DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	1	159
		HWY. 351 NORTH & SOUTH INTERS. IMPVTS. (JONESBORO) (S)				

"A PARTIALLY CONTROLLED ACCESS FACILITY"

ARKANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLANS FOR STATE HIGHWAY

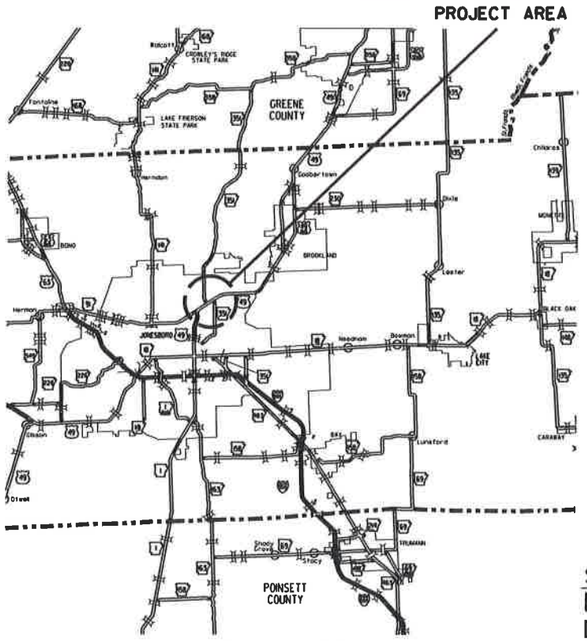
HWY. 351 NORTH & SOUTH INTERS. IMPVTS. (JONESBORO) (S)

CRAIGHEAD COUNTY

ROUTE 351 SECTIONS 1 & 2

JOB 100875

FED. AID PROJ. STPC-STPLC-9227(72)



VICINITY MAP

ARK. HWY. DIST. NO. 10

N

STA. 334+50.35
BEGIN SITE 2-HWY. 49
LOG MILE 10.05

NOT TO SCALE

STA. 212+74.00
END SITE 2

R 4 E | R 5 E

STA. 337+36.43
END SITE 2-HWY. 49

STA. 151+14.00
END SITE 1

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36

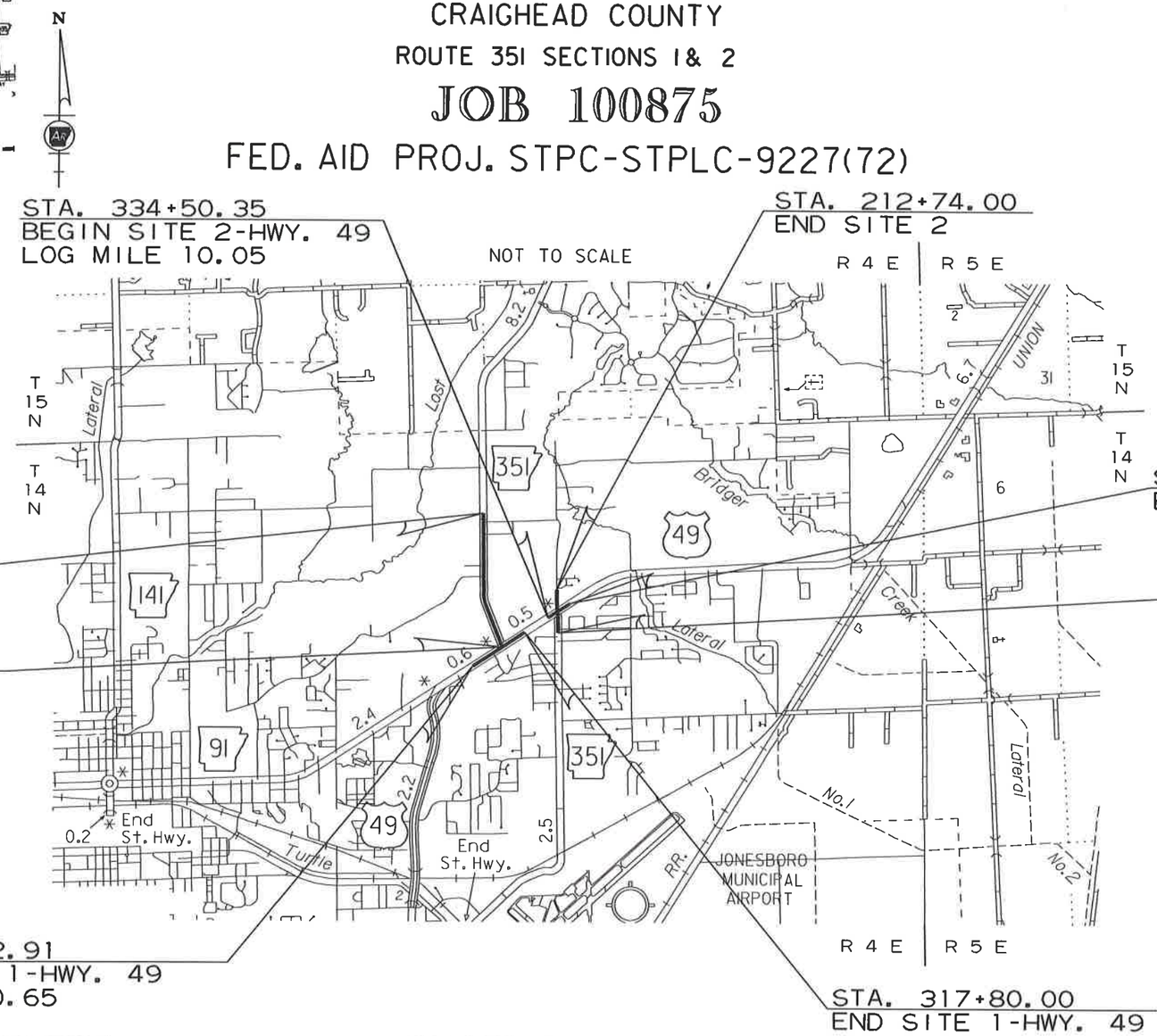
STA. 100+34.33
BEGIN SITE 1
LOG MILE 0.01

N

STA. 303+92.91
BEGIN SITE 1-HWY. 49
LOG MILE 10.65

STA. 317+80.00
END SITE 1-HWY. 49

R 4 E | R 5 E



DESIGN TRAFFIC DATA

DESIGN YEAR	2043
2023 ADT	19000
2043 ADT	25000
2043 DHV	2750
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	3%
DESIGN SPEED	45 MPH

N

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14276
JARED D. WILEY

CHIEF ENGINEER - PRECONSTRUCTION

MAY 01 2024

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°52' 16"	N 35°51' 36"	N 35°51' 32"
LONGITUDE	W 90°39' 30"	W 90°39' 27"	W 90°38' 59"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF	PROJECT	7915.84	FEET	OR	1.499	MILES
NET	ROADWAY	7915.84			1.499	MILES
NET	BRIDGES	0.00			0.000	MILES
NET	PROJECT	7915.84			1.499	MILES

mh39735 6/13/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	2	159
		INDEX OF SHEETS AND STANDARD DRAWINGS				

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

Digitally signed by Trinity Smith
Date: 2024.05.01 15:28:02-05'00'

INDEX OF SHEETS

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-9E	DETAILS OF DROP INLETS (TYPE C)	08-22-02
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	08-22-02
MB-1	MAILBOX DETAILS	11-18-04
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
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
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
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-1	ANTENNA POLE	11-16-17
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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
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TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
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R-115X-0	DETAILS OF STANDARD BARREL SECTIONS FOR 15° SKEW BARRELS FOR REINFORCED CONCRETE BOX CULVERTS	08-14-63
W-X003-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	05-10-66
W-X15	DETAILS OF STANDARD WINGS FOR 15° SKEW BARRELS FOR REINFORCED CONCRETE BOX CULVERTS	06-13-63
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	3	159
		GOVERNING SPECS. & GENERAL NOTES				

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

GOVERNING SPECIFICATIONS (1 OF 2)

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITON OF 2014, AND THE FOLLOWING SPECIA_ 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
501-2_____	CEMENT
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
620-1_____	MULCH COVER
621-1_____	FILTER SOCKS
632-1_____	CONCRETE ISLAND
633-1_____	CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1_____	CURBING
700-2_____	TRAFFIC CONTROL FACILITIES
800-1_____	STRUCTURES
802-4_____	CEMENT
804-2_____	REINFORCING STEEL FOR STRUCTURES

GOVERNING SPECIFICATIONS (2 OF 2)

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

NUMBER	TITLE
JOB 100875__	ACCESSIBLE PEDESTRIAN SIGNAL (APS)
JOB 100875__	ACTUATED CONTROLLER
JOB 100875__	AIRPORT CLEARANCE REQUIREMENTS
JOB 100875__	ANTENNA SUPPORT
JOB 100875__	ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)
JOB 100875__	ASSESSMENT OF WORKING DAYS – MAINTENANCE OF TRAFFIC
JOB 100875__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 100875__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 100875__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 100875__	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 100875__	CABINET DRAWER ASSEMELY
JOB 100875__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 100875__	COLD MILLING - COUNTY PROPERTY
JOB 100875__	CONCRETE WALKS (TYPE SPECIAL)
JOB 100875__	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 100875__	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB 100875__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 100875__	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 100875__	ELECTRICAL CONDUCTIORS-IN-CONDUIT
JOB 100875__	EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION
JOB 100875__	EXTENSION FOR PIPE CULVERTS
JOB 100875__	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB 100875__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 100875__	IP VIDEO DETECTION SYSTEM
JOB 100875__	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 100875__	LED LUMINAIRE ASSEMBLY(BUG U0 TYPE)
JOB 100875__	LED TRAFFIC SIGNAL HEAD
JOB 100875__	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 100875__	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 100875__	MAINTENANCE OF TRAFFIC
JOB 100875__	MANDATORY ELECTRONIC CONTRACT
JOB 100875__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 100875__	NESTING SITES OF MIGRATORY BIRDS
JOB 100875__	PARTNERING REQUIREMENTS
JOB 100875__	PERCENT AIR VOIDS AND NDESIGN FOR ACHM SURFACE MIX DESIGNS
JOB 100875__	PLASTIC PIPE
JOB 100875__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 100875__	PRICE ADJUSTMENT FOR FUEL
JOB 100875__	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 100875__	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB 100875__	RELOCATION OF TRAFFIC SIGNAL HEAD
JOB 100875__	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 100875__	RETROREFLECTIVE BACKPLATES
JOB 100875__	SERVICE POINT ASSEMBLY(TRAFFIC CONTROL DEVICES)
JOB 100875__	SHORING FOR CULVERTS
JOB 100875__	SITE USE (A+C METHOD) – CALENDAR DAY CONTRACT
JOB 100875__	SOIL STABILIZATION
JOB 100875__	STORM WATER POLLUTION PREVENTION PLAN
JOB 100875__	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 100875__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 100875__	SYSTEM LOCAL CONTROLLER
JOB 100875__	TEXTURED COATING FINISH(CAST-IN PLACE RETAINING WALLS)
JOB 100875__	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)
JOB 100875__	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)
JOB 100875__	UTILITY ADJUSTMENTS
JOB 100875__	VALUE ENGINEERING
JOB 100875__	VIDEO DETECTOR ROTATION
JOB 100875__	WARM MIX ASPHALT

GENERAL NOTES

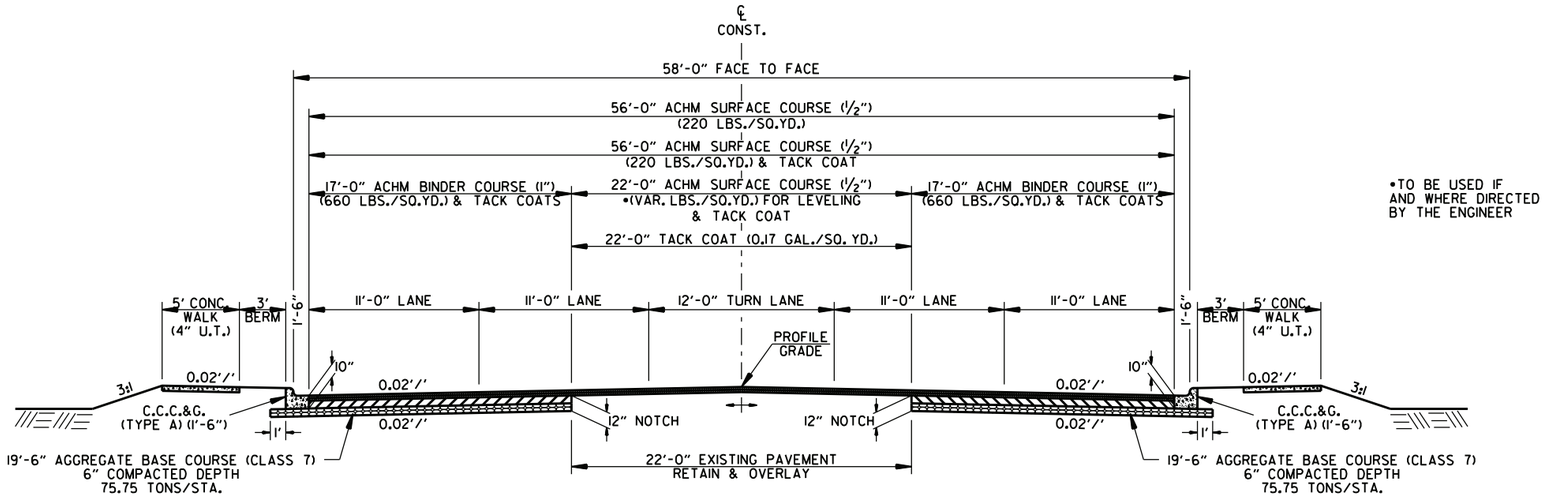
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY 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 SPECIFICATONS.
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.

mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	4	159
		TYPICAL SECTIONS OF IMPROVEMENT				

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

05-01-2024



NOTCH, WIDEN, & OVERLAY SECTION
SITE 1
HWY. 351 N. - STA. 100+34.33 TO STA. 112+64.64
HWY. 351 N. - STA. 124+23.21 TO STA. 151+14.00

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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.

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 PAYMENT 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.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, 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 INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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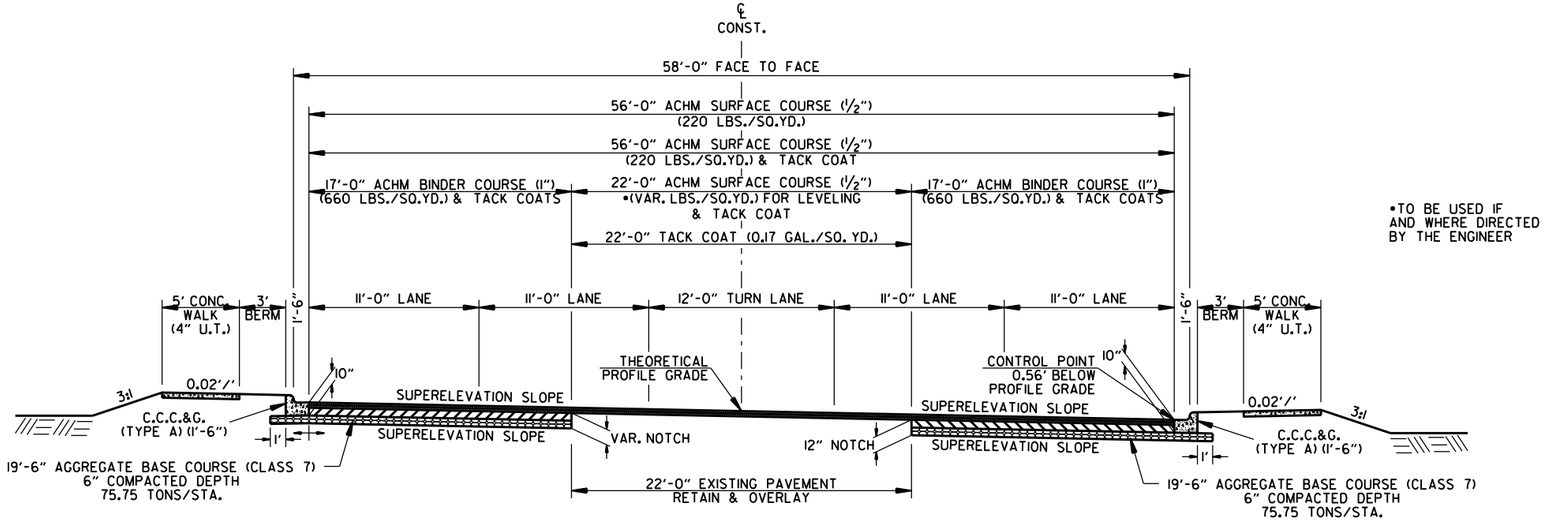


HWY. 351 N. - NOTCH, WIDEN, & OVERLAY SECTION
SITE 1 - STA. 112+64.64 TO STA. 124+23.21
SUPERELEVATION

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

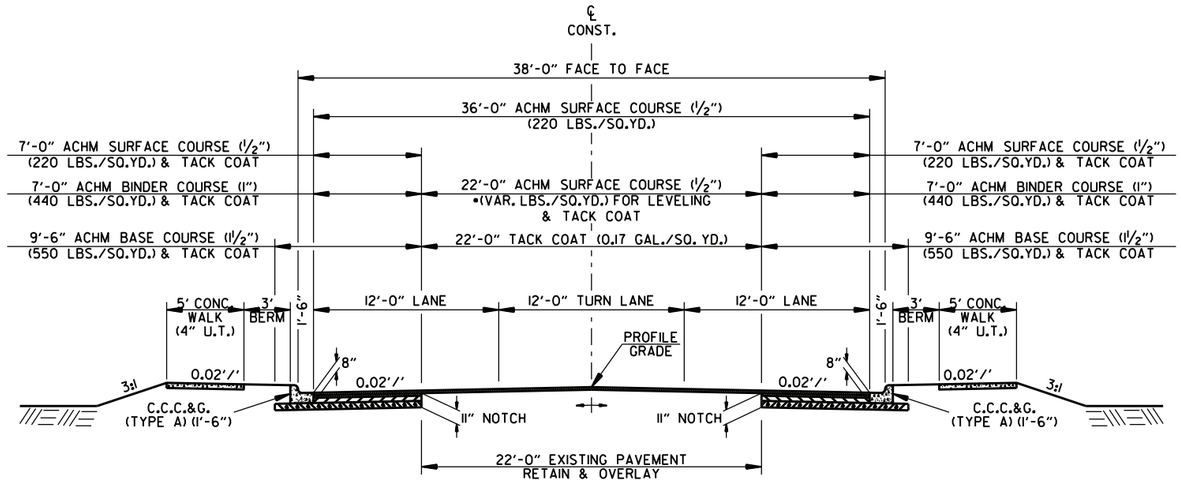
mh39735 3/16/2023
R100875.DGN

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	5	159
		TYPICAL SECTIONS OF IMPROVEMENT				

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

05-01-2024



NOTCH, WIDEN, & OVERLAY SECTION
SITE 2 - HWY. 351 S. STA. 201+11.00 TO STA. 207+90.03
STA. 203+81.00 TO STA. 204+62.81
SITE 2 - PLEASANT GROVE RD.
210+84.68 TO STA. 211+44.00

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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.

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TYPICAL SECTIONS OF IMPROVEMENT

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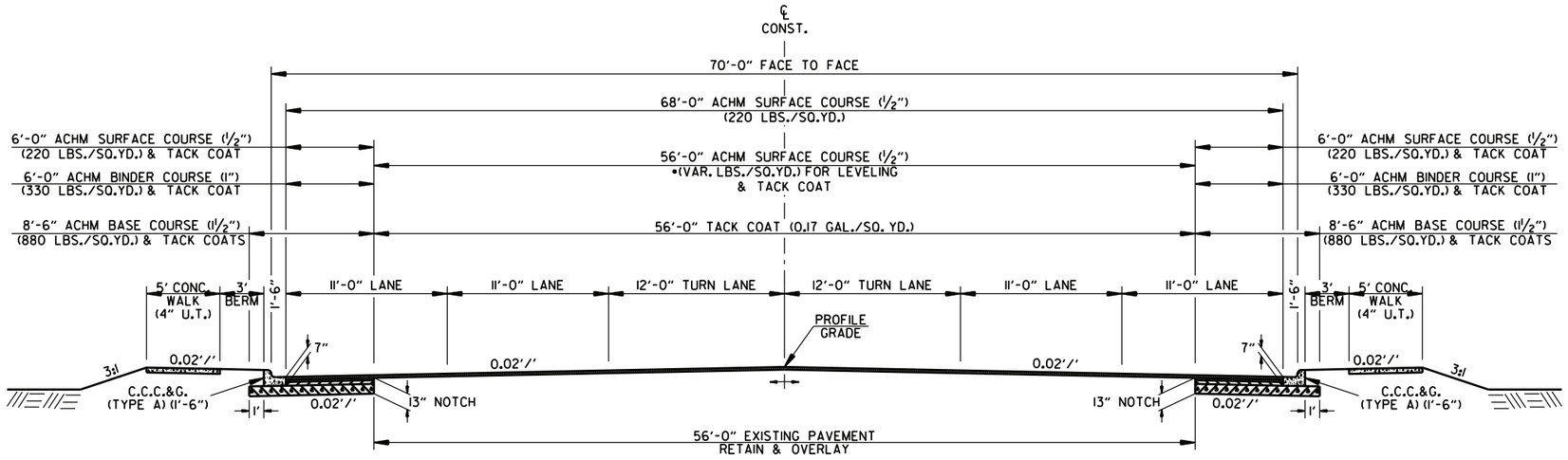
		6	ARK.	100875	6	159

TYPICAL SECTIONS OF IMPROVEMENT

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

05-01-2024



NOTCH, WIDEN, & OVERLAY SECTION

SITE 1 - HWY. 49

STA. 303+92.91 TO STA. 317+80.00
STA. 306+92.91 TO STA. 309+95.80
STA. 314+31.69 TO STA. 314+80.00

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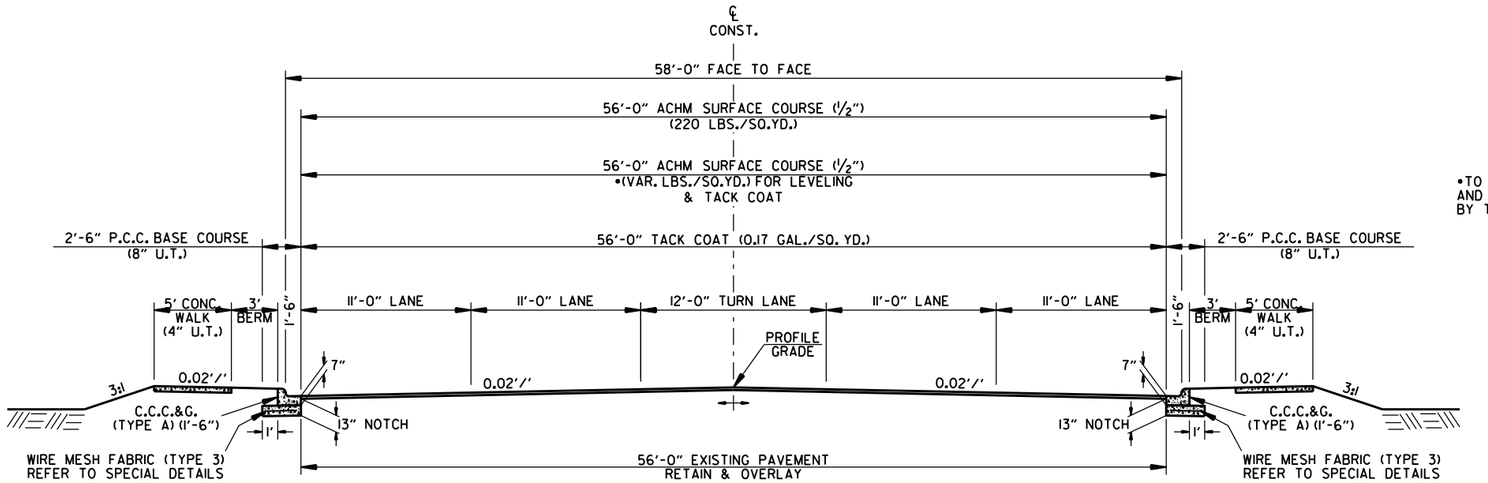
THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, 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 INCLUDED IN THE PRICE BID FOR THE 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.



NOTCH & OVERLAY SECTION

SITE 2 - HWY. 49

STA. 334+50.35 TO STA. 337+36.43

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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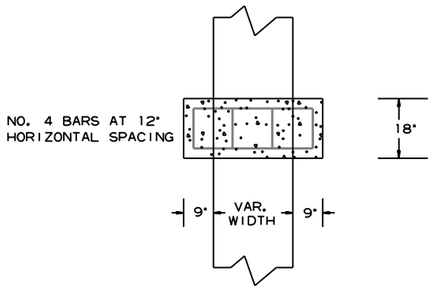
TYPICAL SECTIONS OF IMPROVEMENT

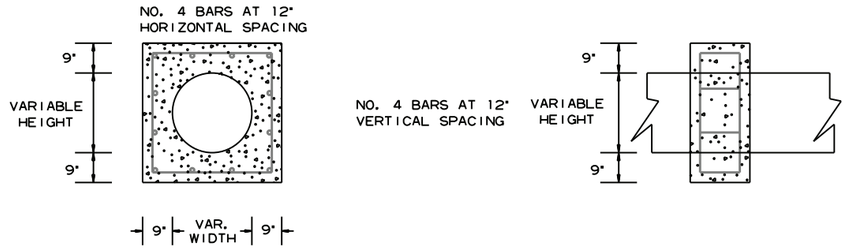
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	7	159
		SPECIAL DETAILS				

STATE OF ARKANSAS
TRINITY D. SMITH
LICENSED PROFESSIONAL ENGINEER
No. 11425
05-01-2024



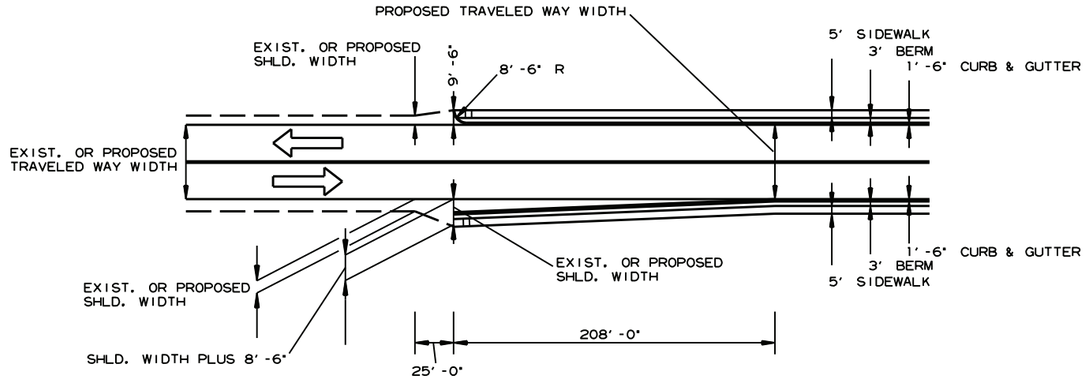
TOP VIEW

MIN 3" COVER

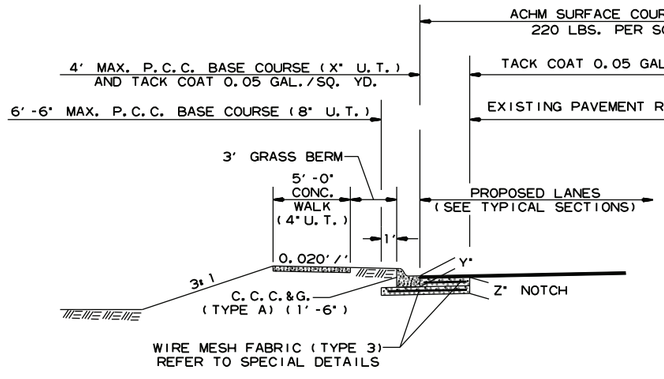


FRONT VIEW SIDE VIEW

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL



TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION



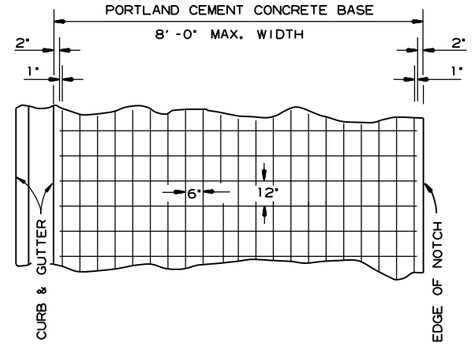
X=5" (HWY. 49)
X=6" (HWY. 351 N., HWY. 351 S., AND PLEASANT GROVE RD.)

Y=7" (HWY. 49)
Y=8" (HWY. 351 N., HWY. 351 S., AND PLEASANT GROVE RD.)

Z=13" (HWY. 49)
Z=9" (HWY. 351 N.)
Z=11" (HWY. 351 S. & PLEASANT GROVE RD.)

P.C.C. BASE WIDENING DETAIL

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



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 (8" U.T.)

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

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	8	159
		SPECIAL DETAILS				

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

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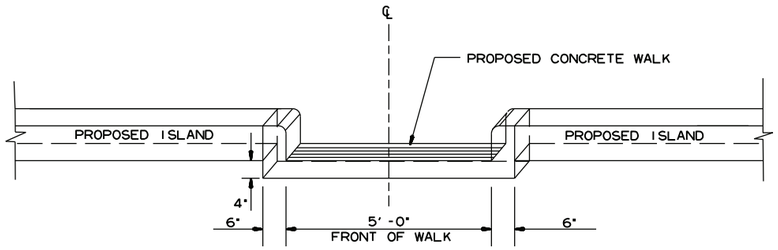
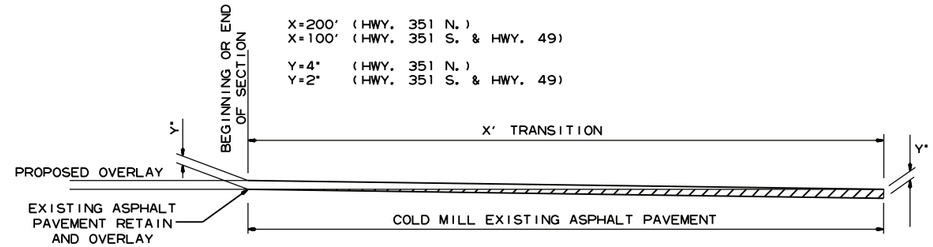


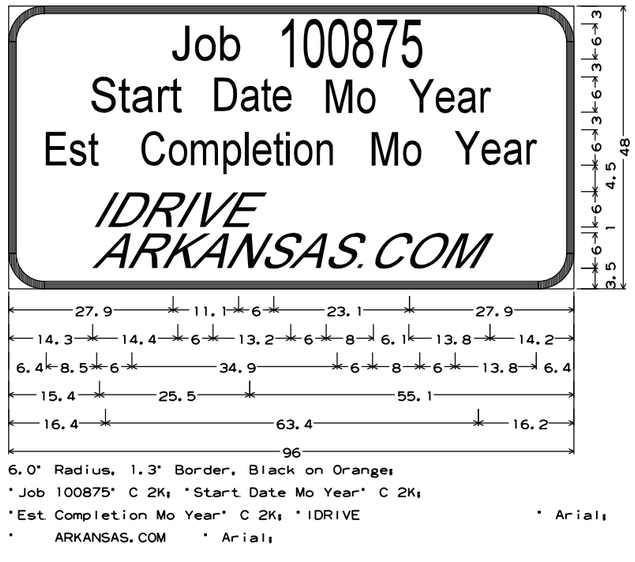
FACE SHALL MEET REQUIREMENTS OF TYPE B CURB

NOTE: CONCRETE WALK THROUGH ISLAND SHALL BE POURED MONOLITHICALLY. ALL MATERIALS REQUIRED TO CONSTRUCT CONCRETE WALK THRU ISLAND SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE ISLAND.

CONCRETE WALK THROUGH ISLAND



DETAIL FOR TRANSITIONS



6.0" Radius, 1.3" Border, Black on Orange;
"Job 100875" C 2K; "Start Date Mo Year" C 2K;
"Est Completion Mo Year" C 2K; "IDRIVE " Arial;
" ARKANSAS.COM " Arial;

CONSTRUCTION PROJECT INFORMATION SIGN

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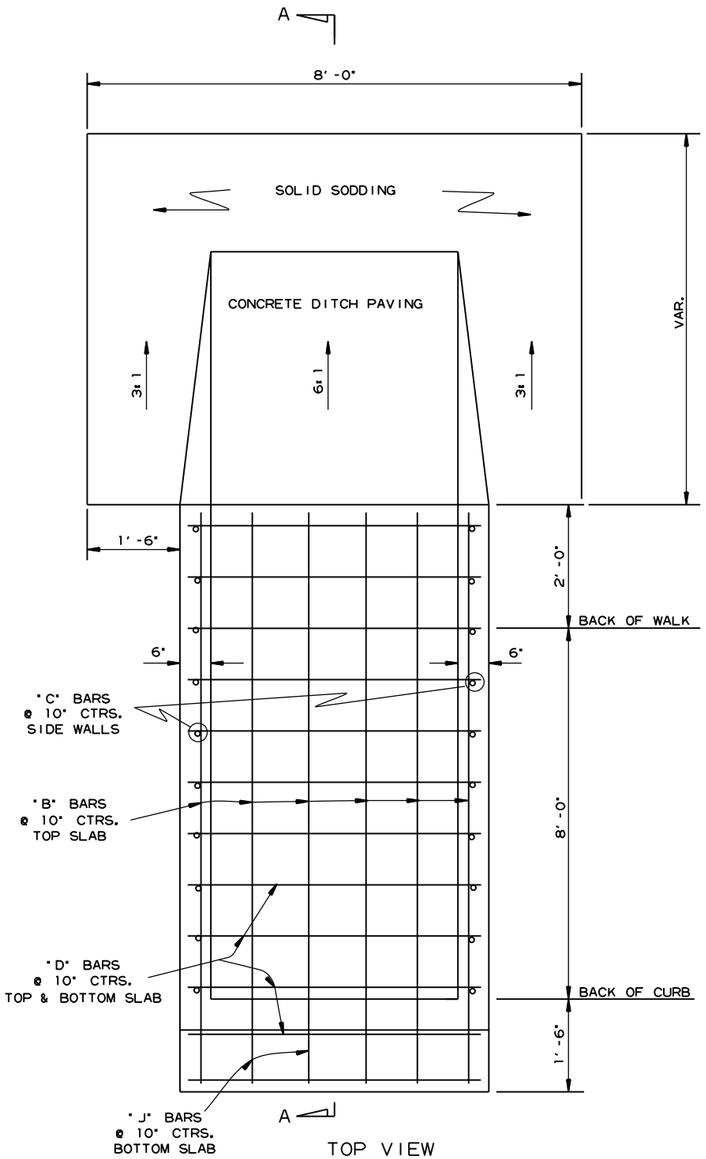
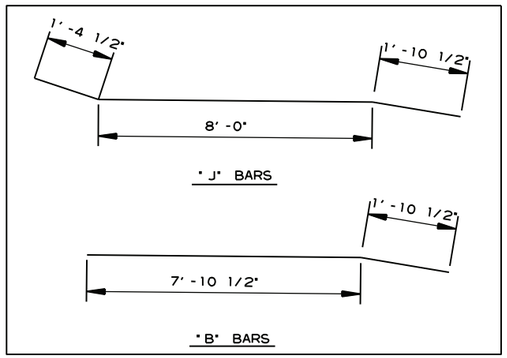
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	9	159
		SPECIAL DETAILS				

STATE OF ARKANSAS
TRINITY D. SMITH
LICENSED PROFESSIONAL ENGINEER
No. 11425
05-01-2024



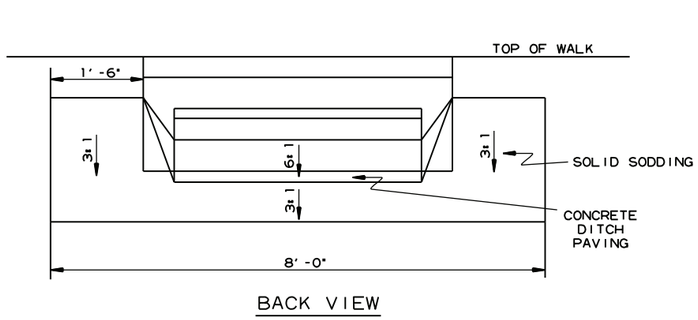
TOP VIEW

BAR DIAGRAM

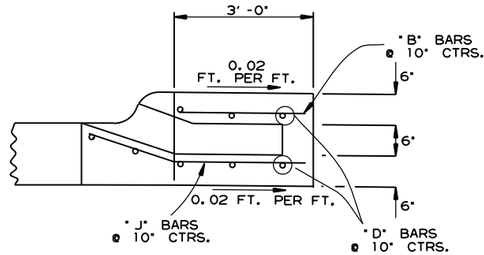


CLASS A CONC.	REINF. STEEL-RDWY. GRADE 60
CU. YDS.	POUND
2.53	207

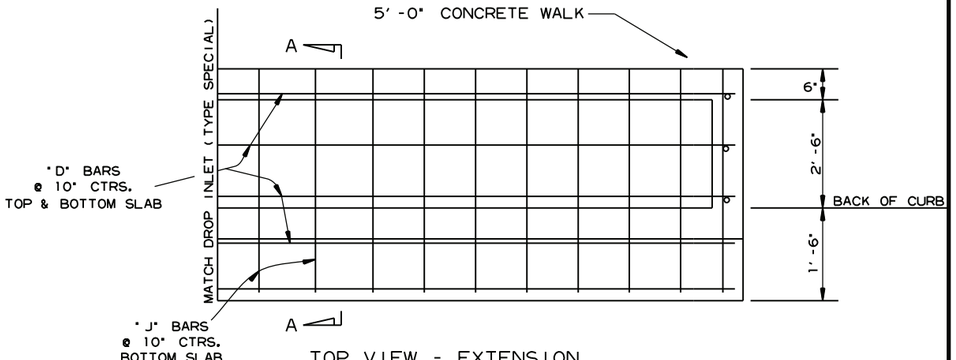
QUANTITIES FOR INFORMATION ONLY
DROP INLET (TYPE SPECIAL)



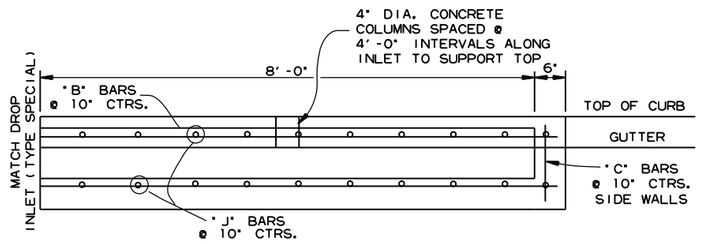
BACK VIEW



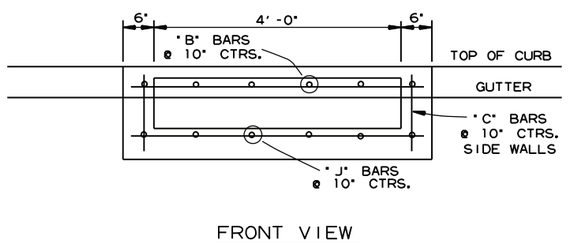
SECTION A-A - EXTENSION



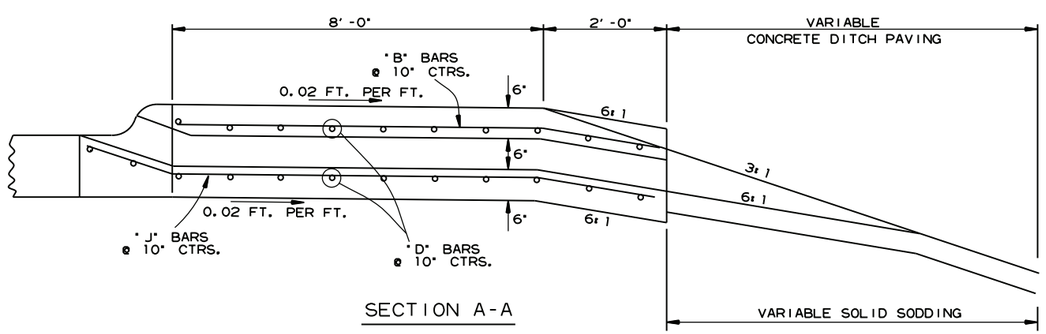
TOP VIEW - EXTENSION



FRONT VIEW - EXTENSION



FRONT VIEW



SECTION A-A

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. ALL REINF. BARS SHALL BE #4 AND HAVE 1 1/2" COVER.
3. DROP INLETS AND EXTENSIONS ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
4. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
5. 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.
6. CONCRETE DITCH PAVING & SOLID SODDING SHALL BE PAID FOR SEPARATELY.
7. CONSTRUCT EXTENSIONS UPSTREAM OF DROP INLET UNLESS OTHERWISE SPECIFIED.

DROP INLET (TYPE SPECIAL)

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SPECIAL DETAILS

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		6	ARK.	100875	10	159
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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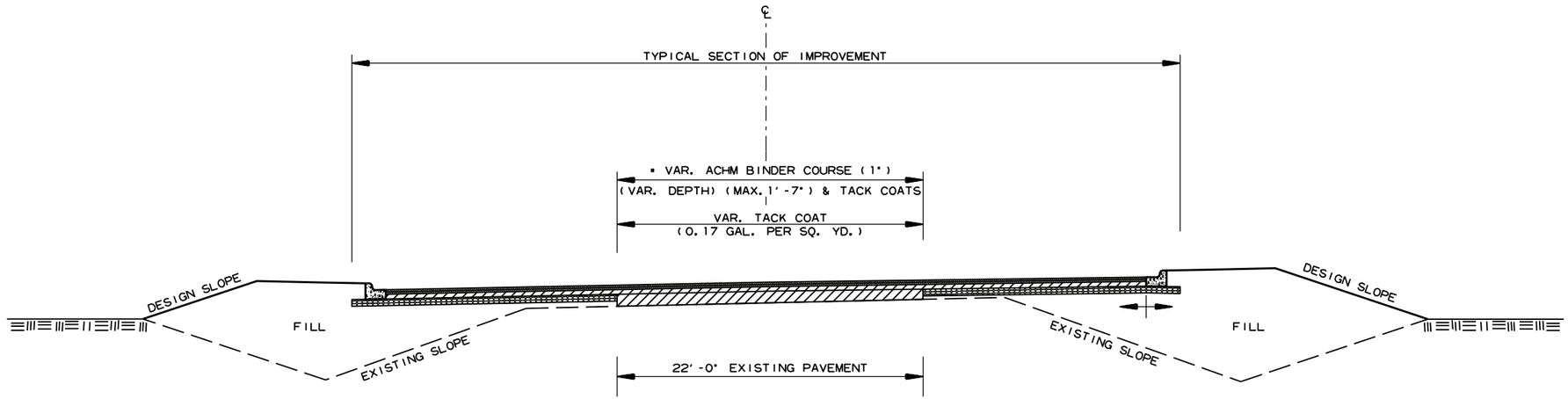
TRINITY D. SMITH

05-01-2024



* 6" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH ACHM BINDER COURSE (1")

METHOD OF RAISING GRADE

NOTES:

(1) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.

(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09, OF THE STANDARD SPECIFICATIONS.

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	11	159

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
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TRINITY D. SMITH
05-01-2024

STA. 100+34.33
BEGIN SITE 1
LOG MILE 0.01

LEGEND

E-5	= SAND DITCH CHECKS
E-11	= SILT FENCE

REVISIONS

DATE OF REVISION	REVISION

SITE 1
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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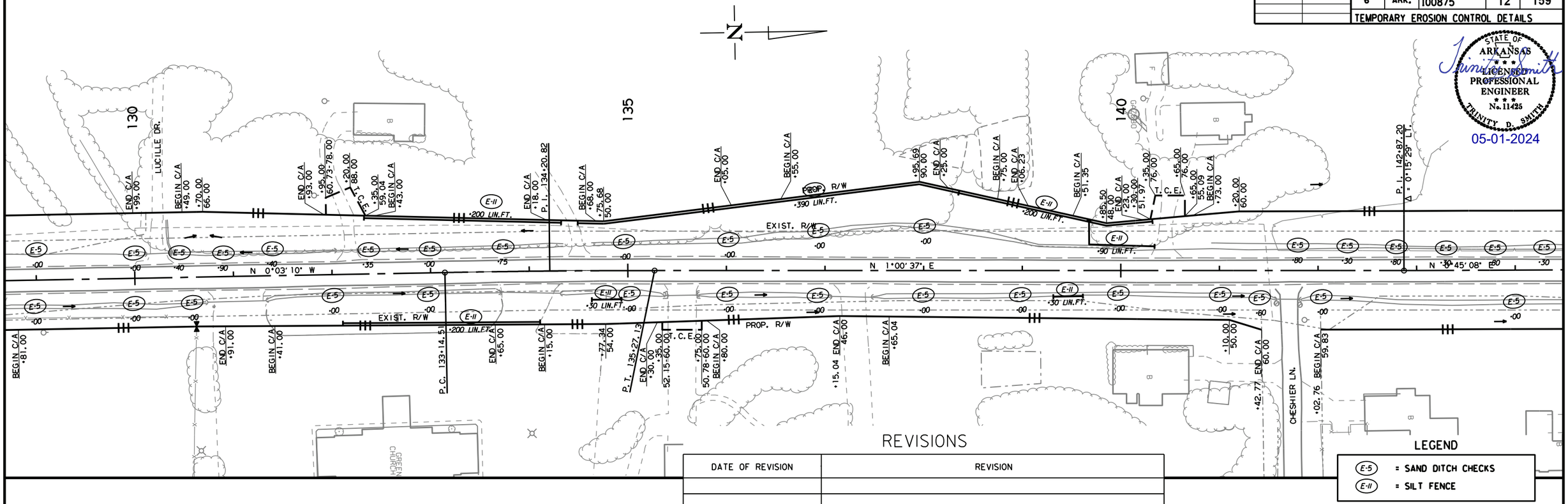
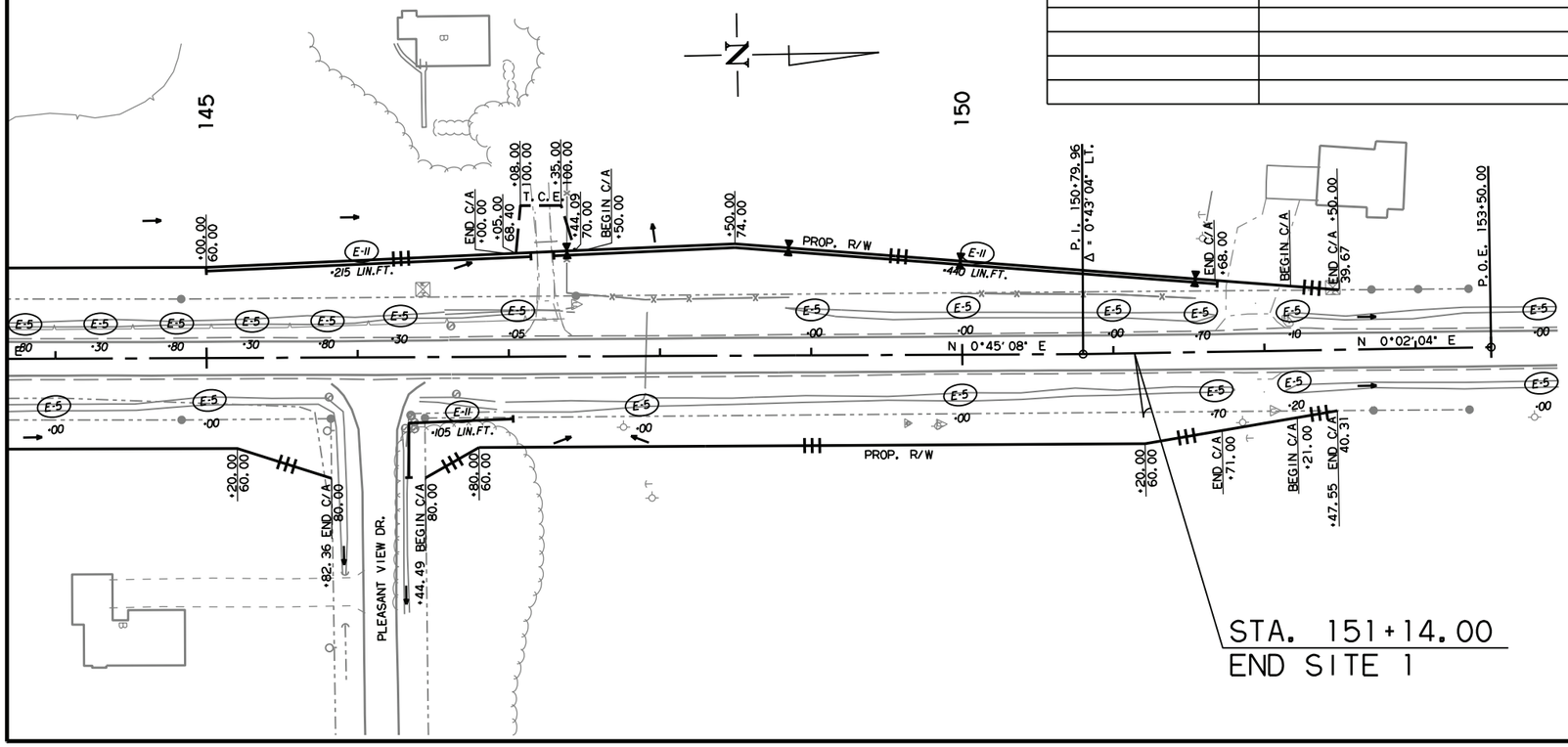
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	12	159

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024





STA. 151+14.00
END SITE 1

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5 = SAND DITCH CHECKS
E-II = SILT FENCE

SITE 1
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	13	159
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

SITE 2 - HWY. 49
BEGIN

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36

STA. 212+74.00
END SITE 2

SITE 2
HWY. 49 END

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5 = SAND DITCH CHECKS
E-11 = SILT FENCE

SITE 2 & SITE 2 - HWY. 49
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	14	159

TEMPORARY EROSION CONTROL DETAILS

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

05-01-2024

STA. 100+34.33
BEGIN SITE 1
LOG MILE 0.01

LEGEND

E-5	= SAND DITCH CHECKS
E-11	= SILT FENCE
E-13	= FILTER SOCK

REVISIONS

DATE OF REVISION	REVISION

SITE 1
STAGE 1
TEMPORARY EROSION CONTROL DETAILS

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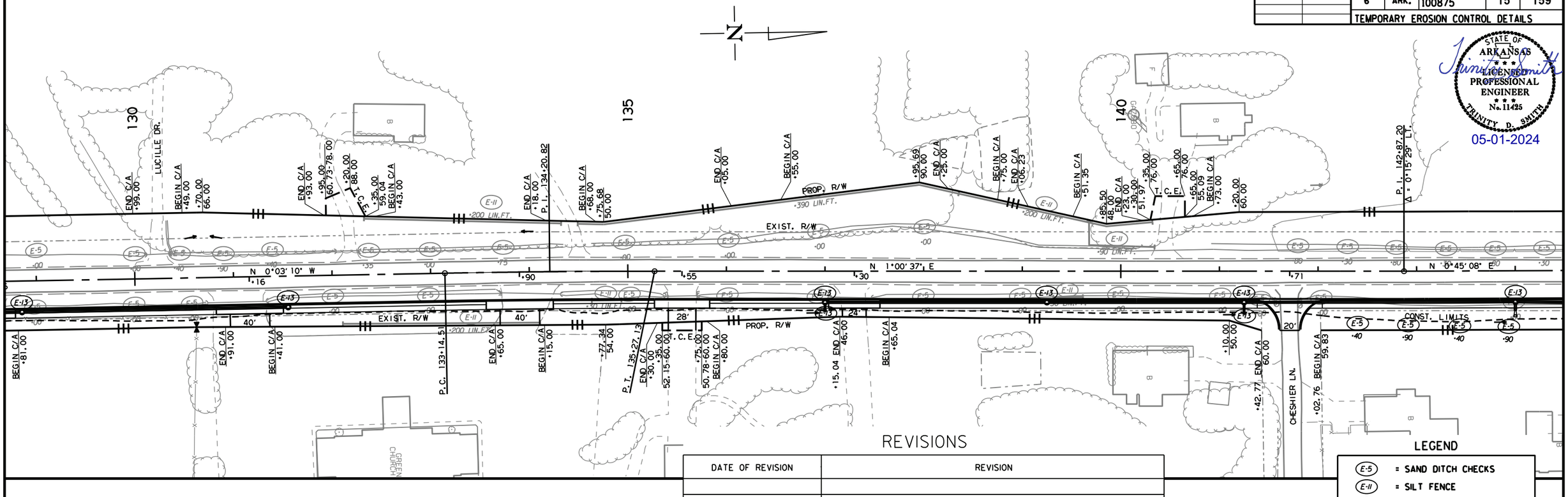
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	15	159

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

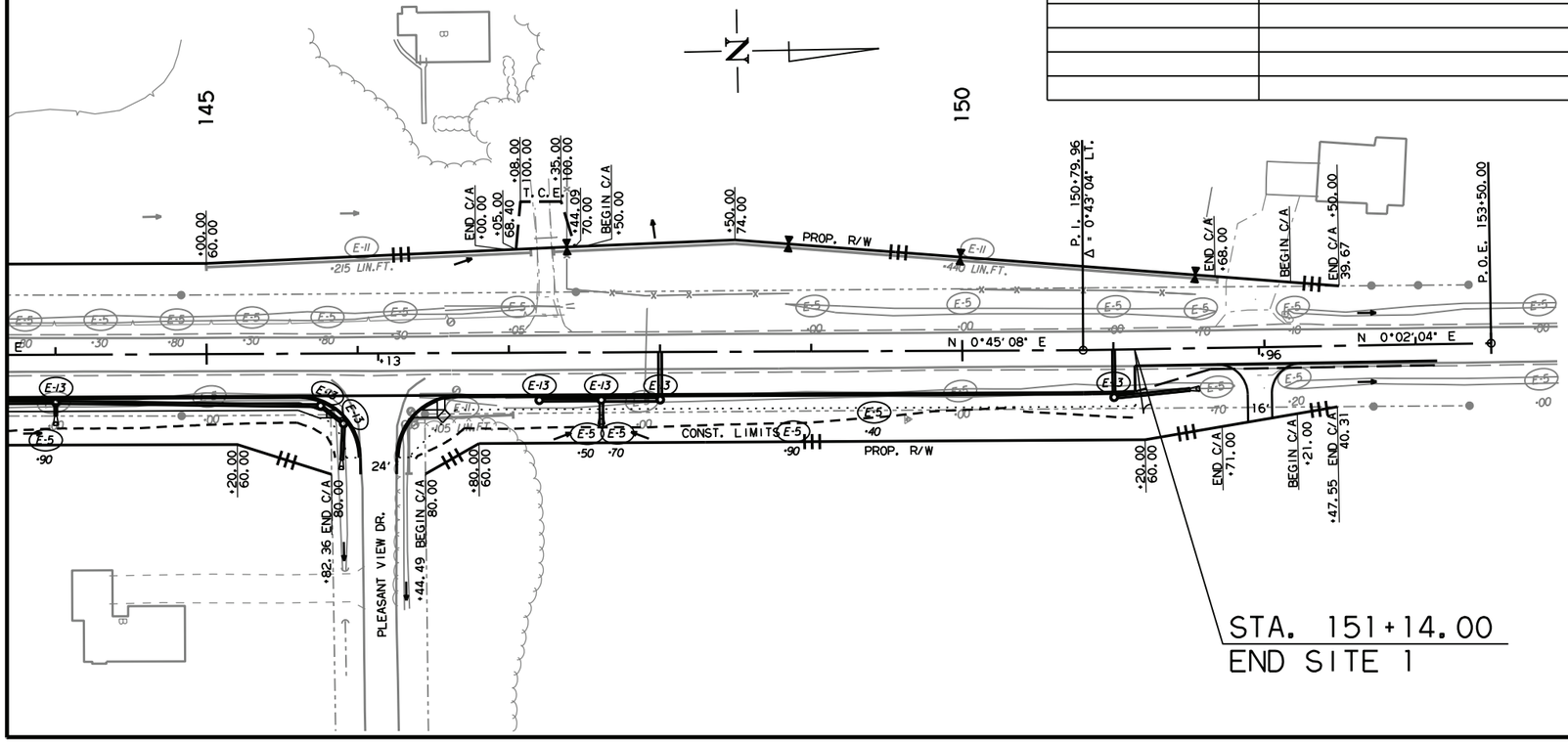


REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-5 = SAND DITCH CHECKS
- E-11 = SILT FENCE
- E-13 = FILTER SOCK



STA. 151+14.00
END SITE 1

SITE 1
STAGE 1
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	16	159

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

STA. 303+92.91
BEGIN SITE 1-HWY. 49
LOG MILE 10.65

STA. 317+80.00
END SITE 1-HWY. 49

SITE 1- HWY. 49
STAGE 1
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5	= SAND DITCH CHECKS
E-11	= SILT FENCE
E-13	= FILTER SOCK

SITE 2 - HWY. 49
BEGIN

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36

SITE 2 HWY. 49
END

STA. 212+74.00
END SITE 2

SITE 2 & SITE 2 - HWY. 49
STAGE 1
TEMPORARY EROSION CONTROL DETAILS

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R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	17	159

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STA. 100+34.33
BEGIN SITE 1
LOG MILE 0.01

LEGEND

E-5	= SAND DITCH CHECKS
E-11	= SILT FENCE
E-13	= FILTER SOCK

REVISIONS

DATE OF REVISION	REVISION

SITE 1
STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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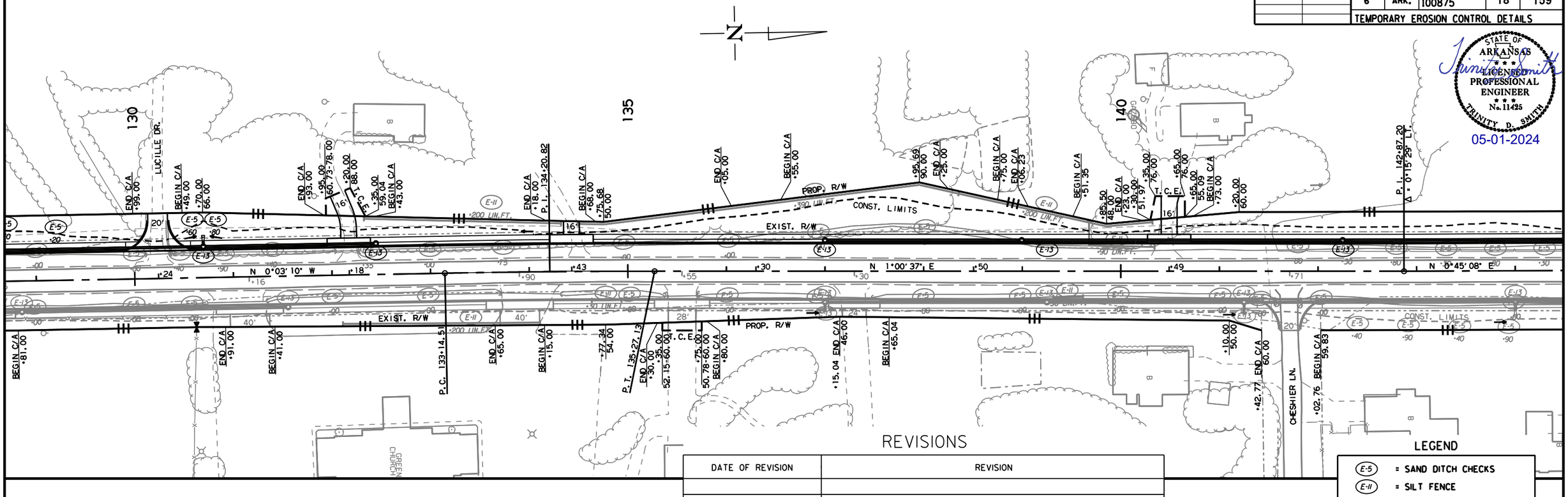
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	18	159

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

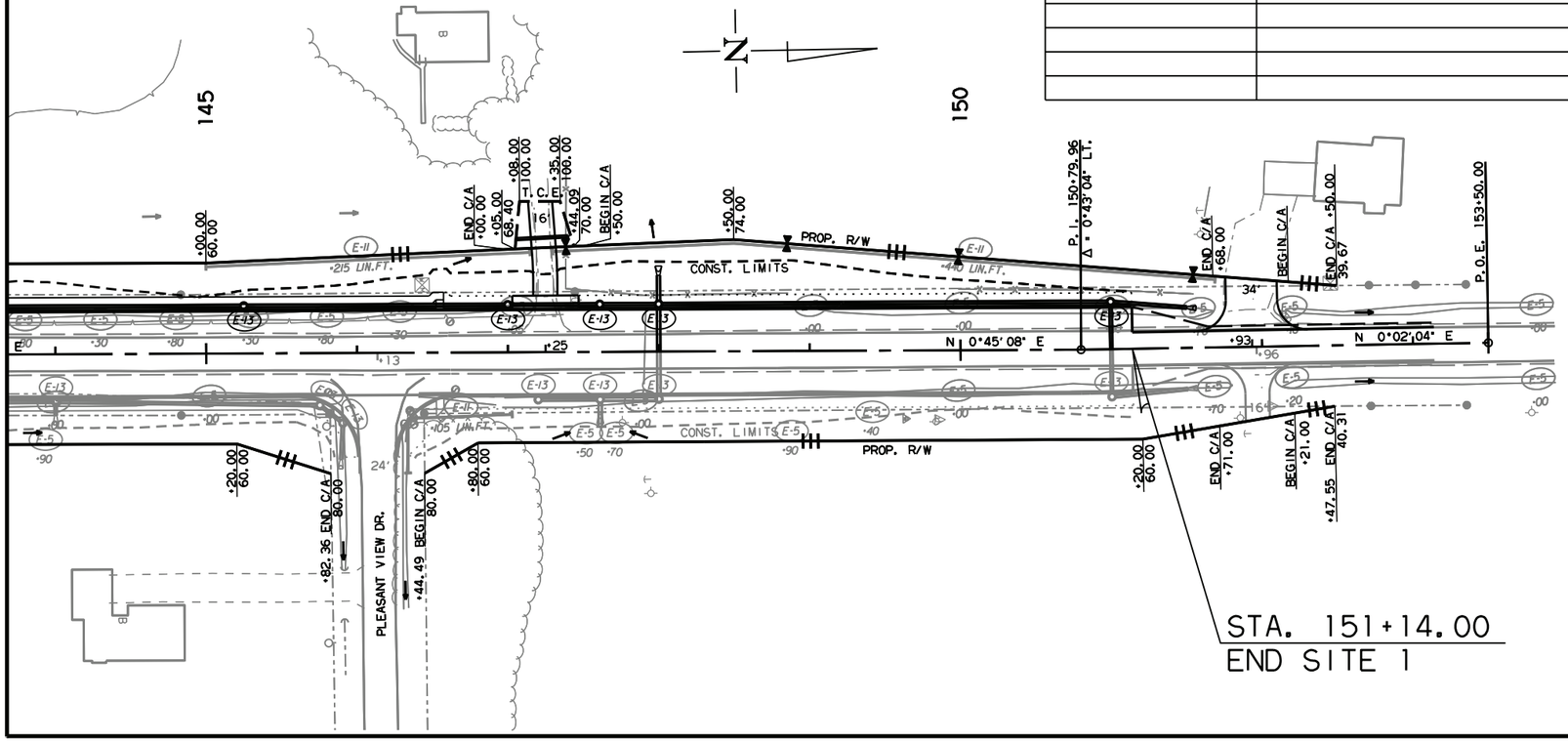


REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND DITCH CHECKS
- (E-11) = SILT FENCE
- (E-13) = FILTER SOCK



STA. 151+14.00
END SITE 1

SITE 1
STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	19	159

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

STA. 303+92.91
BEGIN SITE 1-HWY. 49
LOG MILE 10.65

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5	= SAND DITCH CHECKS
E-11	= SILT FENCE
E-13	= FILTER SOCK

STA. 317+80.00
END SITE 1-HWY. 49

SITE 1- HWY. 49
STAGE 2
TEMPORARY EROSION CONTROL DETAILS

SITE 2 - HWY. 49
BEGIN

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36

SITE 2 HWY. 49
END

STA. 212+74.00
END SITE 2

SITE 2 & SITE 2 - HWY. 49
STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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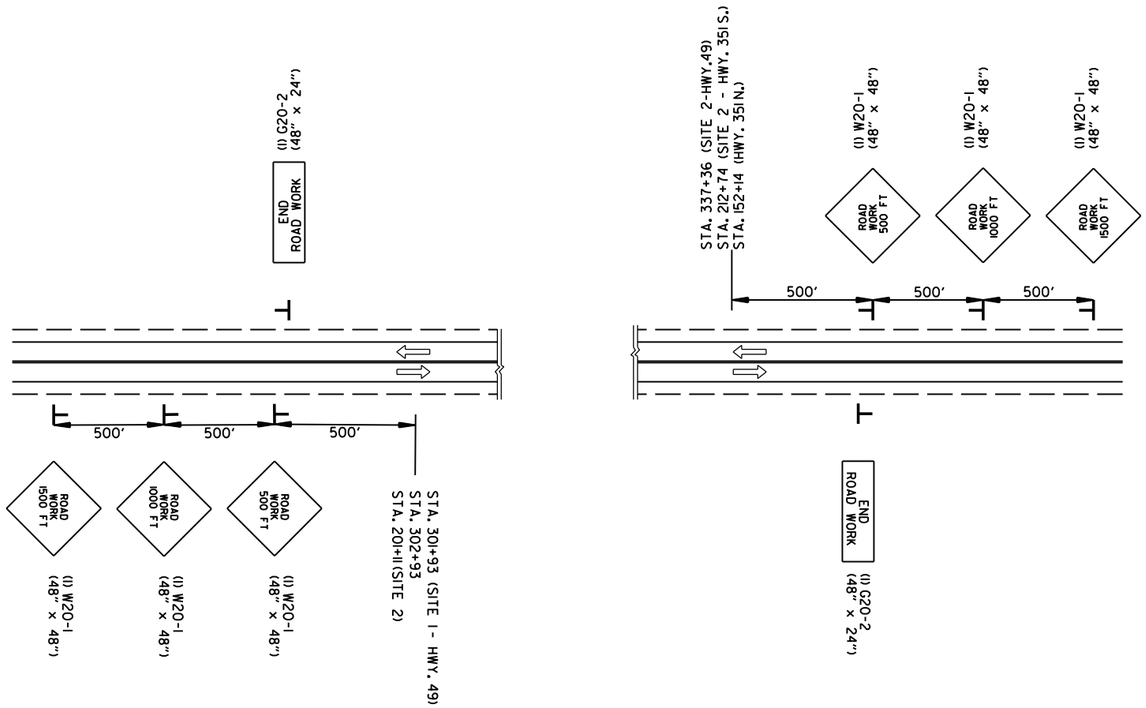
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	20	159
		MAINTENANCE OF TRAFFIC DETAILS				



ADVANCE WARNING (ALL STAGES)

STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

INSTALL TEMPORARY SIGNALS AT THE INTERSECTIONS OF HWY. 49 WITH HWY. 351 N. AND HWY. 351 S.

USE VERTICAL PANELS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC CONES TO DELINEATE DRIVEWAYS.

FURNISH AND INSTALL P.C.C.B. AT SITE 2 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

NOTCH AND WIDEN HWY. 351 N. RT. FROM STA. 100+34.33 TO STA. 153+14.00, HWY. 49 RT. FROM STA. 302+92.91 TO STA. 312+91.77, HWY. 49 LT. FROM STA. 314+31.69 TO STA. 318+80.00, AND THE SOUTHWEST AND NORTHEAST QUADRANTS OF SITE 2 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

STAGE 2 CONSTRUCTION SEQUENCE:

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

USE TRAFFIC DRUMS AND VERTICAL PANELS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC CONES TO DELINEATE DRIVEWAYS.

RELOCATE P.C.C.B. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

NOTCH AND WIDEN HWY. 351 N. LT. FROM STA. 100+34.33 TO STA. 153+14.00, HWY. 49 LT. FROM STA. 302+92.91 TO STA. 311+51.80, HWY. 49 RT. FROM STA. 312+91.77 TO STA. 318+80.00, AND THE SOUTHEAST AND NORTWEST QUADRANTS OF SITE 2 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

APPLY FINAL 2" LIFT OF ACHM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

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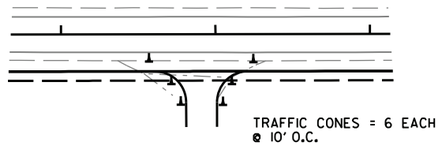
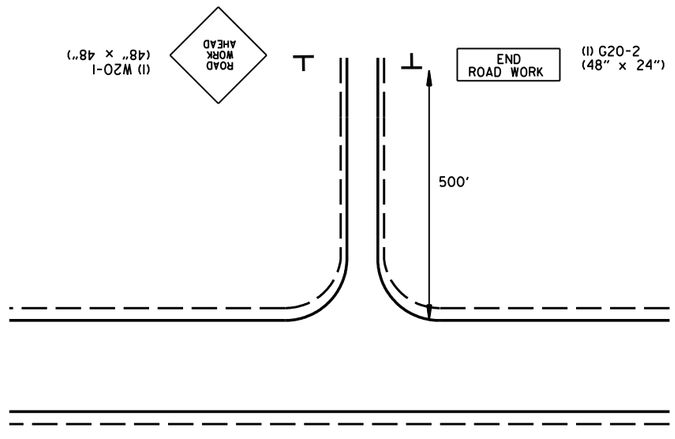
BUMP	(7) W8-1 (30" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
RIGHT SHOULDER CLOSED	(7) W21-5a (36" X 36")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
DO NOT PASS	(7) R4-1 (24" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



DRIVEWAY/TRAFFIC CONE DETAIL



ADVANCE WARNING - SIDE ROADS
(ALL STAGES)

STA. 121+54 RT., HUDSON DR.
STA. 126+42 LT., GREENSBORO RD.
STA. 130+24 LT., LUCILLE DR.
STA. 141+71 RT., CHESHIER LN.
STA. 146+13 RT., PLEASANT VIEW DR.
STA. 201+75 RT., HICKORY LN.
STA. 308+56 RT., JEWELL DR.

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ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	21	159
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
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No. 11425
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STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

INSTALL TEMPORARY SIGNALS AT THE INTERSECTIONS OF HWY. 49 WITH HWY. 351 N. AND HWY. 351 S.

USE VERTICAL PANELS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC CONES TO DELINEATE DRIVEWAYS.

FURNISH AND INSTALL P.C.C.B. AT SITE 2 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

NOTCH AND WIDEN HWY. 351 N. RT. FROM STA. 100+34.33 TO STA. 153+14.00, HWY. 49 RT. FROM STA. 302+92.91 TO STA. 312+91.77, HWY. 49 LT. FROM STA. 314+31.69 TO STA. 318+80.00, AND THE SOUTHWEST AND NORTHEAST QUADRANTS OF SITE 2 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

STAGE 2 CONSTRUCTION SEQUENCE:

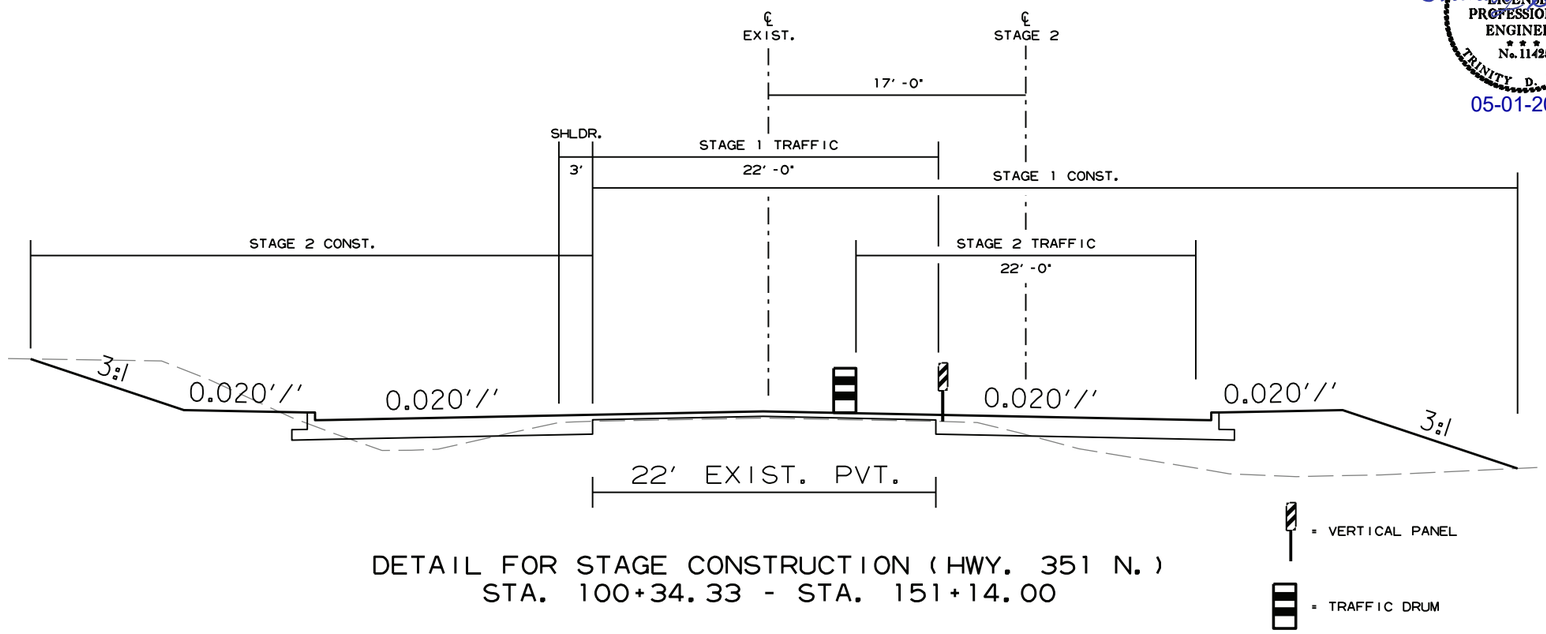
INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

USE TRAFFIC DRUMS AND VERTICAL PANELS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC CONES TO DELINEATE DRIVEWAYS.

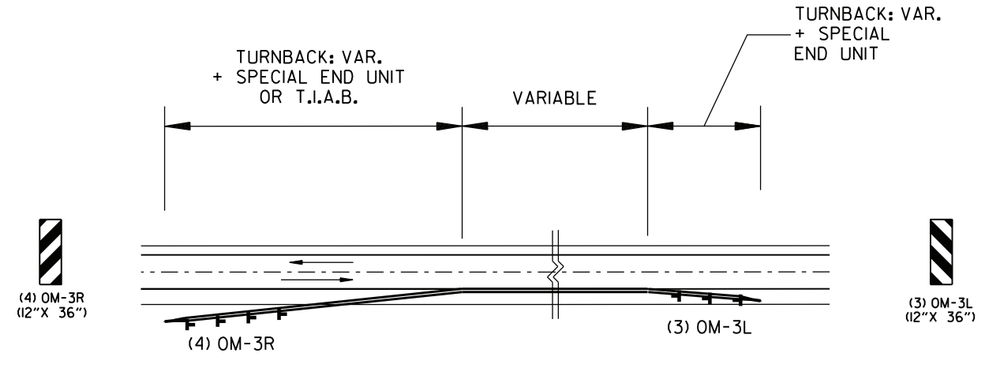
RELOCATE P.C.C.B. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

NOTCH AND WIDEN HWY. 351 N. LT. FROM STA. 100+34.33 TO STA. 153+14.00, HWY. 49 LT. FROM STA. 302+92.91 TO STA. 311+51.80, HWY. 49 RT. FROM STA. 312+91.77 TO STA. 318+80.00, AND THE SOUTHEAST AND NORTWEST QUADRANTS OF SITE 2 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

APPLY FINAL 2" LIFT OF ACHM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.



DETAIL FOR STAGE CONSTRUCTION (HWY. 351 N.)
STA. 100+34.33 - STA. 151+14.00



REFER ALSO TO STANDARD DRAWING TC-5 FOR DETAILS OF PLACEMENT OF PCCB TURNBACKS.

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

DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS

ALL STAGES
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	22	159
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
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STAGE 1 QUANTITIES

SIGNS = 670.5 SQ. FT.
TRAFFIC CONES = 147 EACH
VERTICAL PANELS = 202 EACH
FURNISHING AND INSTALLING P.C.C.B. = 120 LIN FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH

STA. 100+34.33
BEGIN SITE 1
LOG MILE 0.01

VERTICAL PANELS SPACED 35' O.C.

TRAFFIC CONES

TRAFFIC CONES

VERTICAL PANELS SPACED 35' O.C.

SITE 1
STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	23	159

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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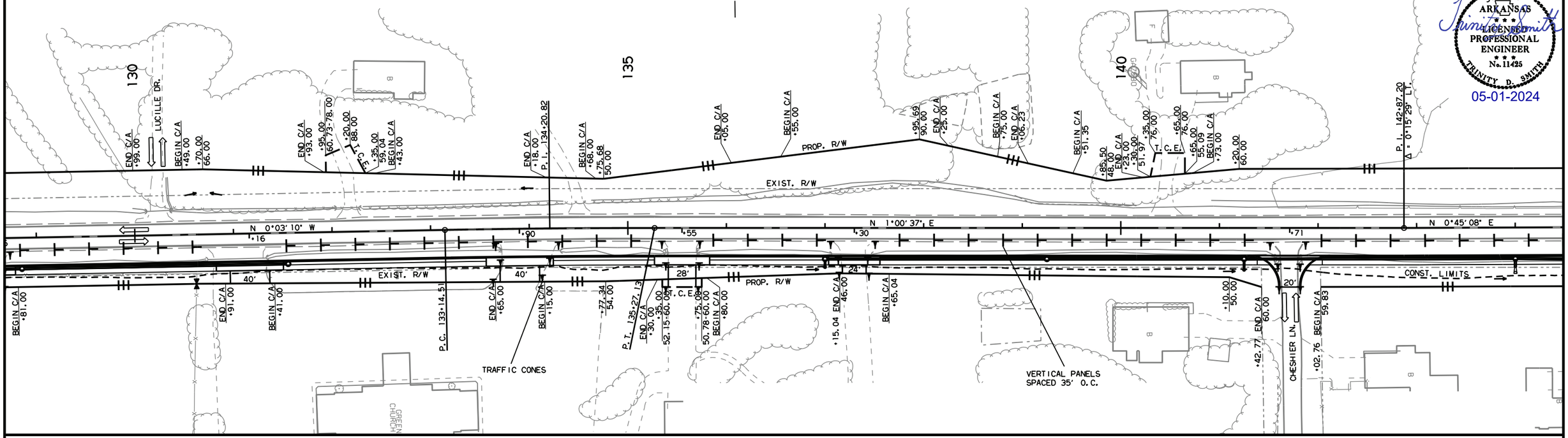

SITE 1
STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	24	159

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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STA. 303+92.91
BEGIN SITE 1-HWY. 49
LOG MILE 10.65

EXIST. R/W
PROP. R/W
T.C.E.
CONST. LIMITS
TRAFFIC CONES
VERTICAL PANELS SPACED 35' O.C.
JEWELL DR.
RUINS
KUM AND GO
BUS SHOPPES AT HILLTOP
RET/WALL
P.O.B. 100+00.00
STA. 312+77
DRIVE TO BE CONSTRUCTED IN PARTIAL WIDTHS AND REMAIN OPEN DURING CONSTRUCTION AT ALL TIMES.
N 58°36'13" E
STA. 317+80.00
END SITE 1-HWY. 49

SITE 1
STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36

VERTICAL PANELS SPACED 35' O.C.
TRAFFIC CONES
FURNISH AND INSTALL
120' P.C.C.B.
• (1) SPECIAL END UNIT
• (1) T.I.A.B.
HICKORY LN.
BURGER KING
DAIRY QUEEN
P.O.B. 200+00.00
P.I. 201+00.00 Δ = 0°39'34" RT.
P.I. 203+27.88 Δ = 0°19'54" LT.
P.I. 335+25.85 Δ = 0°19'01" LT.
P.C. 208+71.95
P.I. 209+89.95
P.C. 211+35.70
P.I. 211+81.66
P.T. 212+27.60
P.O.E. 215+00.00
N 0°59'08" E
N 1°38'42" E
N 1°18'48" E
N 1°20'30" W
N 0°43'35" E
STA. 212+74.00
END SITE 2

SITE 2
STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	25	159
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
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STAGE 2 QUANTITIES

SIGNS = 670.5 SQ. FT.
TRAFFIC DRUMS = 117 EACH
TRAFFIC CONES = 186 EACH
VERTICAL PANELS = 75 EACH
RELOCATING P.C.C.B. = 120 LIN FT.
CONSTRUCTION PAVEMENT MARKINGS = 42494 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS (WORDS) = 5 EACH
CONSTRUCTION PAVEMENT MARKINGS (ARROWS) = 10 EACH

STA. 100+34.33
BEGIN SITE 1
LOG MILE 0.01

DBL. YELLOW CONST. PVMT. MARKING

DBL. YELLOW CONST. PVMT. MARKING

SITE 1
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	26	159

MAINTENANCE OF TRAFFIC DETAILS

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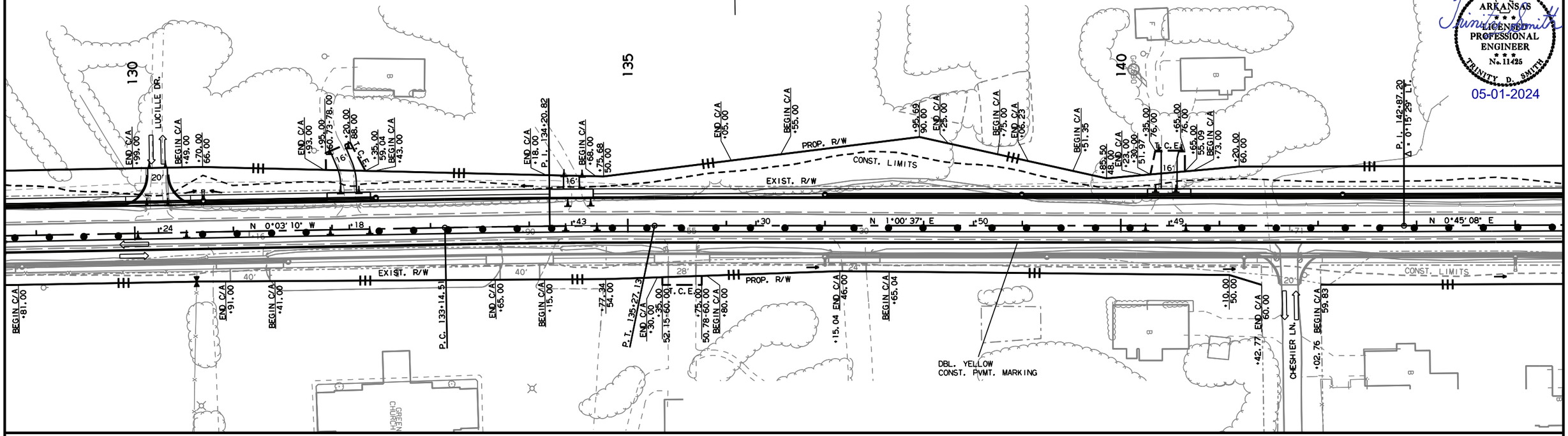

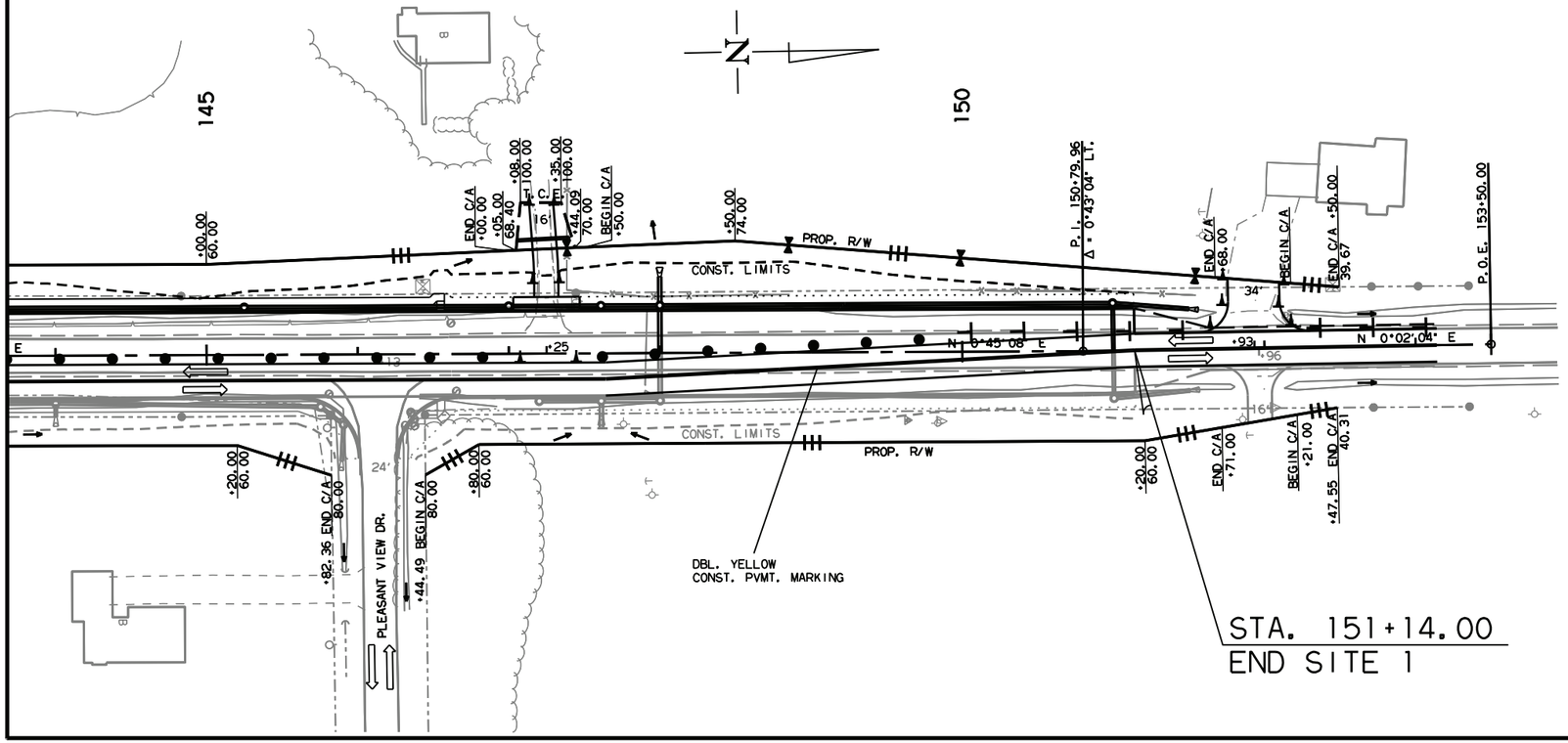

STA. 151+14.00
END SITE 1

SITE 1
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	27	159

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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STA. 303+92.91
BEGIN SITE 1-HWY. 49
LOG MILE 10.65

STA. 317+80.00
END SITE 1-HWY. 49

SITE 1
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36

STA. 212+74.00
END SITE 2

SITE 2
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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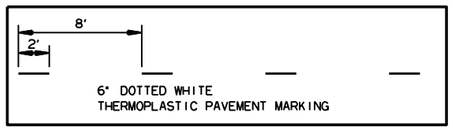
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	28	159

PERMANENT PAVEMENT MARKING DETAILS

PERMANENT PAVEMENT MARKINGS (SITE 1)

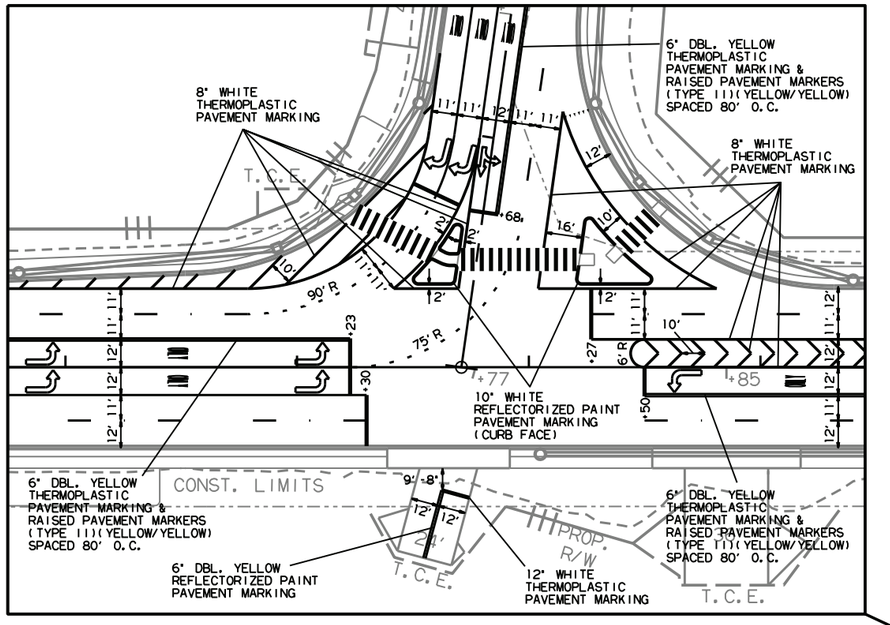
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL) (80' O.C.) = 155 EACH
RAISED PAVEMENT MARKERS TYPE II (WHI/RED) (80' O.C.) = 134 EACH
THERMOPLASTIC PAVEMENT MARKING WHITE (6") = 6250 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 3086 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 735 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (6") = 14366 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE) = 11 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (WORDS) = 20 EACH
THERMOPLASTIC PAVEMENT MARKING (ARROWS) = 28 EACH
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") = 175 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") = 484 LIN. FT.

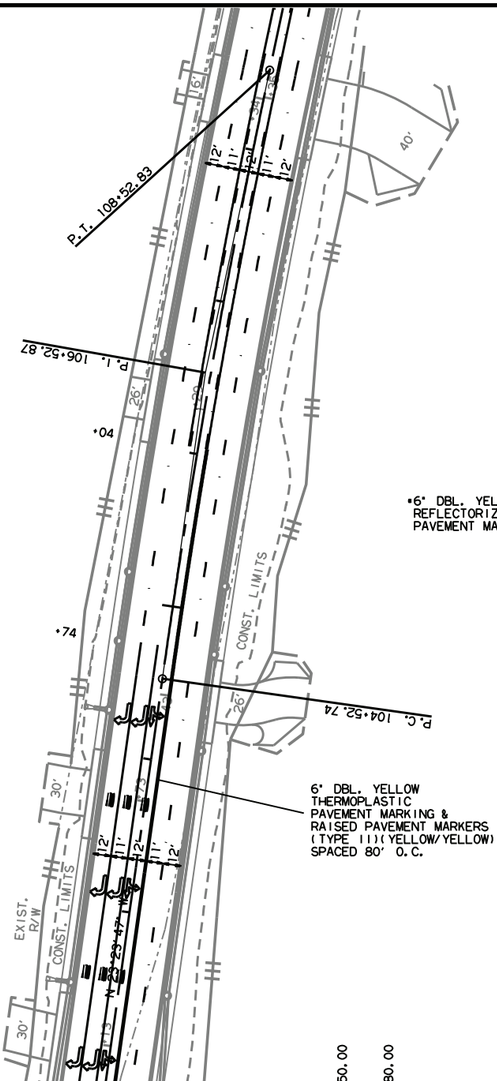


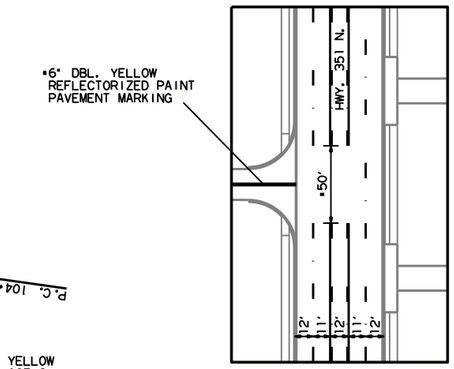
LEGEND

- = 6" WHITE THERMOPLASTIC PAVEMENT MARKING
- = 6" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) SPACED 80' O.C.
- = 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING
- = 12" WHITE (STOP LINE) THERMOPLASTIC PAVEMENT MARKING
- = 12" WHITE (CROSSWALK) THERMOPLASTIC PAVEMENT MARKING
- = 6" SKIP YELLOW WITH 6" YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
- = THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)
- = THERMOPLASTIC PAVEMENT MARKING (WORD)
- = THERMOPLASTIC PAVEMENT MARKING (ARROW)

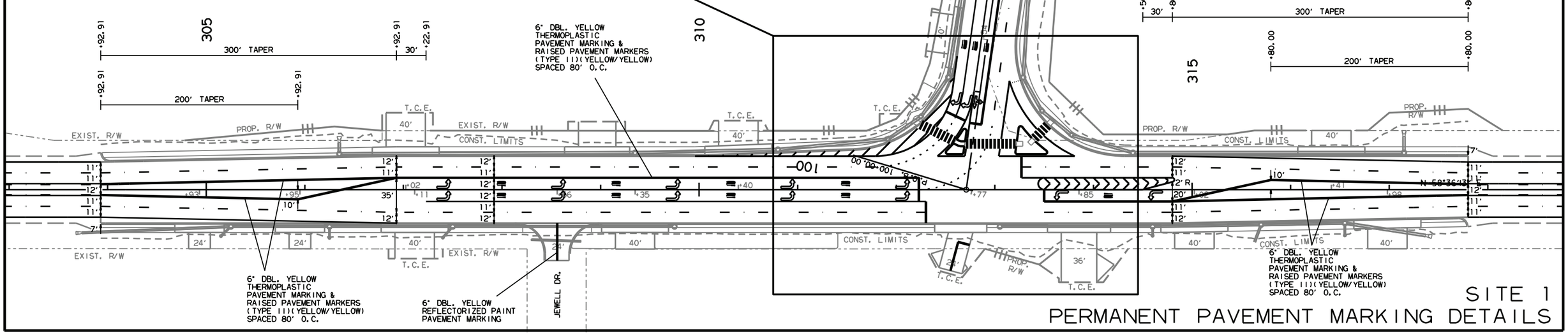
NOTE: USE THE CORRESPONDING PAVEMENT MARKINGS LISTED ABOVE UNLESS OTHERWISE SPECIFIED IN THE PERMANENT PAVEMENT MARKING DETAILS.







TURNOUT STRIPING DETAIL



SITE 1
PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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TRINITY D. SMITH
05-01-2024

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	29	159

PERMANENT PAVEMENT MARKING DETAILS

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LICENSED PROFESSIONAL ENGINEER
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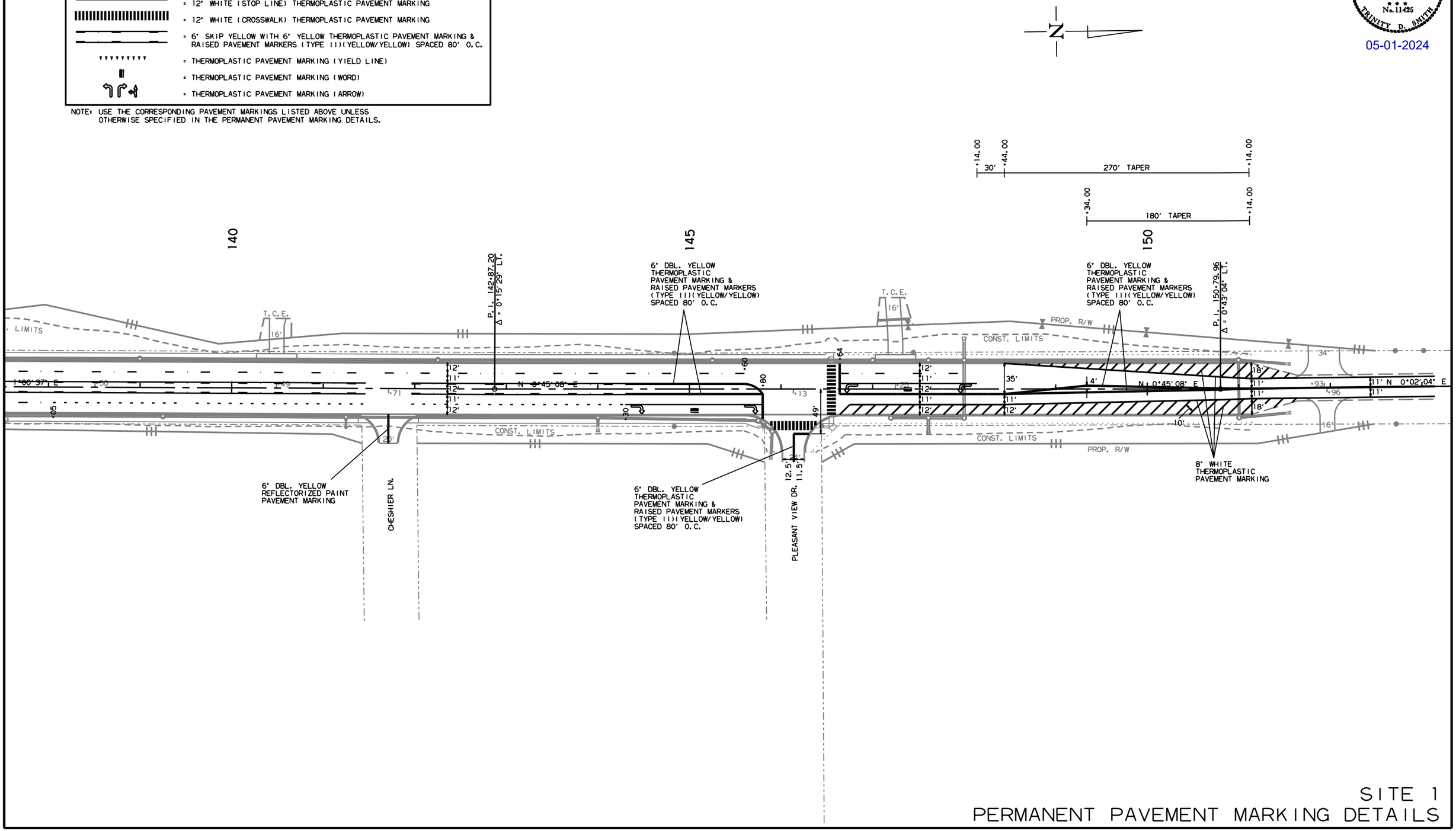
TRINITY D. SMITH

05-01-2024

LEGEND

- = 6" WHITE THERMOPLASTIC PAVEMENT MARKING
- = 6" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) SPACED 80' O.C.
- = 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING
- = 12" WHITE (STOP LINE) THERMOPLASTIC PAVEMENT MARKING
- = 12" WHITE (CROSSWALK) THERMOPLASTIC PAVEMENT MARKING
- = 6" SKIP YELLOW WITH 6" YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
- = THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)
- = THERMOPLASTIC PAVEMENT MARKING (WORD)
- = THERMOPLASTIC PAVEMENT MARKING (ARROW)

NOTE: USE THE CORRESPONDING PAVEMENT MARKINGS LISTED ABOVE UNLESS OTHERWISE SPECIFIED IN THE PERMANENT PAVEMENT MARKING DETAILS.



SITE 1
PERMANENT PAVEMENT MARKING DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	30	159
		PERMANENT PAVEMENT MARKING DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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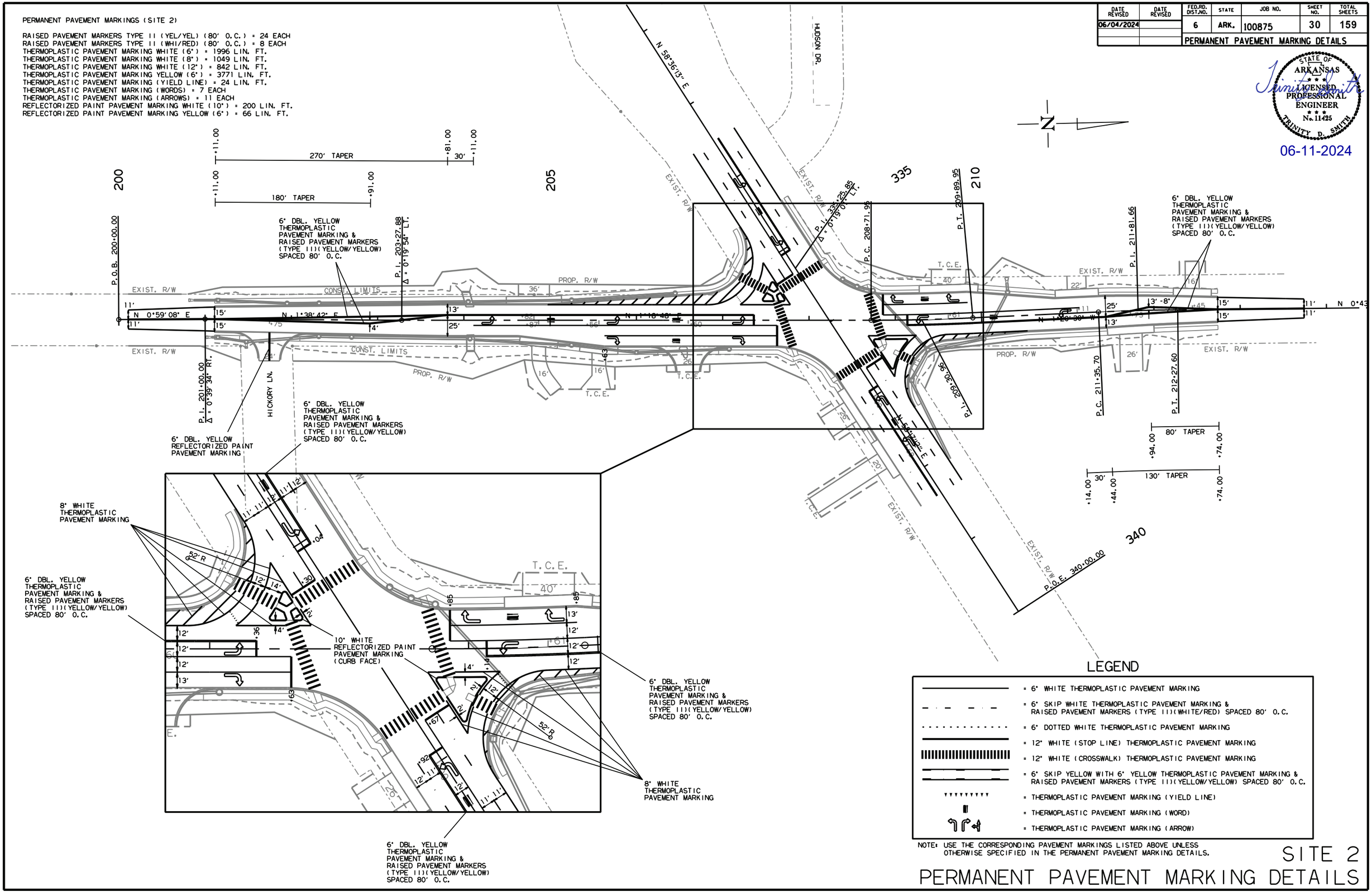
06-11-2024

PERMANENT PAVEMENT MARKINGS (SITE 2)

RAISED PAVEMENT MARKERS TYPE II (YEL/YEL) (80' O.C.) = 24 EACH
RAISED PAVEMENT MARKERS TYPE II (WHI/RED) (80' O.C.) = 8 EACH
THERMOPLASTIC PAVEMENT MARKING WHITE (6") = 1996 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 1049 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 842 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (6") = 3771 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE) = 24 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (WORDS) = 7 EACH
THERMOPLASTIC PAVEMENT MARKING (ARROWS) = 11 EACH
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") = 200 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") = 66 LIN. FT.



LEGEND

- = 6" WHITE THERMOPLASTIC PAVEMENT MARKING
- = 6" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) SPACED 80' O.C.
- = 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING
- = 12" WHITE (STOP LINE) THERMOPLASTIC PAVEMENT MARKING
- = 12" WHITE (CROSSWALK) THERMOPLASTIC PAVEMENT MARKING
- = 6" SKIP YELLOW WITH 6" YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
- = THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)
- = THERMOPLASTIC PAVEMENT MARKING (WORD)
- = THERMOPLASTIC PAVEMENT MARKING (ARROW)

NOTE: USE THE CORRESPONDING PAVEMENT MARKINGS LISTED ABOVE UNLESS OTHERWISE SPECIFIED IN THE PERMANENT PAVEMENT MARKING DETAILS.

SITE 2
PERMANENT PAVEMENT MARKING DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	31	159
		QUANTITIES				

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

06-11-2024

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	TRAFFIC CONE	*PORTABLE CHANGEABLE MESSAGE SIGN	FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN. BARR. (REPAIR)
			LIN. FT. - EACH			NO.	SQ. FT.	EACH				WEEK	LIN. FT.		EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	5	5	5	5	80.0									
W20-1	ROAD WORK 1000 FT.	48"x48"	5	5	5	5	80.0									
W20-1	ROAD WORK 500 FT.	48"x48"	5	5	5	5	80.0									
W20-1	ROAD WORK AHEAD	48"x48"	7	7	7	7	112.0									
G20-2	END ROAD WORK	48"x24"	12	12	12	12	96.0									
OM-3L	OBJECT MARKER	12"x36"	3	3	3	3	9.0									
OM-3R	OBJECT MARKER	12"x36"	4	4	4	4	12.0									
R4-1	DO NOT PASS	24"x30"	7	7	7	7	35.0									
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	7	7	7	7	63.0									
W8-1	BUMP	30"x30"	7	7	7	7	43.8									
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	5	5	5	5	160.0									
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE				25	25				25						
	VERTICAL PANELS		202	74	202			202								
	TRAFFIC DRUMS			117	117				117							
	TRAFFIC CONES		147	190	190						190					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		120	120	240								240			
	RELOCATING PRECAST CONCRETE BARRIER			120	120									120		
	TEMPORARY IMPACT ATTENUATION BARRIER		1		1										1	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		1		1											1
	PORTABLE CHANGEABLE MESSAGE SIGN			65	65							65				
TOTALS:							770.8	202	117	25	190	65	240	120	1	1

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

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 2	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING							REFLECTORIZED PAINT PAVEMENT MARKING	
						TYPE II	TYPE II	6"		8"	12"	WORDS	ARROWS	YIELD LINE	6"	10"
				WORDS	ARROWS	(WHITE/RED)	(YELLOW/YELLOW)	WHITE	YELLOW	WHITE	WHITE				YELLOW	WHITE
	LIN. FT. - EACH		LIN. FT.	EACH		EACH		LIN. FT.				EACH		LIN. FT.	LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	31663		31663													
CONSTRUCTION PAVEMENT MARKINGS (WORDS)	5			5												
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	10				10											
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)		142				142										
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)		155					155									
THERMOPLASTIC PAVEMENT MARKING WHITE (6")		8246						8246								
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		14366							14366							
THERMOPLASTIC PAVEMENT MARKING WHITE (8")		4135								4135						
THERMOPLASTIC PAVEMENT MARKING WHITE (12")		1577									1577					
THERMOPLASTIC PAVEMENT MARKING (WORDS)		27										27				
THERMOPLASTIC PAVEMENT MARKING (ARROWS)		39											39			
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)		35												35		
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")		550													550	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")		375														375
TOTALS:			31663	5	10	142	155	8246	14366	4135	1577	27	39	35	550	375

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

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	32	159
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
116+00	117+00	SITE 1 - HWY. 351 N. RT.	1	1
121+00	122+00	SITE 1 - HWY. 351 N. RT.	1	1
130+00	138+00	SITE 1 - HWY. 351 N. LT.	8	8
139+50	140+50	SITE 1 - HWY. 351 N. LT.	1	1
141+50	151+50	SITE 1 - HWY. 351 N. LT. & RT.	10	10
204+20	206+20	HWY. 351 S. RT.	2	2
210+00	211+00	SITE 2 - PLEASANT GROVE RD. LT.	1	1
TOTALS:			24	24

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
121+78	130+62	SITE 1 - HWY. 351 N. RT.	932
147+39	148+85	SITE 1 - HWY. 351 N. LT.	175
149+99	151+55	SITE 1 - HWY. 351 N. LT.	156
TOTAL:			1263

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
				CU. YD.		TON
	100+34.33	153+14.00	STAGE 1 - SITE 1 - HWY. 351 N.	1729	6938	
	200+11.00	207+90.03	STAGE 1 - SITE 2 - HWY. 351 S.	130	864	
	208+38.00	213+74.00	STAGE 1 - SITE 2 - PLEASANT GROVE RD.	50	286	
	302+92.91	318+80.00	STAGE 1 - SITE 2 - HWY. 49	356	650	
	100+34.33	153+14.00	STAGE 2 - SITE 1 - HWY. 351 N.	1495	11053	
	200+11.00	207+90.03	STAGE 2 - SITE 2 - HWY. 351 S.	53	1235	
	208+38.00	213+74.00	STAGE 2 - SITE 2 - PLEASANT GROVE RD.	463	92	
	302+92.91	318+80.00	STAGE 2 - SITE 1-HWY. 49	405	769	
	333+50.35	338+36.43	STAGE 2 - SITE 2-HWY. 49	15	54	
	ENTIRE	PROJECT	APPROACHES	485	960	
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE			100
			DIRECTED BY THE ENGINEER			
	TOTALS:			5181	22901	100

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

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

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.
127+00.00	128+00.00	SITE 1 - HWY. 351 N. RT.	100.00	6.32	70.22	44.44	0.56
130+50.00	131+00.00	SITE 1 - HWY. 351 N. LT.	50.00	6.32	35.11	22.22	0.28
210+05.00	210+75.00	SITE 2 - HWY. 351 S. LT.	70.00	6.32	49.16	31.11	0.39
TOTALS:					154.49	97.77	1.23

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

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	RETAINING WALLS	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	WALKS	SIGN FOUNDATIONS	CONCRETE DITCH PAVING	SIGNS	PLANTERS	FLAG POLE	LIGHT POLE
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	SQ. YD.	EACH	EACH	EACH	EACH
100+18	102+46	SITE 1 - HWY. 351 N. LT. & RT.	227		121	161		1		1	1	3	
103+41	104+90	SITE 1 - HWY. 351 N. LT. & RT.	276			510							1
107+87	109+58	SITE 1 - HWY. 351 N. RT.				729		1		1			
111+45	114+52	SITE 1 - HWY. 351 N. LT. & RT.	265			227		1		1			
131+32	133+74	SITE 1 - HWY. 351 N. RT.	47					2		2			
135+40	137+47	SITE 1 - HWY. 351 N. RT.				179							
140+34	140+59	SITE 1 - HWY. 351 N. LT.				89							
146+39	146+39	SITE 1 - HWY. 351 N. RT.						1		1			
204+43	205+20	SITE 2 - HWY. 351 S. LT.	57			120							
204+03	204+12	SITE 2 - HWY. 351 S. RT.							30				
206+18	208+22	SITE 2 - HWY. 351 S. LT. & RT.	380				36	1		1			
208+34	212+50	SITE 2 - PLEASANT GROVE RD. LT. & RT.	500			89			7				1
303+67	317+44	SITE 1 - HWY. 49 LT. & RT.	1338	75	161	2126	9	1	99	1	1		1
TOTALS:			3090	75	282	4230	45	8	136	8	2	3	3

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 2	TYPE 3
		SQ.YD.	
100+53	SITE 1 - HWY. 351 N. RT.		3.5
100+60	SITE 1 - HWY. 351 N. LT.		4.0
100+60	SITE 1 - HWY. 351 N. RT.		3.3
100+78	SITE 1 - HWY. 351 N. RT.		3.3
113+53	SITE 1 - HWY. 351 N. LT.		5.4
114+41	SITE 1 - HWY. 351 N. LT.		5.4
121+30	SITE 1 - HWY. 351 N. RT.		5.4
121+78	SITE 1 - HWY. 351 N. RT.		5.4
126+17	SITE 1 - HWY. 351 N. LT.		5.4
126+67	SITE 1 - HWY. 351 N. LT.		5.4
130+00	SITE 1 - HWY. 351 N. LT.		5.4
130+48	SITE 1 - HWY. 351 N. LT.		5.4
141+48	SITE 1 - HWY. 351 N. RT.		5.4
141+95	SITE 1 - HWY. 351 N. RT.		5.4
145+88	SITE 1 - HWY. 351 N. RT.		4.9
146+55	SITE 1 - HWY. 351 N. LT.		3.3
146+55	SITE 1 - HWY. 351 N. RT.	12.7	
201+49	SITE 2 - HWY. 351 S. RT.		5.4
202+01	SITE 2 - HWY. 351 S. RT.		5.4
206+29	SITE 2 - HWY. 351 S RT.		5.4
206+90	SITE 2 - HWY. 351 S RT.		5.4
207+18	SITE 2 - HWY. 351 S. LT.		3.5
207+83	SITE 2 - HWY. 351 S. RT.		4.3
208+67	SITE 2 - PLEASANT GROVE RD. LT.		4.2
208+86	SITE 2 - PLEASANT GROVE RD. RT.	8.5	
209+04	SITE 2 - PLEASANT GROVE RD. RT.		3.3
209+21	SITE 2 - PLEASANT GROVE RD. RT.		3.4
335+38	SITE 1 - HWY. 49 LT.		3.5
336+58	SITE 1 - HWY. 49 RT.		3.4
TOTALS:		21.2	123.5

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	33	159
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	JUNCTION BOXES	DROP INLETS
		EACH	EACH	EACH
103+73	SITE 1 - HWY. 351 N. LT. - 18" x 45' R.C. SIDE DRAIN	1		
106+34	SITE 1 - HWY. 351 N. LT. - 18" x 23' C.M. SIDE DRAIN	1		
108+34	SITE 1 - HWY. 351 N. LT. - 18" x 23' C.M. SIDE DRAIN	1		
109+71	SITE 1 - HWY. 351 N. RT. - 18" x 23' C.M. SIDE DRAIN	1		
111+69	SITE 1 - HWY. 351 N. LT. - 18" x 75' SIDE DRAIN	1		
111+91	SITE 1 - HWY. 351 N. RT. - 24" x 23' C.M. SIDE DRAIN	1		
113+96	SITE 1 - HWY. 351 N. RT. - 24" x 68' R.C. SIDE DRAIN	1		
116+36	SITE 1 - HWY. 351 N. - 24" x 55' C.M. CROSS DRAIN	1		
118+06	SITE 1 - HWY. 351 N. RT. - 18" x 23' C.M. SIDE DRAIN	1		
121+54	SITE 1 - HWY. 351 N. RT. - 18" x 29' C.M. SIDE DRAIN	1		
126+42	SITE 1 - HWY. 351 N. LT. - 24" x 39' C.M. SIDE DRAIN	1		
128+56	SITE 1 - HWY. 351 N. RT. - 18" x 23' C.M. SIDE DRAIN	1		
130+24	SITE 1 - HWY. 351 N. LT. - 18" x 24' C.M. SIDE DRAIN	1		
131+16	SITE 1 - HWY. 351 N. RT. - 24" x 60' C.M. SIDE DRAIN	1		
132+18	SITE 1 - HWY. 351 N. LT. - 18" x 23' C.M. SIDE DRAIN	1		
133+88	SITE 1 - HWY. 351 N. RT. - 18" x 60' C.M. SIDE DRAIN	1		
135+55	SITE 1 - HWY. 351 N. RT. - 18" x 33' C.M. SIDE DRAIN	1		
137+30	SITE 1 - HWY. 351 N. RT. - 18" x 40' C.M. SIDE DRAIN	1		
141+71	SITE 1 - HWY. 351 N. RT. - 18" x 24' C.M. SIDE DRAIN	1		
147+25	SITE 1 - HWY. 351 N. LT. - 18" x 21' C.M. SIDE DRAIN	1		
200+98	SITE 2 - HWY. 351 S. LT. - 18" x 20' C.M. SIDE DRAIN	1		
201+75	SITE 2 - HWY. 351 S. RT. - 18" x 40' R.C. SIDE DRAIN	1		
204+82	SITE 2 - HWY. 351 S. LT. - 18" x 61' R.C. SIDE DRAIN	1		
204+87	SITE 2 - HWY. 351 S. RT. - 18" x 24' SIDE DRAIN	1		
205+56	SITE 2 - HWY. 351 S. RT. - 18" x 24' SIDE DRAIN	1		
210+03	SITE 2 - PLEASANT GROVE RD. RT. - JUNCTION BOX W/ 24" x 51' R.C. PIPE OUTLET	1	1	
210+45	SITE 2 - PLEASANT GROVE RD. LT. - 18" x 38' R.C. SIDE DRAIN	1		
211+11	SITE 2 - PLEASANT GROVE RD. LT. - 18" x 62' SIDE DRAIN	1		
306+23	SITE 1-HWY. 49 RT. - DROP INLET W/ 24" x 114' C.M. PIPE OUTLET	1		1
307+38	SITE 1-HWY. 49 RT. - DROP INLET W/ 24" x 155' C.M. PIPE OUTLET	1		1
313+05	SITE 1-HWY. 49 RT. - JUNCTION BOX W/ 18" x 89' C.M. PIPE INLET AND 18" x 108' C.M. PIPE OUTLET	2	1	
314+14	SITE 1-HWY. 49 RT. - JUNCTION BOX W/ 18" x 14' C.M. PIPE OUTLET	1	1	
315+02	SITE 1-HWY. 49 RT. - 18" x 76' C.M. SIDE DRAIN	1		
316+98	SITE 1-HWY. 49 RT. - 24" x 81' R.C. SIDE DRAIN	1		
TOTALS:		35	3	2

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
204+07	HWY. 351 S. - HDWL. OF R.C. BOX CULVERT ON RT.	1
TOTAL:		1

NOTE: SHOWN FOR INFORMATION ONLY. BENCH MARKS SHALL BE FURNISHED AND PLACED BY STATE FORCES.

