
				5'			22	32	6'-10"			22	32	7'-11"	6'-9"			7				10				7				22	32	6'-4"
				6'			22	32	6'-11"			22	32	8'-1"	6'-11"			7				12				7		#5	12"	22	32	7'-4"
				7'			22	32	7'-1"			22	32	8'-2"	7'-0"			7				14				7		#6	12"	22	32	8'-4"
				8'			22	32	7'-2"			22	32	8'-4"	7'-2"			7				16				7			10"	26	40	9'-4"
SECTION "E" & BAR GROUP "E"	4:1 = 16'-0" 3:1 = 11'-0"	25'-0" TO 30'-0"	1 @ 4'	3'	#6	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	4'-0"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				8				5				22	32	5'-0"
				5'			22	32	4'-10"			22	32	5'-9"	4'-9½"			5				10				5		#5	12"	22	32	6'-0"
				6'			22	32	5'-0"			22	32	5'-11"	4'-11½"			5				12				5		#6	12"	22	32	7'-0"
			1 @ 5'	3'	#6	11"	24	34	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-3"
				4'			24	34	5'-9"			24	36	6'-10"	5'-8"			6				8				6				22	32	5'-3"
				5'			24	34	5'-10"			24	36	7'-0"	5'-10"			6				10				6			10"	28	40	6'-3"
				6'			24	34	6'-0"			24	36	7'-2"	6'-0"			6				12				6		#5	11"	24	36	7'-3"
				7'			24	34	6'-2"			24	36	7'-3"	6'-1"			6				14				6		#6	11"	24	34	8'-3"
			1 @ 6'	4'	#7	11"	24	34	6'-9"	#6	11"	24	36	7'-10"	6'-8"	#4	11"	8		#4	12"	8		#4	11"	8		#4	12"	22	32	5'-5"
				5'			24	34	6'-11"			24	36	8'-0"	6'-10"			8				10				8			11"	24	36	6'-5"
				6'			24	34	7'-1"			24	36	8'-2"	7'-0"			8				12				8		#5	12"	22	32	7'-5"
				7'			24	34	7'-2"			24	36	8'-4"	7'-2"			8				14				8		#6	12"	22	32	8'-5"
				8'			24	34	7'-4"			24	36	8'-5"	7'-3"			8				16				8			10"	26	38	9'-5"
SECTION "F" & BAR GROUP "F"	4:1 = 16'-0" 3:1 = 11'-0"	30'-0" TO 35'-0"	1 @ 4'	3'	#6	13"	20	30	4'-9"	#6	13"	20	30	5'-10"	4'-8"	#4	12	5		#4	12"	6		#4	12"	5		#4	12"	22	32	4'-1"
				4'			20	30	4'-9"			20	30	5'-10"	4'-8"			5				8				5				22	32	5'-1"
				5'			20	30	4'-11"			20	30	6'-0"	4'-10"			5				10				5		#5	12"	22	32	6'-1"
				6'			20	30	5'-1"			20	30	6'-2"	5'-0"			5				12				5		#6	12"	22	32	7'-1"
			1 @ 5'	3'	#7	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	10½"	7		#4	12"	6		#4	10½"	7		#4	12"	22	32	4'-4"
				4'			22	32	5'-9"			22	32	6'-11"	5'-9"			7				8				7				22	32	5'-4"
				5'			22	32	5'-11"			22	32	7'-1"	5'-11"			7				10				7			10"	26	36	6'-4"
				6'			22	32	6'-1"			22	32	7'-3"	6'-1"			7				12				7		#5	11"	24	34	7'-4"
				7'			22	32	6'-3"			22	32	7'-4"	6'-2"			7				14				7		#6	11"	24	36	8'-4"
	Varies with Length of Barrel		1 @ 6'	4'	#7	12"	Varies with Length of Barrel	Varies with Length of Barrel	6'-10"	#7	12"	Varies with Length of Barrel	Varies with Length of Barrel	8'-1"	6'-9"	#4	9½"	9	Varies with Length of Barrel	#4	12"	8	Varies with Length of Barrel	#4	9½"	9	Varies with Length of Barrel	#4	12"	Varies with Length of Barrel	Varies with Length of Barrel	5'-7"
				5'					7'-0"					8'-3"	6'-11"			9				10				9			10"			6'-7"
				6'					7'-2"					8'-5"	7'-1"			9				12				9		#5	12"			7'-7"
				7'					7'-4"					8'-7"	7'-3"			9				14				9		#6	12"			8'-7"
				8'					7'-5"					8'-8"	7'-4"			9				16				9			10"			9'-7"
SECTION "G" & BAR GROUP "G"		35'-0" TO 40'-0"	1 @ 4'	3'	#6	12"			4'-9"	#6	12"			5'-10"	4'-8"	#4	10½"	6		#4	12"	6		#4	10½"	6		#4	12"			4'-2"
				4'					4'-10"					5'-11"	4'-9"			6				8				6						5'-2"
				5'					5'-0"					6'-1"	4'-11"			6				10				6		#5	12"			6'-2"
				6'					5'-2"					6'-3"	5'-1"			6				12				6		#6	12"			7'-2"
			1 @ 5'	3'	#7	11"			5'-9"	#6	11"			6'-10"	5'-8"	#4	10½"	7		#4	12"	6		#4	10½"	7		#4	12"			4'-5"
				4'					5'-10"					7'-0"	5'-10"			7				8				7						5'-5"
				5'					6'-0"					7'-2"	6'-0"			7				10				7			10"			6'-5"
				6'					6'-2"					7'-4"	6'-2"			7				12				7		#5	11"			7'-5"
				7'					6'-4"					7'-5"	6'-3"			7				14				7		#6	11"			8'-5"