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
112+00	35	51	38.00	90	39	27.80	6' LT.	0-5	41	25	A-7-6(16)	BR/GR
112+00	35	51	37.90	90	39	28.10	15' LT.	0-5	43	27	A-7-6(27)	BR/GR
120+00	35	51	45.70	90	39	30.30	6' RT.	0-5	35	21	A-6(14)	RD/BR
120+00	35	51	45.50	90	39	30.30	15' RT.	0-5	41	25	A-7-6(19)	BR/GR
128+00	35	51	53.70	90	39	30.30	6' LT.	0-5	33	18	A-6(8)	BR/GR
128+00	35	51	53.50	90	39	30.50	15' LT.	0-5	31	14	A-6(5)	BROWN
136+00	35	52	1.60	90	39	30.00	6' RT.	0-5	37	20	A-6(13)	BR/GR
136+00	35	52	1.40	90	39	30.00	15' RT.	0-5	32	14	A-6(11)	BROWN
144+00	35	52	9.50	90	39	29.80	6' LT.	0-5	32	17	A-6(10)	BROWN
144+00	35	52	9.40	90	39	30.00	15' LT.	0-5	25	7	A-4(2)	BR/GR

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

CONCRETE WALKS & HAND RAILING

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	CONCRETE WALKS (TYPE SPECIAL)	ARCHITECTURAL FINISH	TEXTURED COATING FINISH	HAND RAILING
			LIN. FT.	SQ.YD.	SQ.YD.	SQ. FT.	SQ. YD.	LIN. FT.
100+28	146+58	SITE 1 - HWY. 351 N. LT.	4007	2226				
100+60	146+61	SITE 1 - HWY. 351 N. RT.	3964	2202				
201+11	207+23	SITE 2 - HWY. 351 S. LT.	445	247				
206+20	207+02	SITE 2 - HWY. 351 S. LT.	83		46		9	
207+02	207+23	SITE 2 - HWY. 351 S. LT.	67	37				
201+11	208+33	SITE 2 - HWY. 351 S. RT.	508	282				
208+14	212+74	SITE 2 - PLEASANT GROVE RD. LT.	311	173				
209+18	209+36	SITE 2 - PLEASANT GROVE RD. RT.	61	34				
209+36	210+90	SITE 2 - PLEASANT GROVE RD. RT.	158		88	335	37	158
210+90	212+74	SITE 2 - PLEASANT GROVE RD. RT.	130	72				
303+93	317+80	SITE 1 - HWY. 49 LT.	554	308				
303+93	317+80	SITE 1 - HWY. 49 RT.	826	459				
334+50	335+31	SITE 2 - HWY. 49 LT.	79	44				
336+65	337+44	SITE 2 - HWY. 49 RT.	25	14				
TOTALS:				6098	134	335	46	158

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")	TYPE D
			LIN. FT.	LIN. FT.
100+23	113+67	SITE 1 - HWY. 351 N. LT.	1418	
100+56	121+44	SITE 1 - HWY. 351 N. RT.	2171	
113+89	114+05	SITE 1 - HWY. 351 N. LT.	22	
114+27	126+31	SITE 1 - HWY. 351 N. LT.	1254	
121+64	141+61	SITE 1 - HWY. 351 N. RT.	2029	
126+53	130+14	SITE 1 - HWY. 351 N. LT.	393	
130+34	151+14	SITE 1 - HWY. 351 N. LT.	2096	
141+81	146+01	SITE 1 - HWY. 351 N. RT.	458	
146+25	151+14	SITE 1 - HWY. 351 N. RT.	511	
201+11	201+62	SITE 2 - HWY. 351 S. RT.	68	
201+11	207+19	SITE 2 - HWY. 351 S. LT.	673	
201+88	206+47	SITE 2 - HWY. 351 S. RT.	494	
206+73	208+36	SITE 2 - HWY. 351 S. RT.	201	
208+11	212+74	SITE 2 - PLEASANT GROVE RD. LT.	477	
209+21	212+74	SITE 2 - PLEASANT GROVE RD. RT.	417	
303+93	308+43	SITE 1 - HWY. 49 RT.	474	
303+93	311+52	SITE 1 - HWY. 49 LT.	763	
308+69	317+80	SITE 1 - HWY. 49 RT.	932	
312+22	312+47	SITE 1 - HWY. 49 RT. - EXISTING APPROACH		25
314+32	317+80	SITE 1 - HWY. 49 LT.	348	
334+50	335+31	SITE 2 - HWY. 49 LT.	80	
336+65	337+92	SITE 2 - HWY. 49 RT.	127	
TOTALS:			15406	25

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	34	159
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL						TEMPORARY EROSION CONTROL						
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	SILT FENCE (E-11)	FILTER SOCK (12") (E-13)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	BAG	LIN. FT.	LIN. FT.	CU. YD.
100+34	151+14	CLEARING AND GRUBBING - HWY. 351 N.										1914	4443		252
201+11	212+74	CLEARING AND GRUBBING - SITE 2										88	1273		51
303+93	317+80	CLEARING AND GRUBBING - SITE 1-HWY. 49										110	45		7
100+34	151+14	STAGE 1 - SITE 1	0.92	1.84	0.92	93.8	0.92		2.41	2.41	49.2	286	268	248	32
201+11	212+74	STAGE 1 - SITE 2	0.10	0.20	0.10	10.2	0.10		0.52	0.52	10.6	44		56	4
303+93	317+80	STAGE 1 - SITE 1-HWY. 49	0.09	0.18	0.09	9.2	0.09		0.47	0.47	9.6	44		60	4
100+34	151+14	STAGE 2 - SITE 1	1.22	2.44	1.22	158.1	1.22	2673	2.64	2.64	53.9	440		194	27
201+11	212+74	STAGE 2 - SITE 2	0.20	0.40	0.20	29.0	0.20	681	0.79	0.79	16.1	44		66	4
303+93	317+80	STAGE 2 - SITE 1-HWY. 49	0.17	0.34	0.17	24.3	0.17	552	0.46	0.46	9.4	44	238	86	14
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.68	1.36	0.68	69.4	0.68		1.82	1.82	37.1	754	1567	178	99
TOTALS:			**3.38**	**6.76**	**3.38**	**394.0**	**3.38**	**3906**	**9.11**	**9.11**	**185.9**	**3768**	**7834**	**888**	**494**

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

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 ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND SQ.YD.
100+45	SITE 1 - HWY. 351 N. LT.	D	30
100+55	SITE 1 - HWY. 351 N. RT.	D	56
206+60	SITE 2 - HWY. 351 S. RT.	B	10
207+60	SITE 2 - HWY. 351 S. LT.	D	36
208+95	SITE 2 - PLEASANT GROVE RD. RT.	D	78
308+95	SITE 1 - HWY. 49 RT. - FORESLOPE	D	75
309+65	SITE 1 - HWY. 49 LT. - FORESLOPE	D	181
310+50	SITE 1 - HWY. 49 RT. - FORESLOPE	D	335
311+55	SITE 1 - HWY. 49 LT. - FORESLOPE	D	232
TOTAL:			**1033**

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE) EACH
SITE 1 - HWY. 351 N.	1	1
SITE 2 - PLEASANT GROVE RD.	4	4
TOTALS:	**5**	**5**

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH FEET	COLD MILLING ASPHALT PAVEMENT SQ. YD.
151+14.00	153+14.00	SITE 1 - HWY. 351 N.	28.00	622.22
200+11.00	201+11.00	SITE 2 - HWY. 351 S.	22.00	244.44
212+74.00	213+74.00	SITE 2 - PLEASANT GROVE RD.	22.00	244.44
302+92.91	303+92.91	SITE 1 - HWY. 49	68.00	755.56
317+80.00	318+80.00	SITE 1 - HWY. 49	68.00	755.56
333+50.35	334+50.35	SITE 2 - HWY. 49	56.00	622.22
337+36.43	338+36.43	SITE 2 - HWY. 49	56.00	622.22
TOTAL:				**3866.66**

COLD MILLING SHALL BE STOCKPILED AT THE FOLLOWING LOCATION:
CRAIGHEAD COUNTY ROAD DEPARTMENT
2800 MOORE RD.
JONESBORO, AR 72401

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS LIN. FT.
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			4000
TOTAL:			**4000**

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

UNDERDRAINS SHALL BE STUBBED INTO THE PROPOSED DROP INLET IF AND WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS TO BE INCLUDED IN THE UNIT PRICE BID FOR 4" PIPE UNDERDRAIN.

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH FEET	LENGTH FEET	TON
116+40	SITE 1 - HWY. 351 N.	8.50	28	22
127+11	SITE 1 - HWY. 351 N.	9.67	28	25
148+00	SITE 1 - HWY. 351 N.	8.50	28	22
151+00	SITE 1 - HWY. 351 N.	7.92	28	20
208+74	SITE 2 - HWY. 351 S.	7.92	50	36
TOTAL:				**125**

AVG. DEPTH = 15"

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D-1) LIN. FT.
121+78	130+62	SITE 1 - HWY. 351 N. RT.	873
147+39	148+85	SITE 1 - HWY. 351 N. LT.	147
149+99	151+55	SITE 1 - HWY. 351 N. LT.	156
TOTAL:			**1176**

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	35	159
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

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 18"	STANDARD DRAWINGS
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.	
101+54	LT.	SITE 1 - HWY. 351 N.	40	101+20	101+88	100.00					DR-1
102+13	LT.	SITE 1 - HWY. 351 N.	30	101+84	102+42	104.17					DR-1
103+73	LT.	SITE 1 - HWY. 351 N.	30	103+44	104+02	95.07					DR-1
104+43	RT.	SITE 1 - HWY. 351 N.	26	104+16	104+70	228.19					DR-1
106+34	LT.	SITE 1 - HWY. 351 N.	16	106+12	106+56		23.73	2.61	9.69		DR-1
108+34	LT.	SITE 1 - HWY. 351 N.	16	108+12	108+56		32.87	3.62	13.42		DR-1
108+35	RT.	SITE 1 - HWY. 351 N.	40	108+01	108+69	554.64					DR-1
112+50	RT.	SITE 1 - HWY. 351 N.	20	112+26	112+74	61.11					DR-1
113+96	RT.	SITE 1 - HWY. 351 N.	24	113+70	114+22	62.67					DR-1
113+97	LT.	SITE 1 - HWY. 351 N.	60				294.66	32.41	120.32		DR-2
119+09	LT.	SITE 1 - HWY. 351 N.	16	118+87	119+31		54.15	5.96	22.11		DR-1
119+21	RT.	SITE 1 - HWY. 351 N.	18	118+98	119+44		95.10	10.46	38.83		DR-1
121+54	RT.	SITE 1 - HWY. 351 N. - HUDSON DR.	20				142.04	15.62	58.00		DR-2
126+42	LT.	SITE 1 - HWY. 351 N. - GREENSBORO RD.	22				181.36	19.95	74.06		DR-2
128+56	RT.	SITE 1 - HWY. 351 N.	16	128+34	128+78		22.22	2.44	9.07		DR-1
130+24	LT.	SITE 1 - HWY. 351 N. - LUCILLE DR.	20				124.27	13.67	50.74		DR-2
132+18	LT.	SITE 1 - HWY. 351 N.	16	131+96	132+40		89.16	9.81	36.41		DR-1
133+90	RT.	SITE 1 - HWY. 351 N.	40	133+68	134+12		59.73	6.57	24.39		DR-1
134+43	LT.	SITE 1 - HWY. 351 N.	16	134+15	134+71		24.37	2.68	9.95		DR-1
135+55	RT.	SITE 1 - HWY. 351 N.	28	135+29	135+81		70.00	7.70	28.58		DR-1
137+30	RT.	SITE 1 - HWY. 351 N.	24	137+08	137+52	23.39					DR-1
140+49	LT.	SITE 1 - HWY. 351 N.	16	140+23	140+76	64.83					DR-1
141+71	RT.	SITE 1 - HWY. 351 N. - CHESHIER LN.	25				127.97	14.08	52.25		DR-2
146+13	RT.	SITE 1 - HWY. 351 N. - PLEASANT VIEW DR.	24				211.17	23.23	86.23		DR-2
147+25	LT.	SITE 1 - HWY. 351 N.	16	147+03	147+47		111.31	12.24	45.45	34	DR-1, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
151+93	LT.	SITE 1 - HWY. 351 N.	24				97.96	10.78	40.00		DR-2
151+96	RT.	SITE 1 - HWY. 351 N.	16				73.59	8.09	30.05		DR-2
201+75	RT.	SITE 2 - HWY. 351 S. - HICKORY LN.	24				129.17	14.21	52.74		DR-2
204+82	LT.	SITE 2 - HWY. 351 S.	36	204+50	205+14		57.44	6.32	23.45		DR-1
204+87	RT.	SITE 2 - HWY. 351 S.	16	204+65	205+09		114.10	12.55	46.59		DR-1
205+56	RT.	SITE 2 - HWY. 351 S.	16	205+34	205+78		93.35	10.27	38.12		DR-1
206+60	RT.	SITE 2 - HWY. 351 S.	26				163.20	17.95	66.64		DR-2
209+61	LT.	SITE 2 - PLEASANT GROVE RD.	40	209+27	209+95		81.78	9.00	33.39		DR-1
211+11	LT.	SITE 2 - PLEASANT GROVE RD.	22	210+86	211+36		38.35	4.22	15.66		DR-1
211+73	RT.	SITE 2 - PLEASANT GROVE RD.	26	211+46	212+00		126.48	13.91	51.65		DR-1
212+45	LT.	SITE 2 - PLEASANT GROVE RD.	16	212+23	212+67	56.60					DR-1
304+93	RT.	SITE 1 - HWY. 49	24	304+67	305+19		43.97	4.84	17.95		DR-1
305+95	RT.	SITE 1 - HWY. 49	24	305+69	306+21		44.19	4.86	18.04		DR-1
307+02	LT.	SITE 1 - HWY. 49	40	306+68	307+36	154.27					DR-1
307+11	RT.	SITE 1 - HWY. 49	40	306+77	307+45		117.78	12.96	48.09		DR-1
308+56	RT.	SITE 1 - HWY. 49 - JEWELL DR.	24				140.67	15.47	57.44	50	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
308+97	LT.	SITE 1 - HWY. 49	38	308+64	309+30	120.33					DR-1
309+35	RT.	SITE 1 - HWY. 49	40	309+01	309+69		74.58	8.20	30.45		DR-1
310+40	LT.	SITE 1 - HWY. 49	40	310+06	310+74	113.69					DR-1
312+77	RT.	SITE 1 - HWY. 49	24	312+51	313+03	121.61					DR-1
313+85	RT.	SITE 1 - HWY. 49	36	313+53	314+17	230.85					DR-1
315+02	RT.	SITE 1 - HWY. 49	40	314+68	315+36	77.16					DR-1
316+41	LT.	SITE 1 - HWY. 49	40	316+07	316+75	73.42					DR-1
316+98	RT.	SITE 1 - HWY. 49	40	316+64	317+32	90.84					DR-1
337+00	RT.	SITE 2 - HWY. 49	26	336+73	337+27		75.11	8.26	30.67		DR-1
337+68	RT.	SITE 2 - HWY. 49	20	337+44	337+92		182.22	20.04	74.41		DR-1
* ENTIRE PROJECT TEMPORARY DRIVES									510.00		
TOTALS:						**2332.84**	**3318.05**	**364.98**	**1864.84**	**84**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2") (PG 64-22).....94.4% MIN. AGGR.....5.6% 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.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	820
ENGINEER	
TOTAL:	**820**

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	37
DIRECTED BY THE ENGINEER	
TOTAL:	**37**

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	37	74
DIRECTED BY THE ENGINEER		
TOTALS:	**37**	**74**

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

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

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	36	159
		QUANTITIES				

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

05-01-2024

STRUCTURES (BOX 1 OF 2)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	(CLASS III) 24"	(CLASS III) 36"	(CLASS IV) 24"	(CLASS V) 18"	(CLASS V) 36"	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	36"	DROP INLETS TYPE MO	TYPE SPECIAL	EXT. 4'	EXT. 8'	JUNCT. BOXES (TYPE E)	YARD DRAINS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.										EACH							EACH			LIN. FT.		CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
	SITE 1																												
100+40	CONST. JUNCTION BOX ON LT. AND PIPE OUTLET									108								1											FPC-9, PCC-1, PCM-1
100+67	CONST. JUNCTION BOX ON LT. AND PIPE OUTLET									38								1											FPC-9, PCC-1, PCM-1
100+70	CONST. DROP INLET ON LT. AND PIPE OUTLET									62					1														FPC-9E, FPC-9M, PCC-1, PCM-1
100+90	CONST. JUNCTION BOX ON RT. AND PIPE OUTLET									36								1											FPC-9, PCC-1, PCM-1
101+10	CONST. DROP INLET ON LT. AND PIPE OUTLET									46					1														FPC-9E, FPC-9M, PCC-1, PCM-1
101+20	CONST. DROP INLET ON RT. AND PIPE OUTLET									36					1														FPC-9E, FPC-9M, PCC-1, PCM-1
102+50	CONST. DROP INLET ON LT. W/ PIPE INLET W/FES AND PIPE OUTLET	8							136			1			1												8	0.10	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1
102+50	CONST. DROP INLET ON RT. AND PIPE OUTLET								126						1														FPC-9E, FPC-9M, PCC-1, PCM-1
104+10	CONST. DROP INLET ON RT. AND PIPE OUTLET								156						1														FPC-9E, FPC-9M, PCC-1, PCM-1
104+28	CONST. DROP INLET ON LT. W/ PIPE INLET W/FES AND PIPE OUTLET	8							174			1			1												8	0.10	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1
104+73	CONST. DROP INLET ON LT. AND PIPE OUTLET								42			1			1												5	0.06	FES-1, FES-2, FPC-9E, PCC-1
104+73	CONST. DROP INLET ON RT. AND PIPE OUTLET									60					1														FPC-9E, FPC-9M, PCC-1, PCM-1
105+18	CONST. DROP INLET ON LT. AND PIPE OUTLET								42						1														FPC-9E, FPC-9M, PCC-1, PCM-1
105+18	CONST. DROP INLET ON RT. AND PIPE OUTLET								40						1														FPC-9E, FPC-9M, PCC-1, PCM-1
106+60	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								140						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
106+60	CONST. DROP INLET ON LT. AND PIPE OUTLET							6											1										FPC-9
106+60	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								138						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
109+20	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								258						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
109+20	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								256						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
112+20	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								296						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
112+20	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								296						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
112+79	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								56						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
114+25	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								142						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
116+40	CONST. DROP INLET ON RT. W/EXT. W/PIPE INLET W/FES AND PIPE OUTLET W/FES		102										2		1			1									16	0.20	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
121+10	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET AND PIPE INLET W/FES	4							86			1			1		1										5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
122+00	CONST. DROP INLET ON RT. W/PIPE INLET W/FES AND PIPE OUTLET	6							166			1			1												5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
123+70	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								236						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
124+25	CONST. DROP INLET ON LT. W/EXT.															1	1												SPECIAL DETAIL
125+95	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								112						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
126+10	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								98						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
127+11	CONST. DROP INLET ON LT. AND PIPE OUTLET W/FES			10										1	1												17	0.21	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
127+11	CONST. DROP INLET ON RT. AND PIPE OUTLET						60								1														FPC-9E, FPC-9M, PCC-1
127+50	CONST. DROP INLET ON LT. AND PIPE OUTLET								36						1														FPC-9E, FPC-9M, PCC-1, PCM-1
127+50	CONST. DROP INLET ON RT. W/PIPE INLET W/FES AND PIPE OUTLET			4						34				1	1												17	0.21	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1
127+89	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								36						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
127+89	CONST. DROP INLET ON RT. AND PIPE OUTLET								36						1														FPC-9E, FPC-9M, PCC-1, PCM-1
128+85	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								92						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
130+70	CONST. DROP INLET ON LT. W/EXT. W/PIPE INLET W/FES AND PIPE OUTLET	4							278			1			1			1									5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1
131+55	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								266						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
132+45	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								172						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
137+00	CONST. DROP INLET ON LT. AND PIPE OUTLET								200						1														FPC-9E, FPC-9M, PCC-1, PCM-1
137+00	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								222						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
137+00	CONST. DROP INLET ON RT. AND PIPE OUTLET							6											1										FPC-9
139+00	CONST. DROP INLET ON LT. AND PIPE OUTLET								326						1														FPC-9E, FPC-9M, PCC-1, PCM-1
139+25	CONST. DROP INLET ON RT. AND PIPE OUTLET								196						1														FPC-9E, FPC-9M, PCC-1, PCM-1
141+25	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								272						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
141+25	CONST. DROP INLET ON RT. AND PIPE OUTLET							8											1										FPC-9
142+25	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								296						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
144+00	CONST. DROP INLET ON RT. W/EXT. W/PIPE INLET W/FES AND PIPE OUTLET	8							172			1			1			1									5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1
145+25	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								172						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
145+76	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								16						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
145+92	CONST. DROP INLET ON RT. AND PIPE OUTLET W/FES	24										1			1												5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
147+00	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								58						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
147+20	CONST. DROP INLET ON RT. AND PIPE OUTLET								38						1														FPC-9E, FPC-9M, PCC-1, PCM-1
147+61	CONST. DROP INLET ON LT. AND PIPE OUTLET								36						1														FPC-9E, FPC-9M, PCC-1, PCM-1
147+61	CONST. DROP INLET ON RT. W/PIPE INLET W/FES AND PIPE OUTLET		8							36			1		1												8	0.10	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1
148+00	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET W/FES		18										1		1		1										8	0.10	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
148+00	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET				60										1		1												FPC-9E, FPC-9M, PCC-1
151+00	CONST. DROP INLET ON LT. W/PIPE INLET W/FES AND PIPE OUTLET	48							296			1			1												5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1
151+00	CONST. DROP INLET ON RT. W/PIPE INLET W/FES AND PIPE OUTLET	48				60						1			1												5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
SUBTOTALS (BOX 1 OF 2):		**158**	**128**	**14**	**60**	**60**	**60**	**20**	**5620**	**1014**	**34**	**10**	**4**	**2**	**53**	**1**	**19**	**9**	**3**	**3**							**122**	**1.50**	

BASIS OF ESTIMATE:
WATER.....12.6GAL. / 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.

mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	37	159
		QUANTITIES				

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

05-01-2024

STRUCTURES (BOX 2 OF 2)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	(CLASS III) 24"	(CLASS III) 36"	(CLASS IV) 24"	(CLASS V) 18"	(CLASS V) 36"	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	36"	DROP INLETS TYPE MO	TYPE SPECIAL	EXT. 4'	EXT. 8'	JUNCT. BOXES (TYPE E)	YARD DRAINS	SPAN	HEIGHT	LENGTH	CLASS 3 CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.										EACH					EACH				LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
	SITE 2																													
201+15	CONST. JUNCTION BOX ON LT. W/PIPE INLET W/FES AND PIPE OUTLET	26							78			1							1								5	0.06	FES-1, FES-2, FPC-9, PCC-1, PCM-1
201+15	CONST. JUNCTION BOX ON RT. W/PIPE INLET W/FES AND PIPE OUTLET	6							30			1							1								5	0.06	FES-1, FES-2, FPC-9, PCC-1, PCM-1
201+48	CONST. JUNCTION BOX ON RT. W/PIPE INLET W/FES AND PIPE OUTLET	2								82		1							1								5	0.06	FES-1, FES-2, FPC-9, PCC-1, PCM-1
201+95	CONST. DROP INLET ON LT. AND PIPE OUTLET								34						1														FPC-9, PCC-1, PCM-1
202+32	CONST. DROP INLET ON LT. AND PIPE OUTLET								34						1														FPC-9E, FPC-9M, PCC-1, PCM-1
202+32	CONST. DROP INLET ON RT. AND PIPE OUTLET									34					1														FPC-9E, FPC-9M, PCC-1, PCM-1
202+70	CONST. DROP INLET ON LT. AND PIPE OUTLET								130						1														FPC-9E, FPC-9M, PCC-1, PCM-1
202+70	CONST. DROP INLET ON RT. AND PIPE OUTLET									132					1														FPC-9E, FPC-9M, PCC-1, PCM-1
204+05	CONST. DROP INLET ON LT. IN TOP OF BOX CULVERT														1														FPC-9E, FPC-9M
204+07	CONST. DROP INLET ON RT. IN TOP OF BOX CULVERT														1														FPC-9E, FPC-9M
204+07	EXTEND 8' x 4' x 34' R.C. BOX CULVERT																				8	4	37	25.01	3785	22	7	0.09	RCB-1, RCB-2, RCB-3, R-100X-0, W-X003-1, W-X152-1, WX15, R-115X-0
205+25	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								114						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
205+25	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								112						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
206+00	CONST. JUNCTION BOX ON RT. AND PIPE OUTLET								72										1										FPC-9, PCC-1, PCM-1
206+45	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET								116						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
207+07	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								108						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
208+38	CONST. DROP INLET ON LT. AND PIPE OUTLET								16						1														FPC-9E, FPC-9M, PCC-1, PCM-1
208+55	CONST. DROP INLET ON LT. AND PIPE OUTLET								16						1														FPC-9E, FPC-9M, PCC-1, PCM-1
208+74	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET					90									1		1												FPC-9E, FPC-9M, PCC-1
209+18	CONST. JUNCTION BOX ON RT. AND PIPE OUTLET								100										1										FPC-9E, FPC-9M, PCC-1, PCM-1
209+36	CONST. DROP INLET ON RT. AND PIPE OUTLET									36					1														FPC-9E, FPC-9M, PCC-1, PCM-1
210+01	CONST. DROP INLET ON RT. AND PIPE OUTLET									62					1														FPC-9E, FPC-9M, PCC-1, PCM-1
210+16	EXTEND 24" x 50' R.C. PIPE CULVERT				18																								FPC-9E, FPC-9M, PCC-1
210+31	CONST. DROP INLET ON LT. AND PIPE INLET W/FES		10									1			1												8	0.10	FES-1, FES-2, FPC-9, PCC-1
	SITE 1 - HWY.49																													
305+15	CONST. DROP INLET ON RT. AND PIPE OUTLET							12												1										FPC-9
305+25	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET W/FES	150										1			1		1										5	0.06	FES-1, FES-2, FPC-9, PCC-1
306+25	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								96						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
306+25	CONST. DROP INLET ON RT. AND PIPE OUTLET							10												1										FPC-9
306+35	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET W/FES		10									1			1			1									8	0.10	FES-1, FES-2, FPC-9, PCC-1
307+40	CONST. DROP INLET ON RT. AND PIPE OUTLET							12												1										FPC-9
307+50	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								122						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
309+35	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET									296					1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
309+35	CONST. DROP INLET ON LT. AND PIPE OUTLET							10												1										FPC-9
309+75	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								222						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
309+75	CONST. DROP INLET ON RT. AND PIPE OUTLET							6												1										FPC-9
310+80	CONST. DROP INLET ON LT. AND PIPE OUTLET									142					1														FPC-9E, FPC-9M, PCC-1, PCM-1
313+05	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								152						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
314+40	CONST. DROP INLET ON LT. W/EXT. AND PIPE OUTLET									272					1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
314+60	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET								106						1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
314+60	CONST. DROP INLET ON RT. AND PIPE OUTLET							8												1										FPC-9
315+70	CONST. DROP INLET ON RT. W/EXT. W/PIPE INLET AND PIPE OUTLET	18							82						1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
316+55	CONST. DROP INLET ON RT. W/EXT. AND PIPE OUTLET W/FES		82									1			1		1										8	0.10	FES-1, FES-2, FPC-9, PCC-1
316+55	CONST. DROP INLET ON RT. AND PIPE OUTLET							10												1										FPC-9
317+15	CONST. DROP INLET ON LT. W/EXT. AND PIPE OULTET W/FES		16									1			1			1										8	0.10	FES-1, FES-2, FPC-9, PCC-1
* ENTIRE PROJECT TO BE USED AS DIRECTED BY THE ENGINEER								600												6										FPC-9
SUBTOTALS (BOX 1 OF 2):		**158**	**128**	**14**	**60**	**60**	**60**	**20**	**5620**	**1014**	**34**	**10**	**4**	**2**	**53**	**1**	**19**	**9**	**3**	**3**								**122**	**1.5**	
SUBTOTALS (BOX 2 OF 2):		**202**	**118**		**18**	**90**		**668**	**1740**	**1056**		**4**	**4**		**30**		**10**	**7**	**5**	**13**				**25.01**	**3785**	**22**	**59**	**0.73**	
TOTALS:		**360**	**246**	**14**	**78**	**150**	**60**	**688**	**7360**	**2070**	**34**	**14**	**8**	**2**	**83**	**1**	**29**	**16**	**8**	**16**				**25.01**	**3785**	**22**	**181**	**2.23**	

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.

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

mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	38	159
		QUANTITIES				

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

05-01-2024

BASE AND SURFACING (BOX 1 OF 2)

STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE						AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						TOTAL GALLONS
				AVG. WID.	8" U.T.	AVG. WID.	6" U.T.	AVG. WID.	5" U.T.	TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			
												TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	
			FEET	FEET	SQ. YD.	FEET	SQ. YD.	FEET	SQ. YD.			FEET			FEET			
MAIN LANES																		
SITE 1																		
100+34.33	104+05.66	HWY. 351 N. - NOTCH, WIDEN, & OVERLAY SECTION	371.33	VAR.	114.71	VAR.	17.37			VAR.	642.45	VAR.	6311.52	315.58				315.58
104+05.66	151+14.00	HWY. 351 N. - NOTCH, WIDEN, & OVERLAY SECTION	4708.34							151.50	7133.14	124.00	64870.46	3243.52				3243.52
151+14.00	151+64.00	HWY. 351 N. - TRANSITION	50.00							VAR.	75.37				28.00	155.56	26.45	26.45
151+64.00	153+14.00	HWY. 351 N. - TRANSITION	150.00												28.00	466.67	79.33	79.33
SITE 2																		
200+11.00	201+11.00	HWY. 351 S. - TRANSITION	100.00	5.50	61.11	5.50	61.11					4.00	44.44	2.22	22.00	244.44	41.55	43.77
201+11.00	203+81.00	HWY. 351 S. - NOTCH, WIDEN, & OVERLAY SECTION	270.00	VAR.	90.01	VAR.	52.50					VAR.	907.23	45.36				45.36
203+81.00	204+62.97	HWY. 351 S. - NOTCH, WIDEN, & OVERLAY SECTION	81.97									47.00	428.07	21.40				21.40
204+62.97	207+90.03	HWY. 351 S. - NOTCH, WIDEN, & OVERLAY SECTION	327.06	VAR.	34.31	VAR.	11.53					VAR.	2634.55	131.73				131.73
208+56.82	210+84.68	PLEASANT GROVE RD. - NOTCH, WIDEN, & OVERLAY SECTION	227.86	VAR.	26.33	VAR.	10.73					VAR.	1963.34	98.17				98.17
210+84.68	211+44.00	PLEASANT GROVE RD. - NOTCH, WIDEN, & OVERLAY SECTION	59.32									47.00	309.78	15.49				15.49
211+44.00	212+74.00	PLEASANT GROVE RD. - NOTCH, WIDEN, & OVERLAY SECTION	130.00	VAR.	43.35	VAR.	25.28					VAR.	438.43	21.92				21.92
212+74.00	213+74.00	PLEASANT GROVE RD. - TRANSITION	100.00	3.00	33.33	3.00	33.33					4.00	44.44	2.22	22.00	244.44	41.55	43.77
SITE 1 - HWY. 49																		
302+92.91	303+67.91	HWY. 49 - TRANSITION	75.00												68.00	566.67	96.33	96.33
303+67.91	303+92.91	HWY. 49 - TRANSITION	25.00							VAR.	25.39				68.00	188.89	32.11	32.11
303+92.91	306+92.91	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	300.00	VAR.	100.00			VAR.	44.44			VAR.	3155.57	157.78				157.78
306+92.91	309+95.80	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	302.89									58.00	1951.96	97.60				97.60
309+95.80	311+51.80	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	156.00									70.00	1213.33	60.67				60.67
311+51.80	314+31.69	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	279.89									53.00	1648.24	82.41				82.41
314+31.69	314+80.00	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	48.31									58.00	311.33	15.57				15.57
314+80.00	317+80.00	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	300.00	VAR.	100.00			VAR.	44.44			VAR.	3155.57	157.78				157.78
317+80.00	318+05.00	HWY. 49 - TRANSITION	25.00							VAR.	25.39				68.00	188.89	32.11	32.11
318+05.00	318+80.00	HWY. 49 - TRANSITION	75.00												68.00	566.67	96.33	96.33
SITE 2 - HWY. 49																		
333+50.35	334+50.35	HWY. 49 - TRANSITION	100.00												56.00	622.22	105.78	105.78
334+50.35	335+30.59	HWY. 49 - NOTCH AND OVERLAY SECTION (LT.)	80.24	2.50	22.29													
335+30.59	336+64.57	HWY. 49 - OVERLAY SECTION	133.98															
336+64.57	337+36.43	HWY. 49 - NOTCH AND OVERLAY SECTION (RT.)	71.86	2.50	19.96													
337+36.43	338+36.43	HWY. 49 - TRANSITION	100.00												56.00	622.22	105.78	105.78
ADDITIONAL FOR LEVELING AND GRADE RAISE																		
100+34.33	101+49.00	HWY. 351 N. - LEVELING	114.67									VAR.	562.74	28.14	VAR.	697.59	118.59	146.73
101+49.00	102+50.00	HWY. 351 N. - GRADE RAISE	101.00									VAR.	523.27	26.16	VAR.	393.51	66.90	93.06
102+50.00	104+05.66	HWY. 351 N. - LEVELING	155.66									VAR.	394.96	19.75	VAR.	418.98	71.23	90.98
104+05.66	115+00.00	HWY. 351 N. - LEVELING	1094.34									22.00	2675.05	133.75	22.00	2675.05	454.76	588.51
115+00.00	124+00.00	HWY. 351 N. - GRADE RAISE	900.00									44.00	4400.00	220.00	22.00	2200.00	374.00	594.00
124+00.00	128+00.00	HWY. 351 N. - LEVELING	400.00									22.00	977.78	48.89	22.00	977.78	166.22	215.11
128+00.00	131+00.00	HWY. 351 N. - GRADE RAISE	300.00									44.00	1466.67	73.33	22.00	733.33	124.67	198.00
131+00.00	135+55.00	HWY. 351 N. - LEVELING	455.00									22.00	1112.22	55.61	22.00	1112.22	189.08	244.69
135+55.00	138+00.00	HWY. 351 N. - GRADE RAISE	245.00									44.00	1197.78	59.89	22.00	598.89	101.81	161.70
138+00.00	151+14.00	HWY. 351 N. - LEVELING	1314.00									22.00	3212.00	160.60	22.00	3212.00	546.04	706.64
201+11.00	202+00.00	HWY. 351 S. - LEVELING	89.00									22.00	217.56	10.88	22.00	217.56	36.99	47.87
202+00.00	206+00.00	HWY. 351 S. - GRADE RAISE	400.00									88.00	3911.11	195.56	22.00	977.78	166.22	361.78
206+00.00	207+90.03	HWY. 351 S. - GRADE RAISE	190.03									VAR.	3075.87	153.79	VAR.	1025.29	174.30	328.09
208+56.82	210+00.00	PLEASANT GROVE RD. - LEVELING	143.18									VAR.	1296.90	64.85	VAR.	648.45	110.24	175.09
210+00.00	212+74.00	PLEASANT GROVE RD. - LEVELING	274.00									22.00	669.78	33.49	22.00	669.78	113.86	147.35
303+92.91	312+00.00	HWY. 49 - LEVELING	807.09									56.00	5021.89	251.09	56.00	5021.89	853.72	1104.81
312+00.00	313+05.00	HWY. 49 - GRADE RAISE	105.00									280.00	3266.67	163.33	56.00	653.33	111.07	274.40
313+05.00	317+80.00	HWY. 49 - LEVELING	475.00									56.00	2955.56	147.78	56.00	2955.56	502.45	650.23
334+50.35	337+36.43	HWY. 49 - LEVELING	286.08									112.00	3560.11	178.01	56.00	1780.05	302.61	480.62
TOTALS:					**645.40**		**211.85**		**88.88**		**7901.74**		**129886.18**	**6494.32**		**30835.71**	**5242.08**	**11736.40**

BASIS OF ESTIMATE:
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	39	159
		QUANTITIES				

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

05-01-2024

BASE AND SURFACING (BOX 2 OF 2)

STATION	STATION	LOCATION	LENGTH	ACHM BASE COURSE (1 1/2")					ACHM BINDER COURSE (1")					ACHM SURFACE COURSE (1/2")										
				AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 70-22	TOTAL PG 64-22	TOTAL PG 70-22
			FEET	FEET			TON	TON	FEET			TON	TON	FEET			TON	TON	FEET			TON	TON	TON	TON
MAIN LANES																								
100+34.33	104+05.56	HWY. 351 N. - NOTCH, WIDEN, & OVERLAY SECTION	371.33						VAR.	1695.96	660.00	559.67		VAR.	2902.23	220.00	319.25		VAR.	2902.23	220.00	319.25		638.50	
104+05.66	151+14.00	HWY. 351 N. - NOTCH, WIDEN, & OVERLAY SECTION	4708.34						34.00	17787.06	660.00	5869.73		56.00	29296.34	220.00	3222.60		56.00	29296.34	220.00	3222.60		6445.20	
151+14.00	151+64.00	HWY. 351 N. - TRANSITION	50.00											28.00	155.56	220.00	17.11		28.00	155.56	220.00	17.11		34.22	
151+64.00	153+14.00	HWY. 351 N. - TRANSITION	150.00											28.00	466.67	220.00	51.33		28.00	466.67	220.00	51.33		102.66	
200+11.00	201+11.00	HWY. 351 S. - TRANSITION	100.00																26.00	288.89	220.00	31.78		31.78	
201+11.00	203+81.90	HWY. 351 S. - NOTCH, WIDEN, & OVERLAY SECTION	270.00	VAR.	359.84	550.00	98.96		VAR.	247.39	440.00	54.43		VAR.	247.39	220.00	27.21		VAR.	960.00	220.00	105.60		132.81	
203+81.00	204+62.97	HWY. 351 S. - NOTCH, WIDEN, & OVERLAY SECTION	81.97	19.00	173.05	550.00	47.59		14.00	127.51	440.00	28.05		14.00	127.51	220.00	14.03		36.00	327.88	220.00	36.07		50.10	
204+62.97	207+90.03	HWY. 351 S. - NOTCH, WIDEN, & OVERLAY SECTION	327.06	VAR.	1002.98	550.00	275.82		VAR.	827.96	440.00	182.15		VAR.	827.96	220.00	91.08		VAR.	2173.95	220.00	239.13		330.21	
208+56.82	210+84.68	PLEASANT GROVE RD. - NOTCH, WIDEN, & OVERLAY SECTON	227.86	VAR.	762.40	550.00	209.66		VAR.	634.11	440.00	139.50		VAR.	634.11	220.00	69.75		VAR.	1434.94	220.00	157.84		227.59	
210+84.68	211+44.00	PLEASANT GROVE RD. - NOTCH, WIDEN, & OVERLAY SECTON	59.32	19.00	125.23	550.00	34.44		14.00	92.28	440.00	20.30		14.00	92.28	220.00	10.15		36.00	237.28	220.00	26.10		36.25	
211+44.00	212+74.00	PLEASANT GROVE RD. - NOTCH, WIDEN, & OVERLAY SECTON	130.00	VAR.	174.24	550.00	47.92		VAR.	119.75	440.00	26.35		VAR.	119.75	220.00	13.17		VAR.	462.22	220.00	50.84		64.01	
212+74.00	213+74.00	PLEASANT GROVE RD. - TRANSITION	100.00																26.00	288.89	220.00	31.78		31.78	
302+92.91	303+67.91	HWY. 49 - TRANSITION	75.00																68.00	566.67	220.00		62.33		62.33
303+67.91	303+92.91	HWY. 49 - TRANSITION	25.00																VAR.	773.61	220.00		85.10		85.10
303+92.91	306+92.91	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	300.00	VAR.	366.67	880.00		161.33	VAR.	255.56	330.00		42.17	VAR.	255.56	220.00		28.11	VAR.	2166.67	220.00		238.33		266.44
306+92.91	309+95.80	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	302.89	17.00	572.13	880.00		251.74	12.00	403.85	330.00		66.64	12.00	403.85	220.00		44.42	68.00	2288.50	220.00		251.74		296.16
309+95.80	311+51.80	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	156.00	20.00	346.67	880.00		152.53	15.00	260.00	330.00		42.90	15.00	260.00	220.00		28.60	71.00	1230.67	220.00		135.37		163.97
311+51.80	314+31.59	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	279.89	14.50	450.93	880.00		198.41	12.00	373.19	330.00		61.58	12.00	373.19	220.00		41.05	68.00	2114.72	220.00		232.62		273.67
314+31.69	314+80.00	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	48.31	17.00	91.25	880.00		40.15	12.00	64.41	330.00		10.63	12.00	64.41	220.00		7.09	68.00	365.01	220.00		40.15		47.24
314+80.00	317+80.00	HWY. 49 - NOTCH, WIDEN, & OVERLAY SECTION	300.00	VAR.	366.67	880.00		161.33	VAR.	255.56	330.00		42.17	VAR.	255.56	220.00		28.11	VAR.	2166.67	220.00		238.33		266.44
317+80.00	318+05.00	HWY. 49 - TRANSITION	25.00																VAR.	773.61	220.00		85.10		85.10
318+05.00	318+80.00	HWY. 49 - TRANSITION	75.00																68.00	566.67	220.00		62.33		62.33
333+50.35	334+50.35	HWY. 49 - TRANSITION	100.00																56.00	622.22	220.00		68.44		68.44
334+50.35	335+30.59	HWY. 49 - NOTCH AND OVERLAY SECTION (LT.)	80.24																56.00	499.27	220.00		54.92		54.92
335+30.59	336+64.57	HWY. 49 - OVERLAY SECTION	133.98																56.00	833.65	220.00		91.70		91.70
336+64.57	337+36.43	HWY. 49 - NOTCH AND OVERLAY SECTION (RT.)	71.86																56.00	447.13	220.00		49.18		49.18
337+36.43	338+36.43	HWY. 49 - TRANSITION	100.00																56.00	622.22	220.00		68.44		68.44
ADDITIONAL FOR LEVELING AND GRADE RAISE																									
100+34.33	101+49.00	HWY. 351 N. - LEVELING	114.67											VAR.	697.59	VAR.	79.23							79.23	
101+49.00	102+50.00	HWY. 351 N. - GRADE RAISE	101.00						VAR.	393.51	VAR.	200.28													
102+50.00	104+05.66	HWY. 351 N. - LEVELING	155.66											VAR.	418.98	VAR.	102.67							102.67	
104+05.66	115+00.00	HWY. 351 N. - LEVELING	1094.34											22.00	2675.05	VAR.	364.59							364.59	
115+00.00	124+00.00	HWY. 351 N. - GRADE RAISE	900.00						22.00	2200.00	VAR.	1044.33													
124+00.00	128+00.00	HWY. 351 N. - LEVELING	400.00											22.00	977.78	VAR.	122.00							122.00	
128+00.00	131+00.00	HWY. 351 N. - GRADE RAISE	300.00						22.00	733.33	VAR.	312.23													
131+00.00	135+55.00	HWY. 351 N. - LEVELING	455.00											22.00	1112.22	VAR.	100.75							100.75	
135+55.00	138+00.00	HWY. 351 N. - GRADE RAISE	245.00						22.00	598.89	VAR.	207.14													
138+00.00	151+14.00	HWY. 351 N. - LEVELING	1314.00											22.00	3212.00	VAR.	399.51							399.51	
201+11.00	202+00.00	HWY. 351 S. - LEVELING	89.00											22.00	217.56	VAR.	30.34							30.34	
202+00.00	206+00.00	HWY. 351 S. - GRADE RAISE	400.00	22.00	977.78	VAR.	440.48		22.00	977.78	440.00	215.11		22.00	977.78	220.00	107.56							107.56	
206+00.00	207+90.03	HWY. 351 S. - GRADE RAISE	190.03	VAR.	1025.29	VAR.	230.44		VAR.	1025.29	440.00	225.56		VAR.	1025.29	220.00	112.78							112.78	
208+56.82	210+00.00	PLEASANT GROVE RD. - LEVELING	143.18											VAR.	648.45	VAR.	153.35							153.35	
210+00.00	212+74.00	PLEASANT GROVE RD. - LEVELING	274.00											22.00	669.78	VAR.	100.10							100.10	
303+92.91	312+00.00	HWY. 49 - LEVELING	807.09											56.00	5021.89	VAR.		534.80							534.80
312+00.00	313+05.00	HWY. 49 - GRADE RAISE	105.00	56.00	653.33	VAR.		411.76	56.00	653.33	330.00		107.80	56.00	653.33	220.00		71.87							71.87
313+05.00	317+80.00	HWY. 49 - LEVELING	475.00											56.00	2955.56	VAR.		472.31							472.31
334+50.35	337+36.43	HWY. 49 - LEVELING	286.08											56.00	1780.05	VAR.		522.70							522.70
TOTALS:					**7448.46**		**1385.31**	**1377.25**		**29726.72**		**9084.83**	**373.89**		**59525.68**		**5508.56**	**1779.06**		**55032.14**		**4289.43**	**1764.08**	**9797.99**	**3543.14**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2") (PG 64-22).....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1") (PG 64-22).....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2") (PG 64-22).....96.3% MIN. AGGR.....3.7% ASPHALT BINDER

ACHM SURFACE COURSE (1/2") (PG 70-22).....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1") (PG 70-22).....96.0% MIN. AGGR.....4.0% ASPHALT BINDER
ACHM BASE COURSE (1 1/2") (PG 70-22).....96.1% MIN. AGGR.....3.9% ASPHALT BINDER

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QUANTITIES

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	40	159
		SUMMARY OF QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

SUMMARY OF QUANTITIES (BOX 1 OF 2)

	ITEM NUMBER	ITEM		QUANTITY	UNIT
	201	CLEARING		24	STATION
	201	GRUBBING		24	STATION
	202	REMOVAL AND DISPOSAL OF CURB AND GUTTER		3090	LIN. FT.
	202	REMOVAL AND DISPOSAL OF FENCE		1263	LIN. FT.
	202	REMOVAL AND DISPOSAL OF RETAINING WALLS		75	LIN. FT.
	202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS		282	SQ. YD.
	202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		4230	SQ. YD.
	202	REMOVAL AND DISPOSAL OF WALKS		45	SQ. YD.
	202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		8	EACH
	202	REMOVAL AND DISPOSAL OF JUNCTION BOXES		3	EACH
	202	REMOVAL AND DISPOSAL OF DROP INLETS		2	EACH
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		35	EACH
	202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING		136	SQ. YD.
	202	REMOVAL AND DISPOSAL OF SIGNS		8	EACH
	202	REMOVAL AND DISPOSAL OF PLANTERS		2	EACH
	202	REMOVAL AND DISPOSAL OF FLAG POLE		3	EACH
	202	REMOVAL AND DISPOSAL OF LIGHT POLE		3	EACH
	SP, SS, & 210	UNCLASSIFIED EXCAVATION		5181	CU. YD.
	SP & 210	COMPACTED EMBANKMENT		22901	CU. YD.
	SP & 210	SOIL STABILIZATION		100	TON
	SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)		9767	TON
	SP, SS, & 309	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS)		89	SQ. YD.
	SP, SS, & 309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)		212	SQ. YD.
	SP, SS, & 309	PORTLAND CEMENT CONCRETE BASE (8" UNIFORM THICKNESS)		645	SQ. YD.
	SS & 401	TACK COAT		11810	GAL.
	SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		2658	TON
	SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")		51	TON
	SP, SS, & 405	ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2")		54	TON
	SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		9062	TON
	SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		382	TON
	SP, SS, & 406	ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1")		15	TON
	SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		12939	TON
	SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		569	TON
	SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		198	TON
	SP & 412	COLD MILLING ASPHALT PAVEMENT		3867	SQ. YD.
	SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		37	TON
	SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		37	TON
	SP, SS, & 505	PORTLAND CEMENT CONCRETE DRIVEWAY		2332.84	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		771	SQ. FT.
	SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE		25	EACH
	SS & 604	TRAFFIC DRUMS		117	EACH
	SS & 604	TRAFFIC CONE		190	EACH
	SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		240	LIN. FT.
	SS & 604	RELOCATING PRECAST CONCRETE BARRIER		120	LIN. FT.
	604	CONSTRUCTION PAVEMENT MARKINGS		31663	LIN. FT.
	604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)		5	EACH
	604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)		10	EACH
	SP, SS, & 604	PORTABLE CHANGEABLE MESSAGE SIGN		65	WEEK
	SS & 604	VERTICAL PANELS		202	EACH
	SS & 605	CONCRETE DITCH PAVING (TYPE B)		154	SQ. YD.
	SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		360	LIN. FT.
*	SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	7360	LIN. FT.
*	SS & 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	7360	LIN. FT.
	SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		150	LIN. FT.
	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		246	LIN. FT.
*	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	2070	LIN. FT.
*	SS & 606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	2070	LIN. FT.
	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		78	LIN. FT.
	SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		14	LIN. FT.
*	SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	34	LIN. FT.
*	SS & 606	36" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	34	LIN. FT.
	SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		60	LIN. FT.
	SS & 606	12" SIDE DRAIN		688	LIN. FT.
	SP, SS, & 606	18" SIDE DRAIN		84	LIN. FT.
	SS & 606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PPE CULVERTS		14	EACH
	SS & 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PPE CULVERTS		8	EACH
	SS & 606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PPE CULVERTS		2	EACH
	SS & 606	SELECTED PIPE BEDDING		820	CU. YD.
	SS & 609	DROP INLETS (TYPE MO)		83	EACH
	SS & 609	DROP INLETS (TYPE SPECIAL)		1	EACH
	SS & 609	JUNCTION BOXES (TYPE E)		8	EACH
	SS & 609	DROP INLET EXTENSIONS (4')		29	EACH
	SS & 609	DROP INLET EXTENSIONS (8')		16	EACH
	SS & 609	YARD DRAINS		16	EACH
	SS & 611	4" PIPE UNDERDRAINS		4000	LIN. FT.
	SS & 615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)		125	TON
	SS & 619	WIRE FENCE (TYPE D-1)		1176	LIN. FT.
	620	LIME		7	TON
	620	SEEDING		3.38	ACRE
	SS & 620	MULCH COVER		12.49	ACRE
	620	WATER		583.4	M. GAL.
	621	TEMPORARY SEEDING		9.11	ACRE
	621	SILT FENCE		7834	LIN. FT.
	621	SAND BAG DITCH CHECKS		3768	BAG
	621	SEDIMENT REMOVAL AND DISPOSAL		494	CU. YD.
	SS & 621	FILTER SOCK (12")		888	LIN. FT.
	623	SECOND SEEDING APPLICATION		3.38	ACRE
	624	SOLID SODDING		4185	SQ. YD.
	SP, SS, & 632	CONCRETE ISLAND		1033	SQ. YD.

* DENOTES ALTERNATE BID ITEMS.

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SUMMARY OF QUANTITIES

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	41	159
		SUMMARY OF QUANTITIES & REVISIONS				

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP, SS, & 633	CONCRETE WALKS	6098	SQ. YD.
SP, SS, & 633	CONCRETE WALKS (TYPE SPECIAL)	134	SQ. YD.
SP, SS, & 633	HAND RAILING	158	LIN. FT.
SS & 634	CONCRETE CURB (TYPE D)	25	LIN. FT.
SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	15406	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	5	EACH
637	MAILBOX SUPPORTS (SINGLE)	5	EACH
SP, SS, & 641	WHEELCHAIR RAMPS (TYPE 2)	21	SQ. YD.
SP, SS, & 641	WHEELCHAIR RAMPS (TYPE 3)	124	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	5	EACH
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	5	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)	364	LIN. FT.
SP	CELLULAR MODEM	1	EACH
SP	ANTENNA SUPPORT (SHOE BASE, 35' HT.)	1	EACH
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	4	EACH
SP	BATTERY BACKUP SYSTEM	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	46	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	13	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	2	EACH
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	4	EACH
SP & 707	CENTRAL CONTROL UNIT	3	EACH
SP & 707	POLE MOUNTED ASSEMBLY	15	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	16	EACH
708	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.)	1945	LIN. FT.
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	5285	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	2052	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	480	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	1549	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	1974	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	765	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	267	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	2785	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	100	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	140	LIN. FT.
710	NON-METALLIC CONDUIT (2")	170	LIN. FT.
710	NON-METALLIC CONDUIT (3")	1670	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 1)	1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2)	3	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3)	1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	11	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	4	EACH
SS & 713	SPAN WIRE ASSEMBLY	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (30')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38')	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	14	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	8	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	3	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
716	TREATED WOOD POLE (CLASS 1, 45')	2	EACH
716	TREATED WOOD POLE (CLASS 2, 45')	4	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	375	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	550	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	8246	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	4135	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	1577	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	14366	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	27	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	39	EACH
SP & 719	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)	35	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	297	EACH
SP	18" STREET NAME SIGN	13	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	1	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	1	EACH
733	VIDEO DETECTOR RELOCATION	1	EACH
SP	VIDEO DETECTOR ROTATION	1	EACH
SP & 733	VIDEO DETECTOR (IP)	28	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	5938	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	5	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	8	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	22	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	25	CU. YD.
SP	ARCHITECTURAL FINISH	335	SQ. FT.
SP	TEXTURED COATING FINISH	46	SQ. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	3785	POUND

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

06-11-2024

REVISIONS

DATE	REVISION	SHEET NUMBER
6/4/2024	A DRIVEWAY WAS ADDED AT HWY. 351 S. STA. 206+60 RT. A SHARED DRIVEWAY PREVIOUSLY AT HWY. 49 STA. 337+52 RT. WAS REVISED TO TWO INDIVIDUAL DRIVEWAYS AT STA. 337+00 AND 337+68 TO SERVE THEIR RESPECTIVE TRACTS. REMOVED THE OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS, SPECIAL CLEARING REQUIREMENTS, AND SPECIAL CLEARING PUP SEASON SPECIAL PROVISIONS. ADDED THE SS-102-3 PREQUALIFICATION OF BIDDERS SUPPLEMENTAL SPECIFICATION. THE SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT SPECIAL PROVISION WAS CHANGED TO THE PROSECUTION VERSION.	3, 13, 16, 19, 24, 27, 30-35, 40-41, 57, 59, 84-87, 150, & 158-159

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	42	159
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

SURVEY CONTROL COORDINATES

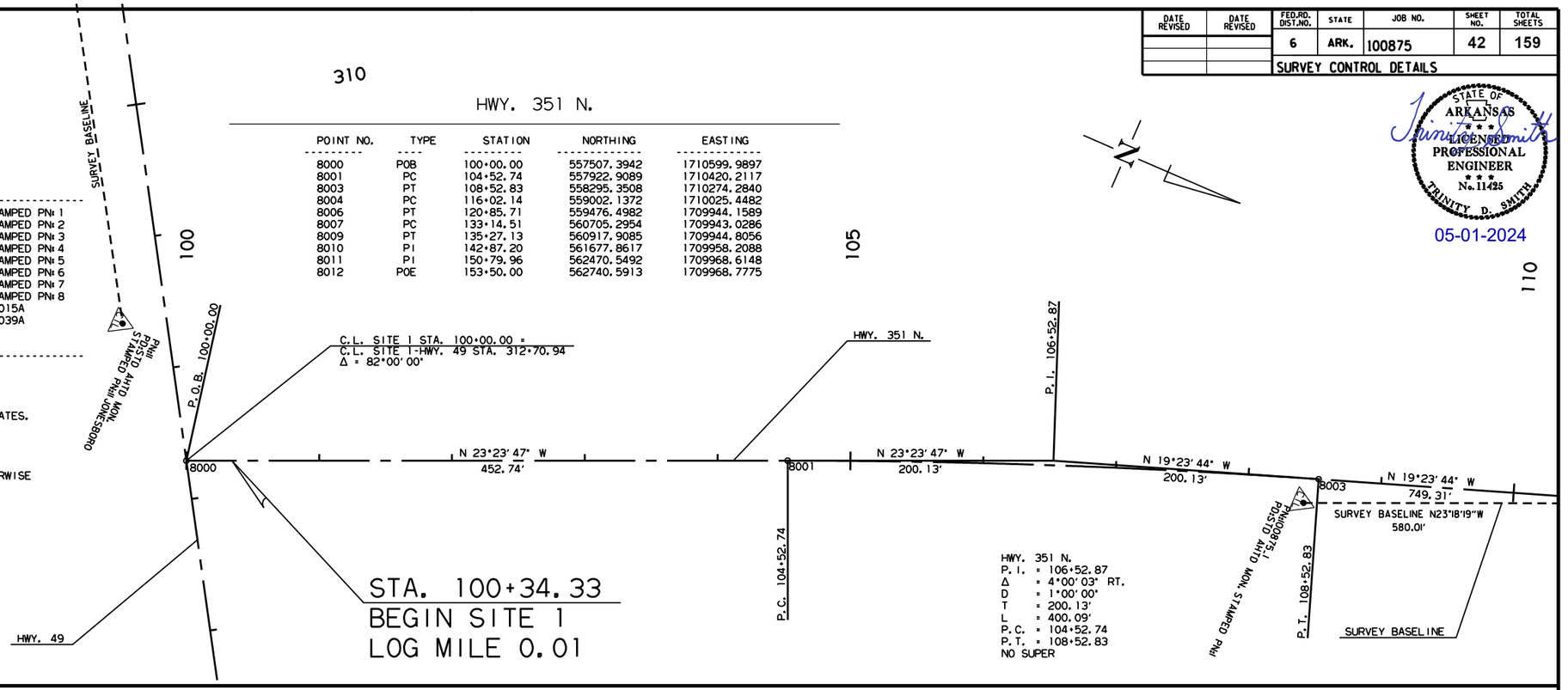
Project Name: s100875
Date: 5/31/2017
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
100875 1	558292.0275	1710295.1949	346.063	CTL	STD AHTD MON. STAMPED PN: 1
100875 2	558824.7175	1710065.7249	353.343	CTL	STD AHTD MON. STAMPED PN: 2
100875 3	559318.5873	1709928.5240	369.232	CTL	STD AHTD MON. STAMPED PN: 3
100875 4	560047.9792	1709901.1172	345.090	CTL	STD AHTD MON. STAMPED PN: 4
100875 5	560819.3831	1709961.7022	363.770	CTL	STD AHTD MON. STAMPED PN: 5
100875 6	561542.4842	1709974.7020	356.372	CTL	STD AHTD MON. STAMPED PN: 6
100875 7	561965.2351	1709984.2296	340.083	CTL	STD AHTD MON. STAMPED PN: 7
100875 8	562576.8688	1709985.9267	344.756	CTL	STD AHTD MON. STAMPED PN: 8
100875 100	555942.5248	1707893.4626	309.119	GPS	AHTD GPS MON 160015A
100875 101	560054.6295	1719959.1035	274.990	GPS	AHTD GPS MON 160039A
100875 990	560637.4072	1709979.9774	361.230	BM	NGS BM K 331

*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).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.999934954 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 s100875gi.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: 160015A - 160039
CONVERGENCE ANGLE: 00-46-50 RIGHT AT LT: 35-51-22.76 LG: 090-39-30.36
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.



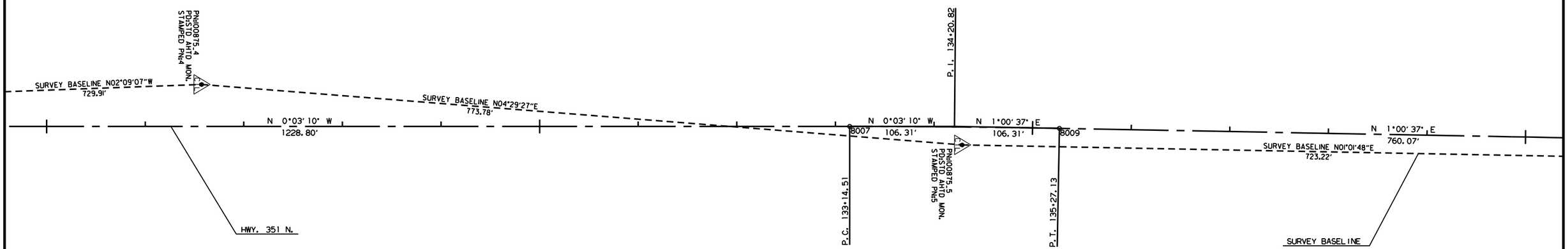
SITE 1
SURVEY CONTROL DETAILS

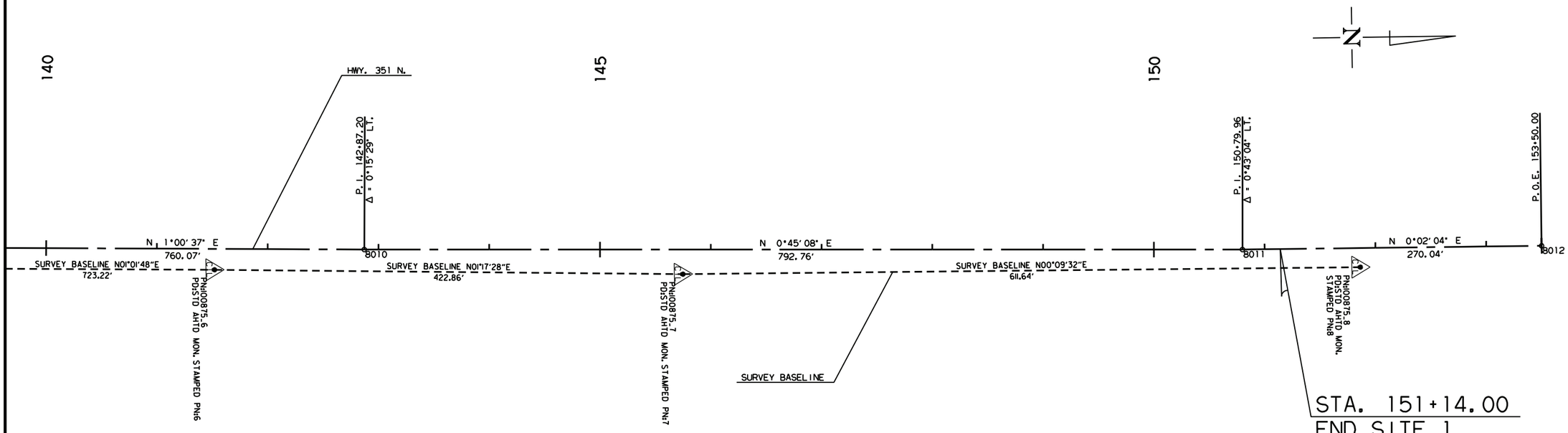
mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	43	159
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

HWY. 351 N.
P.I. = 134+20.82
Δ = 1°03'47" RT.
D = 0°30'00"
T = 106.31'
L = 212.62'
P.C. = 133+14.51
P.T. = 135+27.13
NO SUPER





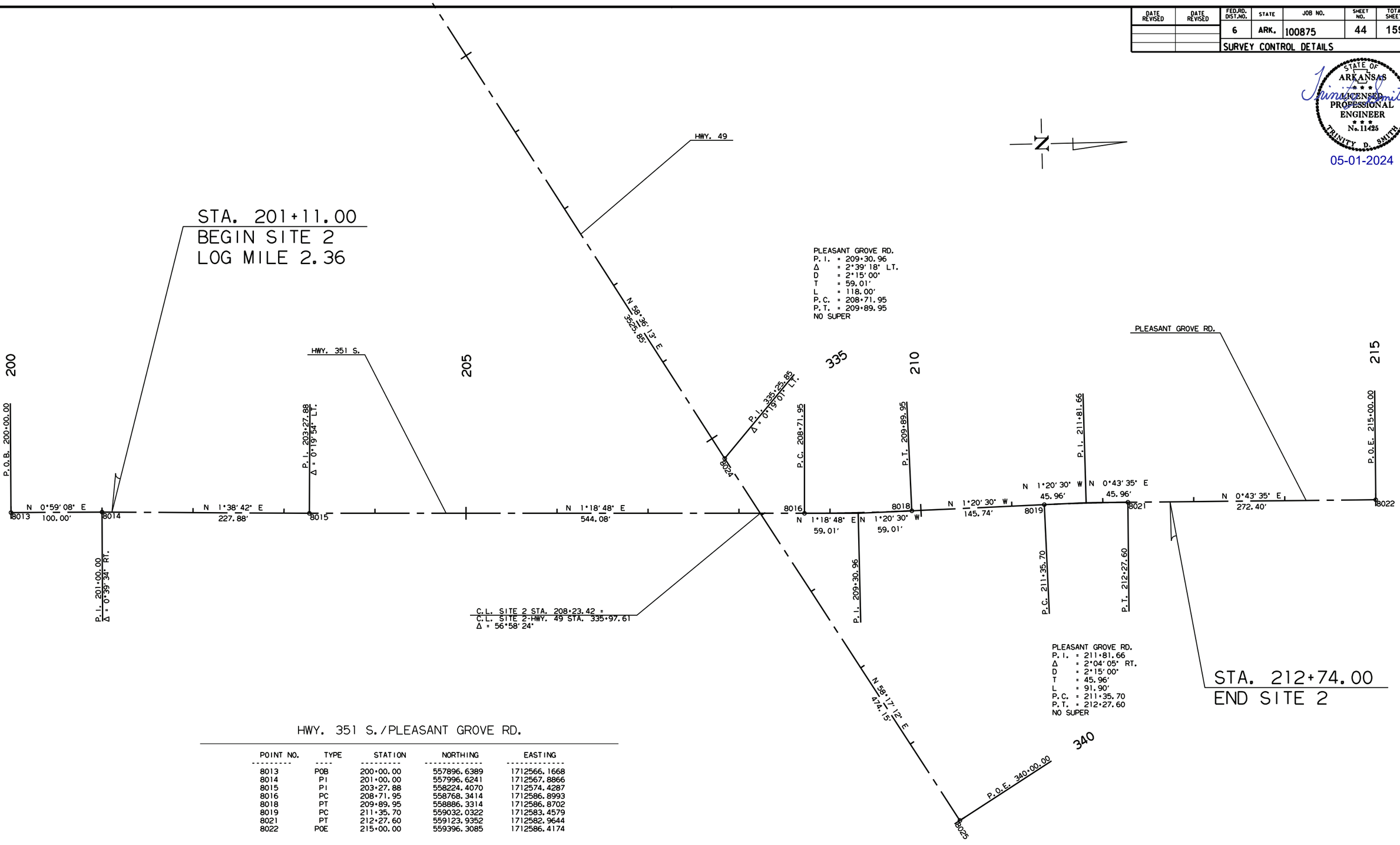
SITE 1
SURVEY CONTROL DETAILS

mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	44	159
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36



PLEASANT GROVE RD.
P.I. = 209+30.96
Δ = 2°39'18" LT.
D = 2°15'00"
T = 59.01'
L = 118.00'
P.C. = 208+71.95
P.T. = 209+89.95
NO SUPER

PLEASANT GROVE RD.
P.I. = 211+81.66
Δ = 2°04'05" RT.
D = 2°15'00"
T = 45.96'
L = 91.90'
P.C. = 211+35.70
P.T. = 212+27.60
NO SUPER

STA. 212+74.00
END SITE 2

HWY. 351 S./PLEASANT GROVE RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8013	POB	200+00.00	557896.6389	1712566.1668
8014	PI	201+00.00	557996.6241	1712567.8866
8015	PI	203+27.88	558224.4070	1712574.4287
8016	PC	208+71.95	558768.3414	1712586.8993
8018	PT	209+89.95	558886.3314	1712586.8702
8019	PC	211+35.70	559032.0322	1712583.4579
8021	PT	212+27.60	559123.9352	1712582.9644
8022	POE	215+00.00	559396.3085	1712586.4174

mh39735 3/16/2023
R100875.DGN

SITE 2
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	45	159
		SURVEY CONTROL DETAILS				

SURVEY CONTROL COORDINATES

Project Name: s100882
Date: 8/11/2016
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL.
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

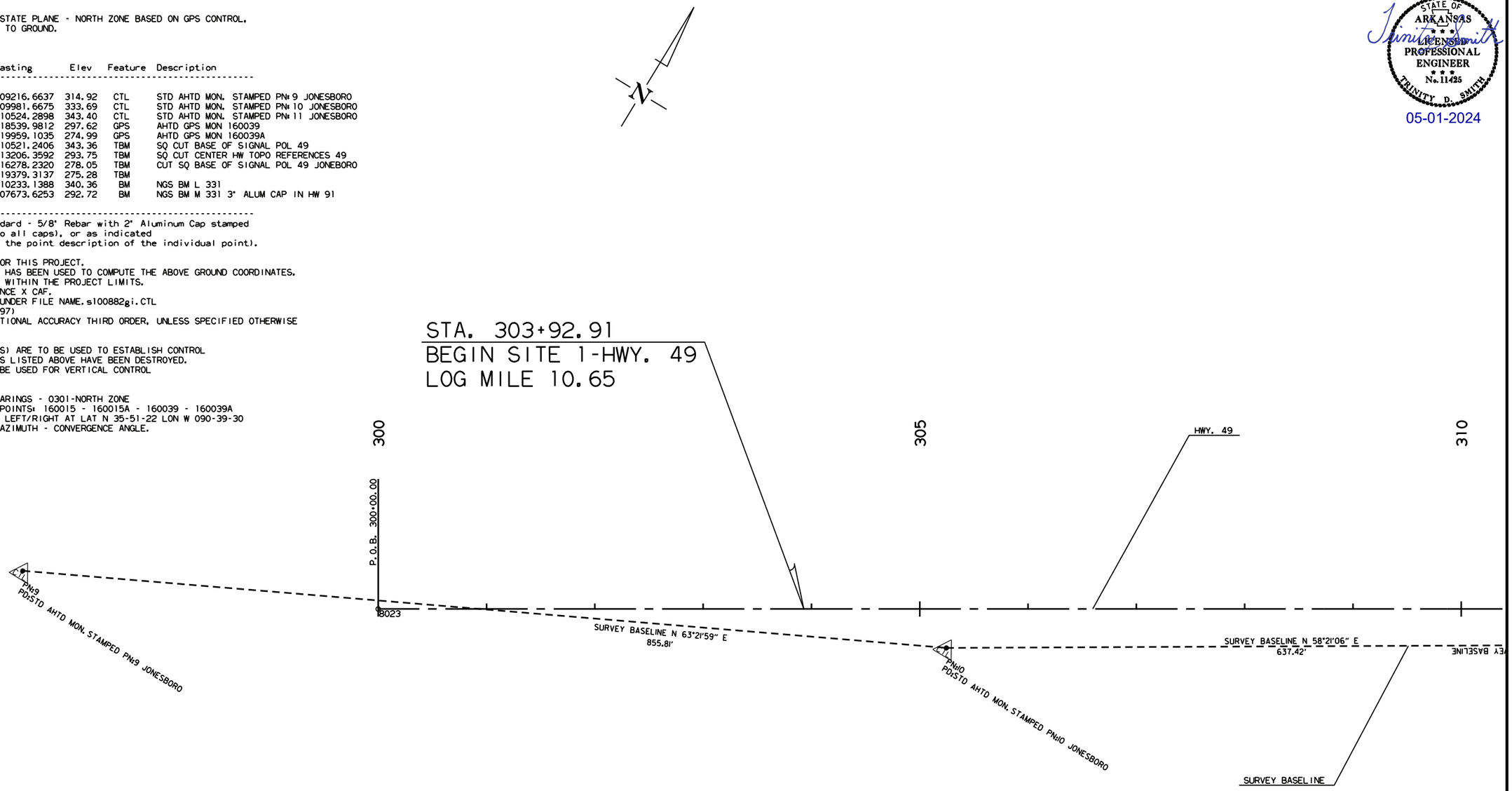
Point Name	Northing	Easting	Elev	Feature	Description
9	556704.3515	1709216.6637	314.92	CTL	STD AHTD MON. STAMPED PN:9 JONESBORO
10	557087.9983	1709981.6675	333.69	CTL	STD AHTD MON. STAMPED PN:10 JONESBORO
11	557422.4526	1710524.2898	343.40	CTL	STD AHTD MON. STAMPED PN:11 JONESBORO
102	560026.1965	1718539.9812	297.62	GPS	AHTD GPS MON 160039
100875.101	560054.6295	1719959.1035	274.99	GPS	AHTD GPS MON 160039A
902	557516.4886	1710521.2406	343.36	TBM	SQ CUT BASE OF SIGNAL POL 49
903	559143.5139	1713206.3592	293.75	TBM	SQ CUT CENTER HW TOPO REFERENCES 49
904	560104.0102	1716278.2320	278.05	TBM	CUT SQ BASE OF SIGNAL POL 49 JONEBORO
905	560130.8082	1719379.3137	275.28	TBM	
994	557223.7247	1710233.1388	340.36	BM	NGS BM L 331
995	555659.2397	1707673.6253	292.72	BM	NGS BM M 331 3" ALUM CAP IN HW 91

*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 0.999934954 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. s100882gi.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: 160015 - 160015A - 160039 - 160039A
CONVERGENCE ANGLE: 0-99-99.9 LEFT/RIGHT AT LAT N 35-51-22 LON W 090-39-30
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024



HWY. 49

POINT NO.	TYPE	STATION	NORTHING	EASTING
8023	POB	300+00.00	556845.2905	1709515.1350
8024	PI	335+25.85	558682.0994	1712524.7400
8025	POE	340+00.00	558931.3478	1712928.0976

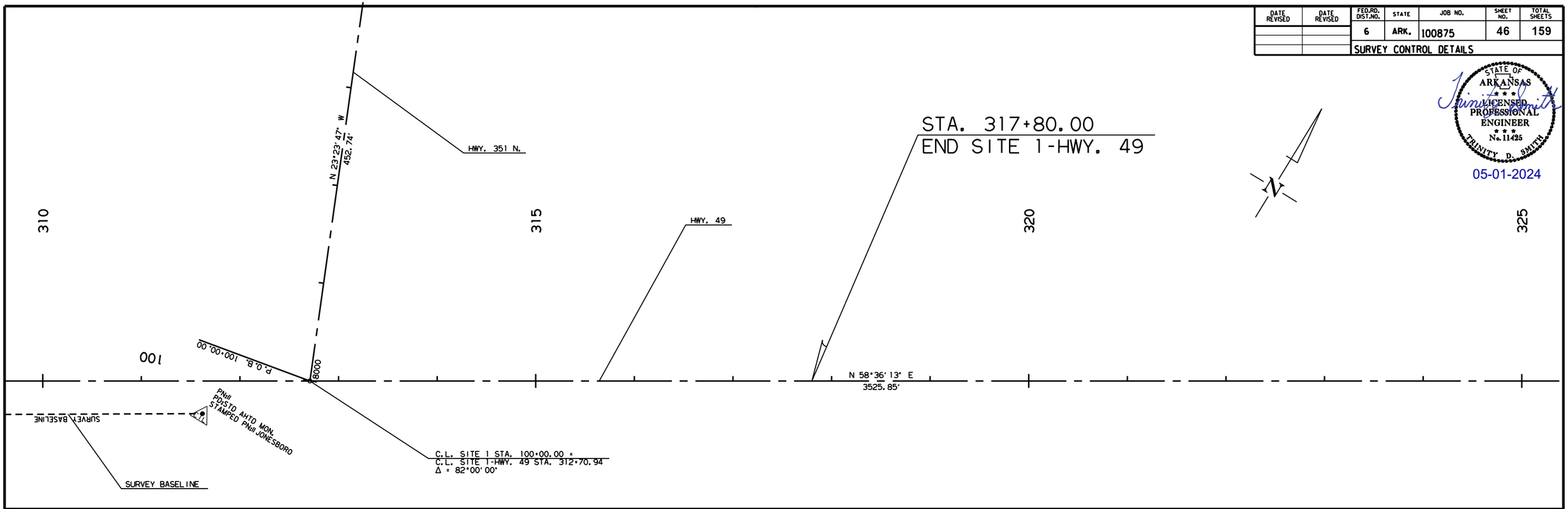
mn39735 3/16/2023
R100875.DGN

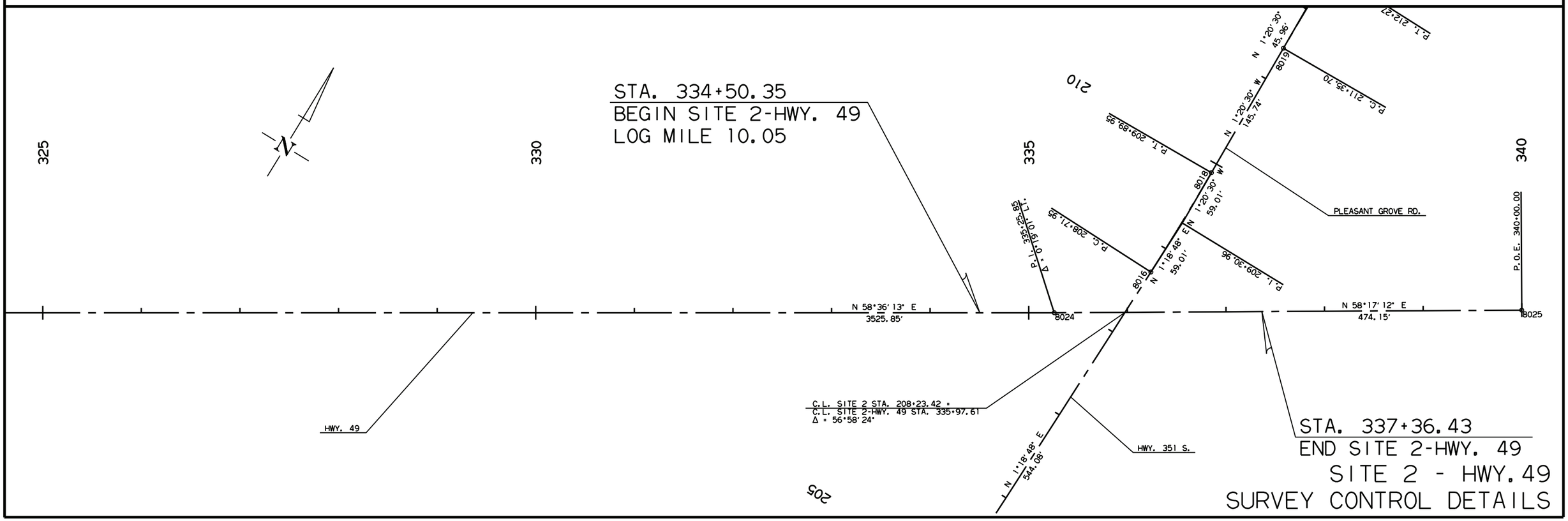
SITE 1 - HWY. 49
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	46	159

SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024





mh39735 3/16/2023
R100875.DGN

SITE 2 - HWY. 49
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	47	159
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STA. 100+40 CONSTRUCT
JUNCTION BOX ON LT.
AND 24" X 108' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 310+80
JUNCTION BOX H = 6'-6"
TYPE E JUNCTION BOX = 3' X 3'
24" R.C. PIPE = 108 LIN. FT.
24" SLPCCS PIPE = 108 LIN. FT.

STA. 100+67 CONSTRUCT
JUNCTION BOX ON LT.
AND 24" X 38' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 100+40
JUNCTION BOX H = 6'-4"
TYPE E JUNCTION BOX = 3' X 3'
24" R.C. PIPE = 38 LIN. FT.
24" SLPCCS PIPE = 38 LIN. FT.

STA. 101+10 CONSTRUCT
DROP INLET ON LT.
AND 24" X 46' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 100+67
DROP INLET H = 6'-6"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 46 LIN. FT.
24" SLPCCS PIPE = 46 LIN. FT.

STA. 102+50 CONSTRUCT
DROP INLET ON LT.
AND 18" X 8' PIPE INLET WITH F.E.S.
AND 24" X 136' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 101+10
DROP INLET H = 6'-5"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 136 LIN. FT.
24" SLPCCS PIPE = 136 LIN. FT.

STA. 103+73 IN PLACE
18" X 45' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 15 CU. YD.

STA. 104+28 CONSTRUCT
DROP INLET ON LT.
AND 18" X 8' PIPE INLET WITH F.E.S.
AND 24" X 174' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 102+50
DROP INLET H = 3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 174 LIN. FT.
24" SLPCCS PIPE = 174 LIN. FT.

STA. 104+73 CONSTRUCT
DROP INLET ON LT.
AND 18" X 42' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 104+28
DROP INLET H = 3'-3"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 48 LIN. FT.
18" SLPCCS PIPE = 42 LIN. FT.
18" F.E.S. = 1 EACH
Q50 = 2 CFS, D.A. = 1 ACRES

STA. 105+18 CONSTRUCT
DROP INLET ON LT.
AND 18" X 42' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 104+73
DROP INLET H = 3'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 42 LIN. FT.
18" SLPCCS PIPE = 42 LIN. FT.

STA. 106+34 IN PLACE
18" X 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 106+60 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 140' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 105+18
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 140 LIN. FT.
18" SLPCCS PIPE = 140 LIN. FT.

STA. 108+34 IN PLACE
18" X 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 5 CU. YD. UNCL. EXC.

STA. 106+60 CONSTRUCT
DROP INLET ON LT.
AND 12" X 6' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 106+60
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 6 LIN. FT.

STA. 109+20 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 258' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 106+60
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 258 LIN. FT.
18" SLPCCS PIPE = 258 LIN. FT.

STA. 100+53 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.5 SQ. YDS.

STA. 100+60 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 4.0 SQ. YDS.

STA. 100+60 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.3 SQ. YDS.

STA. 100+78 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.3 SQ. YDS.

STA. 113+53 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 5.4 SQ. YDS.

STA. 114+41 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 5.4 SQ. YDS.

STA. 112+20 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 4' PIPE INLET WITH F.E.S
AND 18" X 296' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 109+20
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 296 LIN. FT.
18" SLPCCS PIPE = 296 LIN. FT.

STA. 113+97 CONSTRUCT
TURNOUT ON LT. = 10 CU. YD.

STA. 111+69 IN PLACE
18" X 75' PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 100+34.33
BEGIN SITE 1
LOG MILE 0.01

C.L. SITE 1 STA. 100+00.00 =
C.L. SITE 1 HWY. 49 STA. 312+70.94
Δ = 82°00'00"

STA. 101+54 CONSTRUCT
APPROACH ON LT. = 15 CU. YD.

STA. 102+13 CONSTRUCT
APPROACH ON LT. = 15 CU. YD.

STA. 106+29 CONSTRUCT
APPROACH ON LT. = 5 CU. YD.

HWY. 351 N.
P.I. = 106+52.87
Δ = 4°00'03" RT.
D = 1°00'00"
T = 200.13'
L = 400.09'
P.C. = 104+52.74
P.T. = 108+52.83
NO SUPER

P.I. 108+52.83

HWY 351 N.

N 19°23'44" W

N 23°23'47" W

EXIST. R/W

PROP. R/W

CONST. LIMITS

EXIST. R/W

P.O.B. 100+00.00

STA. 100+70 CONSTRUCT
JUNCTION BOX ON RT.
AND 24" X 62' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 314+40
JUNCTION BOX H = 4'-11"
TYPE E JUNCTION BOX = 3' X 3'
24" R.C. PIPE = 62 LIN. FT.
24" SLPCCS PIPE = 62 LIN. FT.

STA. 100+90 CONSTRUCT
JUNCTION BOX ON RT.
AND 24" X 36' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 100+70
JUNCTION BOX H = 6'-5"
TYPE E JUNCTION BOX = 3' X 3'
24" R.C. PIPE = 36 LIN. FT.
24" SLPCCS PIPE = 36 LIN. FT.

STA. 101+20 CONSTRUCT
DROP INLET ON RT.
AND 24" X 36' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 100+90
DROP INLET H = 7'-6"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 36 LIN. FT.
24" SLPCCS PIPE = 36 LIN. FT.

STA. 104+10 CONSTRUCT
DROP INLET ON RT.
AND 24" X 156' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 102+50
DROP INLET H = 4'-10"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 156 LIN. FT.
24" SLPCCS PIPE = 156 LIN. FT.

STA. 104+43 CONSTRUCT
APPROACH ON RT. = 90 CU. YD.

STA. 102+50 CONSTRUCT
DROP INLET ON RT.
AND 18" X 126' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 101+20
DROP INLET H = 7'-5"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 126 LIN. FT.
18" SLPCCS PIPE = 126 LIN. FT.

STA. 104+73 CONSTRUCT
DROP INLET ON RT.
AND 24" X 60' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 104+10
DROP INLET H = 4'-3"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 60 LIN. FT.
24" SLPCCS PIPE = 60 LIN. FT.

STA. 105+18 CONSTRUCT
DROP INLET ON RT.
AND 18" X 40' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 104+73
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 40 LIN. FT.
18" SLPCCS PIPE = 40 LIN. FT.

STA. 106+60 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 138' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 105+18
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 138 LIN. FT.
18" SLPCCS PIPE = 138 LIN. FT.

STA. 108+35 CONSTRUCT
APPROACH ON RT. = 250 CU. YD.

STA. 109+71 IN PLACE
18" X 23' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 109+20 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 256' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 106+60
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 256 LIN. FT.
18" SLPCCS PIPE = 256 LIN. FT.

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.
FOR ALL R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR ALL SLPCCS PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STA. 111+91 IN PLACE
24" X 23' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 112+50 CONSTRUCT
APPROACH ON RT. = 10 CU. YD.

STA. 112+20 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 296' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 109+20
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 296 LIN. FT.
18" SLPCCS PIPE = 296 LIN. FT.

STA. 112+79 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 56' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 112+20
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 56 LIN. FT.
18" SLPCCS PIPE = 56 LIN. FT.

STA. 113+96 IN PLACE
24" X 68' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 20 CU. YD. UNCL. EXC.

STA. 114+25 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 142' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 112+79
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 142 LIN. FT.
18" SLPCCS PIPE = 142 LIN. FT.

mh39735 3/16/2023
R100875.DGN

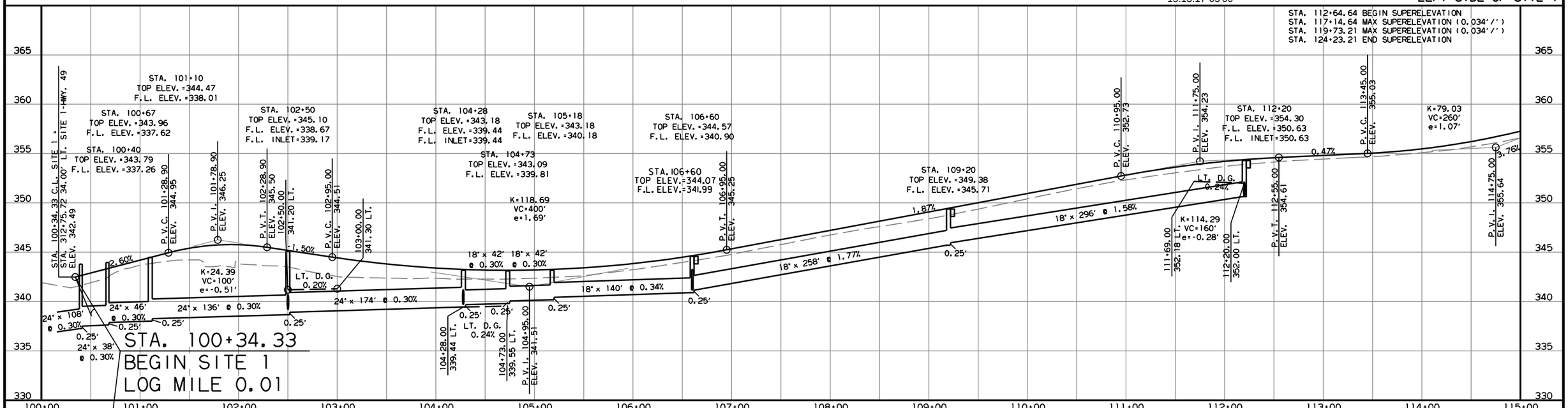
SITE 1

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	48	159
		PLAN AND PROFILE SHEETS				

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

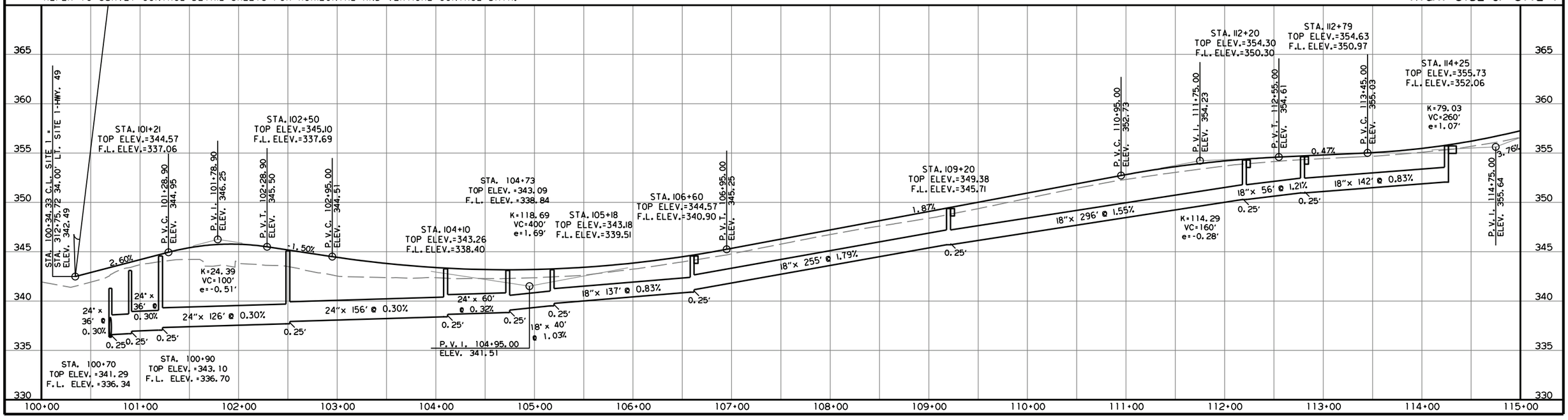
Digitally signed by Trinity Smith
Date: 2024.05.01 15:13:17-05'00'

LEFT SIDE OF SITE 1



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

RIGHT SIDE OF SITE 1



mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	49	159
		PLAN AND PROFILE SHEETS				

ALL R.C. PIPE CULVERTS SHALL BE
CLASS III UNLESS OTHERWISE SPECIFIED.
FOR ALL R.C. PIPE CULVERT INSTALLATIONS
USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR ALL SLPCCS PIPE CULVERT INSTALLATIONS
USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STA. 125+95 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 112' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+11
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 112 LIN. FT.
18" SLPCCS PIPE = 112 LIN. FT.

STA. 126+42 IN PLACE
24" X 39' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
TURNOUT ON LT. = 45 CU. YD.

STA. 124+25 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 4' EXTENSION
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

STA. 127+11 CONSTRUCT
DROP INLET ON LT.
AND 36" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H = 5'-8"
TYPE MO DROP INLET = 5' DIA.
TYPE C DROP INLET = 4' X 4'
36" R.C. PIPE = 10 LIN. FT.
36" F.E.S. = 1 EACH

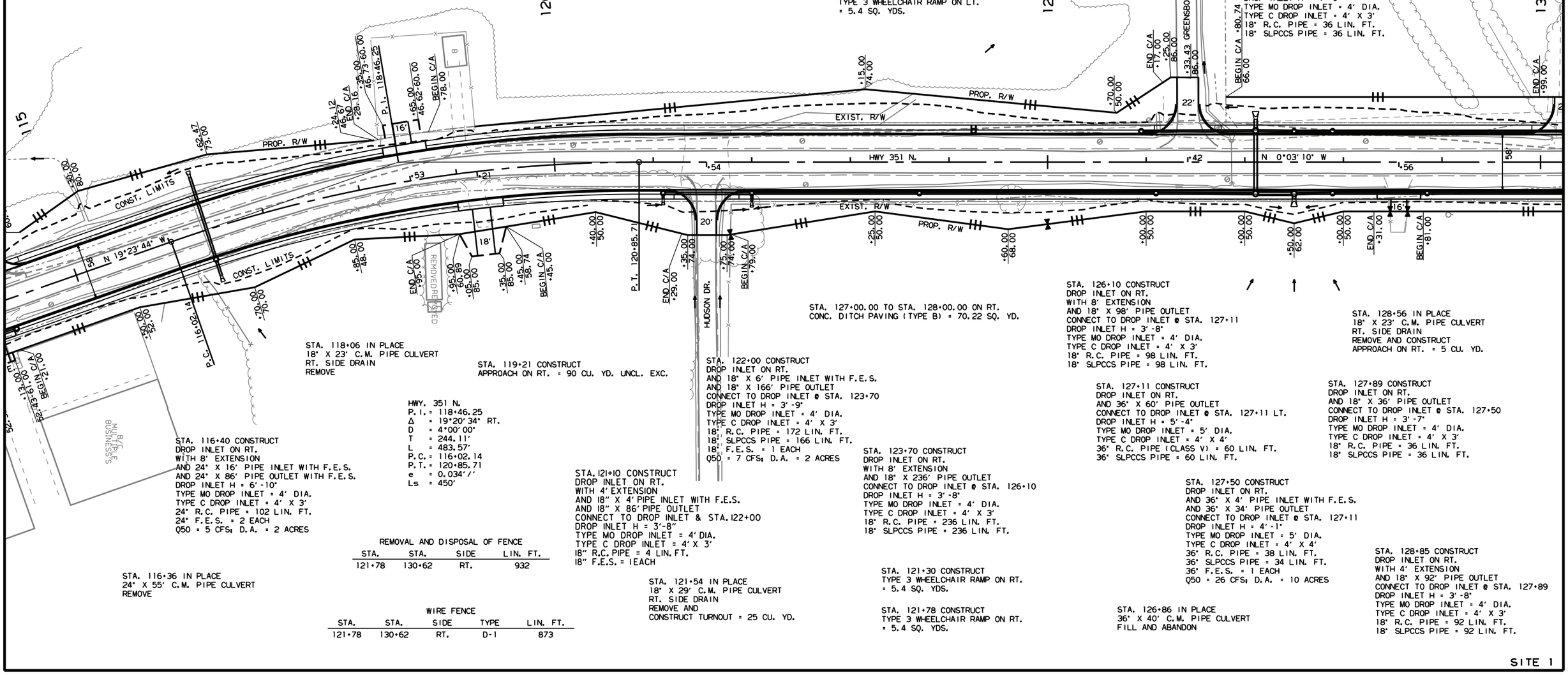
STA. 127+89 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 36' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+50
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 36 LIN. FT.
18" SLPCCS PIPE = 36 LIN. FT.

STA. 118+53 CONSTRUCT
APPROACH ON LT. = 20 CU. YD. UNCL. EXC.

STA. 126+17 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 5.4 SQ. YDS.

STA. 126+67 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 5.4 SQ. YDS.

STA. 127+50 CONSTRUCT
DROP INLET ON LT.
AND 18" X 36' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+11
DROP INLET H = 4'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 36 LIN. FT.
18" SLPCCS PIPE = 36 LIN. FT.



STA. 118+06 IN PLACE
18" X 23' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 119+21 CONSTRUCT
APPROACH ON RT. = 90 CU. YD. UNCL. EXC.

HWY. 351 N.
P.I. = 118+46.25
Δ = 19°20' 34" RT.
D = 4°00' 00"
T = 244.11'
L = 483.57'
P.C. = 116+02.14
P.T. = 120+85.71
e = 0.034'/'
Ls = 450'

STA. 116+40 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 24" X 16' PIPE INLET WITH F.E.S.
AND 24" X 86' PIPE OUTLET WITH F.E.S.
DROP INLET H = 6'-10"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 102 LIN. FT.
24" F.E.S. = 2 EACH
Q50 = 5 CFS, D.A. = 2 ACRES

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
121+78	130+62	RT.	932

STA. 116+36 IN PLACE
24" X 55' C.M. PIPE CULVERT
REMOVE

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
121+78	130+62	RT.	D-1	873

STA. 121+10 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 4' PIPE INLET WITH F.E.S.
AND 18" X 86' PIPE OUTLET
CONNECT TO DROP INLET & STA. 122+00
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 4 LIN. FT.
18" F.E.S. = 1EACH

STA. 121+54 IN PLACE
18" X 29' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT TURNOUT = 25 CU. YD.

STA. 122+00 CONSTRUCT
DROP INLET ON RT.
AND 18" X 6' PIPE INLET WITH F.E.S.
AND 18" X 166' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 123+70
DROP INLET H = 3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 172 LIN. FT.
18" SLPCCS PIPE = 166 LIN. FT.
18" F.E.S. = 1 EACH
Q50 = 7 CFS, D.A. = 2 ACRES

STA. 123+70 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 236' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 126+10
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 236 LIN. FT.
18" SLPCCS PIPE = 236 LIN. FT.

STA. 121+30 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 5.4 SQ. YDS.

STA. 121+78 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 5.4 SQ. YDS.

STA. 127+00.00 TO STA. 128+00.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 70.22 SQ. YD.

STA. 126+10 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 98' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+11
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 98 LIN. FT.
18" SLPCCS PIPE = 98 LIN. FT.

STA. 128+56 IN PLACE
18" X 23' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STA. 127+11 CONSTRUCT
DROP INLET ON RT.
AND 36" X 60' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+11 LT.
DROP INLET H = 5'-4"
TYPE MO DROP INLET = 5' DIA.
TYPE C DROP INLET = 4' X 4'
36" R.C. PIPE (CLASS V) = 60 LIN. FT.
36" SLPCCS PIPE = 60 LIN. FT.

STA. 127+89 CONSTRUCT
DROP INLET ON RT.
AND 18" X 36' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+50
DROP INLET H = 3'-7"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 36 LIN. FT.
18" SLPCCS PIPE = 36 LIN. FT.

STA. 127+50 CONSTRUCT
DROP INLET ON RT.
AND 36" X 4' PIPE INLET WITH F.E.S.
AND 36" X 34' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+11
DROP INLET H = 4'-1"
TYPE MO DROP INLET = 5' DIA.
TYPE C DROP INLET = 4' X 4'
36" R.C. PIPE = 38 LIN. FT.
36" SLPCCS PIPE = 34 LIN. FT.
36" F.E.S. = 1 EACH
Q50 = 26 CFS, D.A. = 10 ACRES

STA. 126+86 IN PLACE
36" X 40' C.M. PIPE CULVERT
FILL AND ABANDON

STA. 128+85 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 92' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+89
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 92 LIN. FT.
18" SLPCCS PIPE = 92 LIN. FT.

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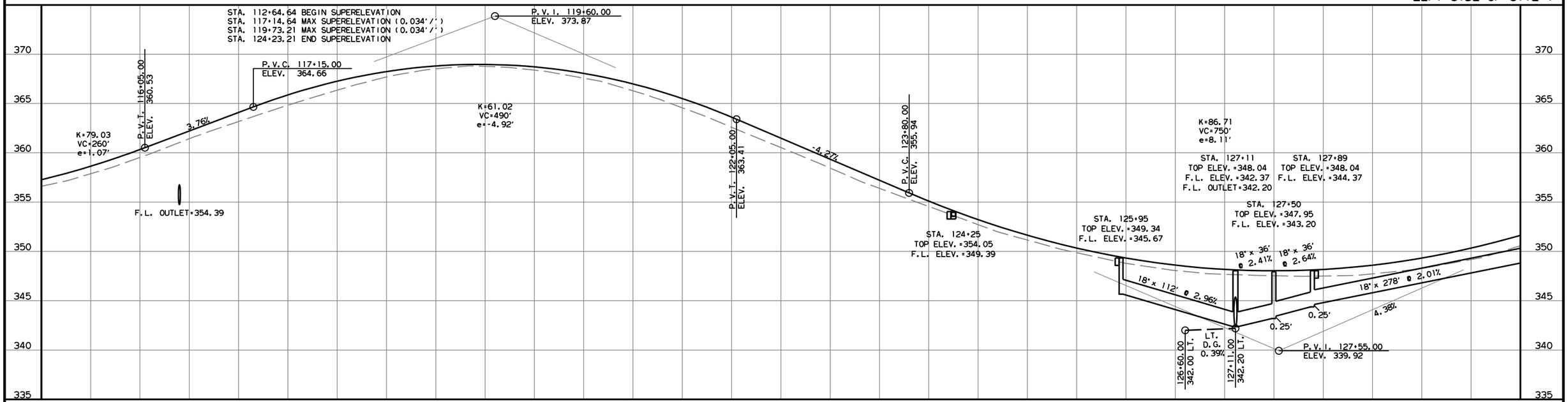
SITE 1

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

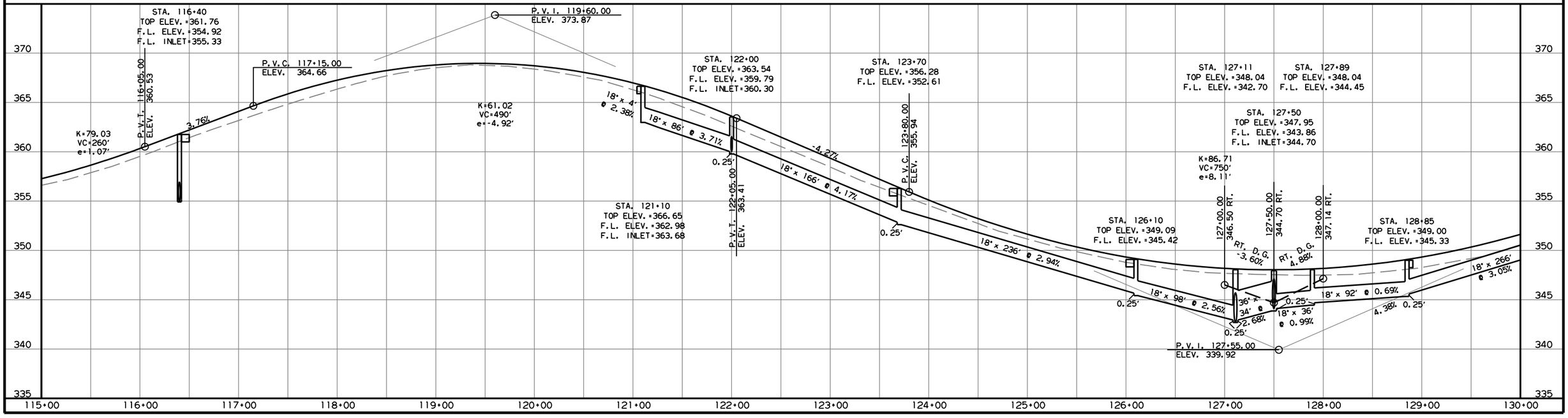
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	50	159
		PLAN AND PROFILE SHEETS				

LEFT SIDE OF SITE 1



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

RIGHT SIDE OF SITE 1



mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	51	159
		PLAN AND PROFILE SHEETS				

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

05-01-2024

STA. 130+50.00 TO STA. 131+00.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 35.11 SQ. YD.

STA. 130+00 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 5.4 SQ. YDS.

STA. 130+48 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 5.4 SQ. YDS.

ALL R.C. PIPE CULVERTS SHALL BE
CLASS III UNLESS OTHERWISE SPECIFIED.
FOR ALL R.C. PIPE CULVERT INSTALLATIONS
USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR ALL SLPCCS PIPE CULVERT INSTALLATIONS
USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STA. 132+18 IN PLACE
18" X 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 45 CU. YD. UNCL. EXC.

STA. 139+00 CONSTRUCT
DROP INLET ON LT.
AND 18" X 326' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 142+25
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 326 LIN. FT.
18" SLPCCS PIPE = 326 LIN. FT.

STA. 130+24 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
TURNOUT ON LT. = 10 CU. YD. UNCL. EXC.

STA. 132+45 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 172' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 130+70
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 172 LIN. FT.
18" SLPCCS PIPE = 172 LIN. FT.

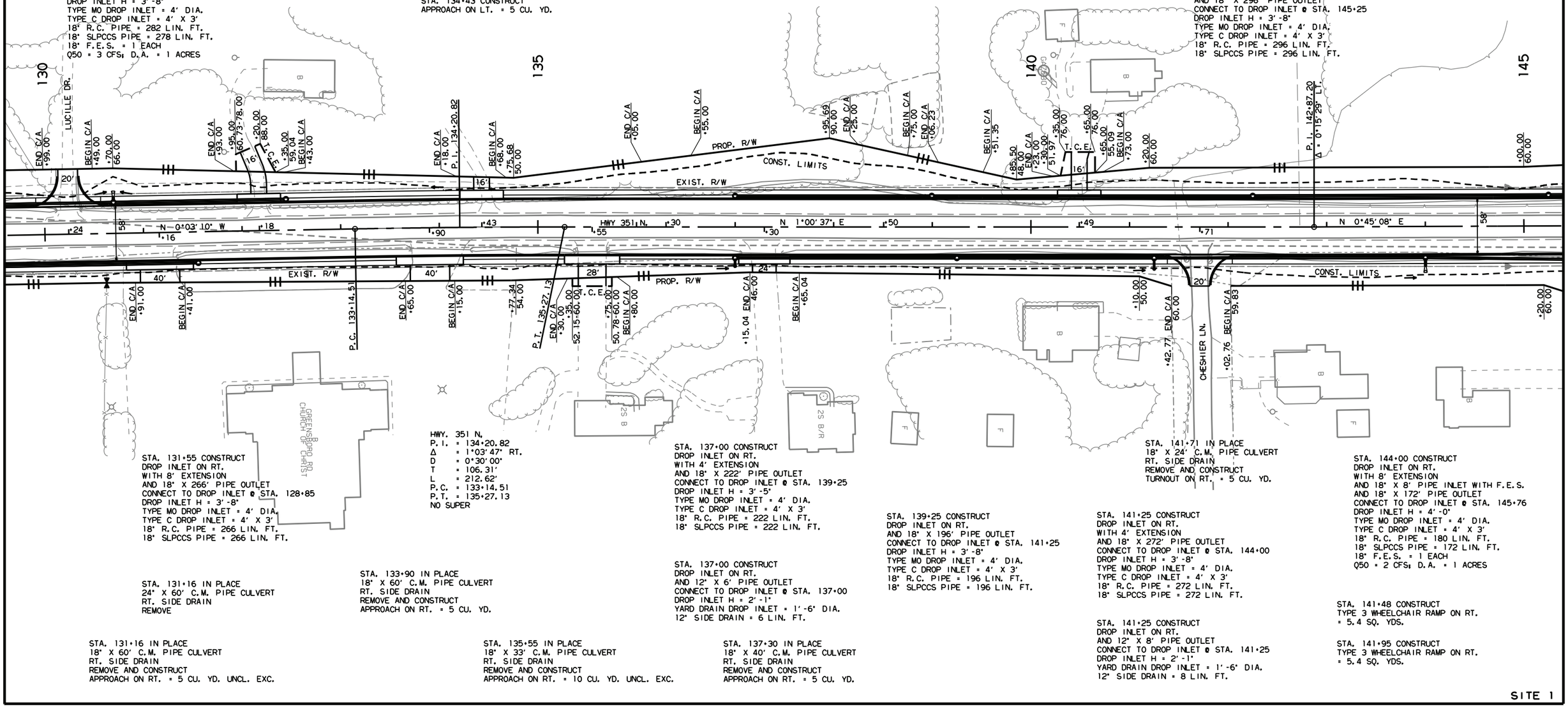
STA. 137+00 CONSTRUCT
DROP INLET ON LT.
AND 18" X 222' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 139+25
DROP INLET H = 3'-5"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 200 LIN. FT.
18" SLPCCS PIPE = 200 LIN. FT.

STA. 130+70 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 18" X 4' PIPE INLET WITH F.E.S.
AND 18" X 278' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 127+89
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 282 LIN. FT.
18" SLPCCS PIPE = 278 LIN. FT.
18" F.E.S. = 1 EACH
Q50 = 3 CFS; D.A. = 1 ACRES

STA. 134+43 CONSTRUCT
APPROACH ON LT. = 5 CU. YD.

STA. 140+49 CONSTRUCT
APPROACH ON LT. = 30 CU. YD. UNCL. EXC.

STA. 142+25 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 18" X 296' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 145+25
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 296 LIN. FT.
18" SLPCCS PIPE = 296 LIN. FT.



STA. 131+55 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 266' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 128+85
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 266 LIN. FT.
18" SLPCCS PIPE = 266 LIN. FT.

HWY. 351 N.
P.I. = 134+20.82
Δ = 1°03'47" RT.
D = 0°30'00"
T = 106.31'
L = 212.62'
P.C. = 133+14.51
P.T. = 135+27.13
NO SUPER

STA. 137+00 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 222' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 139+25
DROP INLET H = 3'-5"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 222 LIN. FT.
18" SLPCCS PIPE = 222 LIN. FT.

STA. 139+25 CONSTRUCT
DROP INLET ON RT.
AND 18" X 196' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 141+25
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 196 LIN. FT.
18" SLPCCS PIPE = 196 LIN. FT.

STA. 141+71 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
TURNOUT ON RT. = 5 CU. YD.

STA. 141+25 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 272' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 144+00
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 272 LIN. FT.
18" SLPCCS PIPE = 272 LIN. FT.

STA. 144+00 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 8' PIPE INLET WITH F.E.S.
AND 18" X 172' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 145+76
DROP INLET H = 4'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 180 LIN. FT.
18" SLPCCS PIPE = 172 LIN. FT.
18" F.E.S. = 1 EACH
Q50 = 2 CFS; D.A. = 1 ACRES

STA. 131+16 IN PLACE
24" X 60' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 133+90 IN PLACE
18" X 60' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STA. 137+00 CONSTRUCT
DROP INLET ON RT.
AND 12" X 6' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 137+00
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 6 LIN. FT.

STA. 141+48 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 5.4 SQ. YDS.

STA. 141+95 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 5.4 SQ. YDS.

STA. 131+16 IN PLACE
18" X 60' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YD. UNCL. EXC.

STA. 135+55 IN PLACE
18" X 33' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 10 CU. YD. UNCL. EXC.

STA. 137+30 IN PLACE
18" X 40' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STA. 141+25 CONSTRUCT
DROP INLET ON RT.
AND 12" X 8' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 141+25
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 8 LIN. FT.

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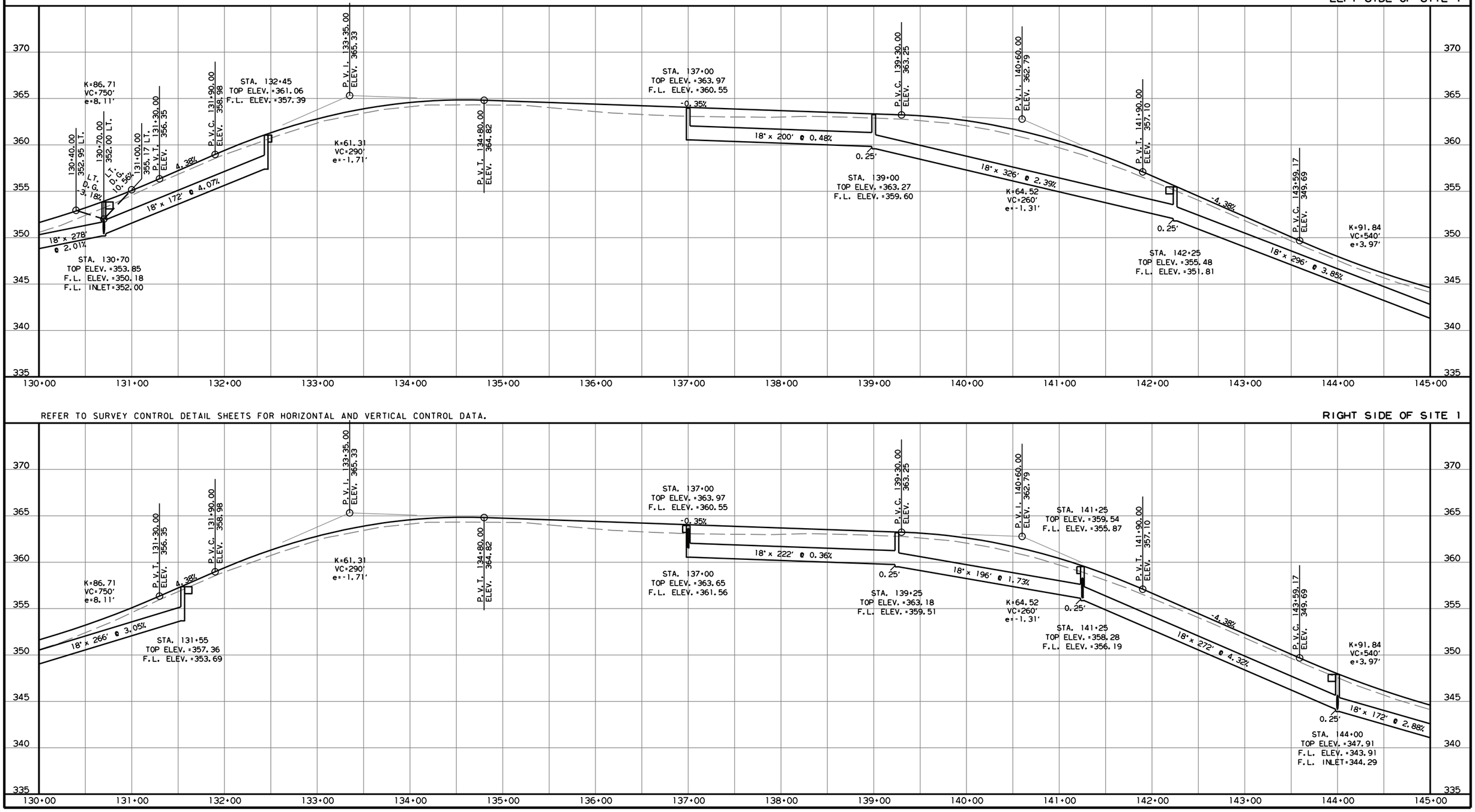
SITE 1

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	52	159
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

LEFT SIDE OF SITE 1



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

RIGHT SIDE OF SITE 1

mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	53	159
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STA. 146+55 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 3.3 SQ. YDS.

STA. 147+25 IN PLACE
18" X 21' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 85 CU. YD.

ALL R.C. PIPE CULVERTS SHALL BE
CLASS III UNLESS OTHERWISE SPECIFIED.
FOR ALL R.C. PIPE CULVERT INSTALLATIONS
USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR ALL SLPCCS PIPE CULVERT INSTALLATIONS
USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STA. 147+00 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 58' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 147+61
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 58 LIN. FT.
18" SLPCCS PIPE = 58 LIN. FT.

STA. 151+93 CONSTRUCT
APPROACH ON LT. = 5 CU. YD.

STA. 145+25 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 18" X 172' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 147+00
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 172 LIN. FT.
18" SLPCCS PIPE = 172 LIN. FT.

STA. 147+61 CONSTRUCT
DROP INLET ON LT.
AND 18" X 36' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 148+00
DROP INLET H = 4'-6"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 36 LIN. FT.
18" SLPCCS PIPE = 36 LIN. FT.

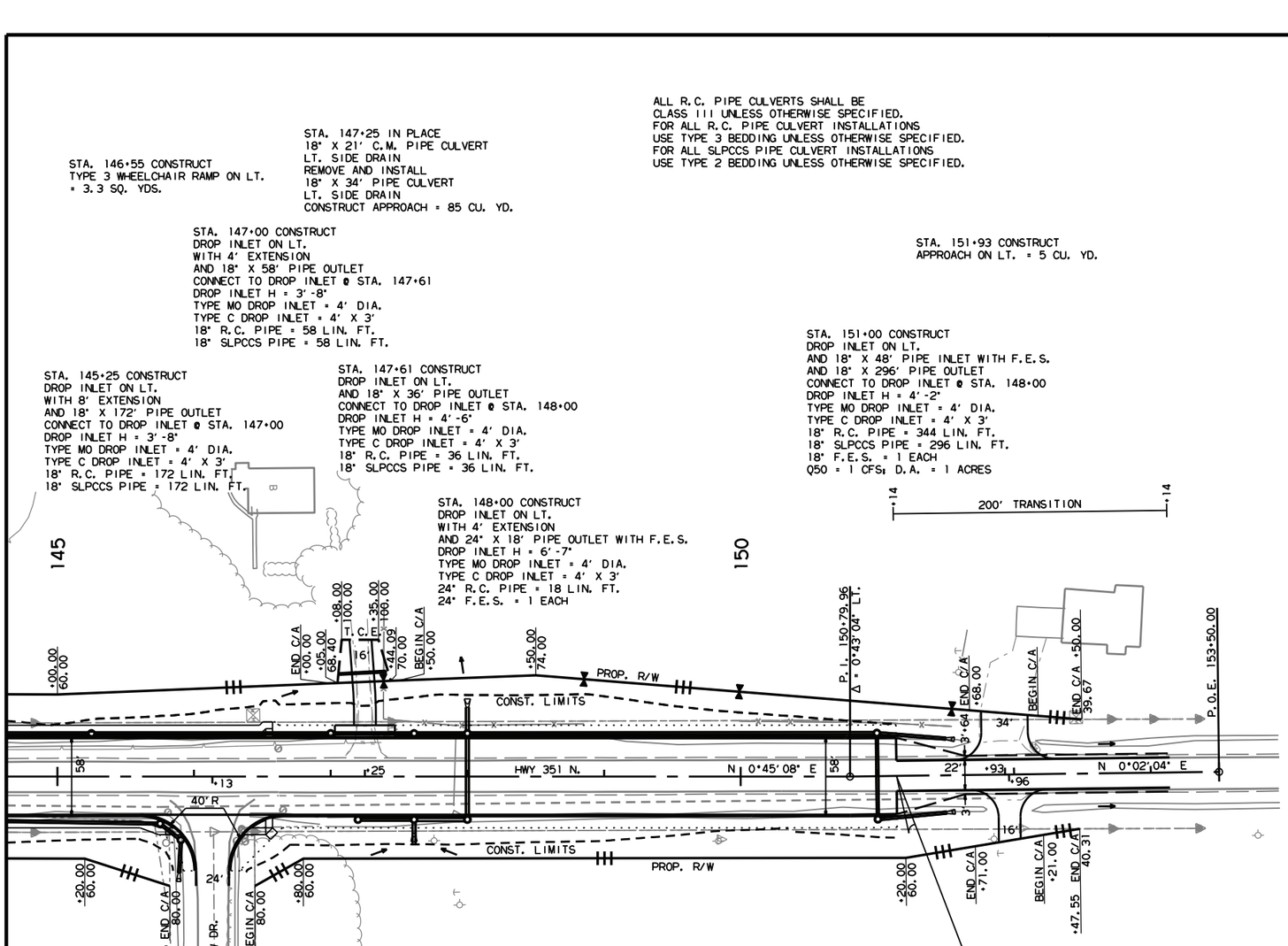
STA. 151+00 CONSTRUCT
DROP INLET ON LT.
AND 18" X 48' PIPE INLET WITH F.E.S.
AND 18" X 296' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 148+00
DROP INLET H = 4'-2"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 344 LIN. FT.
18" SLPCCS PIPE = 296 LIN. FT.
18" F.E.S. = 1 EACH
Q50 = 1 CFS; D.A. = 1 ACRES

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
147+39	148+85	LT.	175
149+99	151+55	LT.	156

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
147+39	148+85	LT.	D-1	147
149+99	151+55	LT.	D-1	156



STA. 145+76 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 16' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 145+92
DROP INLET H = 3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 16 LIN. FT.
18" SLPCCS PIPE = 16 LIN. FT.

STA. 145+92 CONSTRUCT
DROP INLET ON RT.
AND 18" X 24' PIPE OUTLET WITH F.E.S.
DROP INLET H = 3'-10"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 24 LIN. FT.
18" F.E.S. = 1 EACH

STA. 146+13 CONSTRUCT
TURNOUT ON RT. = 40 CU. YD.

STA. 147+20 CONSTRUCT
DROP INLET ON RT.
AND 18" X 38' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 147+61
DROP INLET H = 3'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 38 LIN. FT.
18" SLPCCS PIPE = 38 LIN. FT.

STA. 147+61 CONSTRUCT
DROP INLET ON RT.
AND 24" X 8' PIPE INLET WITH F.E.S.
AND 24" X 36' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 148+00
DROP INLET H = 4'-5"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 44 LIN. FT.
24" SLPCCS PIPE = 36 LIN. FT.
24" F.E.S. = 1 EACH
Q50 = 12 CFS; D.A. = 4 ACRES

STA. 148+00 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 24" X 60' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 148+00 LT.
DROP INLET H = 5'-4"
24" R.C. PIPE (CLASS IV) = 60 LIN. FT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'

STA. 145+88 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 4.9 SQ. YDS.

STA. 146+55 CONSTRUCT
TYPE 2 WHEELCHAIR RAMP ON RT.
= 12.7 SQ. YDS.

STA. 151+14.00
END SITE 1

STA. 151+00 CONSTRUCT
DROP INLET ON RT.
AND 18" X 48' PIPE INLET WITH F.E.S.
AND 18" X 60' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 151+00 LT.
DROP INLET H = 3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 48 LIN. FT.
18" R.C. PIPE (CLASS V) = 60 LIN. FT.
18" F.E.S. = 1 EACH
Q50 = 1 CFS; D.A. = 1 ACRES

STA. 151+96 CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

mh39735 3/16/2023
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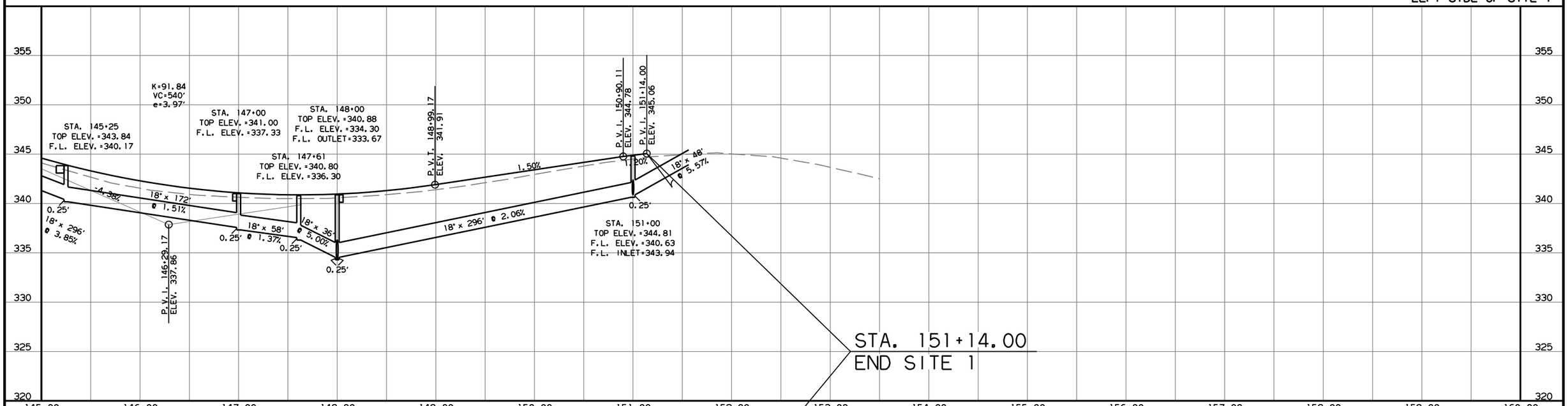
SITE 1

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	54	159
		PLAN AND PROFILE SHEETS				

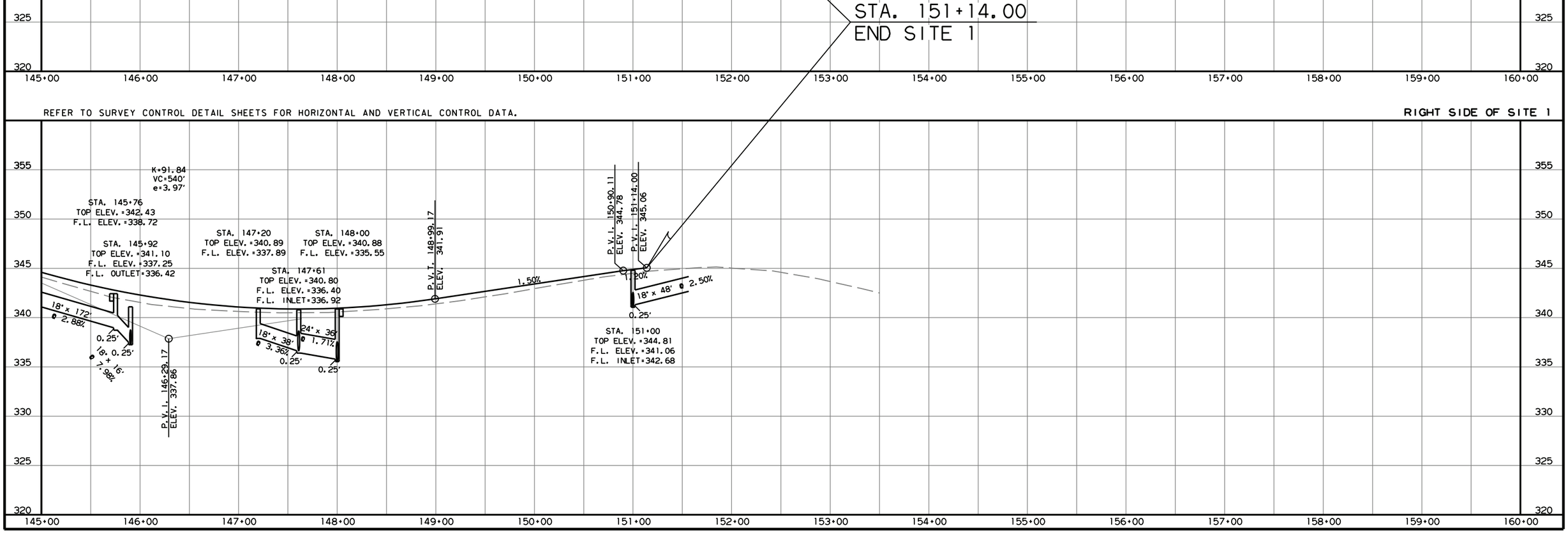
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

LEFT SIDE OF SITE 1



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

RIGHT SIDE OF SITE 1



mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	55	159
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STA. 303+92.91
BEGIN SITE 1-HWY. 49
LOG MILE 10.65

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.
FOR ALL R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR ALL SLPCCS PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STA. 306+35 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 24' X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H = 4'-2"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 10 LIN. FT.
24" F.E.S. = 1 EACH

STA. 309+35 CONSTRUCT
DROP INLET ON LT.
AND 12" X 10' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 309+35
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 10 LIN. FT.

STA. 310+40 CONSTRUCT
APPROACH ON LT. = 20 CU. YD.

STA. 314+40 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 24' X 272' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 317+15
DROP INLET H = 4'-2"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 272 LIN. FT.
24" SLPCCS PIPE = 272 LIN. FT.

C.L. SITE 1-HWY. 49 STA. 312+70.94 =
C.L. SITE 1 STA. 100+00.00
Δ = 82°00'00"

300' TAPER

STA. 307+02 IN PLACE
18" X 53' R.C. PIPE CULVERT
LT. SIDE DRAIN
RETAIN AND CONSTRUCT
APPROACH ON LT. = 30 CU. YD.

STA. 308+97 CONSTRUCT
APPROACH ON LT. = 25 CU. YD.

STA. 310+80 CONSTRUCT
DROP INLET ON LT.
AND 24" X 142' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 309+35
DROP INLET H = 6'-6"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 142 LIN. FT.
24" SLPCCS PIPE = 142 LIN. FT.

156' TAPER

KUM AND GO

110' R

P.O.B. 300+00.00

EXIST. R/W
PROP. R/W
CONST. LIMITS
T.C.E.
HWY. 49

STA. 304+93 CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STA. 313+05 IN PLACE
JUNCTION BOX ON RT.
18" X 89' C.M. PIPE INLET
18" X 108' C.M. PIPE OUTLET
REMOVE

STA. 314+14 IN PLACE
JUNCTION BOX ON RT.
18" X 14' C.M. PIPE OUTLET
REMOVE

STA. 308+31 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
= 5.4 SQ. YDS.

STA. 305+15 CONSTRUCT
DROP INLET ON RT.
AND 12" X 12' PIPE OUTLET
CONNECT TO DROP INLET
@ STA. 305+25
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 12 LIN. FT.

STA. 305+25 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 150' PIPE OUTLET WITH F.E.S.
DROP INLET H = 4'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 150 LIN. FT.
18" F.E.S. = 1 EACH

100' TRANSITION

STA. 308+81 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
= 5.4 SQ. YDS.

STA. 305+95 CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STA. 307+11 CONSTRUCT
APPROACH ON RT. = 20 CU. YD.

STA. 306+23 IN PLACE
DROP INLET ON RT.
24" X 114' C.M. PIPE OUTLET
REMOVE

STA. 306+25 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 96' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 305+25
DROP INLET H = 4'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 96 LIN. FT.
18" SLPCCS PIPE = 96 LIN. FT.

STA. 306+25 CONSTRUCT
DROP INLET ON RT.
AND 12" X 10' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 306+25
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 10 LIN. FT.

STA. 307+38 IN PLACE
DROP INLET ON RT.
24" X 155' C.M. PIPE OUTLET
REMOVE

STA. 307+40 CONSTRUCT
DROP INLET ON RT.
AND 12" X 12' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 307+50
DROP INLET H = 2'-4"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 12 LIN. FT.

STA. 307+50 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 122' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 306+25
DROP INLET H = 4'-1"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 122 LIN. FT.
18" SLPCCS PIPE = 122 LIN. FT.

STA. 308+56 CONSTRUCT
18" X 50' R.C. PIPE CULVERT
RT. SIDE DRAIN
CONSRUCT
TURNOUT ON RT. = 5 CU. YD.

STA. 309+35 CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STA. 312+77 CONSTRUCT
APPROACH ON RT. = 90 CU. YD. UNCL. EXC.

JEWELL DR.

RUINS

STA. 309+75 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 222' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 307+50
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 222 LIN. FT.
18" SLPCCS PIPE = 222 LIN. FT.

STA. 309+75 CONSTRUCT
DROP INLET ON RT.
AND 12" X 6' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 309+75
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 6 LIN. FT.

STA. 313+85 CONSTRUCT
APPROACH ON RT. = 140 CU. YD. UNCL. EXC.

STA. 313+05 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 152' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 314+60
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 152 LIN. FT.
18" SLPCCS PIPE = 152 LIN. FT.

STA. 314+60 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 106' PIPE OUTLET
CONNECT TO DROP INLET
@ STA. 315+70
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 106 LIN. FT.
18" SLPCCS PIPE = 106 LIN. FT.

STA. 314+60 CONSTRUCT
DROP INLET ON RT.
AND 12" X 8' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 314+60
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 8 LIN. FT.

300' TAPER

STA. 317+15 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 24" X 16' PIPE OUTLET WITH F.E.S.
DROP INLET H = 4'-2"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 16 LIN. FT.
24" F.E.S. = 1 EACH

STA. 316+41 CONSTRUCT
APPROACH ON LT. = 5 CU. YD.

100' TRANSITION

N 58°36'35" E

END C/A +91.00
BEGIN C/A +41.00

STA. 315+70 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 18' PIPE INLET
AND 18" X 82' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 316+55
DROP INLET H = 4'-3"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 100 LIN. FT.
18" SLPCCS PIPE = 82 LIN. FT.

STA. 316+55 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 24" X 82' PIPE OUTLET WITH F.E.S.
DROP INLET H = 4'-3"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 82 LIN. FT.
24" F.E.S. = 1 EACH

STA. 316+55 CONSTRUCT
DROP INLET ON RT.
AND 12" X 10' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 316+55
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 10 LIN. FT.

STA. 315+02 IN PLACE
18" X 76' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STA. 316+98 IN PLACE
24" X 81' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STA. 317+80.00
END SITE 1-HWY. 49

SITE 1 - HWY. 49

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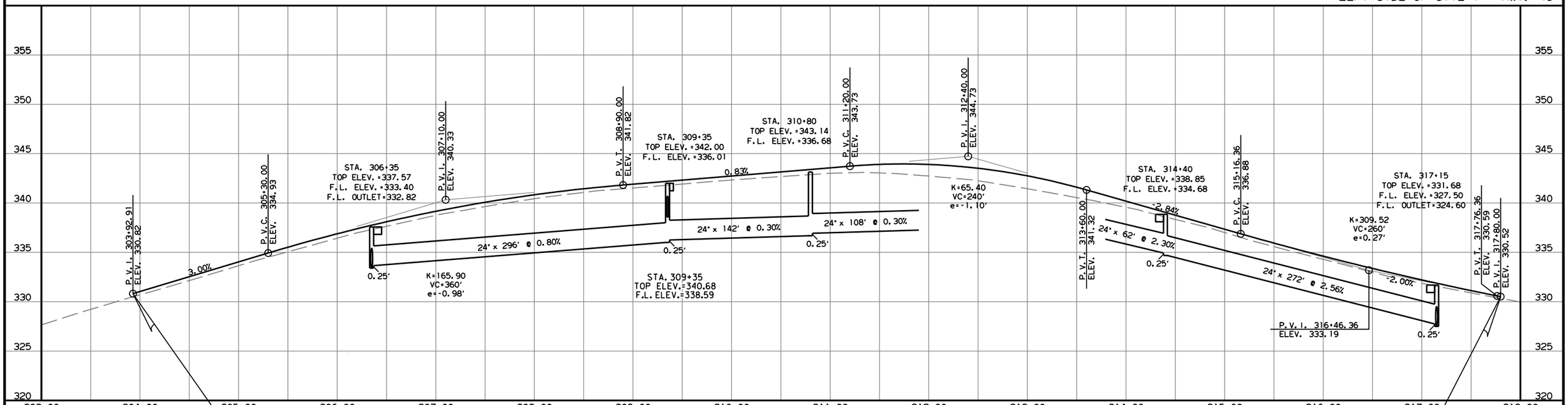
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	56	159
		PLAN AND PROFILE SHEETS				

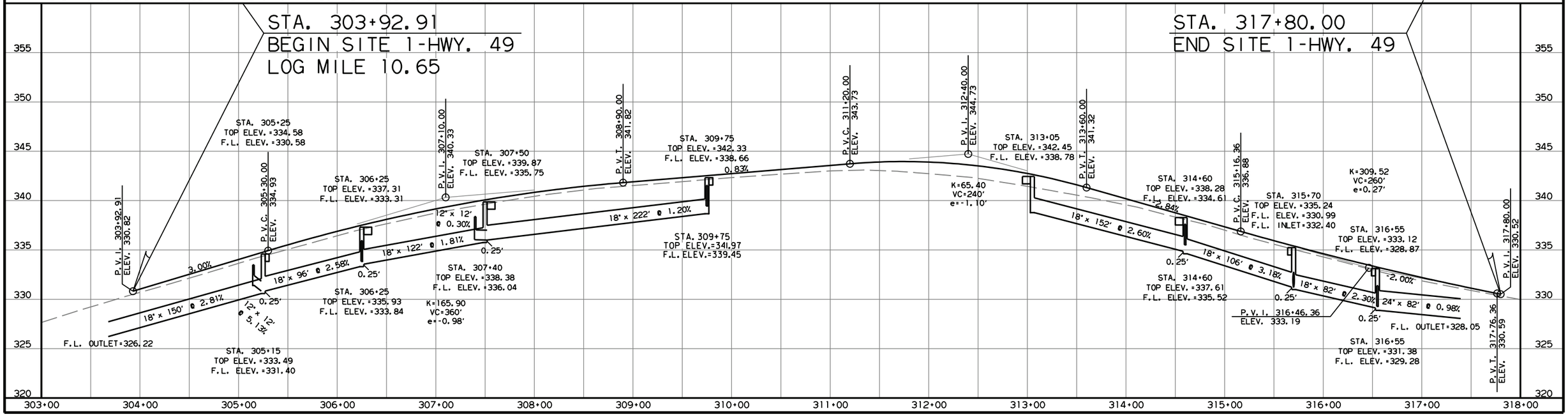
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

LEFT SIDE OF SITE 1 - HWY. 49



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

RIGHT SIDE OF SITE 1 - HWY. 49



DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	57	159
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

STA. 200+98 IN PLACE
18" X 20' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 201+15 CONSTRUCT
JUNCTION BOX ON LT.
AND 18" X 26' PIPE INLET WITH F.E.S.
AND 18" X 78' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 201+95
JUNCTION BOX H = 3'-9"
TYPE E JUNCTION BOX = 3' X 3'
18" R.C. PIPE = 104 LIN. FT.
18" SLPCCS PIPE = 78 LIN. FT.
18" F.E.S. = 1 EACH
Q10 = 5 CFS; D.A. = 2 ACRES

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36

STA. 201+95 CONSTRUCT
DROP INLET ON LT.
AND 18" X 34' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 202+32
DROP INLET H = 3'-4"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 34 LIN. FT.
18" SLPCCS PIPE = 34 LIN. FT.

STA. 202+32 CONSTRUCT
DROP INLET ON LT.
AND 18" X 34' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 202+70
DROP INLET H = 3'-7"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 34 LIN. FT.
18" SLPCCS PIPE = 34 LIN. FT.

STA. 202+70 CONSTRUCT
DROP INLET ON LT.
AND 18" X 130' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 204+07
DROP INLET H = 4'-3"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 130 LIN. FT.
18" SLPCCS PIPE = 130 LIN. FT.

STA. 204+05 CONSTRUCT
DROP INLET ON LT.
IN TOP OF BOX CULVERT
DROP INLET H = 3'-4"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'

STA. 205+25 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 114' PIPE OUTLET
CONNECT TO BOX CULVERT
@ STA. 204+07
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 114 LIN. FT.
18" SLPCCS PIPE = 114 LIN. FT.

STA. 204+07 IN PLACE
8' X 4' X 34' R.C. BOX CULVERT
WITH 3:1 WINGS LT.
RETAIN AND EXTEND 18' LT. ON 15° RT. FWD. SKEW AND 19' RT.
WITH 2:1 WINGS LT. & 3:1 WINGS RT.
TO A COMPLETED LENGTH OF 71'
Q50 = 290 CFS; D.A. = 90 ACRES

STA. 204+82 IN PLACE
18" X 61' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 5 CU. YD.

STA. 206+45 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 116' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 205+25
DROP INLET H = 2'-3"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 116 LIN. FT.
18" SLPCCS PIPE = 116 LIN. FT.

STA. 207+18 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 3.5 SQ. YDS.

STA. 208+38 CONSTRUCT
DROP INLET ON LT.
AND 18" X 16' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 208+56
DROP INLET H = 2'-3"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 16 LIN. FT.
18" SLPCCS PIPE = 16 LIN. FT.

STA. 209+61 CONSTRUCT
APPROACH ON LT. = 10 CU. YD. UNCL. EXC.

STA. 209+40 IN PLACE
OVERHEAD LIGHT POLE
O/S 54.00' LT.
RETAIN

STA. 210+16 IN PLACE
24" X 50' R.C. PIPE CULVERT
EXTEND 6' LT. AND 4' RT. WITH CONCRETE COLLARS
TO A COMPLETED LENGTH OF 60'
CONNECT TO DROP INLETS @ STA. 210+31 LT. & 210+01 RT.
18" R.C. PIPE (CLASS IV) = 18 LIN. FT.

STA. 208+55 CONSTRUCT
DROP INLET ON LT.
AND 18" X 16' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 208+74
DROP INLET H = 2'-6"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 16 LIN. FT.
18" SLPCCS PIPE = 16 LIN. FT.

STA. 210+05.00 TO STA. 210+75.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 49.16 SQ. YD.

STA. 208+67 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 4.2 SQ. YDS.

STA. 208+74 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 90' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 209+36 RT.
DROP INLET H = 3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS V) = 90 LIN. FT.

STA. 212+74.00
END SITE 2

STA. 210+31 CONSTRUCT
DROP INLET ON LT.
AND 24" X 10' PIPE INLET WITH F.E.S.
DROP INLET H = 5'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 10 LIN. FT.
24" F.E.S. = 1 EACH
Q50 = 12 CFS; D.A. = 2 ACRES

STA. 212+45 CONSTRUCT
APPROACH ON LT. = 10 CU. YD. UNCL. EXC.

STA. 210+45 IN PLACE
18" X 38' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE 22' RT.
TO A COMPLETED LENGTH OF 16'

STA. 211+11 IN PLACE
18" X 62' PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 5 CU. YD. UNCL. EXC.

PLEASANT GROVE RD.
P.I. = 209+30.96
Δ = 2°39'18" LT.
D = 2°15'00"
T = 59.01'
L = 118.00'
P.C. = 208+71.95
P.T. = 209+89.95
NO SUPER

PLEASANT GROVE RD.
P.I. = 211+81.66
Δ = 2°04'05" RT.
D = 2°15'00"
T = 45.96'
L = 91.90'
P.C. = 211+35.70
P.T. = 212+27.60
NO SUPER

N 58°36'13" E
HWY. 49
EXIST. R/W
CONST. LIMITS
PROP. R/W
HUDSON DR.
HICKORY LN.
HWY 351 S.
PLEASANT GROVE RD.
N 0°59'08" E
N 1°38'42" E
N 1°18'48" E
N 0°43'35" E
N 1°20'30" W
N 58°17'12" E
T.C.E.
P.O.B. 200+00.00
P.O.E. 215+00.00
P.O.E. 340+00.00
180' TAPER
100' TAPER
270' TAPER
90' TAPER
130' TAPER
100' TRANSITION
200
205
210
215
335
340

STA. 207+02.00
END CONCRETE WALK
TYPE SPECIAL

STA. 206+20.00
BEGIN CONCRETE WALK
TYPE SPECIAL

STA. 201+49 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 5.4 SQ. YDS.

STA. 202+01 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 5.4 SQ. YDS.

STA. 206+29 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 5.4 SQ. YDS.

STA. 206+90 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 5.4 SQ. YDS.

STA. 207+83 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 4.3 SQ. YDS.

STA. 208+86 CONSTRUCT
TYPE 2 WHEELCHAIR RAMP ON RT.
= 8.5 SQ. YDS.

STA. 209+04 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.3 SQ. YDS.

STA. 209+21 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.4 SQ. YDS.

STA. 211+73 CONSTRUCT
APPROACH ON RT. = 40 CU. YD.

C.L. SITE 2 STA. 208+23.42 =
C.L. SITE 2-HWY. 49 STA. 335+97.61
Δ = 56°58'24"

STA. 210+90.00
END RETAINING WALL
AND HAND RAIL

STA. 209+36.40
BEGIN RETAINING WALL
AND HAND RAIL

STA. 210+03 IN PLACE
JUNCTION BOX ON RT.
24" X 51' R.C. PIPE OUTLET
REMOVE

STA. 210+01 CONSTRUCT
DROP INLET ON RT.
AND 24" X 62' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 209+37
DROP INLET H = 7'-2"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 62 LIN. FT.
24" SLPCCS PIPE = 62 LIN. FT.

STA. 201+15 CONSTRUCT
JUNCTION BOX ON RT.
AND 18" X 6' PIPE INLET WITH F.E.S.
AND 18" X 30' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 201+48
JUNCTION BOX H = 2'-6"
TYPE E JUNCTION BOX = 3' X 3'
18" R.C. PIPE = 36 LIN. FT.
18" SLPCCS PIPE = 30 LIN. FT.
18" F.E.S. = 1 EACH
Q10 = 7 CFS; D.A. = 3 ACRES

STA. 201+48 CONSTRUCT
JUNCTION BOX ON RT.
AND 18" X 2' PIPE INLET WITH F.E.S.
AND 24" X 82' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 202+32
JUNCTION BOX H = 3'-9"
TYPE E JUNCTION BOX = 3' X 3'
18" R.C. PIPE = 2 LIN. FT.
24" R.C. PIPE = 82 LIN. FT.
24" SLPCCS PIPE = 82 LIN. FT.
18" F.E.S. = 1 EACH
Q10 = 1 CFS; D.A. = 1 ACRES

STA. 201+75 IN PLACE
18" X 40' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
TURNOUT ON RT. = 5 CU. YD.

STA. 202+32 CONSTRUCT
DROP INLET ON RT.
AND 24" X 34' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 202+70
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 34 LIN. FT.
24" SLPCCS PIPE = 34 LIN. FT.

STA. 202+70 CONSTRUCT
DROP INLET ON RT.
AND 24" X 132' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 204+07
DROP INLET H = 4'-1"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 132 LIN. FT.
24" SLPCCS PIPE = 132 LIN. FT.

STA. 204+07 CONSTRUCT
DROP INLET ON RT.
IN TOP OF BOX CULVERT
DROP INLET H = 3'-5"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'

STA. 204+87 IN PLACE
18" X 24' PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 55 CU. YD.

STA. 205+56 IN PLACE
18" X 24' PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 35 CU. YD.

ALL R.C. PIPE CULVERTS SHALL BE
CLASS III UNLESS OTHERWISE SPECIFIED.
FOR ALL R.C. PIPE CULVERT INSTALLATIONS
USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR ALL SLPCCS PIPE CULVERT INSTALLATIONS
USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STA. 205+25 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 112' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 204+07
DROP INLET H = 5'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 112 LIN. FT.
18" SLPCCS PIPE = 112 LIN. FT.

STA. 206+00 CONSTRUCT
JUNCTION BOX ON RT.
AND 18" X 72' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 205+25
JUNCTION BOX H = 3'-6"
TYPE E JUNCTION BOX = 3' X 3'
18" R.C. PIPE = 72 LIN. FT.
18" SLPCCS PIPE = 72 LIN. FT.

STA. 206+60 CONSTRUCT
TURNOUT ON RT. = 5 CU. YD.

STA. 207+07 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 108' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 206+00
DROP INLET H = 3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 108 LIN. FT.
18" SLPCCS PIPE = 108 LIN. FT.

STA. 209+36 CONSTRUCT
DROP INLET ON RT.
AND 24" X 36' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 209+17
DROP INLET H = 7'-1"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 36 LIN. FT.
24" SLPCCS PIPE = 36 LIN. FT.

STA. 209+18 CONSTRUCT
JUNCTION BOX ON RT.
AND 24" X 100' PIPE OUTLET
CONNECT TO EXIST. JUNCTION BOX @ STA. 338+11
JUNCTION BOX H = 5'-6"
TYPE E JUNCTION BOX = 3' X 3'
24" R.C. PIPE = 100 LIN. FT.
24" SLPCCS PIPE = 100 LIN. FT.

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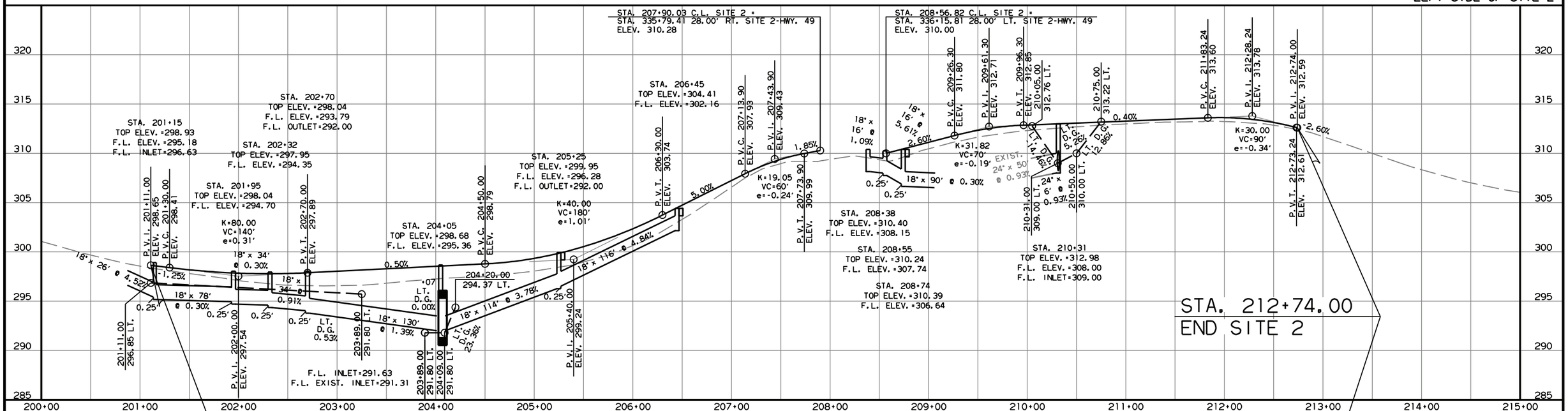
SITE 2

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	58	159
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

LEFT SIDE OF SITE 2



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

RIGHT SIDE OF SITE 2

STA. 201+11.00
BEGIN SITE 2
LOG MILE 2.36
STA. 201+15
TOP ELEV. =298.91
F.L. ELEV. =296.41
F.L. INLET=297.41
STA. 201+48
TOP ELEV. =298.55
F.L. ELEV. =294.80
F.L. INLET=295.49
STA. 202+00.00
ELEV. 297.54
STA. 202+32
TOP ELEV. =297.95
F.L. ELEV. =294.31
STA. 202+70
TOP ELEV. =298.04
F.L. ELEV. =293.96
F.L. OUTLET=292.00
STA. 202+70.00
ELEV. 297.89
STA. 204+07
TOP ELEV. =298.69
F.L. ELEV. =295.26
STA. 205+25
TOP ELEV. =299.83
F.L. ELEV. =294.83
F.L. OUTLET=292.00
STA. 205+40.00
ELEV. 299.24
STA. 206+00
TOP ELEV. =302.35
F.L. ELEV. =298.85
STA. 206+30.00
ELEV. 303.74
STA. 207+07
TOP ELEV. =307.47
F.L. ELEV. =303.70
STA. 207+13.90
ELEV. 307.93
STA. 207+43.90
ELEV. 309.43
STA. 207+73.90
ELEV. 309.99
STA. 208+56.82 C.L. SITE 2 =
STA. 336+15.81 28.00' LT. SITE 2-HWY. 49
ELEV. 310.00
STA. 209+09
TOP ELEV. =311.74
F.L. ELEV. =304.64
STA. 209+18
TOP ELEV. =309.64
F.L. ELEV. =304.14
F.L. OUTLET=302.16
STA. 209+26.30
ELEV. 311.80
STA. 209+61.30
ELEV. 312.71
STA. 209+96.30
ELEV. 312.85
STA. 210+01
TOP ELEV. =312.92
F.L. ELEV. =305.72
STA. 211+83.24
ELEV. 313.60
STA. 212+28.24
ELEV. 313.78
STA. 212+73.24
ELEV. 312.61
STA. 212+74.00
ELEV. 312.59
EXIST. 24" x 50' @ 0.93%
18" x 16.7' @ 16.7%
18" x 30' @ 4.48%
24" x 82' @ 0.30%
24" x 132' @ 1.49%
18" x 112' @ 2.54%
18" x 72' @ 5.22%
18" x 108' @ 4.41%
24" x 62' @ 1.34%
24" x 4' @ 0.93%
24" x 36' @ 0.69%
K=80.00 VC=140' e=0.31'
K=40.00 VC=180' e=1.01'
K=19.05 VC=60' e=-0.24'
K=31.82 VC=70' e=-0.19'
K=30.00 VC=90' e=-0.34'
0.50%
-1.25%
5.00%
1.85%
0.40%
2.60%
-2.60%
F.L. EXIST. OUTLET=291.27
F.L. OUTLET=291.25

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	59	159
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
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TRINITY D. SMITH

06-11-2024

STA. 334+50.35
BEGIN SITE 2-HWY. 49
LOG MILE 10.05

STA. 337+36.43
END SITE 2-HWY. 49

STA. 335+38 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 3.5 SQ. YDS.

STA. 337+00 CONSTRUCT
APPROACH ON RT. = 20 CU. YD.

STA. 337+68 CONSTRUCT
APPROACH ON RT. = 25 CU. YD.

C.L. SITE 2-HWY. 49 STA. 335+97.61 =
C.L. SITE 2 STA. 208+23.42
Δ = 56°58'24"

STA. 336+58 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.4 SQ. YDS.

AUTOZONE
BURGER KING
DAIRY QUEEN
HUDSON DR.
PLEASANT GROVE RD.
EXIST. R/W
PROP. R/W
CONST. LIMITS
HWY. 49
N 58°36'13" E
N 58°17'12" E
100' TRANSITION
T.C.E.
P.O.E. 340+00.00
330
335
340
210
205

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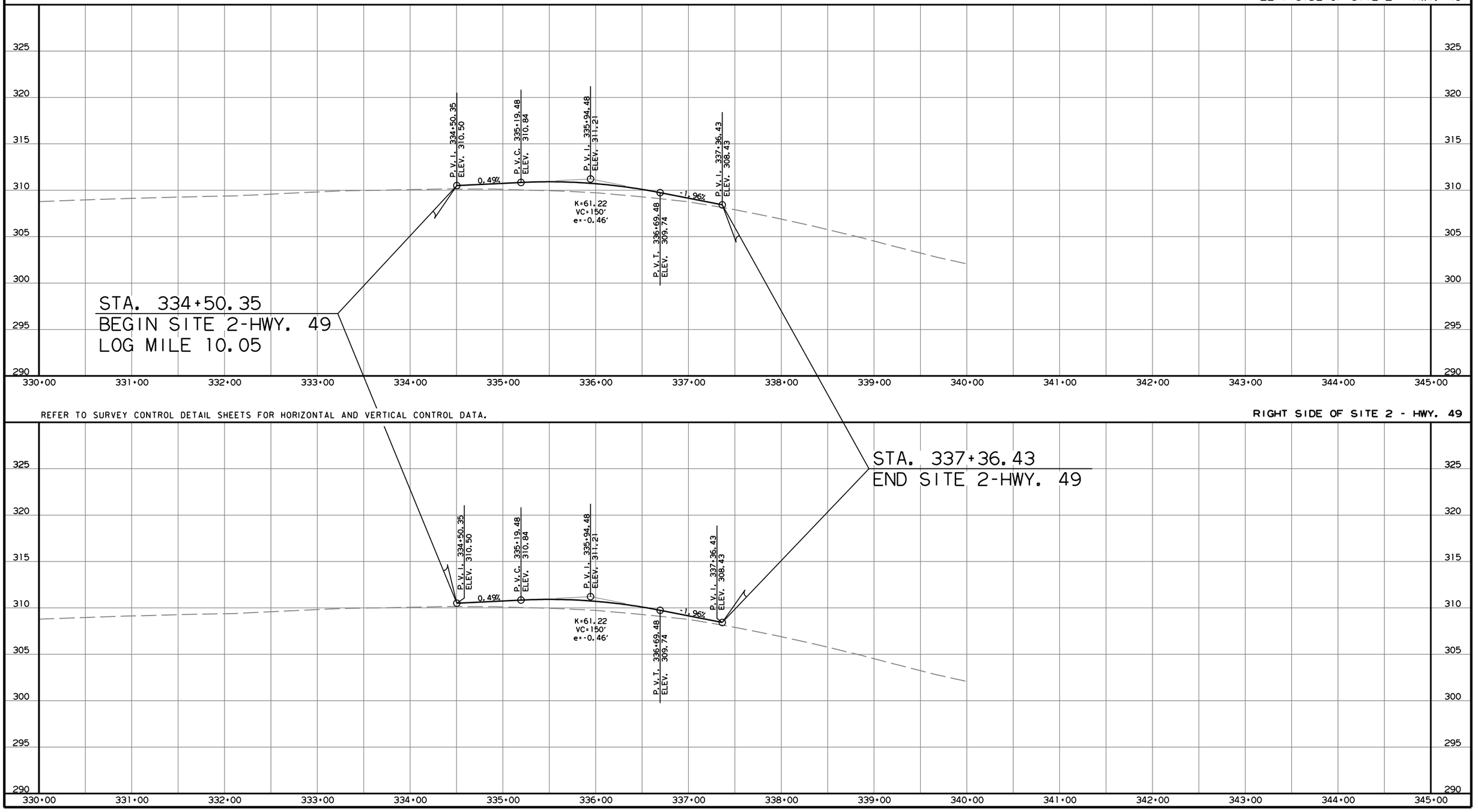
R100875.DGN

SITE 2 - HWY. 49

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	60	159
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

LEFT SIDE OF SITE 2 - HWY. 49



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

RIGHT SIDE OF SITE 2 - HWY. 49

mh39735 3/16/2023
R100875.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	61	159

(2) SUMMARY OF TRAFFIC SIGNAL QUANTITIES

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	HWY. 49 & HWY. 351 N.	HWY. 49 & HWY. 351 S./ PLEASANT GROVE RD.	HWY. 351 & PLEASANT VIEW DR.	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	2	2	1	5	EACH
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1			1	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	2	2	1	5	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)	234	130		364	LIN. FT.
SP	CELLULAR MODEM			1	1	EACH
SP	ANTENNA SUPPORT (SHOE BASE, 35' HT.)	1			1	EACH
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	2	2		4	EACH
SP	BATTERY BACKUP SYSTEM	1			1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	21	17	8	46	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	6	6	1	13	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)		2		2	EACH
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	4			4	EACH
SP & 707	CENTRAL CONTROL UNIT	1	1	1	3	EACH
SP & 707	POLE MOUNTED ASSEMBLY	3	8	4	15	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	8	4	16	EACH
708	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.)	490	1105	350	1945	LIN. FT.
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	3705	860	720	5285	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	894	1087	71	2052	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	223	257		480	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	662	507	380	1549	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	794	700	480	1974	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	375	230	160	765	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	129	88	50	267	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1508	737	540	2785	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	40	40	20	100	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	70	70		140	LIN. FT.
710	NON-METALLIC CONDUIT (2")	70	70	30	170	LIN. FT.
710	NON-METALLIC CONDUIT (3")	702	600	368	1670	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 1)		1		1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2)	2		1	3	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3)		1		1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	4	3	4	11	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	1	2	1	4	EACH
SS & 713	SPAN WIRE ASSEMBLY	1	1		2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (30')		1		1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1		1	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38')	1	1		2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40')			1	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')			1	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')		2		2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	2			2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	1			1	EACH
SP	LED LUMINAIRE ASSEMBLY	7	4	3	14	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	2	4	2	8	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	1	1	3	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	0.50		1.00	LUMP SUM
716	TREATED WOOD POLE (CLASS 1, 45')		2		2	EACH
716	TREATED WOOD POLE (CLASS 2, 45')	4			4	EACH
SP	18" STREET NAME SIGN	4	6	3	13	EACH
733	VIDEO DETECTOR RELOCATION	1			1	EACH
SP	VIDEO DETECTOR ROTATION	1			1	EACH
SP & 733	VIDEO DETECTOR (IP)	11	12	5	28	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	2845	2053	1040	5938	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	2	2	1	5	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	3	3	2	8	EACH

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

05-01-2024

LOCATION: HWY. 351 NORTH & SOUTH INTERS. IMPVTS.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE: 03-29-2024 FILE NAME: t100875_job.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	62	159

(2) TRAFFIC SIGNAL NOTES

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

05-01-2024

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 HEAD, PUSH BUTTONS, DETECTION SYSTEM, CONDUITS, CONDUCTORS, CABLE, TRAFFIC CONTROLLER, CONFLICT MONITOR, COMMUNICATIONS, 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 AS REQUIRE BY ITS MANAGEMENT SECTION-MAINTENANCE DIVISION AND APPROVED.
   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, WARRANTYS, 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.

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CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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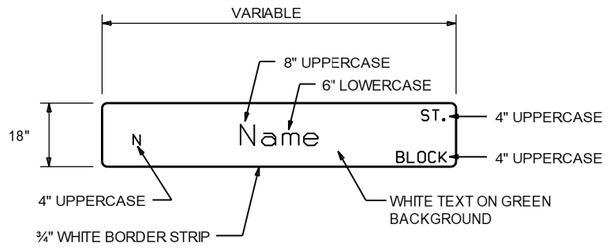
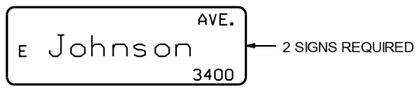
(2) TRAFFIC SIGNAL STREET NAME SIGNS

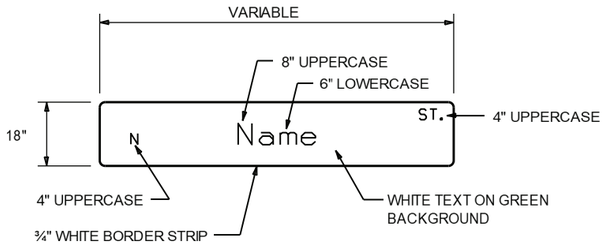
OVERHEAD STREET NAME MARKER STANDARD MAST ARM MOUNTED

HIGHWAY 49 AND HIGHWAY 351 N. INTERSECTION

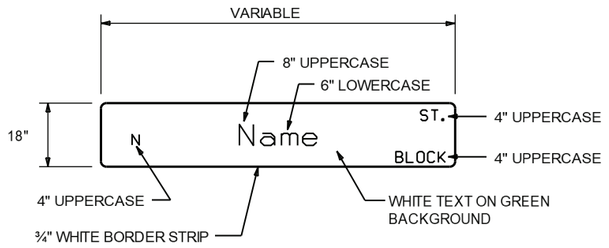


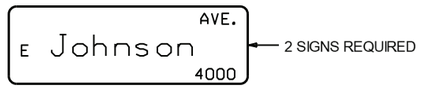


HIGHWAY 351 N. AND PLEASANT VIEW DRIVE INTERSECTION

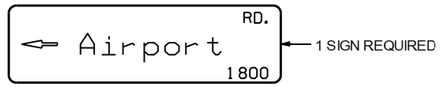


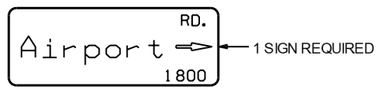
HIGHWAY 49 AND HIGHWAY 351 S./PLEASANT GROVE ROAD INTERSECTION





ARROW SHALL LEAD HWY. OR STREET NAME IN DIRECTION OF TRAVEL (TYPICAL)





STATE OF ARKANSAS
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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.

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(2) GROUNDING ARRAY DETAIL

GROUNDING ARRAY
SINGLE-PORT FUSION WELDS

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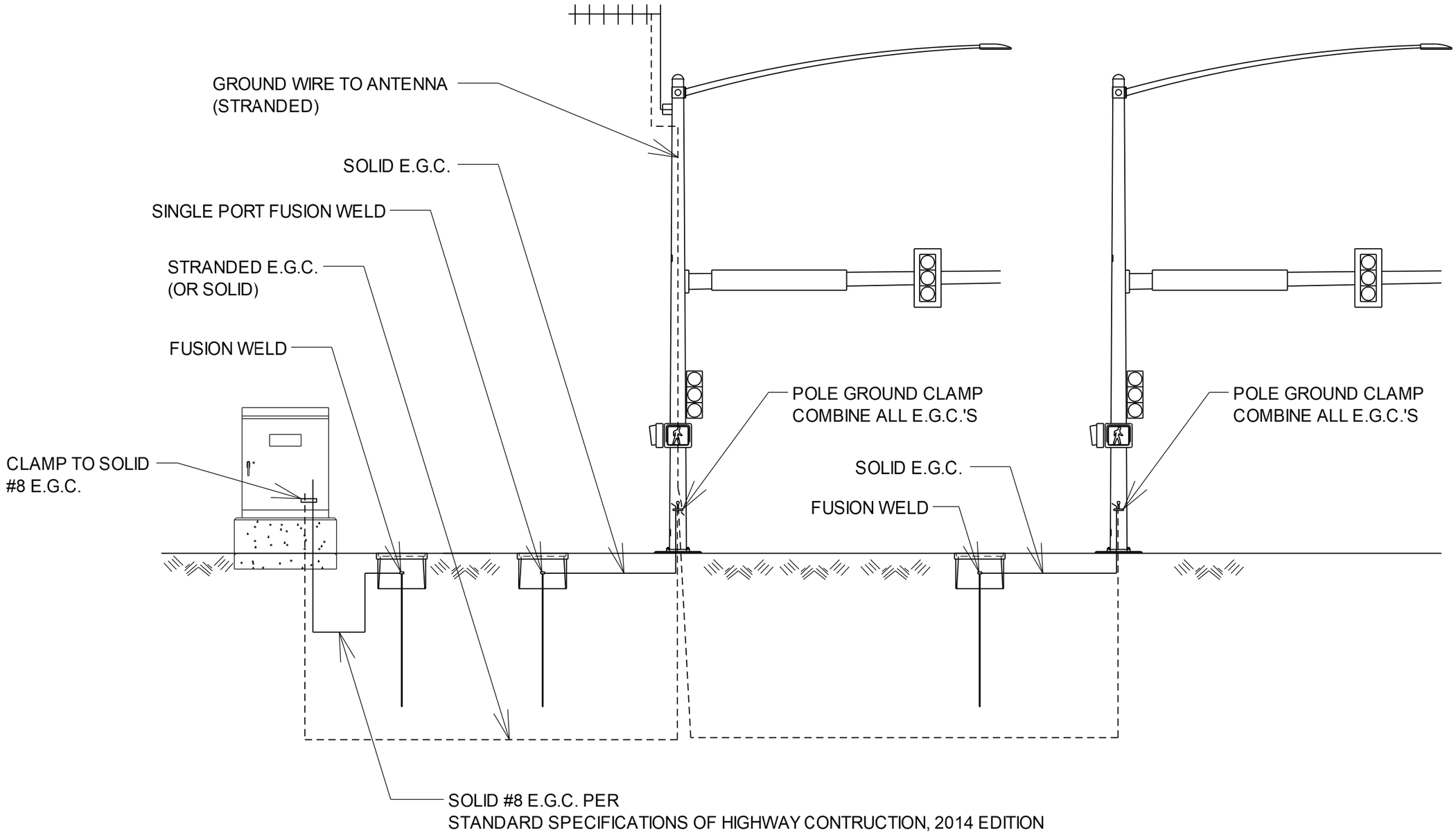

LOCATION:	HWY. 351 NORTH & SOUTH INTERS. IMPVTS.
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(2) PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL

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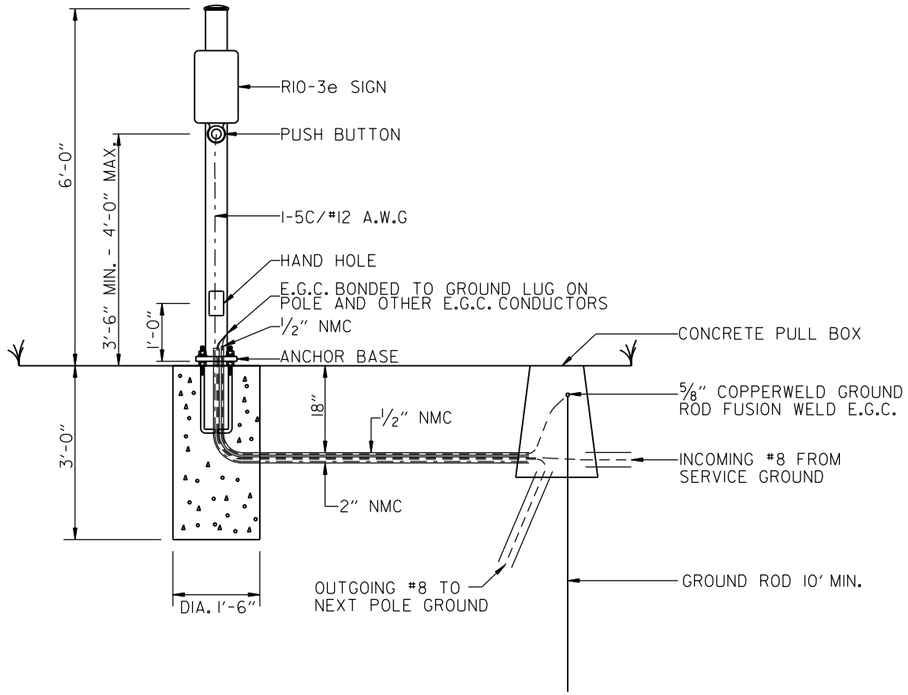
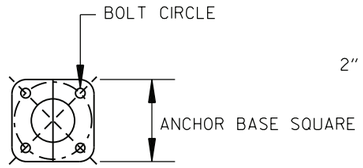
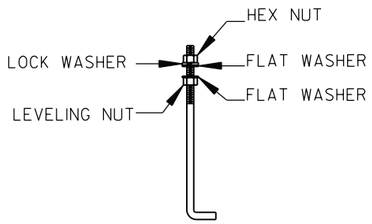
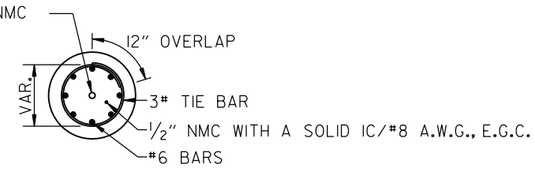


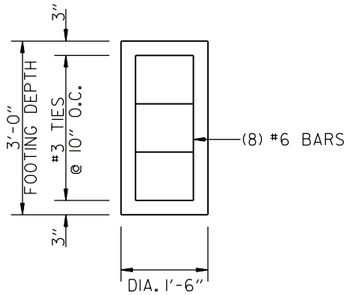


ANCHOR BASE
N.T.S.



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.

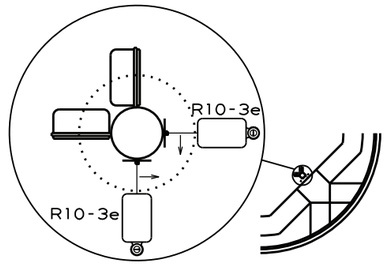
HAND HOLE - HAND HOLES SHALL BE 3 IN. X 5 IN. FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL.

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

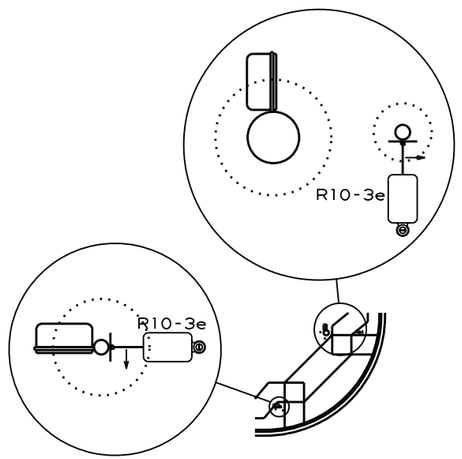
GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPARATELY.

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.

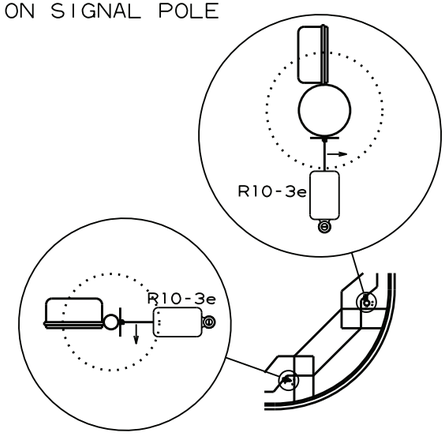
CONCRETE - ALL CONCRETE POLE FOUNDATION SHALL BE CLASS "S" OR GREATER.



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

LOCATION:	HWY. 351 NORTH & SOUTH INTERS. IMPVTS.
CITY:	JONESBORO
COUNTY:	CRAIGHEAD
DISTRICT: 10	SCALE: N/A DRAWN BY: BRB/GWE

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(2) TRAFFIC SIGNAL QUANTITIES - HWY. 351 N.

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

05-01-2024

STAGE 1 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)	90	LIN. FT.
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	7	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	3	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1865	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	689	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	47	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	47	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	70	LIN. FT.
710	NON-METALLIC CONDUIT (2")	30	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	1	EACH
SS & 713	SPAN WIRE ASSEMBLY	1	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.25	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)	970	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	1	EACH

STAGE 1:
INSTALL ALL TEMPORARY TRAFFIC SIGNAL EQUIPMENT, INCLUDING THE PERMANENT SERVICE POINT ASSEMBLY (2 CIRCUITS) WITH ALL ASSOCIATED ITEMS AS SHOWN ON THE STAGE 1 TEMPORARY TRAFFIC SIGNAL PLANS AND REMOVE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT. INSTALL TWO (2) LOCAL RADIOS (E-NET 5.8) WITH ANTENNA FOR POINT TO POINT CONTECTION WITH THE LOCAL RADIO (E-NET 5.8) WITH ANTENNA AT THE HIGHWAY 49 AND HIGHWAY 351 N. INTERSECTION AND WITH THE CENTRAL FIRE STATION EMERGENCY SIGNAL ON HIGHWAY 49. REFER TO SYSTEM LOCAL CONTROLLER SPECIAL PROVISION FOR ETHERNET RADIO SPECIFICATIONS. CONTRACT THE CITY OF JONESBORO ENGINEERING DEPARTMENT TO COORDINATE A COMMUNICATIONS TEST.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 1 TRAFFIC SIGNAL PLANS FOR STAGE 1.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

STAGE 2 TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	2	EACH
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	570	LIN. FT.
733	VIDEO DETECTOR RELOCATION	1	EACH
SP	VIDEO DETECTOR ROTATION	1	EACH

STAGE 2 :
RELOCATE TRAFFIC SIGNAL HEADS 4, 5, 9, AND 10, ROTATE VIDEO DETECTOR V4, RELOCATE VIDEO DETECTOR V3, AND ADD NEW SIGNAL HEADS 11 AND 12, AND ADD NEW VIDEO DETECTOR V7.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 2 TRAFFIC SIGNAL PLANS.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

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)	144	LIN. FT.
SP	ANTENNA SUPPORT (SHOE BASE, 35' HT.)	1	EACH
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)	12	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	3	EACH
SP & 707	CENTRAL CONTROL UNIT	1	EACH
SP & 707	POLE MOUNTED ASSEMBLY	3	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.)	490	LIN. FT.
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1270	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	205	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	223	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	662	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	747	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	375	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	82	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1508	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	40	LIN. FT.
710	NON-METALLIC CONDUIT (3")	702	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 2)	2	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	7	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	2	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.25	LUMP SUM
SP	18" STREET NAME SIGN	4	EACH
SP & 733	VIDEO DETECTOR (IP)	7	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	1875	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	EACH

PERMANENT TRAFFIC SIGNAL:
THE TEMPORARY TRAFFIC SIGNAL INSTALLATION FOR STAGE 2 SHALL REMAIN IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL IS COMPLETED AND OPERATIONAL. INSTALL THE PERMANENT TRAFFIC SIGNAL, MAINTAIN THE SERVICE POINT ASSEMBLY (2 CIRCUITS) WITH ALL ASSOCIATED EQUIPMENT THAT WAS INSTALLED IN THE STAGE 1 TEMPORARY TRAFFIC SIGNAL PLANS. REMOVE THE TEMPORARY TRAFFIC SIGNAL COMPONENTS THAT WERE INSTALLED ON THE STAGE 1 AND 2 TEMPORARY TRAFFIC SIGNAL PLANS. INSTALL TWO (2) LOCAL RADIOS (E-NET 5.8) WITH ANTENNA FOR POINT TO POINT CONTECTION WITH THE LOCAL RADIO (E-NET 5.8) WITH ANTENNA AT THE HIGHWAY 49 AND HIGHWAY 351 N. INTERSECTION AND WITH THE CENTRAL FIRE STATION EMERGENCY SIGNAL ON HIGHWAY 49. REFER TO SYSTEM LOCAL CONTROLLER SPECIAL PROVISION FOR ETHERNET RADIO SPECIFICATIONS. CONTACT THE CITY OF JONESBORO ENGINEERING DEPARTMENT TO COORDINATE A COMMUNICATIONS TEST.
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS.)

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(2) SIGNALIZATION PLAN SHEET

STAGE 1 PHASING DIAGRAM

STAGE 1 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.

STAGES 1 AND 2 DETECTOR SPACING CHART

ARDOT HWY. 49 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 351 N. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	85'	N/A

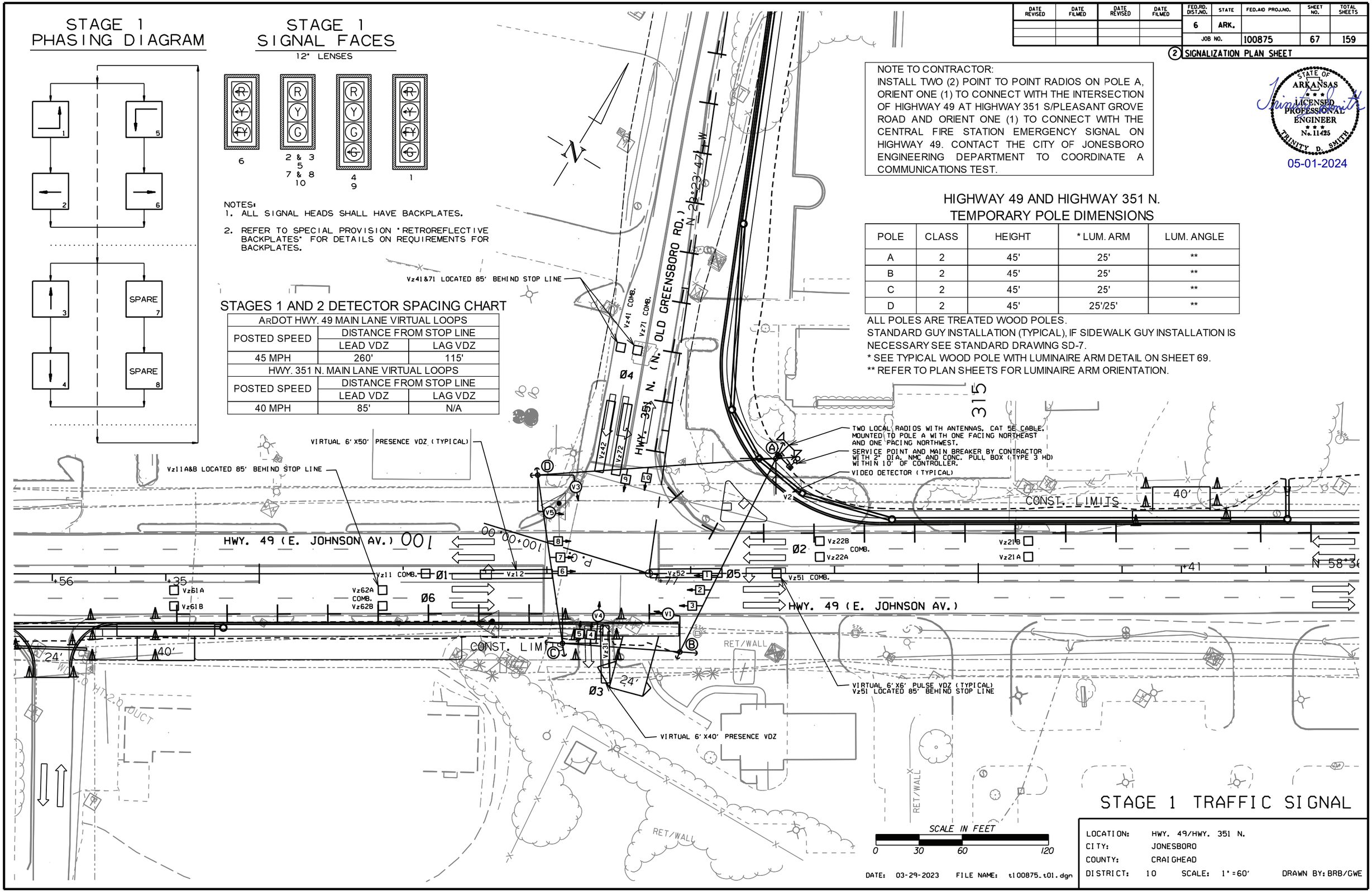
NOTE TO CONTRACTOR:
INSTALL TWO (2) POINT TO POINT RADIOS ON POLE A, ORIENT ONE (1) TO CONNECT WITH THE INTERSECTION OF HIGHWAY 49 AT HIGHWAY 351 S/PLEASANT GROVE ROAD AND ORIENT ONE (1) TO CONNECT WITH THE CENTRAL FIRE STATION EMERGENCY SIGNAL ON HIGHWAY 49. CONTACT THE CITY OF JONESBORO ENGINEERING DEPARTMENT TO COORDINATE A COMMUNICATIONS TEST.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

HIGHWAY 49 AND HIGHWAY 351 N. TEMPORARY POLE DIMENSIONS

POLE	CLASS	HEIGHT	* LUM. ARM	LUM. ANGLE
A	2	45'	25'	**
B	2	45'	25'	**
C	2	45'	25'	**
D	2	45'	25'/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 69.
** REFER TO PLAN SHEETS FOR LUMINAIRE ARM ORIENTATION.



STAGE 1 TRAFFIC SIGNAL

SCALE IN FEET
0 30 60 120

LOCATION: HWY. 49/HWY. 351 N.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=60' DRAWN BY: BRB/GWE

DATE: 03-29-2023 FILE NAME: tl00875_t01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	68	159

(2) SIGNALIZATION PLAN SHEET

TYPICAL WOOD POLE WITH LUMINAIRE ARM

NOTE TO CONTRACTOR:
LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS. LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES. THE COST FOR LUMINAIRE ARMS, MOUNTING, AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

STAGES 1 DESIGN PARAMETERS

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

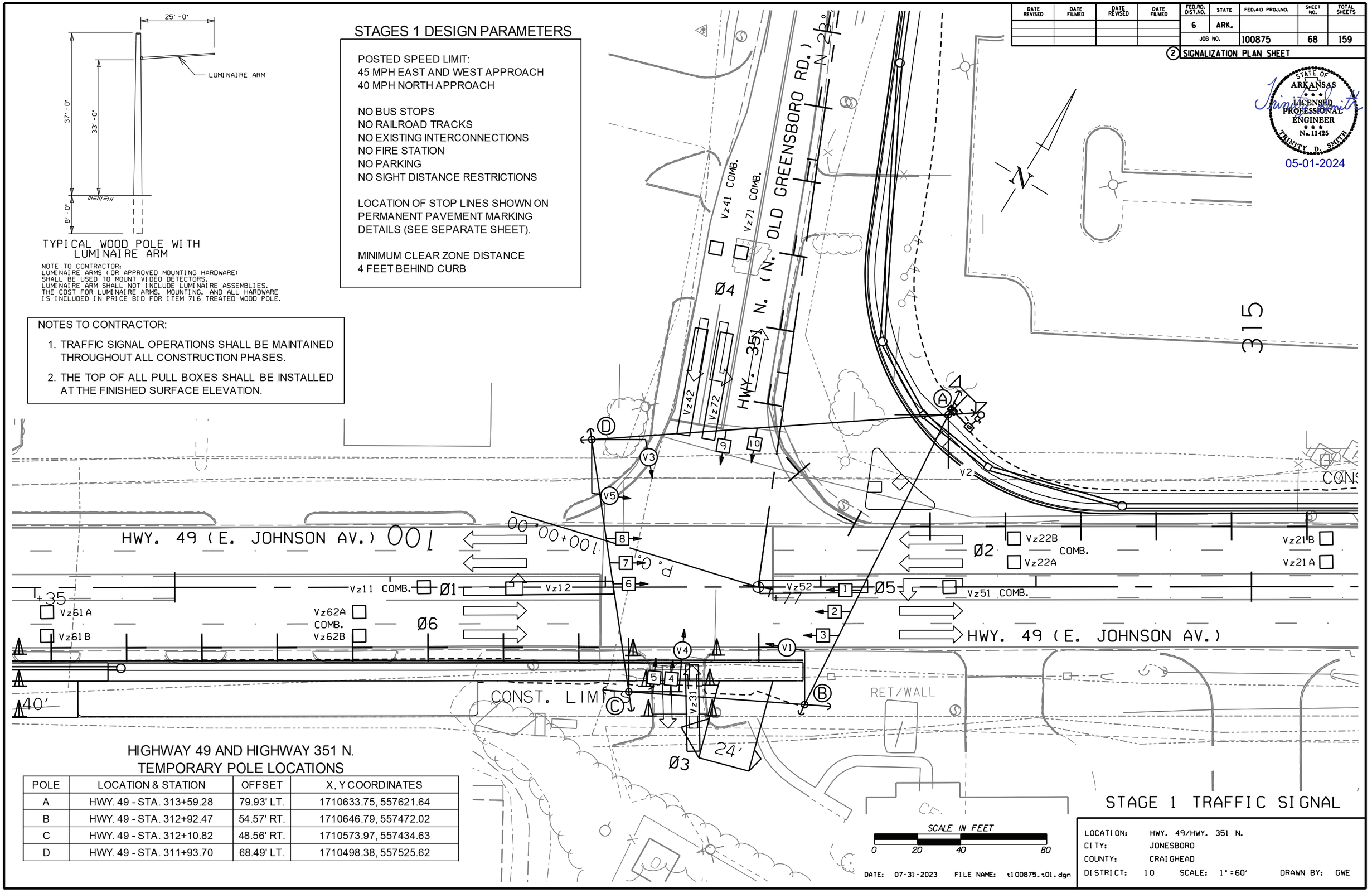
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

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

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

NOTES TO CONTRACTOR:

1. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
2. THE TOP OF ALL PULL BOXES SHALL BE INSTALLED AT THE FINISHED SURFACE ELEVATION.



HIGHWAY 49 AND HIGHWAY 351 N.
TEMPORARY POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 49 - STA. 313+59.28	79.93' LT.	1710633.75, 557621.64
B	HWY. 49 - STA. 312+92.47	54.57' RT.	1710646.79, 557472.02
C	HWY. 49 - STA. 312+10.82	48.56' RT.	1710573.97, 557434.63
D	HWY. 49 - STA. 311+93.70	68.49' LT.	1710498.38, 557525.62

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

SCALE IN FEET
0 20 40 80

DATE: 07-31-2023 FILE NAME: t100875_t01.dgn

STAGE 1 TRAFFIC SIGNAL

LOCATION: HWY. 49/HWY. 351 N.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=60' DRAWN BY: GWE

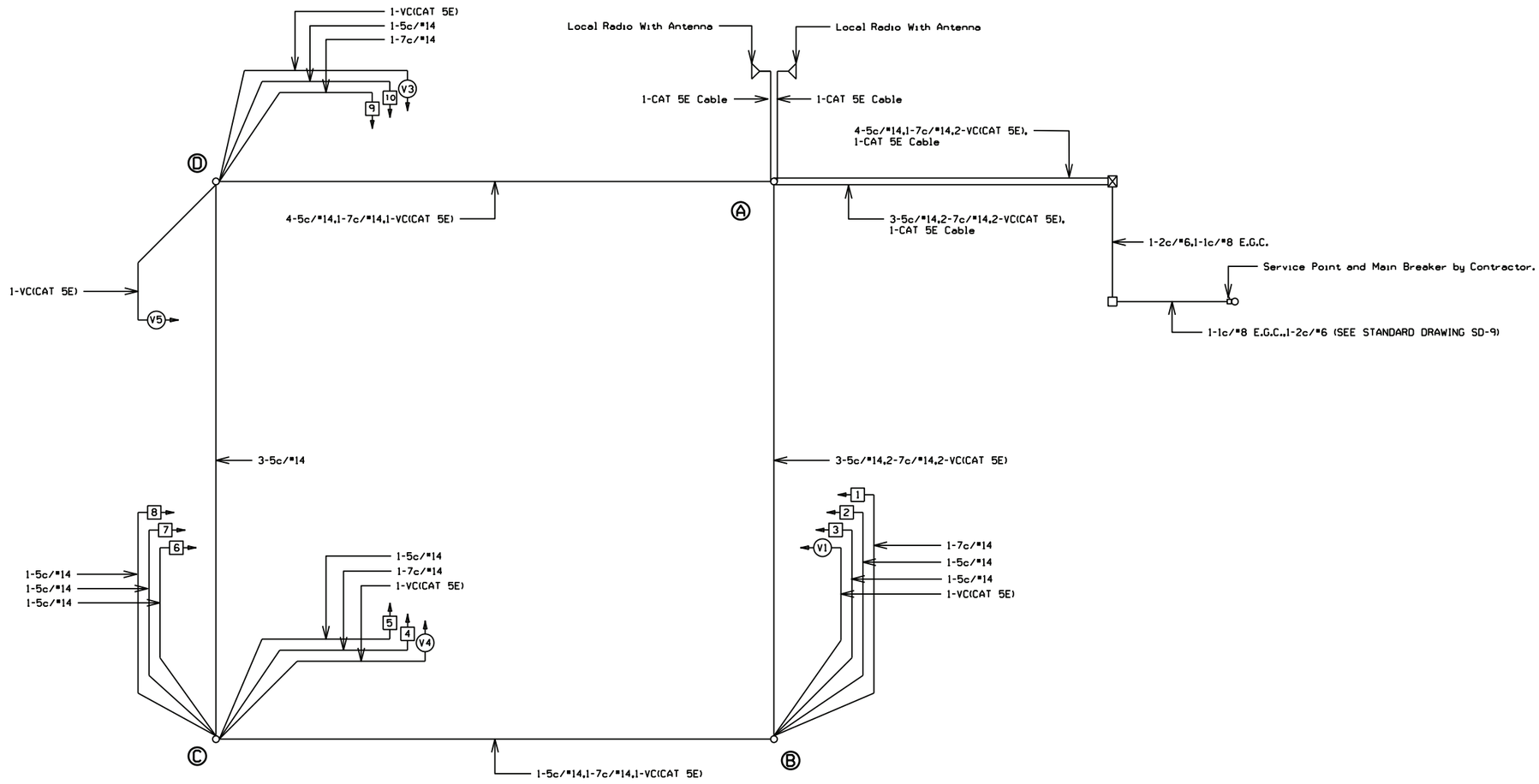
T100875_T01.DGN 7/31/2023

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	69	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024



STAGE 1 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.

LOCATION:	HWY. 49/HWY. 351 N.		
CITY:	JONESBORO		
COUNTY:	CRAIGHEAD		
DISTRICT: 10	SCALE: N/A	DRAWN BY:	BRB/GWE

DATE: 03-29-2024 FILE NAME: t100875_t01.dgn

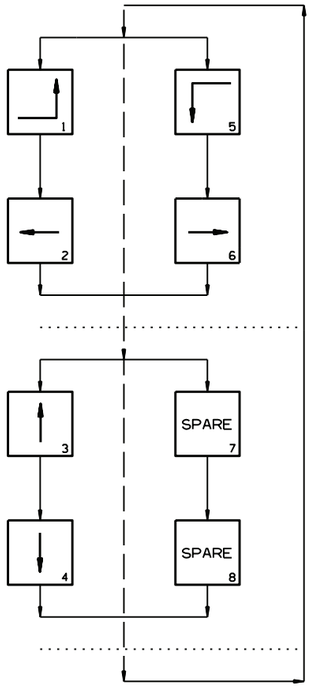
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	70	159

(2) SIGNALIZATION PLAN SHEET

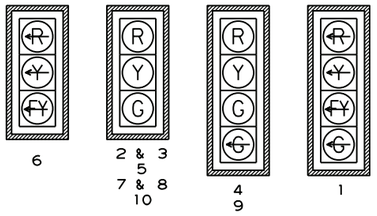
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STAGE 1 PHASING DIAGRAM



STAGE 1 SIGNAL FACES

12" LENSES



6 | 2 & 3 5 7 & 8 10 | 4 9 | 1

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

STAGE 1 DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 100875											
HIGHWAY 49 AND HIGHWAY 351 N. 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	EB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23"
Vz12	EB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23"
Vz21 A&B	WB ADVANCE	LOCAL			5	V2	2			CAMERA V5	23"
Vz22 A&B	WB NEAR	COMB.			6	V10	2	2		CAMERA V5	23"
Vz31	NB NEAR	LOCAL			10	V3	3			CAMERA V3	23"
Vz41	SB RIGHT TURN FAR	COMB.			13	V4	4			CAMERA V4	23"
Vz42	SB RIGHT TURN	LOCAL			14	V12	4	4		CAMERA V4	23"
Vz51	WB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23"
Vz52	WB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	23"
Vz61 A&B	EB ADVANCE	LOCAL			3	V6	6			CAMERA V1	23"
Vz62 A&B	EB NEAR	COMB.			4	V14	6	6		CAMERA V1	23"
Vz71	SB LEFT TURN/THRU FAR	COMB.			15	V15	7	7		CAMERA V4	23"
Vz72	SB LEFT TURN/THRU	LOCAL			16	V7	7			CAMERA V4	23"
					SPARE: 9, 11 AND 12						

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

STAGE 1 INTERVAL CHART

SIGNAL FACES	HIGHWAY 49 AND HIGHWAY 351 N.													FLASH SEQUENCE
	1+5	CLR.	1+6	CLR.	2+5	C_R.	2+6	CLR.	3	CLR.	4	CLR.		
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	~~FY~~	***	~~FY~~	***	~~FY~~	***	~~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

DATE: 07-31-2023 FILE NAME: t100875_t01.dgn

LOCATION: HWY. 49/HWY. 351 N.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	71	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STAGES 2 PHASING DIAGRAM

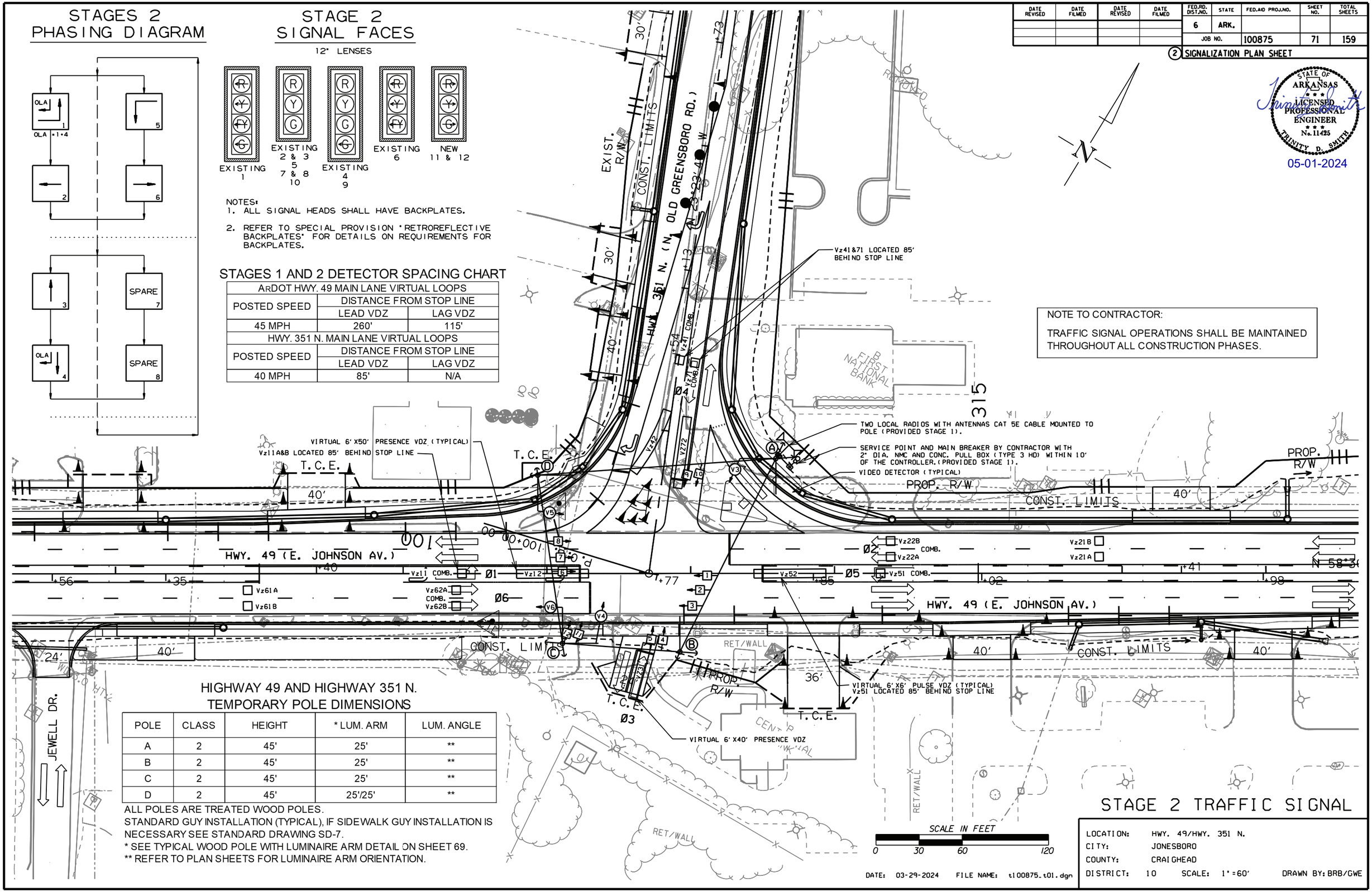
STAGE 2 SIGNAL FACES

12" LENSES

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

STAGES 1 AND 2 DETECTOR SPACING CHART

ARDOT HWY. 49 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 351 N. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	85'	N/A



NOTE TO CONTRACTOR:

TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

HIGHWAY 49 AND HIGHWAY 351 N. TEMPORARY POLE DIMENSIONS

POLE	CLASS	HEIGHT	* LUM. ARM	LUM. ANGLE
A	2	45'	25'	**
B	2	45'	25'	**
C	2	45'	25'	**
D	2	45'	25'/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 69.
** REFER TO PLAN SHEETS FOR LUMINAIRE ARM ORIENTATION.

SCALE IN FEET
0 30 60 120

STAGE 2 TRAFFIC SIGNAL

LOCATION:	HWY. 49/HWY. 351 N.		
CITY:	JONESBORO		
COUNTY:	CRAIGHEAD		
DISTRICT:	10	SCALE:	1"=60'
DRAWN BY:	BRB/GWE		

DATE: 03-29-2024 FILE NAME: t100875_t01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	72	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

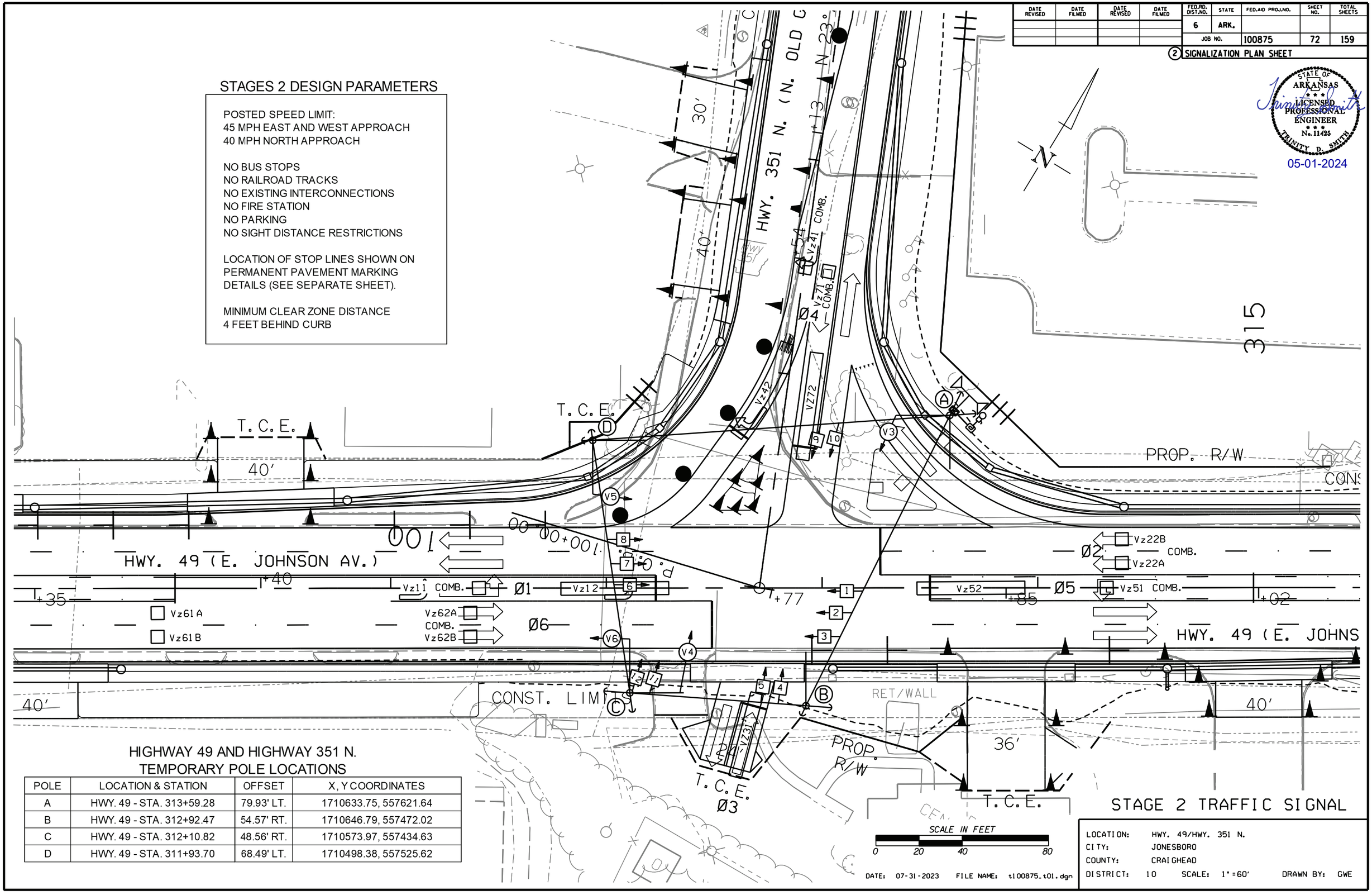
STAGES 2 DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH EAST AND WEST APPROACH
40 MPH NORTH 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 HIGHWAY 351 N.
TEMPORARY POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 49 - STA. 313+59.28	79.93' LT.	1710633.75, 557621.64
B	HWY. 49 - STA. 312+92.47	54.57' RT.	1710646.79, 557472.02
C	HWY. 49 - STA. 312+10.82	48.56' RT.	1710573.97, 557434.63
D	HWY. 49 - STA. 311+93.70	68.49' LT.	1710498.38, 557525.62

STAGE 2 TRAFFIC SIGNAL

LOCATION: HWY. 49/HWY. 351 N.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=60' DRAWN BY: GWE

DATE: 07-31-2023 FILE NAME: t100875_t01.dgn

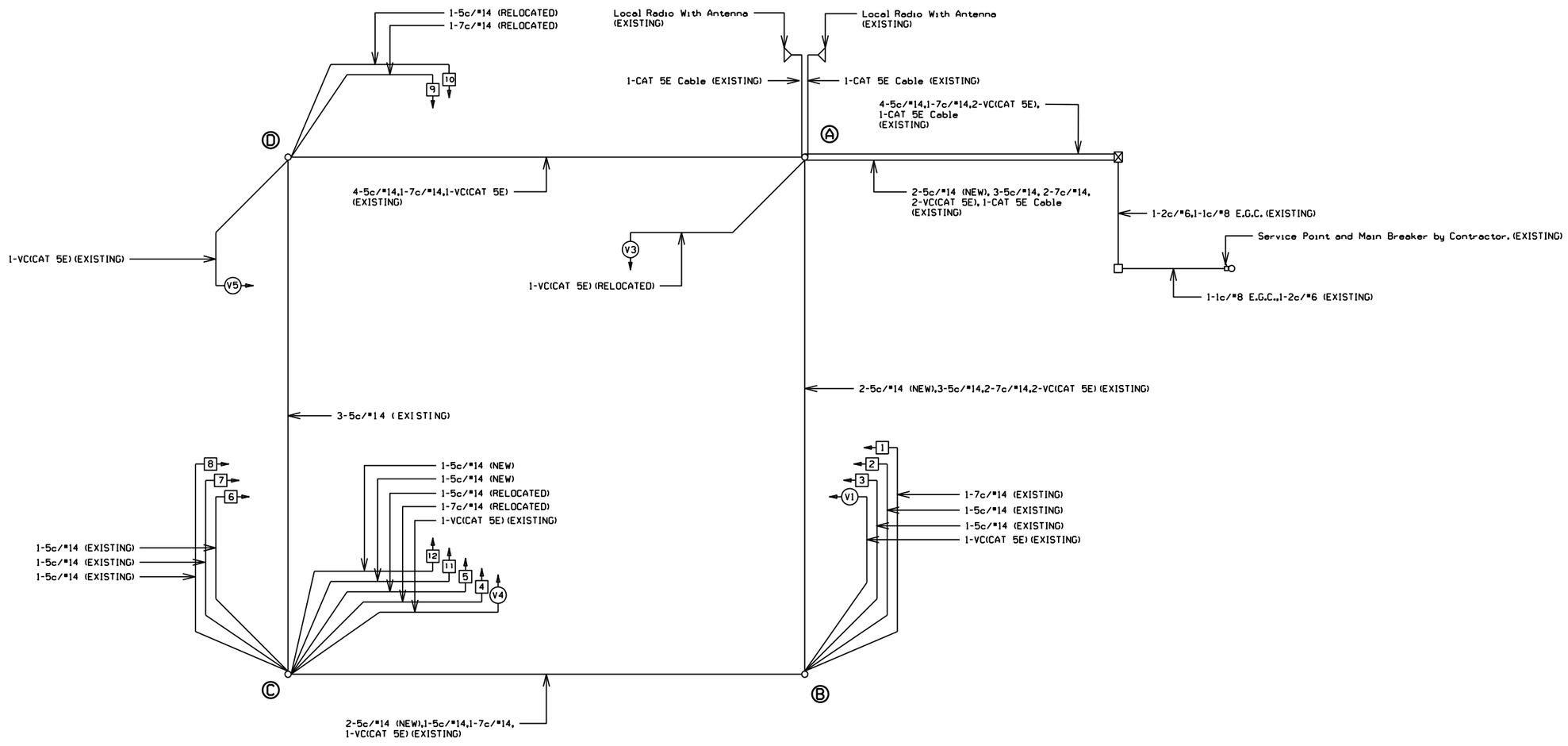
T100875_T01.DGN 7/31/2023

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	73	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024



STAGE 2 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.

DATE: 03-29-2024 FILE NAME: t100875_t01.dgn

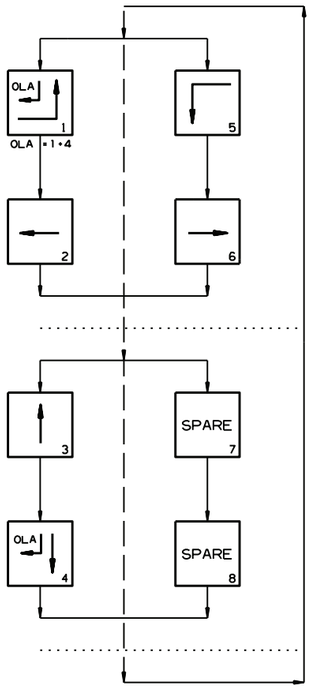
LOCATION:	HWY. 49/HWY. 351 N.			
CITY:	JONESBORO			
COUNTY:	CRAIGHEAD			
DISTRICT:	10	SCALE: N/A	DRAWN BY:	BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	74	159

(2) SIGNALIZATION PLAN SHEET

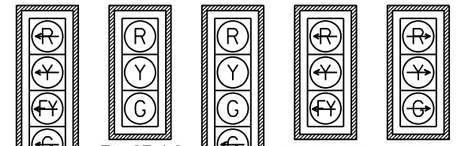
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STAGES 2 PHASING DIAGRAM



STAGE 2 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.

STAGE 2 DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 100875											
HIGHWAY 49 AND HIGHWAY 351 N. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM DETECTOR NUMBERS	COMMENTS	TUBE LENGTHS
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz11 A&B	EB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23"
Vz12 A&B	EB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23"
Vz21 A&B	WB ADVANCE	LOCAL			5	V2	2			CAMERA V5	23"
Vz22 A&B	WB NEAR	COMB.			6	V10	2	2		CAMERA V5	23"
Vz31	NB NEAR	LOCAL			10	V3	3			CAMERA V3	23"
Vz41	SB RIGHT TURN FAR	COMB.			13	V4	4			CAMERA V4	23"
Vz42	SB RIGHT TURN	LOCAL			14	V12	4	4		CAMERA V4	23"
Vz51	WB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23"
Vz52	WB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	23"
Vz61 A&B	EB ADVANCE	LOCAL			3	V6	6			CAMERA V1	23"
Vz62 A&B	EB NEAR	COMB.			4	V14	6	6		CAMERA V1	23"
Vz71	SB LEFT TURN/THRU FAR	COMB.			15	V15	7	7		CAMERA V4	23"
Vz72	SB LEFT TURN/THRU	LOCAL			16	V7	7			CAMERA V4	23"
					SPARE: 9, 11 AND 12						

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

STAGE 2 INTERVAL CHART

SIGNAL FACES	HIGHWAY 49 AND HIGHWAY 351 N. 1+5	CLR.	1+6	CLR.	2+5	C_R.	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	~~FY~~	***	~~FY~~	***	~~FY~~	***	~~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
11 & 12	~~G~~	*	~~G~~	*	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	~~Y~~		~~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

DATE: 07-31-2023 FILE NAME: t100875_t01.dgn

LOCATION: HWY. 49/HWY. 351 N.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	75	159

(2) SIGNALIZATION PLAN SHEET

PHASING DIAGRAM

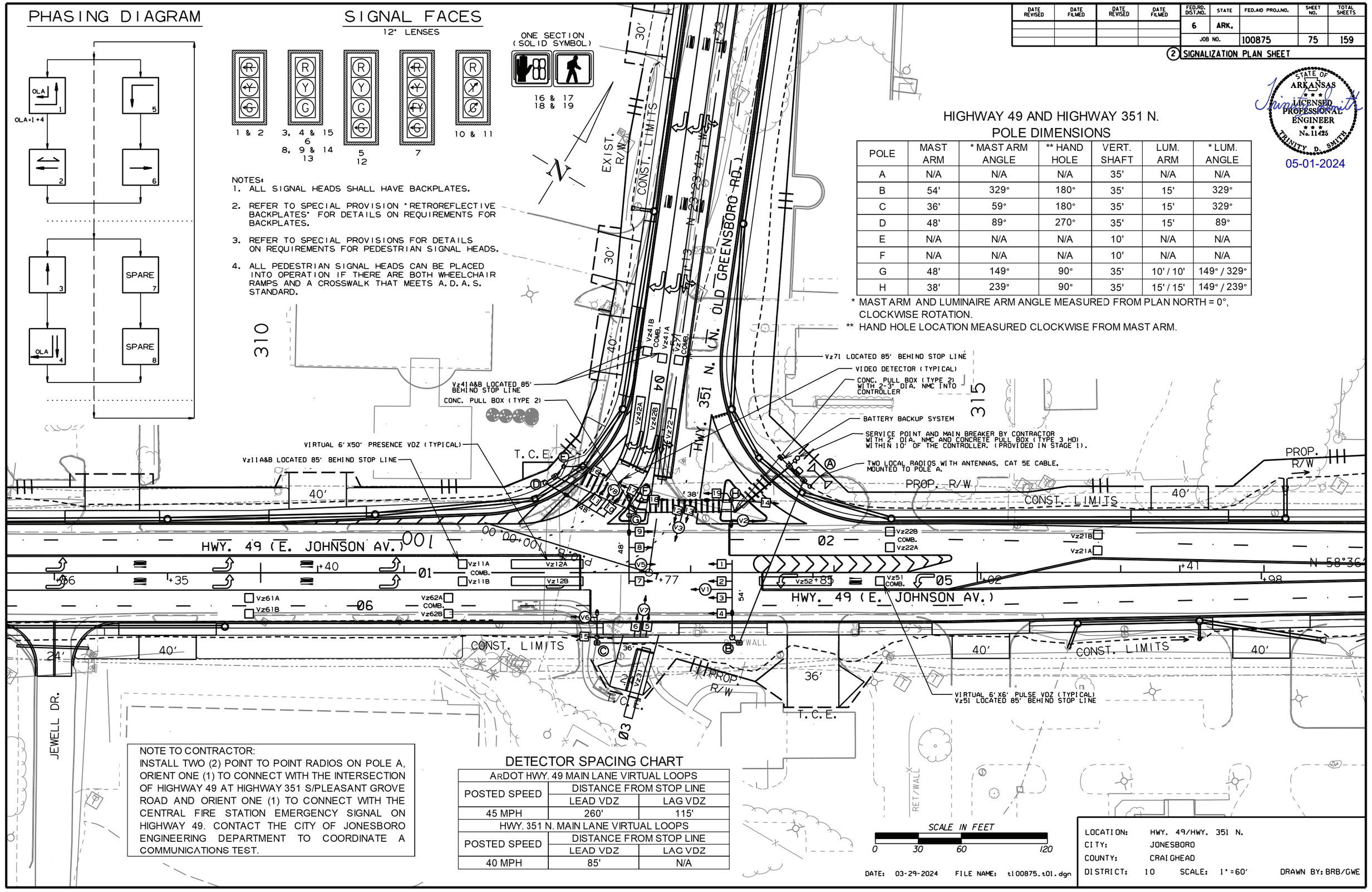
SIGNAL FACES

12" LENSES

ONE SECTION (SOLID SYMBOL)

16 & 17
18 & 19

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.



HIGHWAY 49 AND HIGHWAY 351 N.
POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	** HAND HOLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	N/A	N/A	N/A	35'	N/A	N/A
B	54'	329°	180°	35'	15'	329°
C	36'	59°	180°	35'	15'	329°
D	48'	89°	270°	35'	15'	89°
E	N/A	N/A	N/A	10'	N/A	N/A
F	N/A	N/A	N/A	10'	N/A	N/A
G	48'	149°	90°	35'	10' / 10'	149° / 329°
H	38'	239°	90°	35'	15' / 15'	149° / 239°

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

** HAND HOLE LOCATION MEASURED CLOCKWISE FROM MAST ARM.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

NOTE TO CONTRACTOR:
INSTALL TWO (2) POINT TO POINT RADIOS ON POLE A, ORIENT ONE (1) TO CONNECT WITH THE INTERSECTION OF HIGHWAY 49 AT HIGHWAY 351 S/PLEASANT GROVE ROAD AND ORIENT ONE (1) TO CONNECT WITH THE CENTRAL FIRE STATION EMERGENCY SIGNAL ON HIGHWAY 49. CONTACT THE CITY OF JONESBORO ENGINEERING DEPARTMENT TO COORDINATE A COMMUNICATIONS TEST.

DETECTOR SPACING CHART

ARDOT HWY. 49 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 351 N. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	85'	N/A

SCALE IN FEET
0 30 60 120

DATE: 03-29-2024 FILE NAME: tl00875_t01.dgn

LOCATION:	HWY. 49/HWY. 351 N.		
CITY:	JONESBORO		
COUNTY:	CRAIGHEAD		
DISTRICT:	10	SCALE: 1"=60'	DRAWN BY: BRB/GWE

DESIGN PARAMETERS

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	76	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

CONTROLLER CABINET LOCATION

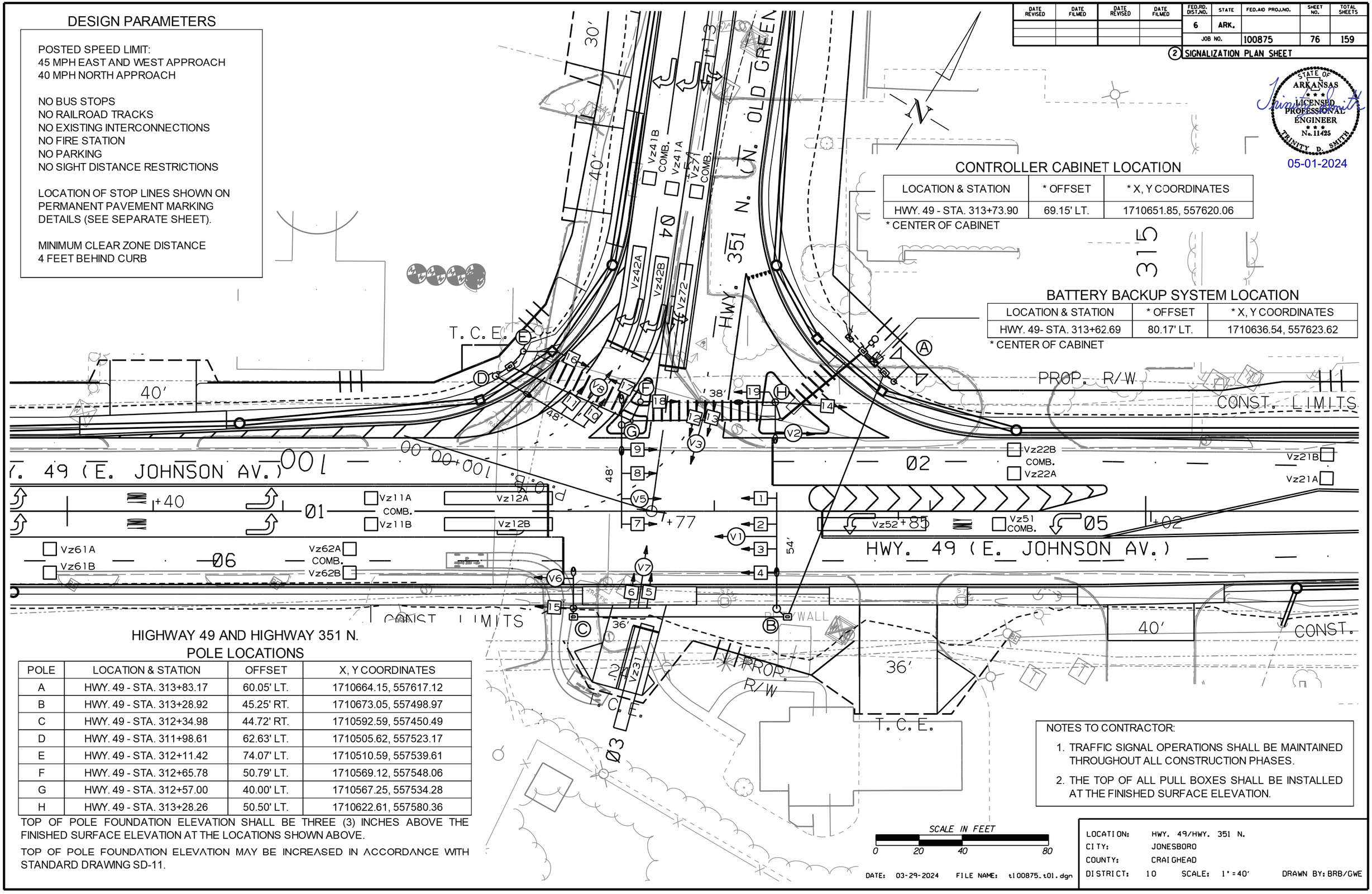
LOCATION & STATION	* OFFSET	* X, Y COORDINATES
HWY. 49 - STA. 313+73.90	69.15' LT.	1710651.85, 557620.06

* CENTER OF CABINET

BATTERY BACKUP SYSTEM LOCATION

LOCATION & STATION	* OFFSET	* X, Y COORDINATES
HWY. 49- STA. 313+62.69	80.17' LT.	1710636.54, 557623.62

* CENTER OF CABINET



HIGHWAY 49 AND HIGHWAY 351 N.
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 49 - STA. 313+83.17	60.05' LT.	1710664.15, 557617.12
B	HWY. 49 - STA. 313+28.92	45.25' RT.	1710673.05, 557498.97
C	HWY. 49 - STA. 312+34.98	44.72' RT.	1710592.59, 557450.49
D	HWY. 49 - STA. 311+98.61	62.63' LT.	1710505.62, 557523.17
E	HWY. 49 - STA. 312+11.42	74.07' LT.	1710510.59, 557539.61
F	HWY. 49 - STA. 312+65.78	50.79' LT.	1710569.12, 557548.06
G	HWY. 49 - STA. 312+57.00	40.00' LT.	1710567.25, 557534.28
H	HWY. 49 - STA. 313+28.26	50.50' LT.	1710622.61, 557580.36

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.

NOTES TO CONTRACTOR:

1. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
2. THE TOP OF ALL PULL BOXES SHALL BE INSTALLED AT THE FINISHED SURFACE ELEVATION.

SCALE IN FEET
0 20 40 80

DATE: 03-29-2024 FILE NAME: t100875_t01.dgn

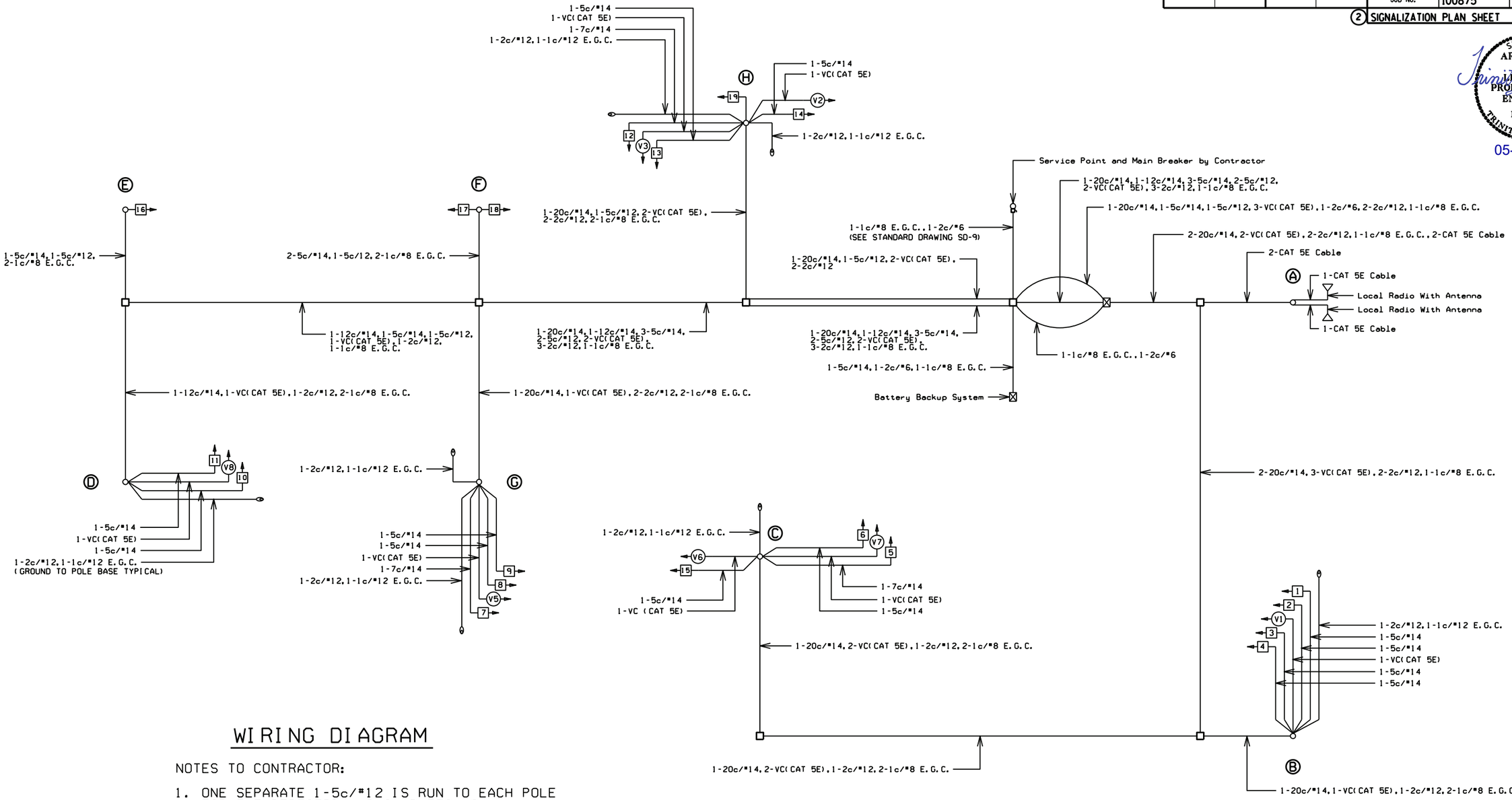
LOCATION: HWY. 49/HWY. 351 N.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=40' DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	77	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024



WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c/#12 IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON(S).
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. SEE GROUNDING ARRAY DETAIL ON SHEET 65.
5. BI-DIRECTIONAL PUSHBUTTON TO BE INSTALLED ON POLE F.

LOCATION:	HWY. 49/HWY. 351 N.		
CITY:	JONESBORO		
COUNTY:	CRAIGHEAD		
DISTRICT: 10	SCALE: N/A	DRAWN BY:	BRB/GWE

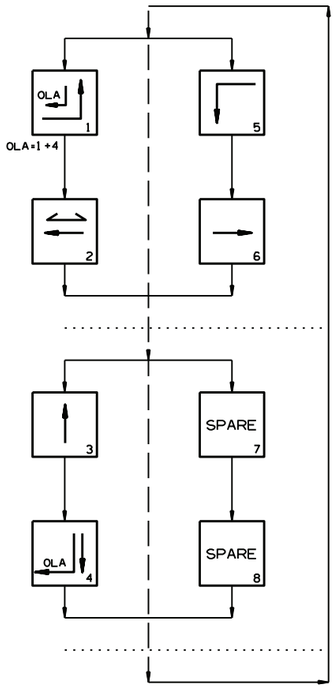
DATE: 03-29-2024 FILE NAME: t100875_t01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	78	159

(2) SIGNALIZATION PLAN SHEET

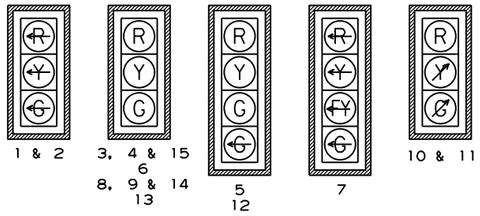
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

PHASING DIAGRAM

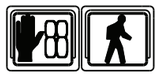


SIGNAL FACES

12" LENSES



ONE SECTION
(SOLID SYMBOL)



16 & 17
18 & 19

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.

DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 100875											
HIGHWAY 49 AND HIGHWAY 351 N. 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 A&B	EB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	74"
Vz12 A&B	EB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	74"
Vz21 A&B	WB ADVANCE	LOCAL			5	V2	2			CAMERA V2	23"
Vz22 A&B	WB NEAR	COMB.			6	V10	2	2		CAMERA V5	74"
Vz31	NB NEAR	LOCAL			10	V3	3			CAMERA V3	37"
Vz41 A&B	SB RIGHT TURN FAR	COMB.			13	V4	4			CAMERA V8	37"
Vz42 A&B	SB RIGHT TURN	LOCAL			14	V12	4	4		CAMERA V8	37"
Vz51	WB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	74"
Vz52	WB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	74"
Vz61 A&B	EB ADVANCE	LOCAL			3	V6	6			CAMERA V6	23"
Vz62 A&B	EB NEAR	COMB.			4	V14	6	6		CAMERA V1	74"
Vz71	SB LEFT TURN/THRU FAR	COMB.			15	V15	7	7		CAMERA V7	74"
Vz72	SB LEFT TURN/THRU	LOCAL			16	V7	7			CAMERA V7	74"
PB2 A&B	HWY. 351 N. LEG	PED.				P2	2				
					SPARE: 9, 11 AND 12						

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

INTERVAL CHART

SIGNAL FACES	HIGHWAY 49 AND HIGHWAY 351 N. 1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3	CLR.	4	CLR.	FLASH SEQUENCE
1 & 2	~~G~~	*	~~G~~	*	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
3, 4, & 15	R	R	G	**	R	R	G	**	R	R	R	R	R
5	R	R	R	R	R	R	R	R	R	R	G ~~G~~	Y	R
6	R	R	R	R	R	R	R	R	R	R	G	Y	R
7	~~G~~	*	~~FY~~	***	~~G~~	*	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
8, 9, & 14	R	R	R	R	G	**	G	**	R	R	R	R	R
10 & 11	~~G~~	*	~~G~~	*	R	R	R	R	R	R	~~G~~	~~Y~~	R
12	R	R	R	R	R	R	R	R	G ~~G~~	Y	R	R	R
13	R	R	R	R	R	R	R	R	G	Y	R	R	R
16,17,18, & 19	DW	DW	DW	DW	W	FDW	W	FDW	DW	DW	DW	DW	BLK

* 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

DATE: 07-31-2023 FILE NAME: t100875_t01.dgn

LOCATION: HWY. 49/HWY. 351 N.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	79	159

(2) TRAFFIC SIGNAL QUANTITIES - HWY. 351 S.