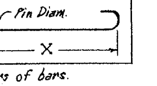
NOTE:- Bars for each Section to be marked with the Section Letter, thus for Section B, the bars should be marked Ba, Bb, Bd, Bd_1, Be and Bf.

Designed By:- W.C.H. 9-5-62 Checked By:- RWS 11-8-62
Drawn By:- W.C.H. 10-10-62 Checked By:- J.E.M. 11-12-62
Quantities By:- W.C.H. 11-7-62 Checked By:- J.E.M. 11-16-62

DIMENSIONS / QUANTITIES

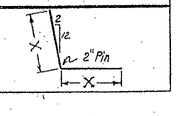
MAX. DESIGN DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	ADDITIONAL PER LAP	ADDITIONAL TWO HEADWALLS & APRONS
D	S	H	A	OW	T	C	B	OH	CU. YD.	LB.	LB.	LB.
SECTION "A" - 10'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6½"	4'-1"	0.312	29.62	13.36	51.44
		4'	16	5'-0"		6"		5'-1"	0.349	32.29	15.03	51.44
		5'	20	5'-0"		6"		6'-1"	0.386	34.96	16.70	51.44
		6'	24	5'-2"		7"		7'-1"	0.467	38.08	18.37	52.33
	1 @ 5'	3'	15	6'-0"	7"	6"	7"	4'-2"	0.370	43.16	15.03	79.37
		4'	20	6'-0"		6"		5'-2"	0.407	45.83	16.70	79.37
		5'	25	6'-0"		6"		6'-2"	0.444	48.50	18.37	79.37
		6'	30	6'-2"		7"		7'-2"	0.526	51.87	20.04	80.77
		7'	35	6'-3"		7½"		8'-2"	0.594	57.00	21.71	81.46
	1 @ 6'	4'	24	7'-0"	7½"	6"	7½"	5'-3"	0.472	58.99	18.37	93.29
		5'	30	7'-0"		6"		6'-3"	0.509	61.66	20.04	93.29
		6'	36	7'-2"		7"		7'-3"	0.591	65.18	21.71	94.68
		7'	42	7'-3"		7½"		8'-3"	0.660	70.41	23.38	95.37
		8'	48	7'-4"		8"		9'-3"	0.735	79.83	25.05	96.07
SECTION "B" - 15'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6½"	4'-1"	0.312	33.98	13.36	
		4'	16	5'-0"		6"		5'-1"	0.349	36.65	15.03	
		5'	20	5'-0"		6"		6'-1"	0.386	39.32	16.70	
		6'	24	5'-2"		7"		7'-1"	0.467	44.39	18.37	
	1 @ 5'	3'	15	6'-0"	7"	6"	7"	4'-2"	0.370	49.78	15.03	
		4'	20	6'-0"		6"		5'-2"	0.407	52.45	16.70	
		5'	25	6'-0"		6"		6'-2"	0.444	55.12	18.37	
		6'	30	6'-2"		7"		7'-2"	0.526	59.48	20.04	