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

05-01-2024

STAGE 1 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)	45	LIN. FT.
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	2	EACH
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	733	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	45	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	45	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	70	LIN. FT.
710	NON-METALLIC CONDUIT (2")	30	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	1	EACH
SS & 713	SPAN WIRE ASSEMBLY	1	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.25	LUMP SUM
716	TREATED WOOD POLE (CLASS 1, 45')	2	EACH
SP & 733	VIDEO DETECTOR (IP)	4	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	505	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	1	EACH

STAGE 1:
INSTALL ALL TEMPORARY TRAFFIC SIGNAL EQUIPMENT, INCLUDING THE PERMANENT SERVICE POINT ASSEMBLY (2 CIRCUITS) WITH ALL ASSOCIATED ITEMS AS SHOWN ON THE STAGE 1 TEMPORARY TRAFFIC SIGNAL PLANS AND REMOVE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT. MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 1 TRAFFIC SIGNAL PLANS. INSTALL ONE (1) LOCAL RADIO (E-NET 5.8) WITH ANTENNA FOR POINT TO POINT CONTECTION WITH THE LOCAL RADIO (E-NET 5.8) WITH ANTENNA AT THE HIGHWAY 49 AND HIGHWAY 351 N. INTERSECTION, REFER TO SYSTEM LOCAL CONTROLLER SPECIAL PROVISION FOR ETHERNET RADIO SPECIFICATIONS.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

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)	85	LIN. FT.
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	9	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	2	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.)	1105	LIN. FT.
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	860	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	354	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	257	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	507	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	655	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	230	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	43	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	737	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	40	LIN. FT.
710	NON-METALLIC CONDUIT (3")	600	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 1)	1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3)	1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	3	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (30')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	2	EACH
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.25	LUMP SUM
SP	18" STREET NAME SIGN	6	EACH
SP & 733	VIDEO DETECTOR (IP)	8	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	1548	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	EACH

PERMANENT TRAFFIC SIGNAL:
THE TEMPORARY TRAFFIC SIGNAL INSTALLATION FOR STAGE 2 SHALL REMAIN IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL IS COMPLETED AND OPERATIONAL. INSTALL THE PERMANENT TRAFFIC SIGNAL, MAINTAIN THE SERVICE POINT ASSEMBLY (2 CIRCUITS) WITH ALL ASSOCIATED EQUIPMENT, AND REMOVE THE TEMPORARY TRAFFIC SIGNAL COMPONENTS THAT WERE INSTALLED ON THE STAGE 1 AND 2 TEMPORARY TRAFFIC SIGNAL PLANS. INSTALL ONE (1) LOCAL RADIO (E-NET 5.8) WITH ANTENNA FOR POINT TO POINT CONTECTION WITH THE LOCAL RADIO (E-NET 5.8) WITH ANTENNA AT THE HIGHWAY 49 AND HIGHWAY 351 N. INTERSECTION, REFER TO SYSTEM LOCAL CONTROLLER SPECIAL PROVISION FOR ETHERNET RADIO SPECIFICATIONS.
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS.)

DATE: 03-29-2024 FILE NAME: t100657_02.dgn

LOCATION: HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	80	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

STAGES 1 AND 2 PHASING DIAGRAM

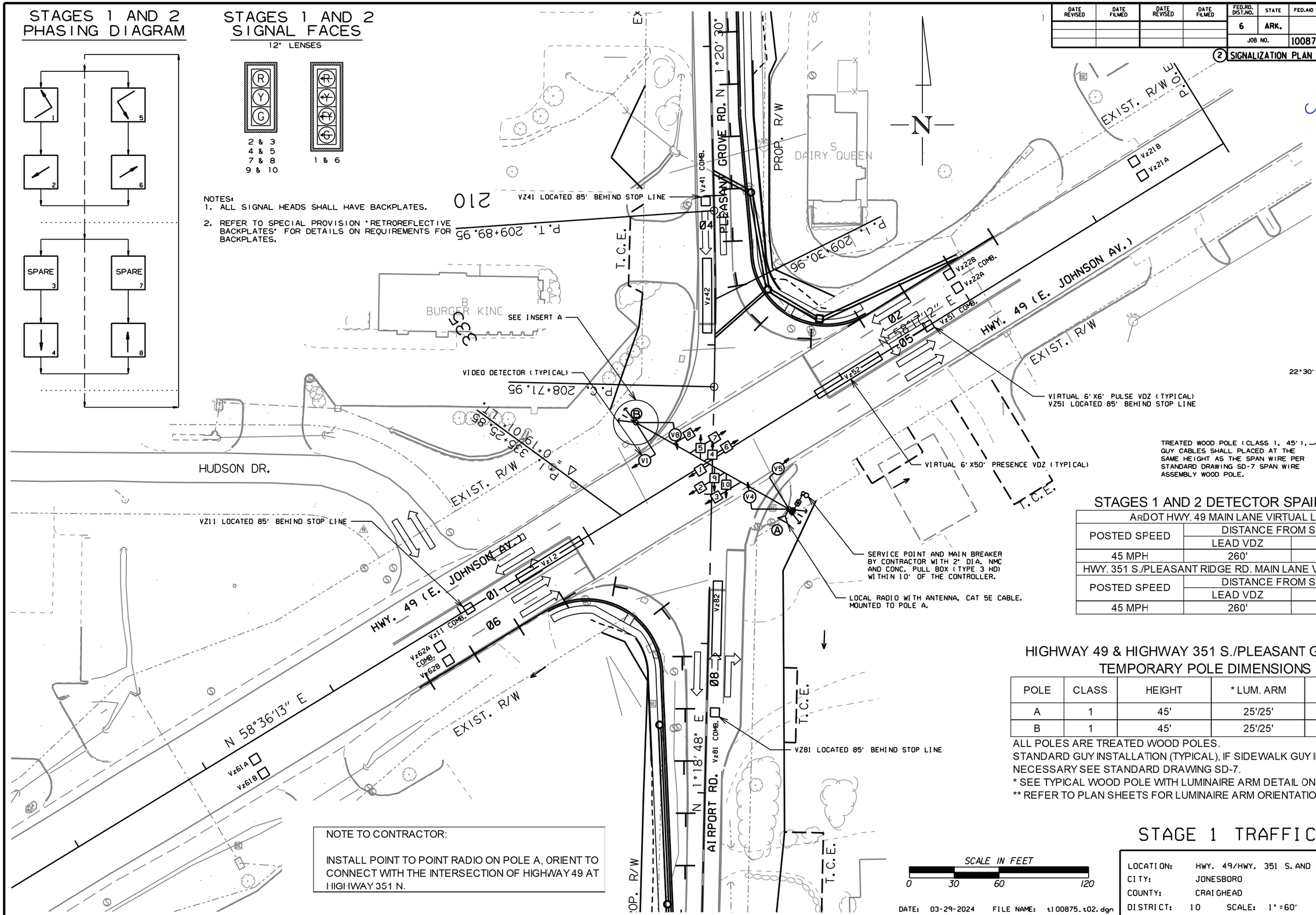
STAGES 1 AND 2 SIGNAL FACES

12" LENSES

2 & 3
4 & 5
7 & 8
9 & 10

1 & 6

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



22°30'

INSERT A

TREATED WOOD POLE (CLASS 1, 45'). GUY CABLES SHALL PLACED AT THE SAME HEIGHT AS THE SPAN WIRE PER STANDARD DRAWING SD-7 SPAN WIRE ASSEMBLY WOOD POLE.

NOTE TO CONTRACTOR:

INSTALL POINT TO POINT RADIO ON POLE A, ORIENT TO CONNECT WITH THE INTERSECTION OF HIGHWAY 49 AT HIGHWAY 351 N.

STAGES 1 AND 2 DETECTOR SPAING CHART

ARDOT HWY. 49 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 351 S./PLEASANT RIDGE RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'

HIGHWAY 49 & HIGHWAY 351 S./PLEASANT GROVE RD. TEMPORARY POLE DIMENSIONS

POLE	CLASS	HEIGHT	* LUM. ARM	LUM. ANGLE
A	1	45'	25'/25'	**
B	1	45'	25'/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 82.
** REFER TO PLAN SHEETS FOR LUMINAIRE ARM ORIENTATION.

SCALE IN FEET
0 30 60 120

STAGE 1 TRAFFIC SIGNAL

LOCATION:	HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.			
CITY:	JONESBORO			
COUNTY:	CRAIGHEAD			
DISTRICT:	10	SCALE:	1"=60'	DRAWN BY: BRB/GWE

DATE: 03-29-2024 FILE NAME: t100875_t02.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	81	159

(2) SIGNALIZATION PLAN SHEET

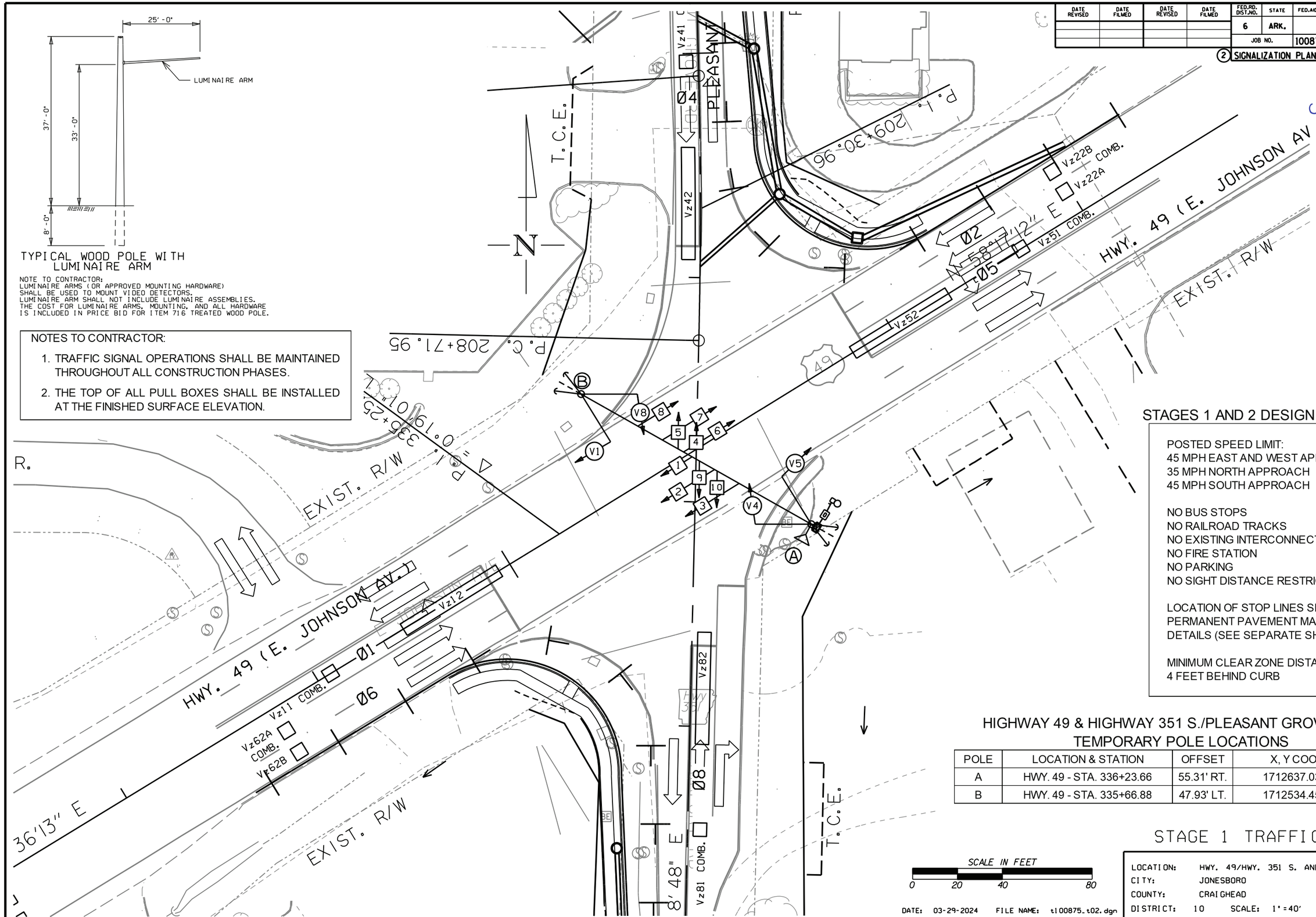
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

TYPICAL WOOD POLE WITH LUMINAIRE ARM

NOTE TO CONTRACTOR:
LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS. LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES. THE COST FOR LUMINAIRE ARMS, MOUNTING, AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

NOTES TO CONTRACTOR:

1. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
2. THE TOP OF ALL PULL BOXES SHALL BE INSTALLED AT THE FINISHED SURFACE ELEVATION.



STAGES 1 AND 2 DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH EAST AND WEST APPROACH
35 MPH NORTH APPROACH
45 MPH 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 & HIGHWAY 351 S./PLEASANT GROVE ROAD. TEMPORARY POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 49 - STA. 336+23.66	55.31' RT.	1712637.03, 558686.47
B	HWY. 49 - STA. 335+66.88	47.93' LT.	1712534.45, 558744.44

STAGE 1 TRAFFIC SIGNAL

SCALE IN FEET
0 20 40 80

DATE: 03-29-2024 FILE NAME: t100875_t02.dgn

LOCATION: HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=40' DRAWN BY: BRB/GWE

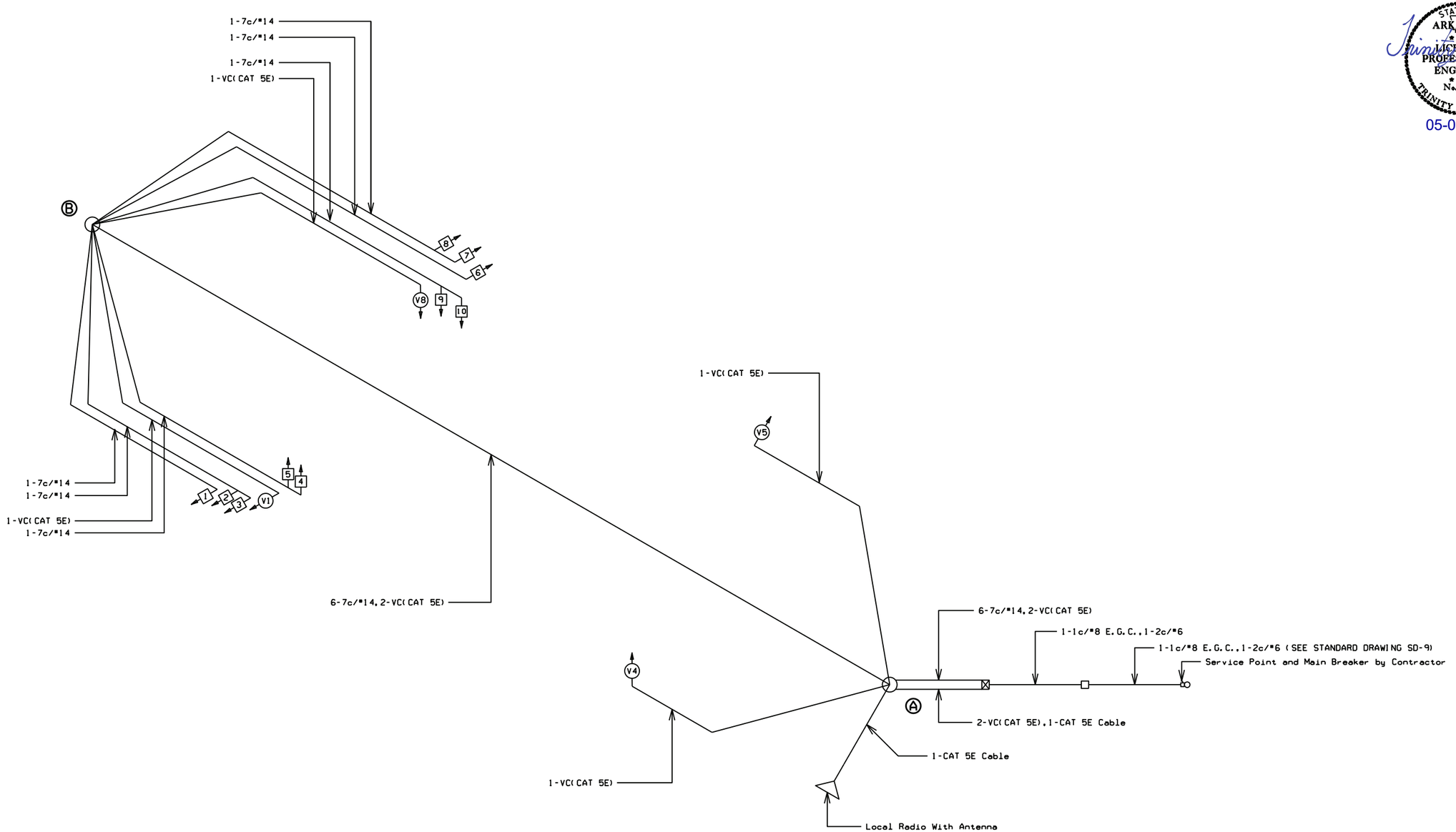
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	82	159

(2) SIGNALIZATION PLAN SHEET

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

05-01-2024



STAGES 1 AND 2 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.

DATE: 03-29-2024 FILE NAME: t100875_t02.dgn

LOCATION:	HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.				
CITY:	JONESBORO				
COUNTY:	CRAIGHEAD				
DISTRICT:	10	SCALE:	N/A	DRAWN BY:	BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

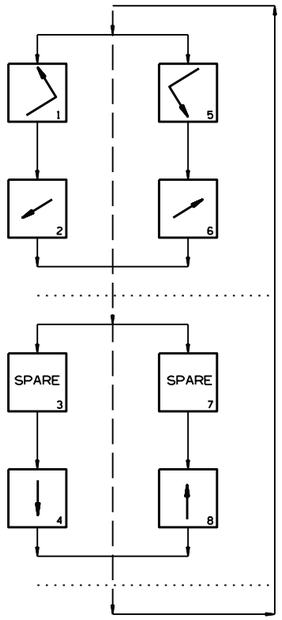
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	83	159

(2) SIGNALIZATION PLAN SHEET

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

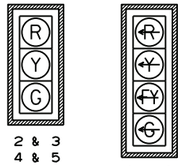
05-01-2024

STAGES 1 AND 2 PHASING DIAGRAM



STAGES 1 AND 2 SIGNAL FACES

12" LENSES



2 & 3
4 & 5
7 & 8
9 & 10

1 & 6

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

STAGES 1 AND 2 DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 100875											
HIGHWAY 49 & HIGHWAY 351 S./PLEASANT GROVE ROAD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM	COMMENTS	TUBE LENGTHS
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAD. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #	DETECTOR NUMBERS		
Vz11	EB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23"
Vz12	EB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23"
Vz21 A&B	WB ADVANCE	LOCAL			5	V2	2			CAMERA V5	23"
Vz22 A&B	WB NEAR	COMB.			6	V10	2	2		CAMERA V5	23"
Vz41	SB ADVANCE	COMB.			9	V4	4	4		CAMERA V4	23"
Vz42	SB NEAR	LOCAL			10	V12	4			CAMERA V4	23"
Vz51	WB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23"
Vz52	WB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	23"
Vz61 A&B	EB ADVANCE	LOCAL			3	V6	6			CAMERA V1	23"
Vz62 A&B	EB NEAR	COMB.			4	V14	6	6		CAMERA V1	23"
Vz81	NB ADVANCE	COMB.			11	V8	8	8		CAMERA V8	23"
Vz82	NB NEAR	LOCAL			12	V16	8			CAMERA V8	23"
					SPARE 13 - 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

STAGES 1 AND 2 INTERVAL CHART

SIGNAL FACES	HIGHWAY 49 & HIGHWAY 351 S./PLEASANT GROVE ROAD. 1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	4+8	CLR.	FLASH SEQUENCE
1	~~G~~	*	~~G~~	*	~~FY~~	***	~~FY~~	***	~~R~~	~~R~~	~~R~~
2 &3	R	R	G	**	R	R	G	**	R	R	R
4 & 5	R	R	R	R	R	R	R	R	G	Y	R
6	~~G~~	*	~~FY~~	***	~~G~~	*	~~FY~~	***	~~R~~	~~R~~	~~R~~
7 & 8	R	R	R	R	G	**	G	**	R	R	R
9 & 10	R	R	R	R	R	R	R	R	G	Y	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

DATE: 07-31-2023 FILE NAME: t100875_t02.dgn

LOCATION: HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
06/04/2024			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	84	159

(2) SIGNALIZATION PLAN SHEET

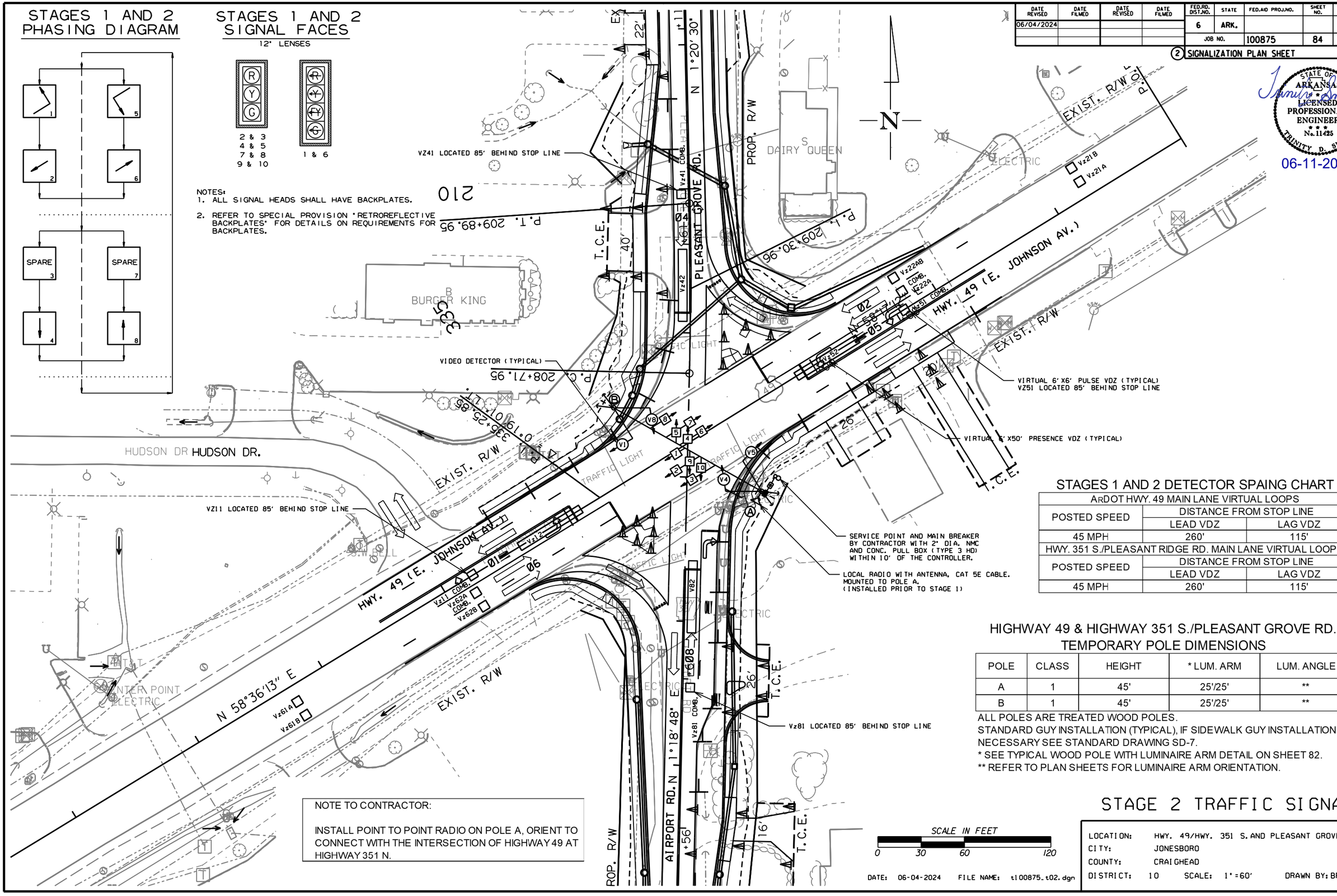
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

STAGES 1 AND 2 PHASING DIAGRAM

STAGES 1 AND 2 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.



NOTE TO CONTRACTOR:

INSTALL POINT TO POINT RADIO ON POLE A, ORIENT TO CONNECT WITH THE INTERSECTION OF HIGHWAY 49 AT HIGHWAY 351 N.

STAGES 1 AND 2 DETECTOR SPAING CHART

ARDOT HWY. 49 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 351 S./PLEASANT RIDGE RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'

HIGHWAY 49 & HIGHWAY 351 S./PLEASANT GROVE RD. TEMPORARY POLE DIMENSIONS

POLE	CLASS	HEIGHT	* LUM. ARM	LUM. ANGLE
A	1	45'	25'/25'	**
B	1	45'	25'/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 82.
** REFER TO PLAN SHEETS FOR LUMINAIRE ARM ORIENTATION.

STAGE 2 TRAFFIC SIGNAL

SCALE IN FEET
0 30 60 120

DATE: 06-04-2024 FILE NAME: t100875_t02.dgn

LOCATION:	HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.		
CITY:	JONESBORO		
COUNTY:	CRAIGHEAD		
DISTRICT:	10	SCALE: 1"=60'	DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
06/04/2024			

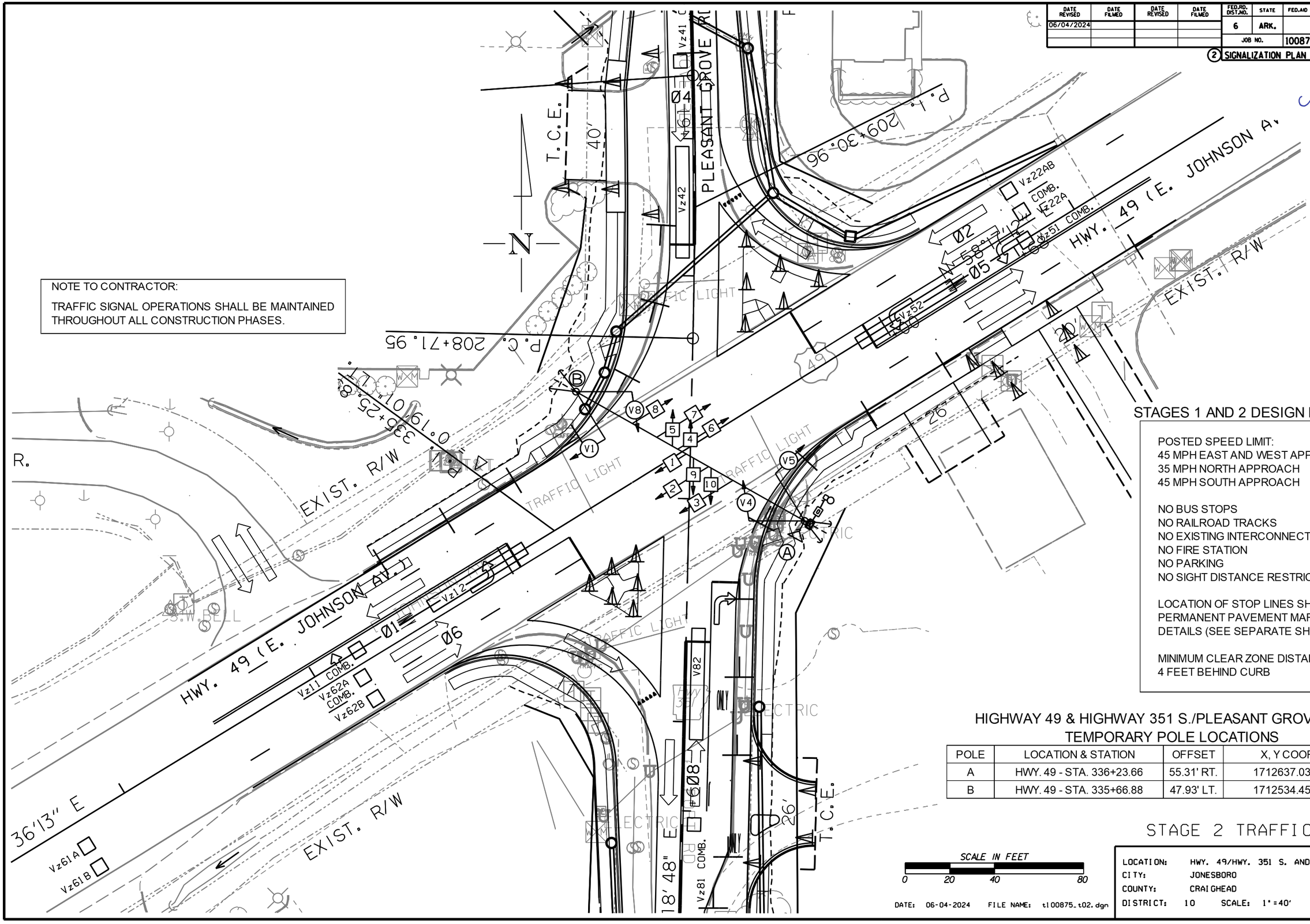
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	85	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

NOTE TO CONTRACTOR:

TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.



STAGES 1 AND 2 DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH EAST AND WEST APPROACH
35 MPH NORTH APPROACH
45 MPH 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 & HIGHWAY 351 S./PLEASANT GROVE ROAD. TEMPORARY POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 49 - STA. 336+23.66	55.31' RT.	1712637.03, 558686.47
B	HWY. 49 - STA. 335+66.88	47.93' LT.	1712534.45, 558744.44

STAGE 2 TRAFFIC SIGNAL

SCALE IN FEET
0 20 40 80

DATE: 06-04-2024 FILE NAME: t100875_t02.dgn

LOCATION: HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=40' DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
06/04/2024				6	ARK.			
				JOB NO.		100875	86	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
06-11-2024

PHASING DIAGRAM

SIGNAL FACES

12" LENSES

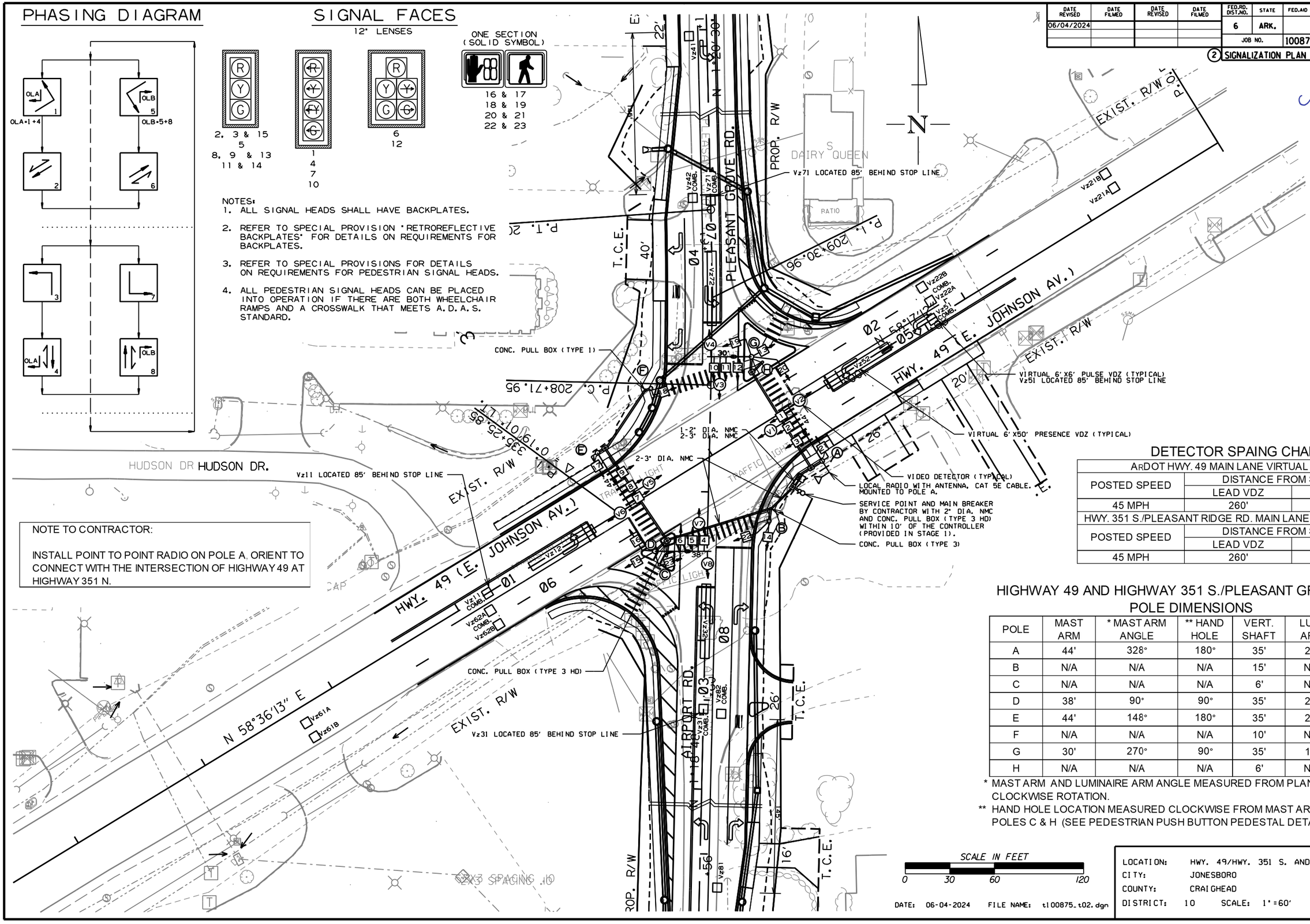
ONE SECTION (SOLID SYMBOL)

16 & 17
18 & 19
20 & 21
22 & 23

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.

NOTE TO CONTRACTOR:

INSTALL POINT TO POINT RADIO ON POLE A. ORIENT TO CONNECT WITH THE INTERSECTION OF HIGHWAY 49 AT HIGHWAY 351 N.



DETECTOR SPAING CHART

ARDOT HWY. 49 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 351 S./PLEASANT RIDGE RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'

HIGHWAY 49 AND HIGHWAY 351 S./PLEASANT GROVE ROAD POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	** HAND HOLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	44'	328°	180°	35'	20'	328°
B	N/A	N/A	N/A	15'	N/A	N/A
C	N/A	N/A	N/A	6'	N/A	N/A
D	38'	90°	90°	35'	20'	90°
E	44'	148°	180°	35'	20'	148°
F	N/A	N/A	N/A	10'	N/A	N/A
G	30'	270°	90°	35'	10'	270°
H	N/A	N/A	N/A	6'	N/A	N/A

* MAST ARM AND LUMINAIRE ARM ANGLE MEASURED FROM PLAN NORTH = 0°, CLOCKWISE ROTATION.
** HAND HOLE LOCATION MEASURED CLOCKWISE FROM MAST ARM. POLES C & H (SEE PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL).

SCALE IN FEET
0 30 60 120

DATE: 06-04-2024 FILE NAME: t100875_t02.dgn

LOCATION: HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=60' DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
06/04/2024			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	87	159

(2) SIGNALIZATION PLAN SHEET

HIGHWAY 49 AND HIGHWAY 351 S./PLEASANT GROVE ROAD
POLE LOCATIONS

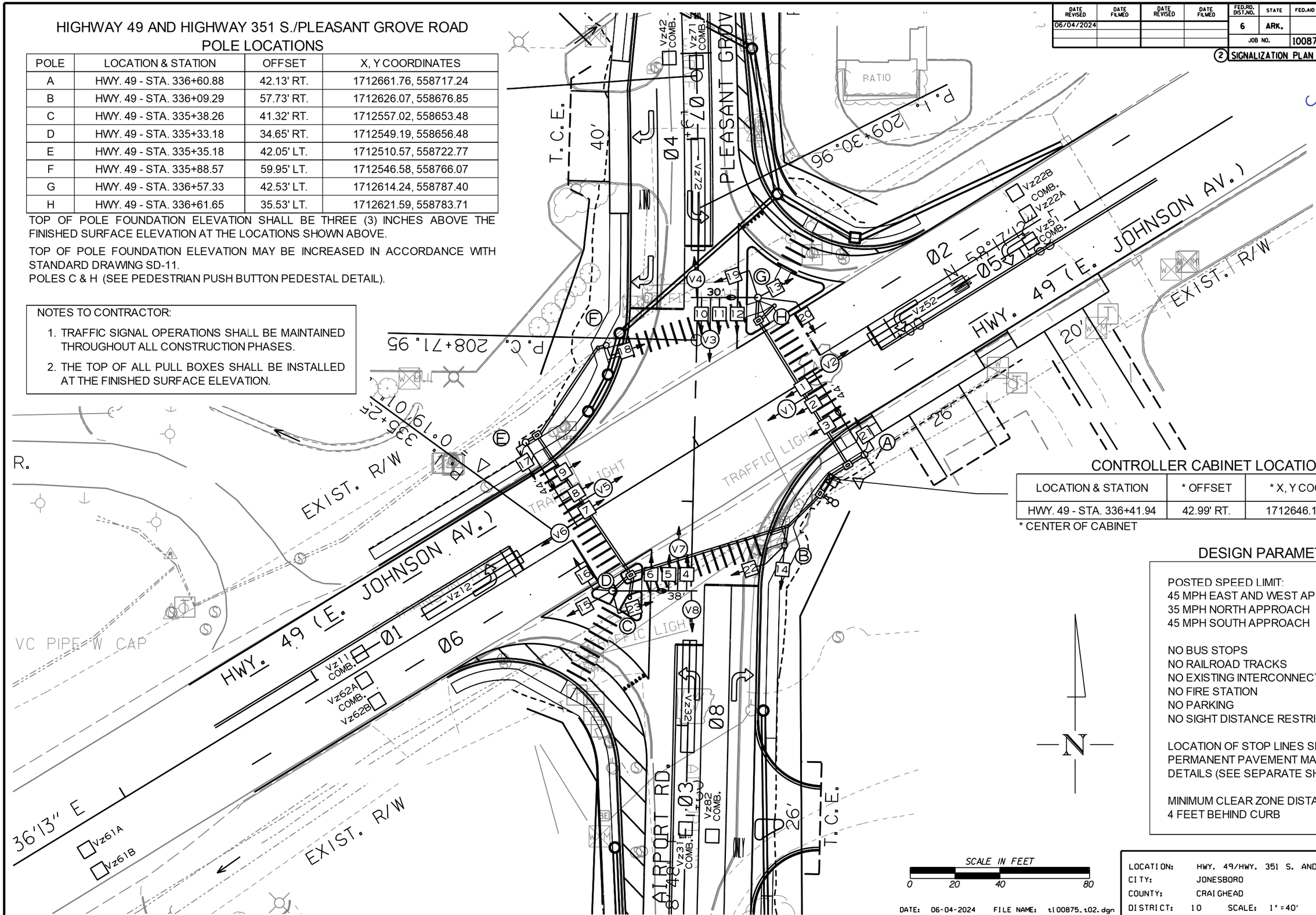
POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 49 - STA. 336+60.88	42.13' RT.	1712661.76, 558717.24
B	HWY. 49 - STA. 336+09.29	57.73' RT.	1712626.07, 558676.85
C	HWY. 49 - STA. 335+38.26	41.32' RT.	1712557.02, 558653.48
D	HWY. 49 - STA. 335+33.18	34.65' RT.	1712549.19, 558656.48
E	HWY. 49 - STA. 335+35.18	42.05' LT.	1712510.57, 558722.77
F	HWY. 49 - STA. 335+88.57	59.95' LT.	1712546.58, 558766.07
G	HWY. 49 - STA. 336+57.33	42.53' LT.	1712614.24, 558787.40
H	HWY. 49 - STA. 336+61.65	35.53' LT.	1712621.59, 558783.71

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.
POLES C & H (SEE PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL).

NOTES TO CONTRACTOR:

1. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
2. THE TOP OF ALL PULL BOXES SHALL BE INSTALLED AT THE FINISHED SURFACE ELEVATION.



CONTROLLER CABINET LOCATION

LOCATION & STATION	* OFFSET	* X, Y COORDINATES
HWY. 49 - STA. 336+41.94	42.99' RT.	1712646.10, 558706.56

* CENTER OF CABINET

DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH EAST AND WEST APPROACH
35 MPH NORTH APPROACH
45 MPH 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

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

06-11-2024

SCALE IN FEET
0 20 40 80

DATE: 06-04-2024 FILE NAME: t100875_t02.dgn

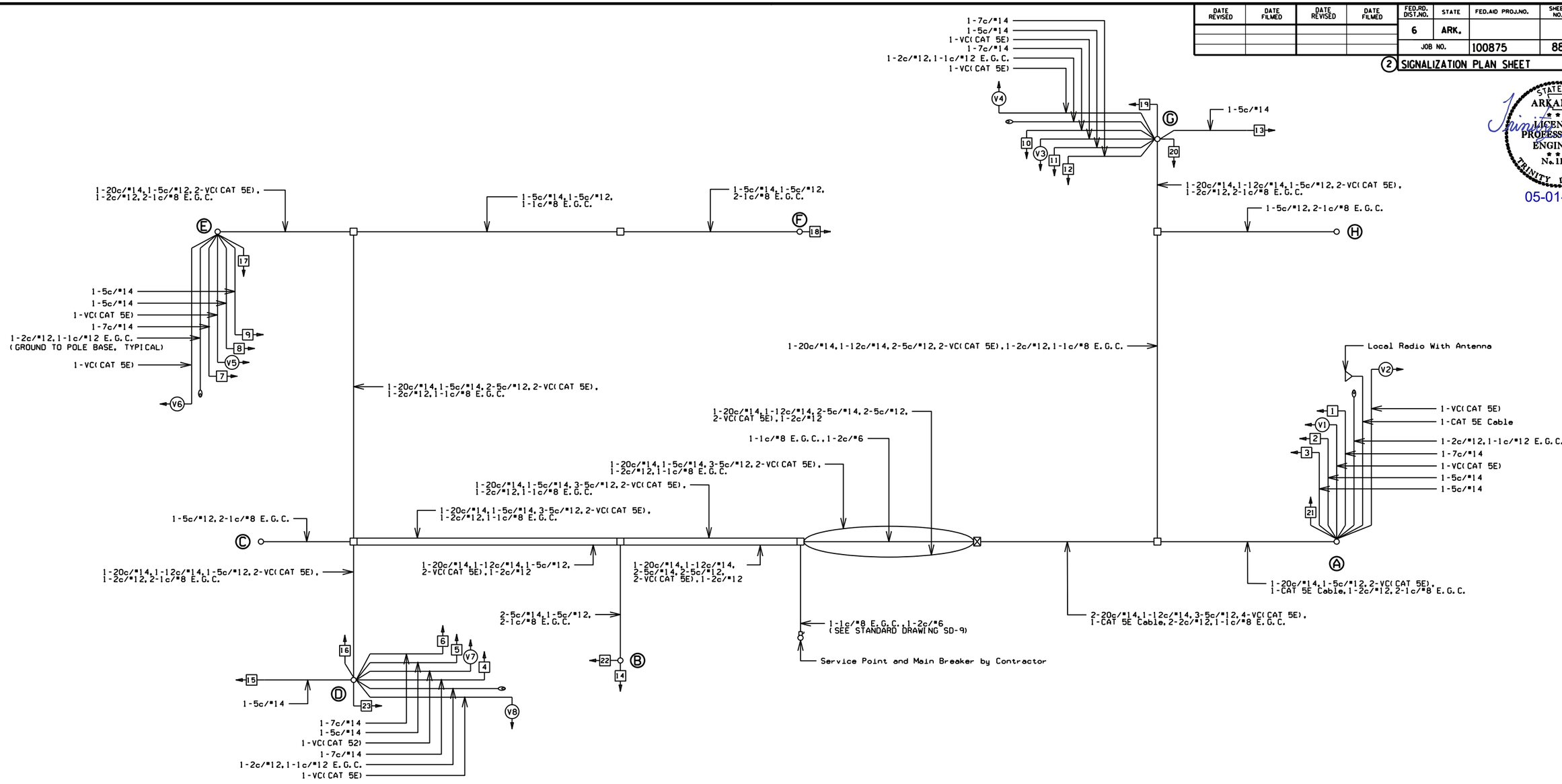
LOCATION: HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=40' DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	88	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024



WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c/#12 IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON(S).
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. SEE GROUNDING ARRAY DETAIL ON SHEET 65.

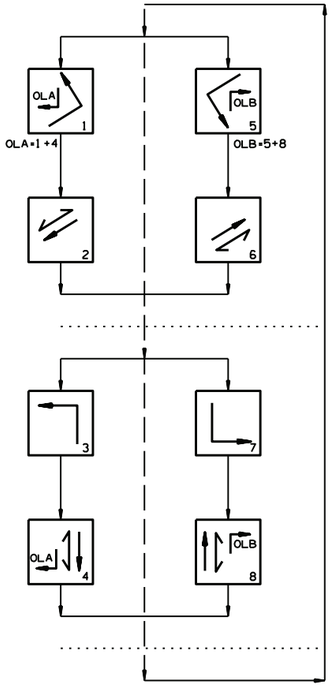
DATE: 03-29-2024 FILE NAME: tl00875_t02.dgn

LOCATION:	HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.
CITY:	JONESBORO
COUNTY:	CRAIGHEAD
DISTRICT: 10	SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	89	159

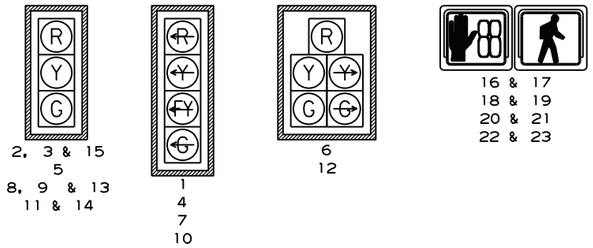
(2) SIGNALIZATION PLAN SHEET

PHASING DIAGRAM



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.
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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 100875											
HIGHWAY 49 & HIGHWAY 351 S./PLEASANT GROVE ROAD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM DETECTOR NUMBERS	COMMENTS	TUBE LENGTHS
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz11	EB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	74"
Vz12	EB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	74"
Vz21 A&B	WB ADVANCE	LOCAL			5	V2	2			CAMERA V2	74"
Vz22 A&B	WB NEAR	COMB.			6	V10	2	2		CAMERA V5	74"
Vz31	NB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V3	74"
Vz32	NB LEFT TURN	LOCAL			10	V3	3			CAMERA V3	74"
Vz41	SB ADVANCE	LOCAL			13	V4	4			CAMERA V4	74"
Vz42	SB NEAR	COMB.			14	V12	4	4		CAMERA V7	74"
Vz51	WB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	74"
Vz52	WB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	74"
Vz61 A&B	EB ADVANCE	LOCAL			3	V6	6			CAMERA V6	74"
Vz62 A&B	EB NEAR	COMB.			4	V14	6	6		CAMERA V1	74"
Vz71	SB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V7	74"
Vz72	SB LEFT TURN	LOCAL			16	V7	7			CAMERA V7	74"
Vz81	NB ADVANCE	LOCAL			11	V8	8			CAMERA V8	74"
Vz82	NB NEAR	COMB.			12	V16	8	8		CAMERA V3	74"
PB2 A&B	PLEASANT GROVE RD. N. LEG	PED.				P2	2				
PB4 A&B	HIGHWAY 49 W. LEG	PED.				P4	4				
PB6 A&B	HIGHWAY 351 S. LEG	PED.				P6	6				
PB8 A&B	HIGHWAY 49 E. 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

INTERVAL CHART

SIGNAL FACES	HIGHWAY 49 & HIGHWAY 351 S./PLEASANT GROVE ROAD.																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~~	*	~~FY~~	***	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
2, 3 & 15	R	R	G	**	R	R	G	**	R	R	R	R	R	R	R	R	R
4	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~FY~~	***	~~G~~	*	~~FY~~	***	~~R~~
5	R	R	R	R	R	R	R	R	R	R	R	R	G	**	G	**	R
6	R / ~~G~~	**	R / ~~G~~	**	R	R	R	R	R	R	R	R	G	**	G	**	R
7	~~G~~	*	~~FY~~	***	~~G~~	*	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
8, 9 & 13	R	R	R	R	G	**	G	**	R	R	R	R	R	R	R	R	R
10	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~G~~	*	~~FY~~	***	~~FY~~	***	~~R~~
11 & 14	R	R	R	R	R	R	R	R	R	R	G	**	R	R	G	**	R
12	R / ~~G~~	**	R	R	R / ~~G~~	**	R	R	R	R	G	**	R	R	G	**	R
16 & 17	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	W	FDW	BLK
18 & 19	DW	DW	DW	DW	W	FDW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
20 & 21	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	W	FDW	BLK
22 & 22	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
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

DATE: 07-31-2023 FILE NAME: tl00875_t02.dgn

LOCATION: HWY. 49/HWY. 351 S. AND PLEASANT GROVE RD.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	90	159

(2) TRAFFIC SIG. QUANTS. - PLEASANT VIEW DR.

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

05-01-2024

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	CELLULAR MODEM	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP & 707	CENTRAL CONTROL UNIT	1	EACH
SP & 707	POLE MOUNTED ASSEMBLY	4	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.)	350	LIN. FT.
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	720	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	71	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	380	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	480	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	160	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	50	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	540	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	30	LIN. FT.
710	NON-METALLIC CONDUIT (3")	368	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 2)	1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
SS & 711	CONCRETE PULL BOX (TYPE 3 HD)	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	3	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	2	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	18" STREET NAME SIGN	3	EACH
SP & 733	VIDEO DETECTOR (IP)	5	EACH
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	1040	LIN. FT.
SP & 733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	EACH

(REFER TO PERMANENT TRAFFIC SIGNAL PLANS.)

DATE: 03-29-2024 FILE NAME: t100875_03.dgn

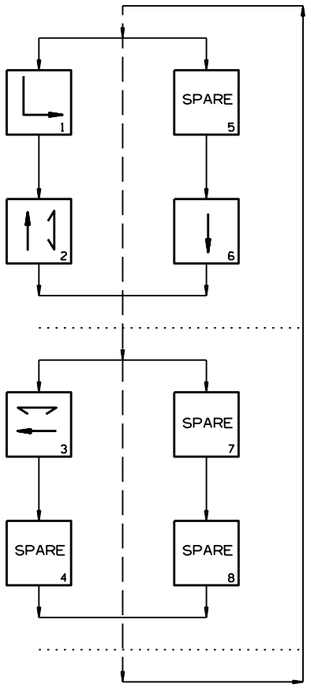
LOCATION: HWY. 351 N. /PLEASANT VIEW DR.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100875	91	159

(2) SIGNALIZATION PLAN SHEET

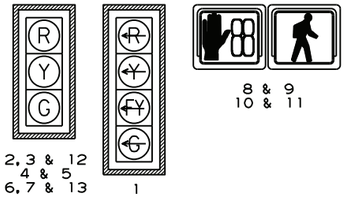
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024

PHASING DIAGRAM

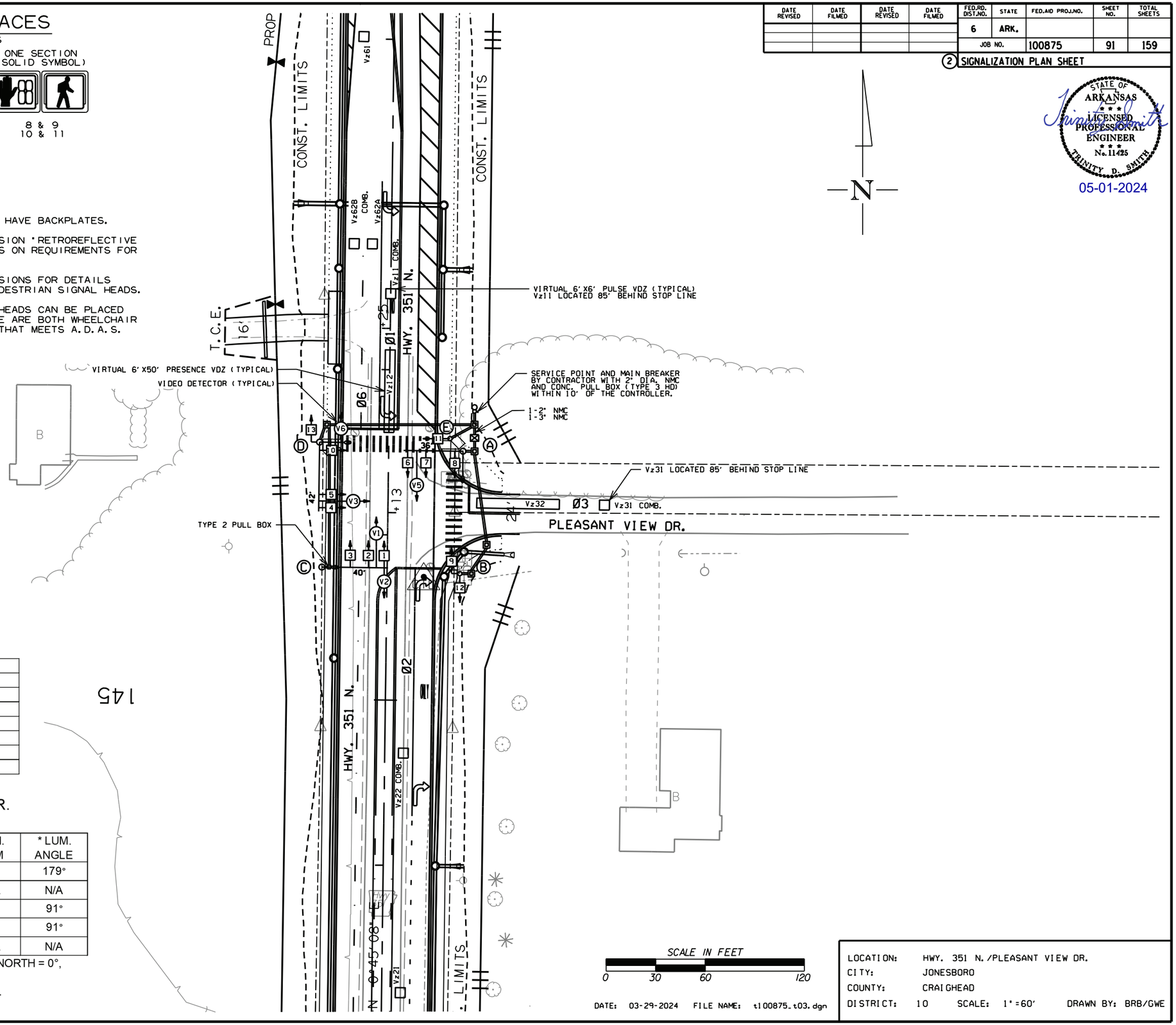


SIGNAL FACES

12" LENSES



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



DETECTOR SPACING CHART

ARDOT HWY. 351 N. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
PLEASANT VIEW RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
30 MPH	85'	N/A

HIGHWAY 351 N. AND PLEASANT VIEW DR. POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	** HAND HOLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	36'	271°	180°	35'	15'	179°
B	N/A	N/A	N/A	15'	N/A	N/A
C	40'	91°	180°	35'	10'	91°
D	42'	179°	90°	35'	15'	91°
E	N/A	N/A	N/A	10'	N/A	N/A

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

145

DATE: 03-29-2024 FILE NAME: t100875_t03.dgn

LOCATION:	HWY. 351 N./PLEASANT VIEW DR.		
CITY:	JONESBORO		
COUNTY:	CRAIGHEAD		
DISTRICT:	10	SCALE: 1"=60'	DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

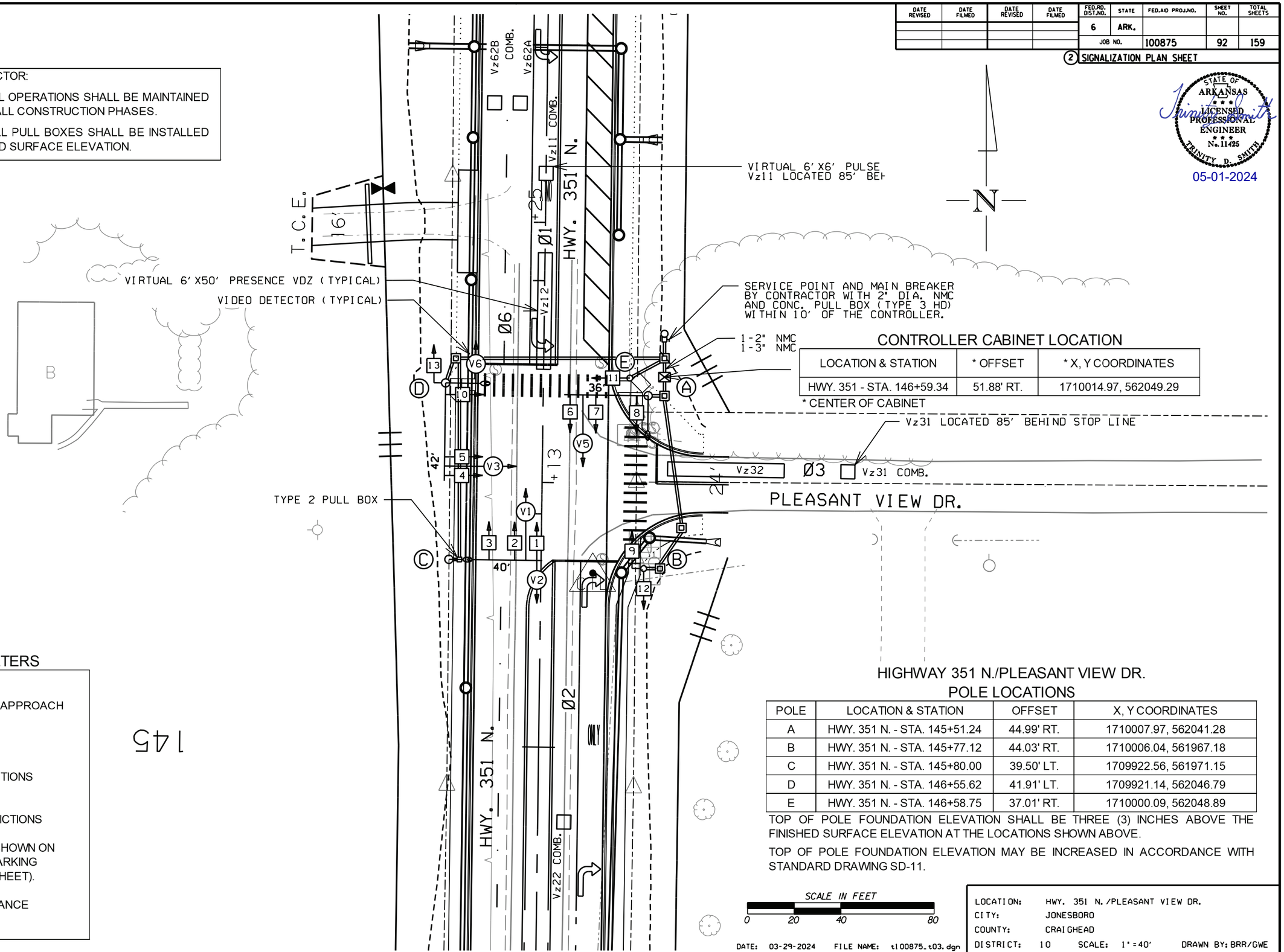
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	92	159

(2) SIGNALIZATION PLAN SHEET

NOTES TO CONTRACTOR:

1. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
2. THE TOP OF ALL PULL BOXES SHALL BE INSTALLED AT THE FINISHED SURFACE ELEVATION.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024



CONTROLLER CABINET LOCATION

LOCATION & STATION	* OFFSET	* X, Y COORDINATES
HWY. 351 - STA. 146+59.34	51.88' RT.	1710014.97, 562049.29

* CENTER OF CABINET

DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH NORTH AND SOUTH APPROACH
N/A MPH EAST 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

145

HIGHWAY 351 N./PLEASANT VIEW DR.
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 351 N. - STA. 145+51.24	44.99' RT.	1710007.97, 562041.28
B	HWY. 351 N. - STA. 145+77.12	44.03' RT.	1710006.04, 561967.18
C	HWY. 351 N. - STA. 145+80.00	39.50' LT.	1709922.56, 561971.15
D	HWY. 351 N. - STA. 146+55.62	41.91' LT.	1709921.14, 562046.79
E	HWY. 351 N. - STA. 146+58.75	37.01' RT.	1710000.09, 562048.89

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.

SCALE IN FEET
0 20 40 80

DATE: 03-29-2024 FILE NAME: t100875_t03.dgn

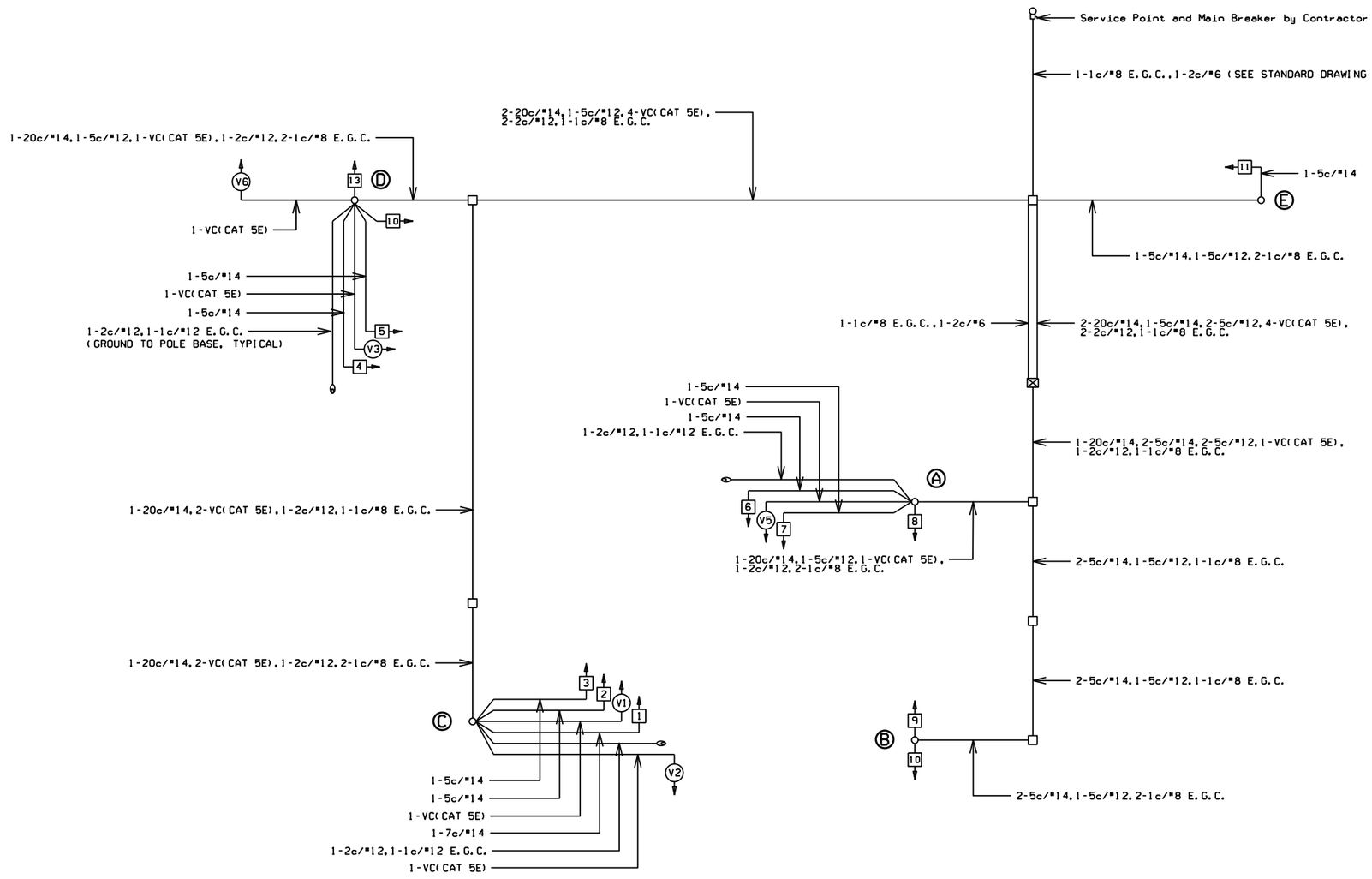
LOCATION: HWY. 351 N./PLEASANT VIEW DR.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1"=40' DRAWN BY: BRR/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	93	159

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
05-01-2024



WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c/#12 IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON(S).
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. SEE GROUNDING ARRAY DETAIL ON SHEET 65.

DATE: 03-29-2024 FILE NAME: tl00875_t03.dgn

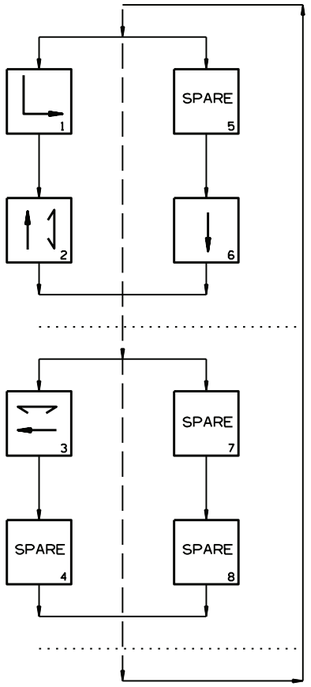
LOCATION:	HWY. 351 N./PLEASANT VIEW DR.
CITY:	JONESBORO
COUNTY:	CRAIGHEAD
DISTRICT: 10	SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100875	94	159

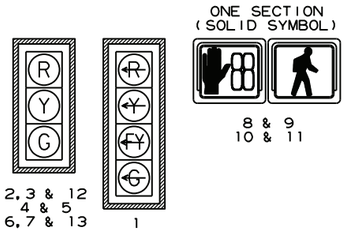
(2) SIGNALIZATION PLAN SHEET

PHASING DIAGRAM



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.
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.

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

05-01-2024

DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOD 100875											
HWY. 351 N./PLEASANT VIEW 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	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	37"
Vz12	SB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	37"
Vz21	NB ADVANCE	LOCAL			5	V2	2			CAMERA V2	74"
Vz22	NB NEAR	COMB.			6	V10	2	2		CAMERA V5	37"
Vz31	WB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V3	37"
Vz32	WB LEFT TURN	LOCAL			10	V3	3			CAMERA V3	37"
Vz61	SB ADVANCE	LOCAL			3	V6	6			CAMERA V6	23"
Vz62 A&B	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	37"
PB2 A&B	(PLEASANT VIEW DR.) E. LEG	PED.				P2	2				
PB3 A&B	(HWY. 351 N.) N. LEG	PED.				P3	3				
					SPARE 7,8,11,12,13,14,15 & 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

INTERVAL CHART

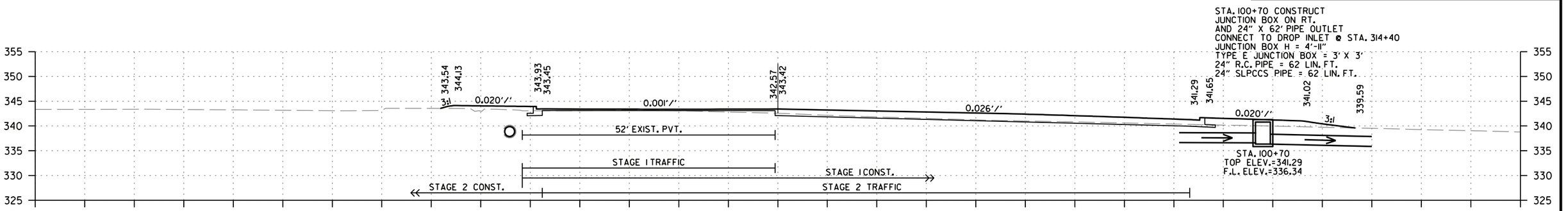
SIGNAL FACES	HIGHWAY 351 N./PLEASANT VIEW DR. 1+6	CLR.	2+6	CLR.	3	CLR.		FLASH SEQUENCE
1	~~<-G~~	*	~~<-FY~~	***	~~<-R~~	~~<-R~~		~~<R-~~
2,3 & 12	G	**	G	**	R	R		R
4 & 5	R	R	R	R	G	Y		R
6,7 & 13	R	R	G	**	R	R		R
8 & 9	DW	DW	W	FDW	DW	DW		BLK
10 & 11	DW	DW	DW	DW	W	FDW		BLK

* 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

DATE: 07-31-2023 FILE NAME: t100875_t03.dgn

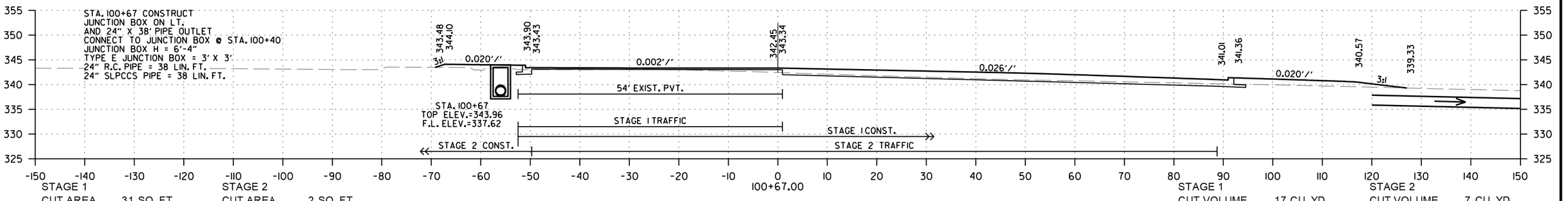
LOCATION: HWY. 351/PLEASANT VIEW DR.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: N/A DRAWN BY: BRB/GWE

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	95	159
		CROSS SECTIONS				



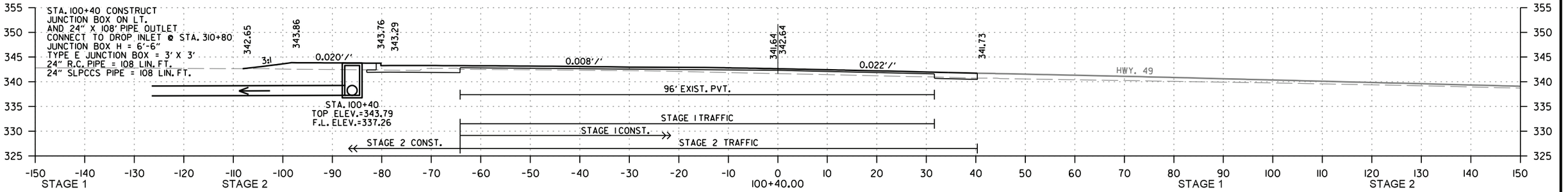
STAGE 1		STAGE 2	
CUT AREA	26 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	31 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	3 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	4 CU. YD.	FILL VOLUME	1 CU. YD.



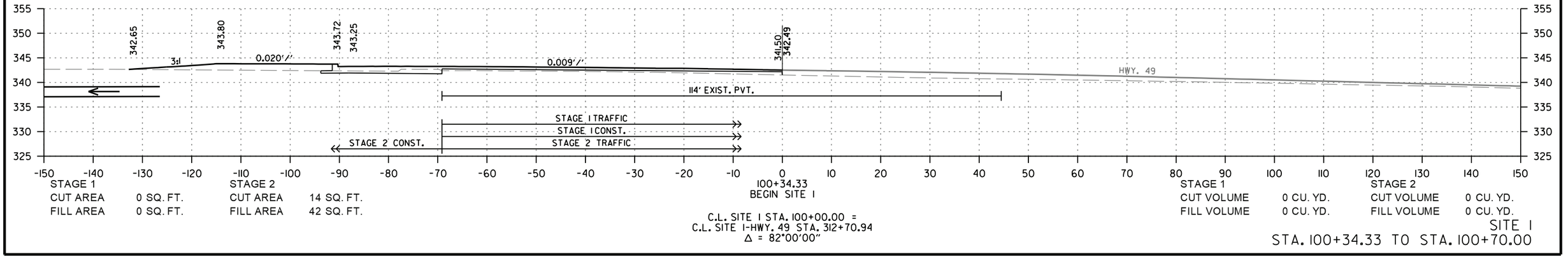
STAGE 1		STAGE 2	
CUT AREA	31 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	33 SQ. FT.	FILL AREA	12 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	17 CU. YD.	CUT VOLUME	7 CU. YD.
FILL VOLUME	17 CU. YD.	FILL VOLUME	21 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	11 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	29 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	7 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	14 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	42 SQ. FT.

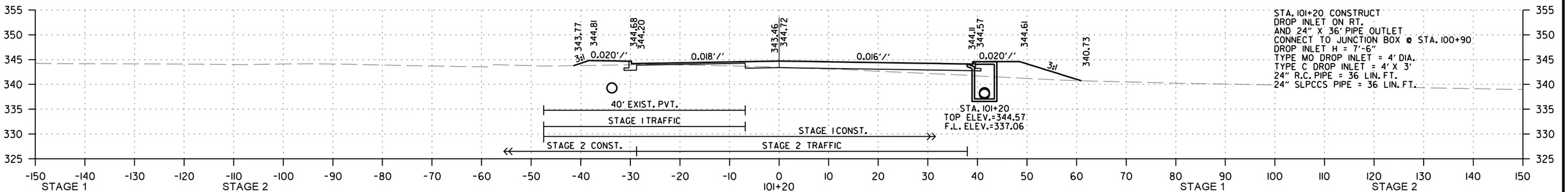
STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

C.L. SITE 1 STA. 100+00.00 =
C.L. SITE 1-HWY. 49 STA. 312+70.94
Δ = 82°00'00"

SITE 1
STA. 100+34.33 TO STA. 100+70.00

mh39735 3/21/2023
R100875.DGN

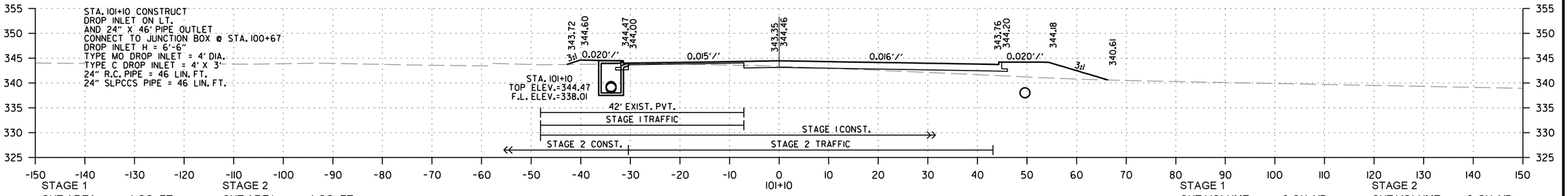
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	96	159
		CROSS SECTIONS				



STA. 101+20 CONSTRUCT
DROP INLET ON RT.
AND 24" X 36' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 100+90
DROP INLET H = 7'-6"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 36 LIN. FT.
24" SLPCCS PIPE = 36 LIN. FT.

STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	65 SQ. FT.	FILL AREA	9 SQ. FT.

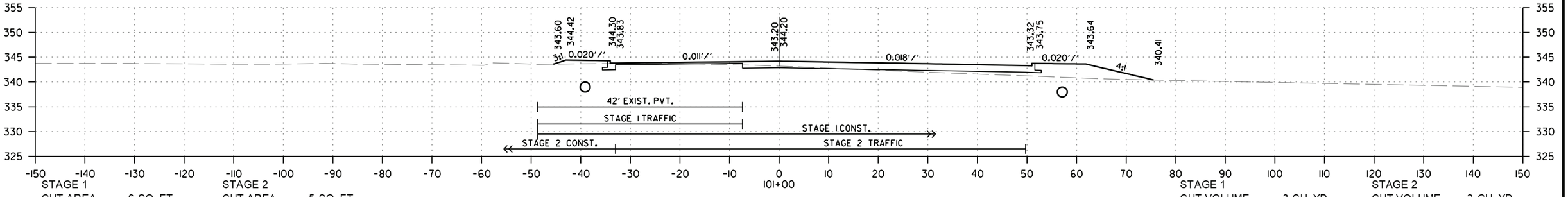
STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	24 CU. YD.	FILL VOLUME	3 CU. YD.



STA. 101+10 CONSTRUCT
DROP INLET ON LT.
AND 24" X 46' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 100+67
DROP INLET H = 6'-6"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 46 LIN. FT.
24" SLPCCS PIPE = 46 LIN. FT.

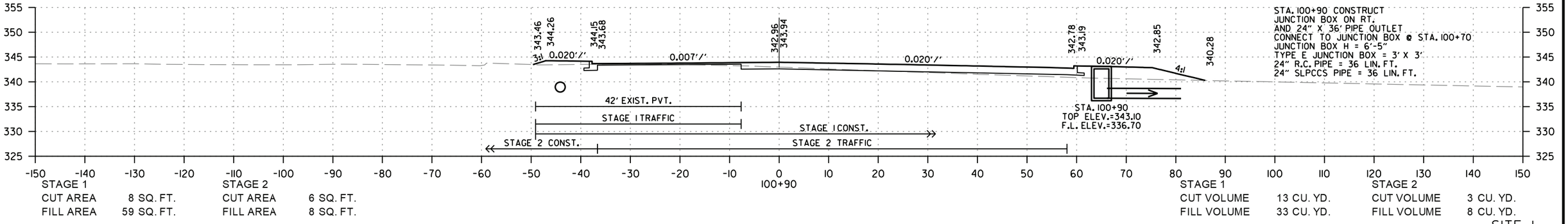
STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	62 SQ. FT.	FILL AREA	7 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	23 CU. YD.	FILL VOLUME	3 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	6 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	62 SQ. FT.	FILL AREA	7 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	3 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	22 CU. YD.	FILL VOLUME	3 CU. YD.



STA. 100+90 CONSTRUCT
JUNCTION BOX ON RT.
AND 24" X 36' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 100+70
JUNCTION BOX H = 6'-5"
TYPE E JUNCTION BOX = 3' X 3'
24" R.C. PIPE = 36 LIN. FT.
24" SLPCCS PIPE = 36 LIN. FT.

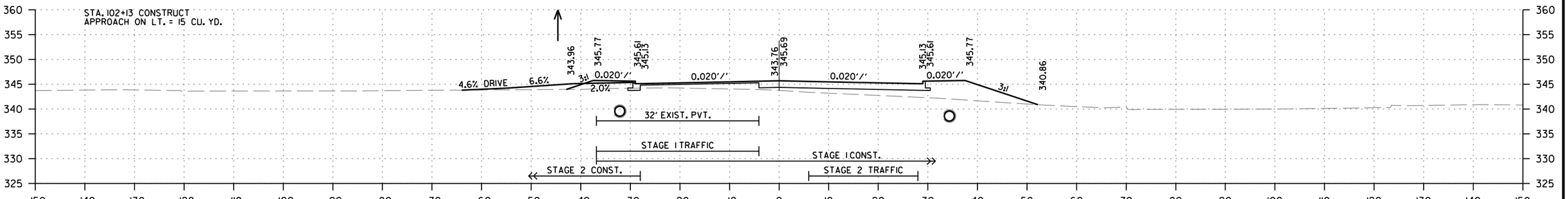
STAGE 1		STAGE 2	
CUT AREA	8 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	59 SQ. FT.	FILL AREA	8 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	13 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	33 CU. YD.	FILL VOLUME	8 CU. YD.

SITE 1
STA. 100+90 TO STA. 101+20

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	97	159
		CROSS SECTIONS				

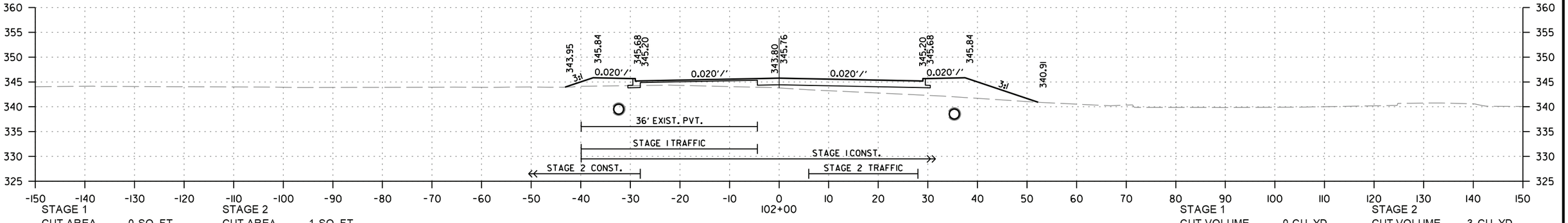


STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 91 SQ. FT.

STAGE 2
CUT AREA 1 SQ. FT.
FILL AREA 17 SQ. FT.

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 44 CU. YD.

STAGE 2
CUT VOLUME 0 CU. YD.
FILL VOLUME 8 CU. YD.

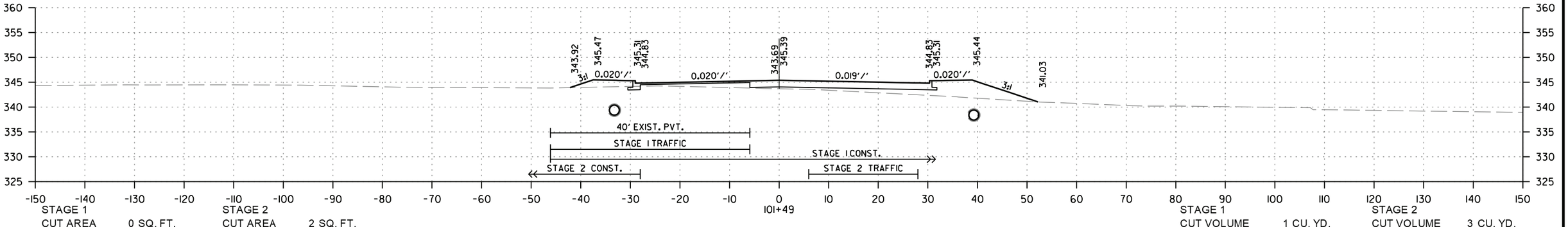


STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 93 SQ. FT.

STAGE 2
CUT AREA 1 SQ. FT.
FILL AREA 17 SQ. FT.

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 157 CU. YD.

STAGE 2
CUT VOLUME 3 CU. YD.
FILL VOLUME 29 CU. YD.



STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 73 SQ. FT.

STAGE 2
CUT AREA 2 SQ. FT.
FILL AREA 14 SQ. FT.

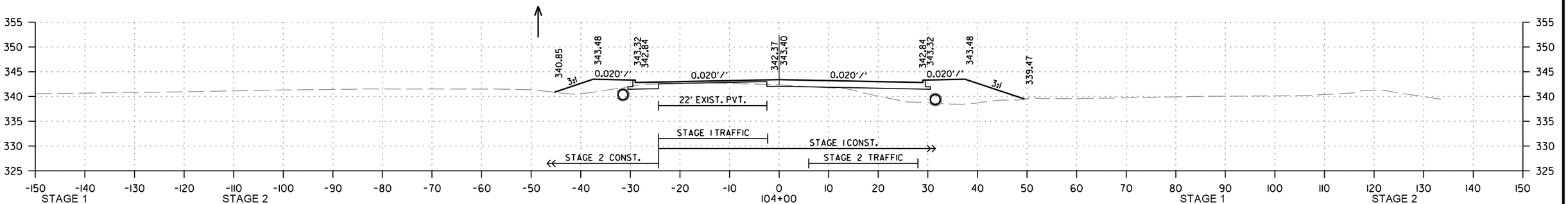
STAGE 1
CUT VOLUME 1 CU. YD.
FILL VOLUME 74 CU. YD.

STAGE 2
CUT VOLUME 3 CU. YD.
FILL VOLUME 12 CU. YD.

SITE 1
STA. 101+49 TO STA. 102+13

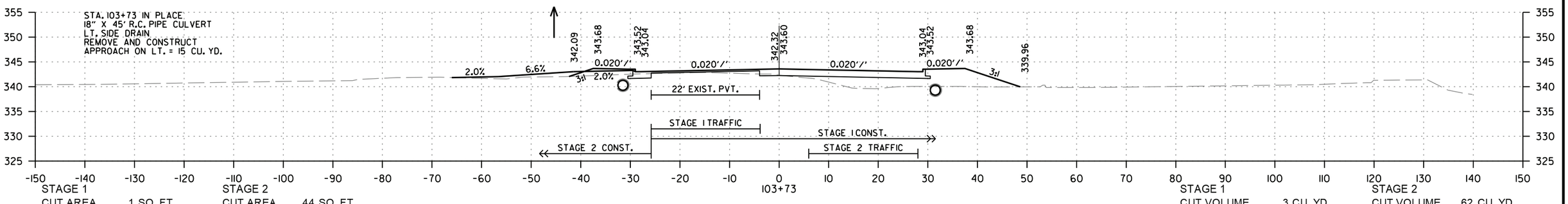
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	98	159
		CROSS SECTIONS				



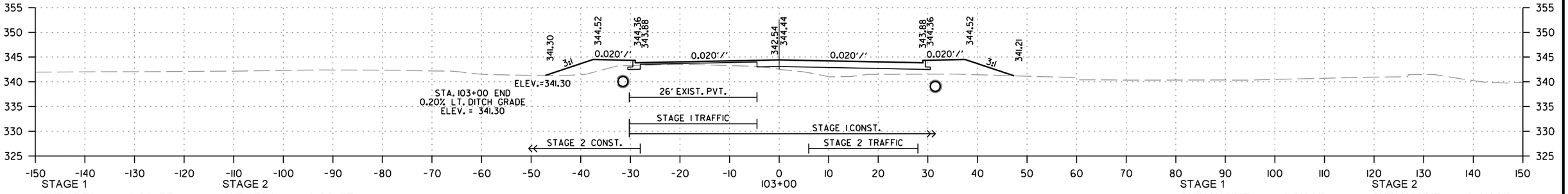
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	96 SQ. FT.	FILL AREA	27 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	25 CU. YD.
FILL VOLUME	45 CU. YD.	FILL VOLUME	20 CU. YD.



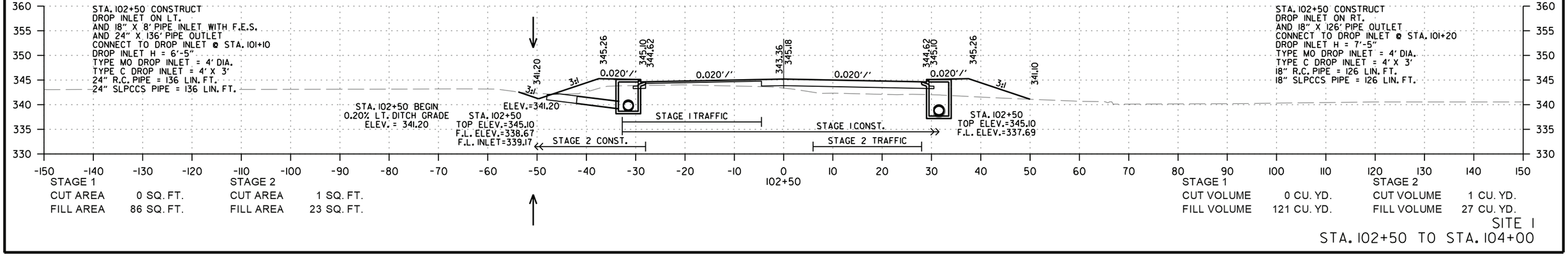
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	44 SQ. FT.
FILL AREA	90 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	3 CU. YD.	CUT VOLUME	62 CU. YD.
FILL VOLUME	223 CU. YD.	FILL VOLUME	54 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	75 SQ. FT.	FILL AREA	27 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	149 CU. YD.	FILL VOLUME	46 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	1 SQ. FT.
FILL AREA	86 SQ. FT.	FILL AREA	23 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	121 CU. YD.	FILL VOLUME	27 CU. YD.

SITE 1
STA. 102+50 TO STA. 104+00

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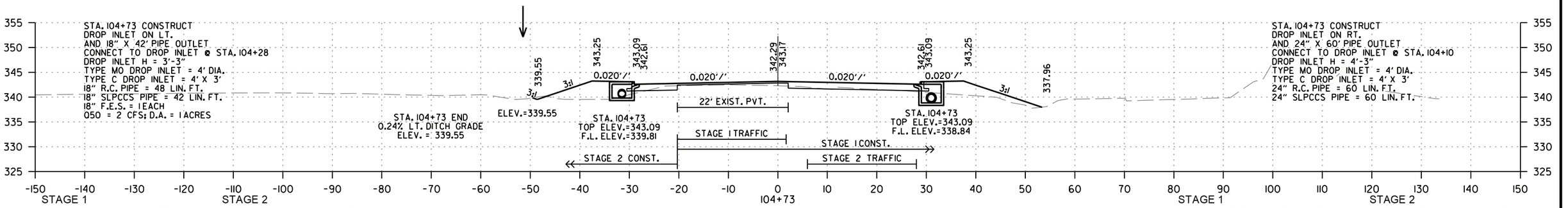
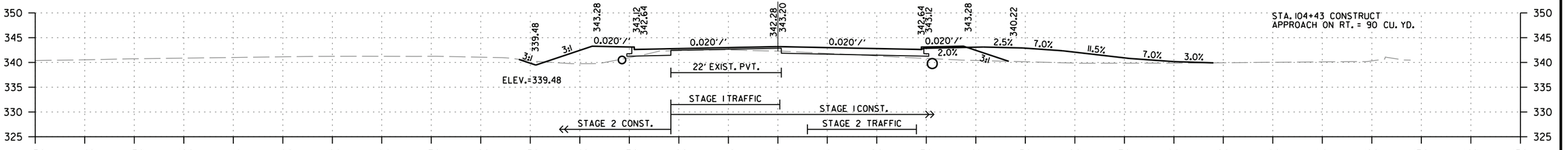
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	99	159
		CROSS SECTIONS				



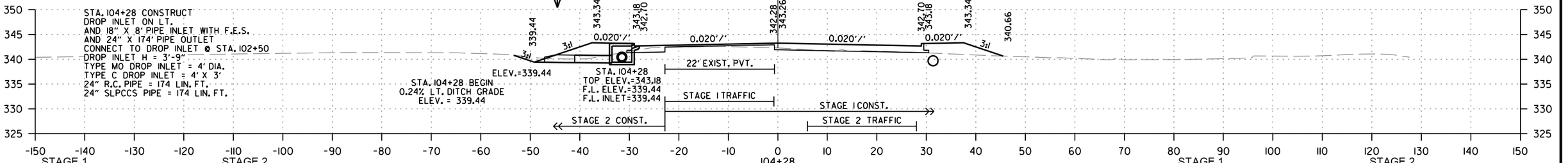
STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	40 SQ. FT.	FILL AREA	46 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	3 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	32 CU. YD.	FILL VOLUME	37 CU. YD.



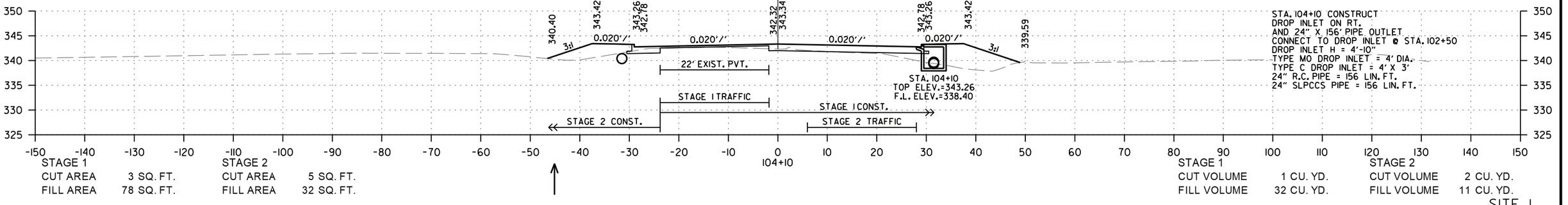
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	36 SQ. FT.	FILL AREA	40 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	3 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	25 CU. YD.	FILL VOLUME	30 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	26 SQ. FT.	FILL AREA	33 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	35 CU. YD.	FILL VOLUME	22 CU. YD.



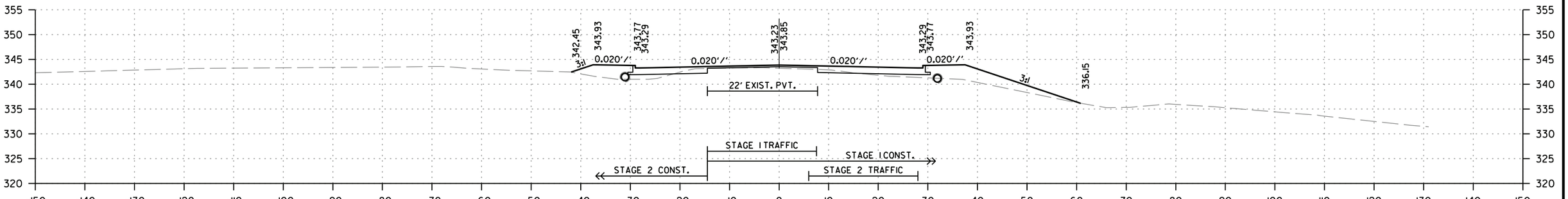
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	78 SQ. FT.	FILL AREA	32 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	32 CU. YD.	FILL VOLUME	11 CU. YD.

SITE 1
STA. 104+10 TO STA. 104+73

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	100	159
		CROSS SECTIONS				

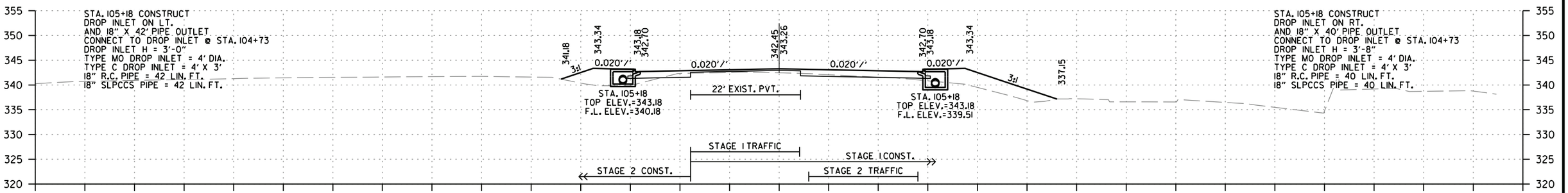


STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 63 SQ. FT.

STAGE 2
CUT AREA 5 SQ. FT.
FILL AREA 32 SQ. FT.

STAGE 1
CUT VOLUME 11 CU. YD.
FILL VOLUME 194 CU. YD.

STAGE 2
CUT VOLUME 12 CU. YD.
FILL VOLUME 111 CU. YD.



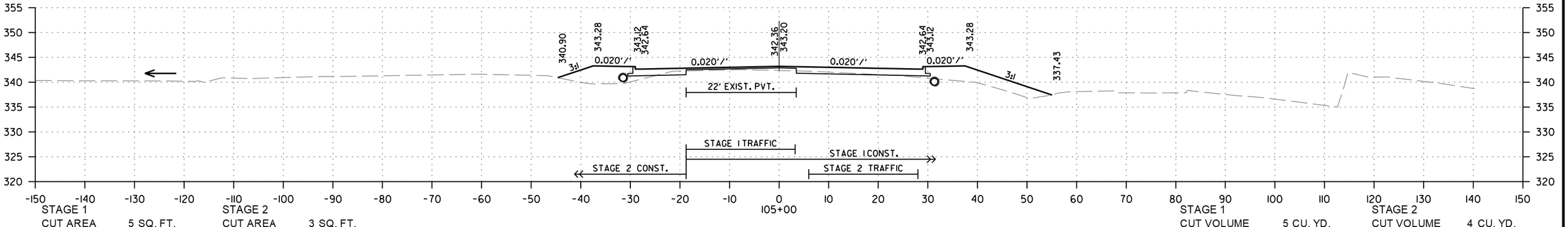
STAGE 1
CUT AREA 4 SQ. FT.
FILL AREA 65 SQ. FT.

STAGE 2
CUT AREA 3 SQ. FT.
FILL AREA 41 SQ. FT.

STAGE 1
CUT VOLUME 3 CU. YD.
FILL VOLUME 41 CU. YD.

STAGE 2
CUT VOLUME 2 CU. YD.
FILL VOLUME 28 CU. YD.

STA. 105+18 CONSTRUCT
DROP INLET ON RT.
AND 18" X 40' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 104+73
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 40 LIN. FT.
18" SLPCCS PIPE = 40 LIN. FT.



STAGE 1
CUT AREA 5 SQ. FT.
FILL AREA 59 SQ. FT.

STAGE 2
CUT AREA 3 SQ. FT.
FILL AREA 43 SQ. FT.

STAGE 1
CUT VOLUME 5 CU. YD.
FILL VOLUME 50 CU. YD.

STAGE 2
CUT VOLUME 4 CU. YD.
FILL VOLUME 45 CU. YD.

SITE 1
STA. 105+00 TO STA. 106+00

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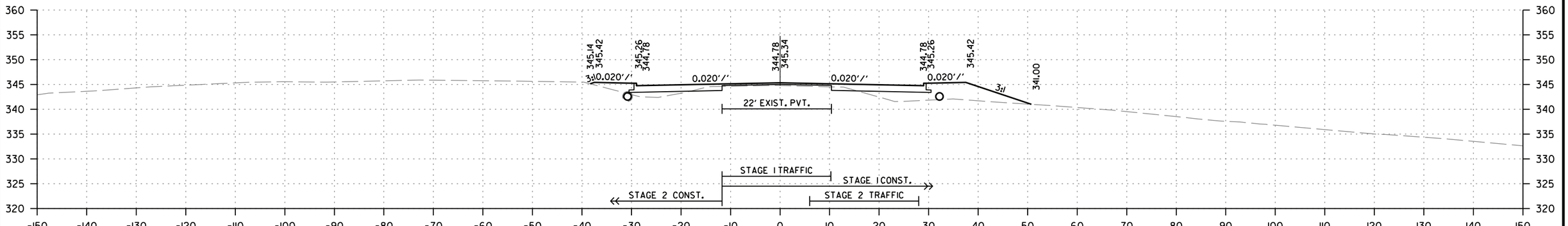
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	101	159
		CROSS SECTIONS				

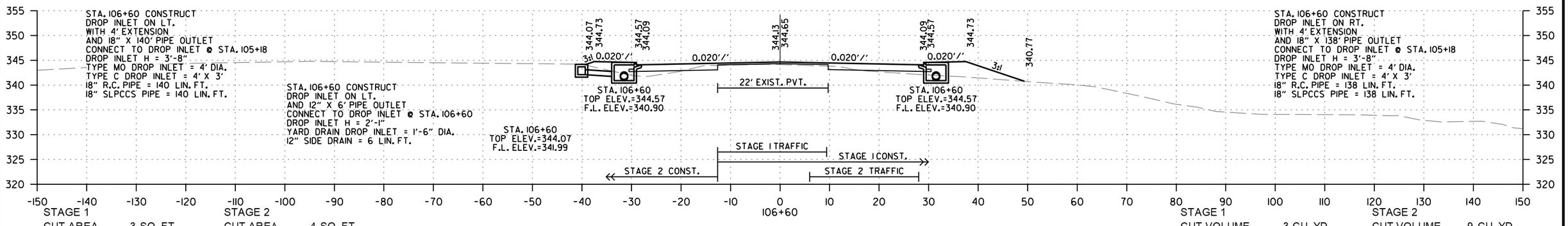


STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 69 SQ. FT.

STAGE 2
CUT AREA 4 SQ. FT.
FILL AREA 20 SQ. FT.

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 9 CU. YD.

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

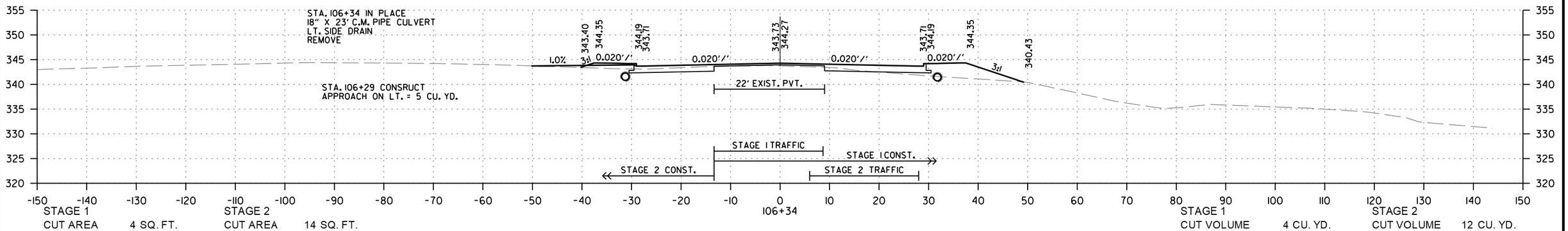


STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 45 SQ. FT.

STAGE 2
CUT AREA 4 SQ. FT.
FILL AREA 23 SQ. FT.

STAGE 1
CUT VOLUME 3 CU. YD.
FILL VOLUME 42 CU. YD.

STAGE 2
CUT VOLUME 9 CU. YD.
FILL VOLUME 16 CU. YD.



STAGE 1
CUT AREA 4 SQ. FT.
FILL AREA 43 SQ. FT.

STAGE 2
CUT AREA 14 SQ. FT.
FILL AREA 10 SQ. FT.

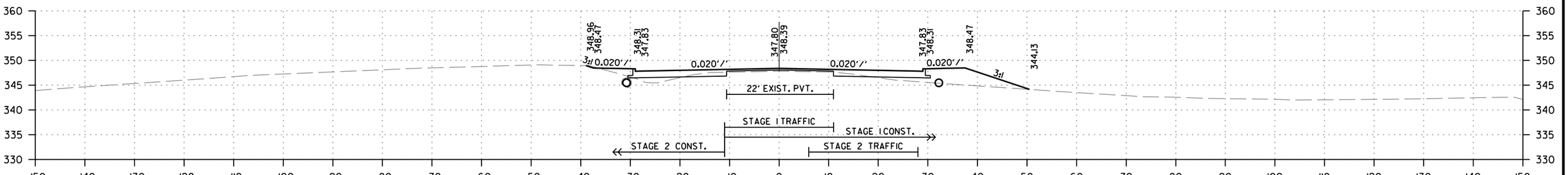
STAGE 1
CUT VOLUME 4 CU. YD.
FILL VOLUME 67 CU. YD.

STAGE 2
CUT VOLUME 12 CU. YD.
FILL VOLUME 26 CU. YD.

SITE 1
STA. 106+34 TO STA. 107+00

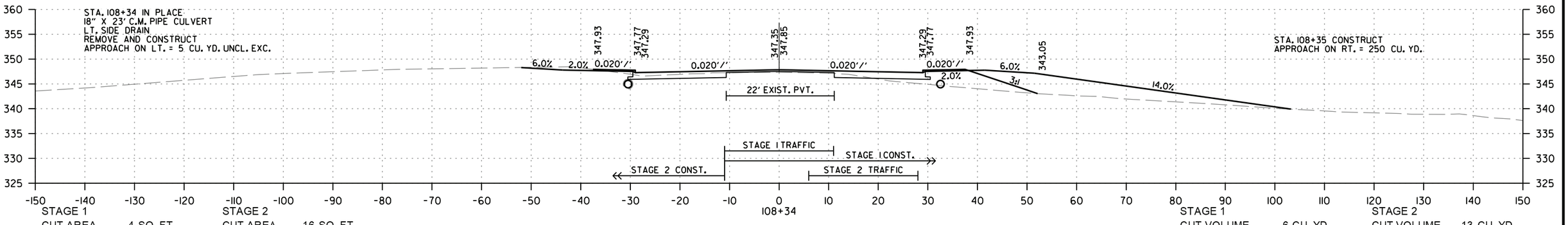
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	102	159
		CROSS SECTIONS				



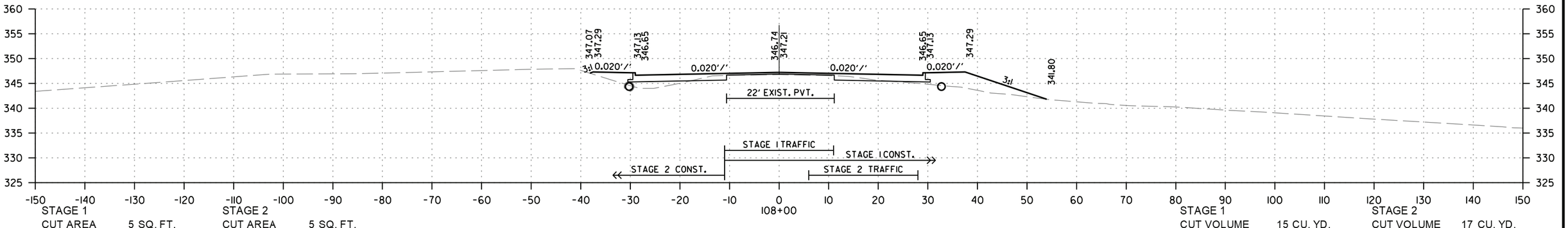
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	52 SQ. FT.	FILL AREA	12 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	11 CU. YD.
FILL VOLUME	60 CU. YD.	FILL VOLUME	9 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	16 SQ. FT.
FILL AREA	59 SQ. FT.	FILL AREA	4 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	13 CU. YD.
FILL VOLUME	69 CU. YD.	FILL VOLUME	17 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	51 SQ. FT.	FILL AREA	23 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	15 CU. YD.	CUT VOLUME	17 CU. YD.
FILL VOLUME	222 CU. YD.	FILL VOLUME	80 CU. YD.

SITE 1
STA. 108+00 TO STA. 108+63

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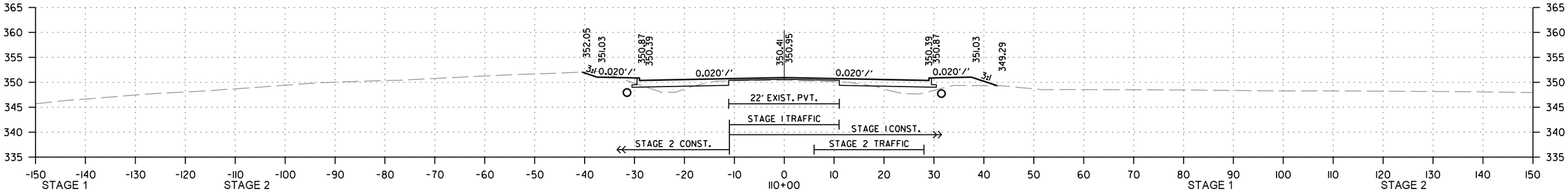
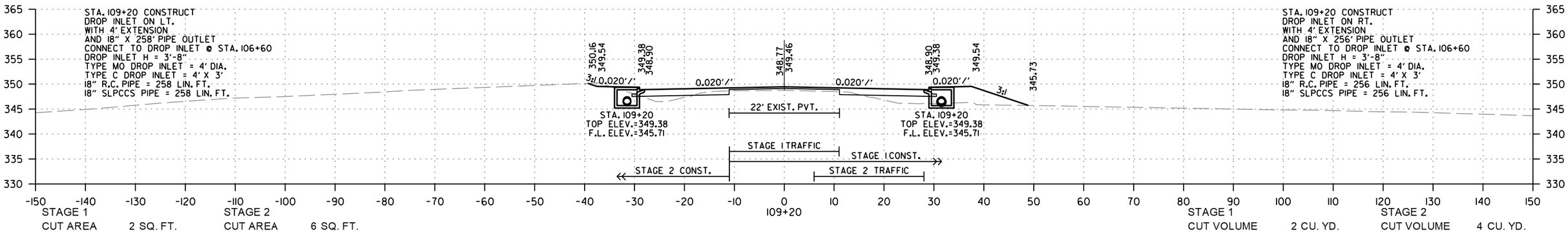
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	103	159
		CROSS SECTIONS				



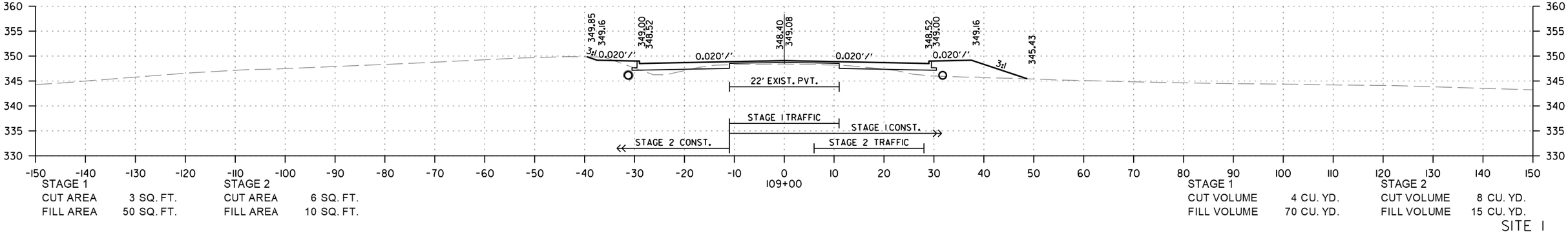
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	10 SQ. FT.
FILL AREA	31 SQ. FT.	FILL AREA	10 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	24 CU. YD.
FILL VOLUME	136 CU. YD.	FILL VOLUME	31 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	61 SQ. FT.	FILL AREA	11 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	41 CU. YD.	FILL VOLUME	8 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	50 SQ. FT.	FILL AREA	10 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	8 CU. YD.
FILL VOLUME	70 CU. YD.	FILL VOLUME	15 CU. YD.

SITE 1
STA. 109+00 TO STA. 110+00

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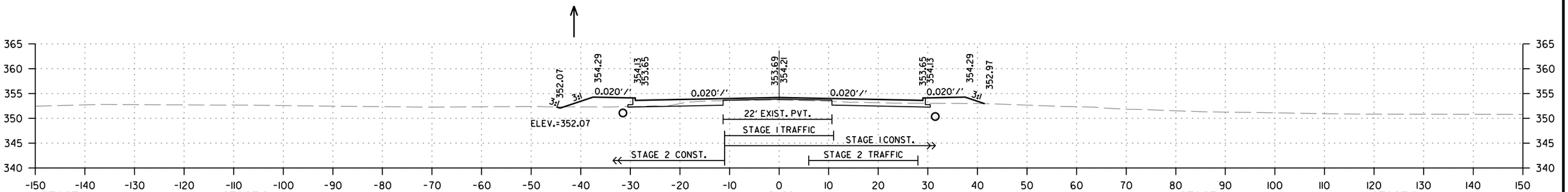
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	104	159
		CROSS SECTIONS				

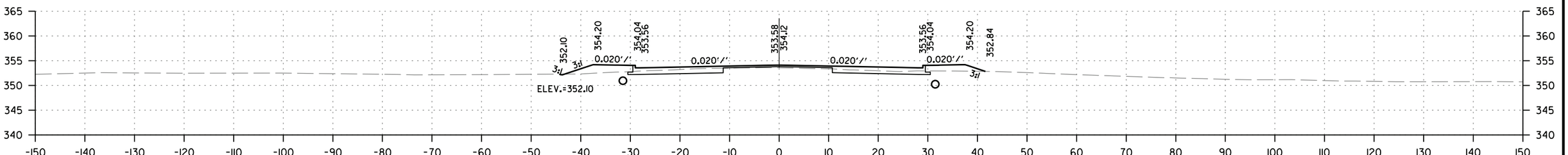


STAGE 1
CUT AREA 14 SQ. FT.
FILL AREA 12 SQ. FT.

STAGE 2
CUT AREA 9 SQ. FT.
FILL AREA 21 SQ. FT.

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

STAGE 2
CUT VOLUME 4 CU. YD.
FILL VOLUME 6 CU. YD.



STAGE 1
CUT AREA 12 SQ. FT.
FILL AREA 12 SQ. FT.

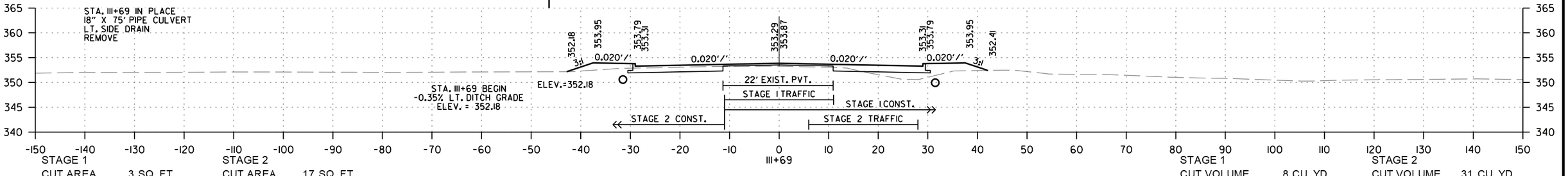
STAGE 2
CUT AREA 15 SQ. FT.
FILL AREA 17 SQ. FT.

STAGE 1
CUT VOLUME 6 CU. YD.
FILL VOLUME 18 CU. YD.

STAGE 2
CUT VOLUME 13 CU. YD.
FILL VOLUME 12 CU. YD.

STA. 111+69 IN PLACE
18" X 75' PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 111+69 BEGIN
-0.35% LT. DITCH GRADE
ELEV. = 352.18

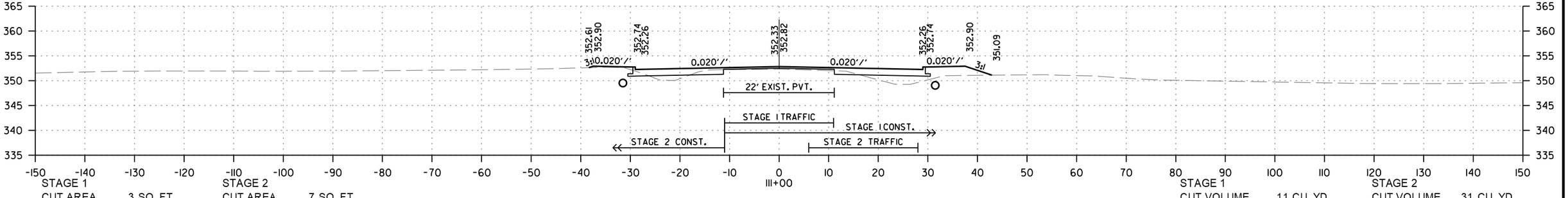


STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 32 SQ. FT.

STAGE 2
CUT AREA 17 SQ. FT.
FILL AREA 13 SQ. FT.

STAGE 1
CUT VOLUME 8 CU. YD.
FILL VOLUME 87 CU. YD.

STAGE 2
CUT VOLUME 31 CU. YD.
FILL VOLUME 26 CU. YD.



STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 36 SQ. FT.

STAGE 2
CUT AREA 7 SQ. FT.
FILL AREA 7 SQ. FT.

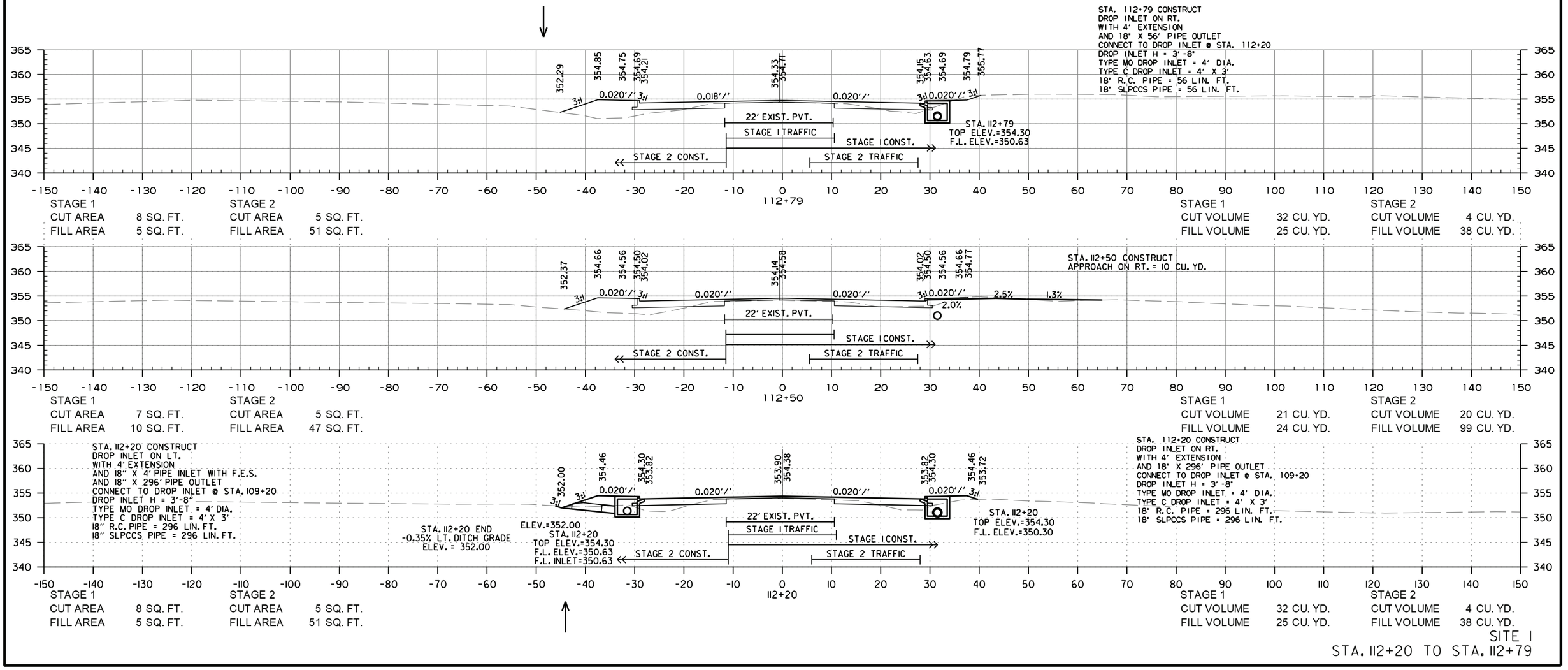
STAGE 1
CUT VOLUME 11 CU. YD.
FILL VOLUME 124 CU. YD.

STAGE 2
CUT VOLUME 31 CU. YD.
FILL VOLUME 31 CU. YD.

SITE 1
STA. 111+00 TO STA. 112+00

mh39735 3/21/2023
R100875.DGN

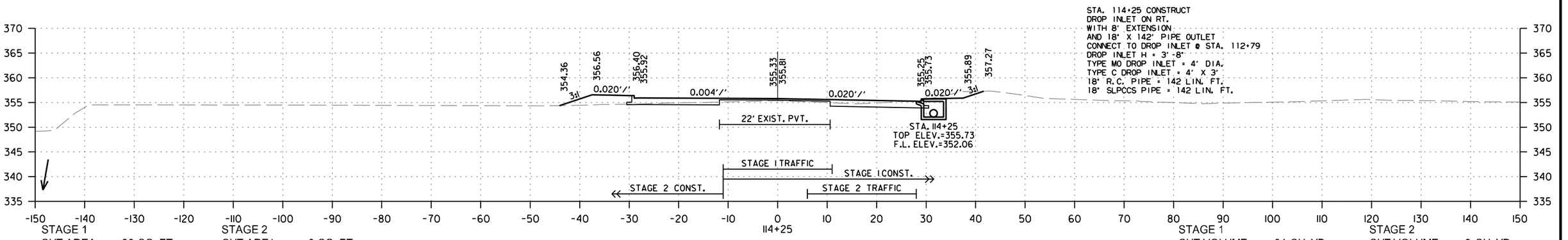
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	105	159
		CROSS SECTIONS				



SITE 1
STA. 112+20 TO STA. 112+79

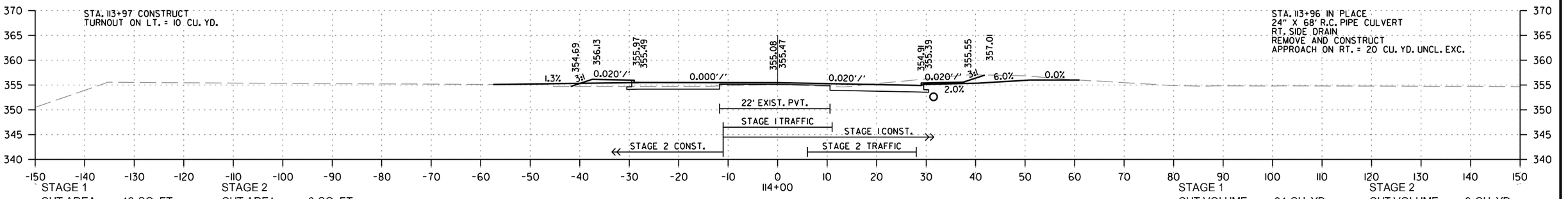
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	106	159
		CROSS SECTIONS				



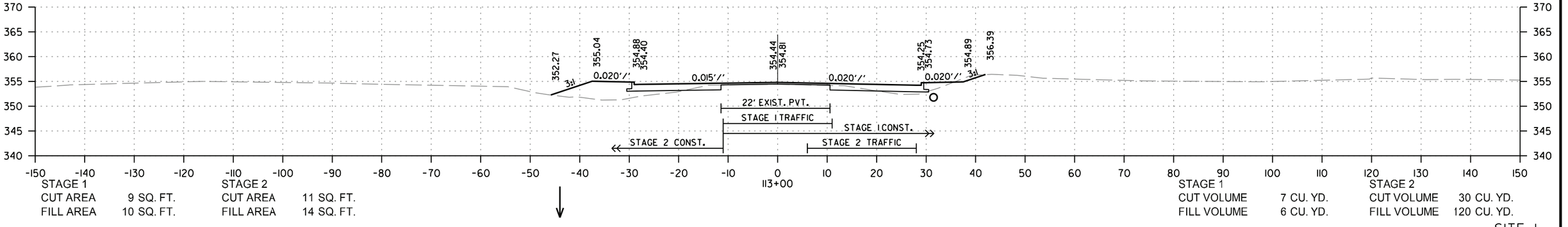
STAGE 1		STAGE 2	
CUT AREA	26 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	21 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	31 CU. YD.	CUT VOLUME	8 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	256 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	42 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	21 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	94 CU. YD.	CUT VOLUME	8 CU. YD.
FILL VOLUME	19 CU. YD.	FILL VOLUME	16 CU. YD.



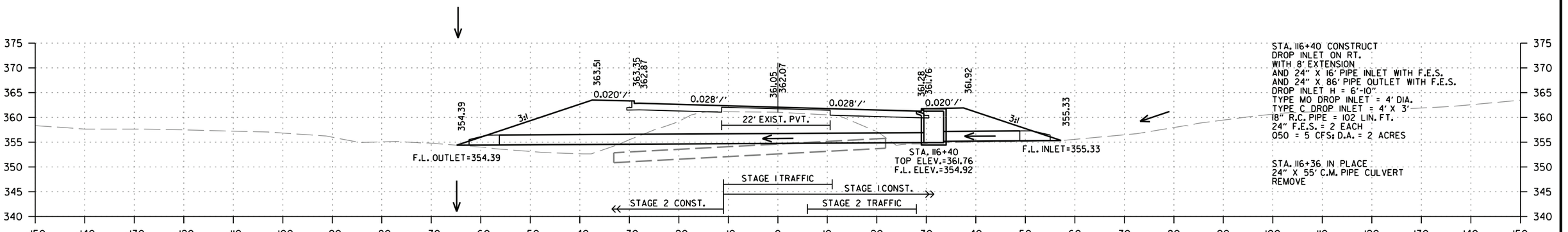
STAGE 1		STAGE 2	
CUT AREA	9 SQ. FT.	CUT AREA	11 SQ. FT.
FILL AREA	10 SQ. FT.	FILL AREA	14 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	30 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	120 CU. YD.

SITE 1
STA. 113+00 TO STA. 114+25

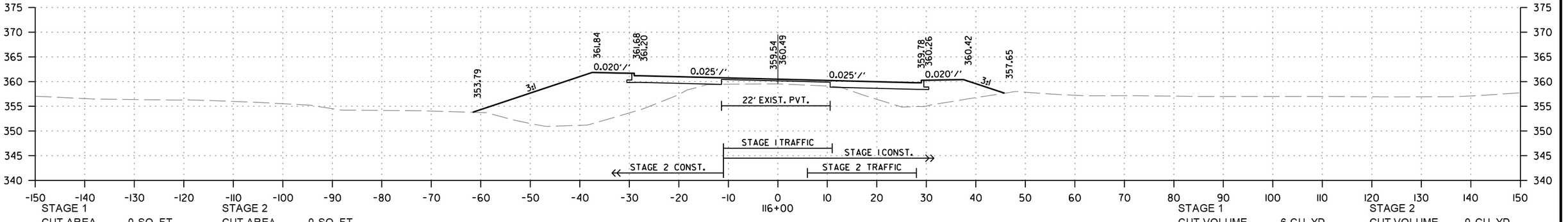
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	107	159
		CROSS SECTIONS				



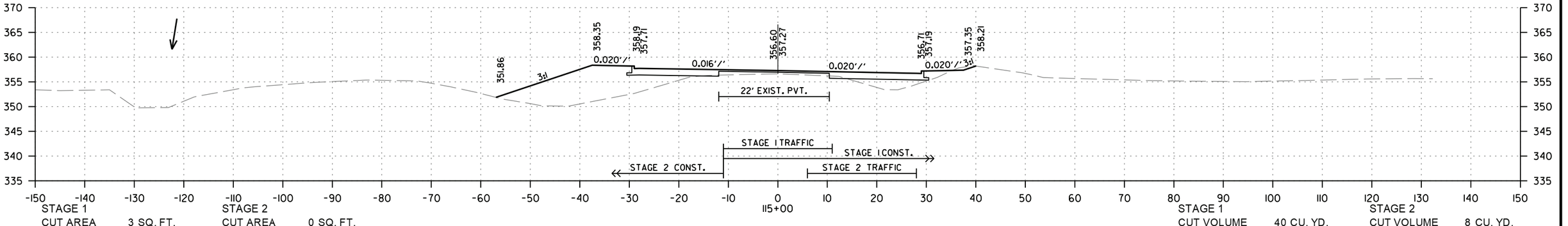
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	183 SQ. FT.	FILL AREA	270 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	204 CU. YD.	FILL VOLUME	393 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	93 SQ. FT.	FILL AREA	261 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	222 CU. YD.	FILL VOLUME	785 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	27 SQ. FT.	FILL AREA	163 SQ. FT.

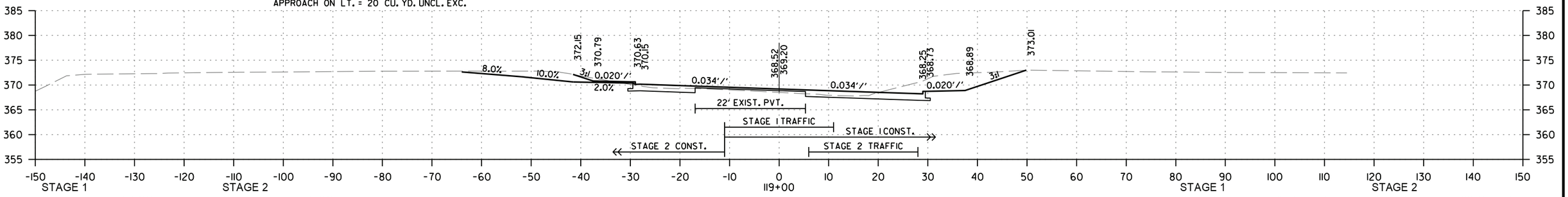
STAGE 1		STAGE 2	
CUT VOLUME	40 CU. YD.	CUT VOLUME	8 CU. YD.
FILL VOLUME	38 CU. YD.	FILL VOLUME	256 CU. YD.

SITE 1
STA. 115+00 TO STA. 116+40

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	108	159
		CROSS SECTIONS				

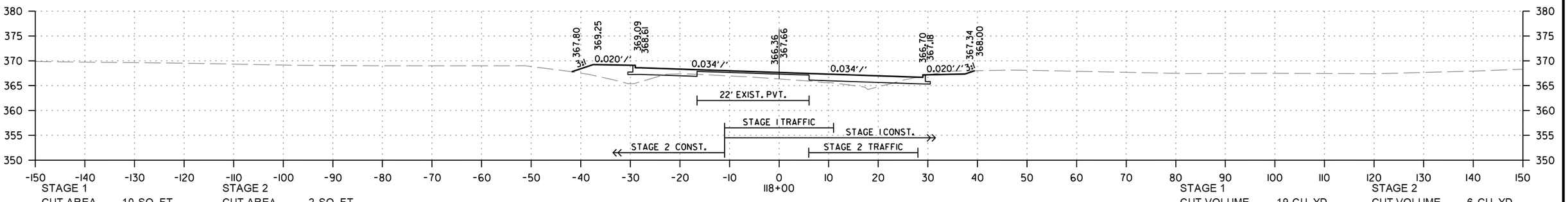
STA. 118+53 CONSTRUCT
APPROACH ON LT. = 20 CU. YD. UNCL. EXC.



STAGE 1		STAGE 2	
CUT AREA	80 SQ. FT.	CUT AREA	13 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	1 SQ. FT.

119+00

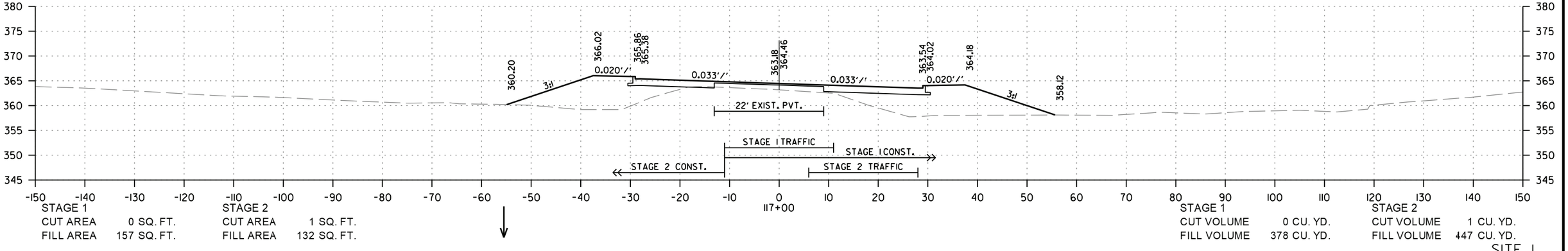
STAGE 1		STAGE 2	
CUT VOLUME	167 CU. YD.	CUT VOLUME	28 CU. YD.
FILL VOLUME	20 CU. YD.	FILL VOLUME	65 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	10 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	11 SQ. FT.	FILL AREA	34 SQ. FT.

118+00

STAGE 1		STAGE 2	
CUT VOLUME	19 CU. YD.	CUT VOLUME	6 CU. YD.
FILL VOLUME	311 CU. YD.	FILL VOLUME	307 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	1 SQ. FT.
FILL AREA	157 SQ. FT.	FILL AREA	132 SQ. FT.

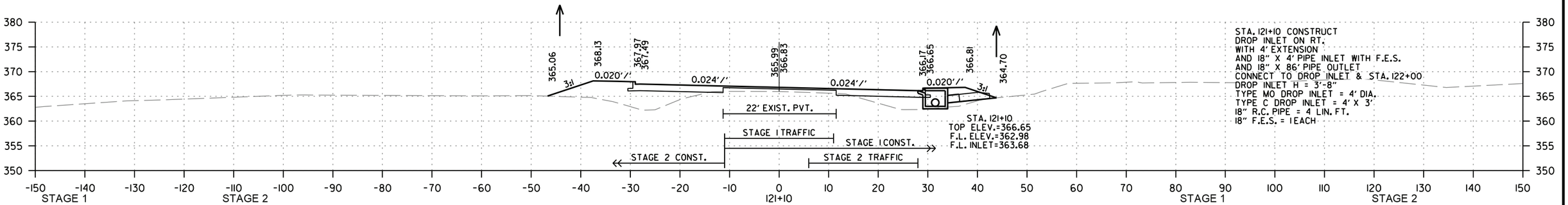
117+00

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	378 CU. YD.	FILL VOLUME	447 CU. YD.

SITE 1
STA. 117+00 TO STA. 119+00

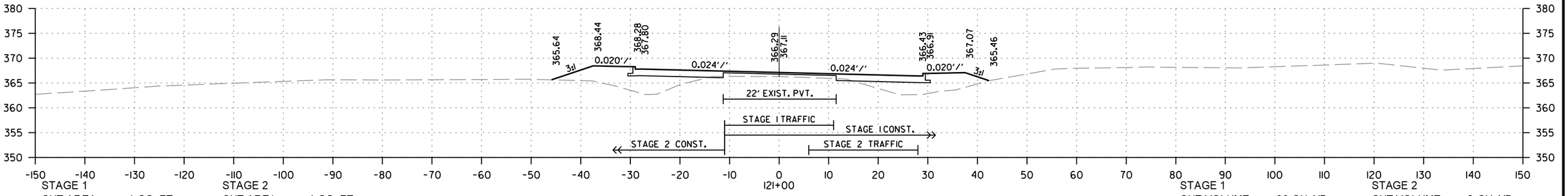
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	109	159
		CROSS SECTIONS				



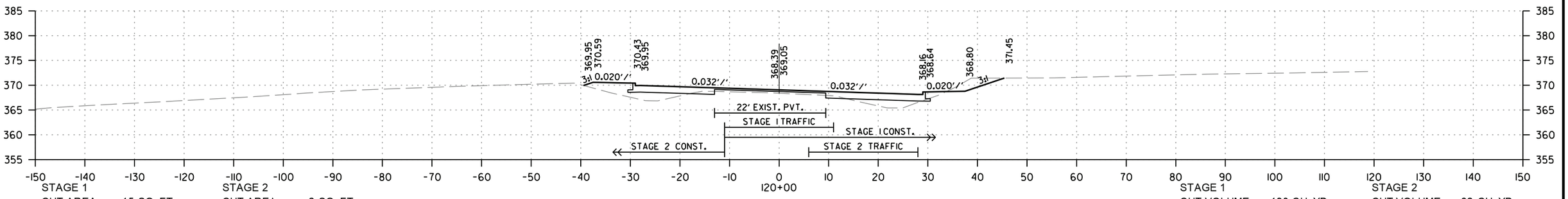
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	66 SQ. FT.	FILL AREA	84 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	23 CU. YD.	FILL VOLUME	30 CU. YD.



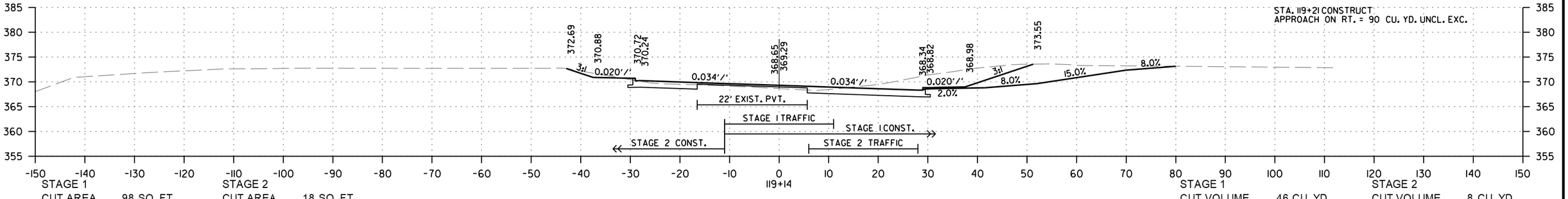
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	1 SQ. FT.
FILL AREA	60 SQ. FT.	FILL AREA	78 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	30 CU. YD.	CUT VOLUME	6 CU. YD.
FILL VOLUME	144 CU. YD.	FILL VOLUME	202 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	15 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	18 SQ. FT.	FILL AREA	31 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	180 CU. YD.	CUT VOLUME	32 CU. YD.
FILL VOLUME	29 CU. YD.	FILL VOLUME	49 CU. YD.



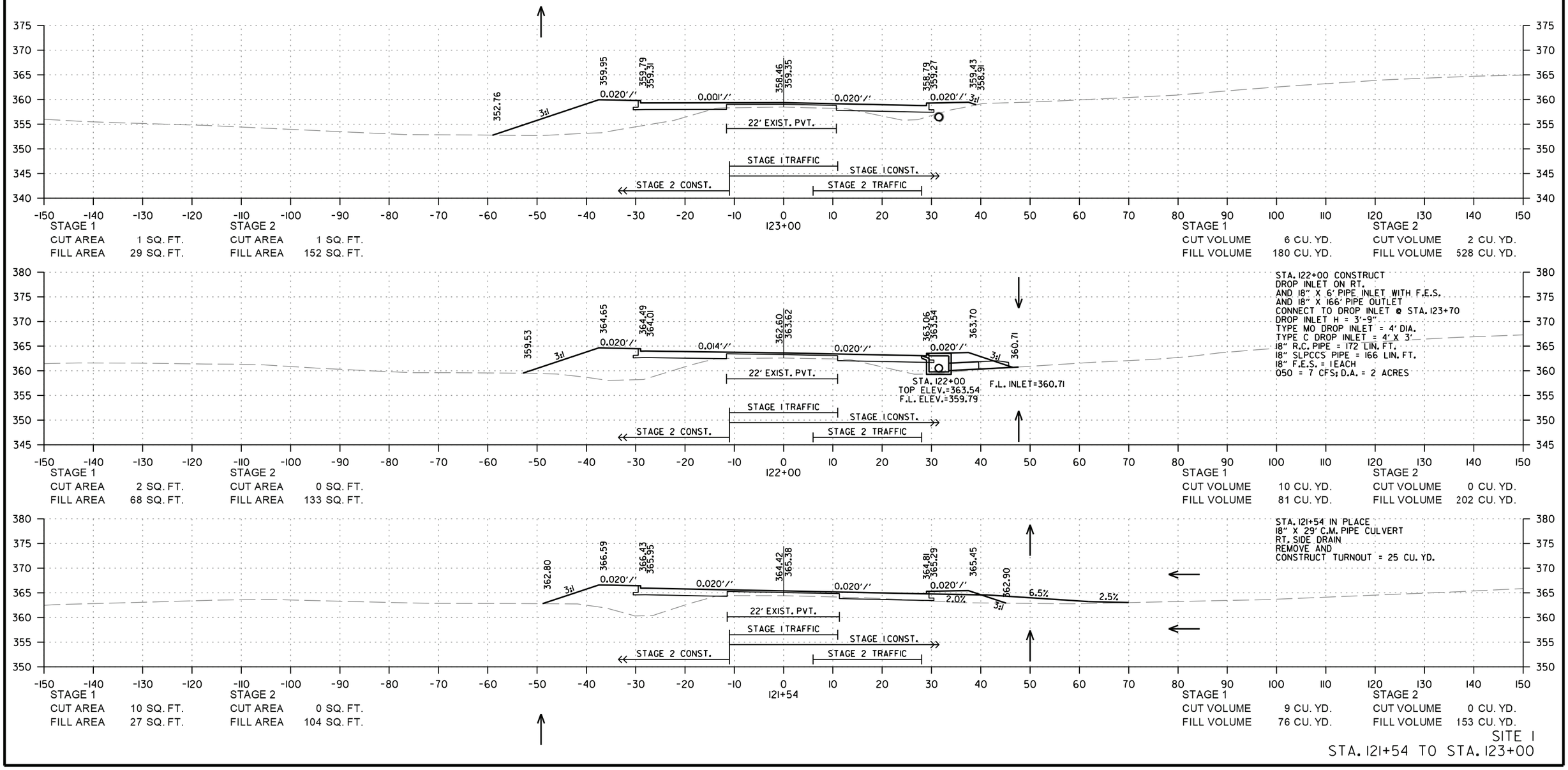
STAGE 1		STAGE 2	
CUT AREA	98 SQ. FT.	CUT AREA	18 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	46 CU. YD.	CUT VOLUME	8 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

SITE 1
STA. 119+14 TO STA. 121+10

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	110	159
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	1 SQ. FT.
FILL AREA	29 SQ. FT.	FILL AREA	152 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	180 CU. YD.	FILL VOLUME	528 CU. YD.

STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	68 SQ. FT.	FILL AREA	133 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	10 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	81 CU. YD.	FILL VOLUME	202 CU. YD.

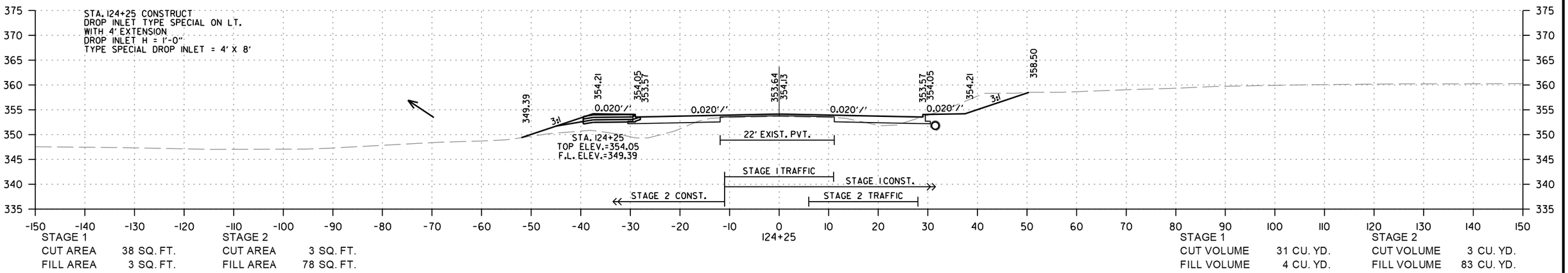
STAGE 1		STAGE 2	
CUT AREA	10 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	27 SQ. FT.	FILL AREA	104 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	9 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	76 CU. YD.	FILL VOLUME	153 CU. YD.

SITE 1
STA. 121+54 TO STA. 123+00

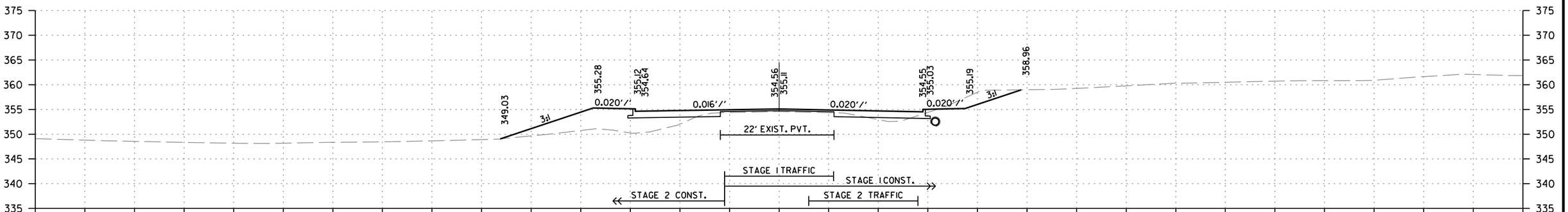
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	111	159
		CROSS SECTIONS				



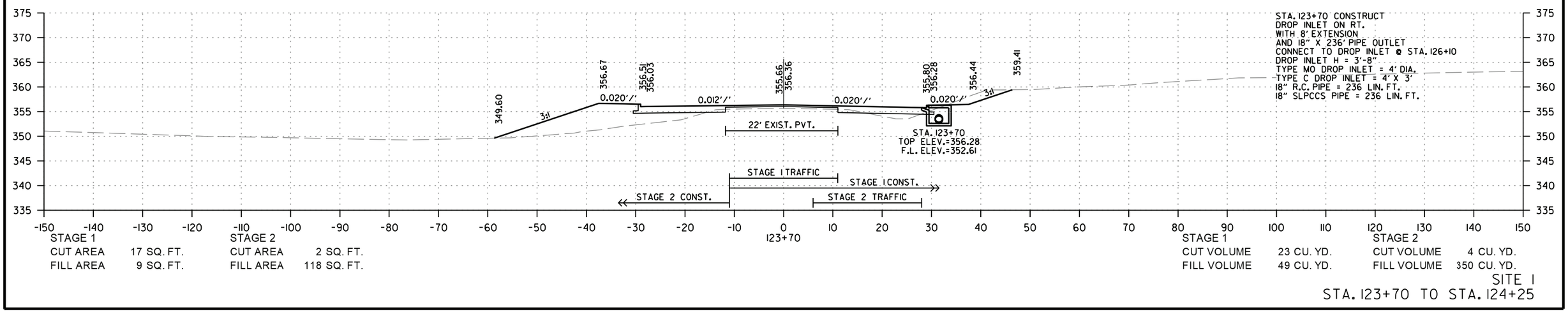
STAGE 1		STAGE 2	
CUT AREA	38 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	3 SQ. FT.	FILL AREA	78 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	31 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	4 CU. YD.	FILL VOLUME	83 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	29 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	5 SQ. FT.	FILL AREA	102 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	26 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	8 CU. YD.	FILL VOLUME	122 CU. YD.



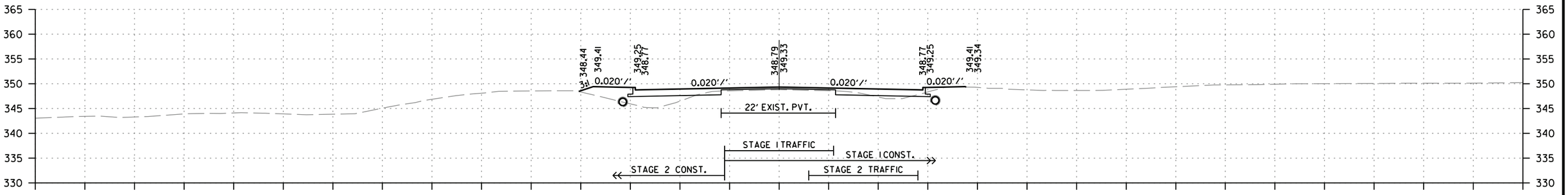
STAGE 1		STAGE 2	
CUT AREA	17 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	9 SQ. FT.	FILL AREA	118 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	23 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	49 CU. YD.	FILL VOLUME	350 CU. YD.

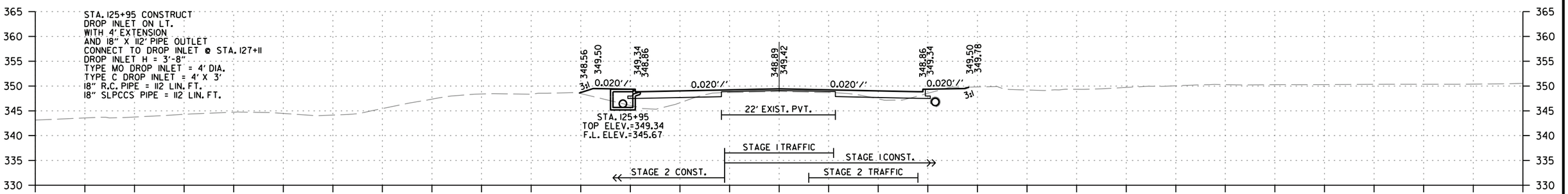
SITE 1
STA. 123+70 TO STA. 124+25

mh39735 3/21/2023
R100875.DGN

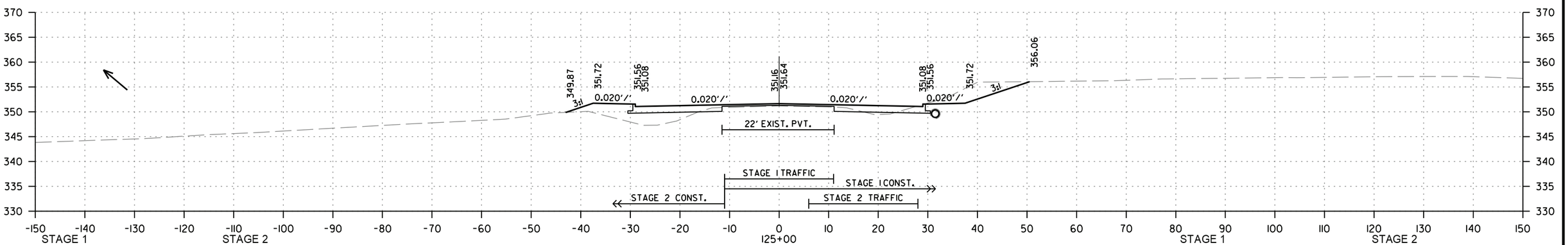
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	112	159
		CROSS SECTIONS				



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	3 SQ. FT.	CUT VOLUME	1 CU. YD.	CUT VOLUME	1 CU. YD.
FILL AREA	3 SQ. FT.	FILL AREA	42 SQ. FT.	FILL VOLUME	1 CU. YD.	FILL VOLUME	8 CU. YD.



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	7 SQ. FT.	CUT AREA	3 SQ. FT.	CUT VOLUME	93 CU. YD.	CUT VOLUME	11 CU. YD.
FILL AREA	3 SQ. FT.	FILL AREA	41 SQ. FT.	FILL VOLUME	9 CU. YD.	FILL VOLUME	162 CU. YD.

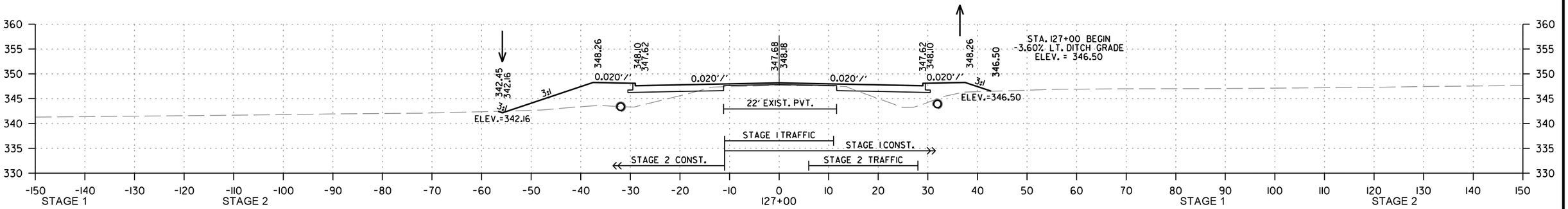


STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	46 SQ. FT.	CUT AREA	3 SQ. FT.	CUT VOLUME	117 CU. YD.	CUT VOLUME	8 CU. YD.
FILL AREA	2 SQ. FT.	FILL AREA	51 SQ. FT.	FILL VOLUME	7 CU. YD.	FILL VOLUME	179 CU. YD.

SITE 1
STA. 125+00 TO STA. 126+00

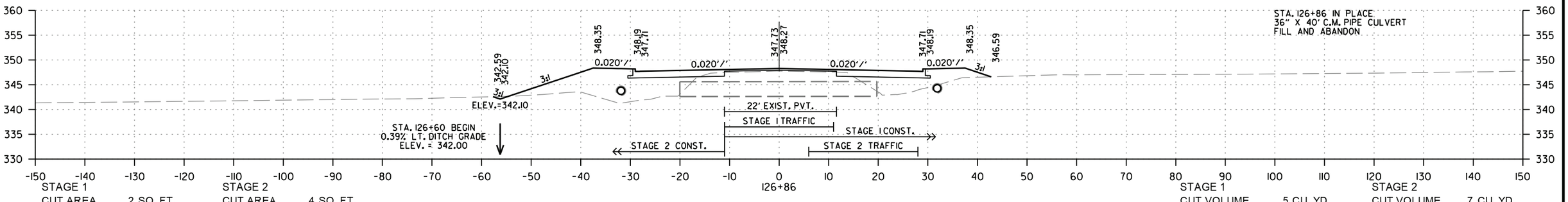
mn39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	113	159
		CROSS SECTIONS				



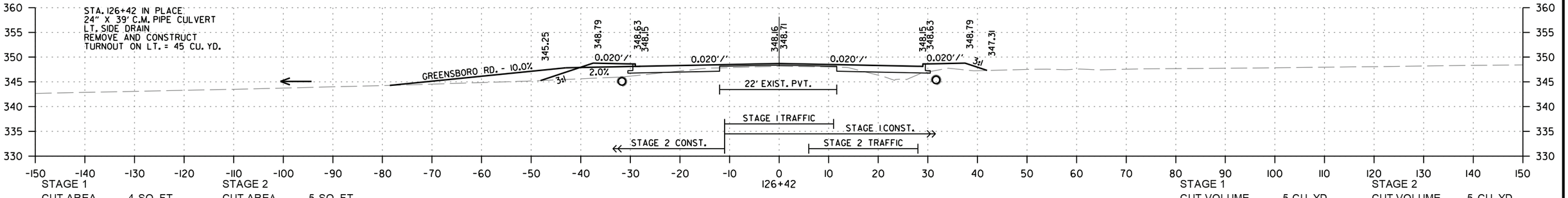
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	54 SQ. FT.	FILL AREA	99 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	31 CU. YD.	FILL VOLUME	61 CU. YD.



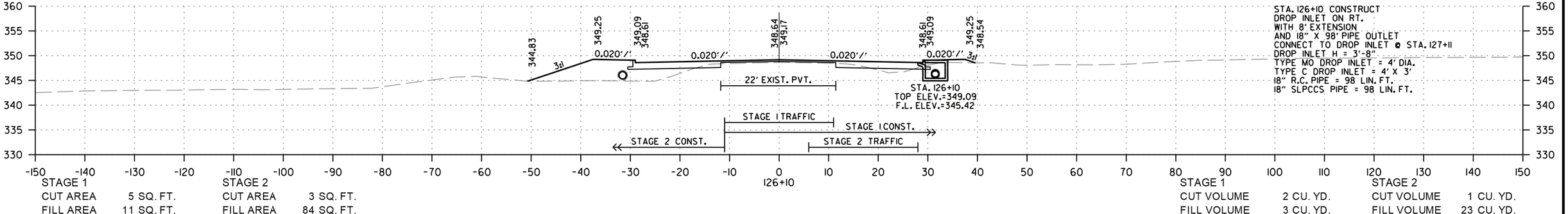
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	64 SQ. FT.	FILL AREA	138 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	5 CU. YD.	CUT VOLUME	7 CU. YD.
FILL VOLUME	71 CU. YD.	FILL VOLUME	145 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	23 SQ. FT.	FILL AREA	40 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	5 CU. YD.	CUT VOLUME	5 CU. YD.
FILL VOLUME	20 CU. YD.	FILL VOLUME	73 CU. YD.



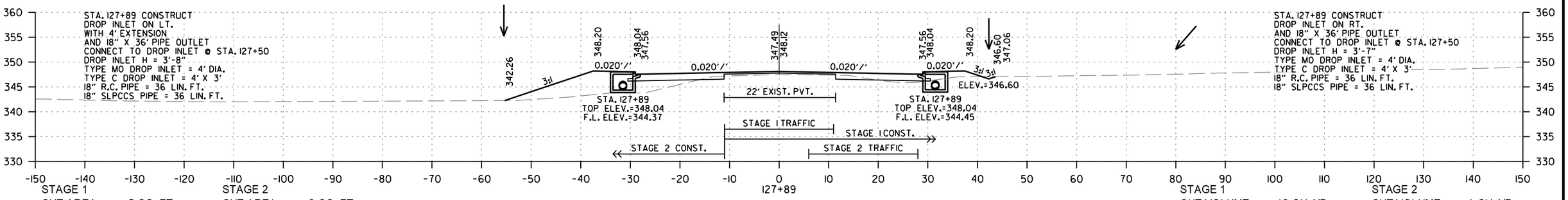
STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	11 SQ. FT.	FILL AREA	84 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	3 CU. YD.	FILL VOLUME	23 CU. YD.

SITE 1
STA. 126+10 TO STA. 127+00

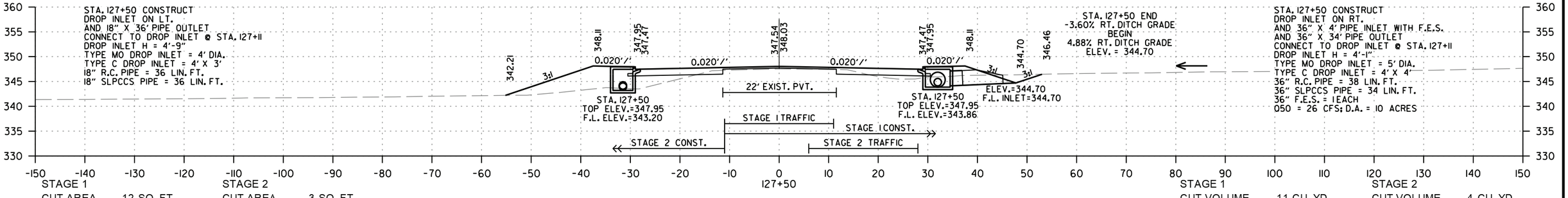
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	114	159
		CROSS SECTIONS				



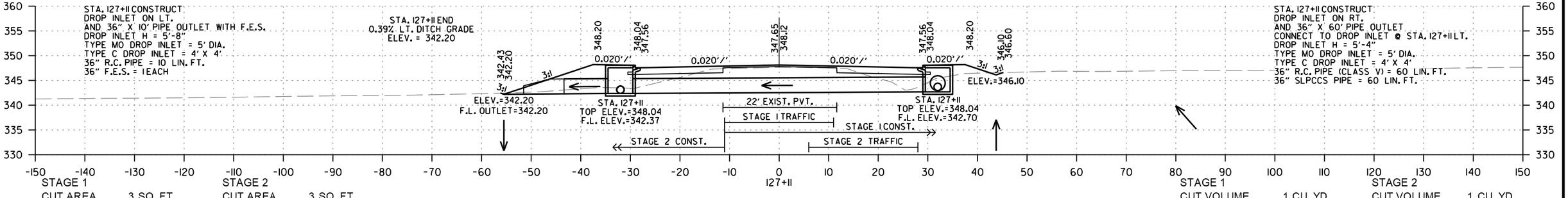
STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	16 SQ. FT.	FILL AREA	99 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	12 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	31 CU. YD.	FILL VOLUME	142 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	12 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	27 SQ. FT.	FILL AREA	97 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	11 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	54 CU. YD.	FILL VOLUME	140 CU. YD.



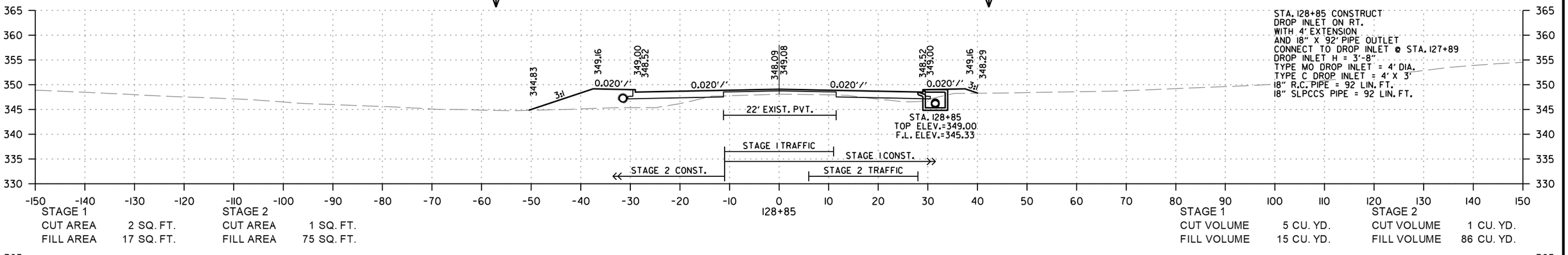
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	48 SQ. FT.	FILL AREA	97 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	21 CU. YD.	FILL VOLUME	40 CU. YD.

SITE 1
STA. 127+11 TO STA. 127+89

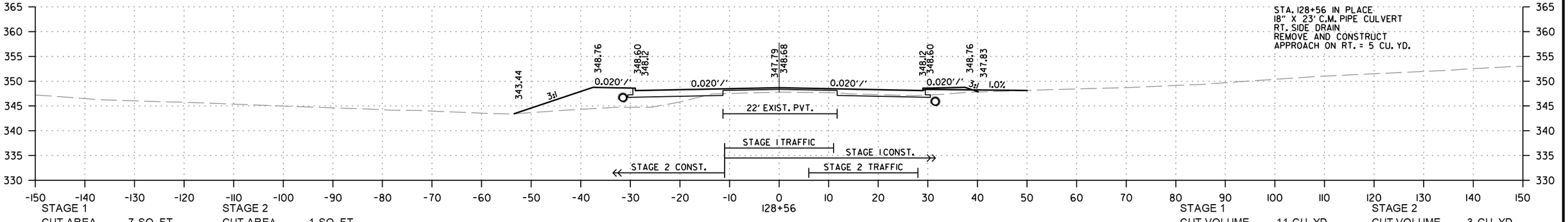
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	115	159
		CROSS SECTIONS				



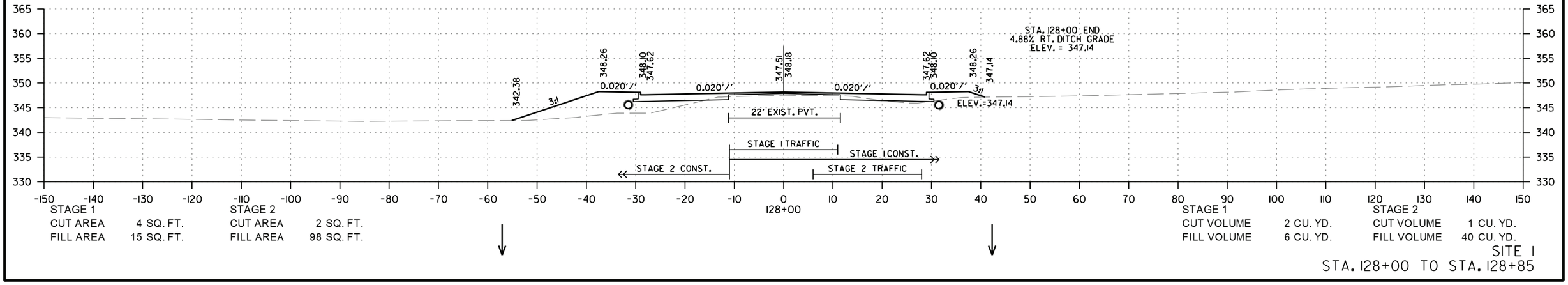
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	1 SQ. FT.
FILL AREA	17 SQ. FT.	FILL AREA	75 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	5 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	15 CU. YD.	FILL VOLUME	86 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	7 SQ. FT.	CUT AREA	1 SQ. FT.
FILL AREA	11 SQ. FT.	FILL AREA	85 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	11 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	27 CU. YD.	FILL VOLUME	190 CU. YD.



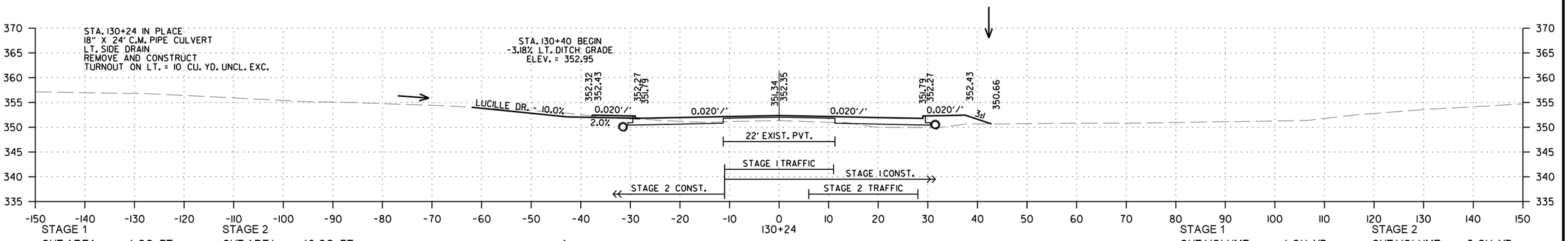
STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	15 SQ. FT.	FILL AREA	98 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	40 CU. YD.

SITE 1
STA. 128+00 TO STA. 128+85

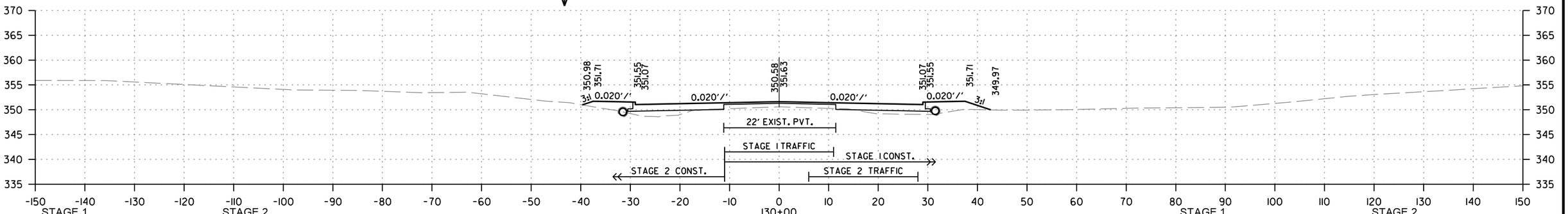
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	116	159
		CROSS SECTIONS				



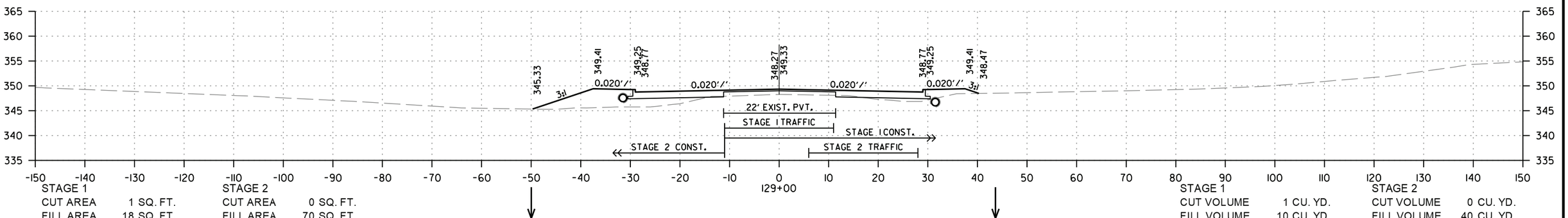
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	12 SQ. FT.
FILL AREA	29 SQ. FT.	FILL AREA	3 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	5 CU. YD.
FILL VOLUME	26 CU. YD.	FILL VOLUME	12 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	29 SQ. FT.	FILL AREA	25 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	87 CU. YD.	FILL VOLUME	176 CU. YD.



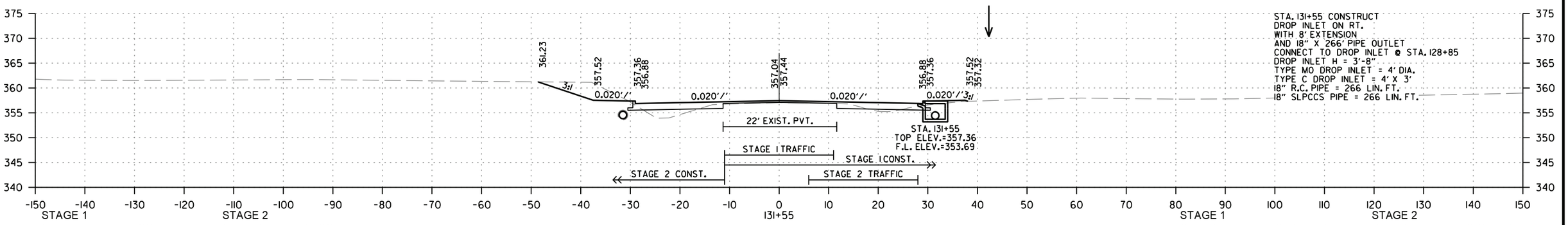
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	18 SQ. FT.	FILL AREA	70 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	10 CU. YD.	FILL VOLUME	40 CU. YD.

SITE 1
STA. 129+00 TO STA. 130+24

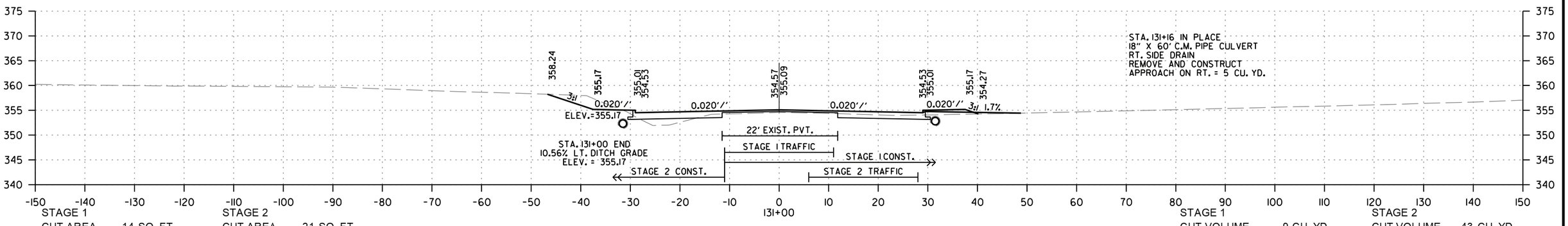
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	117	159
		CROSS SECTIONS				



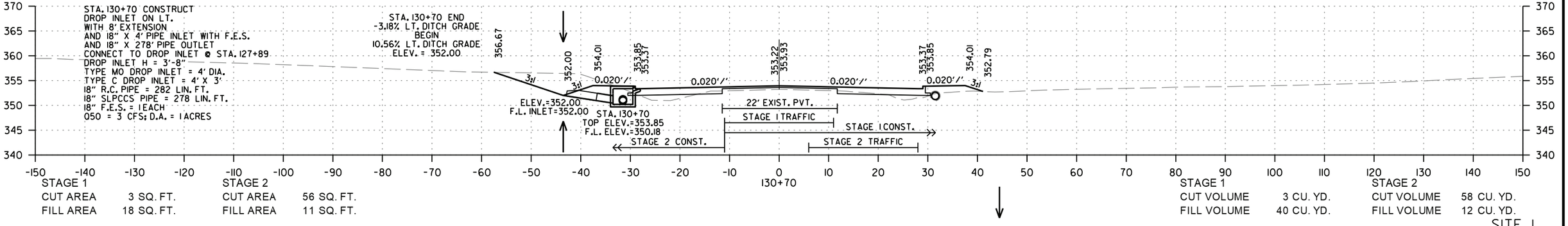
STAGE 1		STAGE 2	
CUT AREA	7 SQ. FT.	CUT AREA	37 SQ. FT.
FILL AREA	6 SQ. FT.	FILL AREA	12 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	21 CU. YD.	CUT VOLUME	59 CU. YD.
FILL VOLUME	15 CU. YD.	FILL VOLUME	22 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	14 SQ. FT.	CUT AREA	21 SQ. FT.
FILL AREA	9 SQ. FT.	FILL AREA	10 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	9 CU. YD.	CUT VOLUME	43 CU. YD.
FILL VOLUME	15 CU. YD.	FILL VOLUME	12 CU. YD.



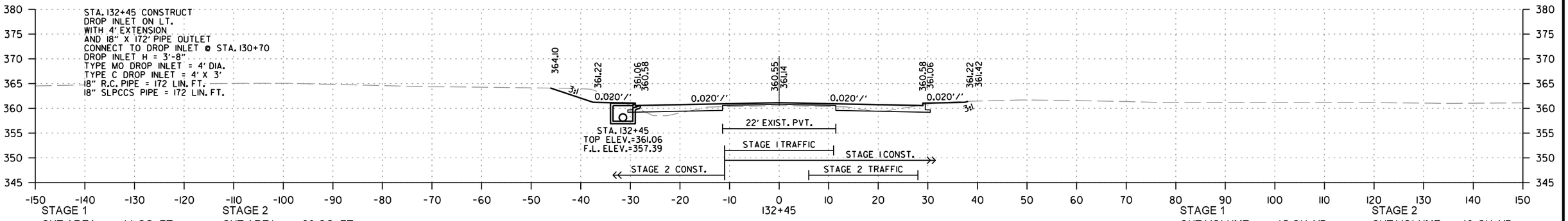
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	56 SQ. FT.
FILL AREA	18 SQ. FT.	FILL AREA	11 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	3 CU. YD.	CUT VOLUME	58 CU. YD.
FILL VOLUME	40 CU. YD.	FILL VOLUME	12 CU. YD.

SITE 1
STA. 130+70 TO STA. 131+55

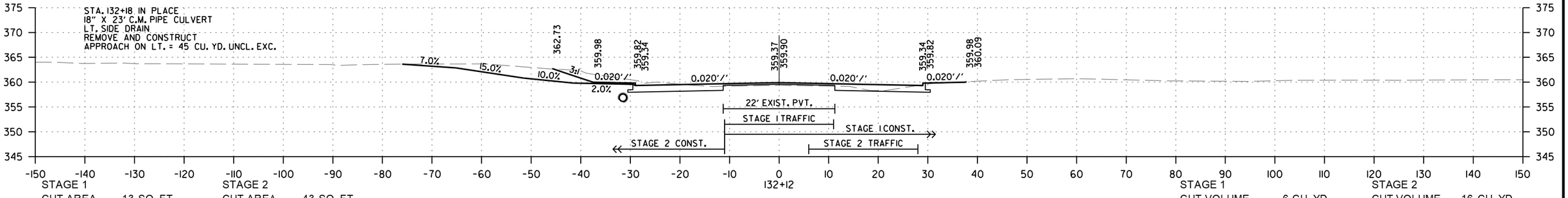
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	118	159
		CROSS SECTIONS				



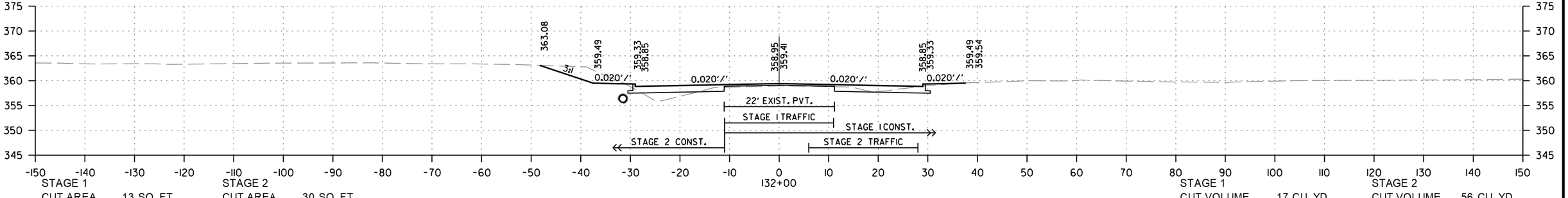
STAGE 1		STAGE 2	
CUT AREA	11 SQ. FT.	CUT AREA	23 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	5 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	15 CU. YD.	CUT VOLUME	40 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	3 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	13 SQ. FT.	CUT AREA	43 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	16 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	2 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	13 SQ. FT.	CUT AREA	30 SQ. FT.
FILL AREA	1 SQ. FT.	FILL AREA	11 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	17 CU. YD.	CUT VOLUME	56 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	19 CU. YD.

SITE 1
STA. 132+00 TO STA. 132+45

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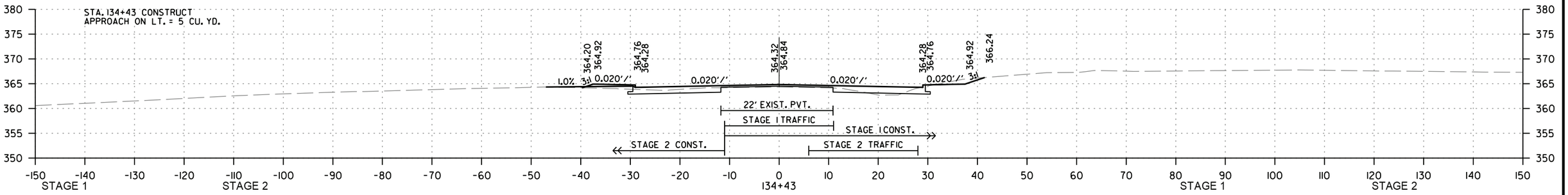
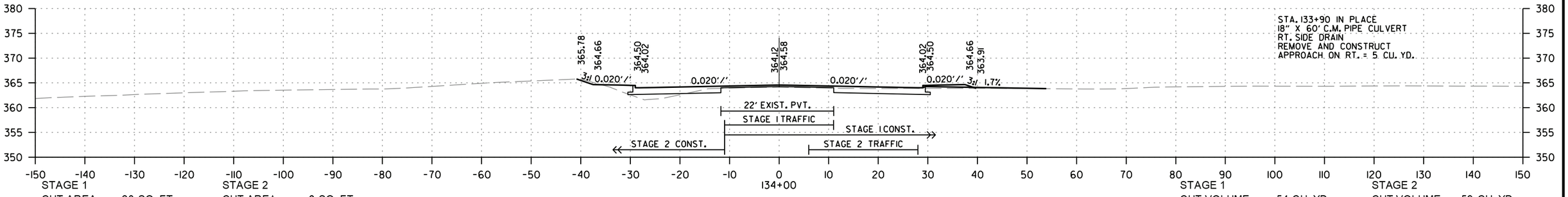
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	119	159
		CROSS SECTIONS				



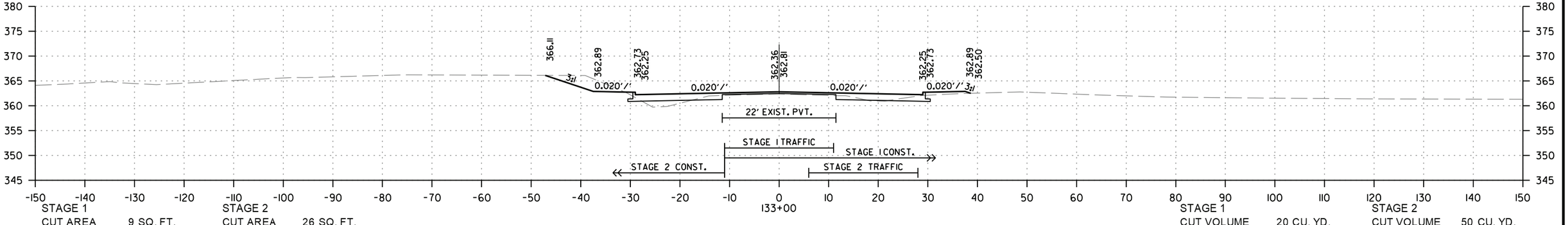
STAGE 1		STAGE 2	
CUT AREA	13 SQ. FT.	CUT AREA	15 SQ. FT.
FILL AREA	2 SQ. FT.	FILL AREA	8 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	26 CU. YD.	CUT VOLUME	17 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	17 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	20 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	6 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	54 CU. YD.	CUT VOLUME	59 CU. YD.
FILL VOLUME	20 CU. YD.	FILL VOLUME	39 CU. YD.



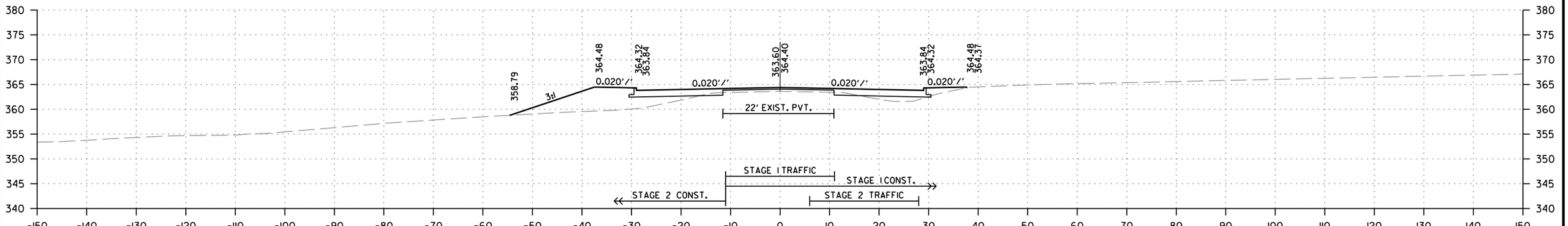
STAGE 1		STAGE 2	
CUT AREA	9 SQ. FT.	CUT AREA	26 SQ. FT.
FILL AREA	5 SQ. FT.	FILL AREA	8 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	20 CU. YD.	CUT VOLUME	50 CU. YD.
FILL VOLUME	5 CU. YD.	FILL VOLUME	13 CU. YD.

SITE 1
STA. 133+00 TO STA. 134+43

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	120	159
		CROSS SECTIONS				



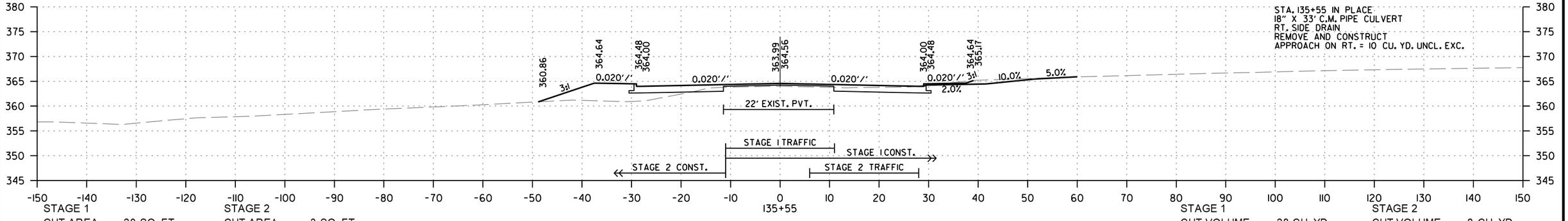
STAGE 1
CUT AREA 2 SQ. FT.
FILL AREA 16 SQ. FT.

STAGE 2
CUT AREA 2 SQ. FT.
FILL AREA 94 SQ. FT.

136+00

STAGE 1
CUT VOLUME 18 CU. YD.
FILL VOLUME 13 CU. YD.

STAGE 2
CUT VOLUME 4 CU. YD.
FILL VOLUME 128 CU. YD.



STA. 135+55 IN PLACE
18" X 33' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 10 CU. YD. UNCL. EXC.

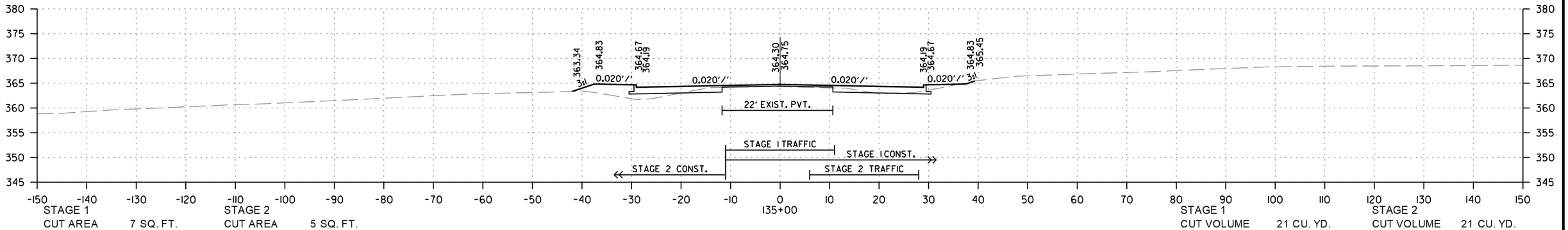
STAGE 1
CUT AREA 20 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 3 SQ. FT.
FILL AREA 59 SQ. FT.

135+55

STAGE 1
CUT VOLUME 28 CU. YD.
FILL VOLUME 4 CU. YD.

STAGE 2
CUT VOLUME 8 CU. YD.
FILL VOLUME 89 CU. YD.



STAGE 1
CUT AREA 7 SQ. FT.
FILL AREA 4 SQ. FT.

STAGE 2
CUT AREA 5 SQ. FT.
FILL AREA 28 SQ. FT.

135+00

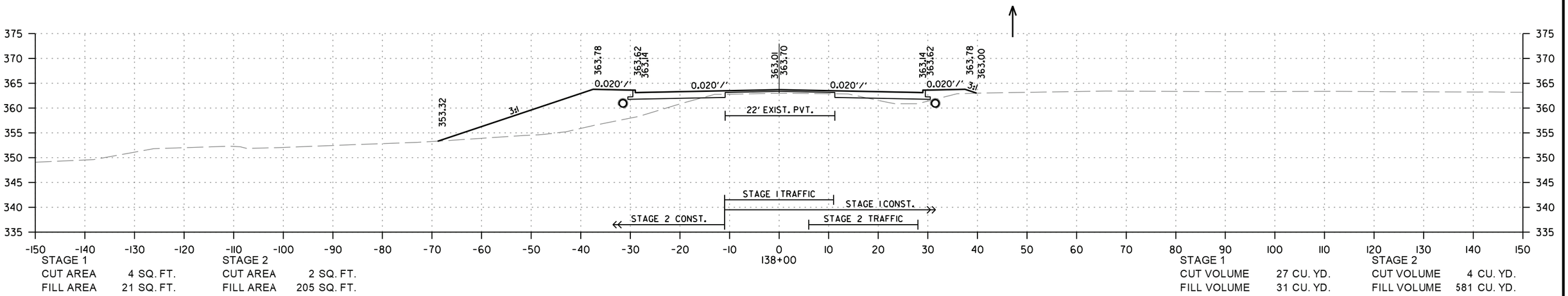
STAGE 1
CUT VOLUME 21 CU. YD.
FILL VOLUME 6 CU. YD.

STAGE 2
CUT VOLUME 21 CU. YD.
FILL VOLUME 38 CU. YD.

SITE 1
STA. 135+00 TO STA. 136+00

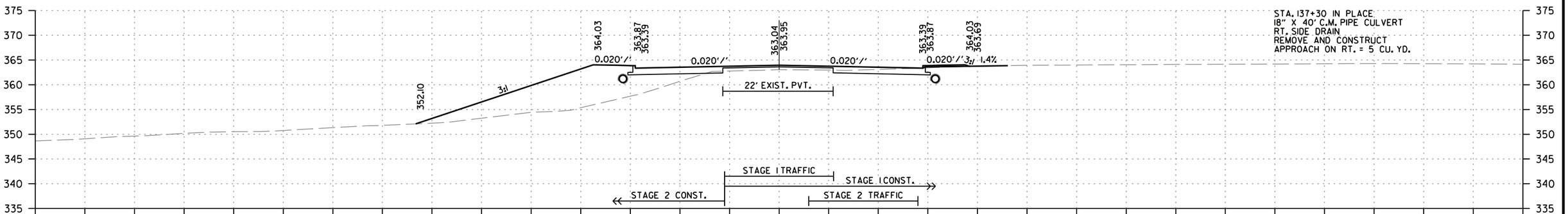
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	121	159
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	21 SQ. FT.	FILL AREA	205 SQ. FT.

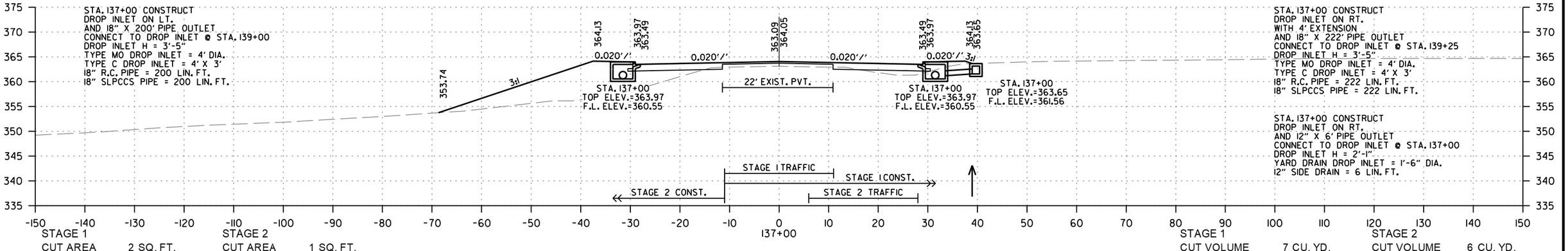
STAGE 1		STAGE 2	
CUT VOLUME	27 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	31 CU. YD.	FILL VOLUME	581 CU. YD.



STA. 137+30 IN PLACE
18" X 40' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STAGE 1		STAGE 2	
CUT AREA	17 SQ. FT.	CUT AREA	1 SQ. FT.
FILL AREA	3 SQ. FT.	FILL AREA	243 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	11 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	12 CU. YD.	FILL VOLUME	244 CU. YD.



STA. 137+00 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 222' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 139+25
DROP INLET H = 3'-5"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 222 LIN. FT.
18" SLPCCS PIPE = 222 LIN. FT.

STA. 137+00 CONSTRUCT
DROP INLET ON RT.
AND 12" X 6' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 137+00
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 6 LIN. FT.

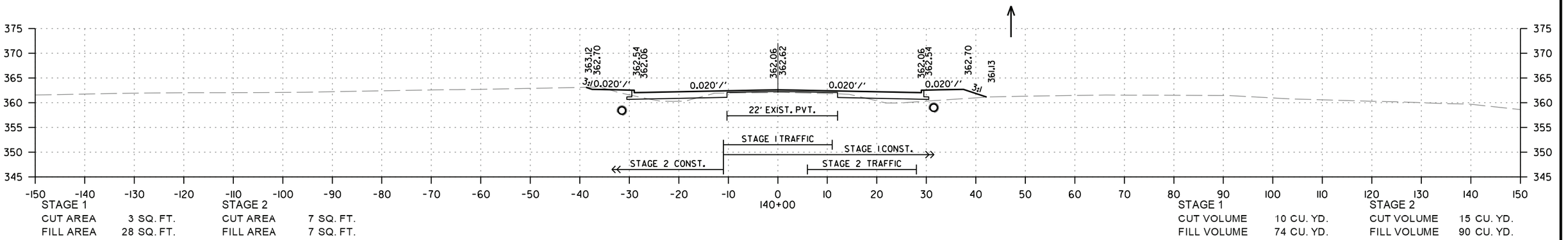
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	1 SQ. FT.
FILL AREA	18 SQ. FT.	FILL AREA	197 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	6 CU. YD.
FILL VOLUME	63 CU. YD.	FILL VOLUME	539 CU. YD.

SITE 1
STA. 137+00 TO STA. 138+00

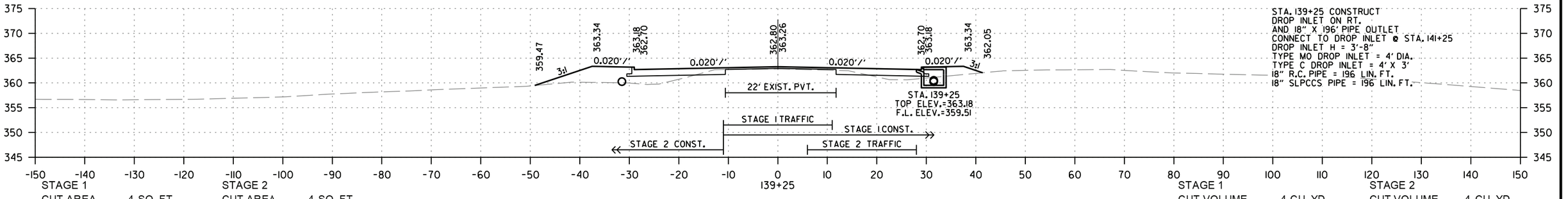
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	122	159
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	7 SQ. FT.
FILL AREA	28 SQ. FT.	FILL AREA	7 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	10 CU. YD.	CUT VOLUME	15 CU. YD.
FILL VOLUME	74 CU. YD.	FILL VOLUME	90 CU. YD.

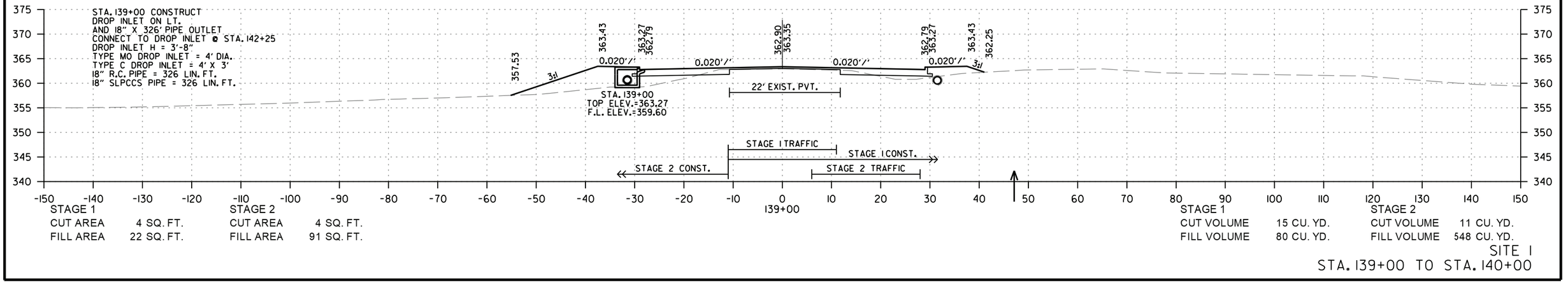


STA. 139+25 CONSTRUCT
DROP INLET ON RT.
AND 18" X 196' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 141+25
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 196 LIN. FT.
18" SLPCCS PIPE = 196 LIN. FT.

STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	25 SQ. FT.	FILL AREA	58 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	22 CU. YD.	FILL VOLUME	69 CU. YD.

STA. 139+00 CONSTRUCT
DROP INLET ON LT.
AND 18" X 326' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 142+25
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 326 LIN. FT.
18" SLPCCS PIPE = 326 LIN. FT.



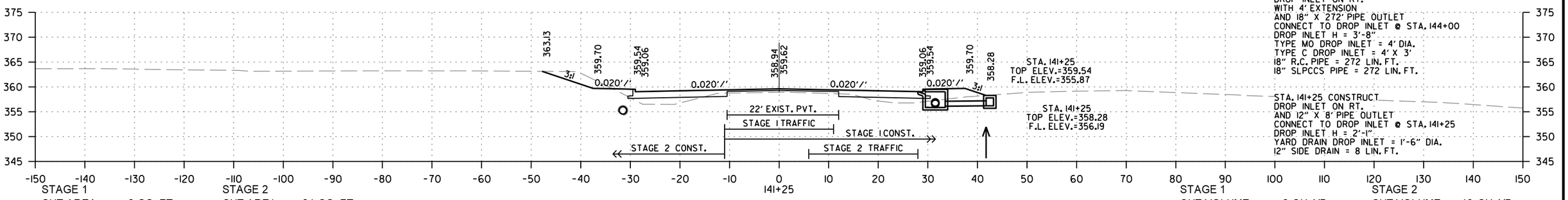
STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	22 SQ. FT.	FILL AREA	91 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	15 CU. YD.	CUT VOLUME	11 CU. YD.
FILL VOLUME	80 CU. YD.	FILL VOLUME	548 CU. YD.

SITE 1
STA. 139+00 TO STA. 140+00

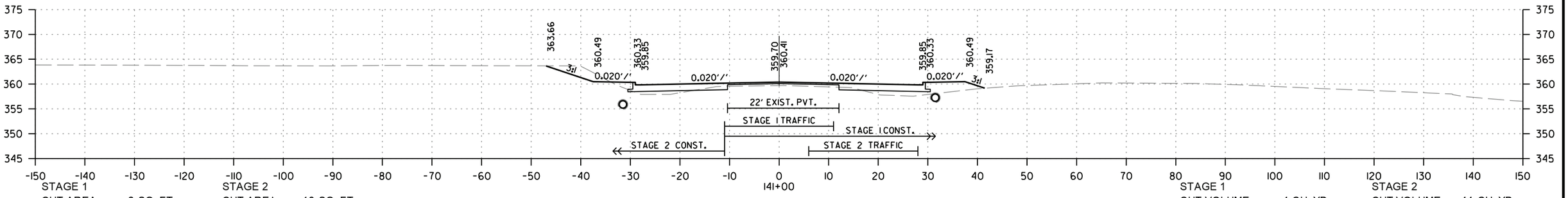
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	123	159
		CROSS SECTIONS				



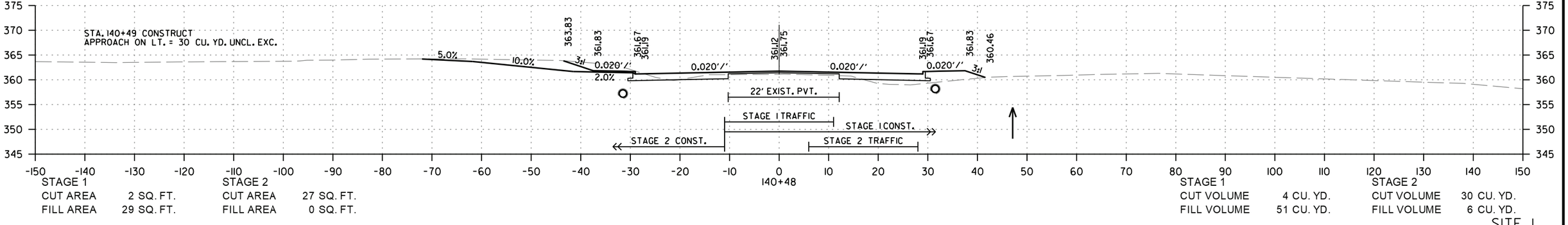
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	21 SQ. FT.
FILL AREA	30 SQ. FT.	FILL AREA	17 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	19 CU. YD.
FILL VOLUME	27 CU. YD.	FILL VOLUME	13 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	19 SQ. FT.
FILL AREA	29 SQ. FT.	FILL AREA	10 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	44 CU. YD.
FILL VOLUME	56 CU. YD.	FILL VOLUME	10 CU. YD.



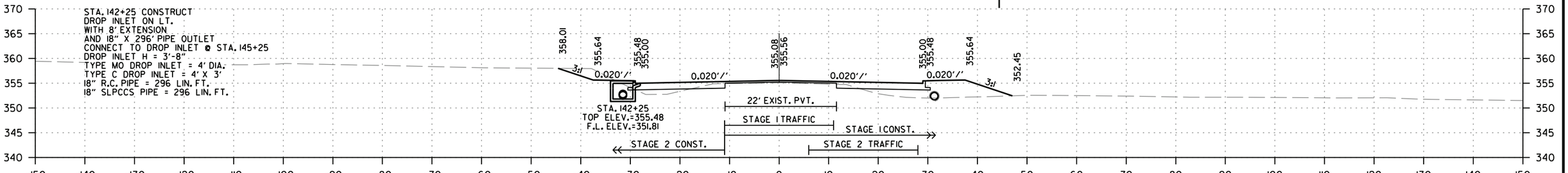
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	27 SQ. FT.
FILL AREA	29 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	30 CU. YD.
FILL VOLUME	51 CU. YD.	FILL VOLUME	6 CU. YD.

SITE 1
STA. 140+48 TO STA. 141+25

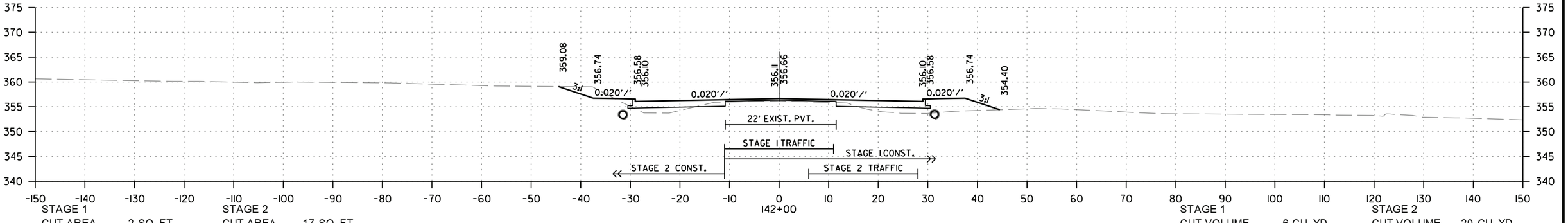
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	124	159
		CROSS SECTIONS				



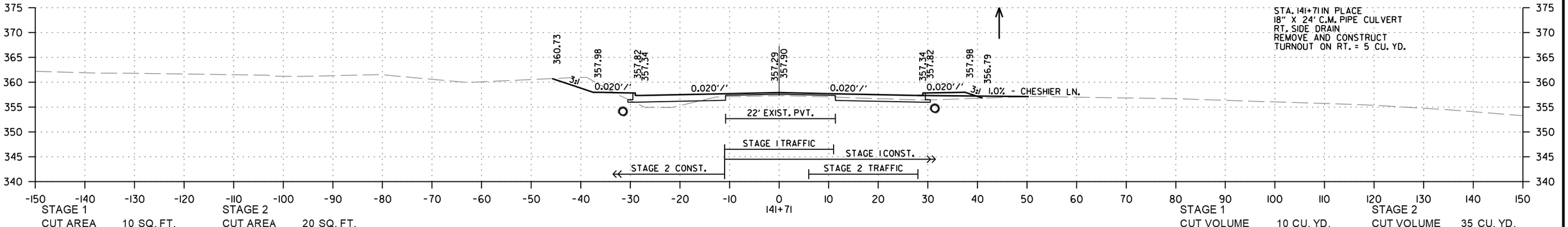
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	18 SQ. FT.
FILL AREA	60 SQ. FT.	FILL AREA	11 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	16 CU. YD.
FILL VOLUME	47 CU. YD.	FILL VOLUME	11 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	17 SQ. FT.
FILL AREA	42 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	20 CU. YD.
FILL VOLUME	30 CU. YD.	FILL VOLUME	15 CU. YD.



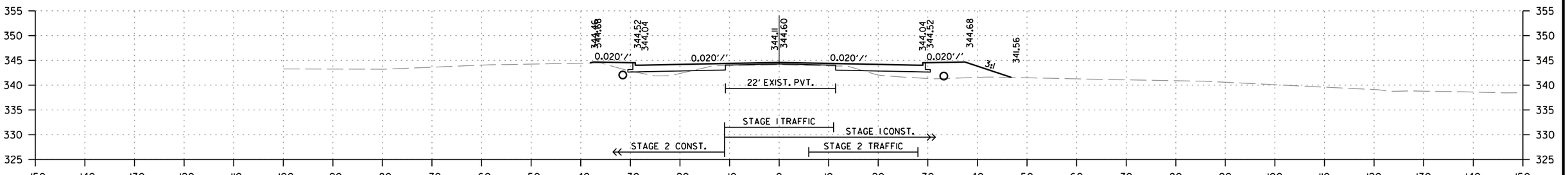
STAGE 1		STAGE 2	
CUT AREA	10 SQ. FT.	CUT AREA	20 SQ. FT.
FILL AREA	13 SQ. FT.	FILL AREA	14 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	10 CU. YD.	CUT VOLUME	35 CU. YD.
FILL VOLUME	37 CU. YD.	FILL VOLUME	26 CU. YD.

SITE 1
STA. 141+71 TO STA. 142+25

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	125	159
		CROSS SECTIONS				



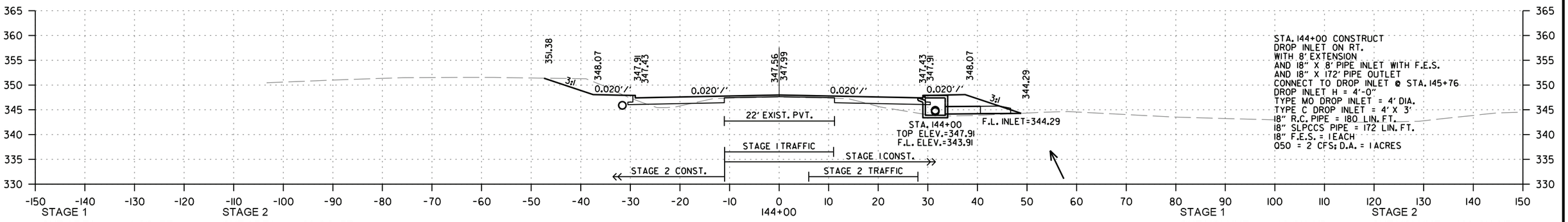
STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 51 SQ. FT.

STAGE 2
CUT AREA 4 SQ. FT.
FILL AREA 13 SQ. FT.

145+00

STAGE 1
CUT VOLUME 13 CU. YD.
FILL VOLUME 224 CU. YD.

STAGE 2
CUT VOLUME 63 CU. YD.
FILL VOLUME 33 CU. YD.



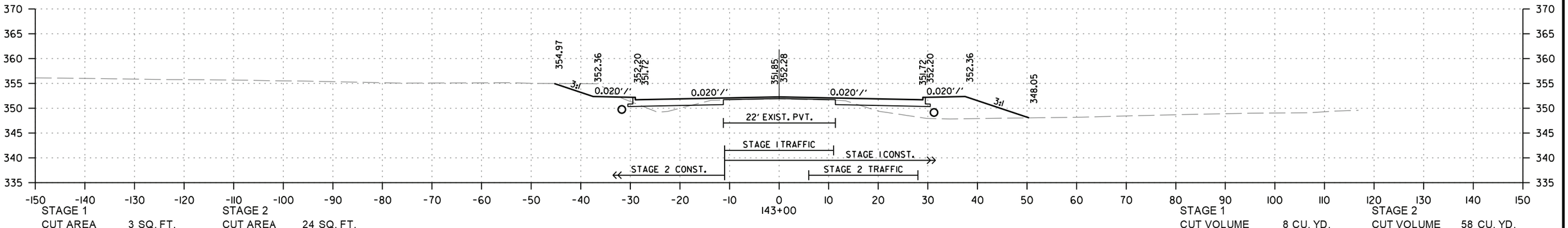
STAGE 1
CUT AREA 4 SQ. FT.
FILL AREA 70 SQ. FT.

STAGE 2
CUT AREA 30 SQ. FT.
FILL AREA 5 SQ. FT.

144+00

STAGE 1
CUT VOLUME 13 CU. YD.
FILL VOLUME 283 CU. YD.

STAGE 2
CUT VOLUME 100 CU. YD.
FILL VOLUME 26 CU. YD.



STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 83 SQ. FT.

STAGE 2
CUT AREA 24 SQ. FT.
FILL AREA 9 SQ. FT.

143+00

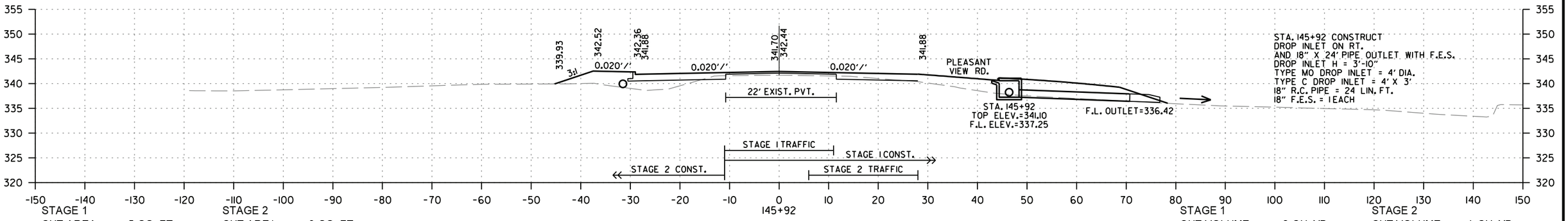
STAGE 1
CUT VOLUME 8 CU. YD.
FILL VOLUME 199 CU. YD.

STAGE 2
CUT VOLUME 58 CU. YD.
FILL VOLUME 28 CU. YD.

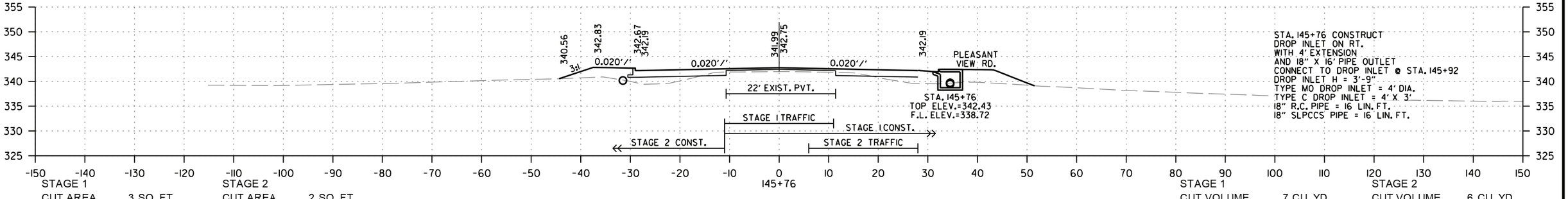
SITE 1
STA. 143+00 TO STA. 145+00

mh39735 3/21/2023
R100875.DGN

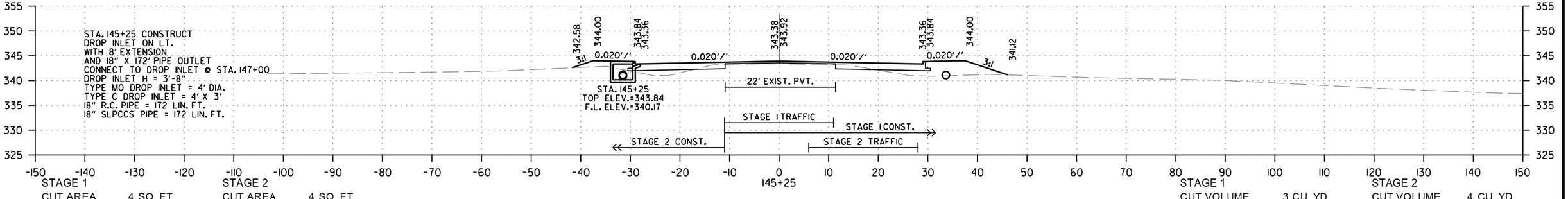
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	126	159
		CROSS SECTIONS				



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	3 SQ. FT.	CUT VOLUME	2 CU. YD.	CUT VOLUME	1 CU. YD.
FILL AREA	0 SQ. FT.	FILL AREA	52 SQ. FT.	FILL VOLUME	2 CU. YD.	FILL VOLUME	27 CU. YD.



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	2 SQ. FT.	CUT VOLUME	7 CU. YD.	CUT VOLUME	6 CU. YD.
FILL AREA	7 SQ. FT.	FILL AREA	39 SQ. FT.	FILL VOLUME	46 CU. YD.	FILL VOLUME	59 CU. YD.



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	4 SQ. FT.	CUT VOLUME	3 CU. YD.	CUT VOLUME	4 CU. YD.
FILL AREA	42 SQ. FT.	FILL AREA	23 SQ. FT.	FILL VOLUME	43 CU. YD.	FILL VOLUME	17 CU. YD.

SITE 1
STA. 145+25 TO STA. 145+92

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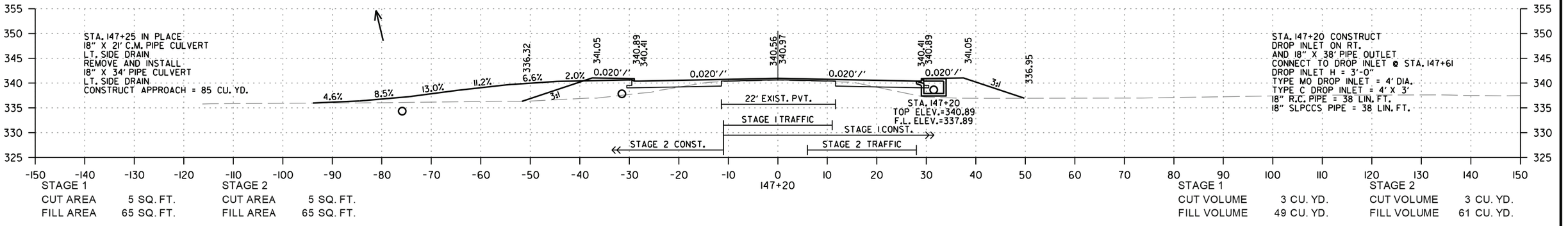
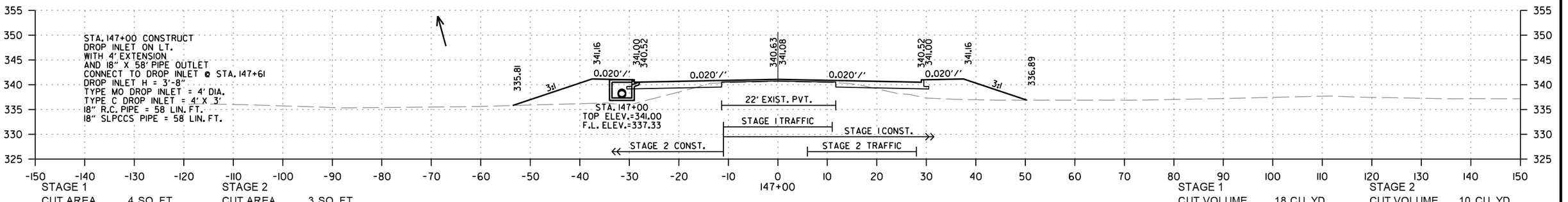
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	127	159
		CROSS SECTIONS				



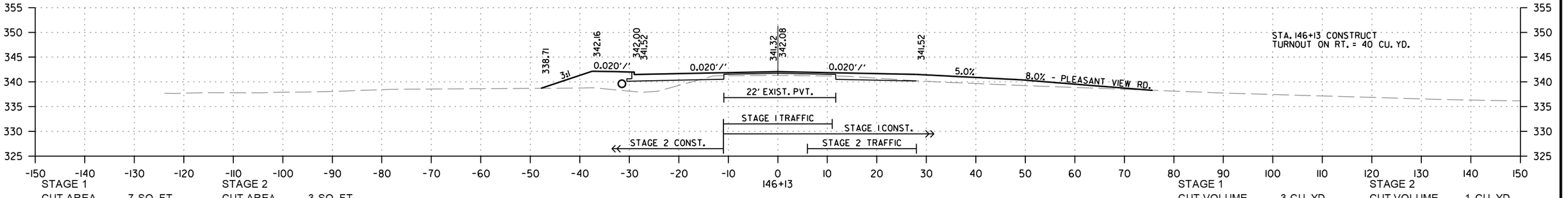
STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	65 SQ. FT.	FILL AREA	65 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	3 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	49 CU. YD.	FILL VOLUME	61 CU. YD.



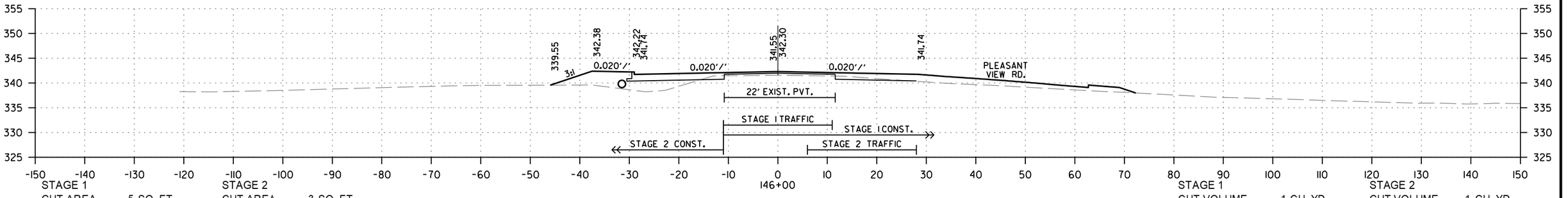
STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	67 SQ. FT.	FILL AREA	99 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	18 CU. YD.	CUT VOLUME	10 CU. YD.
FILL VOLUME	108 CU. YD.	FILL VOLUME	266 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	7 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	66 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	3 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	30 CU. YD.



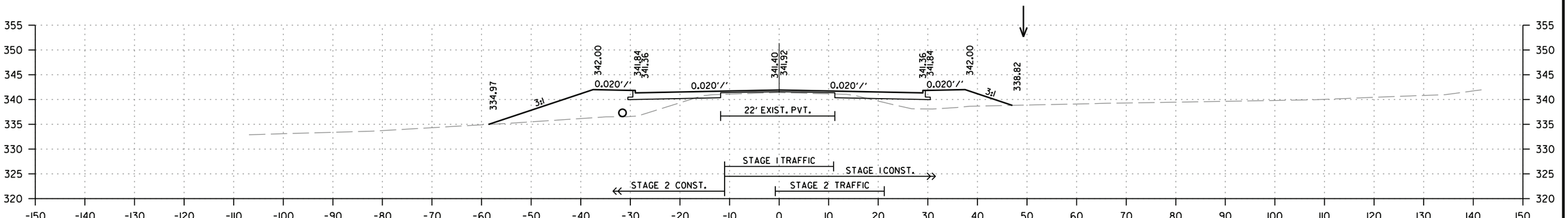
STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	58 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	16 CU. YD.

SITE 1
STA. 146+00 TO STA. 147+20

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	128	159
		CROSS SECTIONS				



STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 59 SQ. FT.

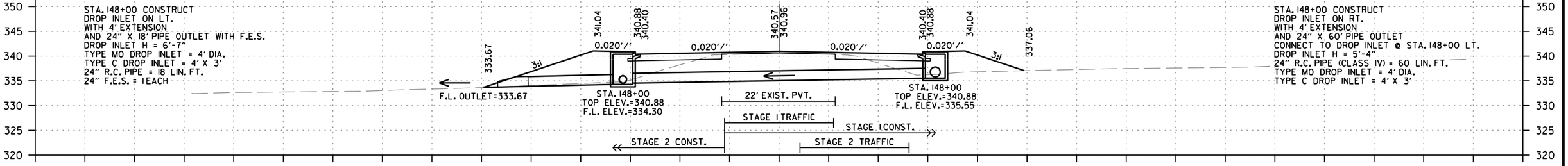
STAGE 2
CUT AREA 3 SQ. FT.
FILL AREA 126 SQ. FT.

149+00

STAGE 1
CUT VOLUME 13 CU. YD.
FILL VOLUME 259 CU. YD.

STAGE 2
CUT VOLUME 11 CU. YD.
FILL VOLUME 500 CU. YD.

STA. 148+00 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 24" X 18' PIPE OUTLET WITH F.E.S.
DROP INLET H = 6'-7"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 18 LIN. FT.
24" F.E.S. = 1 EACH



STA. 148+00 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 24" X 60' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 148+00 LT.
DROP INLET H = 5'-4"
24" R.C. PIPE (CLASS IV) = 60 LIN. FT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'

148+00

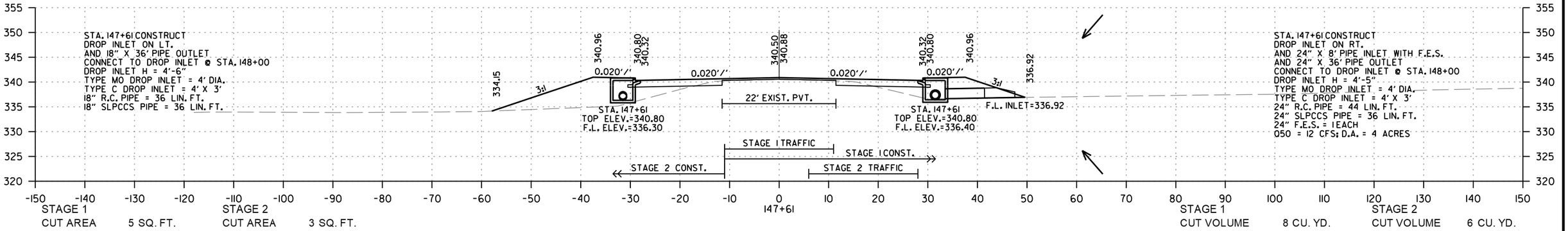
STAGE 1
CUT AREA 4 SQ. FT.
FILL AREA 81 SQ. FT.

STAGE 2
CUT AREA 3 SQ. FT.
FILL AREA 144 SQ. FT.

STAGE 1
CUT VOLUME 7 CU. YD.
FILL VOLUME 110 CU. YD.

STAGE 2
CUT VOLUME 4 CU. YD.
FILL VOLUME 194 CU. YD.

STA. 147+61 CONSTRUCT
DROP INLET ON LT.
AND 18" X 36' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 148+00
DROP INLET H = 4'-6"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 36 LIN. FT.
18" SLPCCS PIPE = 36 LIN. FT.



STA. 147+61 CONSTRUCT
DROP INLET ON RT.
AND 24" X 8' PIPE INLET WITH F.E.S.
AND 24" X 36' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 148+00
DROP INLET H = 4'-5"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
24" R.C. PIPE = 44 LIN. FT.
24" SLPCCS PIPE = 36 LIN. FT.
24" F.E.S. = 1 EACH
Q50 = 12 CFS; D.A. = 4 ACRES

147+61

STAGE 1
CUT AREA 5 SQ. FT.
FILL AREA 71 SQ. FT.

STAGE 2
CUT AREA 3 SQ. FT.
FILL AREA 125 SQ. FT.

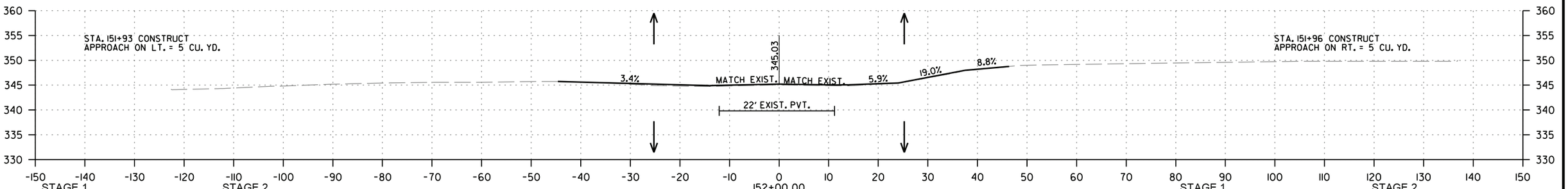
STAGE 1
CUT VOLUME 8 CU. YD.
FILL VOLUME 103 CU. YD.

STAGE 2
CUT VOLUME 6 CU. YD.
FILL VOLUME 144 CU. YD.

SITE 1
STA. 147+61 TO STA. 149+00

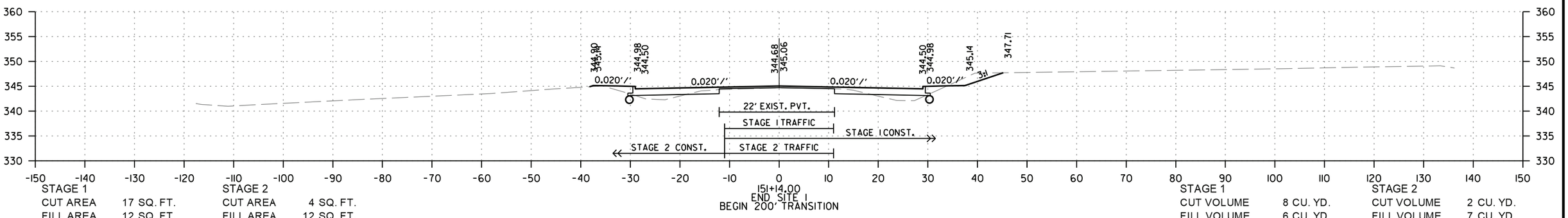
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	129	159
		CROSS SECTIONS				



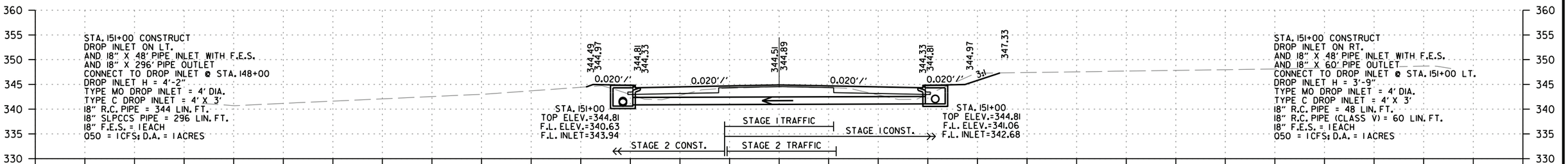
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	27 CU. YD.	CUT VOLUME	6 CU. YD.
FILL VOLUME	19 CU. YD.	FILL VOLUME	19 CU. YD.



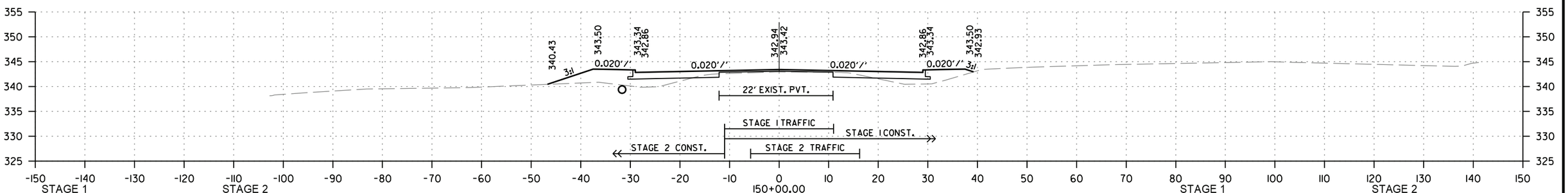
STAGE 1		STAGE 2	
CUT AREA	17 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	12 SQ. FT.	FILL AREA	12 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	8 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	7 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	14 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	13 SQ. FT.	FILL AREA	15 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	35 CU. YD.	CUT VOLUME	11 CU. YD.
FILL VOLUME	70 CU. YD.	FILL VOLUME	120 CU. YD.



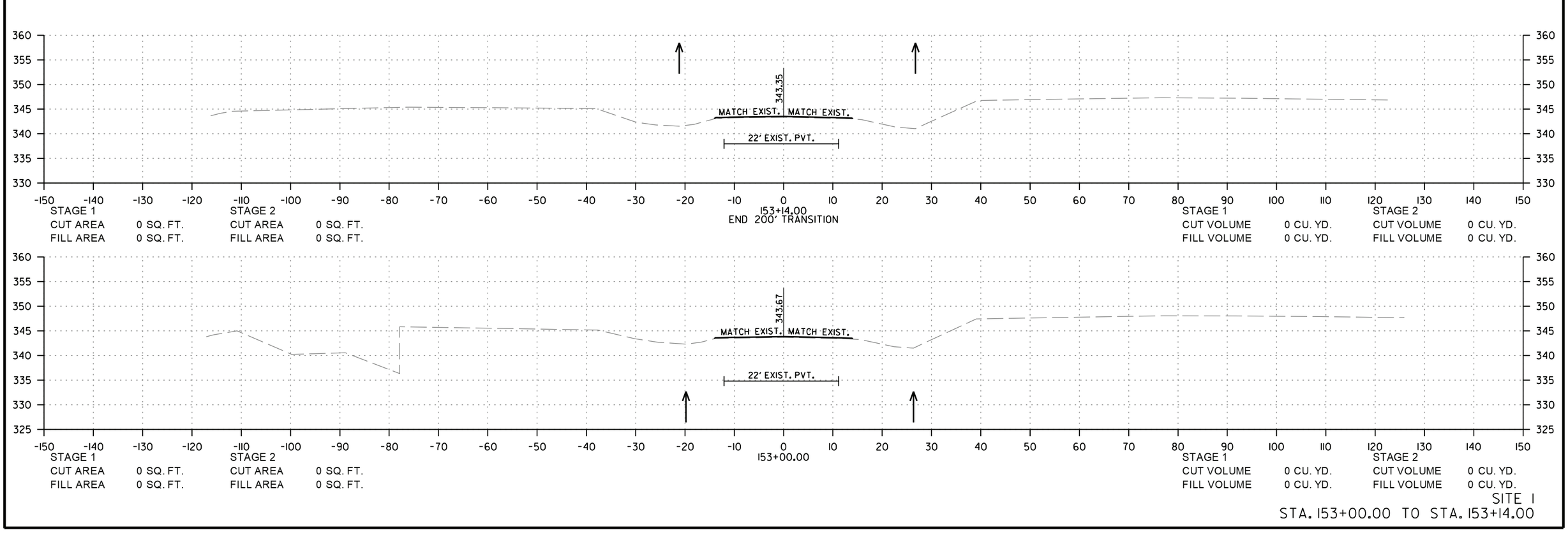
STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	25 SQ. FT.	FILL AREA	50 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	15 CU. YD.	CUT VOLUME	9 CU. YD.
FILL VOLUME	156 CU. YD.	FILL VOLUME	326 CU. YD.