		7'	35	6'-3"		7½"		8'-2"	0.594	67.68	21.71	
	1 @ 6'	4'	24	7'-0"	8"	6"	8¼"	5'-4¼"	0.499	65.30	18.37	
		5'	30	7'-0"		6"		6'-4¼"	0.536	66.63	20.04	
		6'	36	7'-2"		7"		7'-4¼"	0.619	73.53	21.71	
		7'	42	7'-3"		7½"		8'-4¼"	0.688	82.41	23.38	
		8'	48	7'-4"		8"		9'-4¼"	0.763	93.19	25.05	
SECTION "C" - 20'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6¾"	4'-1¼"	0.316	37.54	13.36	
		4'	16	5'-0"		6"		5'-1¼"	0.353	40.21	15.03	
		5'	20	5'-0"		6"		6'-1¼"	0.390	44.44	16.70	
		6'	24	5'-2"		7"		7'-1¼"	0.471	51.38	18.37	
	1 @ 5'	3'	15	6'-0"	7½"	6"	7¾"	4'-3¼"	0.394	52.85	15.03	
		4'	20	6'-0"		6"		5'-3¼"	0.431	55.52	16.70	
		5'	25	6'-0"		6"		6'-3¼"	0.468	58.92	18.37	
		6'	30	6'-2"		7"		7'-3¼"	0.550	67.04	20.04	
		7'	35	6'-3"		7½"		8'-3¼"	0.618	78.27	21.71	
	1 @ 6'	4'	24	7'-0"	8½"	6"	9"	5'-5½"	0.526	69.39	18.37	
		5'	30	7'-0"		6"		6'-5½"	0.563	72.06	20.04	
		6'	36	7'-2"		7"		7'-5½"	0.646	81.20	21.71	
		7'	42	7'-3"		7½"		8'-5½"	0.716	92.67	23.38	
		8'	48	7'-4"		8"		9'-5½"	0.791	103.06	25.05	
SECTION "D" - 25'-0"	1 @ 4'	3'	12	5'-0"	6¾"	6"	7¼"	4'-2"	0.327	39.63	13.36	
		4'	16	5'-0"		6"		5'-2"	0.364	42.30	15.03	
		5'	20	5'-0"		6"		6'-2"	0.401	49.41	16.70	
		6'	24	5'-2"		7"		7'-2"	0.483	55.14	18.37	
	1 @ 5'	3'	15	6'-0"	8"	6"	8½"	4'-4½"	0.417	55.28	15.03	
		4'	20	6'-0"		6"		5'-4½"	0.454	57.95	16.70	
		5'	25	6'-0½"		6¼"		6'-4½"	0.501	61.61	18.37	
		6'	30	6'-2½"		7¼"		7'-4½"	0.585	71.20	20.04	
		7'	35	6'-4"		8"		8'-4½"	0.668	81.45	21.71	
	1 @ 6'	4'	24	7'-0"	9¼"	6"	9¾"	5'-7"	0.559	72.95	18.37	
		5'	30	7'-1"		6½"		6'-7"	0.616	76.21	20.04	
		6'	36	7'-2½"		7¼"		7'-7"	0.691	85.22	21.71	
		7'	42	7'-4"		8"		8'-7"	0.776	97.23	23.38	
		8'	48	7'-5½"		8¾"		9'-7"	0.869	108.02	25.05	
SECTION "E" - 30'-0"	1 @ 4'	3'	12	5'-0"	7¼"	6"	7¾"	4'-3"	0.343	42.12	13.36	