SITE 1
STA. 150+00.00 TO STA. 152+00.00

mn39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	130	159
		CROSS SECTIONS				



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

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

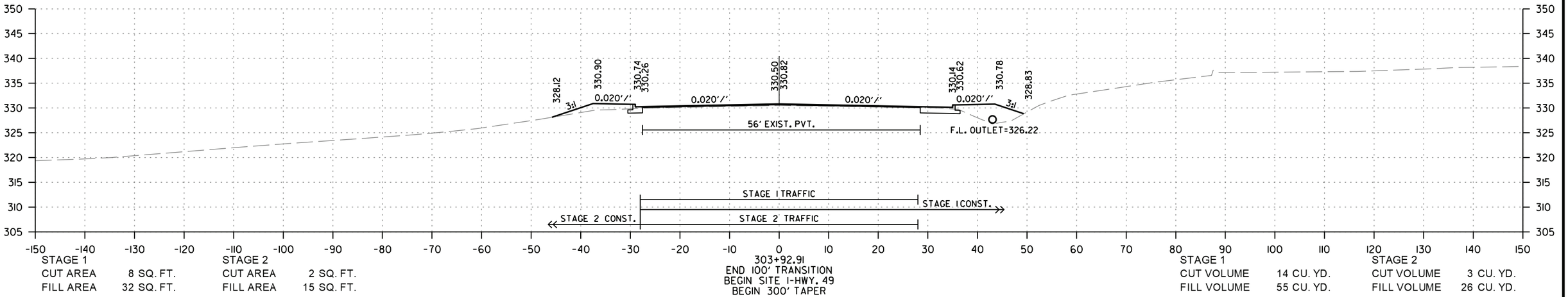
STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

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

SITE 1
STA. 153+00.00 TO STA. 153+14.00

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	131	159
		CROSS SECTIONS				



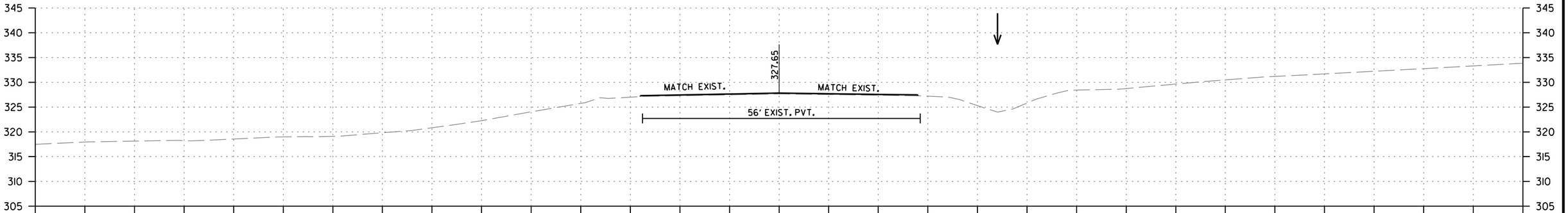
STAGE 1
CUT AREA 8 SQ. FT.
FILL AREA 32 SQ. FT.

STAGE 2
CUT AREA 2 SQ. FT.
FILL AREA 15 SQ. FT.

303+92.91
END 100' TRANSITION
BEGIN SITE 1-HWY. 49
BEGIN 300' TAPER

STAGE 1
CUT VOLUME 14 CU. YD.
FILL VOLUME 55 CU. YD.

STAGE 2
CUT VOLUME 3 CU. YD.
FILL VOLUME 26 CU. YD.



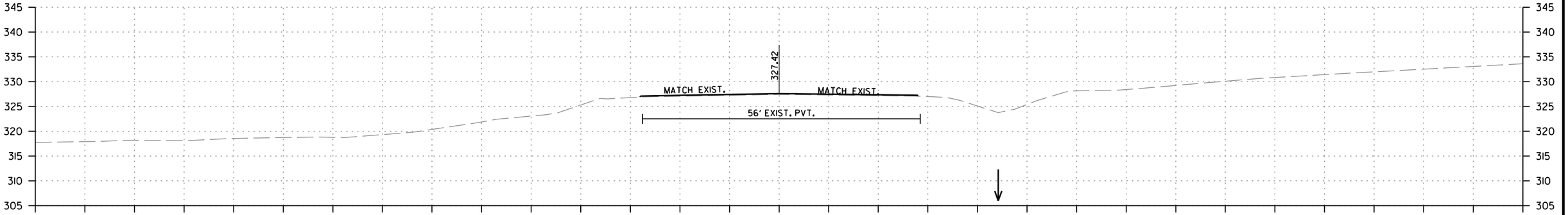
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

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

303+00.00

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

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



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

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

302+92.91
BEGIN 100' TRANSITION

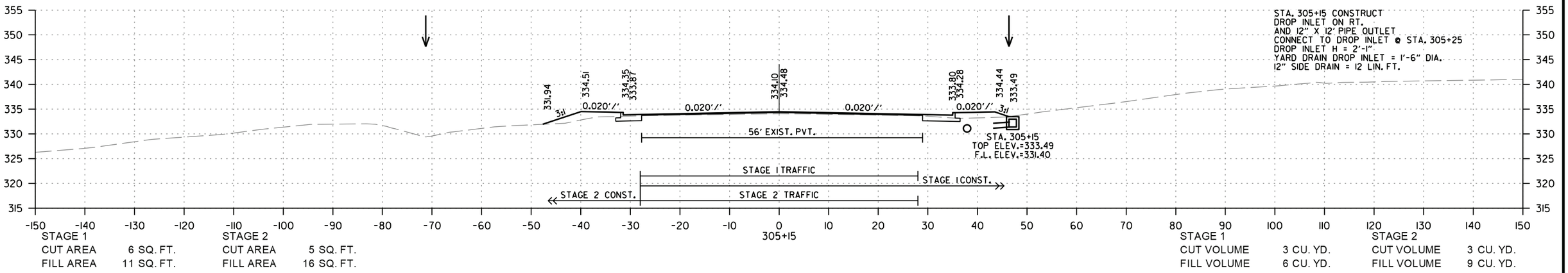
STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

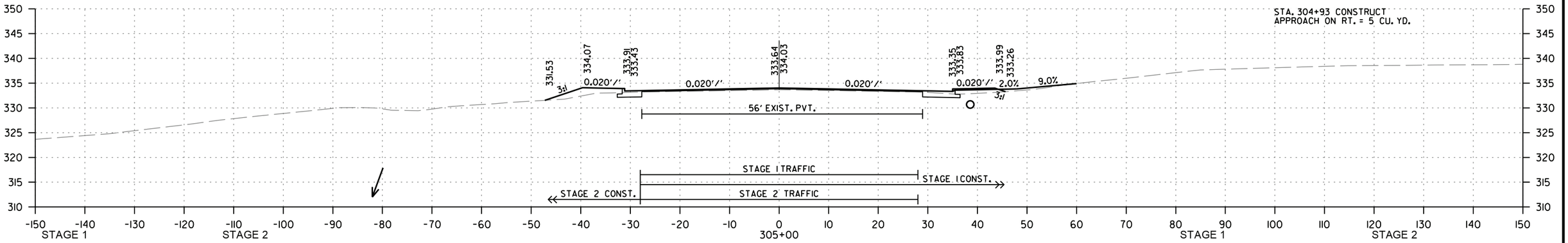
STAGE 2
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

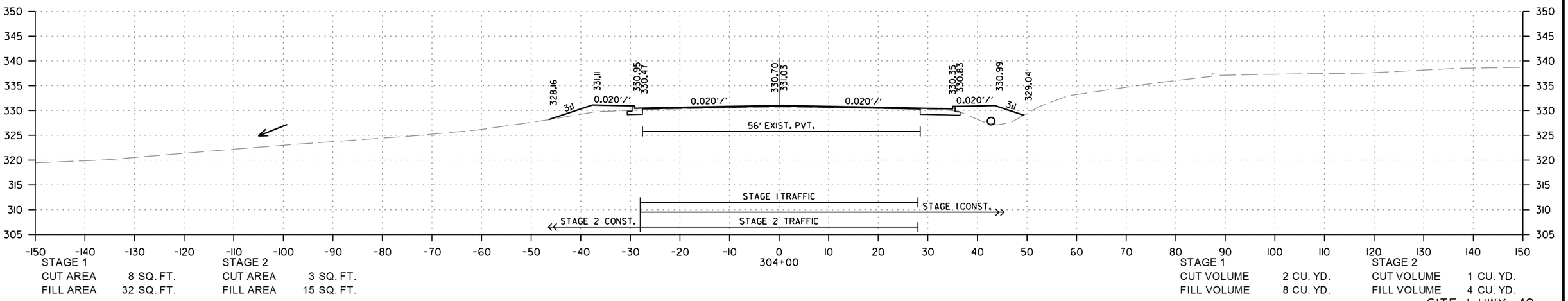
SITE I-HWY. 49
STA. 302+92.91 TO STA. 303+92.91

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	132	159
		CROSS SECTIONS				







SITE 1-HWY. 49
STA. 304+00 TO STA. 305+15

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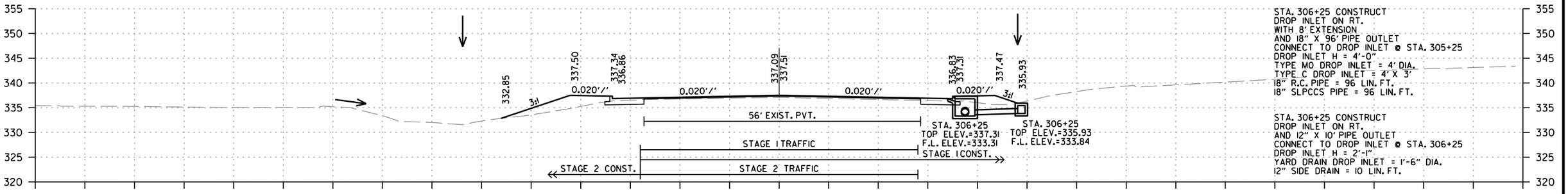
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	133	159
		CROSS SECTIONS				

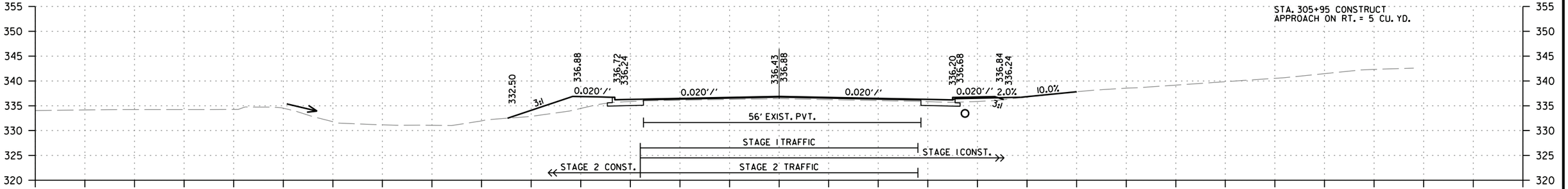


STA. 306+25 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 96' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 305+25
DROP INLET H = 4'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 96 LIN. FT.
18" SLPCCS PIPE = 96 LIN. FT.

STA. 306+25 CONSTRUCT
DROP INLET ON RT.
AND 12" X 10' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 306+25
DROP INLET H = 2'-1"
YARD DRAIN DROP INLET = 1'-6" DIA.
12" SIDE DRAIN = 10 LIN. FT.

STAGE 1		STAGE 2	
CUT AREA	6 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	16 SQ. FT.	FILL AREA	34 SQ. FT.

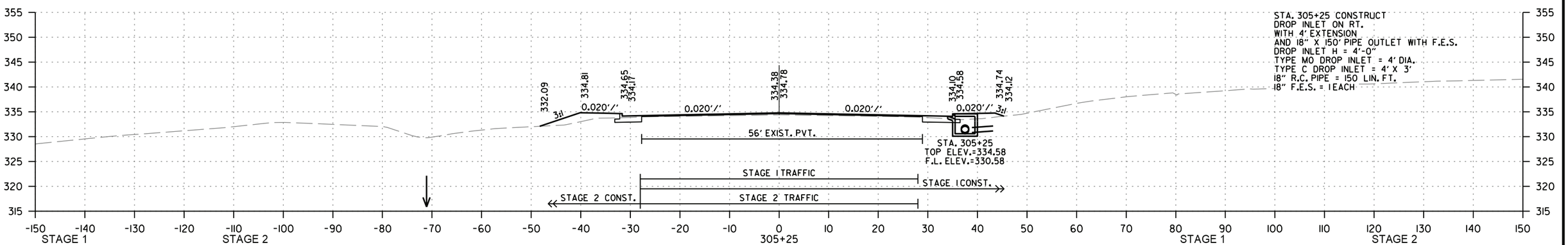
STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	6 CU. YD.
FILL VOLUME	11 CU. YD.	FILL VOLUME	32 CU. YD.



STA. 305+95 CONSTRUCT
APPROACH ON RT. = 5 CU. YD.

STAGE 1		STAGE 2	
CUT AREA	6 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	8 SQ. FT.	FILL AREA	35 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	17 CU. YD.	CUT VOLUME	15 CU. YD.
FILL VOLUME	24 CU. YD.	FILL VOLUME	74 CU. YD.



STA. 305+25 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 150' PIPE OUTLET WITH F.E.S.
DROP INLET H = 4'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 150 LIN. FT.
18" F.E.S. = 1 EACH

STAGE 1		STAGE 2	
CUT AREA	6 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	9 SQ. FT.	FILL AREA	18 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	4 CU. YD.	FILL VOLUME	6 CU. YD.

SITE I-HWY. 49
STA. 305+25 TO STA. 306+25

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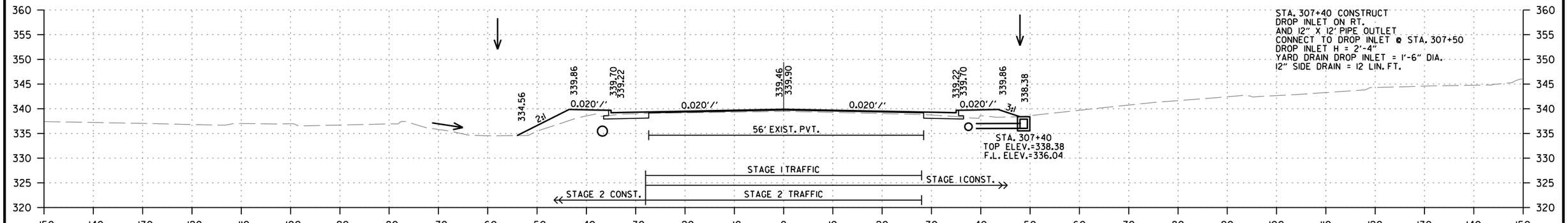
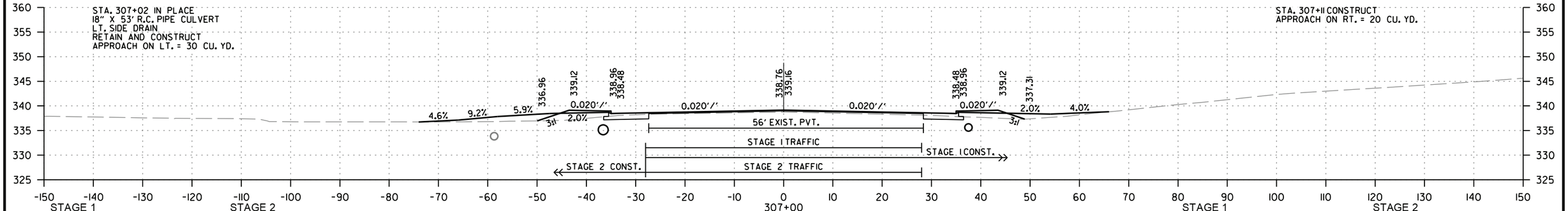
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	134	159
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	15 SQ. FT.	FILL AREA	25 SQ. FT.

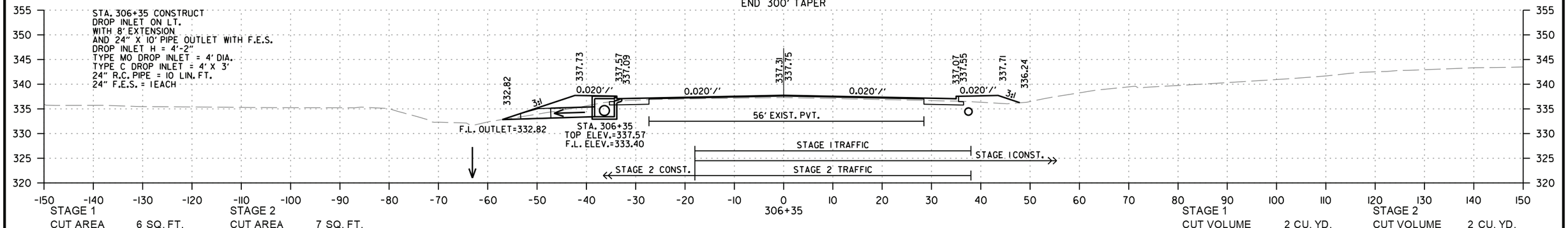
STAGE 1		STAGE 2	
CUT VOLUME	8 CU. YD.	CUT VOLUME	12 CU. YD.
FILL VOLUME	22 CU. YD.	FILL VOLUME	33 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	6 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	15 SQ. FT.	FILL AREA	19 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	14 CU. YD.	CUT VOLUME	18 CU. YD.
FILL VOLUME	35 CU. YD.	FILL VOLUME	63 CU. YD.

306+92.91
END 300' TAPER



STAGE 1		STAGE 2	
CUT AREA	6 SQ. FT.	CUT AREA	7 SQ. FT.
FILL AREA	14 SQ. FT.	FILL AREA	33 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	12 CU. YD.

SITE I-HWY. 49
STA. 306+35 TO STA. 307+40

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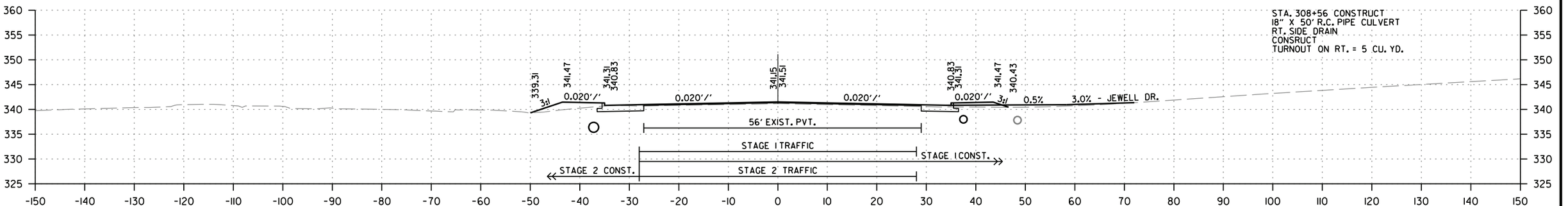
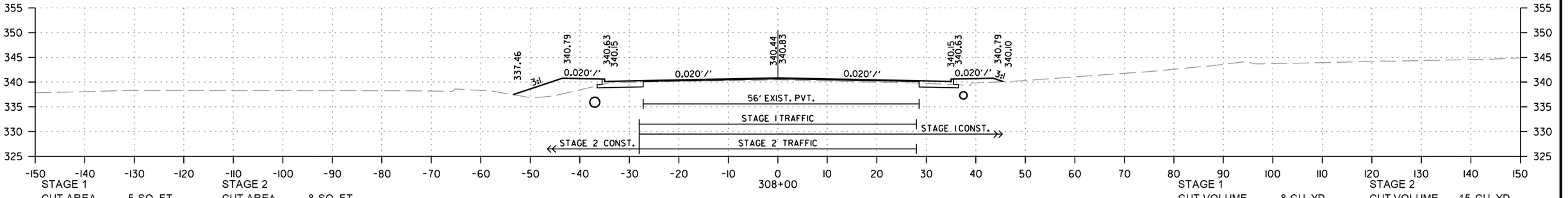
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	135	159
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	7 SQ. FT.	CUT AREA	10 SQ. FT.
FILL AREA	9 SQ. FT.	FILL AREA	14 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	12 CU. YD.	CUT VOLUME	19 CU. YD.
FILL VOLUME	19 CU. YD.	FILL VOLUME	53 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	9 SQ. FT.	FILL AREA	37 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	8 CU. YD.	CUT VOLUME	15 CU. YD.
FILL VOLUME	19 CU. YD.	FILL VOLUME	67 CU. YD.

STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	12 SQ. FT.	FILL AREA	35 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	5 CU. YD.	FILL VOLUME	11 CU. YD.

SITE I-HWY. 49
STA. 307+50 TO STA. 308+56

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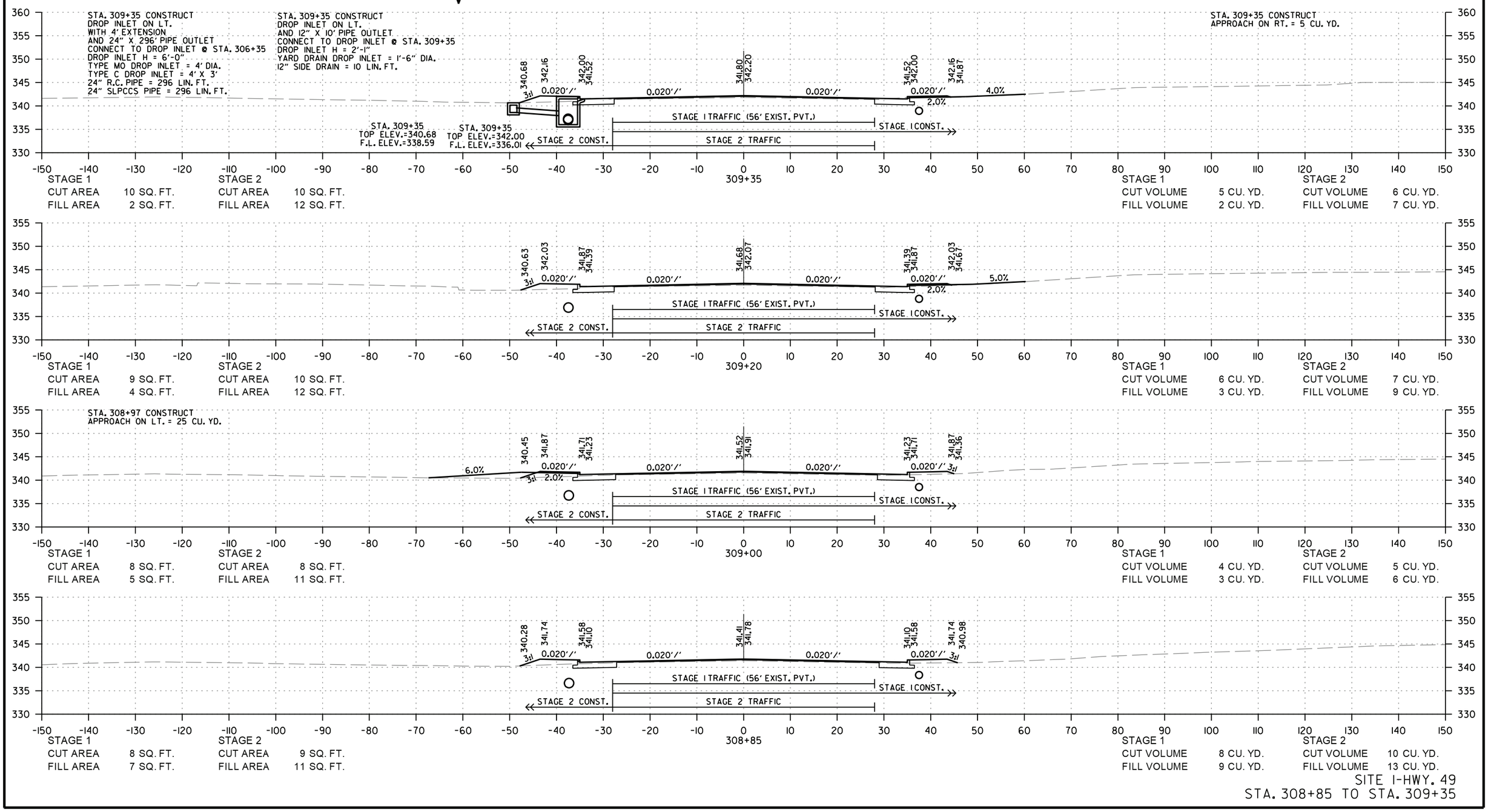
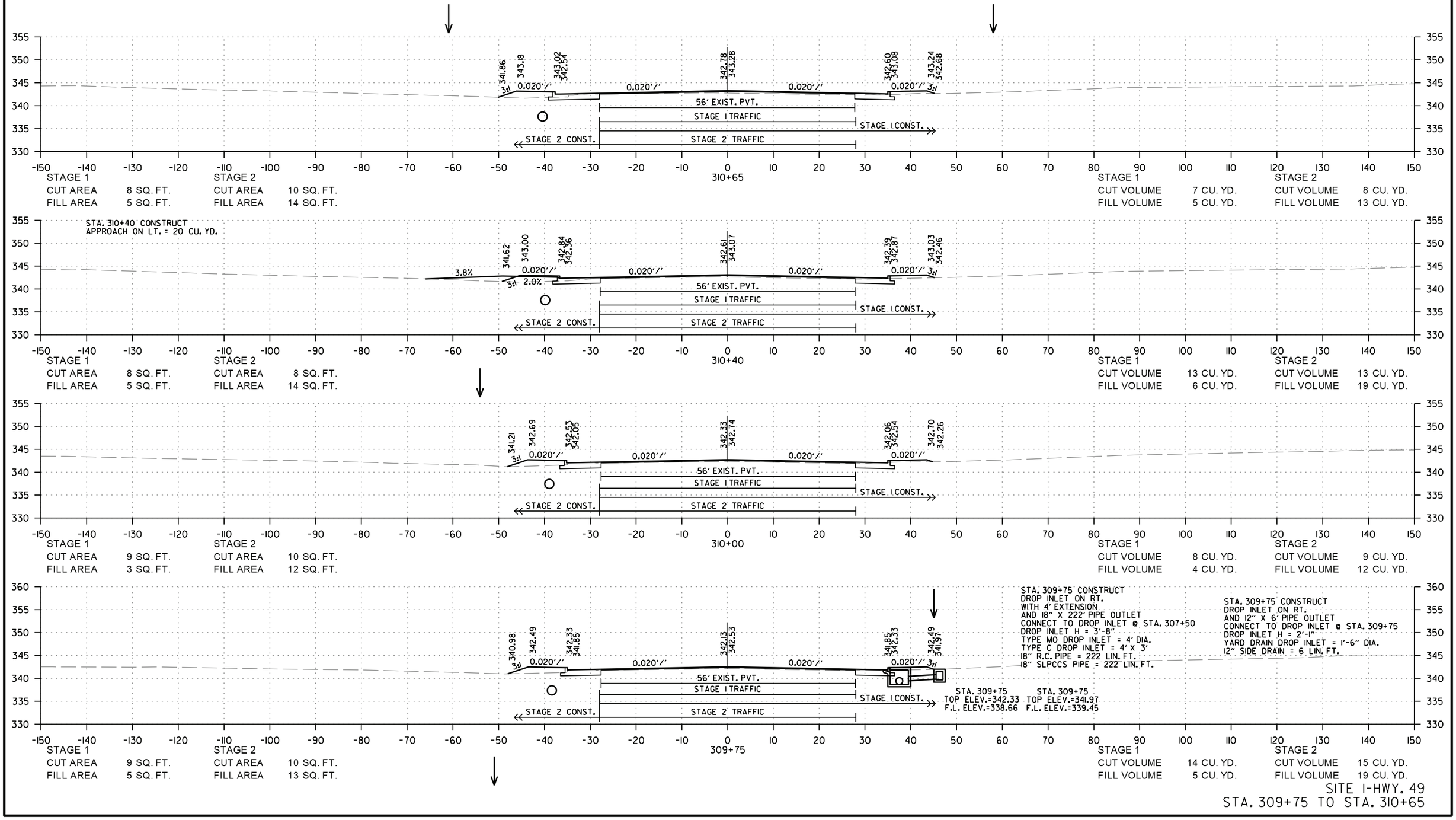
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	136	159
		CROSS SECTIONS				



SITE I-HWY. 49
STA. 308+85 TO STA. 309+35

mh39735 3/21/2023
R100875.DGN

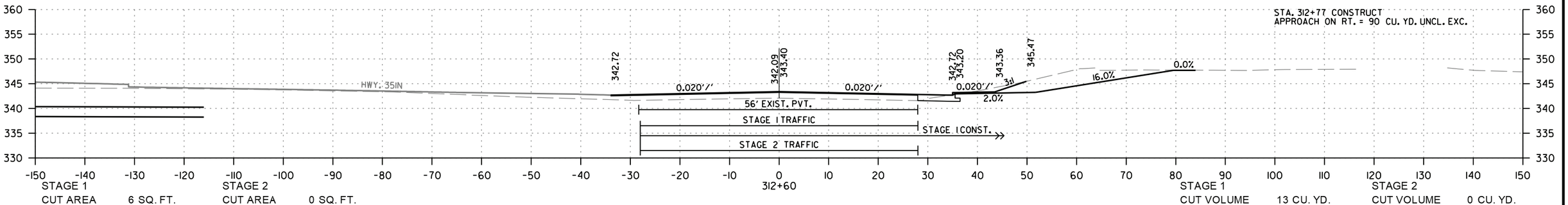
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	137	159
		CROSS SECTIONS				



SITE I-HWY. 49
STA. 309+75 TO STA. 310+65

mh39735 3/21/2023
R100875.DGN

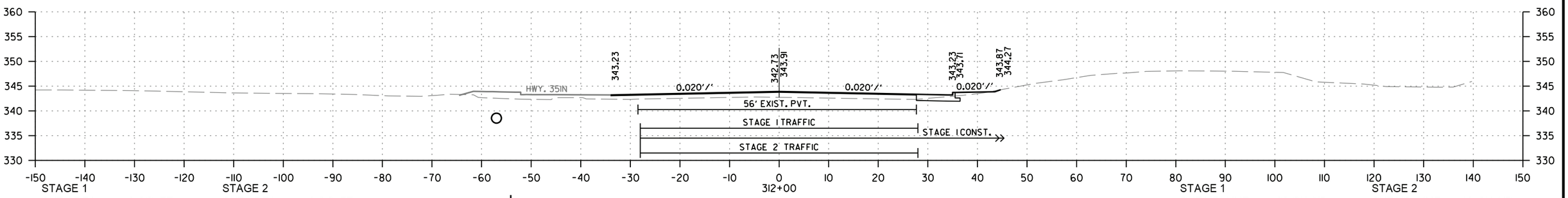
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	138	159
		CROSS SECTIONS				



312+60

STAGE 1		STAGE 2	
CUT AREA	6 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	5 SQ. FT.	FILL AREA	0 SQ. FT.

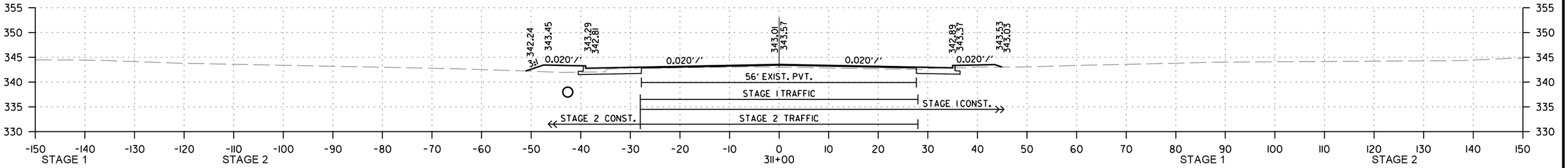
STAGE 1		STAGE 2	
CUT VOLUME	13 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	9 CU. YD.	FILL VOLUME	0 CU. YD.



312+00

STAGE 1		STAGE 2	
CUT AREA	6 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	3 SQ. FT.	FILL AREA	0 SQ. FT.

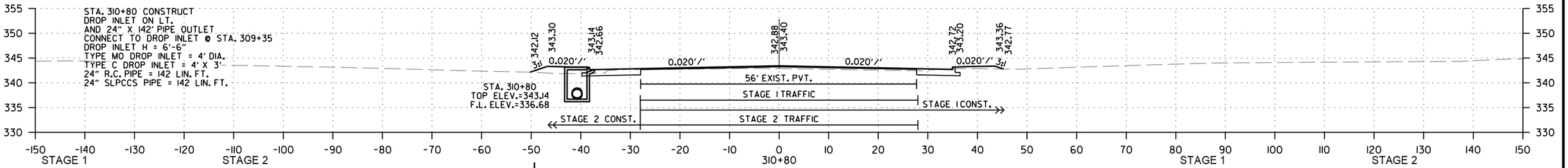
STAGE 1		STAGE 2	
CUT VOLUME	28 CU. YD.	CUT VOLUME	19 CU. YD.
FILL VOLUME	13 CU. YD.	FILL VOLUME	24 CU. YD.



311+00

STAGE 1		STAGE 2	
CUT AREA	9 SQ. FT.	CUT AREA	10 SQ. FT.
FILL AREA	4 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	7 CU. YD.
FILL VOLUME	3 CU. YD.	FILL VOLUME	10 CU. YD.



310+80

STAGE 1		STAGE 2	
CUT AREA	9 SQ. FT.	CUT AREA	10 SQ. FT.
FILL AREA	4 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	5 CU. YD.	CUT VOLUME	6 CU. YD.
FILL VOLUME	3 CU. YD.	FILL VOLUME	8 CU. YD.

SITE I-HWY. 49
STA. 310+80 TO STA. 312+60

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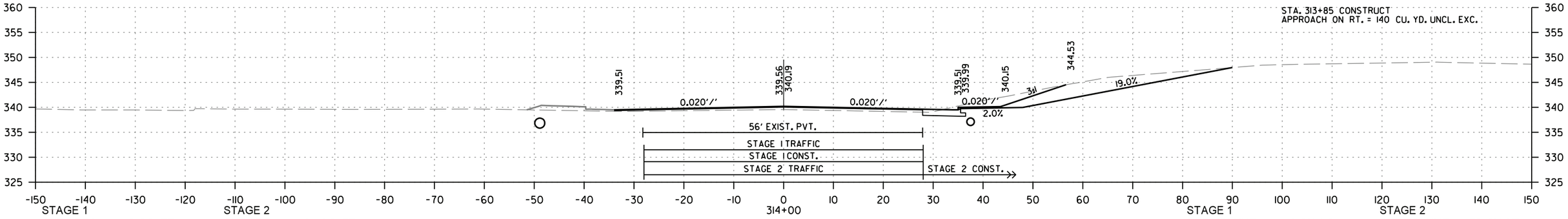
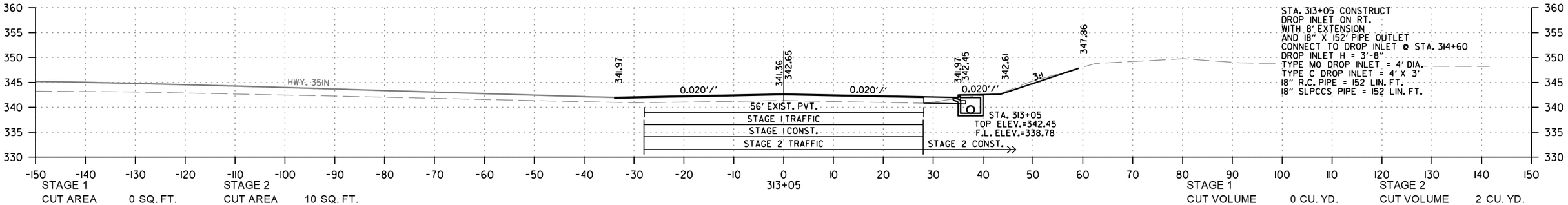
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	139	159
		CROSS SECTIONS				



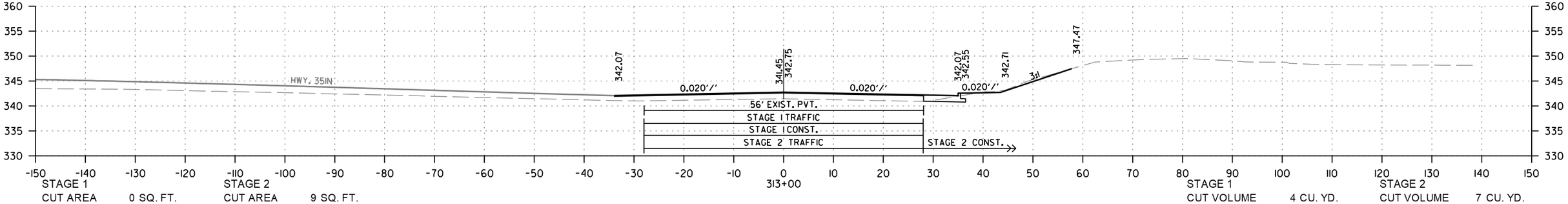
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	31 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	72 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	4 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	10 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	2 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	9 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	1 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	7 CU. YD.
FILL VOLUME	4 CU. YD.	FILL VOLUME	1 CU. YD.

SITE I-HWY. 49
STA. 313+00 TO STA. 314+00

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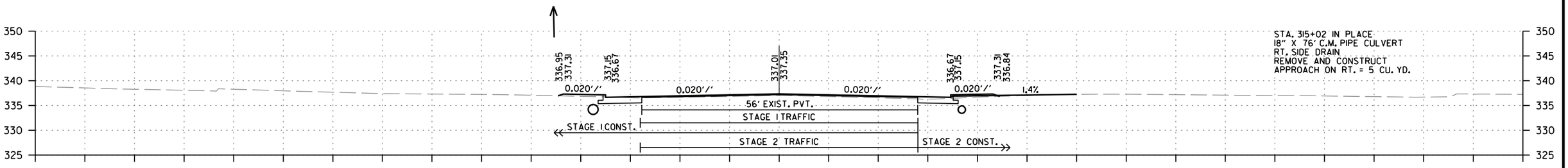
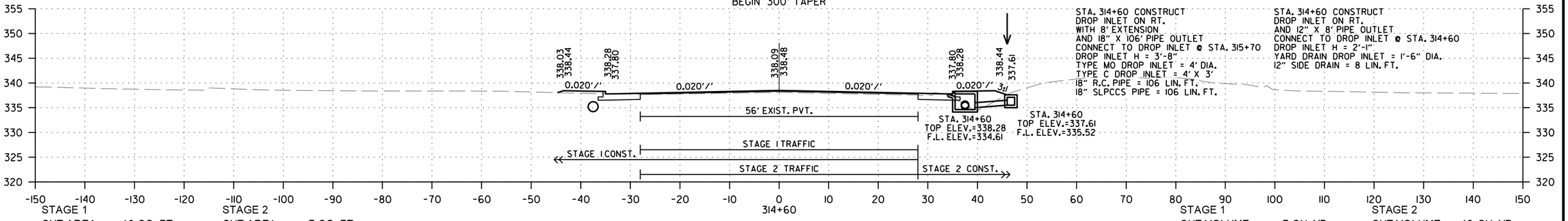
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	140	159
		CROSS SECTIONS				



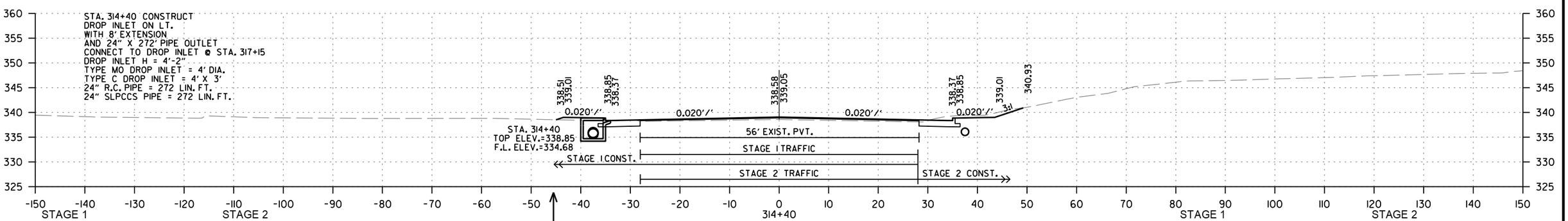
STAGE 1		STAGE 2	
CUT AREA	10 SQ. FT.	CUT AREA	7 SQ. FT.
FILL AREA	3 SQ. FT.	FILL AREA	5 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	15 CU. YD.	CUT VOLUME	10 CU. YD.
FILL VOLUME	5 CU. YD.	FILL VOLUME	22 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	10 SQ. FT.	CUT AREA	7 SQ. FT.
FILL AREA	4 SQ. FT.	FILL AREA	25 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	10 CU. YD.
FILL VOLUME	3 CU. YD.	FILL VOLUME	9 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	9 SQ. FT.	CUT AREA	19 SQ. FT.
FILL AREA	5 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	37 CU. YD.
FILL VOLUME	4 CU. YD.	FILL VOLUME	0 CU. YD.

SITE I-HWY. 49
STA. 314+40 TO STA. 315+00

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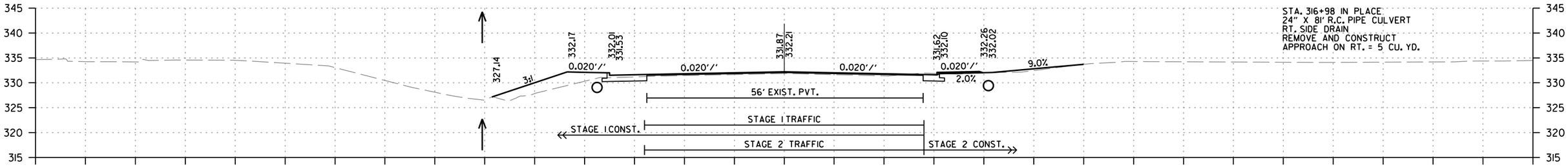
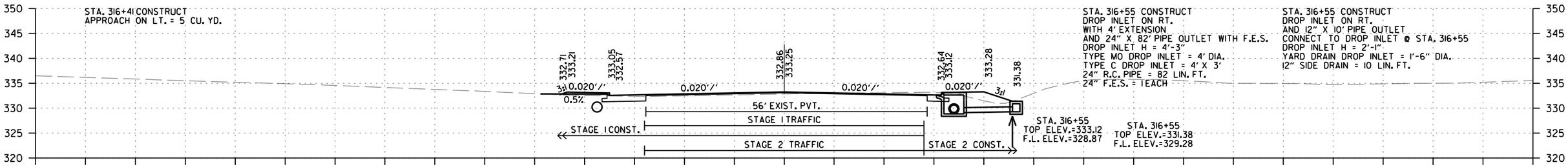
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	141	159
		CROSS SECTIONS				



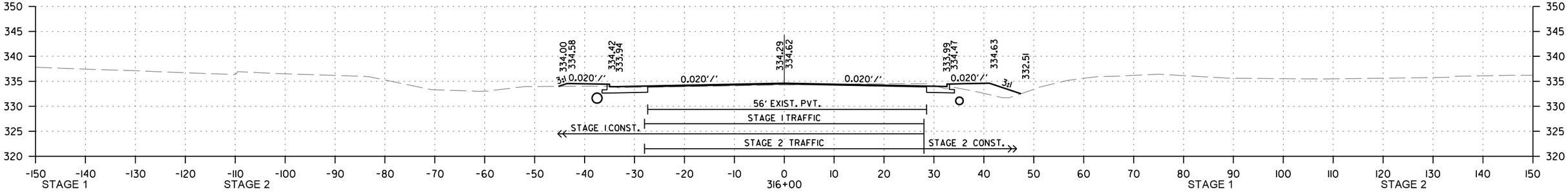
STAGE 1		STAGE 2	
CUT AREA	7 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	42 SQ. FT.	FILL AREA	3 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	13 CU. YD.	CUT VOLUME	8 CU. YD.
FILL VOLUME	39 CU. YD.	FILL VOLUME	13 CU. YD.



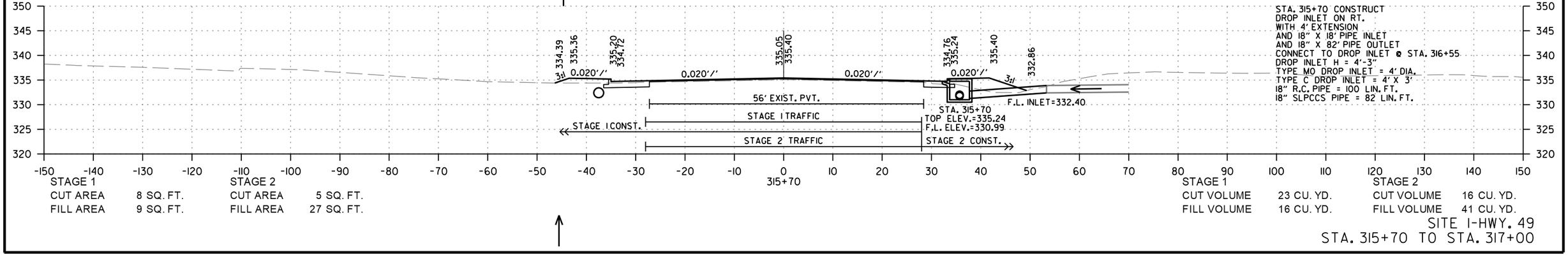
STAGE 1		STAGE 2	
CUT AREA	9 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	5 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	18 CU. YD.	CUT VOLUME	10 CU. YD.
FILL VOLUME	9 CU. YD.	FILL VOLUME	35 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	9 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	4 SQ. FT.	FILL AREA	21 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	9 CU. YD.	CUT VOLUME	6 CU. YD.
FILL VOLUME	7 CU. YD.	FILL VOLUME	27 CU. YD.



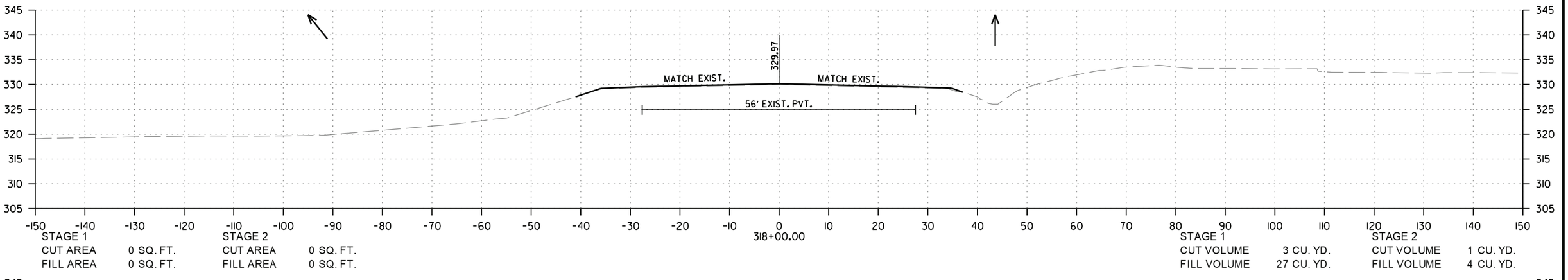
STAGE 1		STAGE 2	
CUT AREA	8 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	9 SQ. FT.	FILL AREA	27 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	23 CU. YD.	CUT VOLUME	16 CU. YD.
FILL VOLUME	16 CU. YD.	FILL VOLUME	41 CU. YD.

SITE I-HWY. 49
STA. 315+70 TO STA. 317+00

mh39735 3/21/2023
R100875.DGN

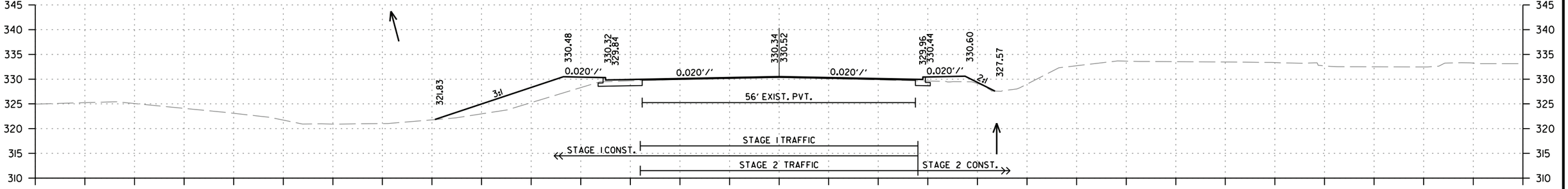
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	142	159
		CROSS SECTIONS				



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

318+00.00

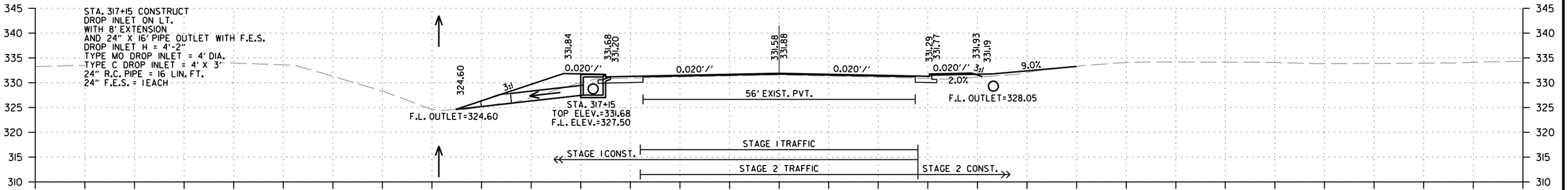
STAGE 1 CUT VOLUME 3 CU. YD. FILL VOLUME 27 CU. YD.
STAGE 2 CUT VOLUME 1 CU. YD. FILL VOLUME 4 CU. YD.



STAGE 1 CUT AREA 8 SQ. FT. FILL AREA 73 SQ. FT.
STAGE 2 CUT AREA 3 SQ. FT. FILL AREA 10 SQ. FT.

317+80.00
END 300' TAPER
END SITE I-HWY. 49
BEGIN 100' TRANSITION

STAGE 1 CUT VOLUME 19 CU. YD. FILL VOLUME 154 CU. YD.
STAGE 2 CUT VOLUME 7 CU. YD. FILL VOLUME 23 CU. YD.



STAGE 1 CUT AREA 8 SQ. FT. FILL AREA 55 SQ. FT.
STAGE 2 CUT AREA 3 SQ. FT. FILL AREA 9 SQ. FT.

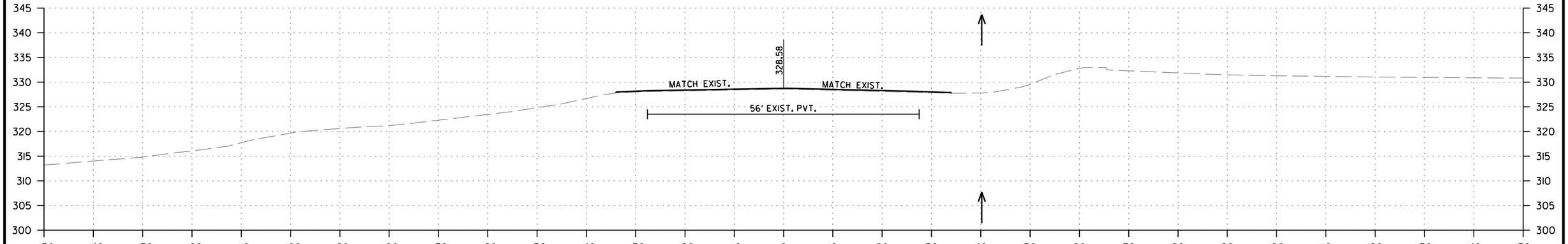
317+15.00

STAGE 1 CUT VOLUME 4 CU. YD. FILL VOLUME 27 CU. YD.
STAGE 2 CUT VOLUME 2 CU. YD. FILL VOLUME 3 CU. YD.

SITE I-HWY. 49
STA. 317+15.00 TO STA. 318+00.00

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	143	159
		CROSS SECTIONS				



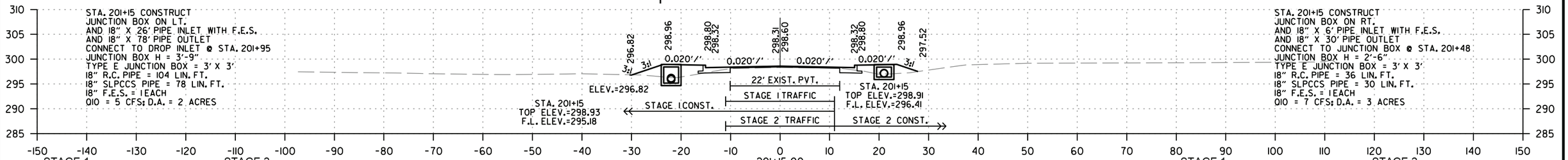
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

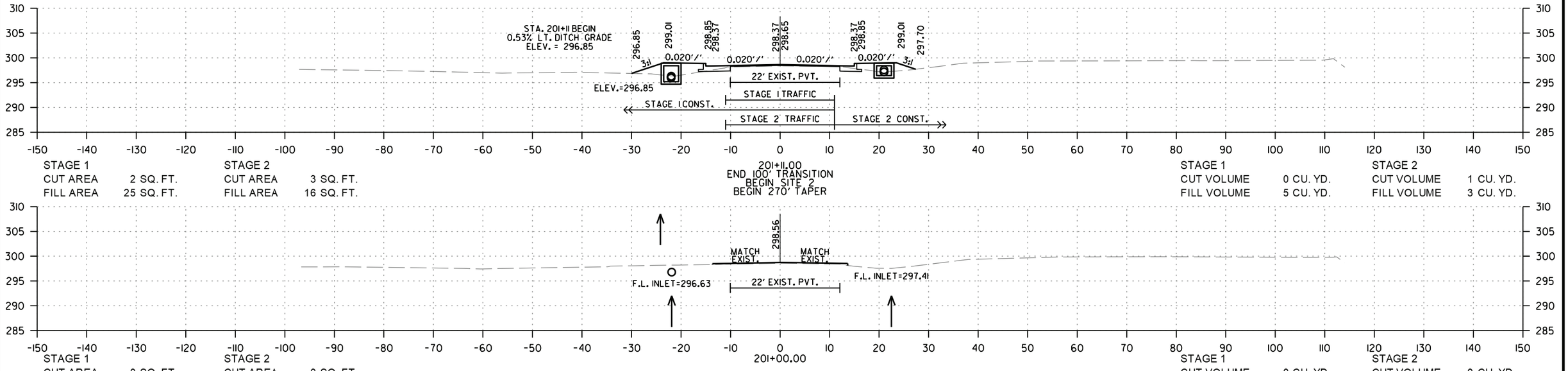
STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

SITE I-HWY. 49
STA. 318+80.00 TO STA. 318+80.00

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	144	159
		CROSS SECTIONS				

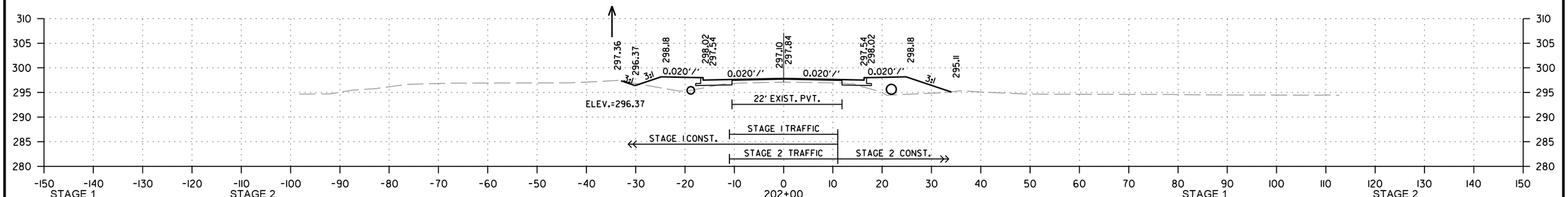




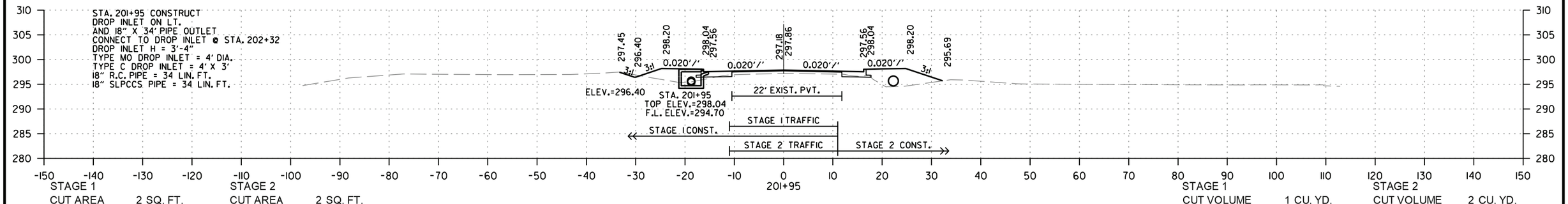
SITE 2
STA. 200+11.00 TO STA. 201+15.00

mh39735 3/21/2023
R100875.DGN

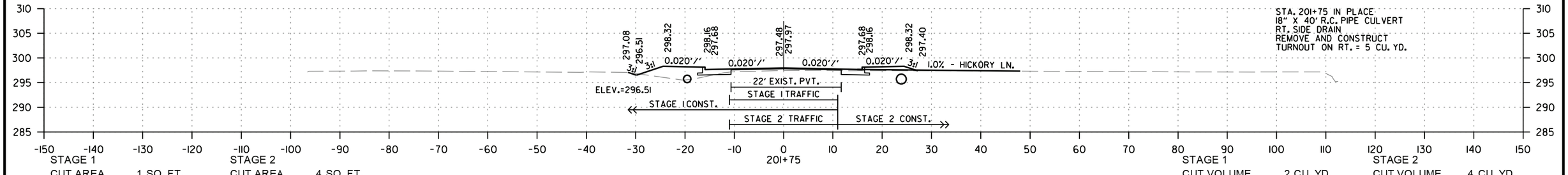
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	145	159
		CROSS SECTIONS				



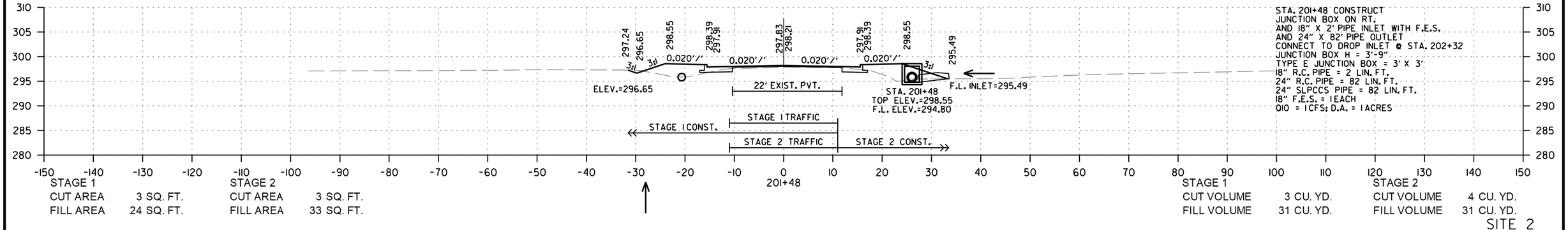
STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	1 SQ. FT.	CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL AREA	26 SQ. FT.	FILL AREA	42 SQ. FT.	FILL VOLUME	5 CU. YD.	FILL VOLUME	7 CU. YD.



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	2 SQ. FT.	CUT VOLUME	1 CU. YD.	CUT VOLUME	2 CU. YD.
FILL AREA	26 SQ. FT.	FILL AREA	37 SQ. FT.	FILL VOLUME	19 CU. YD.	FILL VOLUME	17 CU. YD.



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	4 SQ. FT.	CUT VOLUME	2 CU. YD.	CUT VOLUME	4 CU. YD.
FILL AREA	25 SQ. FT.	FILL AREA	8 SQ. FT.	FILL VOLUME	25 CU. YD.	FILL VOLUME	21 CU. YD.

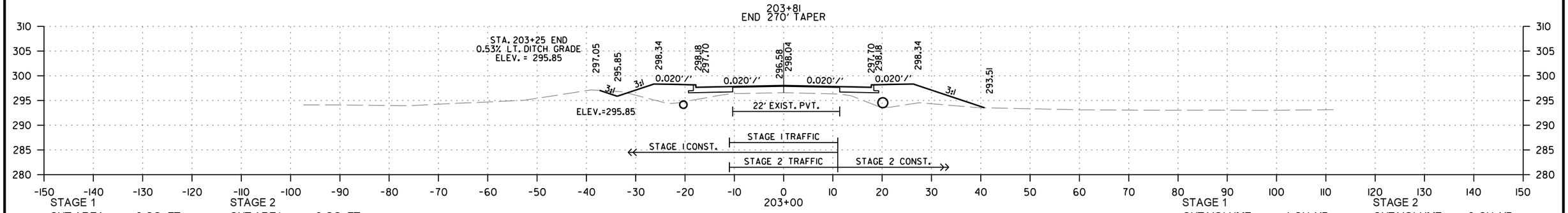


STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	3 SQ. FT.	CUT VOLUME	3 CU. YD.	CUT VOLUME	4 CU. YD.
FILL AREA	24 SQ. FT.	FILL AREA	33 SQ. FT.	FILL VOLUME	31 CU. YD.	FILL VOLUME	31 CU. YD.

SITE 2
STA. 201+48 TO STA. 202+00

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	146	159
		CROSS SECTIONS				

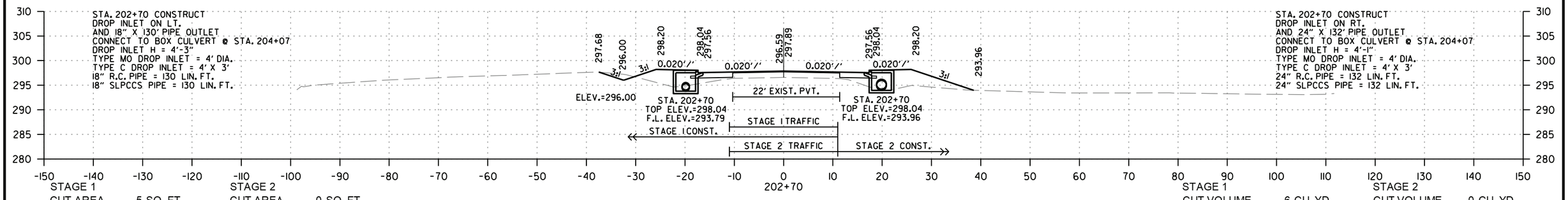


STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 44 SQ. FT.

STAGE 2
CUT AREA 0 SQ. FT.
FILL AREA 70 SQ. FT.

STAGE 1
CUT VOLUME 4 CU. YD.
FILL VOLUME 44 CU. YD.

STAGE 2
CUT VOLUME 0 CU. YD.
FILL VOLUME 71 CU. YD.

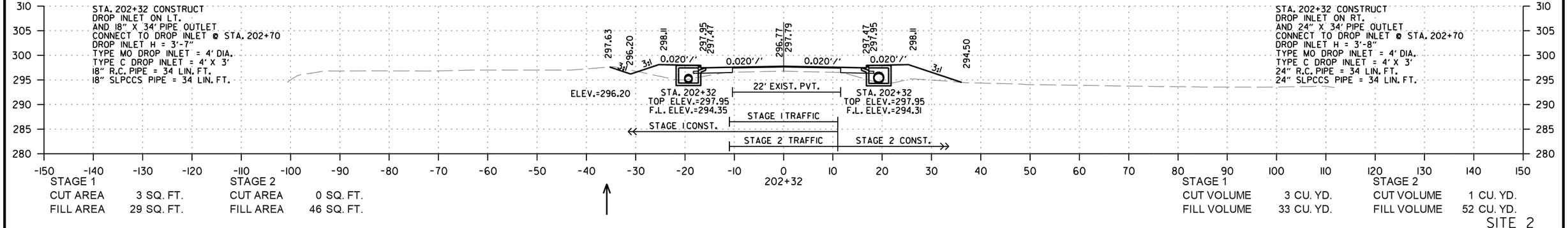


STAGE 1
CUT AREA 5 SQ. FT.
FILL AREA 36 SQ. FT.

STAGE 2
CUT AREA 0 SQ. FT.
FILL AREA 57 SQ. FT.

STAGE 1
CUT VOLUME 6 CU. YD.
FILL VOLUME 46 CU. YD.

STAGE 2
CUT VOLUME 0 CU. YD.
FILL VOLUME 72 CU. YD.



STAGE 1
CUT AREA 3 SQ. FT.
FILL AREA 29 SQ. FT.

STAGE 2
CUT AREA 0 SQ. FT.
FILL AREA 46 SQ. FT.

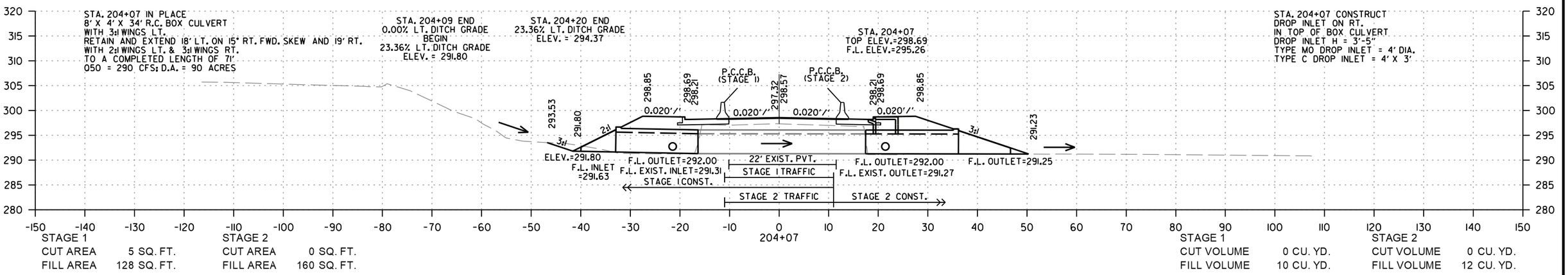
STAGE 1
CUT VOLUME 3 CU. YD.
FILL VOLUME 33 CU. YD.

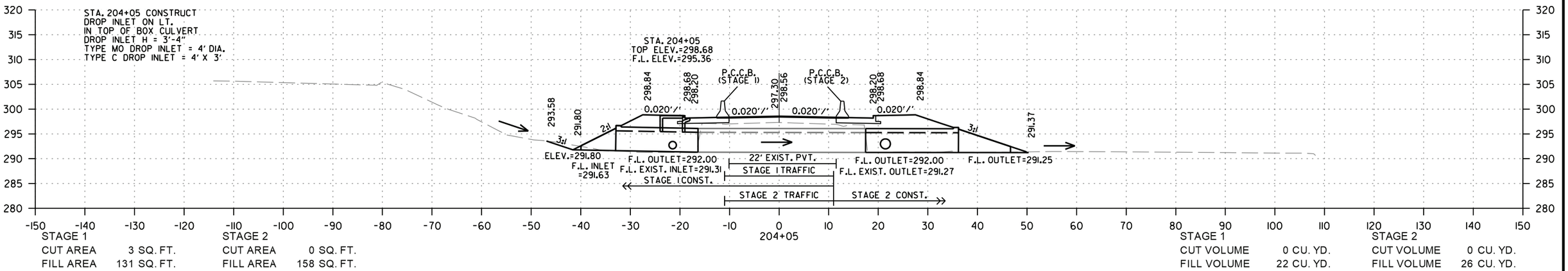
STAGE 2
CUT VOLUME 1 CU. YD.
FILL VOLUME 52 CU. YD.

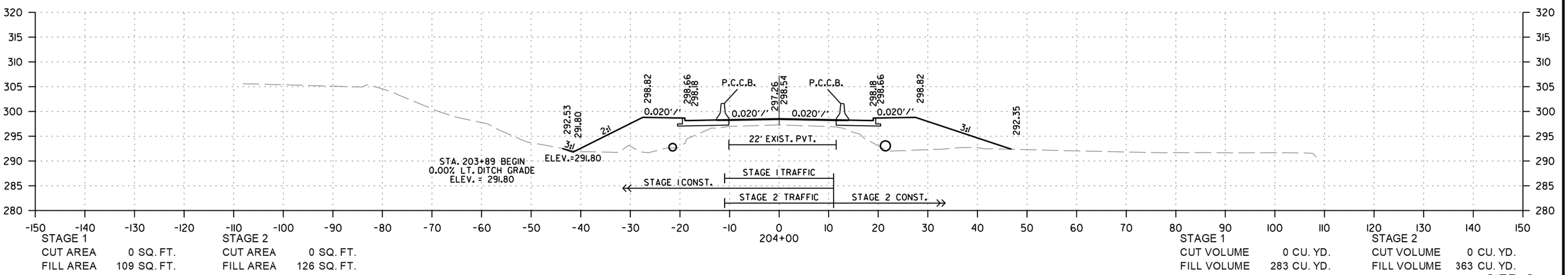
SITE 2
STA. 202+32 TO STA. 203+00

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	147	159
		CROSS SECTIONS				





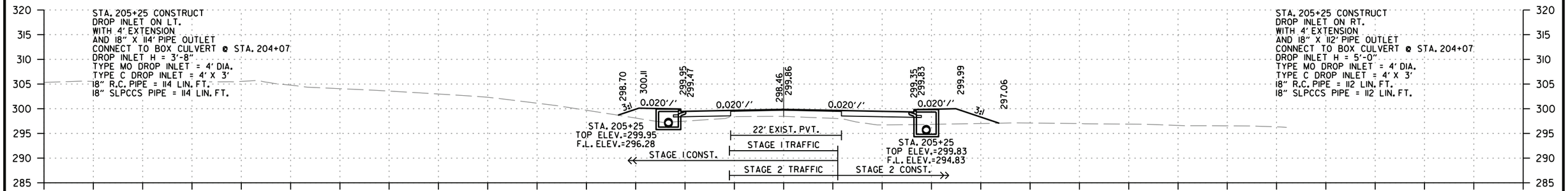


SITE 2
STA. 204+00 TO STA. 204+07

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	148	159
		CROSS SECTIONS				

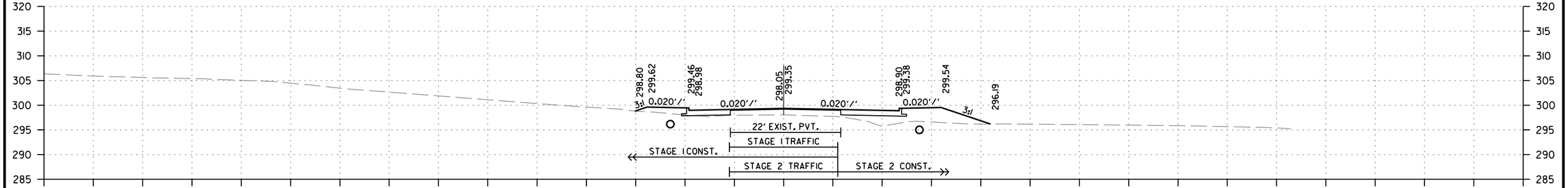
STA. 205+25 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 114' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 204+07
DROP INLET H = 3'-8"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 114 LIN. FT.
18" SLPCCS PIPE = 114 LIN. FT.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	32 SQ. FT.	FILL AREA	59 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	20 CU. YD.	FILL VOLUME	52 CU. YD.

STA. 205+25 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 112' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 204+07
DROP INLET H = 5'-0"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE = 112 LIN. FT.
18" SLPCCS PIPE = 112 LIN. FT.

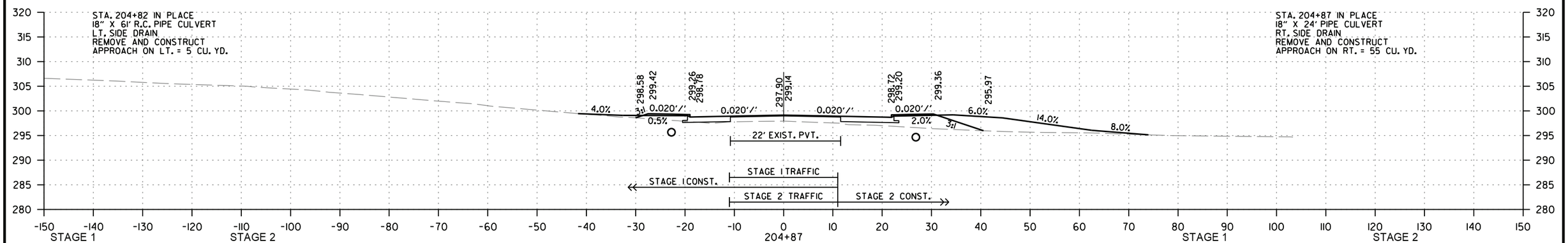


STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	12 SQ. FT.	FILL AREA	54 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	23 CU. YD.

STA. 204+82 IN PLACE
18" X 61' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 5 CU. YD.

STA. 204+87 IN PLACE
18" X 24' PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 55 CU. YD.



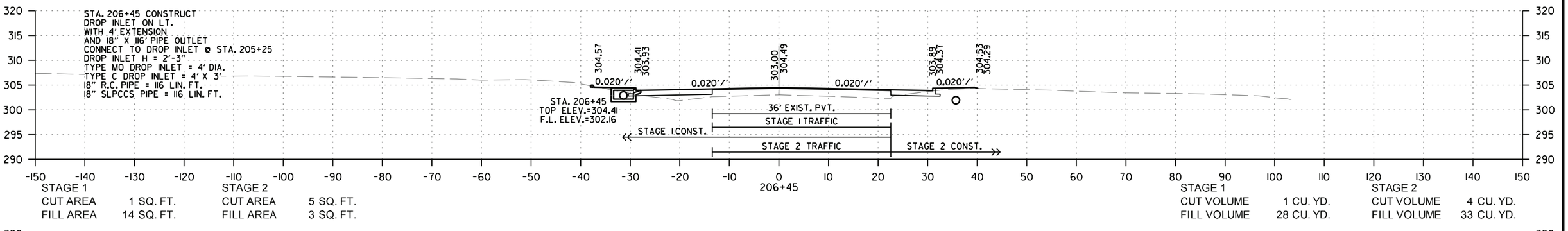
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	12 SQ. FT.	FILL AREA	43 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	207 CU. YD.	FILL VOLUME	301 CU. YD.

SITE 2
STA. 204+87 TO STA. 205+25

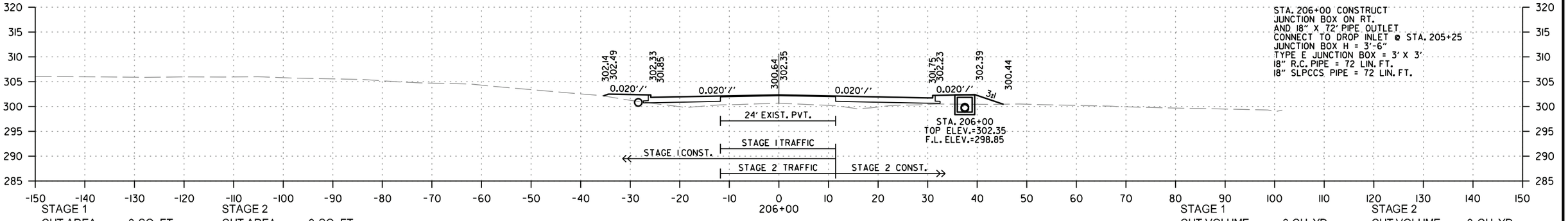
mn39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	149	159
		CROSS SECTIONS				



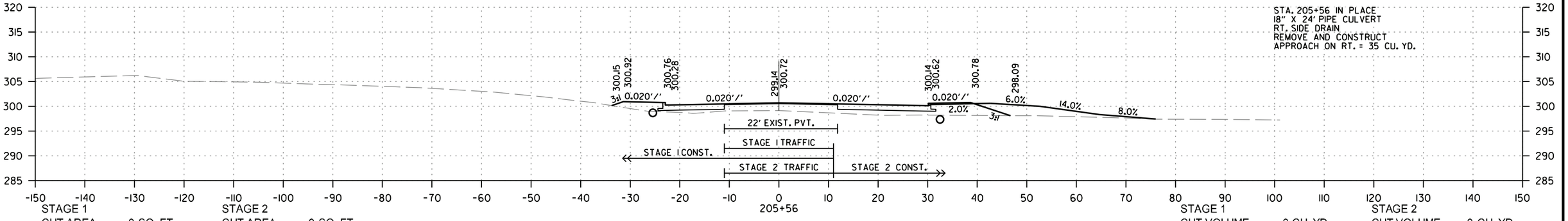
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	14 SQ. FT.	FILL AREA	3 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	28 CU. YD.	FILL VOLUME	33 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	19 SQ. FT.	FILL AREA	36 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	32 CU. YD.	FILL VOLUME	68 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	20 SQ. FT.	FILL AREA	47 SQ. FT.

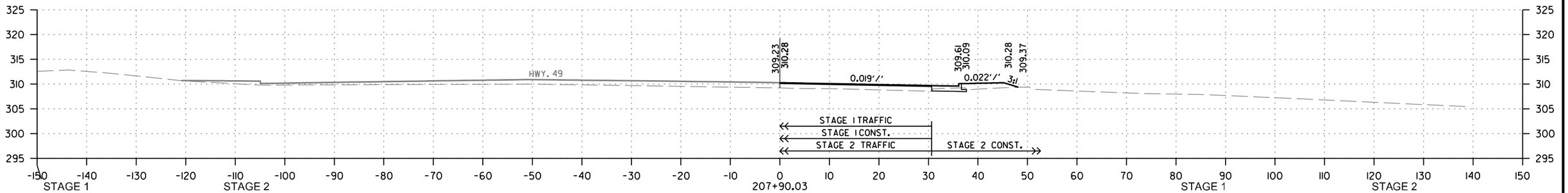
STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	30 CU. YD.	FILL VOLUME	61 CU. YD.

SITE 2
STA. 205+56 TO STA. 206+45

mh39735 3/21/2023
R100875.DGN

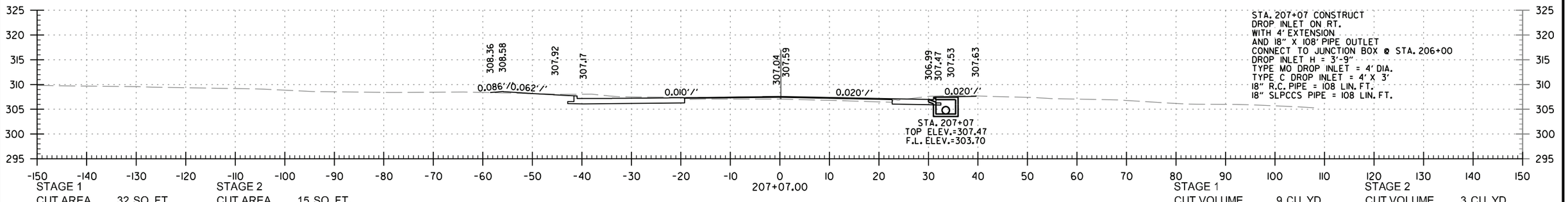
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	150	159
		CROSS SECTIONS				

C.L. SITE 2 STA. 208+23.42 =
C.L. SITE 2-HWY. 49 STA. 335+97.61
Δ = 56°58'24"



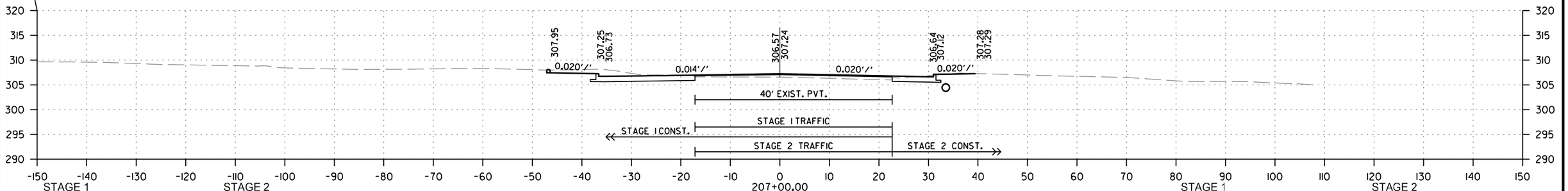
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	11 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	57 CU. YD.	CUT VOLUME	22 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	17 CU. YD.



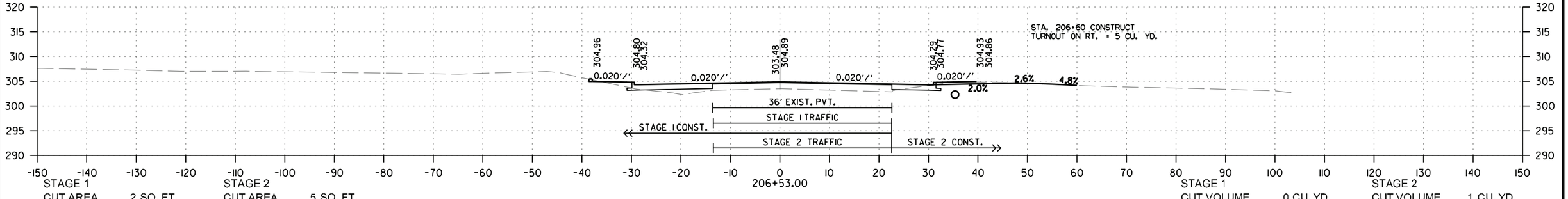
STAGE 1		STAGE 2	
CUT AREA	32 SQ. FT.	CUT AREA	15 SQ. FT.
FILL AREA	1 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	9 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	37 SQ. FT.	CUT AREA	10 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	34 CU. YD.	CUT VOLUME	13 CU. YD.
FILL VOLUME	10 CU. YD.	FILL VOLUME	1 CU. YD.



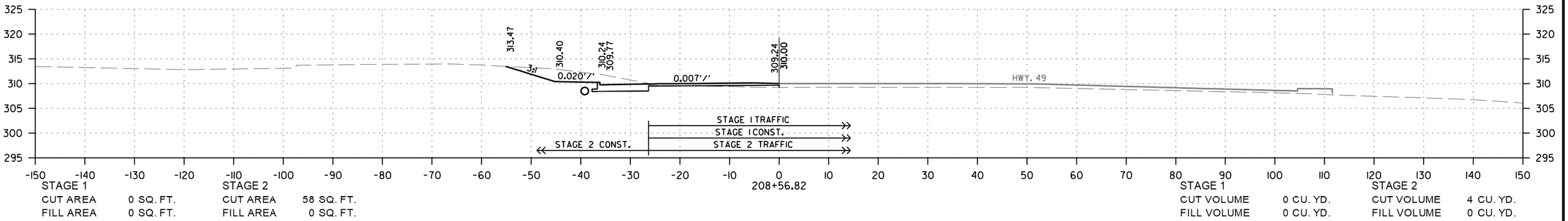
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	12 SQ. FT.	FILL AREA	1 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	4 CU. YD.	FILL VOLUME	1 CU. YD.

SITE 2
STA. 206+53.00 TO STA. 207+90.03

mh39735 3/21/2023
R100875.DGN

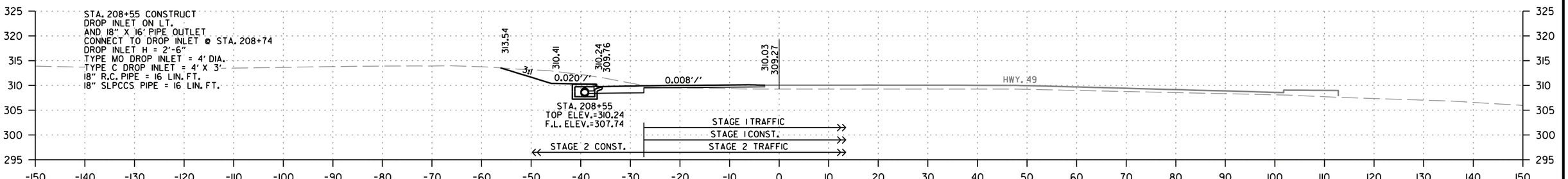
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	151	159
		CROSS SECTIONS				



STAGE 1 — CUT AREA 0 SQ. FT. — FILL AREA 0 SQ. FT.
STAGE 2 — CUT AREA 58 SQ. FT. — FILL AREA 0 SQ. FT.

208+56.82

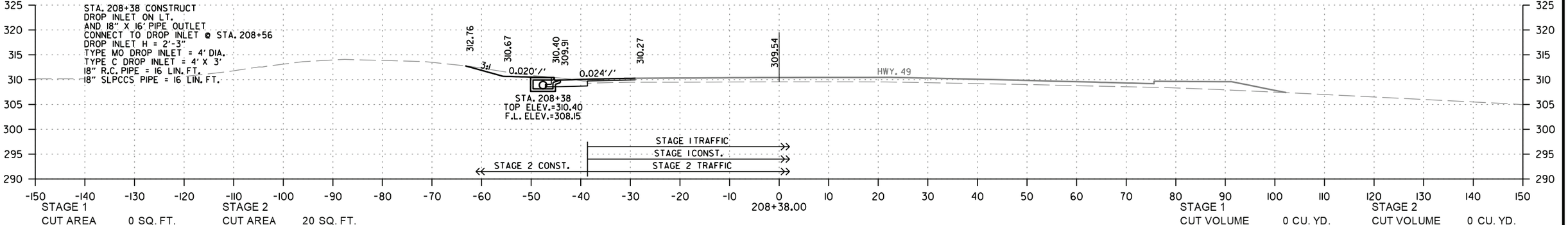
STAGE 1 — CUT VOLUME 0 CU. YD. — FILL VOLUME 0 CU. YD.
STAGE 2 — CUT VOLUME 4 CU. YD. — FILL VOLUME 0 CU. YD.



STAGE 1 — CUT AREA 0 SQ. FT. — FILL AREA 0 SQ. FT.
STAGE 2 — CUT AREA 56 SQ. FT. — FILL AREA 0 SQ. FT.

208+55.00

STAGE 1 — CUT VOLUME 0 CU. YD. — FILL VOLUME 0 CU. YD.
STAGE 2 — CUT VOLUME 24 CU. YD. — FILL VOLUME 0 CU. YD.



STAGE 1 — CUT AREA 0 SQ. FT. — FILL AREA 0 SQ. FT.
STAGE 2 — CUT AREA 20 SQ. FT. — FILL AREA 0 SQ. FT.

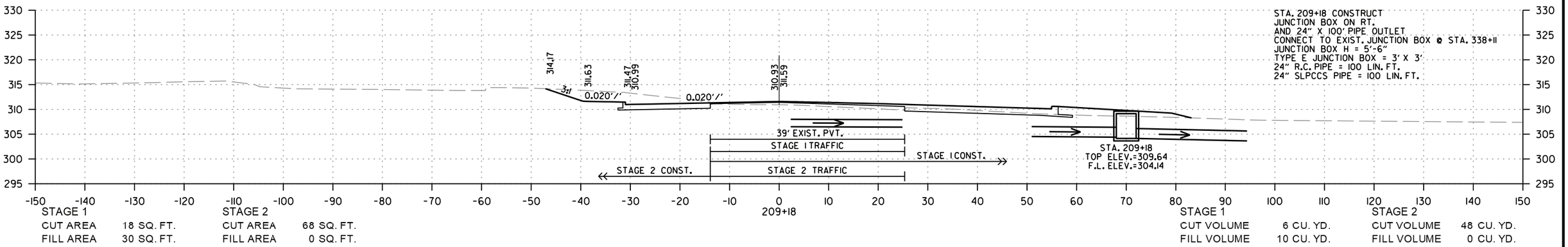
208+38.00

STAGE 1 — CUT VOLUME 0 CU. YD. — FILL VOLUME 0 CU. YD.
STAGE 2 — CUT VOLUME 0 CU. YD. — FILL VOLUME 0 CU. YD.

SITE 2
STA. 208+38.00 TO STA. 208+56.82

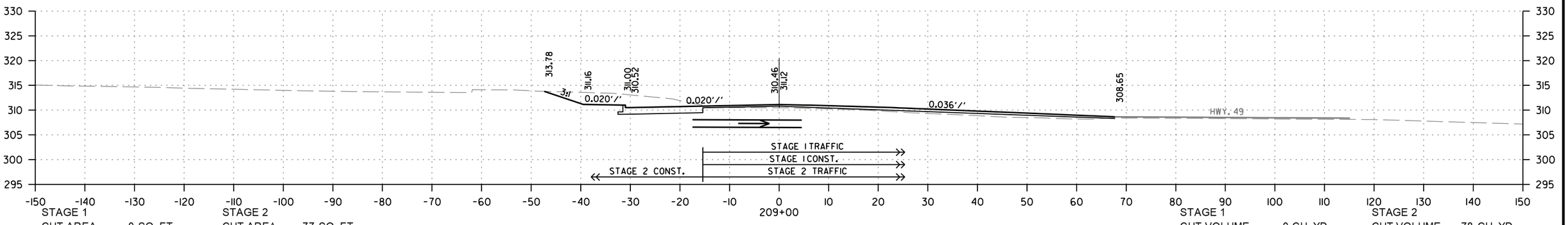
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	152	159
		CROSS SECTIONS				



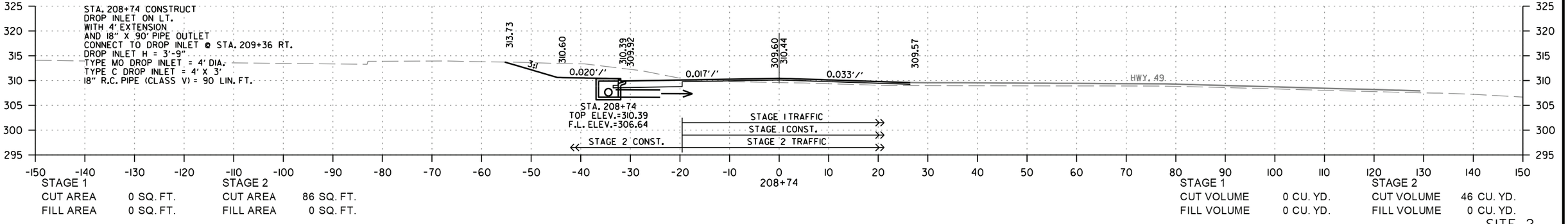
STAGE 1		STAGE 2	
CUT AREA	18 SQ. FT.	CUT AREA	68 SQ. FT.
FILL AREA	30 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	48 CU. YD.
FILL VOLUME	10 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	77 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	78 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.



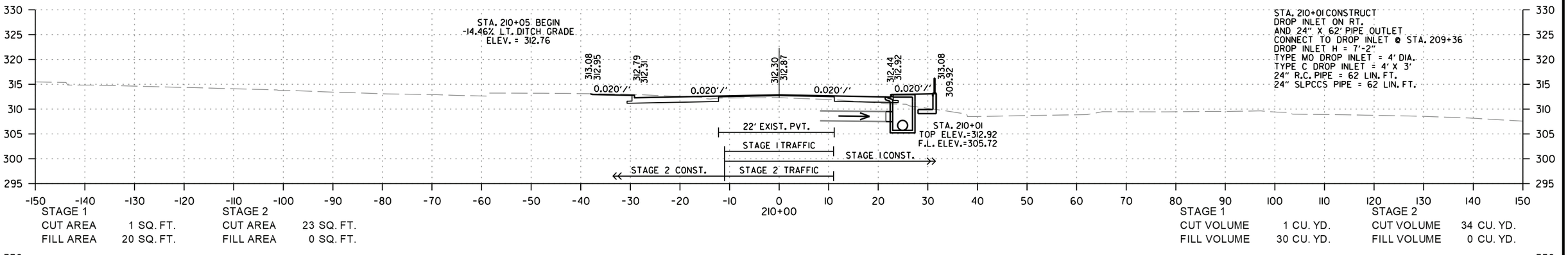
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	86 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	46 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

SITE 2
STA. 208+74 TO STA. 209+18

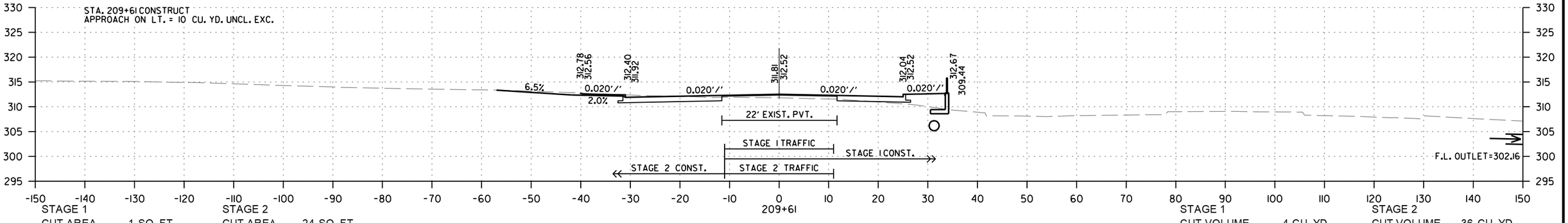
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	153	159
		CROSS SECTIONS				



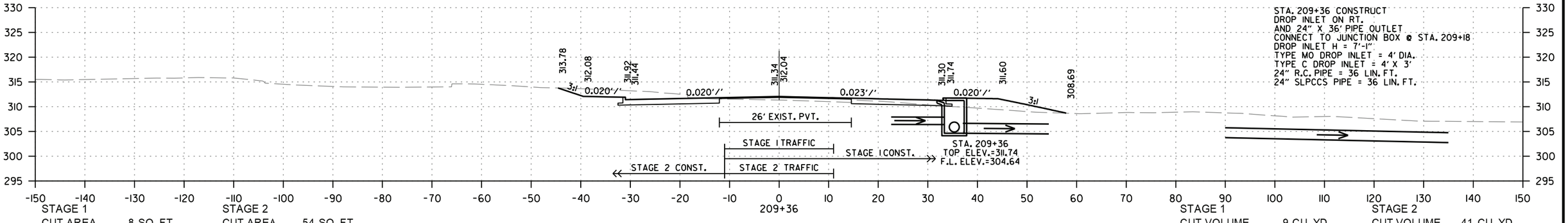
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	23 SQ. FT.
FILL AREA	20 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	34 CU. YD.
FILL VOLUME	30 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	24 SQ. FT.
FILL AREA	21 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	36 CU. YD.
FILL VOLUME	26 CU. YD.	FILL VOLUME	0 CU. YD.



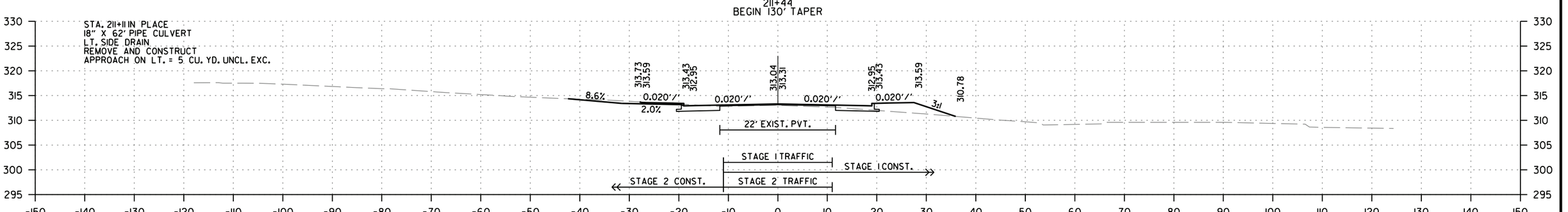
STAGE 1		STAGE 2	
CUT AREA	8 SQ. FT.	CUT AREA	54 SQ. FT.
FILL AREA	36 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	9 CU. YD.	CUT VOLUME	41 CU. YD.
FILL VOLUME	22 CU. YD.	FILL VOLUME	0 CU. YD.

SITE 2
STA. 209+36 TO STA. 210+00

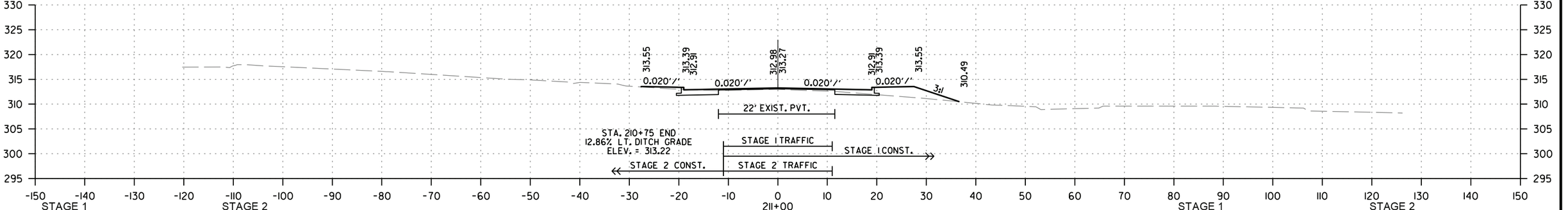
mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	154	159
		CROSS SECTIONS				



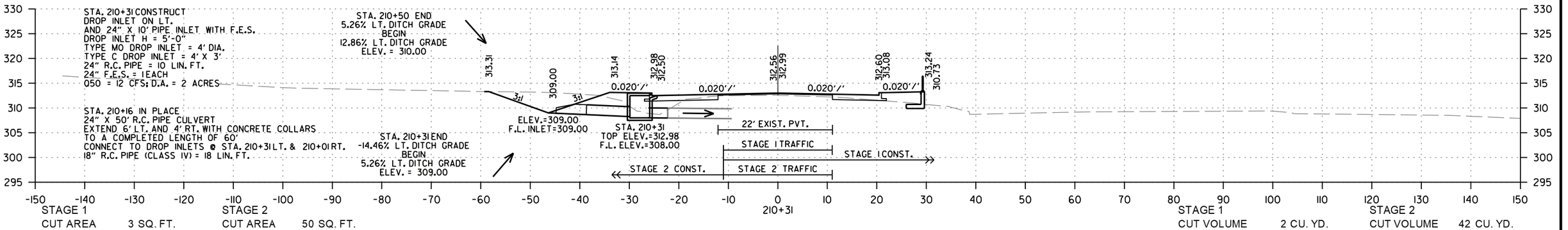
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	9 SQ. FT.
FILL AREA	23 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	3 CU. YD.
FILL VOLUME	10 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	24 SQ. FT.	FILL AREA	2 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	8 CU. YD.	CUT VOLUME	74 CU. YD.
FILL VOLUME	51 CU. YD.	FILL VOLUME	46 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	50 SQ. FT.
FILL AREA	16 SQ. FT.	FILL AREA	34 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	2 CU. YD.	CUT VOLUME	42 CU. YD.
FILL VOLUME	21 CU. YD.	FILL VOLUME	20 CU. YD.

SITE 2
STA. 210+31 TO STA. 211+11

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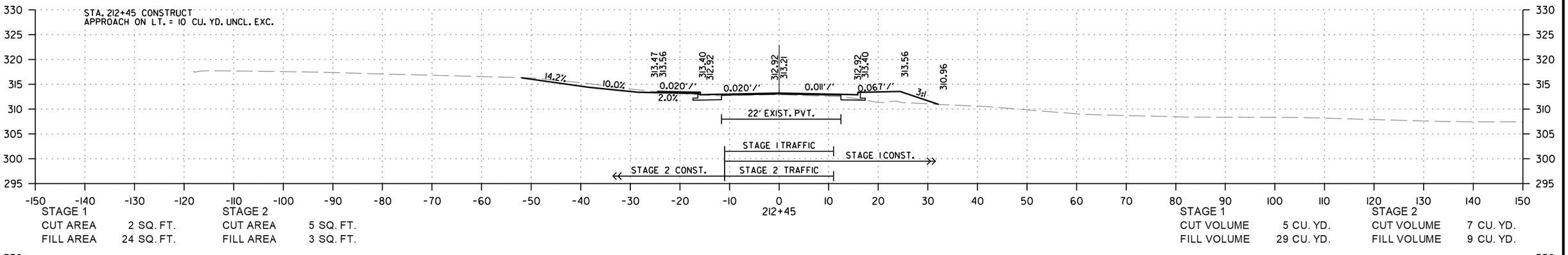
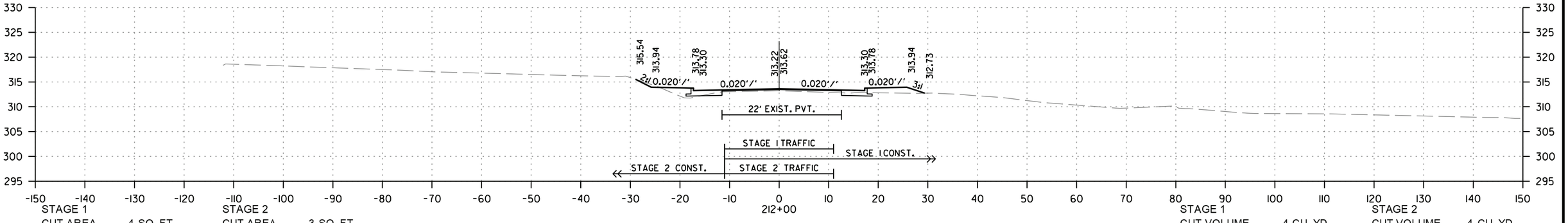
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	155	159
		CROSS SECTIONS				



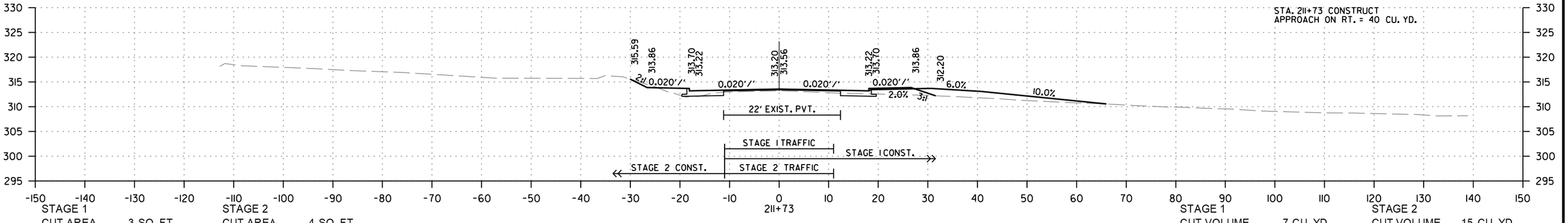
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	24 SQ. FT.	FILL AREA	3 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	5 CU. YD.	CUT VOLUME	7 CU. YD.
FILL VOLUME	29 CU. YD.	FILL VOLUME	9 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	11 SQ. FT.	FILL AREA	8 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	13 CU. YD.	FILL VOLUME	7 CU. YD.



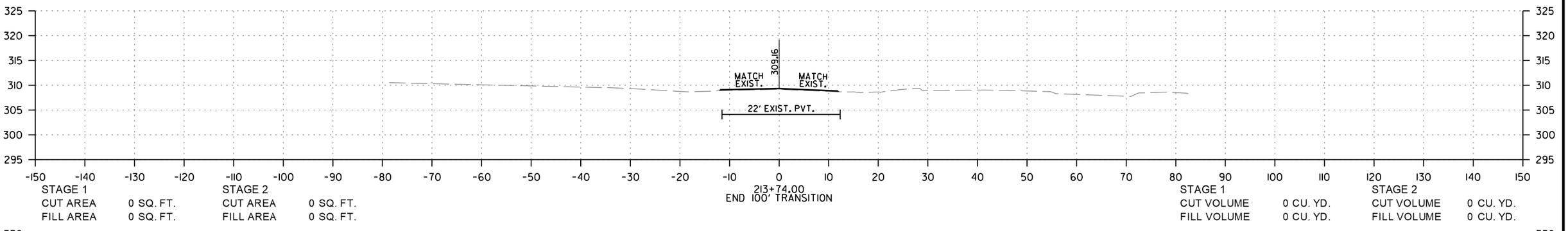
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	14 SQ. FT.	FILL AREA	5 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	15 CU. YD.
FILL VOLUME	42 CU. YD.	FILL VOLUME	6 CU. YD.

SITE 2
STA. 211+73 TO STA. 212+45

mh39735 3/21/2023
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	156	159
		CROSS SECTIONS				



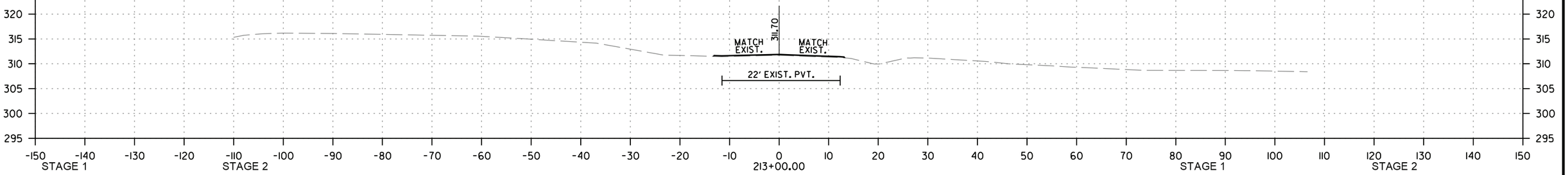
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

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

213+74.00
END 100' TRANSITION

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

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



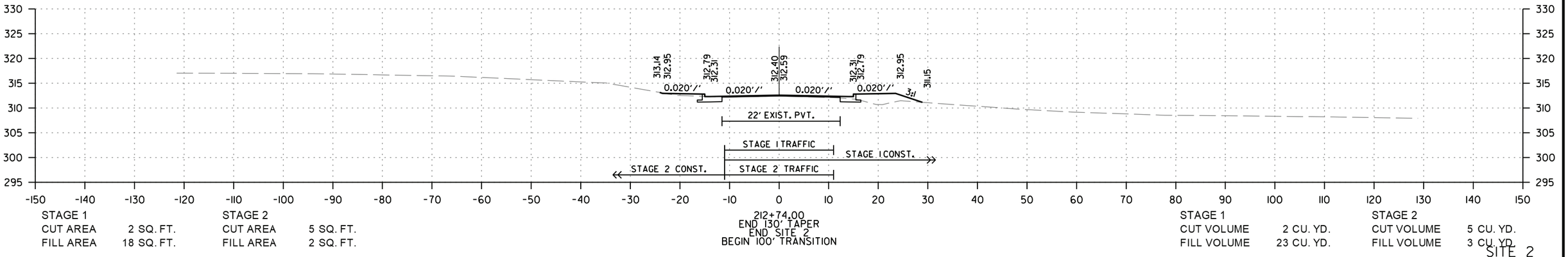
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

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

213+00.00

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

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



STAGE 1
CUT AREA 2 SQ. FT.
FILL AREA 18 SQ. FT.

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

212+74.00
END 130' TAPER
END SITE 2
BEGIN 100' TRANSITION

STAGE 1
CUT VOLUME 2 CU. YD.
FILL VOLUME 23 CU. YD.

STAGE 2
CUT VOLUME 5 CU. YD.
FILL VOLUME 3 CU. YD.

SITE 2
STA. 212+74.00 TO STA. 213+74.00

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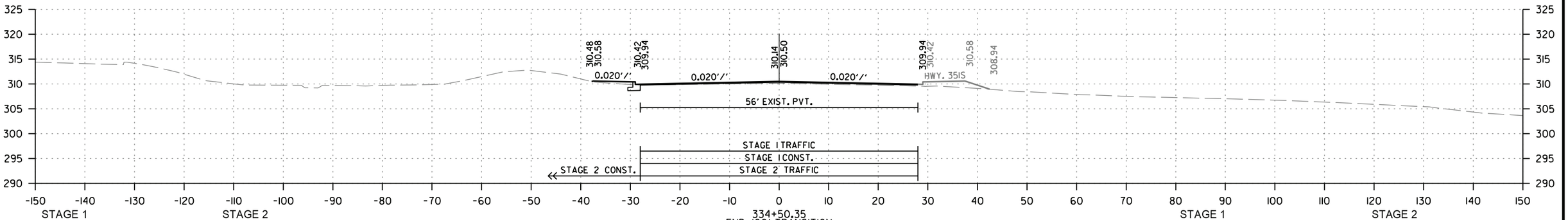
R100875.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	100875	157	159
		CROSS SECTIONS				



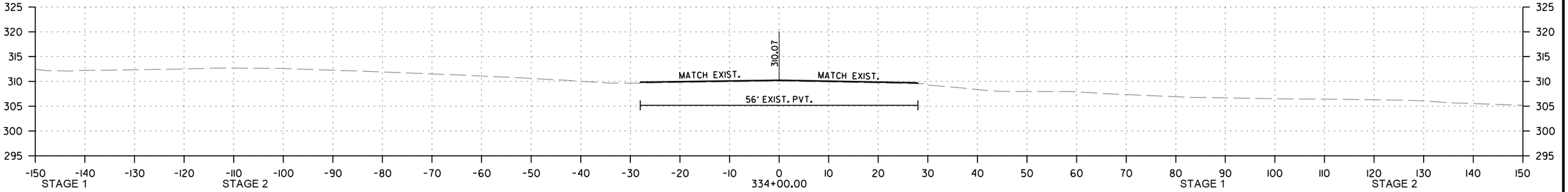
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

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

334+50.35
END 100' TRANSITION
BEGIN SITE 2-HWY. 49

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

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



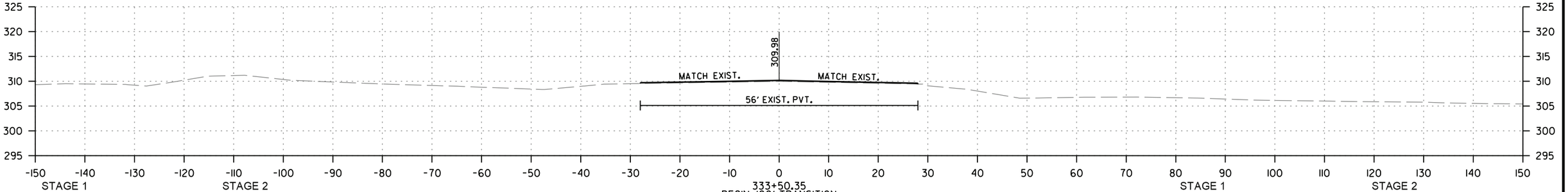
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

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

334+00.00

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

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



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

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

333+50.35
BEGIN 100' TRANSITION

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

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

SITE 2-HWY. 49
STA. 333+50.35 TO STA. 334+50.35

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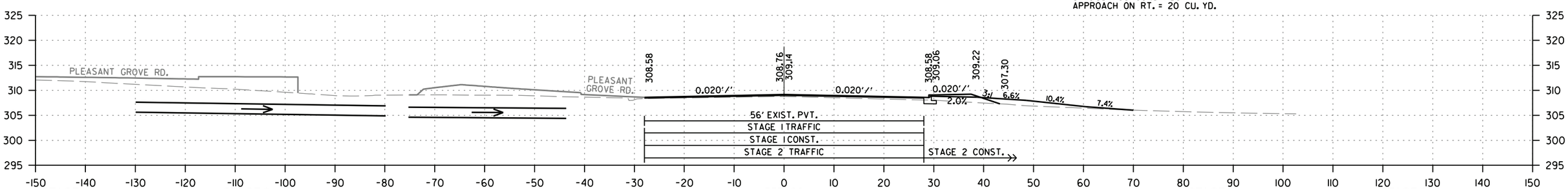
R100875.DGN

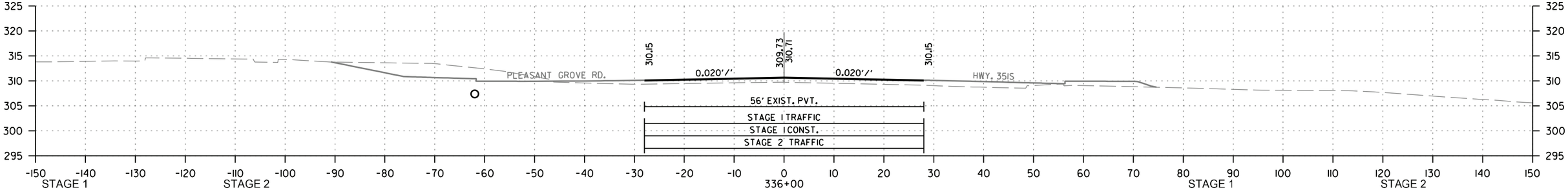
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	158	159
		CROSS SECTIONS				

STA. 337+00 CONSTRUCT
APPROACH ON RT. = 20 CU. YD.



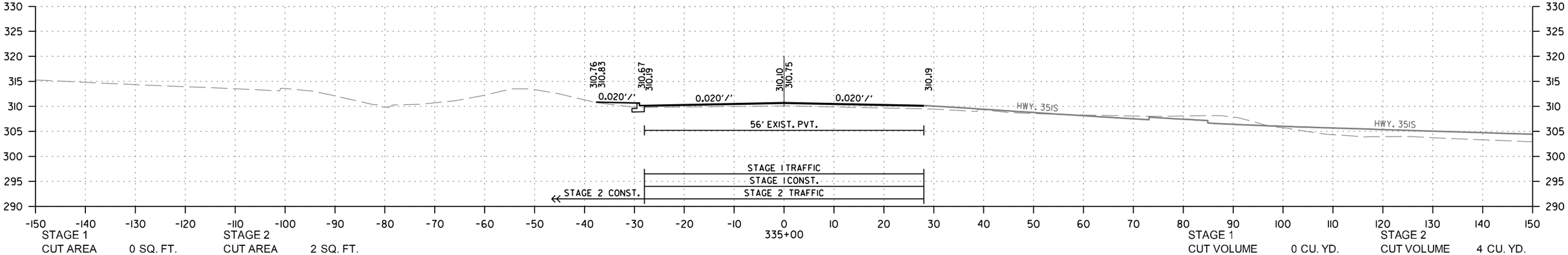
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	15 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	28 CU. YD.



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

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	7 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	4 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	4 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	6 CU. YD.

SITE 2-HWY. 49
STA. 335+00 TO STA. 337+00

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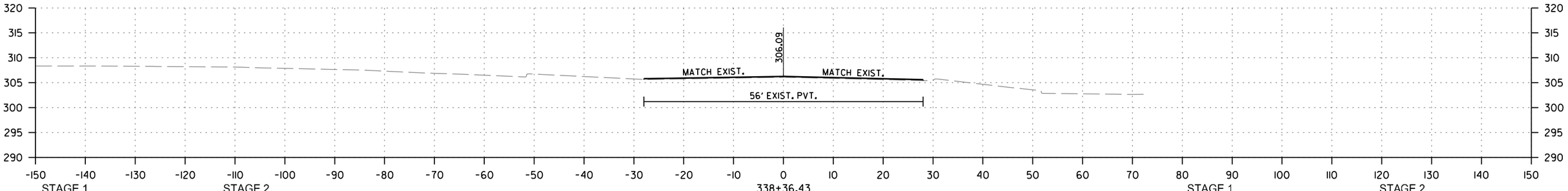
R100875.DGN

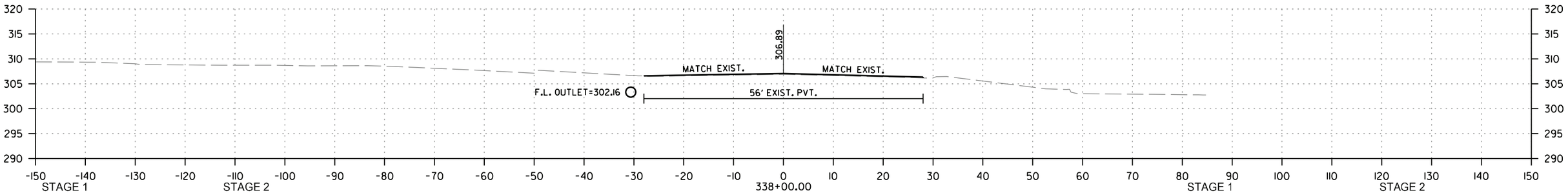
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
06/04/2024		6	ARK.	100875	159	159
		CROSS SECTIONS				



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

338+36.43
END 100' TRANSITION

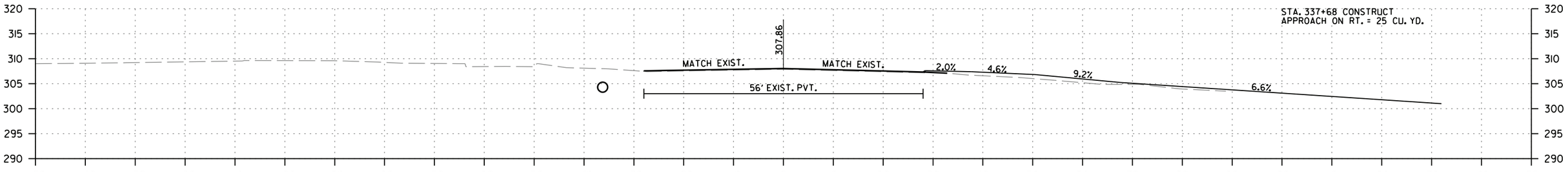
STAGE 1 CUT VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.
STAGE 2 CUT VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.