		4'	16	5'-0"		6"		5'-3"	0.380	44.79	15.03	
		5'	20	5'-1"		6½"		6'-3"	0.436	52.39	16.70	
		6'	24	5'-3"		7½"		7'-3"	0.521	63.09	18.37	
	1 @ 5'	3'	15	6'-0"	8¾"	6"	9¼"	4'-6"	0.444	58.94	15.03	
		4'	20	6'-0"		6"		5'-6"	0.481	61.61	16.70	
		5'	25	6'-1½"		6¾"		6'-6"	0.549	66.77	18.37	
		6'	30	6'-3½"		7¾"		7'-6"	0.637	75.68	20.04	
		7'	35	6'-5"		8½"		8'-6"	0.724	88.37	21.71	
	1 @ 6'	4'	24	7'-0"	10"	6"	10½"	5'-8½"	0.591	79.04	20.04	
		5'	30	7'-2"		7"		6'-8½"	0.669	83.78	21.71	
		6'	36	7'-4"		8"		7'-8½"	0.760	92.53	23.38	
		7'	42	7'-5½"		8¾"		8'-8½"	0.850	104.59	25.05	
		8'	48	7'-7"		9½"		9'-8½"	0.949	115.61	26.72	
SECTION "F" - 35'-0"	1 @ 4'	3'	12	5'-0"	7¾"	6"	8¼"	4'-4"	0.358	45.49	13.36	
		4'	16	5'-0"		6"		5'-4"	0.395	48.16	15.03	
		5'	20	5'-2"		7"		6'-4"	0.471	56.32	16.70	
		6'	24	5'-4"		8"		7'-4"	0.560	67.17	18.37	
	1 @ 5'	3'	15	6'-0"	9¼"	6"	9¾"	4'-7"	0.463	63.18	16.70	
		4'	20	6'-0½"		6¼"		5'-7"	0.509	66.11	18.37	
		5'	25	6'-2½"		7¼"		6'-7"	0.588	71.65	20.04	
		6'	30	6'-4½"		8¼"		7'-7"	0.679	80.70	21.71	
		7'	35	6'-6"		9"		8'-7"	0.770	93.59	23.38	
	1 @ 6'	4'	24	7'-1"	10¾"	6½"	11¼"	5'-10"	0.641	85.81	21.71	
		5'	30	7'-3"		7½"		6'-10"	0.724	91.60	23.38	
		6'	36	7'-5"		8½"		7'-10"	0.818	99.56	25.05	
		7'	42	7'-7"		9½"		8'-10"	0.925	112.23	26.72	
		8'	48	7'-8½"		10¼"		9'-10"	1.030	123.01	28.39	
SECTION "G" - 40'-0"	1 @ 4'	3'	12	5'-0"	8¼"	6"	8¾"	4'-5"	0.373	49.38	15.03	
		4'	16	5'-1"		6½"		5'-5"	0.427	52.56	16.70	
		5'	20	5'-3"		7½"		6'-5"	0.507	60.85	18.37	
		6'	24	5'-5"		8½"		7'-5"	0.599	71.86	20.04	
	1 @ 5'	3'	15	6'-0"	9¾"	6"	10¼"	4'-8"	0.481	67.30	16.70	
		4'	20	6'-1½"		6¾"		5'-8"	0.545	70.89	18.37	
		5'	25	6'-3½"		7¾"		6'-8"	0.628	76.56	20.04	
		6'	30	6'-5½"		8¾"		7'-8"	0.723	85.78	21.71	
		7'	35	6'-7"		9½"		8'-8"	0.817	98.84	23.38	

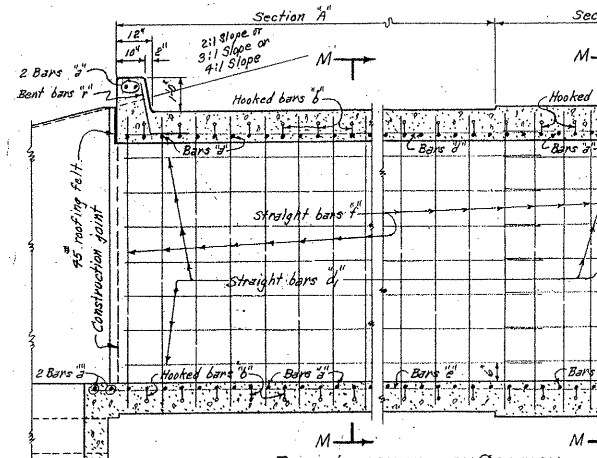
NOTE:- For details of wings and bar lists, see Drawing Nos. W-X002-1, W-X003-1, and W-X004-1.

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	Bars "b"
#4	2"	4"	0'-10½"	
#5	2½"	4¾"	0'-11½"	
#6	3"	5"	1'-2"	
#7	3½"	5¾"	1'-4"	

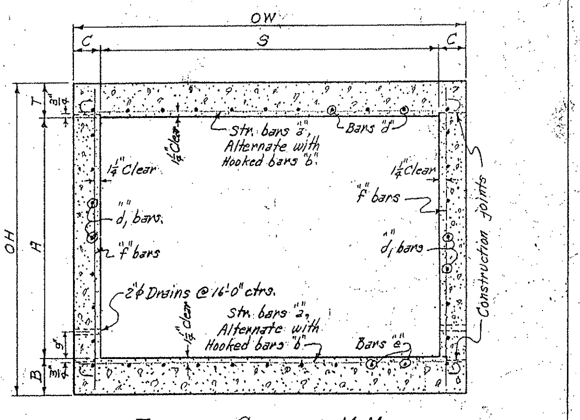
NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

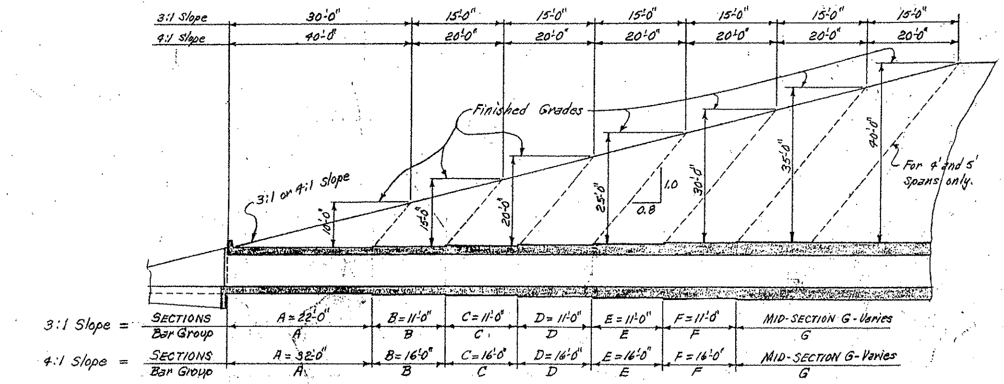
SPAN	SIZE	SPACING	No. REQ'D	LENGTH	X	Bars "r" Dowel bars in Headwalls
4'	#4	11"	12	2'-5"	1'-2½"	
5'	#4	11½"	14	2'-6"	1'-3"	
6'	#4	12"	16	2'-7"	1'-3½"	



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



TYPICAL LONGITUDINAL SECTION-SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER

NOTE:- Lengths of Sections, with Bar Groups to be shown on Cross Section Sheets.

SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS						MID-SECTION AND BAR GROUP
	A	B	C	D	E	F	
5.0' to 9.5'	✓						A
10.0' to 14.5'	✓						B
15.0' to 19.5'	✓	✓					C
20.0' to 24.5'	✓	✓	✓				D
25.0' to 29.5'	✓	✓	✓	✓			E
30.0' to 34.5	✓	✓	✓	✓	✓		F
35.0' to 40.0	✓	✓	✓	✓	✓	✓	G

LENGTH OF SECTIONS FOR SKEWED CULVERTS

SKEW ANGLE	SEC. OF SKEW ANGLE	3:1 SLOPES SECTIONS		4:1 SLOPES SECTIONS	
		A	B,C,D,E, or F	A	B,C,D,E, or F
0°	1.0	22.0'	11.0'	32.0'	16.0'
15°	1.0353	22.776'	11.388'	33.129'	16.564'
30°	1.1547	25.403'	12.702'	36.950	18.475'
45°	1.4142	31.113'	15.556'	45.255'	22.627'

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.

BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.

CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X002-1, W-X003-1 and W-X004-1.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" Ctrs.

UNIT STRESSES:-

Class S Concrete	(n=10)	1200 #/□"
Reinforcing Steel		20,000 #/□"

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS

4', 5' & 6' SPANS
SINGLES
3:1 OR 4:1 SLOPES
OVER 5'-0" COVER

STANDARD DRAWING NO. R-100X-X1