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

338+00.00

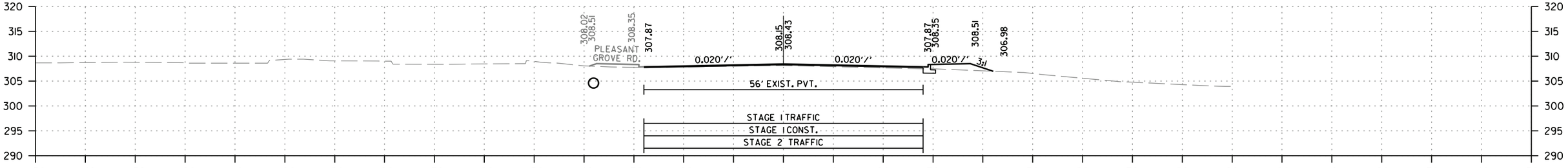
STAGE 1 CUT VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.
STAGE 2 CUT VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.



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

337+52.00

STAGE 1 CUT VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.
STAGE 2 CUT VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.



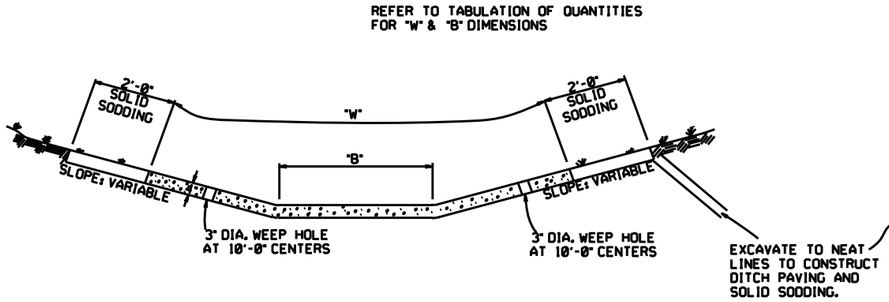
STAGE 1 CUT AREA 0 SQ. FT. FILL AREA 0 SQ. FT.
STAGE 2 CUT AREA 0 SQ. FT. FILL AREA 0 SQ. FT.

337+36.43
END SITE 2-HWY. 49
BEGIN 100' TRANSITION

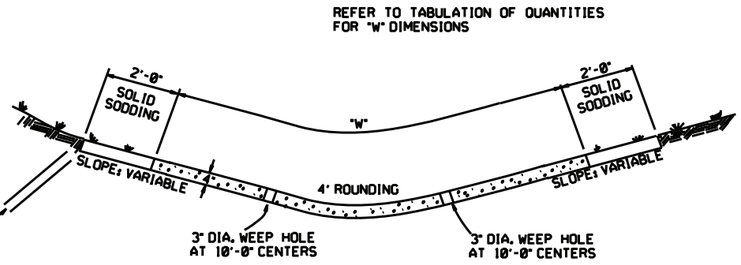
STAGE 1 CUT VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.
STAGE 2 CUT VOLUME 1 CU. YD. FILL VOLUME 10 CU. YD.

SITE 2-HWY. 49
STA. 337+36.43 TO STA. 338+36.43

mh39735 3/21/2023
R100875.DGN

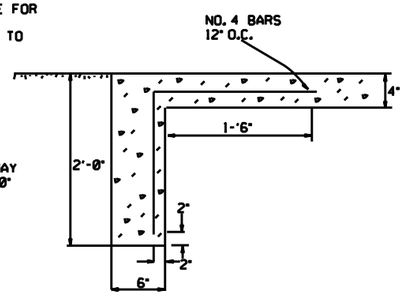


TYPE A



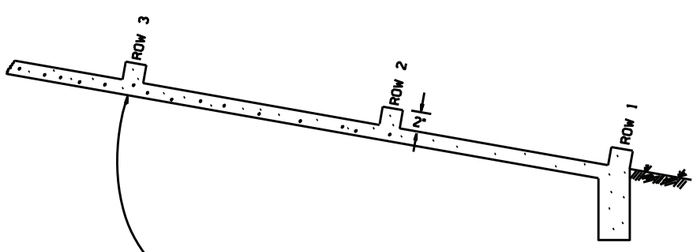
TYPE B

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



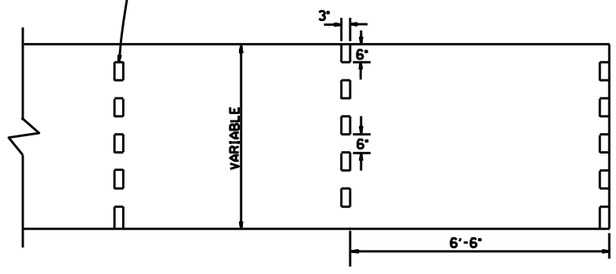
TOE WALL DETAIL FOR CONCRETE DITCH PAVING

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



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.

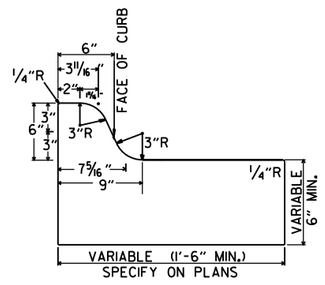
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
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

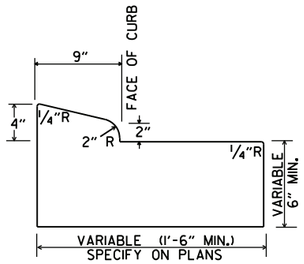
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

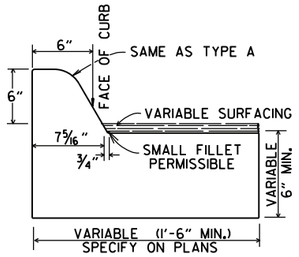
STANDARD DRAWING CDP-1



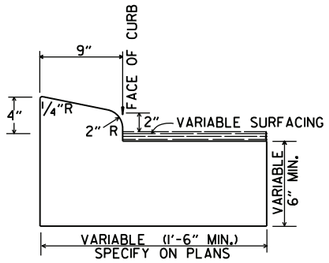
TYPE A



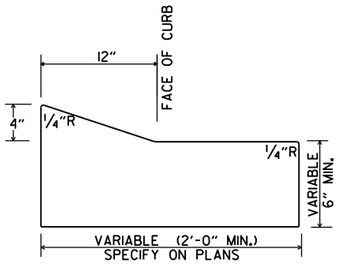
TYPE B-1



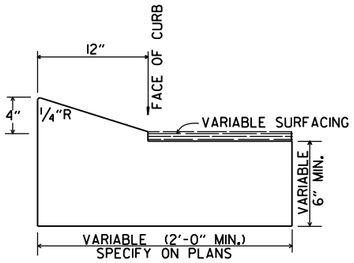
TYPE C



TYPE B-2

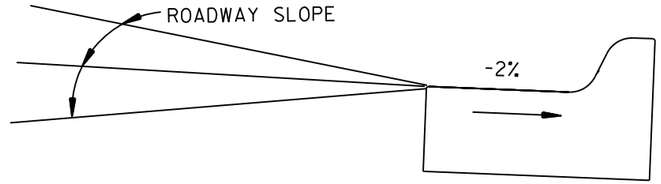


TYPE E-1



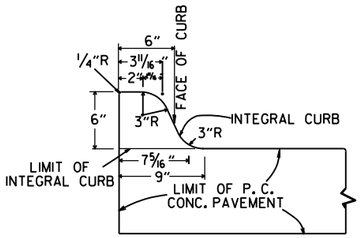
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

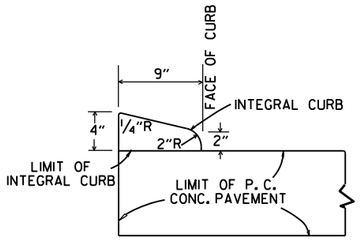


DETAIL OF GUTTER SLOPE

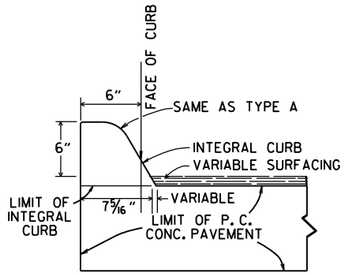
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

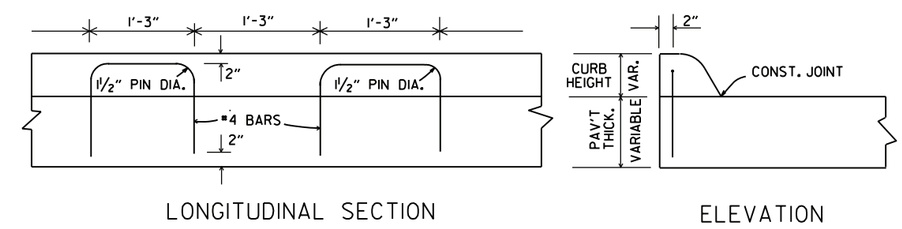


TYPE B



TYPE C

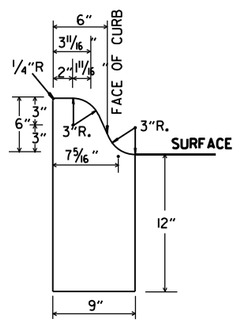
INTEGRAL CURB



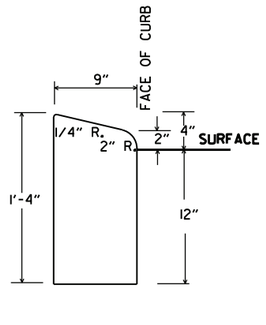
LONGITUDINAL SECTION

ELEVATION

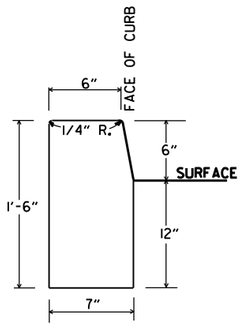
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



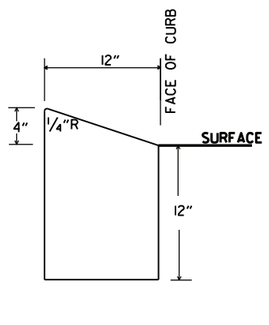
TYPE A



TYPE B

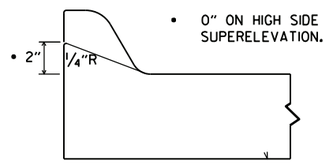


TYPE D



TYPE E

CONCRETE CURB



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

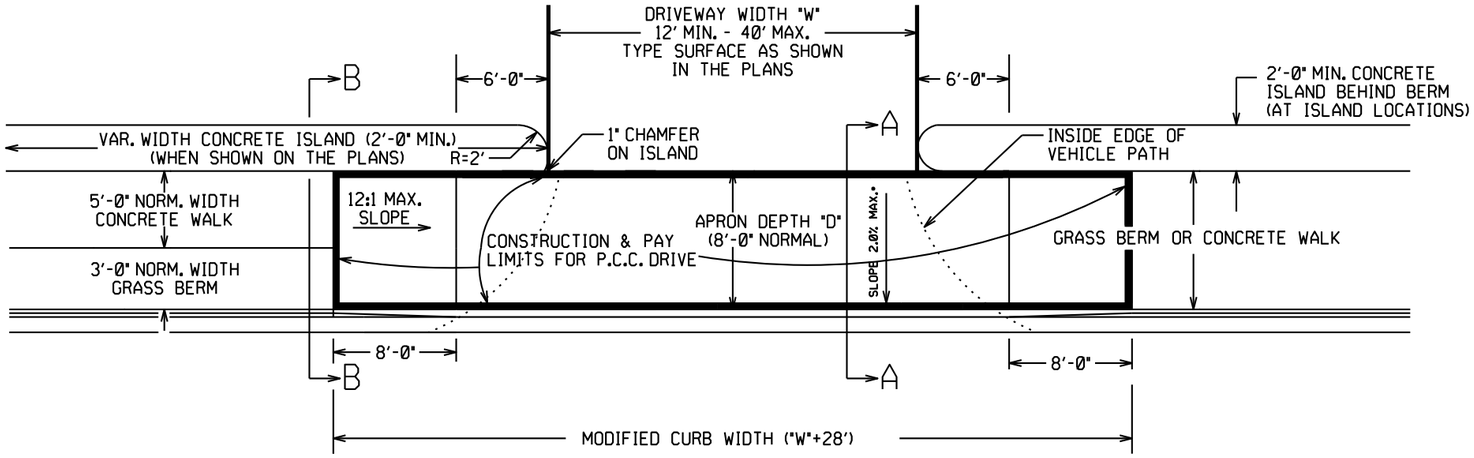
DETAILS OF MODIFIED CURB

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

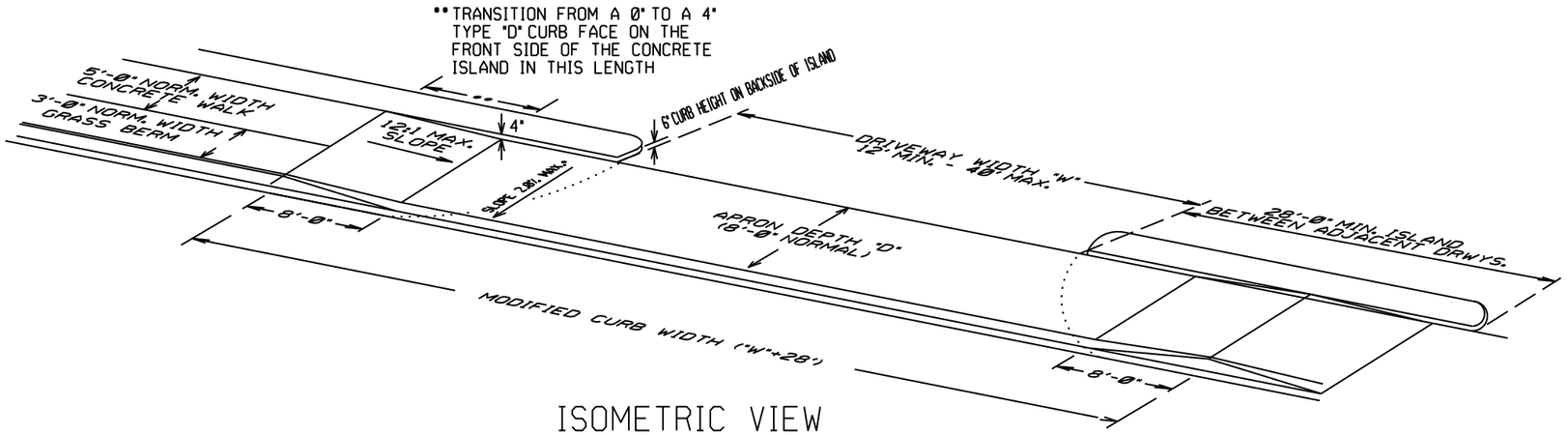
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

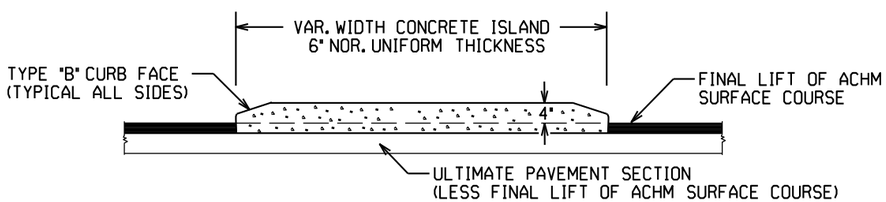
STANDARD DRAWING CG-1



PLAN VIEW



ISOMETRIC VIEW

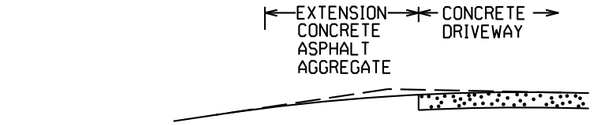


CURBED ISLANDS FOR CHANNELIZATION

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

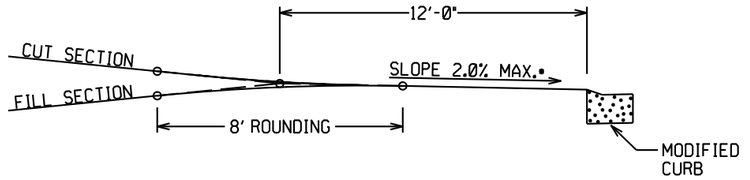
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

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

4: AGGREGATE - 6" AGGREGATE BASE COURSE

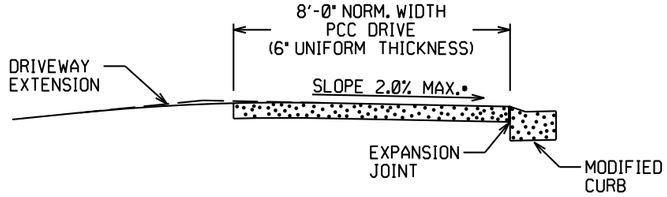
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

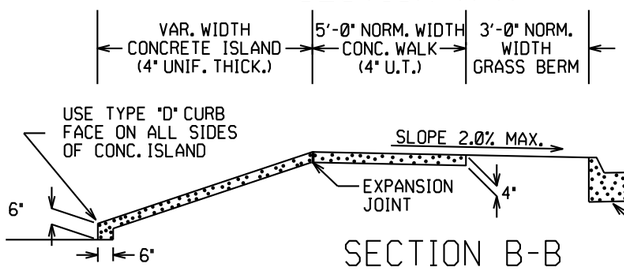


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



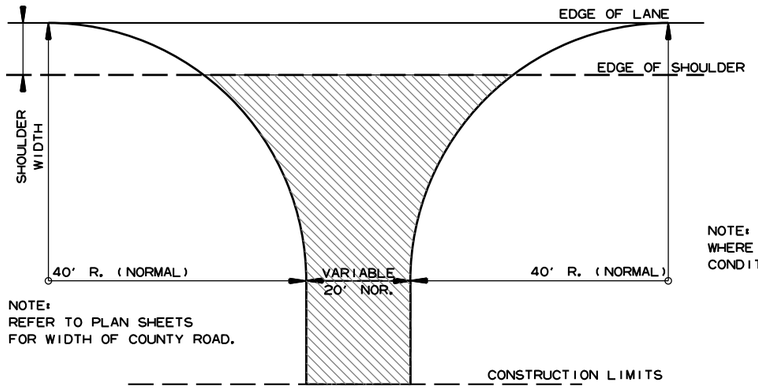
SECTION B-B
CURBED ISLAND BEHIND WALK

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

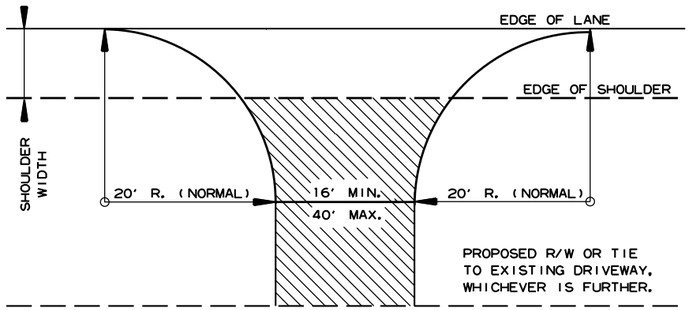
STANDARD DRAWING DR-1



NOTE: 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.

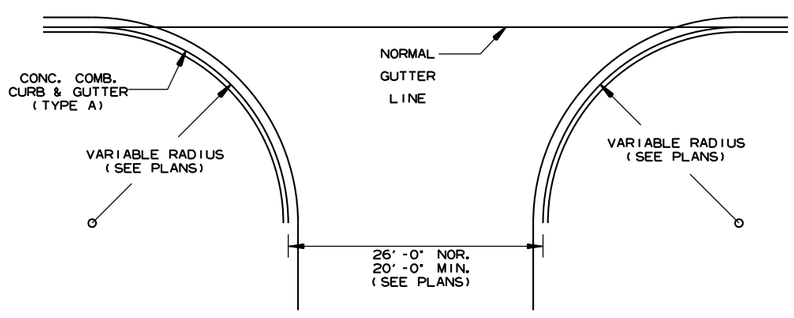
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



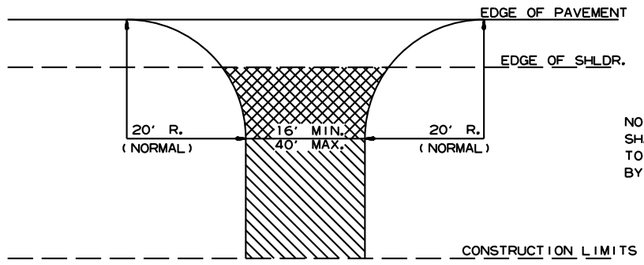
NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

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)



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

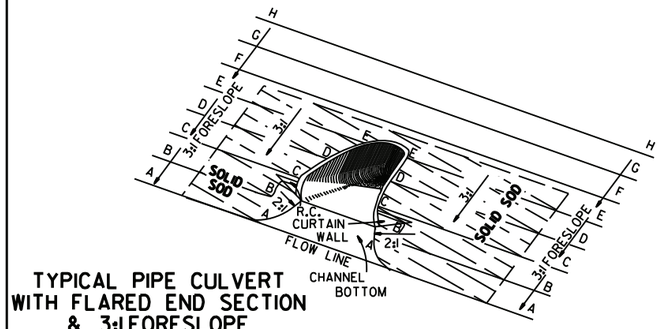
DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		ISSUED

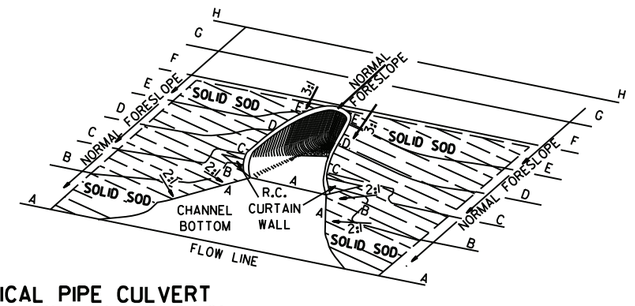
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

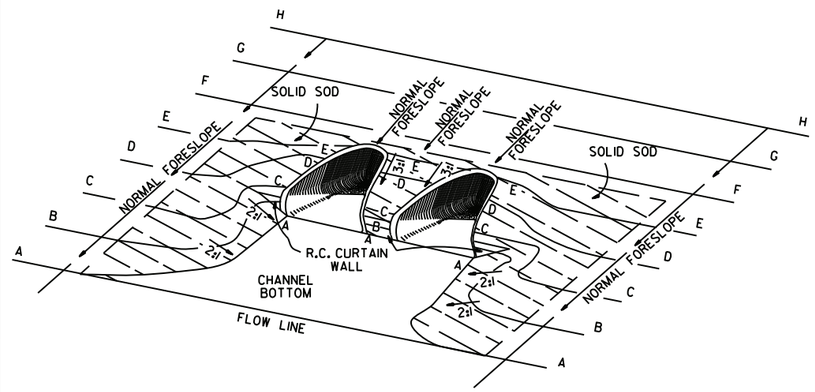
STANDARD DRAWING DR-2



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

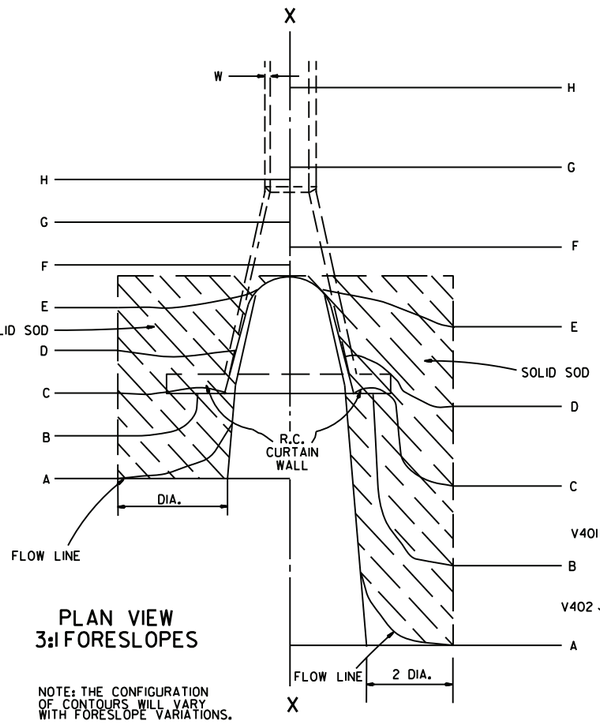
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"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

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

REINFORCING STEEL SCHEDULE

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

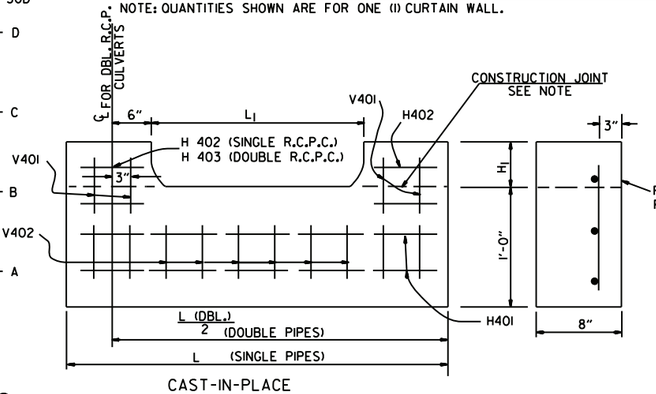
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

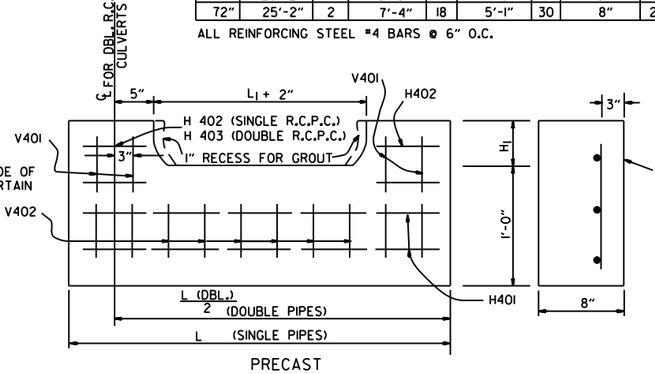
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

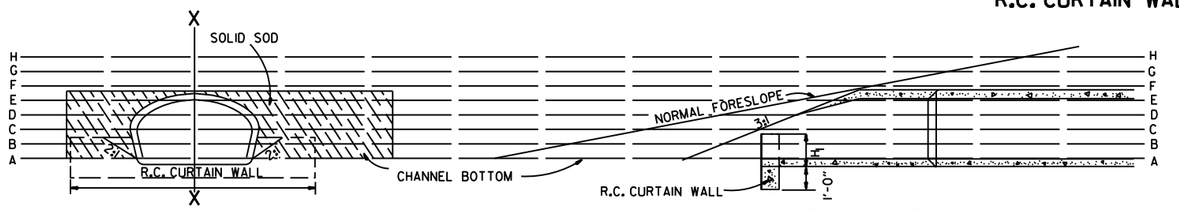
SOLID SODDING

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

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

GENERAL NOTES

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



END VIEW

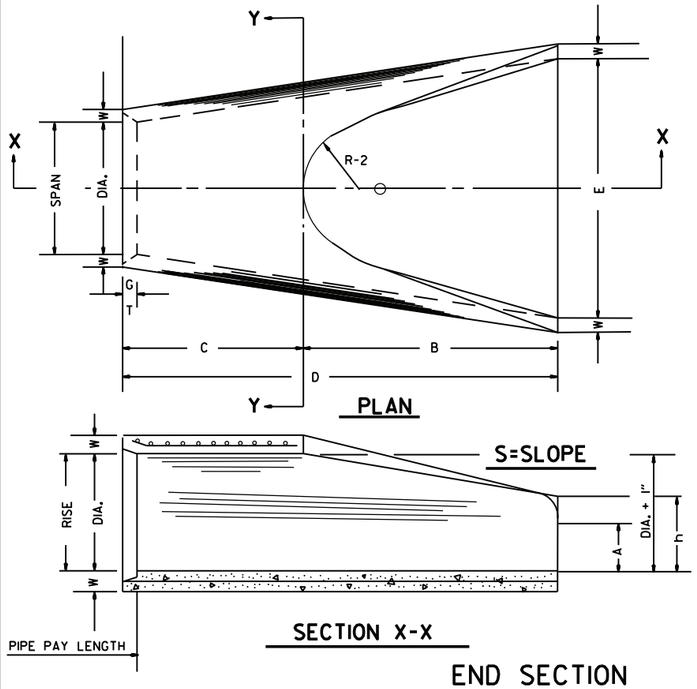
SECTIONAL VIEW "X-X"

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

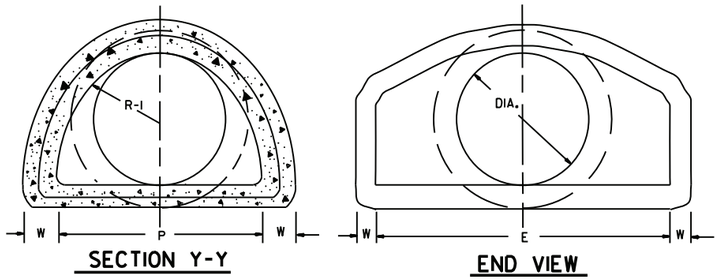
STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	P	R-I	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33⅜"	16⅛"	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"	47⅛"	24⅛"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36⅛"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77⅛"	38⅝"	24"	5"	13250	4'-6"

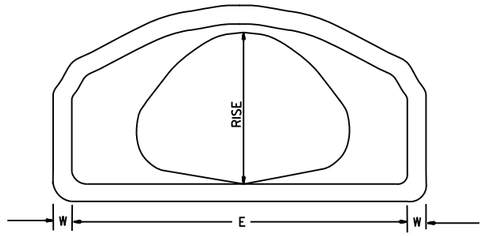


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

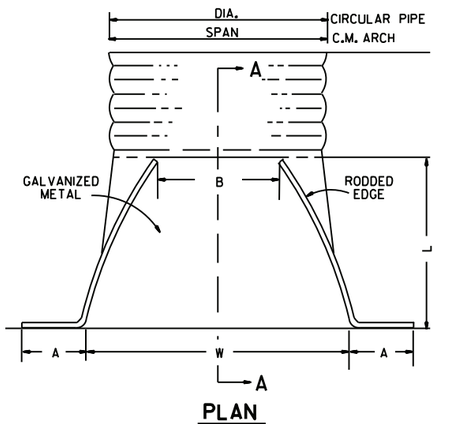
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅛"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅜"	22"	3½"	2½:1
42	51⅛	51	31⅝	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"	70⅜"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅛"	24"	5"	2¼:1

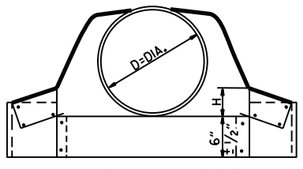
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

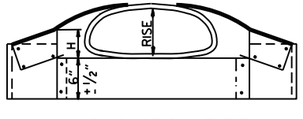


END VIEW
CONCRETE ARCH PIPE



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



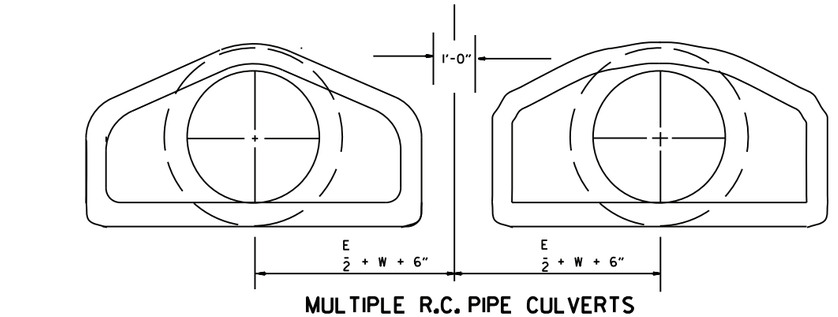


CIRCULAR PIPE

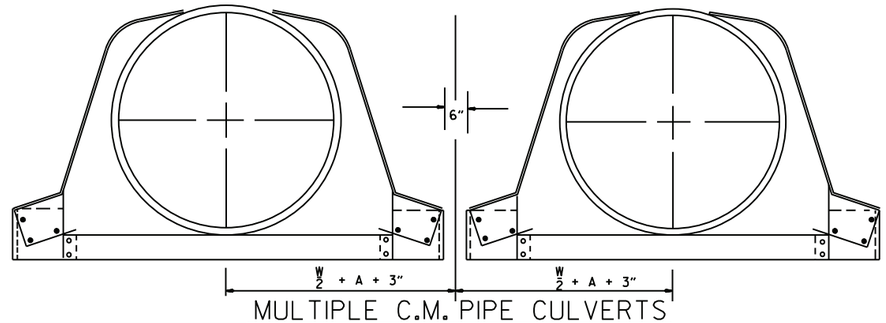
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

C.M. ARCH PIPE

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



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

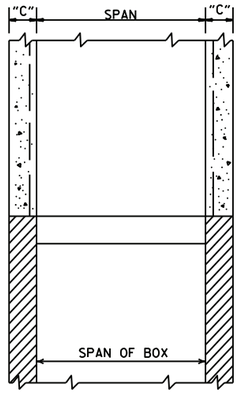
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73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

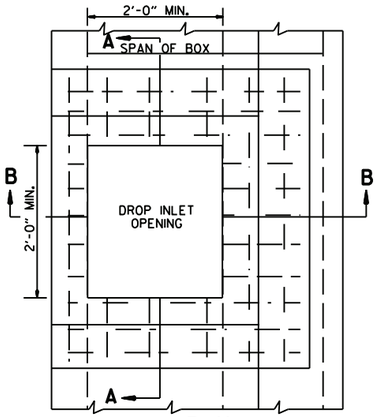
FLARED END SECTION

STANDARD DRAWING FES-2

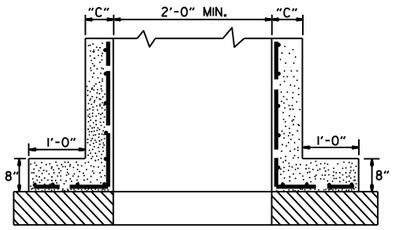
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



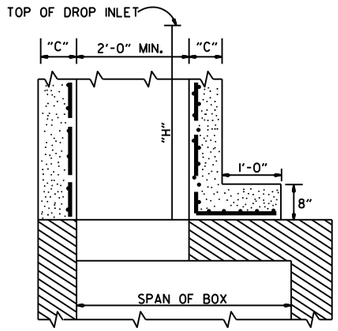
SECTION B-B



PLAN

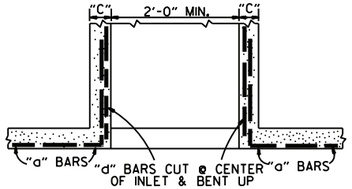


SECTION A-A

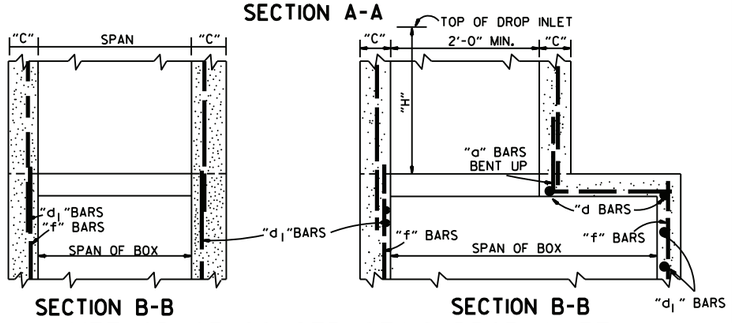


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



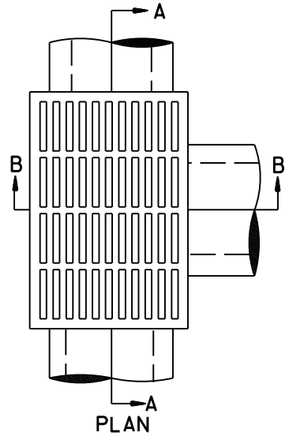
SECTION A-A



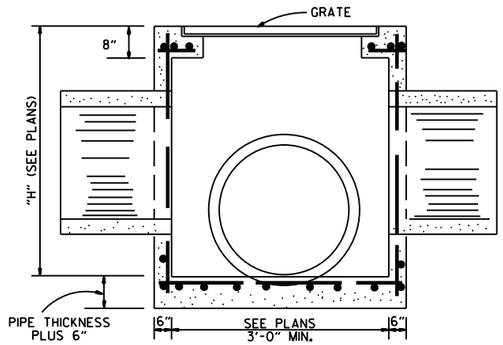
SECTION B-B SECTION B-B

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.

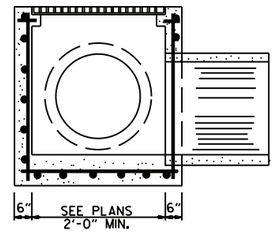


PLAN



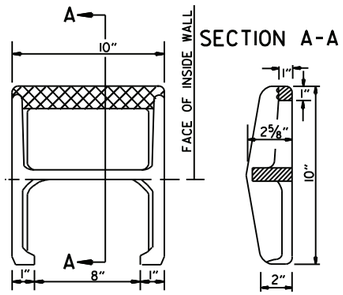
SECTION A-A

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)

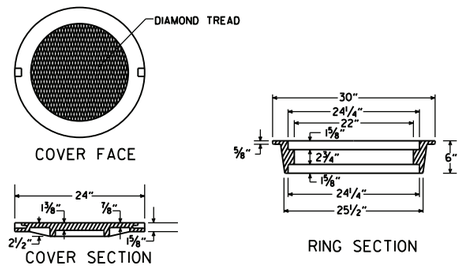


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

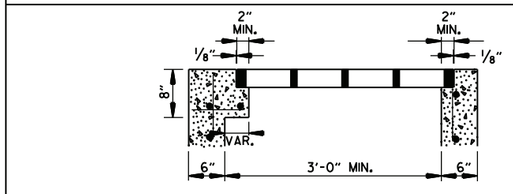
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

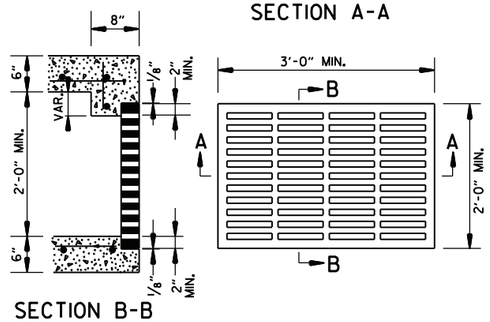


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



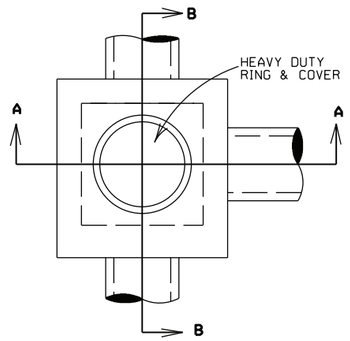
SECTION A-A



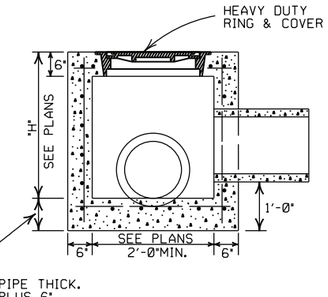
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

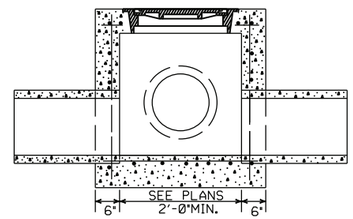


PLAN



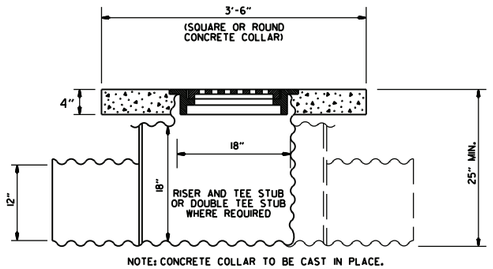
SECTION A-A

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.

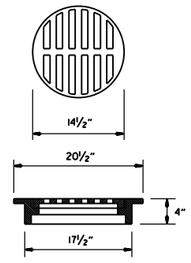


SECTION B-B

JUNCTION BOX (TYPE E)



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

4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC.	HEIGHT 5'-0" REINF. STEEL	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL
		CU. YDS.	POUNDS	CU. YDS.	POUNDS
18"	2'-6"	1.77	156	0.28	22
24"	2'-6"	1.79	156	0.28	22
30"	3'-2"	2.39	205	0.30	26
36"	3'-8"	2.63	236	0.32	28
42"	4'-4"	2.95	250	0.34	30
48"	4'-10"	3.21	265	0.36	32

NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

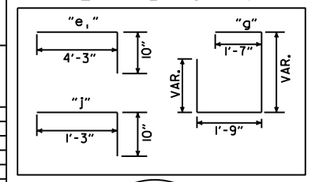
DROP INLET EXTENSION

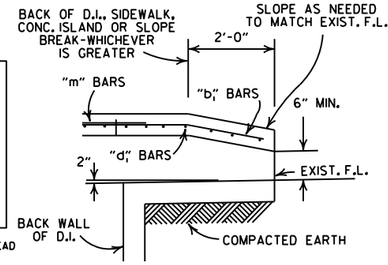
4'-0" CLASS A CONC.	4'-0" REINF. STEEL	8'-0" CLASS A CONC.	8'-0" REINF. STEEL
CU. YDS.	POUNDS	CU. YDS.	POUNDS
0.58	38	0.87	72
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
0.04	3		

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

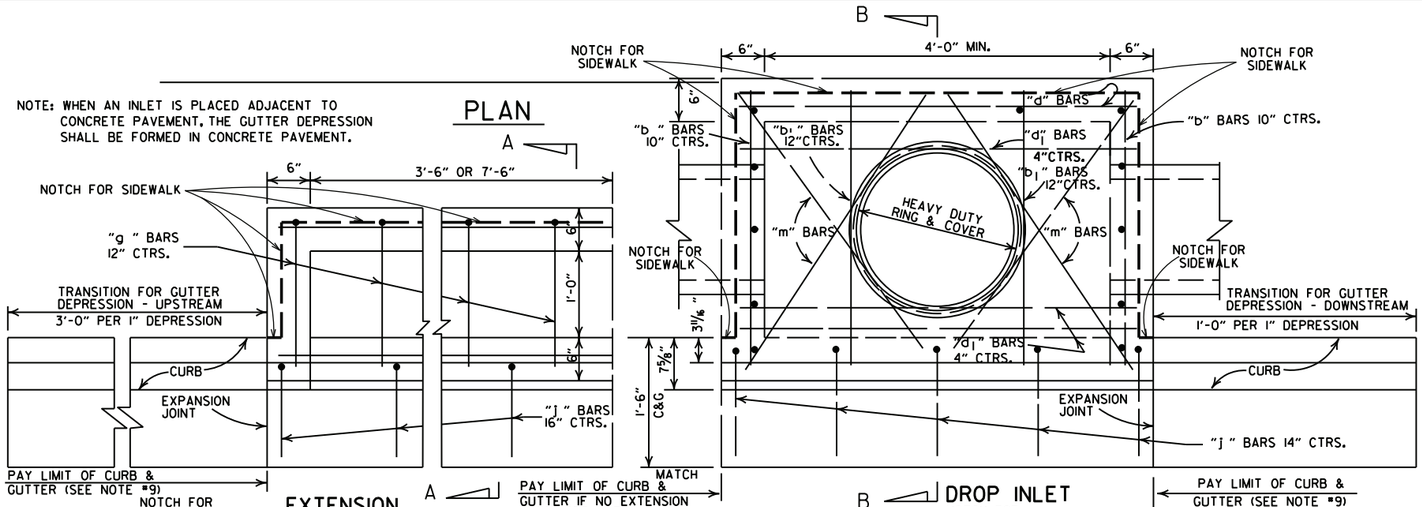
BAR DIAGRAM

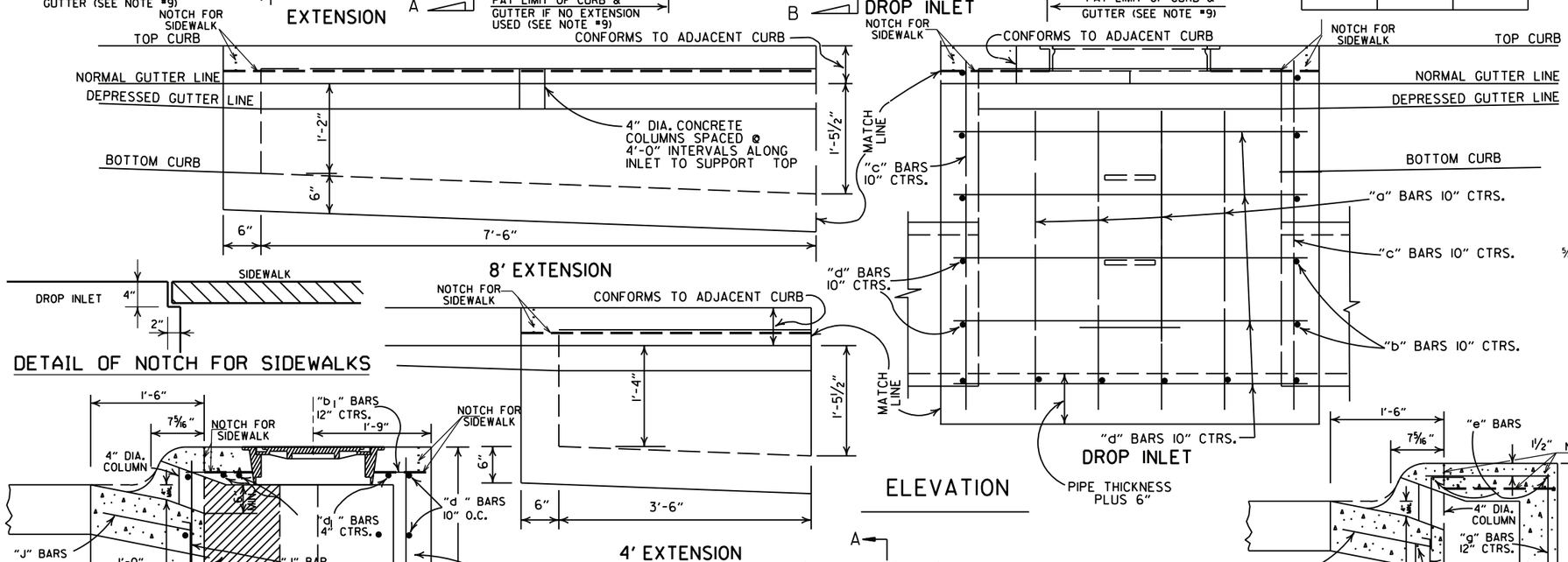


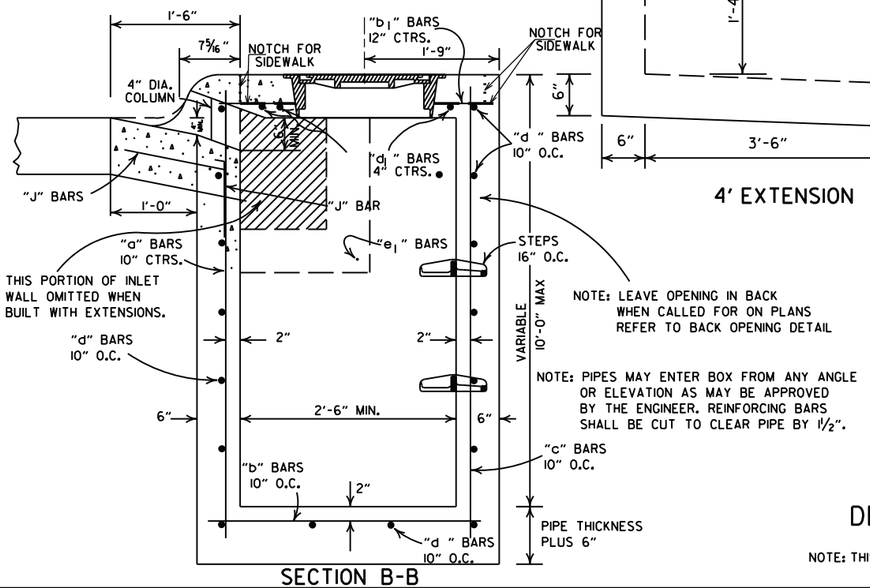


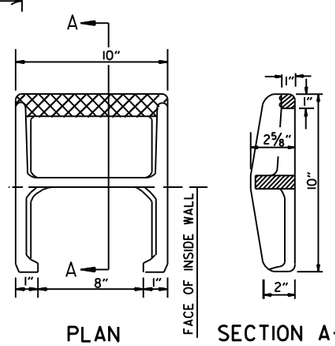
BACK OPENING

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 C).





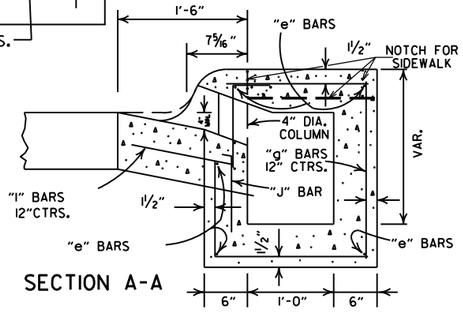


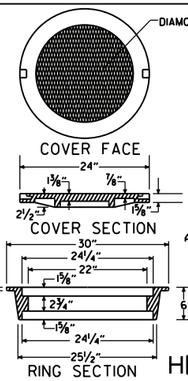


DETAIL OF STEP FOR DROP INLET

APPROX. WEIGHT = 11 LBS. (CAST IRON)

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.





APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

GENERAL NOTES:

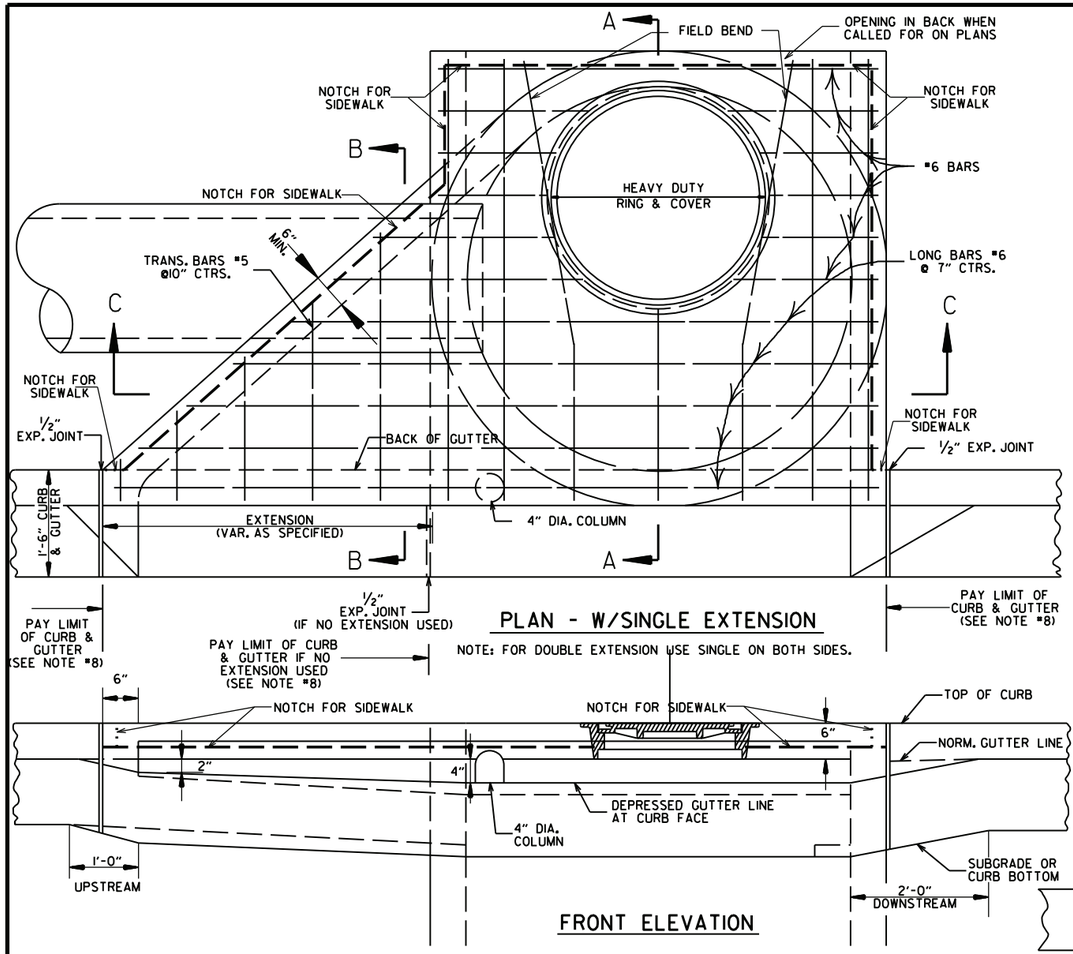
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (FPC-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. 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.
10. 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.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
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.

DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
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 (TYPE C)

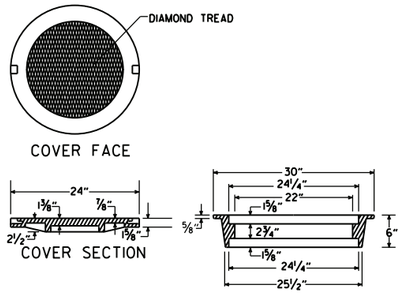
STANDARD DRAWING FPC-9E



PLAN - W/SINGLE EXTENSION

FRONT ELEVATION

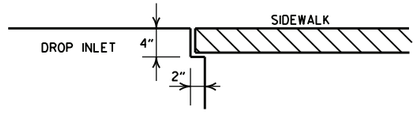
SECTION C-C



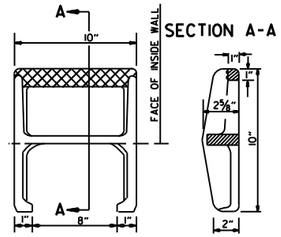
APPROXIMATE TOTAL WEIGHT = 333 LBS.

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

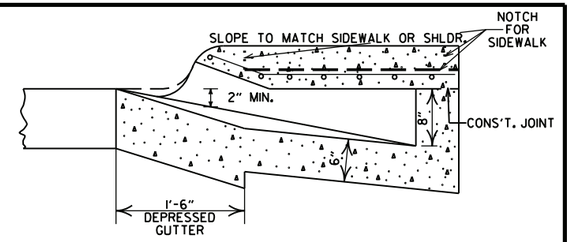


APPROX. WEIGHT = 11 LBS. (CAST IRON)

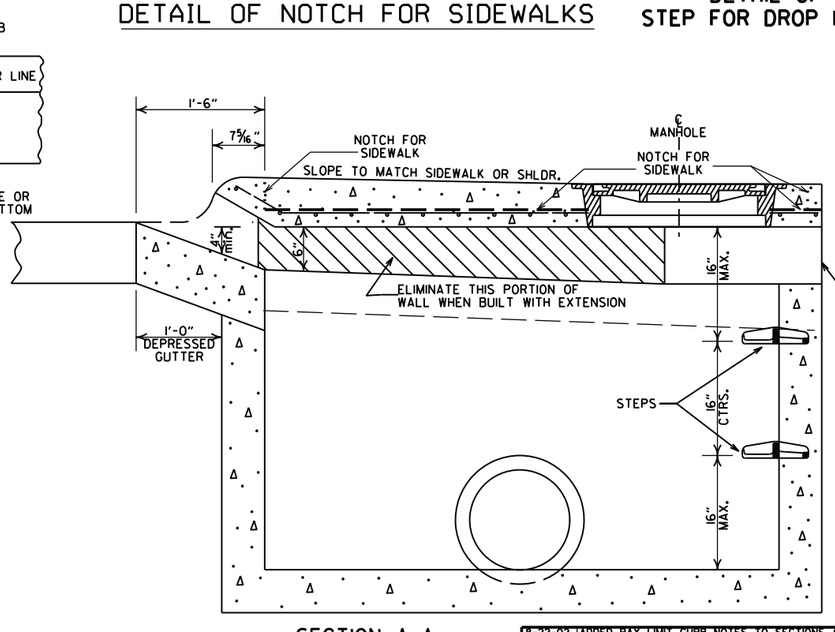
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

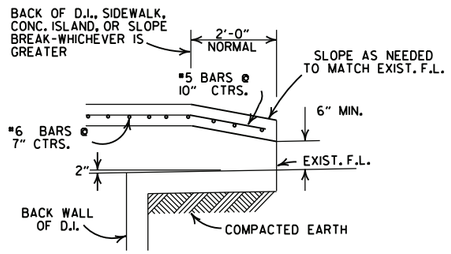
DETAIL OF STEP FOR DROP INLET



SECTION B-B



SECTION A-A



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.

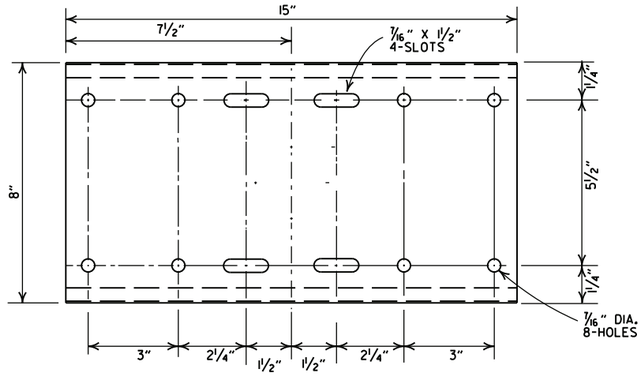
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS	
		CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

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	
4-27-95	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
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
5-23-89	ADDED NOTE 9 & MINIMUM WALL THICKNESS	513-5-23-89
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

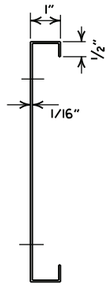
ARKANSAS STATE HIGHWAY COMMISSION

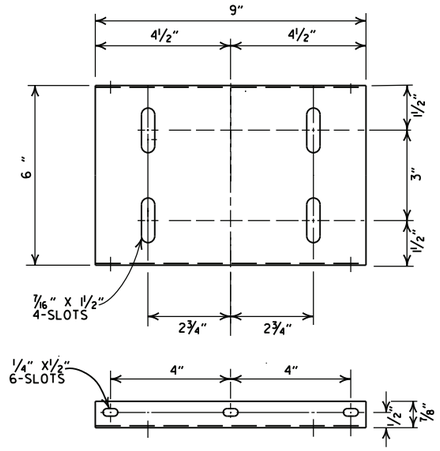
DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M

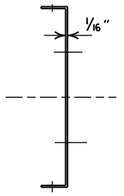


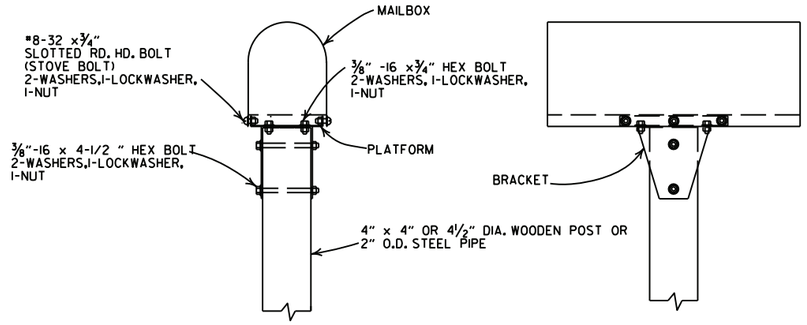
SHELF



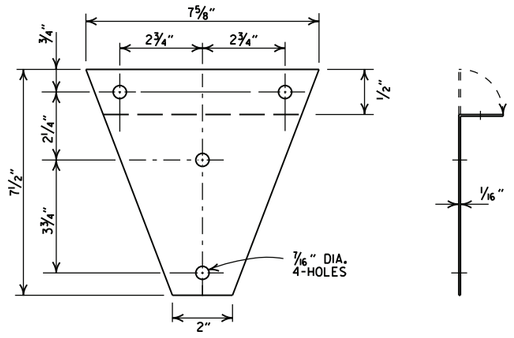


PLATFORM





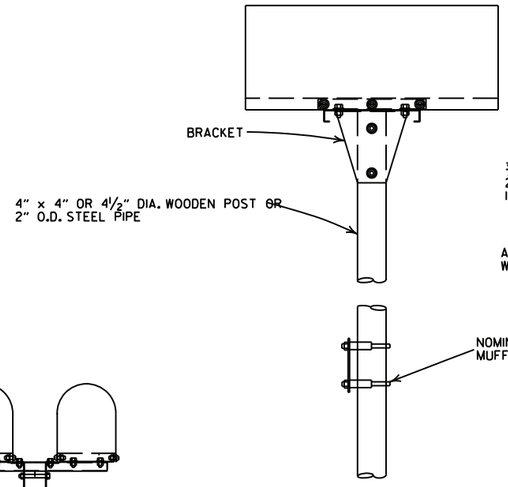
SINGLE INSTALLATION

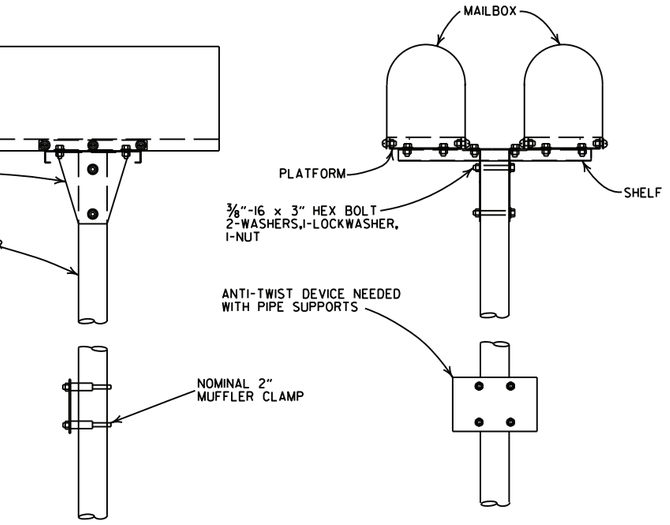


BRACKET

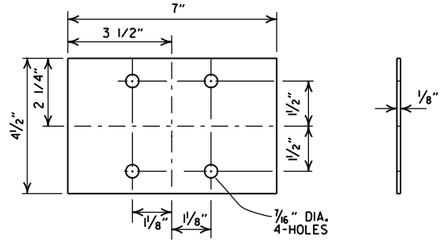
GENERAL NOTES

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 X¾" 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.

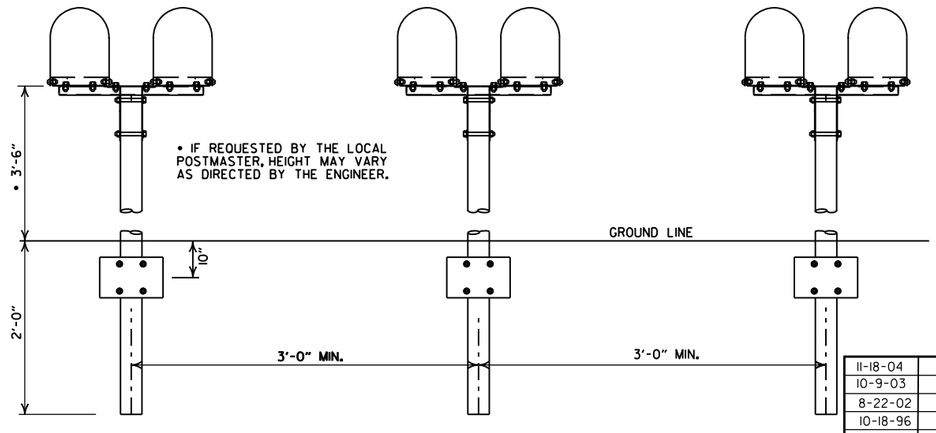




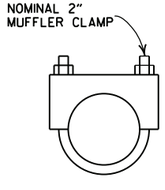
DOUBLE INSTALLATION



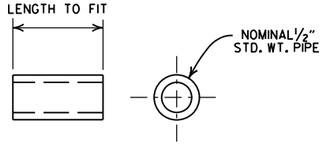
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



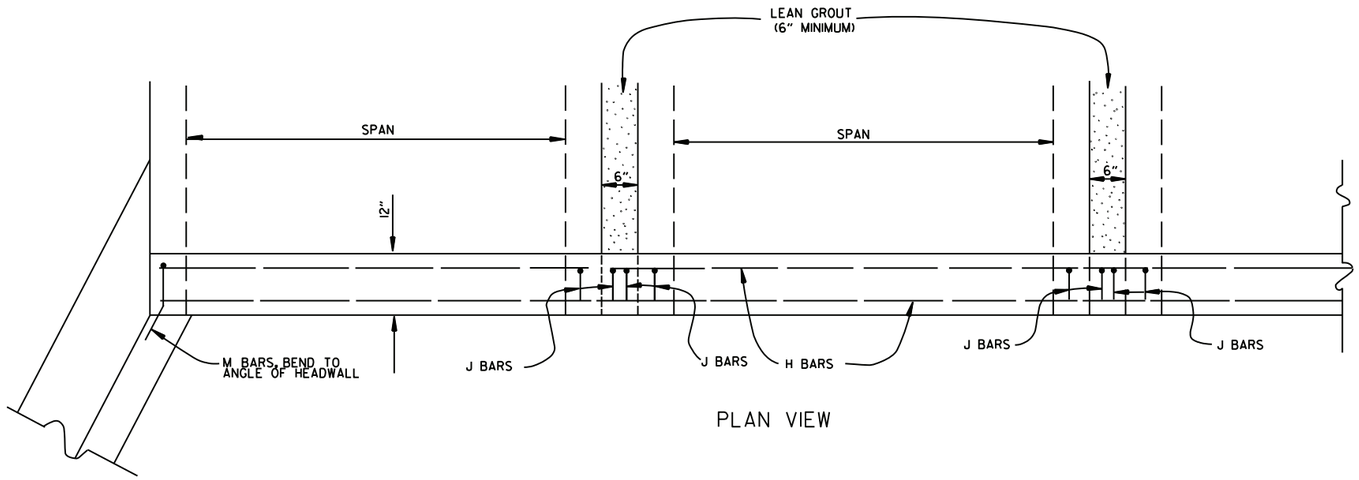
SPACER

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

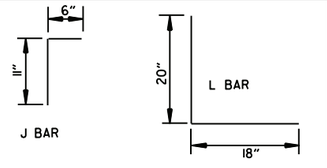
STANDARD DRAWING MB-1



PLAN VIEW

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

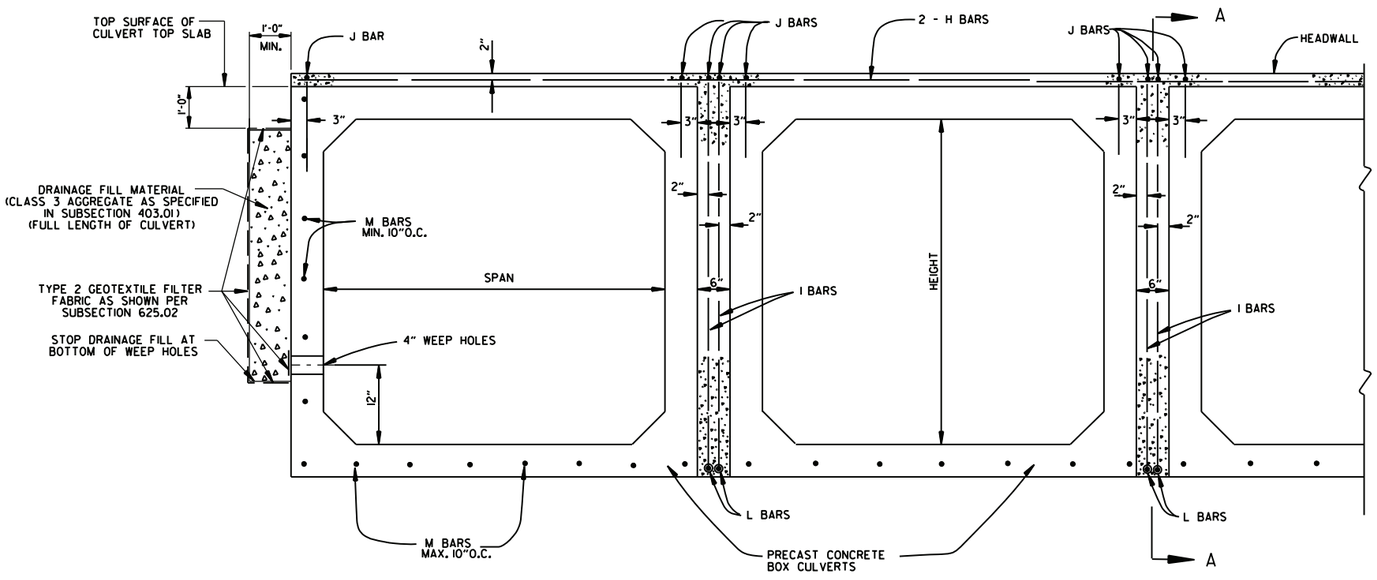
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT 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.

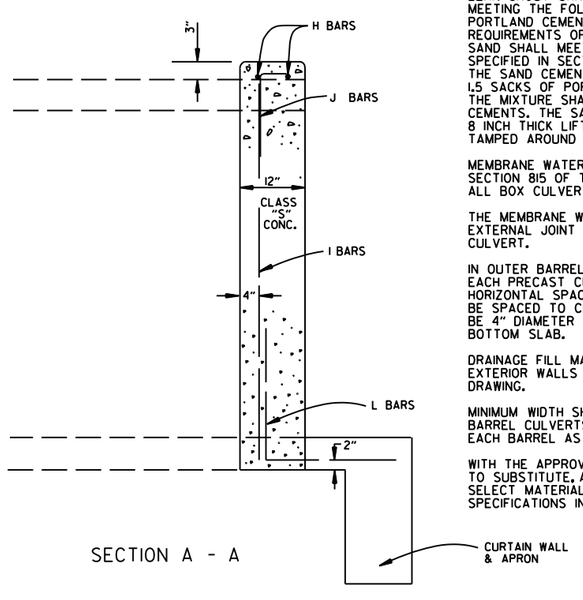
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED; JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-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.

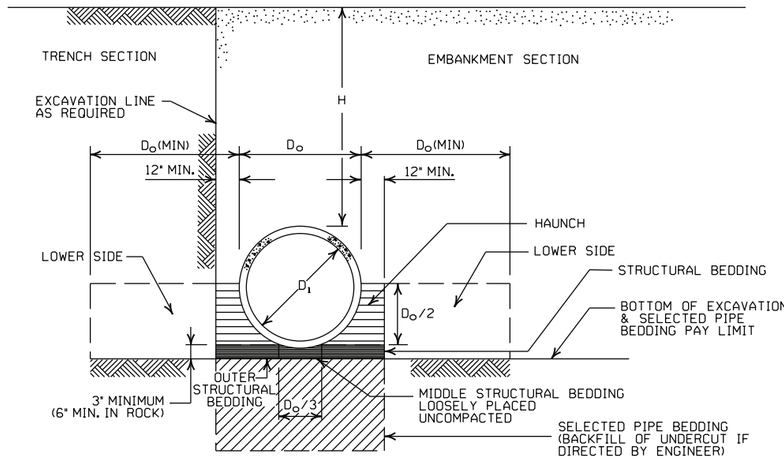
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS 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."

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

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 TYPE 1	INSTALLATION TYPE 1		INSTALLATION TYPE 1	INSTALLATION 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 TYPE 2	INSTALLATION TYPE 1		INSTALLATION TYPE 2	INSTALLATION 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.

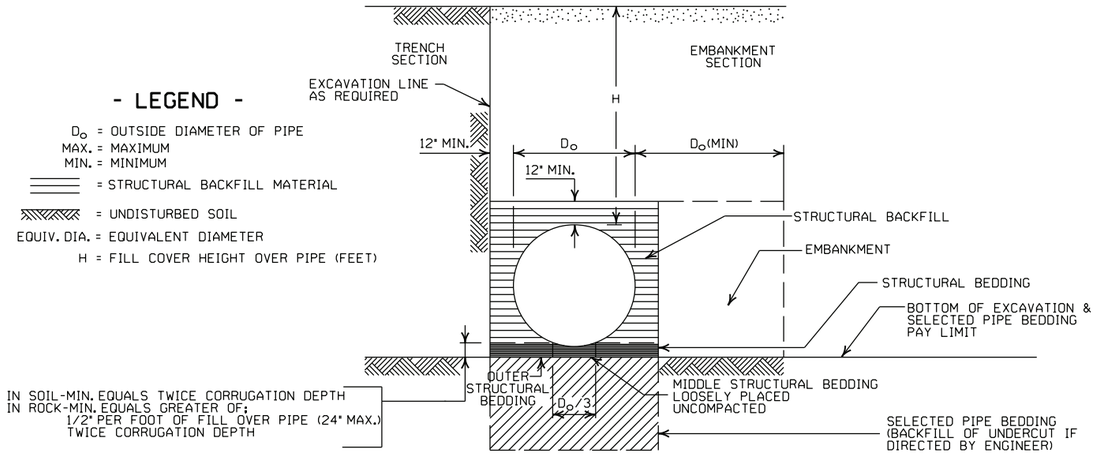
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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



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

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.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

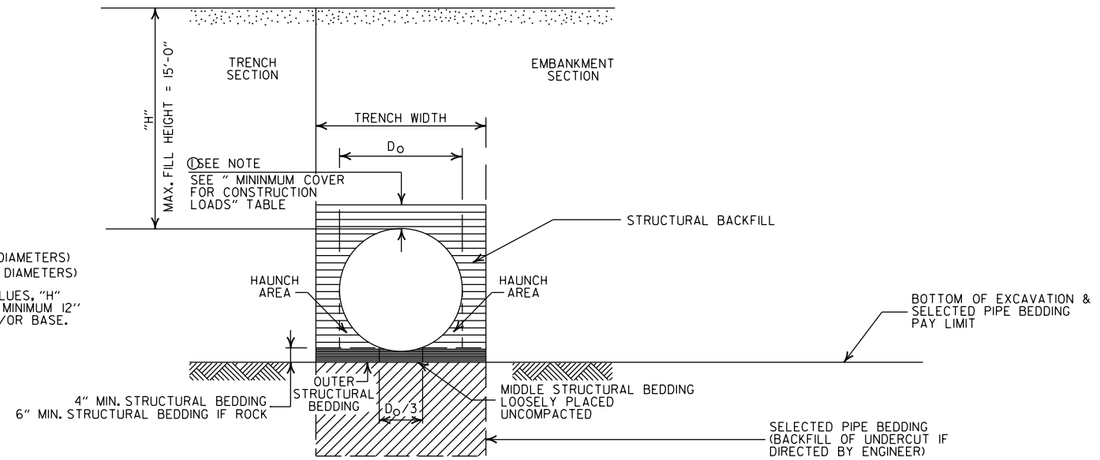
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL 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.)
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	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

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

SM3 WILL NOT BE ALLOWED.

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

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

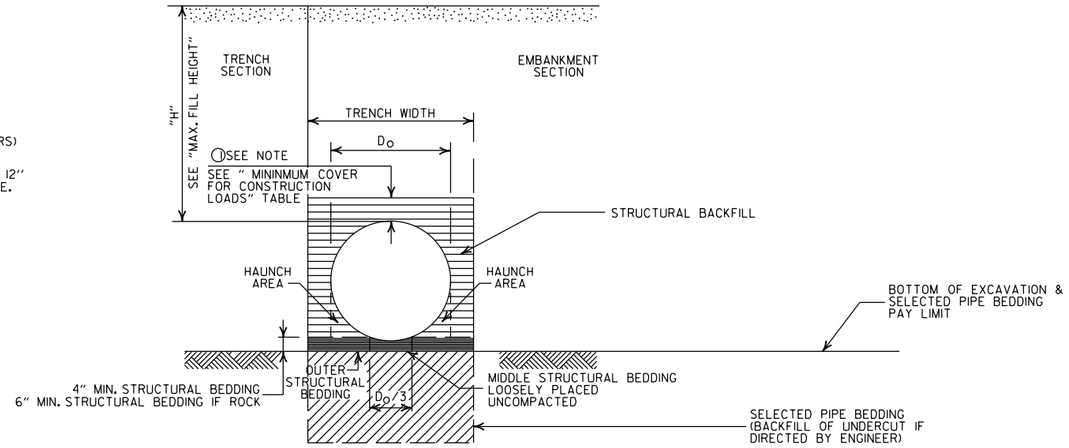
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL 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 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 POLYPROPYLENE PIPE.

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 TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

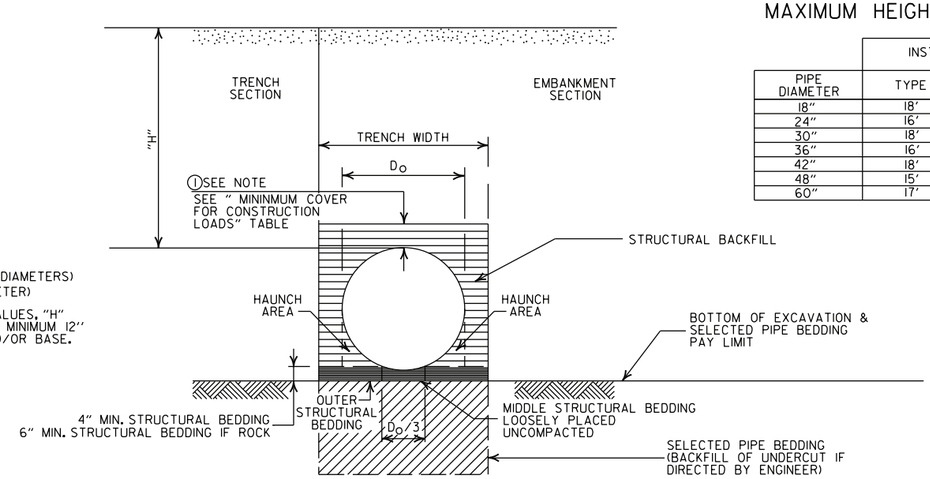
①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

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

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

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



MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

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

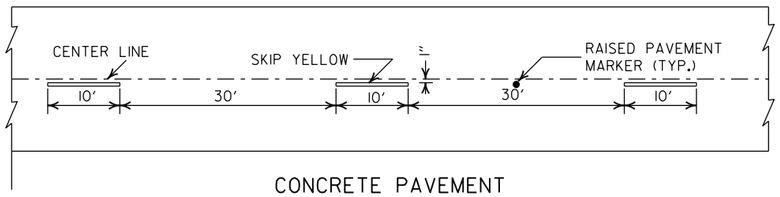
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

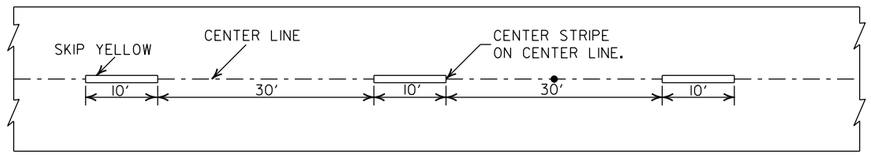
PLASTIC PIPE CULVERT
(POLYPROPYLENE)

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.

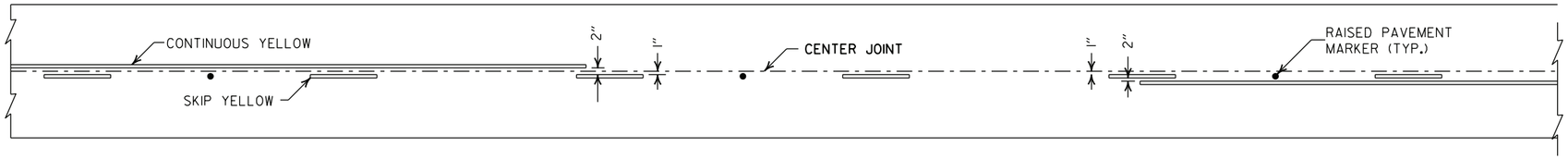


CONCRETE PAVEMENT

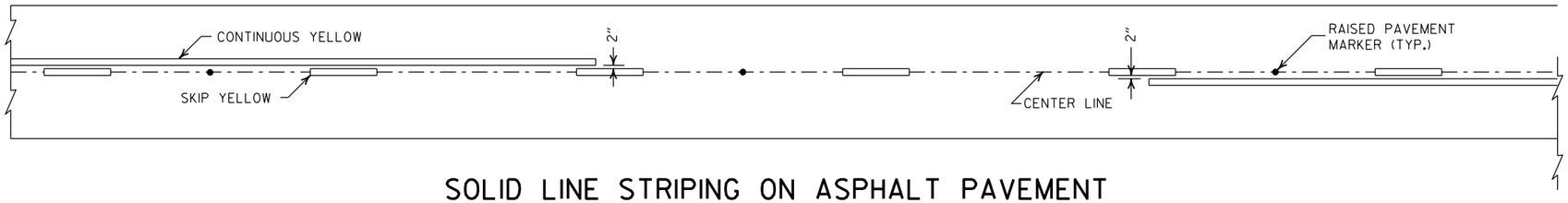


ASPHALT PAVEMENT

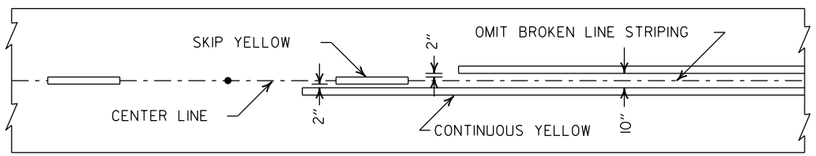
BROKEN LINE STRIPING



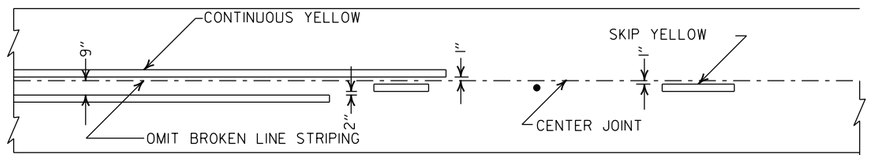
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

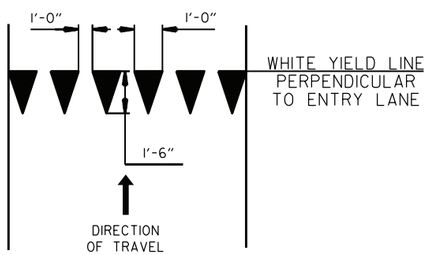


ASPHALT PAVEMENT

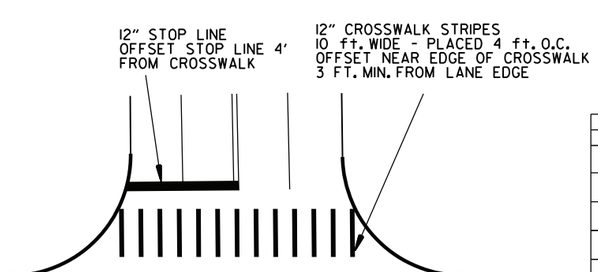


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

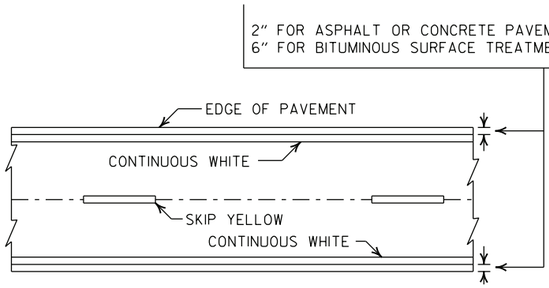


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

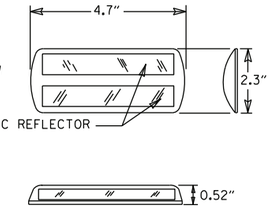
DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	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



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

ARKANSAS STATE HIGHWAY COMMISSION

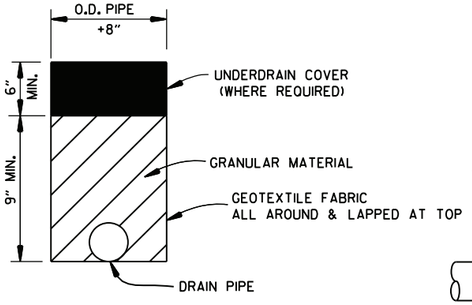
PAVEMENT MARKING DETAILS

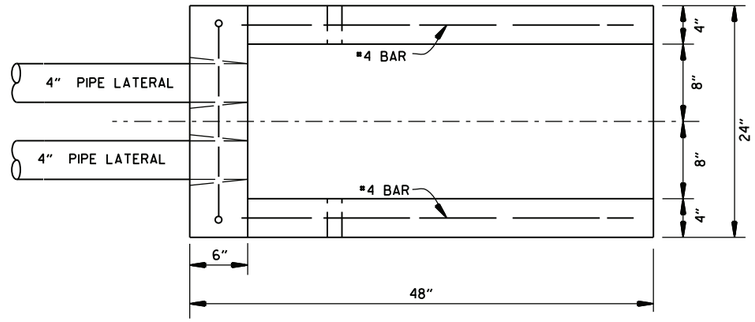
STANDARD DRAWING PM-1

NOTE:

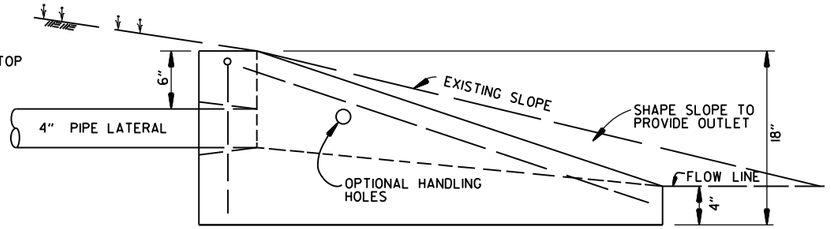
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

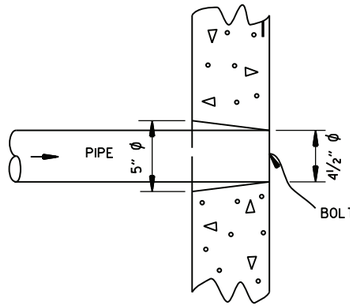




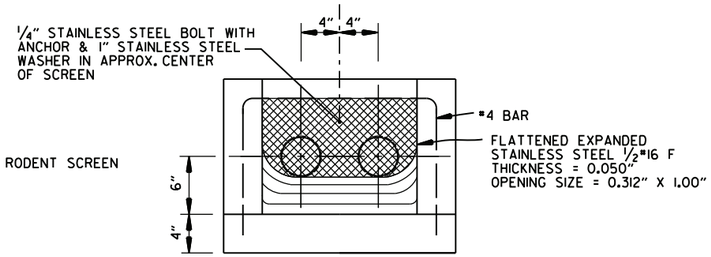
PLAN VIEW



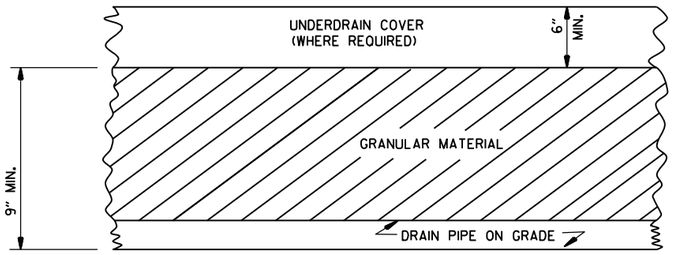
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

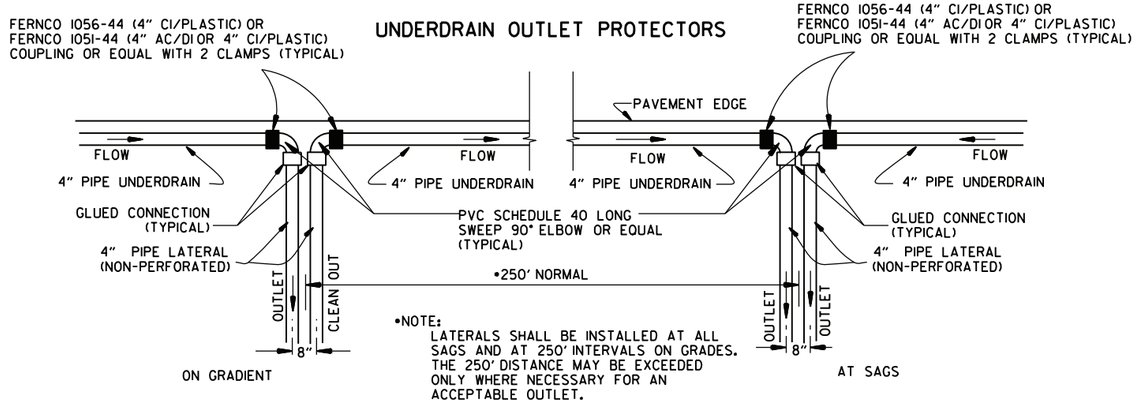


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE 1. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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

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

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

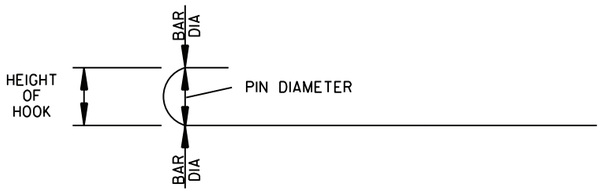
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

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

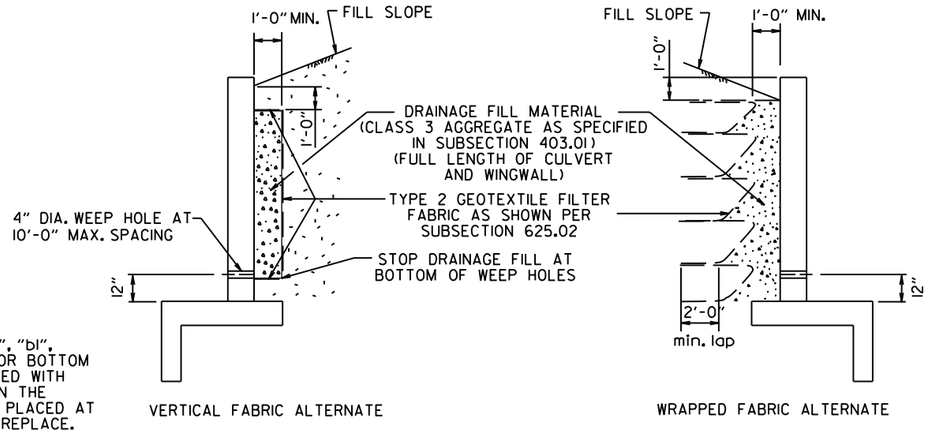
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

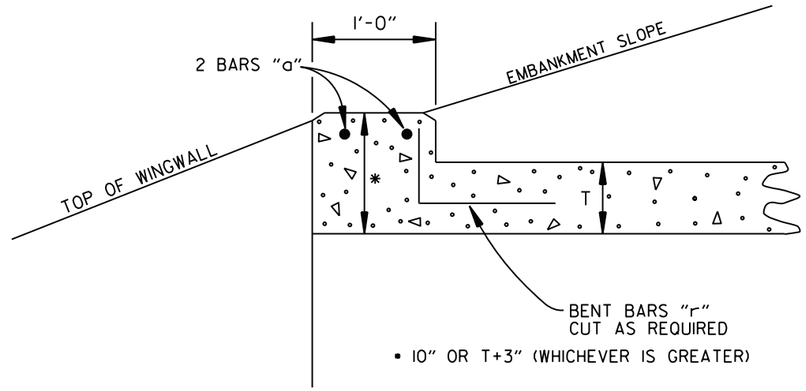
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

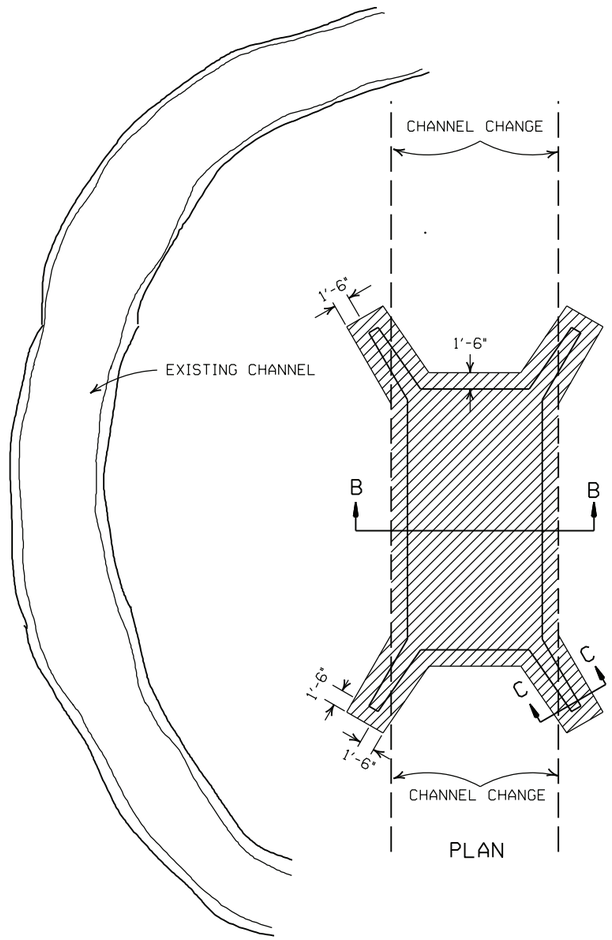
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

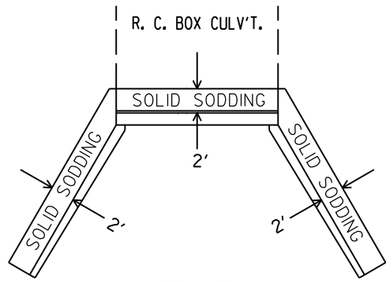
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

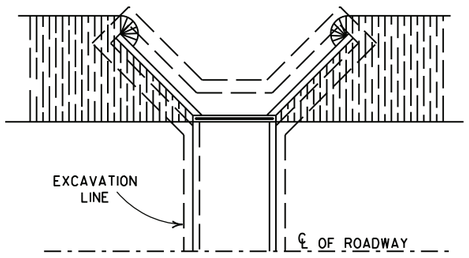
SOLID SODDING



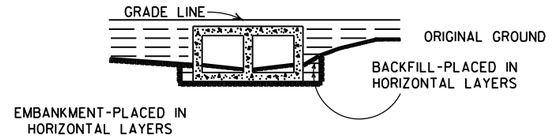
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

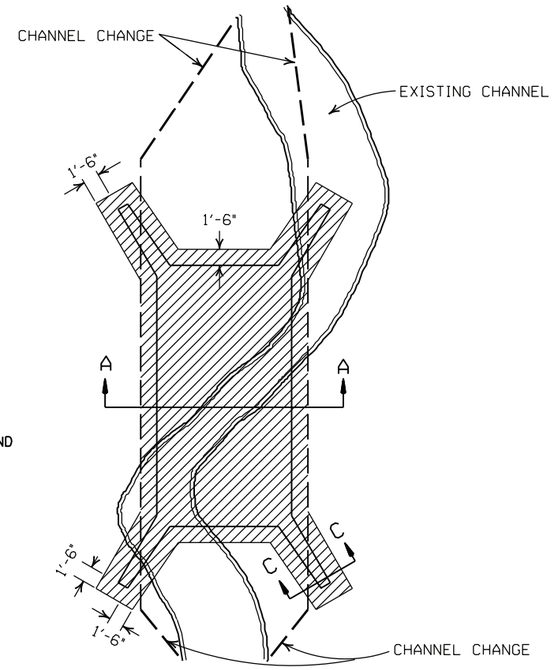


PLAN

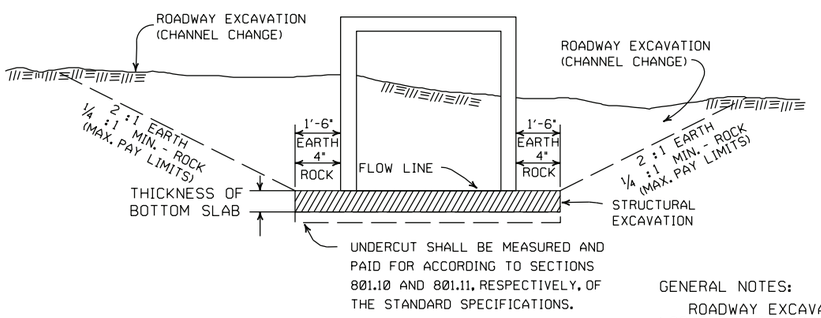


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

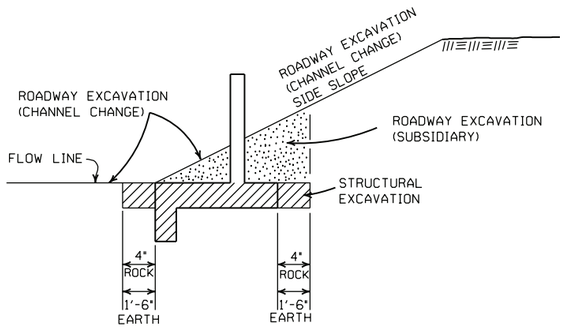


PLAN

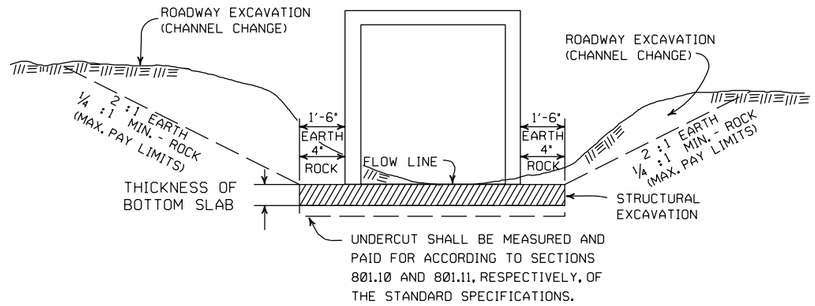


SECTION B-B

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.

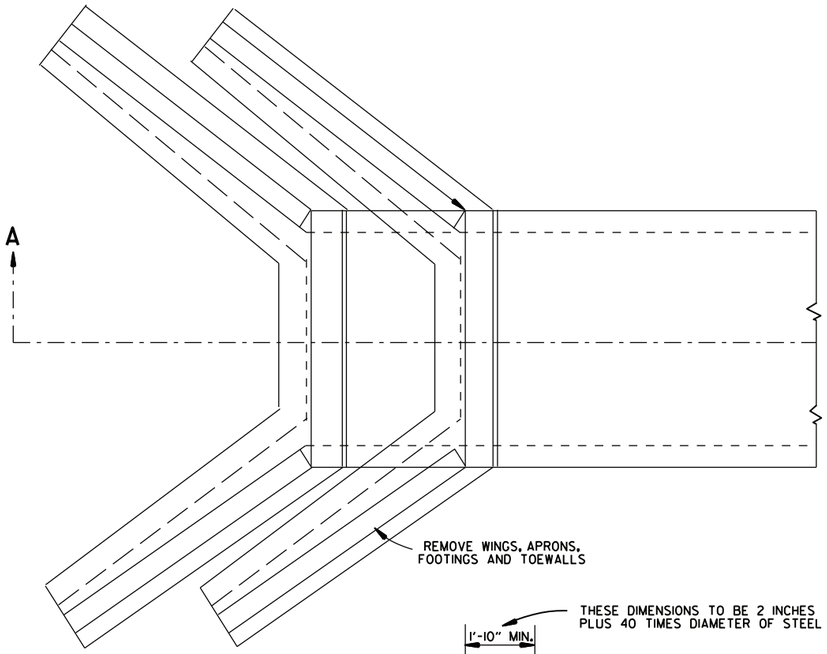
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

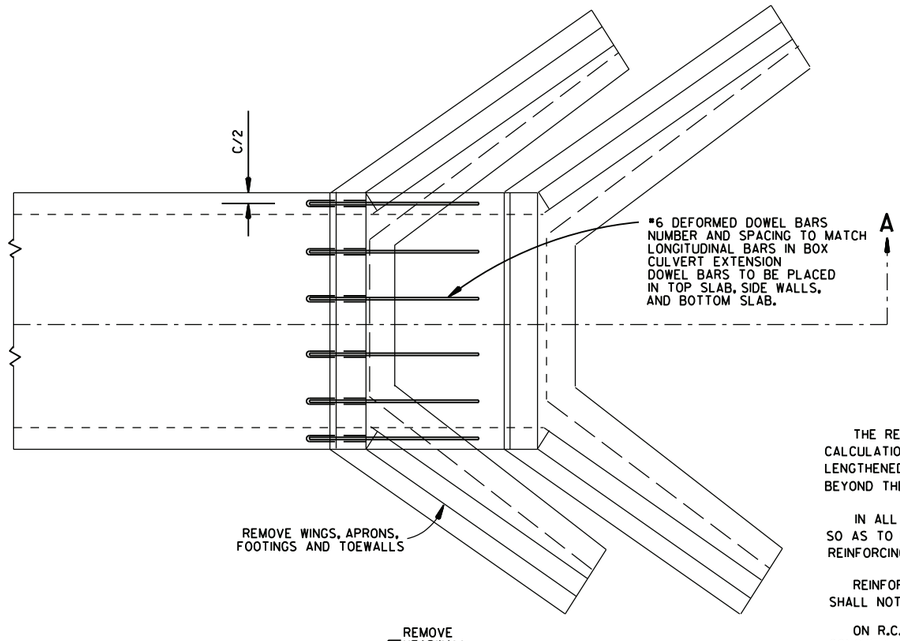
STANDARD DRAWING RCB-2



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

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.

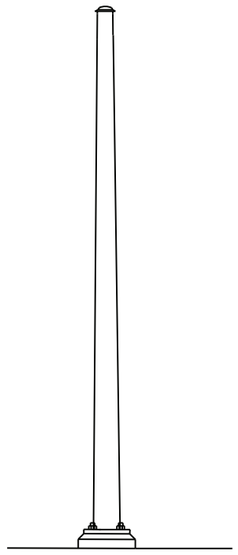
USE FATIGUE CATEGORY II.

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 ½" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

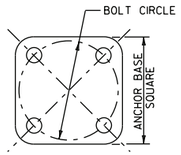
THE GROUND ROD SHALL BE FUSION WELDED TO A IC/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX PAID FOR SEPARATELY AS SHOWN ON THE PLANS.



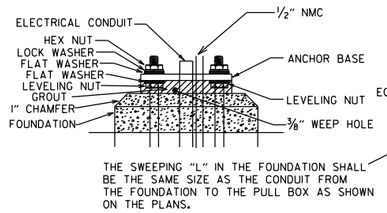
ANTENNA POLE

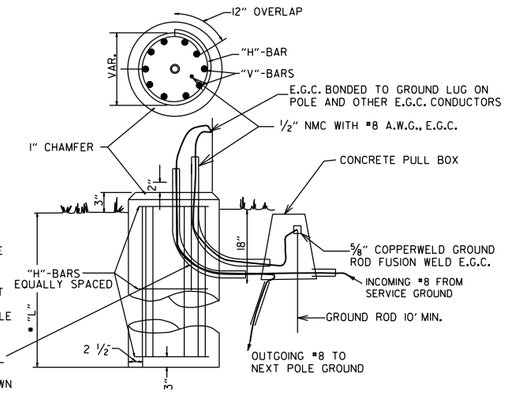
NOTE:

COMMUNICATION CABLE SHIELD SHALL BE TIED TO THE GROUND AT ONE ONE POINT (MASTER CABINET). THE SHIELD SHALL BE MAINTAINED CONTINUOUS (THROUGH ALL SPLICES). PLEASE REFER TO TESTING PROCEDURES IN SPECIAL PROVISIONS.



ANCHOR BASE





TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING.

POLE HEIGHT	FOUNDATION DIAMETER	DEPTH "L"	VERTICAL	HORIZONTAL	TIE SPACING
20.0'	30"	5'-6"	12-#7	#4	5 SP @ 12"
25.0'	30"	6'-0"	12-#7	#4	6 SP @ 11"
30.0'	30"	6'-6"	12-#7	#4	6 SP @ 12"
35.0'	30"	7'-0"	12-#7	#4	7 SP @ 11"
40.0'	30"	7'-6"	12-#7	#4	7 SP @ 12"
45.0'	36"	8'-6"	13-#8	#4	8 SP @ 12"
50.0'	36"	9'-6"	13-#8	#4	9 SP @ 12"
55.0'	36"	10'-0"	13-#8	#4	10 SP @ 11"
60.0'	36"	10'-6"	13-#8	#4	10 SP @ 12"
65.0'	36"	11'-0"	13-#8	#4	12 SP @ 10 ½"
70.0'	36"	11'-6"	13-#8	#4	11 SP @ 12"
75.0'	42"	13'-0"	18-#8	#4	14 SP @ 10 ½"
80.0'	42"	13'-6"	18-#8	#4	13 SP @ 12"
85.0'	42"	14'-6"	18-#8	#4	14 SP @ 12"
90.0'	42"	15'-0"	18-#8	#4	18 SP @ 9 ½"

ALL CONCRETE SHALL BE CLASS "S" WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'C=3500 PSI. CONCRETE SHALL BE POURED IN THE DRY AND ALL EXPOSED CORNERS CHAMFERED ¾" UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 40 (YIELD STRENGTH=40,000 PSI).

PROVIDE 3" CLEAR TIES. DETAIL 3" TO FIRST TIE AT TOP OF SHAFT.

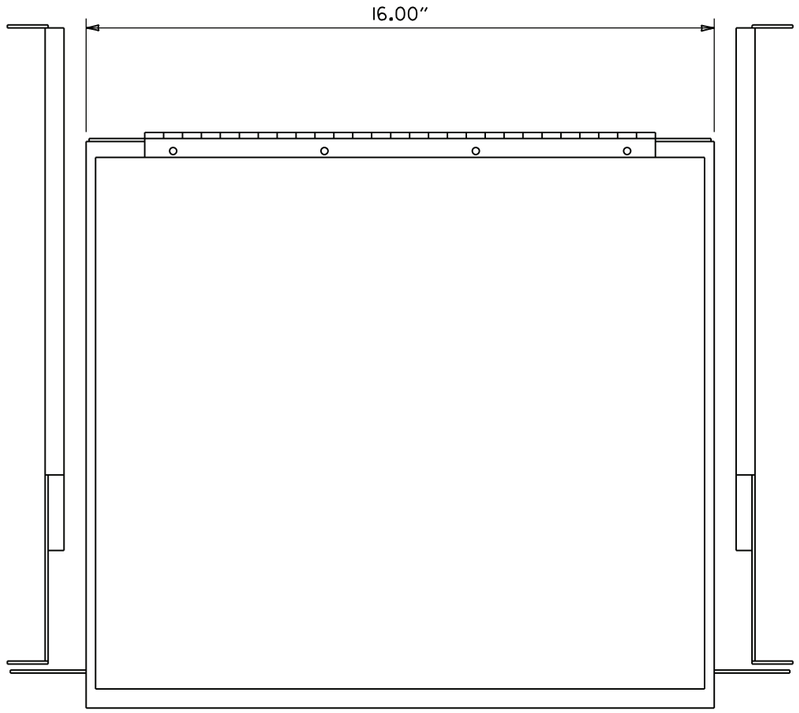
DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
04-18-08	REVISED AASHTO NOTES	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
09-06-00	ISSUED	

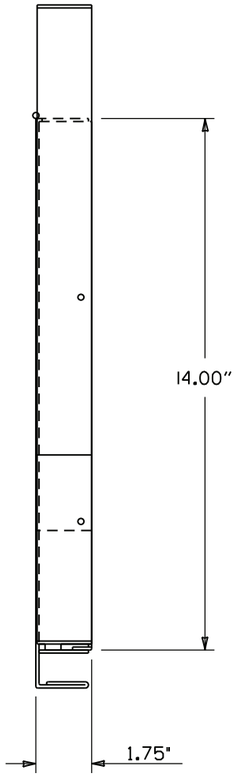
ARKANSAS STATE HIGHWAY COMMISSION

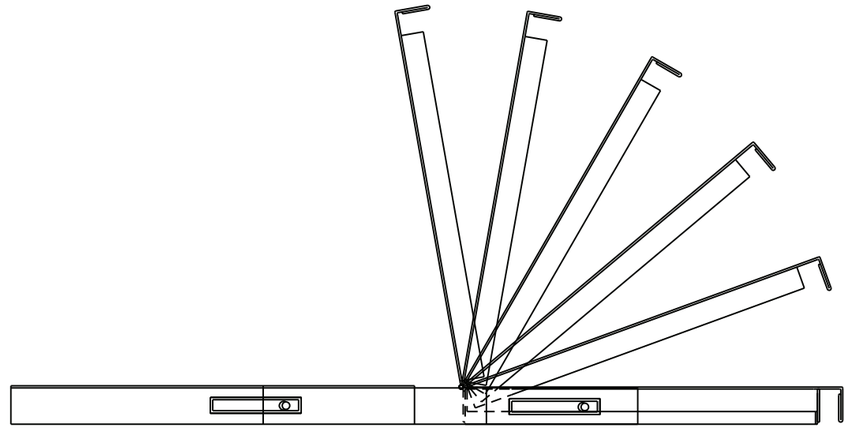
ANTENNA POLE

STANDARD DRAWING SD-1

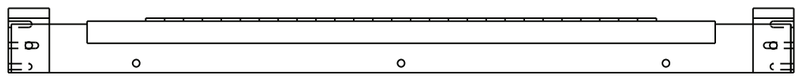
DRAWER PLAN VIEW



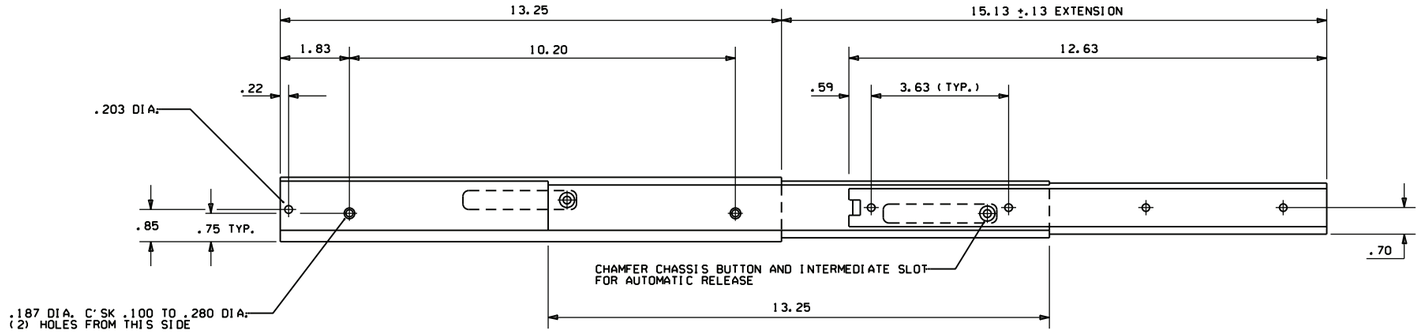




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

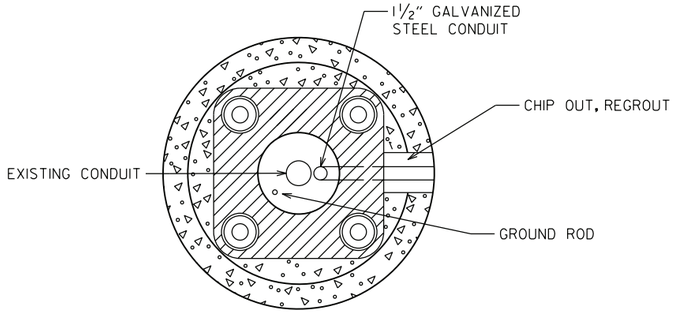
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
6-15-05	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

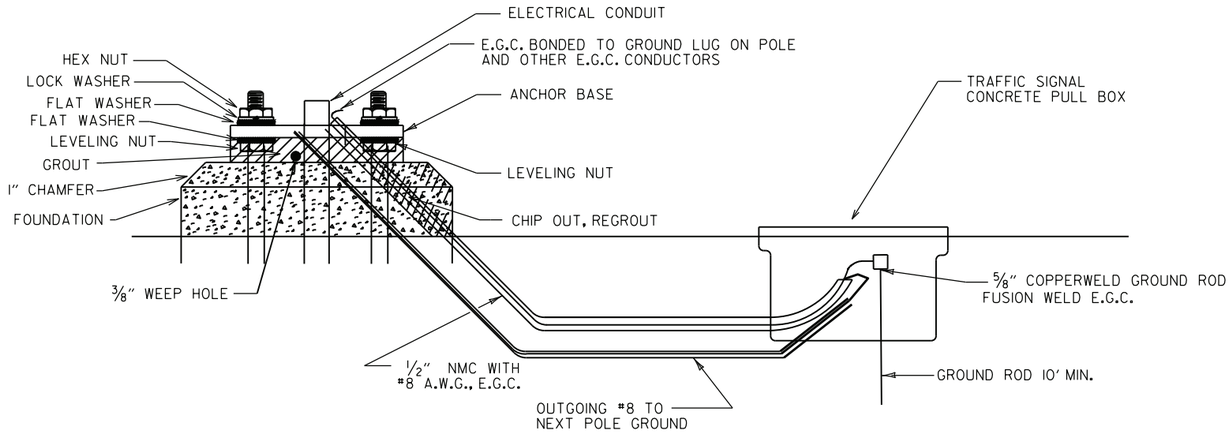
CONTROLLER CABINET UTILITY DRAWER

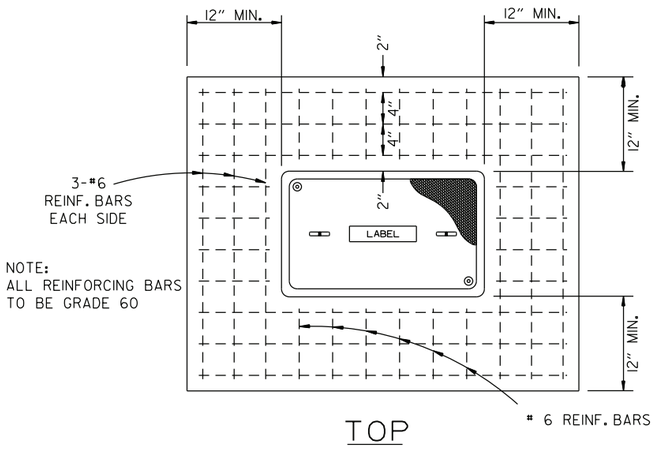
STANDARD DRAWING SD-5

CONDUIT ENTRY TO EXISTING POLE BASE

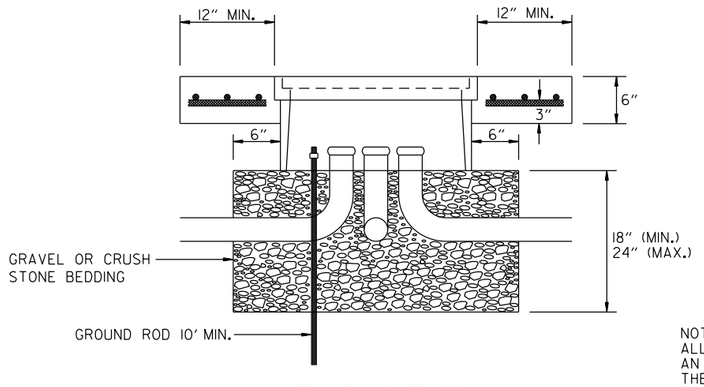


ANCHOR BASE



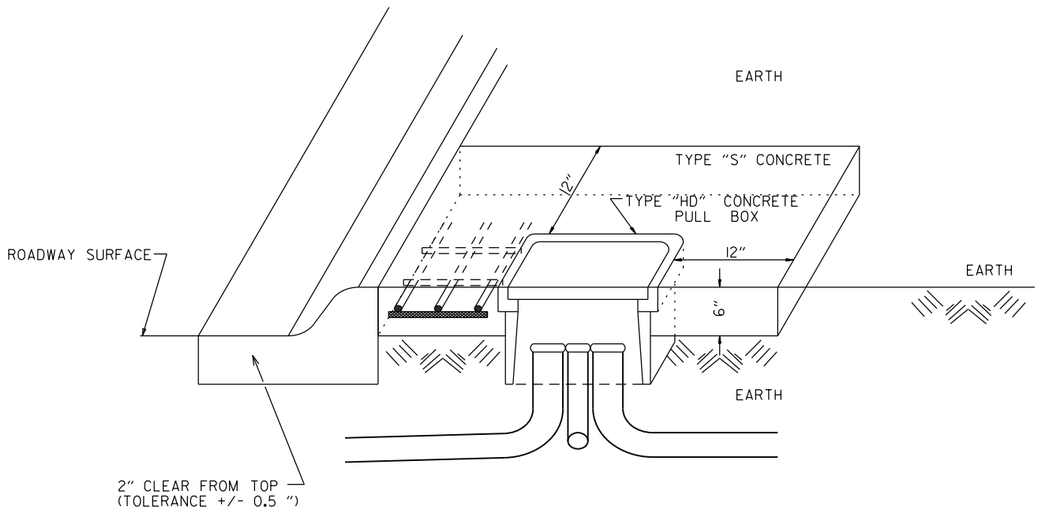


TOP



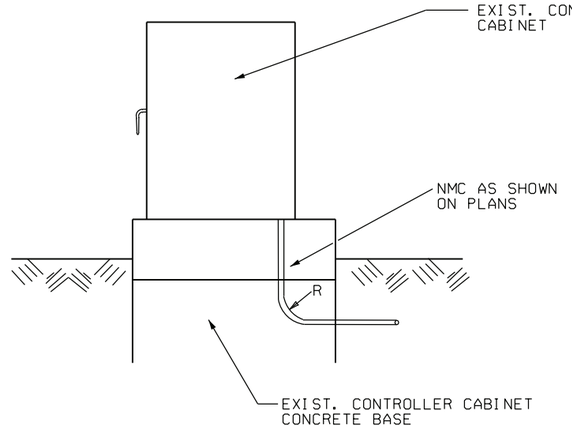
ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



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.

CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



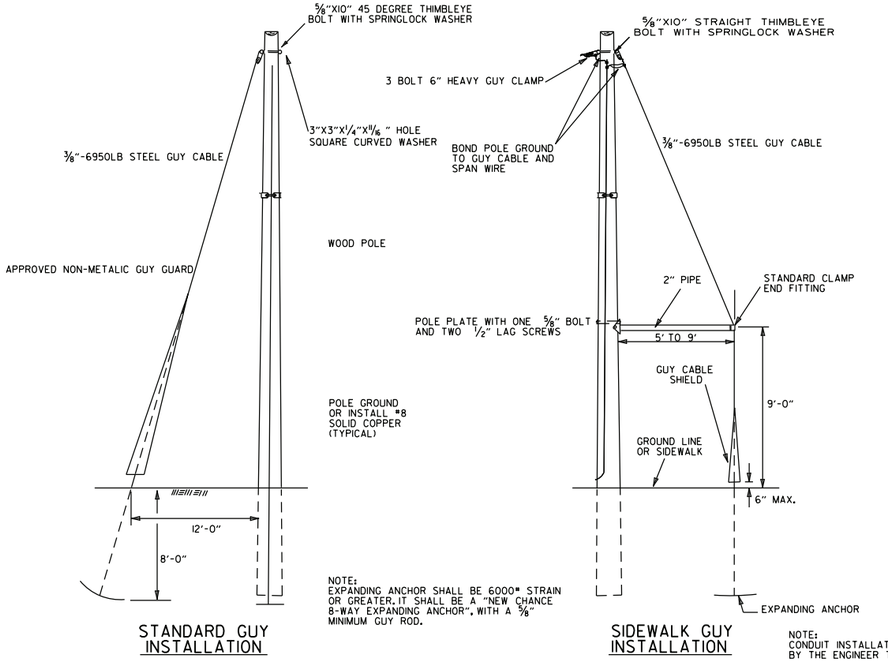
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

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

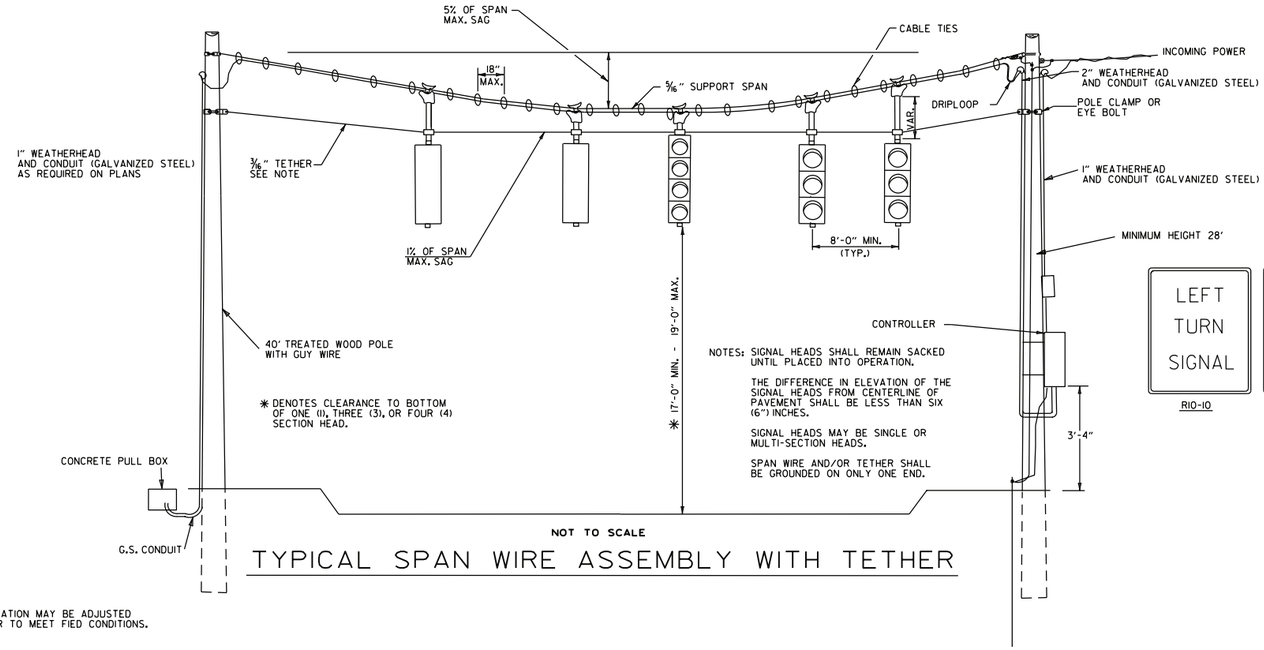


STANDARD GUY INSTALLATION

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.

SIDEWALK GUY INSTALLATION

NOTE:
CONDUIT INSTALLATION MAY BE ADJUSTED BY THE ENGINEER TO MEET FIED CONDITIONS.



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.

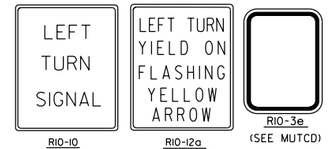
SIGNAL HEADS MAY BE SINGLE OR MULTI-SECTION HEADS.

SPAN WIRE AND/OR TETHER SHALL BE GROUNDED ON ONLY ONE END.

* DENOTES CLEARANCE TO BOTTOM OF ONE (1), THREE (3), OR FOUR (4) SECTION HEAD.

NOT TO SCALE

TYPICAL SPAN WIRE ASSEMBLY WITH TETHER

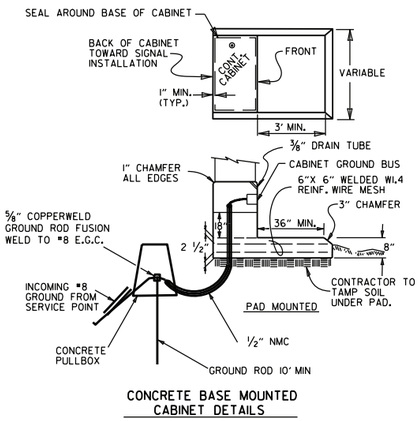


NOTES:
SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

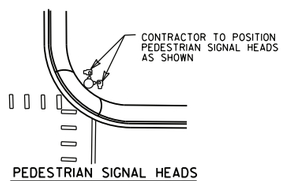
THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE FOUNDATION GROUND ROD WITH A #8 A.W.G. SOLID COPPER WIRE. ON EXISTING FOUNDATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X 5/8" COPPERWELD GROUND ROD.



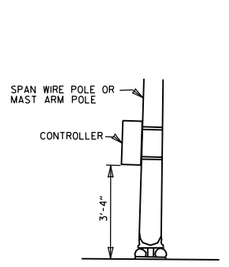
CONCRETE BASE MOUNTED CABINET DETAILS

CABINET NOTE:

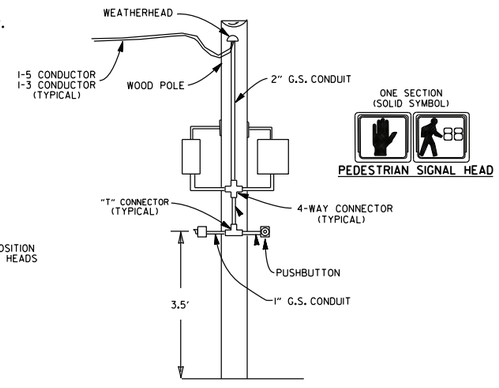
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.



PEDESTRIAN SIGNAL HEADS



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED



PEDESTRIAN SIGNAL HEAD

WOODEN POLE INSTALLATION OF PED HEADS

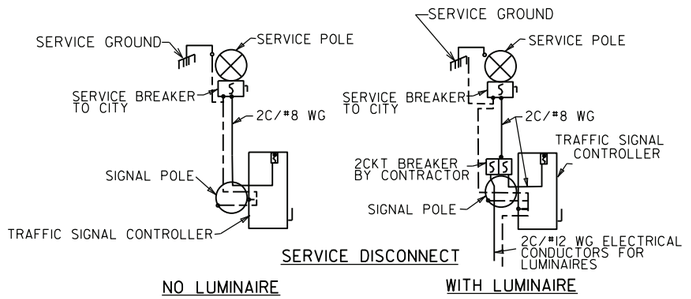
MINIMUM STRUCTURAL REQUIREMENTS:

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.



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.

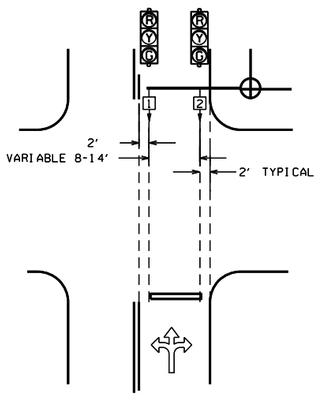
DATE	REVISION	FILMED
02-13-24	REVISED SPECIAL SIGN TO R10-12a SIGN	
11-16-17	REVISED NOTES, ADDED SPAN WIRE SUPPORT POLE DETAIL, ADDED PEDESTRIAN SIGNAL HEAD DETAIL	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
07-21-11	REVISED PEDESTRIAN SIGN & GROUNDING	
04-17-08	REVISED TO 2001 AASHTO 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	

ARKANSAS STATE HIGHWAY COMMISSION

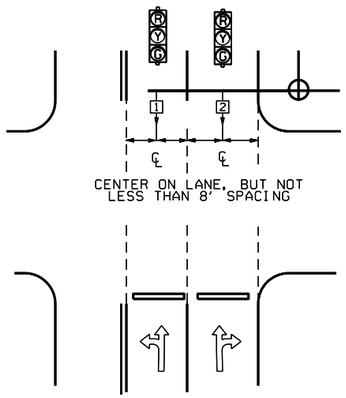
SPAN WIRE ASSEMBLY WOOD POLE

STANDARD DRAWING SD-7

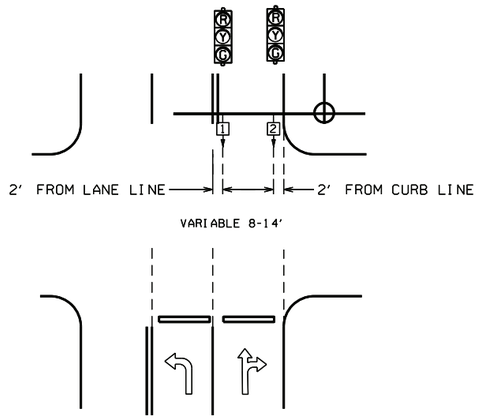
(A)



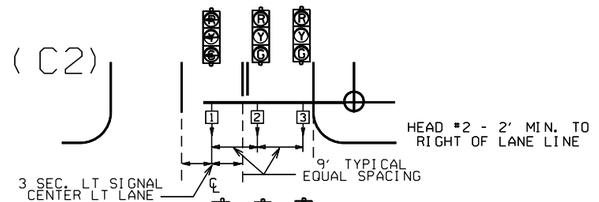
(B)



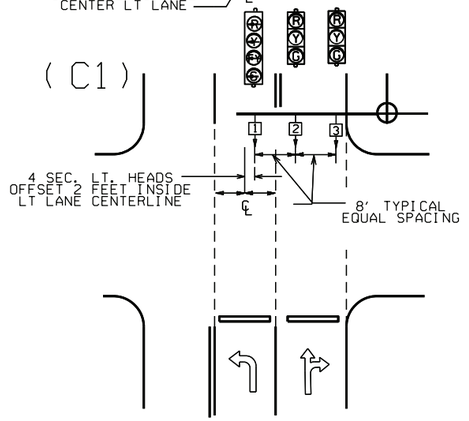
(C)



(C2)



(C1)



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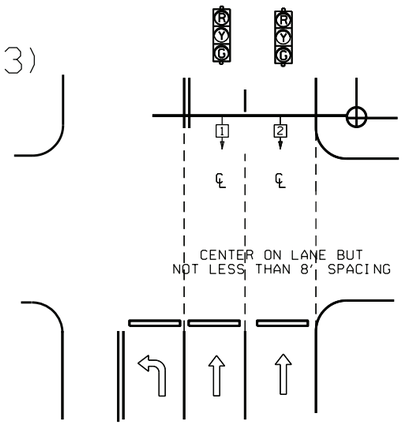

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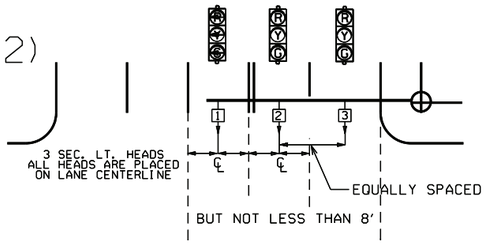
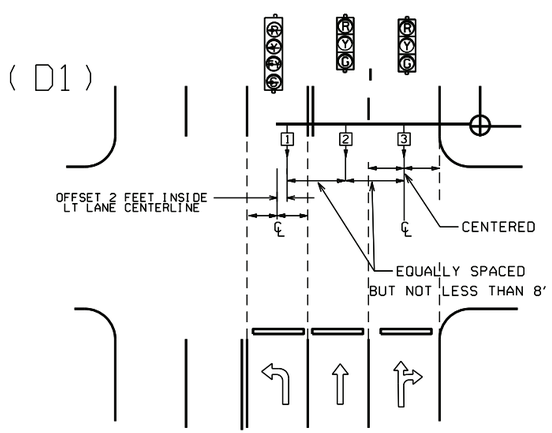
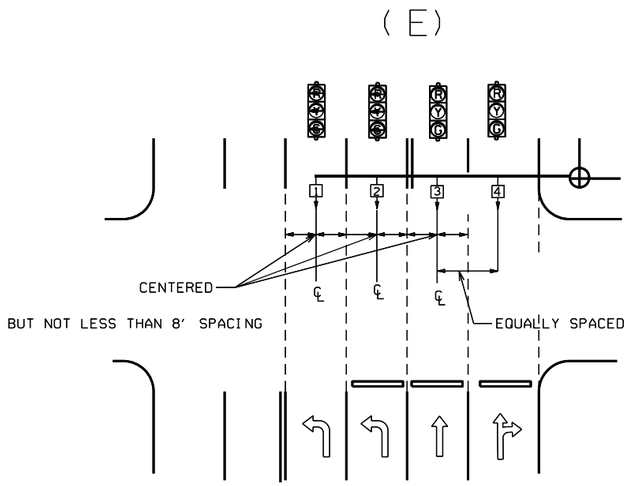


(D1)



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.

(E)



℄ = 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.

12-8-16	REVISED NOTE 6	
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	
DATE	REVISION	DATE FILM

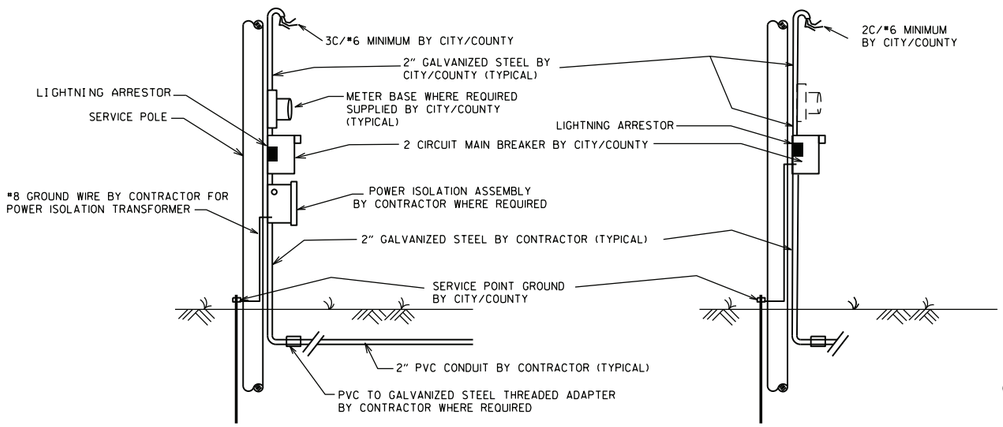
ARKANSAS STATE HIGHWAY COMMISSION

SIGNAL HEAD PLACEMENT

STANDARD DRAWING SD-8

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY



WITHOUT POWER ISOLATION ASSEMBLY

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.

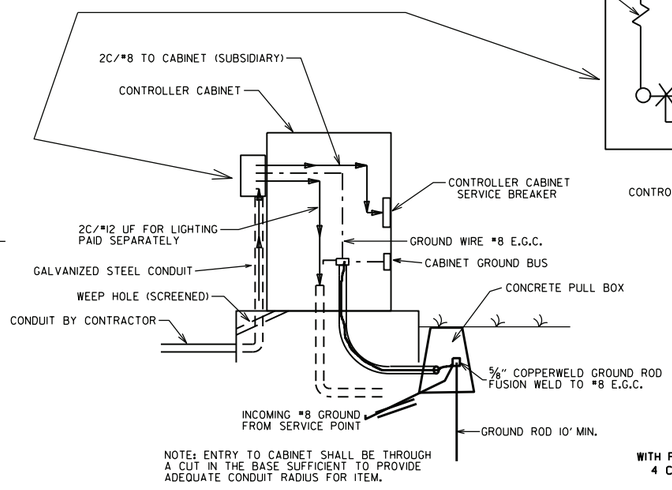
ALL SITUATIONS:
ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, 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.

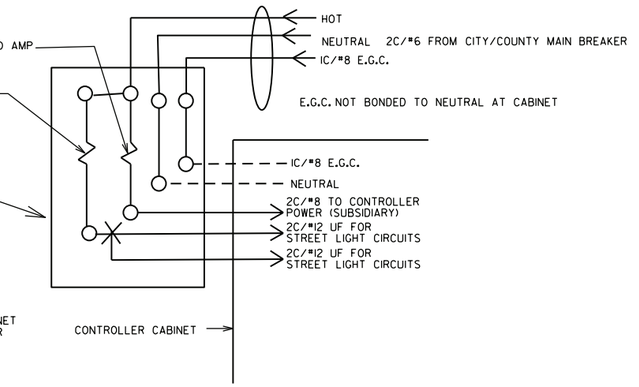
MAIN BREAKER NEAR CONTROLLER CABINET:
ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

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.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



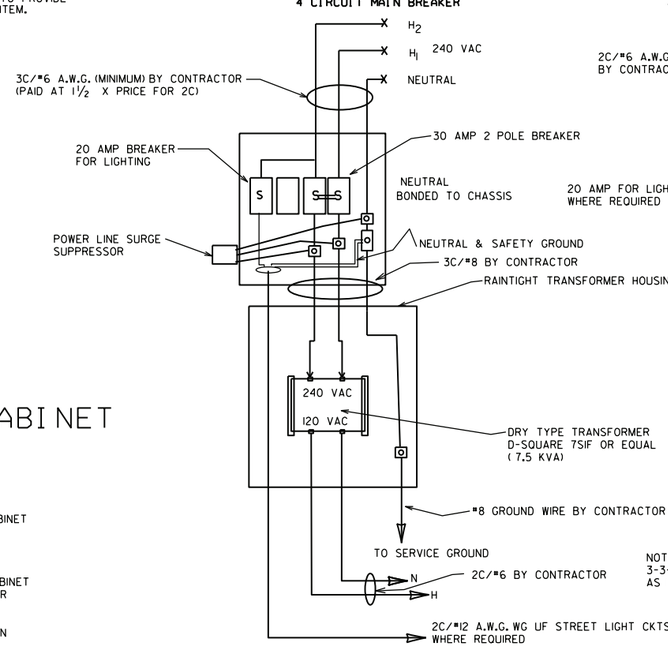
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



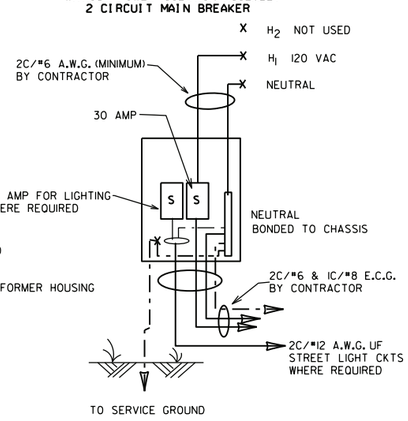
MAIN BREAKER WIRING (TYPICAL)

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.

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

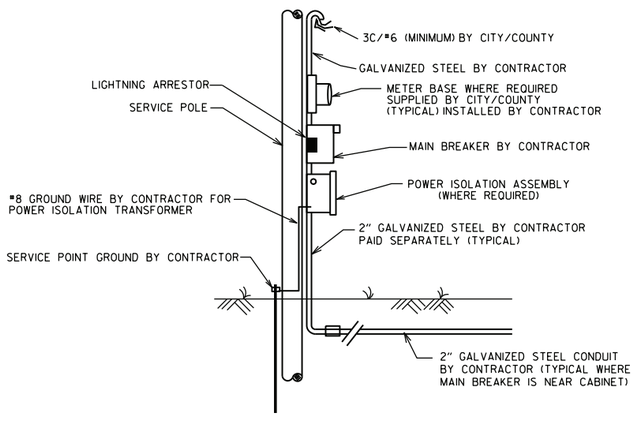


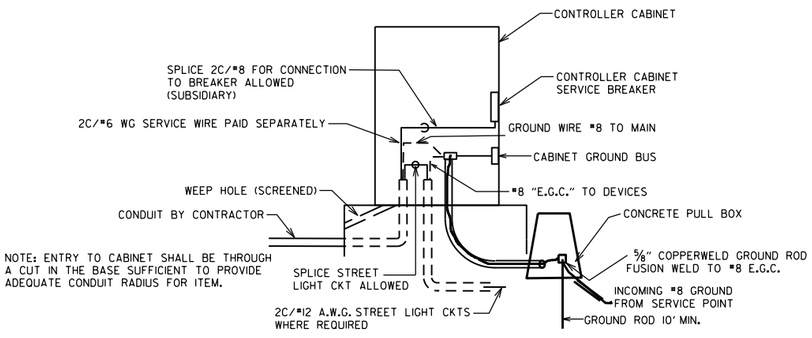
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



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 (RIO-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 (RIO-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 RIO-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 ½" 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.

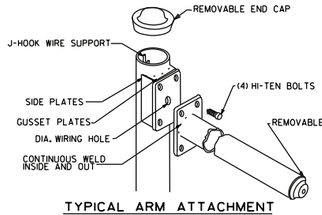
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

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).

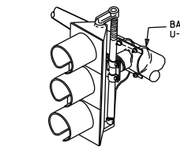
6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.125 TO 0.15 INCHES PER FOOT.

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.

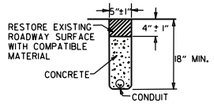
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



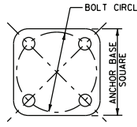
TYPICAL ARM ATTACHMENT



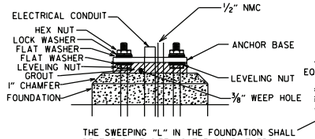
NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.

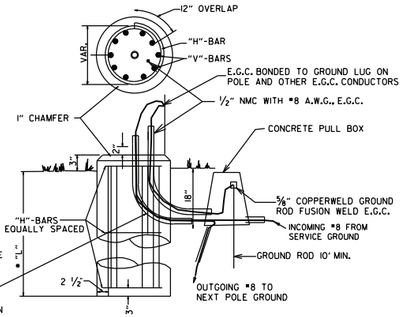


TRENCHING DETAIL
(FOR SAW CUT TRENCH IN ROADWAY)



ANCHOR BASE





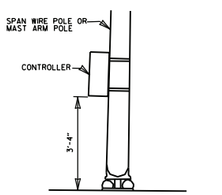
THE SWEEPING "L" IN THE FOUNDATION SHALL BE THE SAME SIZE AS THE CONDUIT FROM THE FOUNDATION TO THE PULL BOX AS SHOWN ON THE PLANS.

THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#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.

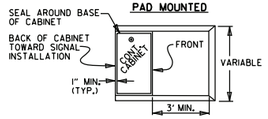
TYPICAL FOUNDATION DETAILS

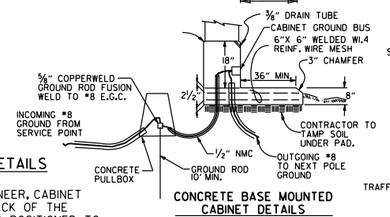
POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FOUNDATION DIAMETER	DEPTH "L"*	STEEL		
			VERTICAL	HORIZONTAL	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

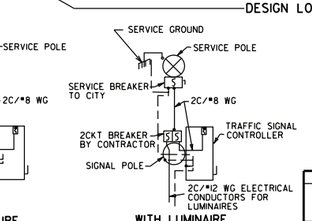
NOTE:
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X ⅝" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" 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 ¼" 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.

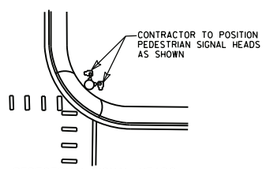


NO LUMINAIRE

WITH LUMINAIRE

SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES



PEDESTRIAN SIGNAL HEADS

* 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.

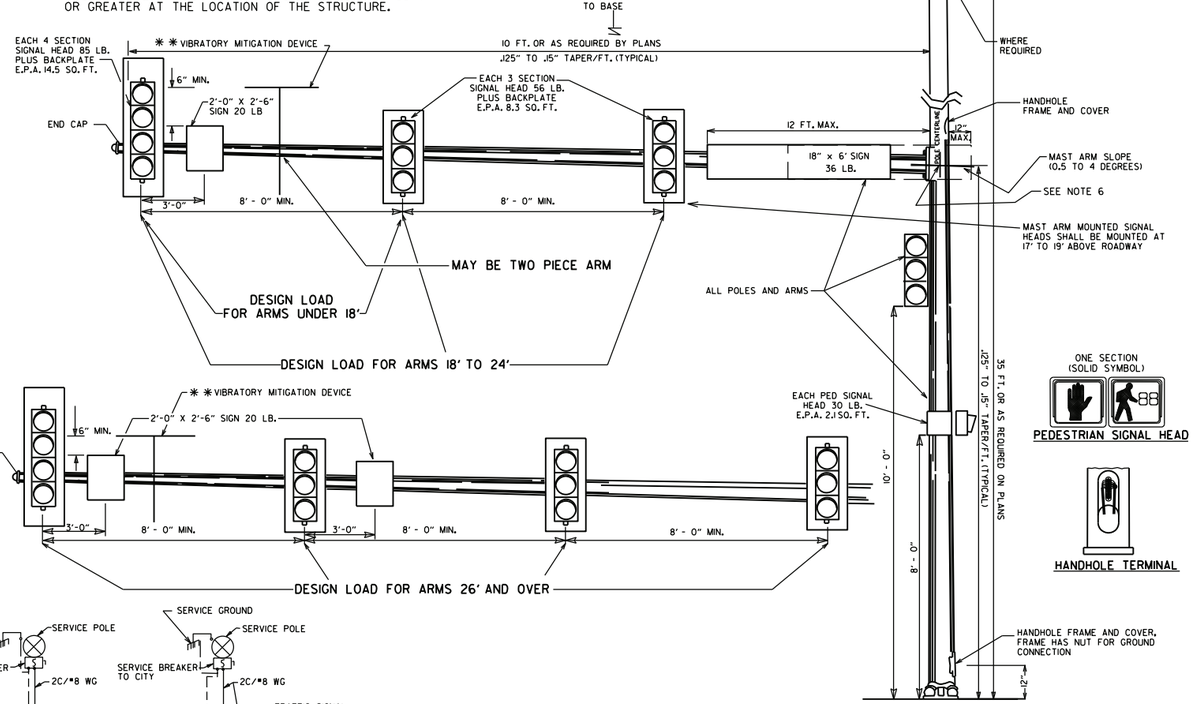
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.

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.



DATE	REVISION	FILMED
02-13-24	REVISED SPECIAL SIGN TO RIO-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 (4% MAXIMUM)

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE
0° 15'	NC		
0° 30'			
0° 45'			
1° 00'			
1° 15'			
1° 30'			
1° 45'			
2° 00'			
2° 15'	RC	72	100
2° 30'			
2° 45'			
3° 00'			
3° 15'	0.022	75	
3° 30'			
3° 45'	0.024	79	
4° 00'			
4° 15'			
4° 30'			
4° 45'	0.026	83	
5° 00'			
5° 30'			
6° 00'	0.028	86	125
6° 30'			
7° 00'			
7° 30'	0.030	90	
8° 00'			
8° 30'	0.032	93	
9° 00'			
9° 30'			
10° 00'	0.034	97	
10° 30'			
11° 00'			
11° 30'			
12° 00'	0.036	100	
12° 30'			
13° 00'			
13° 30'			
14° 00'	0.038	104	
14° 30'			
15° 00'			
15° 30'			
16° 00'			
16° 30'	0.040	108	150

D MAX = 22° 45'

DEGREE OF CURVE	35 MPH e	35 MPH Ls (FT) MINIMUM	35 MPH Ls (FT) DESIRABLE
0° 15'	NC		
0° 30'			
0° 45'			
1° 00'			
1° 15'			
1° 30'			
1° 45'	RC	78	100
2° 00'			
2° 15'			
2° 30'	0.022	82	
2° 45'	0.024	86	
3° 00'			
3° 15'			
3° 30'	0.026	90	
3° 45'			
4° 00'			
4° 15'	0.028	94	125
4° 30'			
4° 45'			
5° 00'	0.030	98	
5° 30'			
6° 00'	0.032	101	
6° 30'			
7° 00'	0.034	105	
7° 30'			
8° 00'			
8° 30'	0.036	109	
9° 00'			150
9° 30'			
10° 00'	0.038	113	
10° 30'			
11° 00'			
11° 30'	0.040	117	

D MAX = 15° 15'

DEGREE OF CURVE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE
0° 15'	NC		
0° 30'			
0° 45'			
1° 00'			
1° 15'	RC	84	100
1° 30'			
1° 45'			
2° 00'	0.022	88	
2° 15'	0.024	92	
2° 30'	0.026	97	
2° 45'			
3° 00'	0.028	101	125
3° 15'			
3° 30'			
3° 45'	0.030	105	
4° 00'			
4° 15'	0.032	109	
4° 30'			
4° 45'			
5° 00'	0.034	113	
5° 30'			150
6° 00'	0.036	118	
6° 30'			
7° 00'	0.038	122	
7° 30'			
8° 00'	0.040	126	

D MAX = 10° 30'

DEGREE OF CURVE	45 MPH e	45 MPH Ls (FT) MINIMUM	45 MPH Ls (FT) DESIRABLE
0° 15'	NC		
0° 30'			
0° 45'			
1° 00'	RC	90	125
1° 15'			
1° 30'	0.022	95	
1° 45'	0.024	99	
2° 00'	0.026	104	
2° 15'			
2° 30'	0.028	108	150
2° 45'	0.030	113	
3° 00'			
3° 15'	0.032	117	
3° 30'			
3° 45'	0.034	122	
4° 00'			
4° 15'	0.036	126	
4° 30'			
4° 45'			
5° 00'	0.038	131	
5° 30'			
6° 00'	0.040	135	

D MAX = 8° 00'

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.)

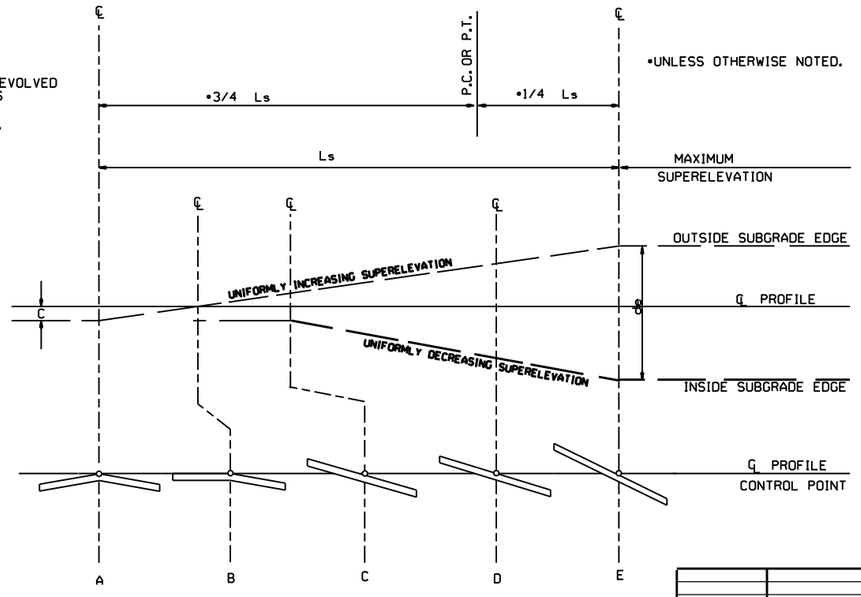
GENERAL NOTES

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:

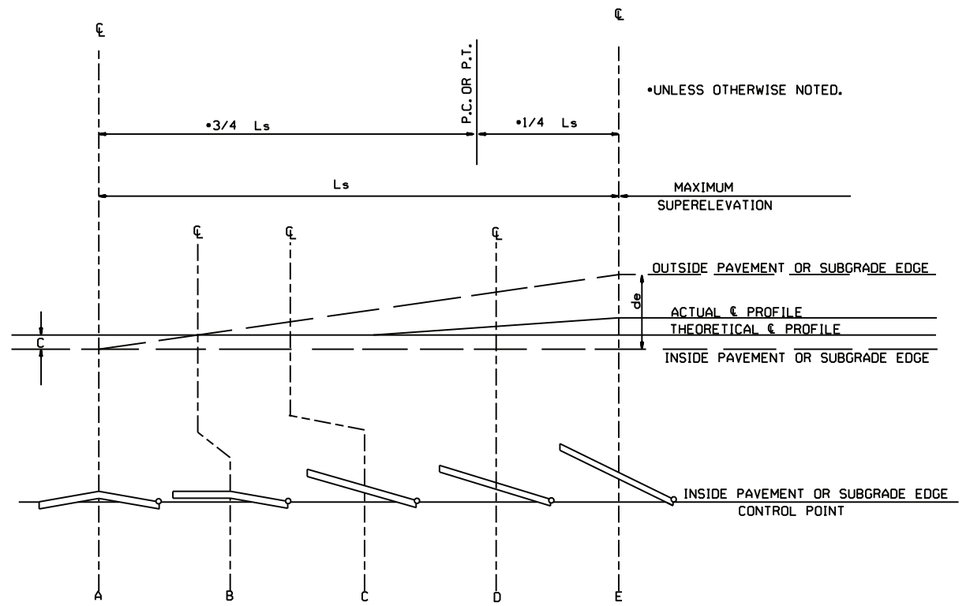
3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

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

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



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.

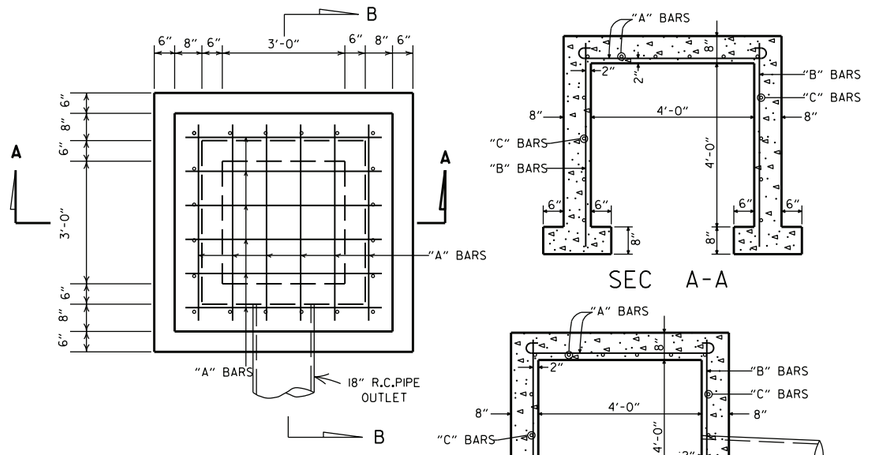
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

11-07-19	ISSUED	
DATE	REVISION	DATE FILMED

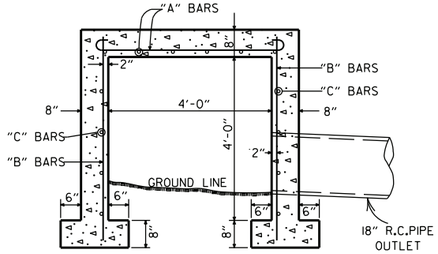
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC (4% MAXIMUM)

STANDARD DRAWING SE-3



SEC A-A



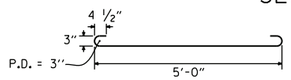
SEC B-B

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

STEEL SCHEDULE

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

ALL STEEL TO BE #4 BARS



"A" BARS

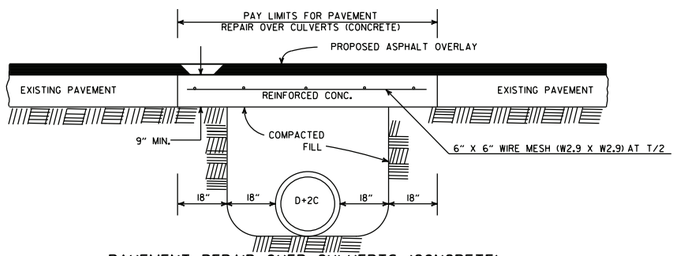
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

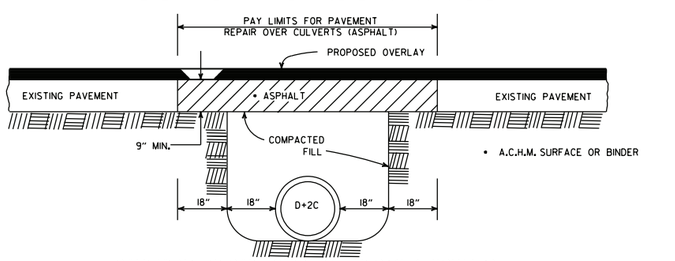
GENERAL NOTE:

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



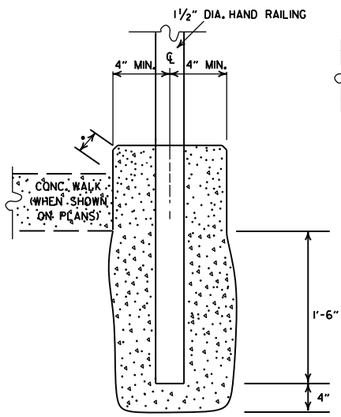
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



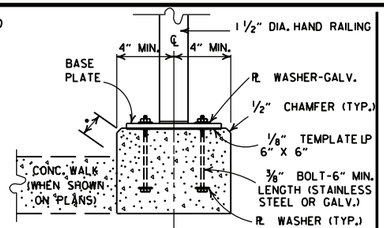
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

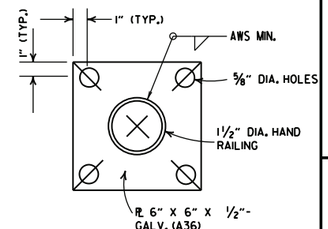
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

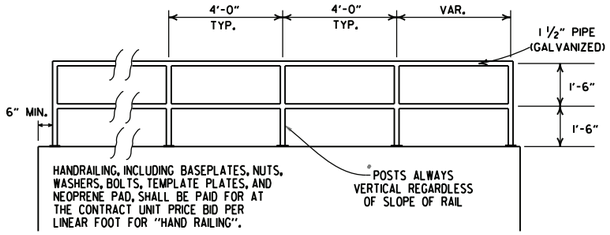


POST CONNECTION TO WALL

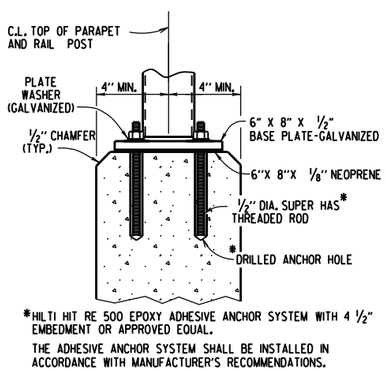


BASE PLATE

POST CONNECTION DETAILS



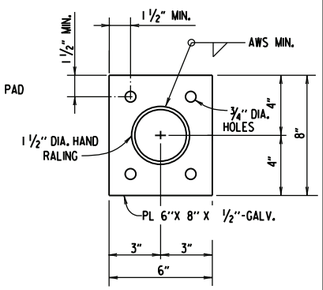
HAND RAILING SHALL CONFORM TO SECTION 633.



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

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

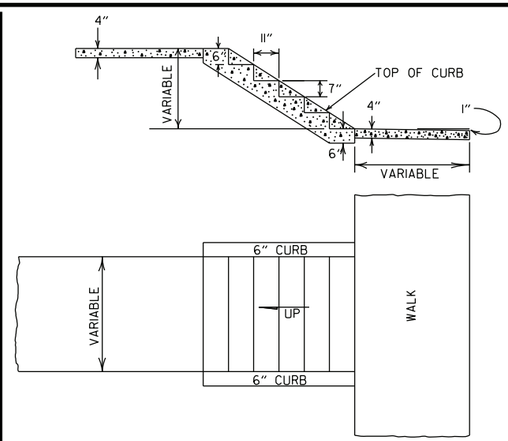
POST CONNECTION TO WALL



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.

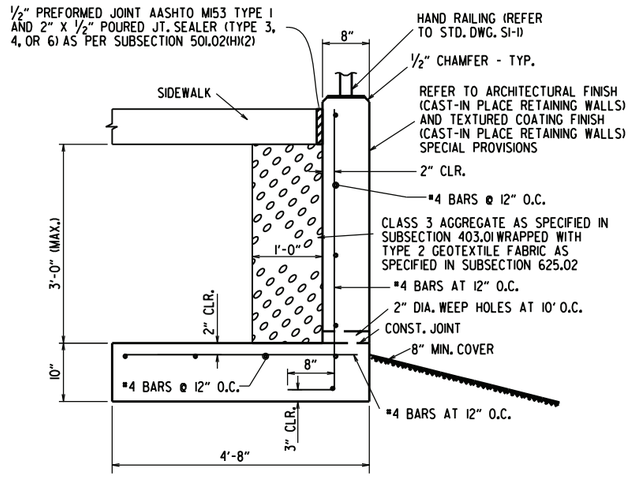
DETAILS OF CONCRETE STEPS & WALKS

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	
4-26-94	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

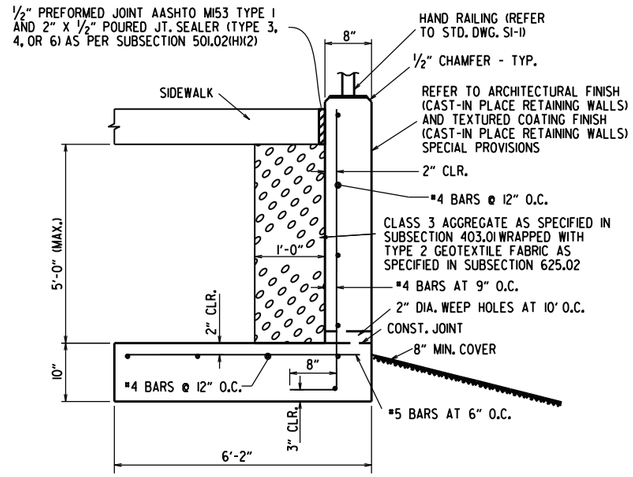
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1



CONCRETE WALK (TYPE SPECIAL) DETAIL MAX HEIGHT 3'-0"

N.T.S.



CONCRETE WALK (TYPE SPECIAL) DETAIL MAX HEIGHT 5'-0"

N.T.S.

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.

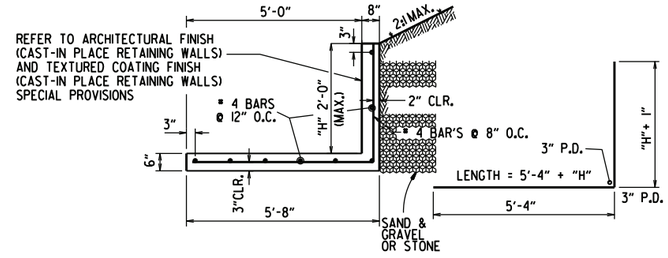
REINFORCING STEEL: ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 60.

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, PREFORMED JOINT FILLER, WEEP HOLES, CLASS 3 AGGREGATE, REINF. STEEL, CONCRETE, & GEOTEXTILE FABRIC SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO CONCRETE WALKS (TYPE SPECIAL).

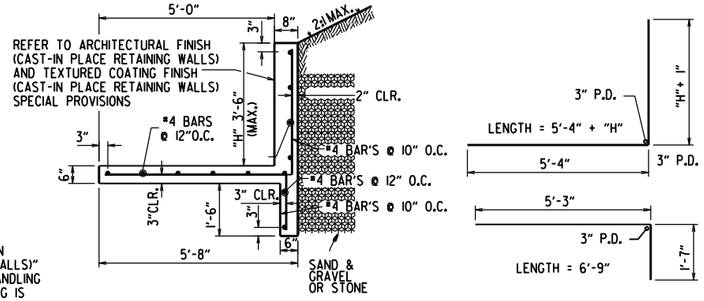
JOINTS IN THE WALL SHALL MATCH TYPE AND SPACING OF THE JOINTS IN THE WALK.

THESE DETAILS ARE NOT INTENDED FOR USE ALONG STREAMS OR DITCHES WITHOUT CONSIDERATION FOR SCOUR.



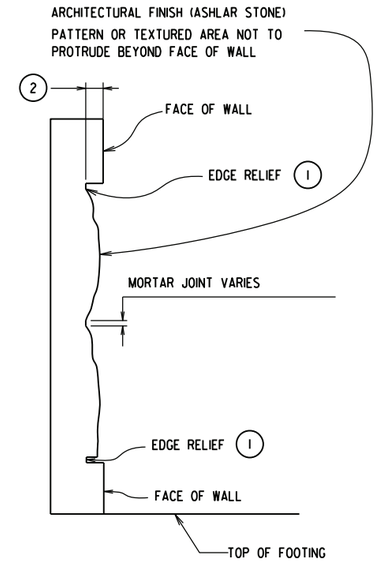
CONCRETE WALK (TYPE SPECIAL) DETAILS MAX HEIGHT 2'-0"

N.T.S.



CONCRETE WALK (TYPE SPECIAL) DETAILS MAX HEIGHT 3'-6"

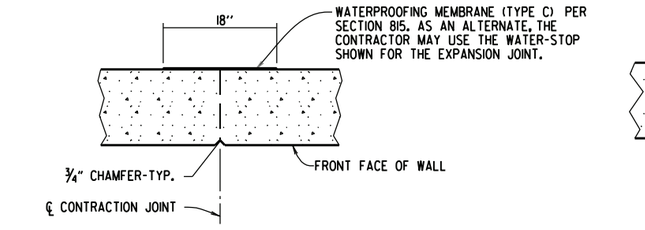
N.T.S.



ARCHITECTURAL FINISH DETAILS

N.T.S.

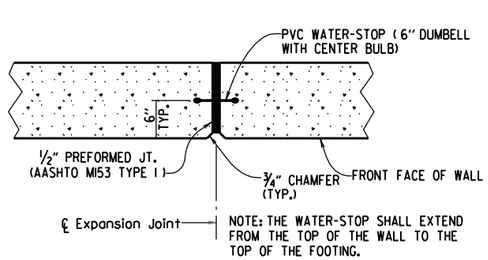
1. PROVIDE EDGE RELIEF AROUND PERIMETER OF TEXTURE. EDGE RELIEF DIMENSIONS SHALL MATCH MANUFACTURERS EDGE DISTANCE.
2. DEPTH OF ASHLAR STONE PATTERN APPROX. 1⅝". SEE SP "ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)".



TYPICAL CONTRACTION JOINT DETAIL

N.T.S.

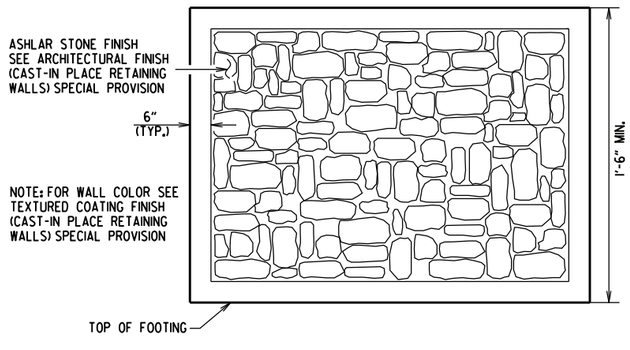
NOTE: 20'-0" MAX. SPACING BETWEEN CONTRACTION JOINTS. HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONTRACTION JOINTS.



TYPICAL EXPANSION JOINT DETAIL

N.T.S.

NOTE: 60'-0" MAX. SPACING BETWEEN EXPANSION JOINTS. HORIZONTAL REINFORCING SHALL STOP 2" FROM ℄ EXPANSION JOINT.



ASHLAR STONE FINISH DETAIL

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).

DATE	REVISION	DATE FILMED
11-05-20	REVISED GENERAL NOTES	
5-14-20	DRAWING ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

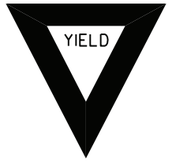
CONCRETE WALK (TYPE SPECIAL)

STANDARD DRAWING SI - 3

R1-1

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

R1-2



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

R2-1

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

W3-5

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

W3-5a

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

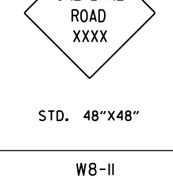
R4-1

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

R4-2

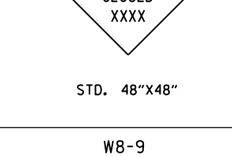
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



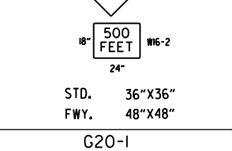
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



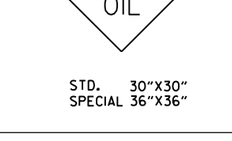
48"X30"

RII-3A



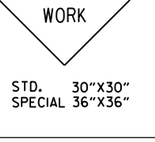
60"X30"

RII-4



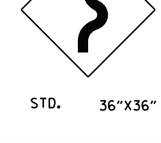
60"X30"

W21-5a



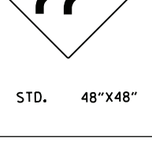
STD. 36"X36"
FWY. 48"X48"

WI-1



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

WI-2

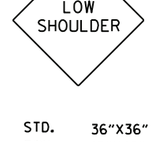


STD. 36"X36"
FWY. 48"X48"

WI-3

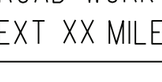
STD. 48"X48"

WI-4



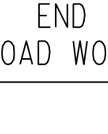
STD. 48"X48"

WI-6



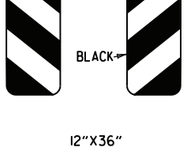
STD. 48"X24"
SPECIAL 60"X30"

WI-8



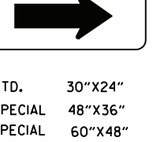
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2

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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

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

W8-9

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

G20-1

60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

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

M4-10

48"X18"

R55-1

36"X60"

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

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

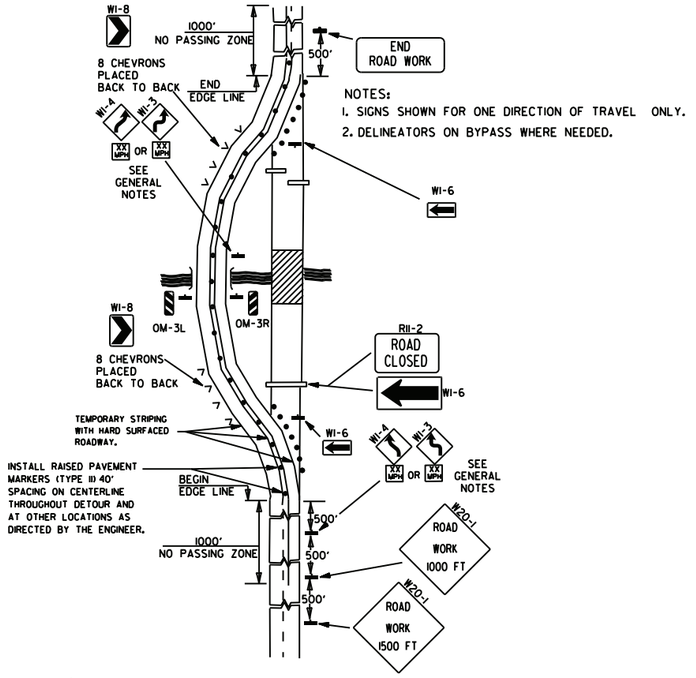
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

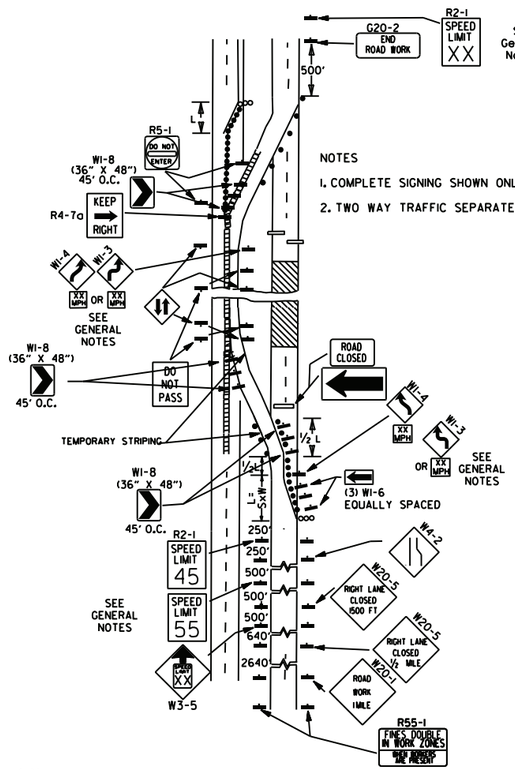
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



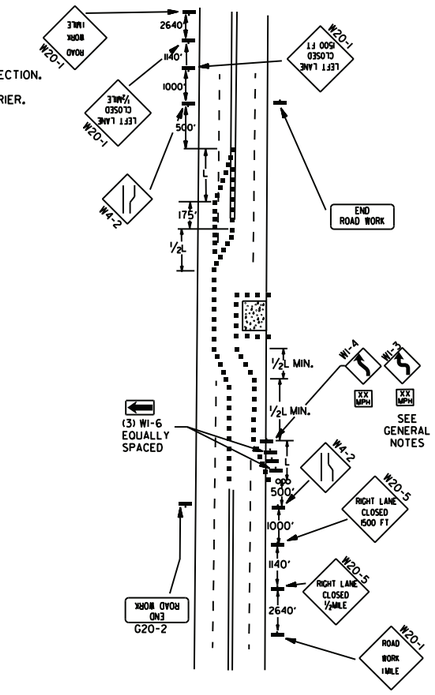
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

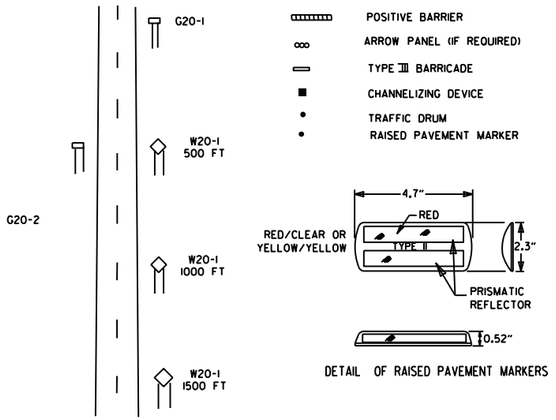


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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:

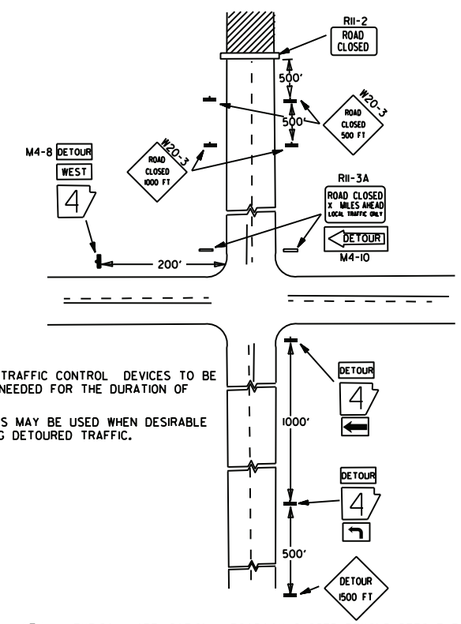
L= MINIMUM LENGTH OF TAPER.

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

W= WIDTH OF OFFSET.

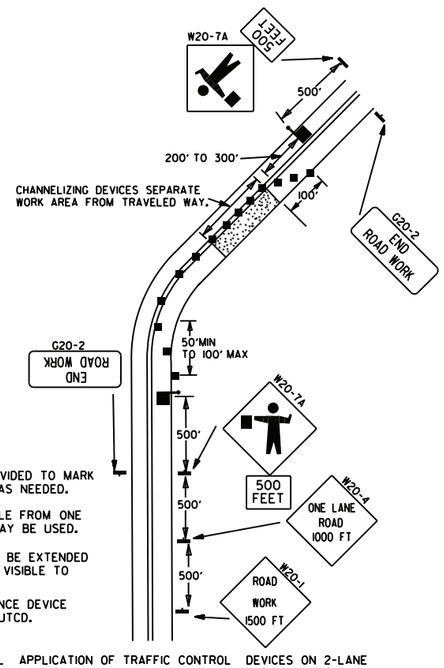
GENERAL NOTES:

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 WI-3 OR WI-4 CURVE WARNING SIGNS. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE 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).



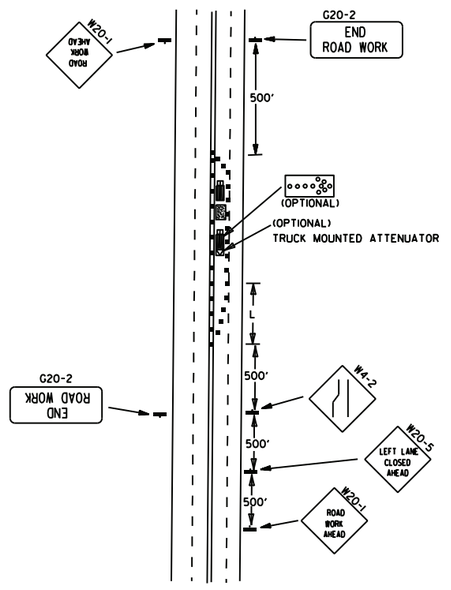
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



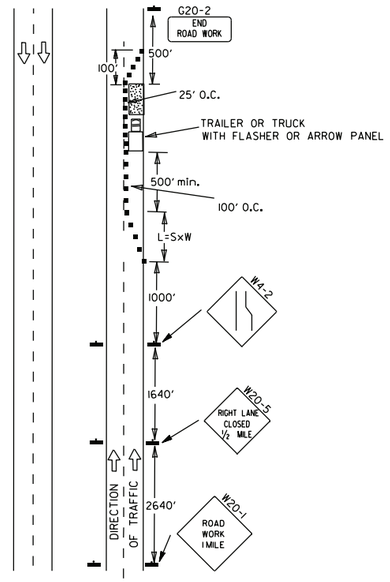
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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	

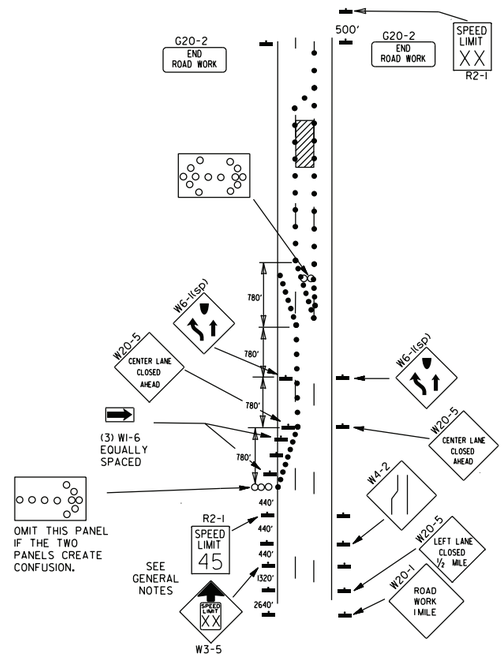
ARKANSAS STATE HIGHWAY COMMISSION

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.



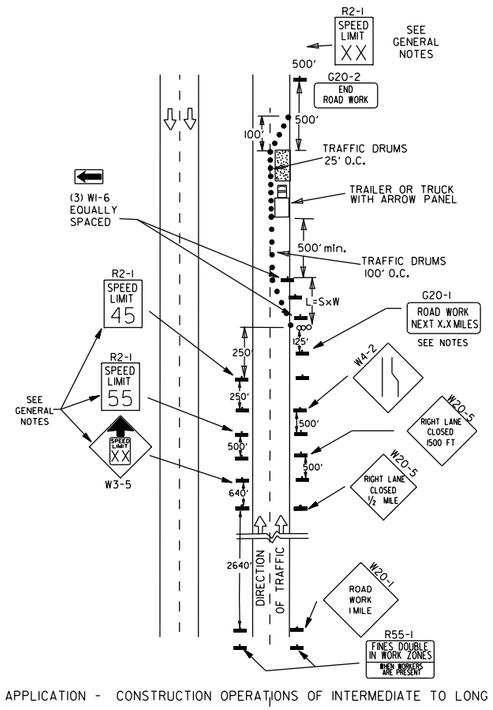
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

- ARROW PANEL (IF REQUIRED)
- ■ CHANNELIZING DEVICE
- ● TRAFFIC DRUM

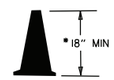
GENERAL NOTES:

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 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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).



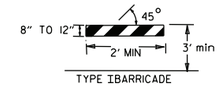
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES



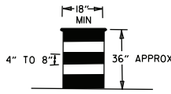
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

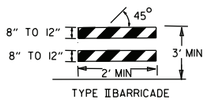
CONES



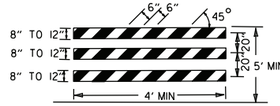
TYPE IBARRICADE

PLASTIC DRUM



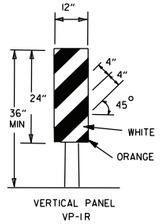


TYPE IIBARRICADE



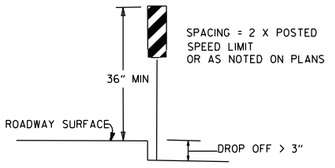
TYPE IIIBARRICADE

NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.

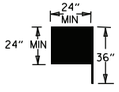


VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

TRAFFIC CONTROL DEVICES

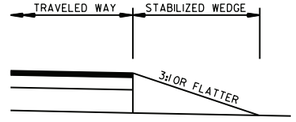
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	EDGE OF TRAVELED LANE OR 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:

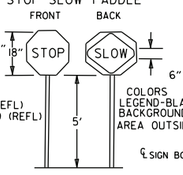
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL 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).

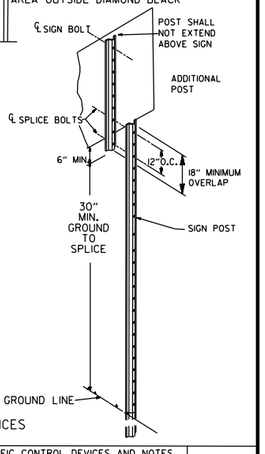


STABILIZED WEDGE

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

STOP SLOW PADDLE

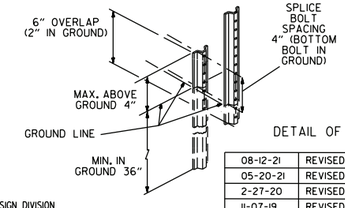




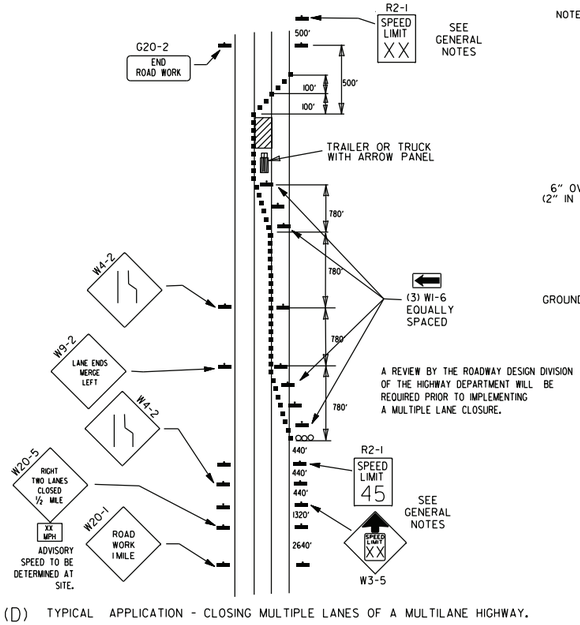
NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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	

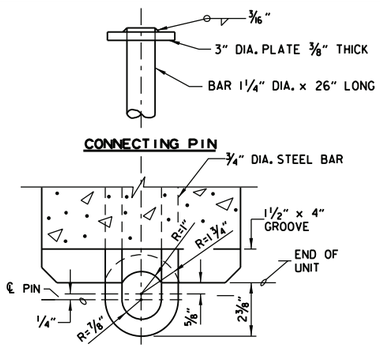
ARKANSAS STATE HIGHWAY COMMISSION

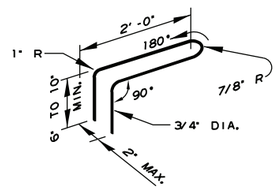
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

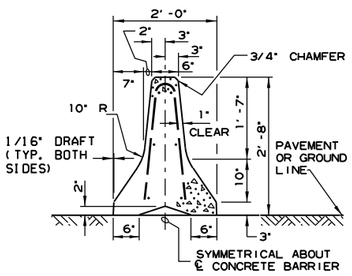
STANDARD DRAWING TC-3

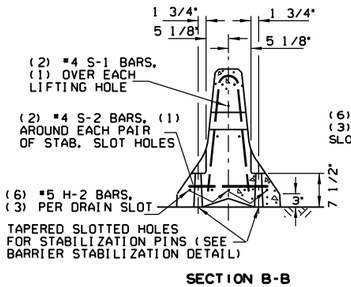
REINFORCING BAR TABLE PER BARRIER UNIT

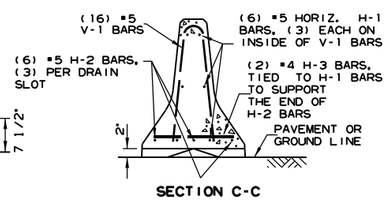
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ.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

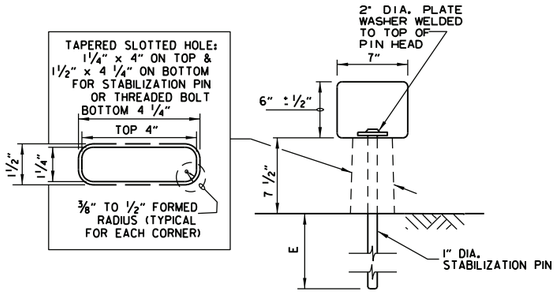




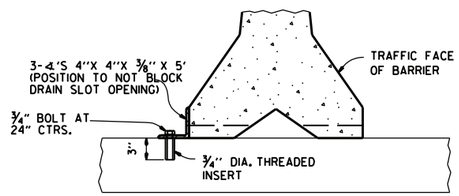






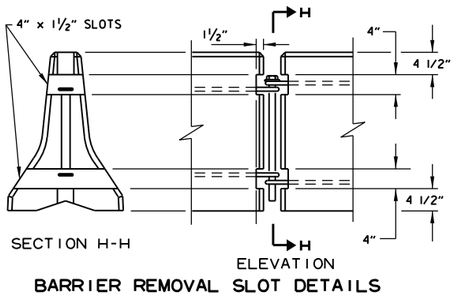


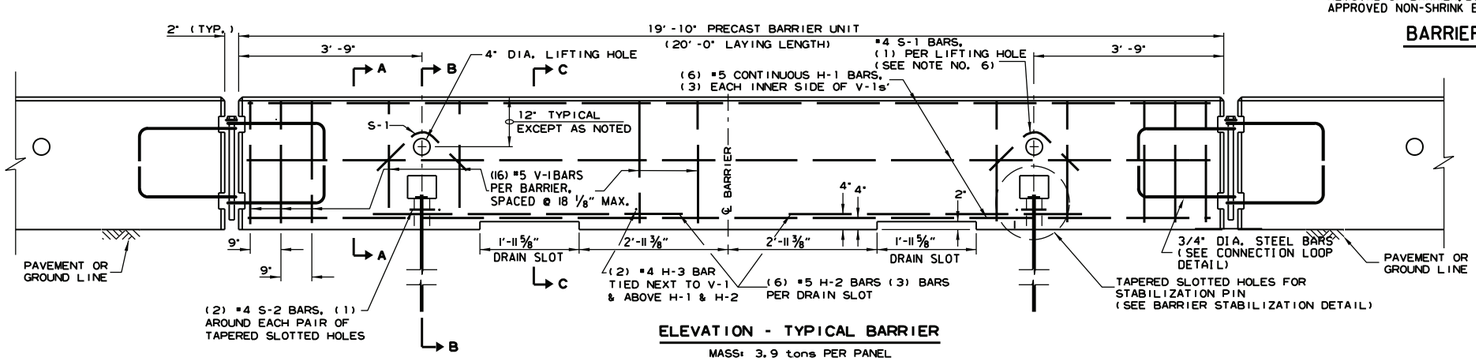
(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL
BRIDGE DECKS





MASS: 3.9 tons PER PANEL

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL, AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

2. MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
   REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
   STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
   DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

   IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS.
   DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
   PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

3. OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.

4. DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.

5. ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.

6. A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.

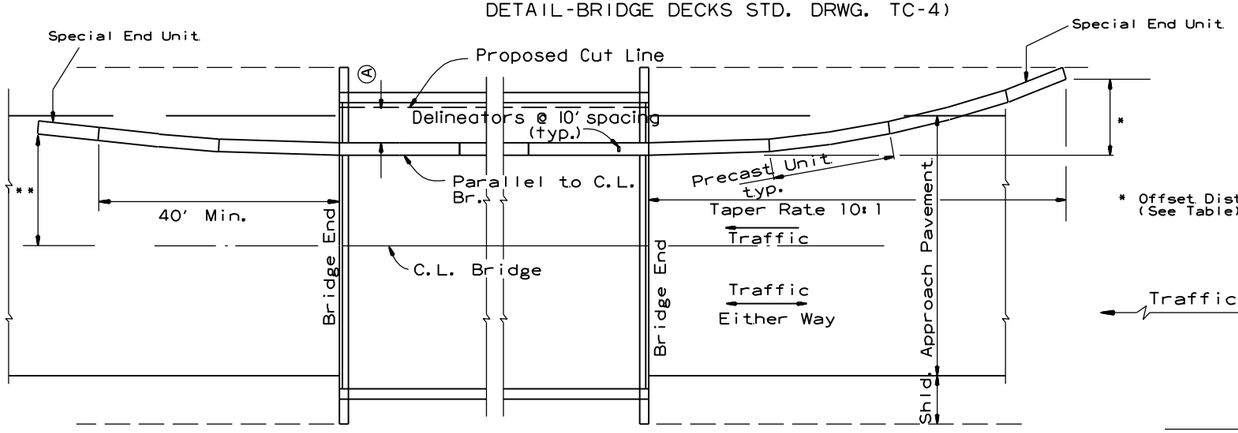
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

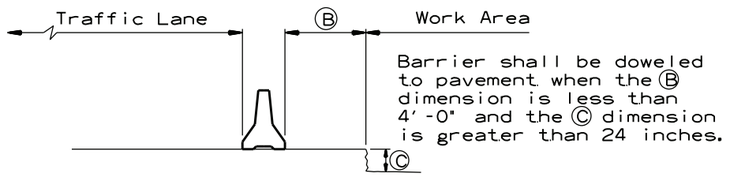
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

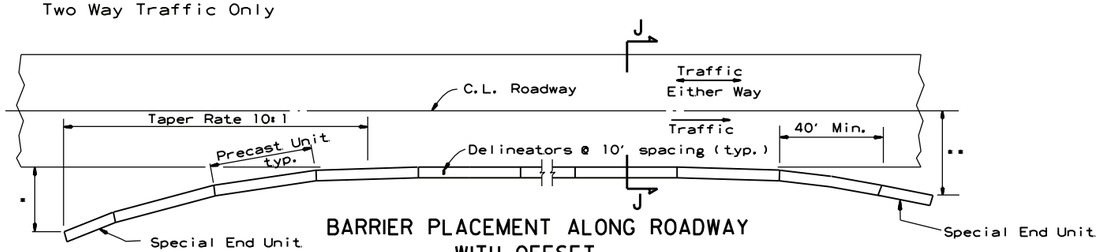


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

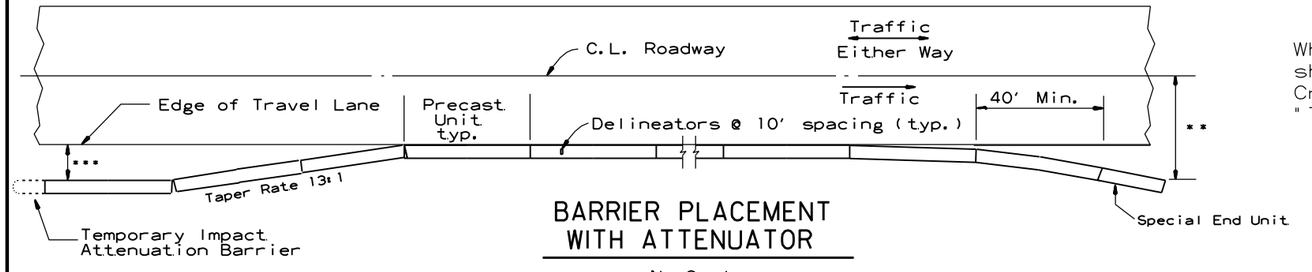
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

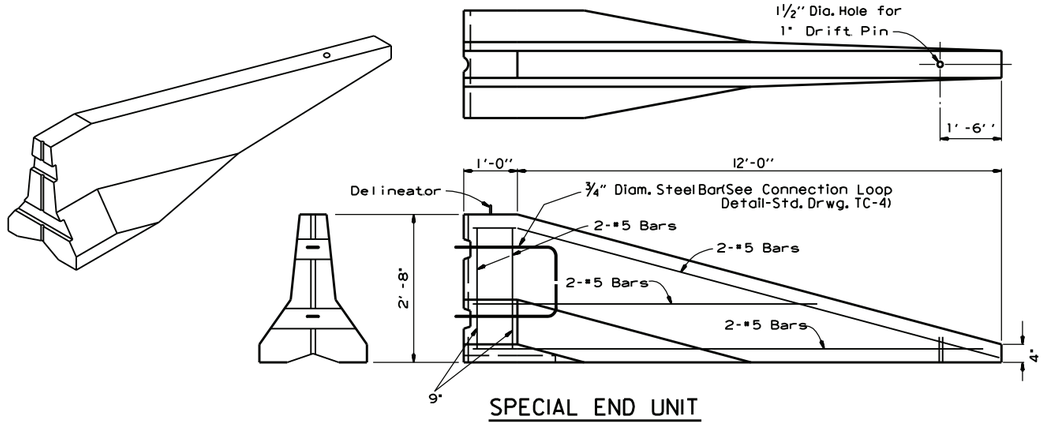


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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



SPECIAL END UNIT

No Scale

General Notes

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

DATE	REVISION	FILMED
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

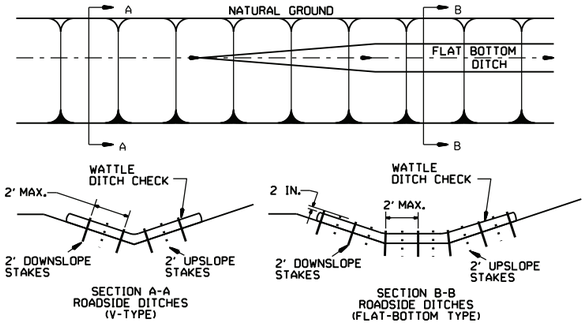
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

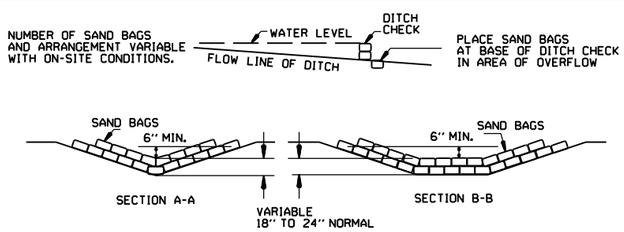
STANDARD DRAWING TC-5

GENERAL NOTES

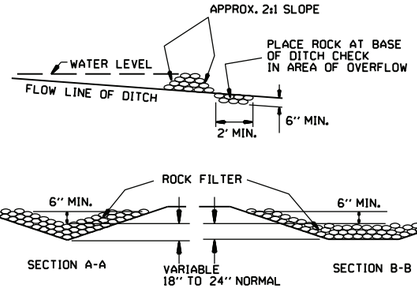
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

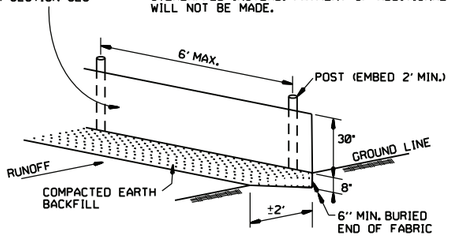


ROCK DITCH CHECK (E-6)

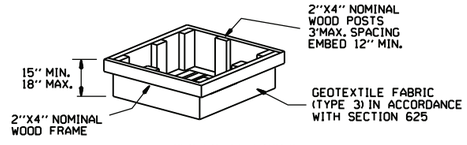
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

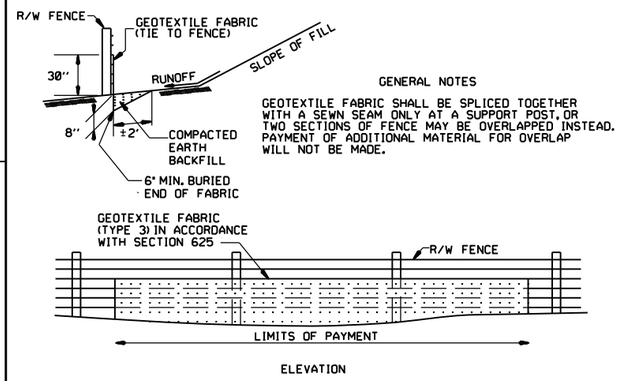
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



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.

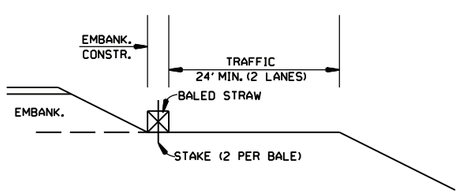
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

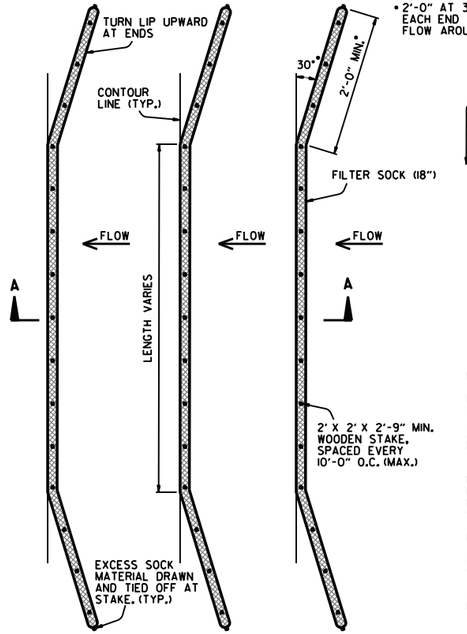
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

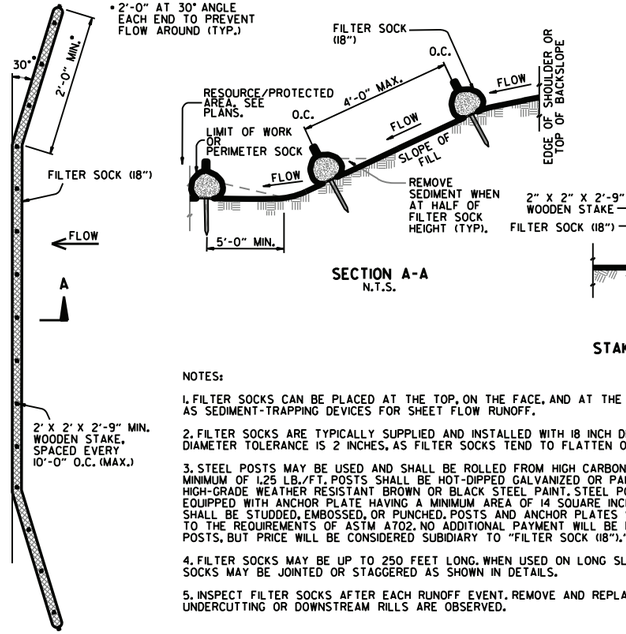
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.

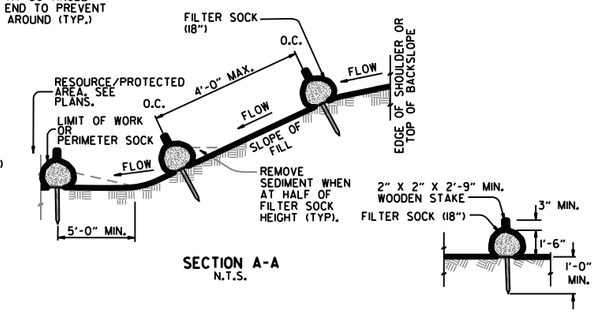


BALED STRAW FILTER BARRIER (E-2)



PLAN VIEW
N.T.S.





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.

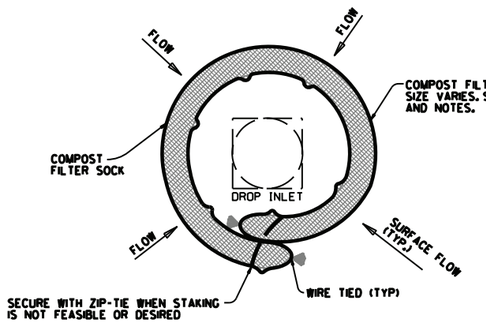
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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")."

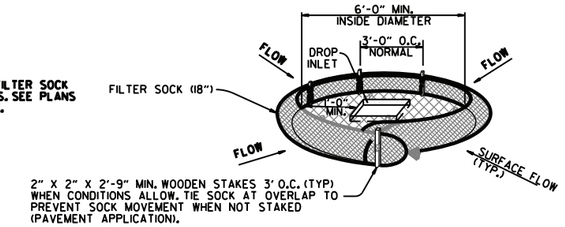
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

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

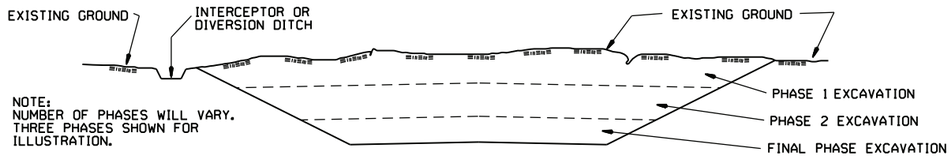
CLEARING AND GRUBBING

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

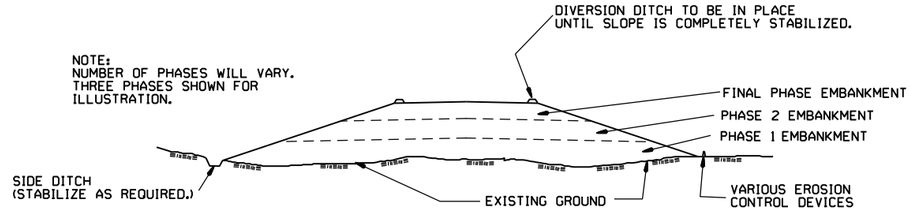
1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.

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.

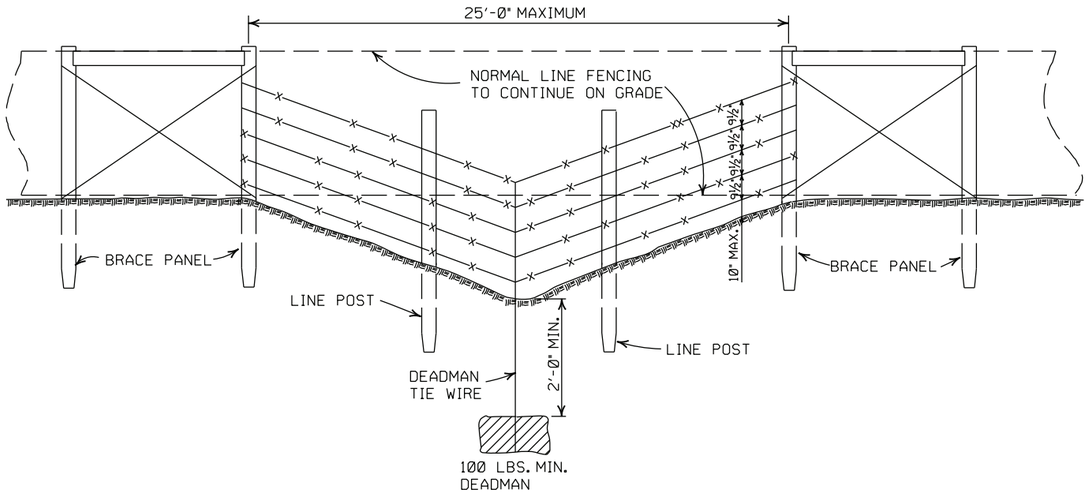
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

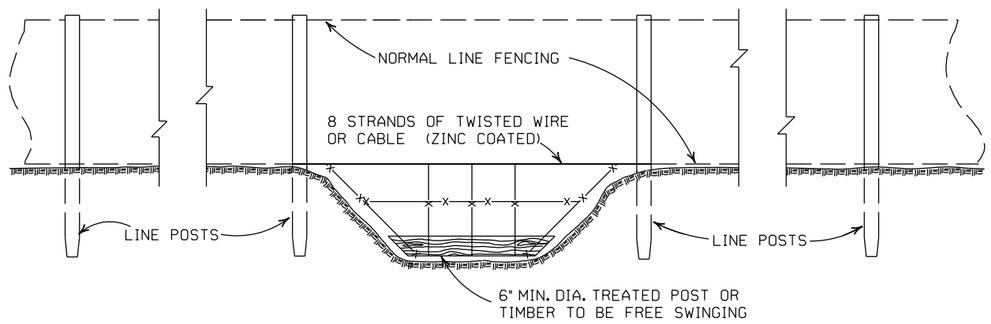
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

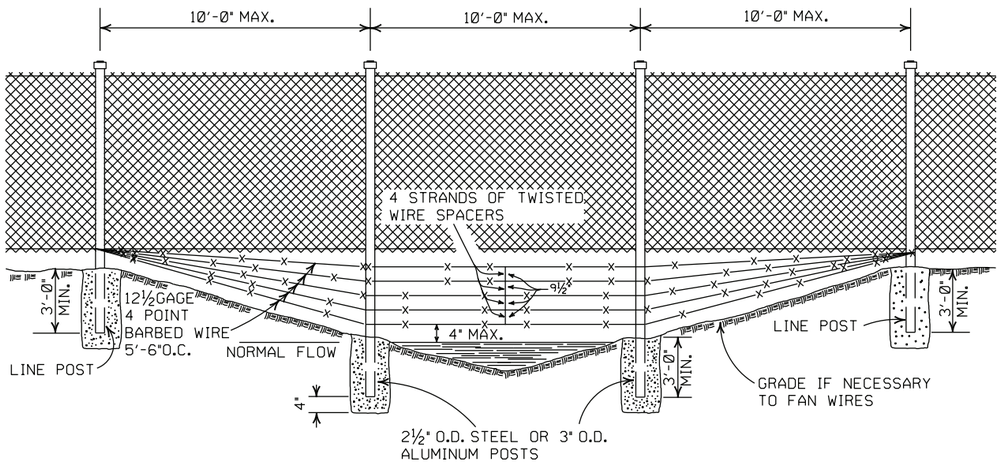
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3







GENERAL NOTES:

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

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

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

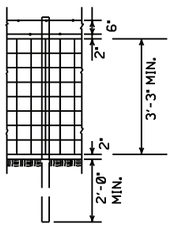
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

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

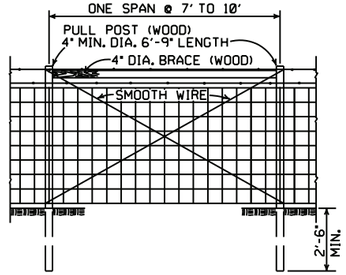
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

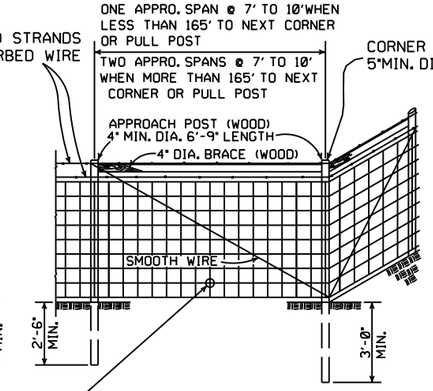
STANDARD DRAWING WF-2

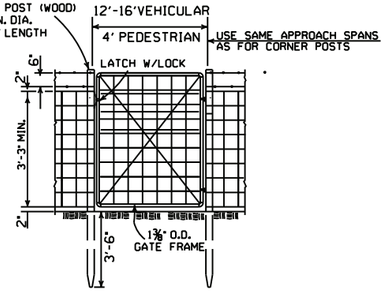


LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"



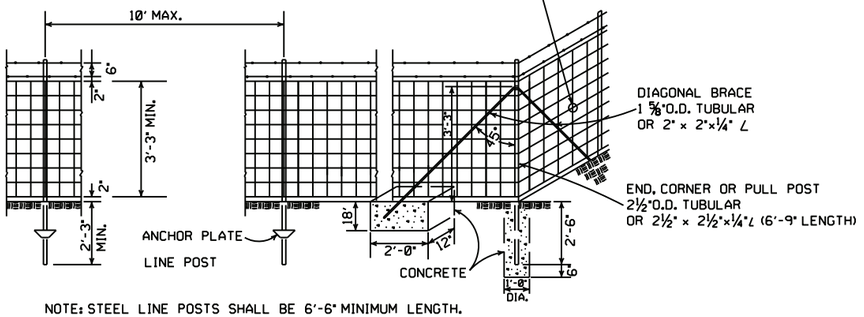
LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'



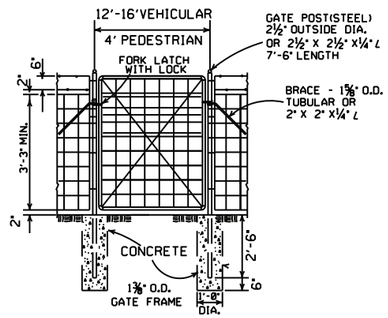


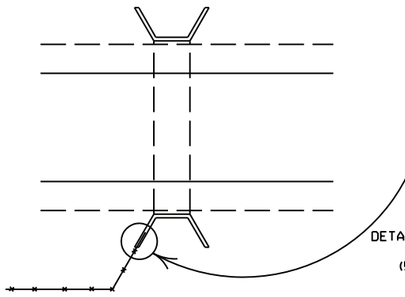
TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES
WILL BE PERMITTED

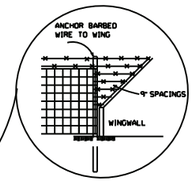


NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.





NOTE: USE ⅜" x 1½" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.



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

GENERAL NOTES:

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

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

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

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

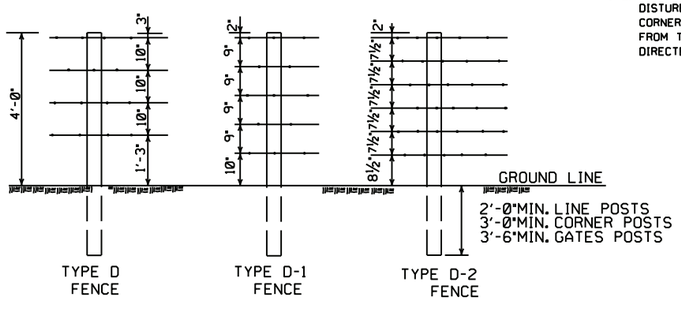
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS:
THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

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

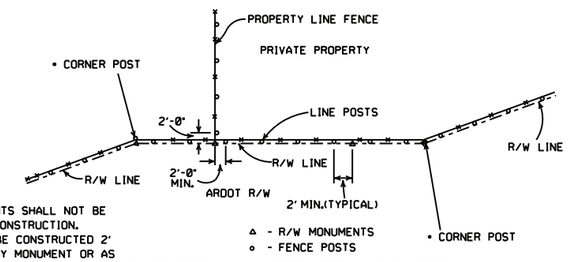
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

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

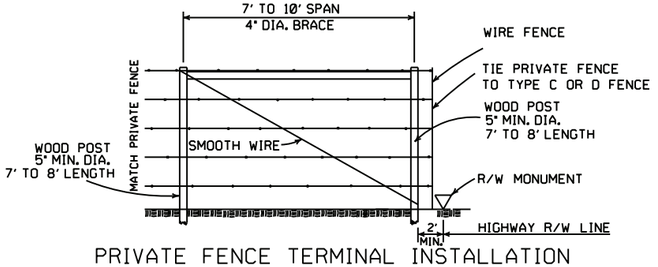


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



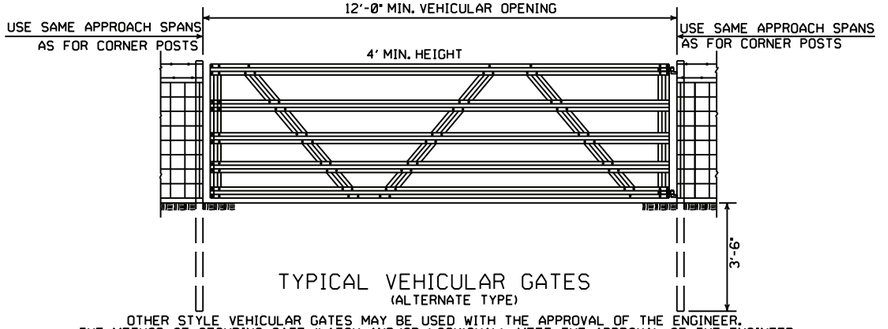
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

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



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

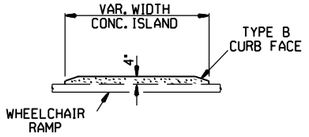
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

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

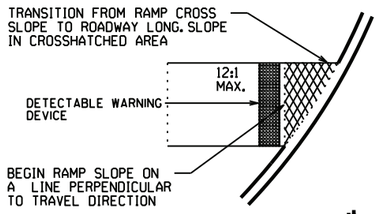
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

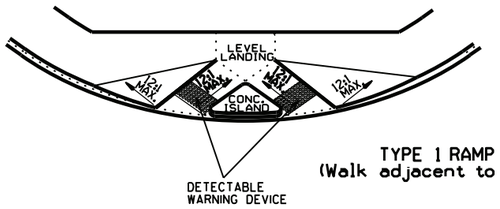
STANDARD DRAWING WF-4



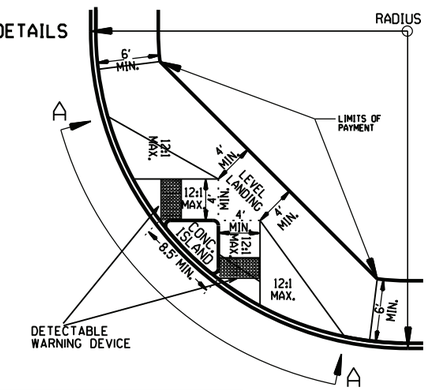
CONCRETE ISLAND DETAIL



SLOPE TRANSITION DETAILS

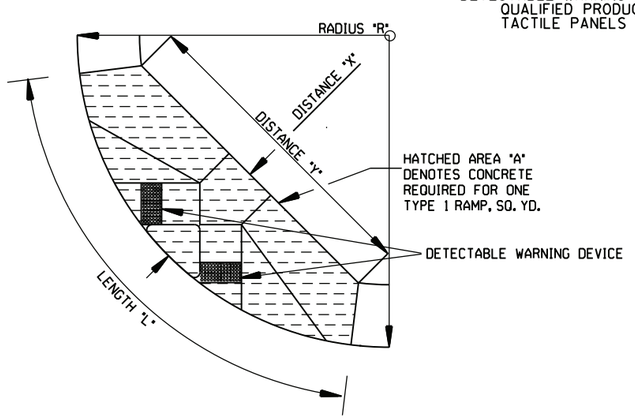


TYPE 1 RAMP
(Walk adjacent to curb)



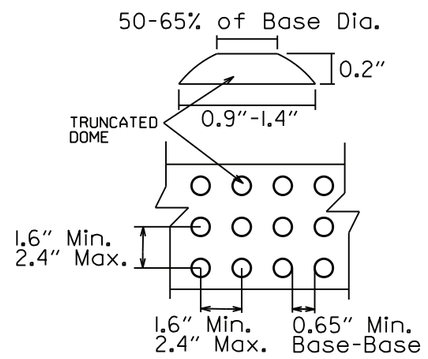
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS "R" FEET	DISTANCE "X" FEET	DISTANCE "Y" FEET	LENGTH "L" FEET	RAMP AREA "A" 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

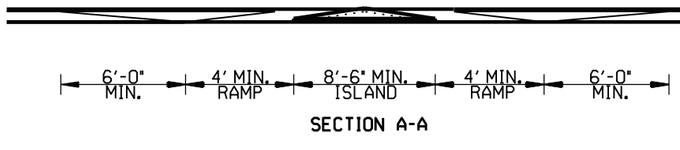


GENERAL NOTES FOR DETECTABLE WARNING DEVICES

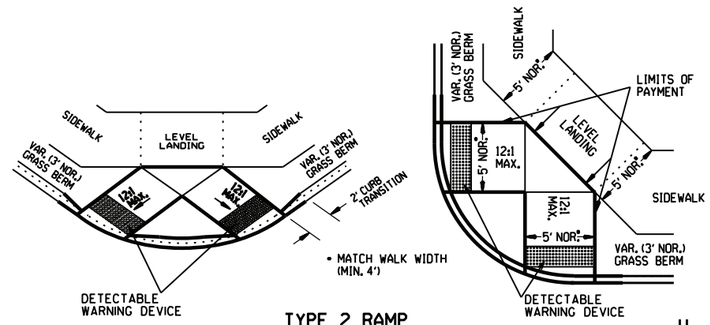
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT 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

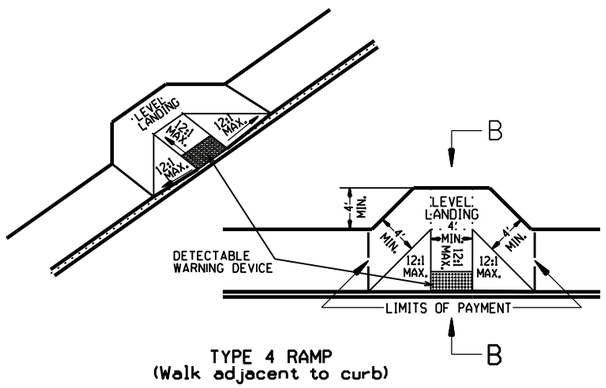


SECTION A-A

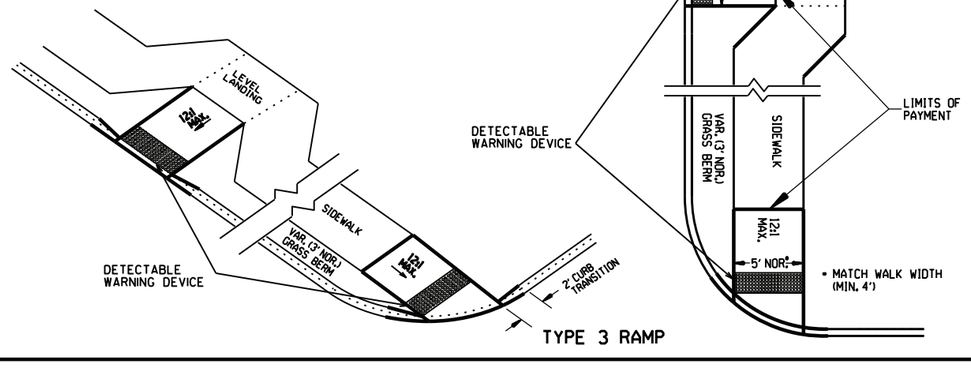


TYPE 2 RAMP

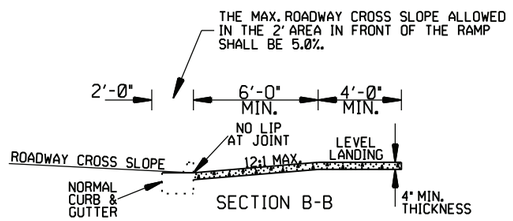
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.



TYPE 4 RAMP
(Walk adjacent to curb)



TYPE 3 RAMP



SECTION B-B

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.

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.

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	FROM8#TO12#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.				
J08 No.					

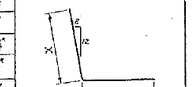
BAR LIST FOR BARREL SECTION 60°0" IN LENGTH

DEPTH OF COVER D	SPAN S	CLEAR HEIGHT H	"a" bars. STRAIGHT. In Top and Bottom Slabs of Barrel. Add 1 in Apron and Headwall Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	"b" bars. BENT - See Diagram below. In Top and Bottom Slabs of Barrel. Alternate with "a" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	"d" bars. STRAIGHT. Longitudinal in Top Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH	"d1" bars. STRAIGHT. Longitudinal in Sidewalls. SIZE	SPACING	NO. REQ'D	LENGTH	"e" bars. STRAIGHT. Longitudinal in Bottom Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH	"f" bars. STRAIGHT. Verticals in Sidewalls. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
0'-0" TO 5'-0" MAXIMUM	1' @ 4'	2'			120	120	4'-9"			110	110	5'-10"	4'-8"	#5	10½"	6	#4	16"	4	#5	12"	5	#4	12"	120	120	2'-11"
		3'			120	120	5'-1"			110	110	5'-10"	4'-8"			6			6			3			120	120	3'-7"
		4'			120	120	5'-5"			110	110	5'-10"	4'-8"			6			8			5			120	120	4'-3"
		5'			120	120	5'-9"			110	110	5'-10"	4'-8"			6			10						120	120	4'-11"
		6'			120	120	6'-1"			110	110	5'-10"	4'-8"			6			12						120	120	5'-7"
	1' @ 5'	3'			120	120	5'-9"			110	110	6'-10"	5'-8"			7			6			6			120	120	5'-0"
		4'			120	120	5'-9"			110	110	6'-10"	5'-8"			7			8			8			120	120	5'-8"
		5'	#6	13"	120	120	5'-9"	#6	13"	110	110	6'-10"	5'-8"	#5	10½"	7	#4	12"	10	#4	12"	10	#4	12"	120	120	5'-11"
		6'			120	120	6'-1"			110	110	7'-0"	5'-10"			7			12			12			120	120	6'-5"
		7'			120	120	6'-0"			110	110	7'-1"	5'-11"			7			14						120	120	6'-11"
	1' @ 6'	3'			128	128	6'-3"			116	116	7'-10"	6'-8"			8			6			7			120	120	5'-7"
		4'			128	128	6'-9"			116	116	7'-10"	6'-8"			8			8			8			120	120	6'-2"
		5'			128	128	6'-9"			116	116	7'-10"	6'-8"			8			10			10			120	120	6'-10"
		6'	#6	12"	128	128	6'-11"	#6	12"	118	118	8'-0"	6'-10"	#5	10½"	8	#4	12"	12	#4	12"	12	#4	12"	120	120	7'-6"
		7'			128	128	7'-0"			118	118	8'-0"	6'-10"			8			14						120	120	8'-2"
		8'			128	128	7'-1"			118	118	8'-1"	6'-11"			8			16						120	120	8'-11"
	1' @ 7'	3'			128	128	6'-9"			116	116	8'-10"	7'-8"			9			8			8			120	120	6'-6"
		4'			128	128	6'-11"			116	116	8'-10"	7'-8"			9			10			10			120	120	7'-2"
		5'			128	128	7'-0"			116	116	8'-10"	7'-8"			9			12			12			120	120	7'-10"
		6'			128	128	7'-1"			116	116	8'-10"	7'-8"			9			14						120	120	8'-6"
		7'	#7	12"	128	128	7'-2"	#7	12"	116	116	8'-10"	7'-8"	#5	10½"	9	#4	12"	16	#4	12"	16	#4	12"	120	120	8'-10"
		8'			128	128	7'-3"			116	116	8'-10"	7'-8"			9			18						120	120	9'-2"
	1' @ 8'	3'			128	128	6'-9"			118	118	9'-10"	8'-8"			11			8			9			120	120	6'-10"
		4'			128	128	7'-0"			118	118	9'-10"	8'-8"			11			10			11			120	120	7'-6"
		5'			128	128	7'-1"			118	118	9'-10"	8'-8"			11			12			12			120	120	8'-2"
		6'			128	128	7'-2"			118	118	10'-0"	8'-10"			11			14						120	120	8'-10"
		7'	#7	12"	128	128	7'-3"	#7	12"	118	118	10'-0"	8'-10"	#5	10"	11	#4	12"	16	#4	12"	16	#4	12"	120	120	9'-6"
		8'			128	128	7'-4"			118	118	10'-0"	8'-10"			11			18						120	120	10'-2"
	1' @ 9'	3'			128	128	6'-9"			118	118	9'-10"	8'-8"			11			8			9			120	120	6'-10"
		4'			128	128	7'-0"			118	118	9'-10"	8'-8"			11			10			11			120	120	7'-6"
		5'			128	128	7'-1"			118	118	9'-10"	8'-8"			11			12			12			120	120	8'-2"
		6'			128	128	7'-2"			118	118	10'-0"	8'-10"			11			14						120	120	8'-10"
		7'	#7	12"	128	128	7'-3"	#7	12"	118	118	10'-0"	8'-10"	#5	10"	11	#4	12"	16	#4	12"	16	#4	12"	120	120	9'-6"
		8'			128	128	7'-4"			118	118	10'-0"	8'-10"			11			18						120	120	10'-2"
	1' @ 10'	3'			128	128	7'-0"			118	118	10'-10"	9'-8"			13			8			10			120	120	7'-2"
		4'			128	128	7'-1"			118	118	10'-10"	9'-8"			13			10			12			120	120	7'-10"
		5'			128	128	7'-2"			118	118	10'-10"	9'-8"			13			12			14			120	120	8'-6"
		6'			128	128	7'-3"			118	118	10'-11"	9'-9"			13			14						120	120	9'-2"
		7'	#7	12"	128	128	7'-4"	#7	12"	118	118	11'-0"	9'-10"	#5	10"	13	#4	12"	16	#4	12"	18	#4	12"	120	120	9'-10"
		8'			128	128	7'-5"			118	118	11'-0"	9'-10"			13			18						120	120	10'-6"
		9'			128	128	7'-6"			118	118	11'-0"	9'-10"			13			20						120	120	11'-2"
	1' @ 11'	3'			128	128	7'-0"			118	118	11'-10"	10'-8"			13			8			10			120	120	7'-2"
		4'			128	128	7'-1"			118	118	11'-10"	10'-8"			13			10			12			120	120	7'-10"
		5'			128	128	7'-2"			118	118	11'-10"	10'-8"			13			12			14			120	120	8'-6"
		6'			128	128	7'-3"			118	118	11'-11"	10'-9"			13			14						120	120	9'-2"
		7'	#7	12"	128	128	7'-4"	#7	12"	118	118	12'-0"	10'-10"	#5	10"	13	#4	12"	16	#4	12"	18	#4	12"	120	120	9'-10"
		8'			128	128	7'-5"			118	118	12'-0"	10'-10"			13			18						120	120	10'-6"
		9'			128	128	7'-6"			118	118	12'-0"	10'-10"			13			20						120	120	11'-2"
		10'			128	128	7'-7"			118	118	12'-1"	10'-11"			13			22						120	120	11'-10"
	1' @ 12'	3'			128	128	7'-0"			118	118	12'-10"	11'-6"			13			8			10			120	120	7'-2"
		4'			128	128	7'-1"			118	118	12'-10"	11'-6"			13			10			12			120	120	7'-10"
		5'			128	128	7'-2"			118	118	12'-10"	11'-6"			13			12			14			120	120	8'-6"
		6'			128	128	7'-3"			118	118	12'-11"	11'-7"			13			14						120	120	9'-2"
		7'	#7	12"	128	128	7'-4"	#7	12"	118	118	13'-0"	11'-8"	#5	10"	13	#4	12"	16	#4	12"	18	#4	12"	120	120	9'-10"
		8'			128	128	7'-5"			118	118	13'-0"	11'-8"			13			18						120	120	10'-6"
		9'			128	128	7'-6"			118	118	13'-0"	11'-8"			13			20						120	120	11'-2"
		10'			128	128	7'-7"			118	118	13'-1"	11'-9"			13			22						120	120	11'-10"
		11'			128	128	7'-8"			118	118	13'-1"	11'-9"			13			24						120	120	12'-6"
		12'			128	128	7'-9"			118	118	13'-2"	11'-10"			13			26						120	120	13'-2"
	1' @ 6'	6'			140	140	7'-9"			130	130	13'-4"	12'-0"			15			12			14			120	120	7'-7"
		7'			140	140	7'-10"			130	130	13'-4"	12'-0"			15			14						120	120	8'-3"
		8'			140	140	7'-11"			130	130	13'-4"	12'-0"			15			16						120	120	8'-11"
	1' @ 7'	6'			140	140	7'-9"			130	130	13'-5"	12'-1"			15			12			14			120	120	7'-7"
		7'			140	140	7'-10"			130	130	13'-5"	12'-1"			15			14						120	120	8'-3"
		8'			140	140	7'-11"			130	130	13'-5"	12'-1"			15			16						120	120	8'-11"
		9'	#7	11"	140	140	8'-0"	#7	11"	130	130	13'-6"	12'-2"	#5	9½"	15	#4	12"	18	#4	12"	20	#4	12"	120	120	9'-7"
		10'			140	140	8'-1"			130	130	13'-6"	12'-2"			15			20						120	120	10'-3"
		11'			140	140	8'-2"			130	130	13'-7"	12'-3"			15			22						120	120	10'-11"
		12'			140	140	8'-3"			130	130	13'-7"	12'-3"			15			24						120	120	11'-7"
	1' @ 8'	6'			140	140	7'-9"			130	130	13'-8"	12'-4"			15			12			14			120	120	7'-7"
		7'			140	140	7'-10"			130	130	13'-8"	12'-4"			15			14						120	120	8'-3"
		8'			140	140	7'-11"			130	130	13'-8"	12'-4"			15			16						120	120	8'-11"
		9'			140	140	8'-0"			130	130	13'-9"	12'-5"			15			18						120	120	9'-7"
		10'	#7	11"	140	140	8'-1"	#7	11"	130	130	13'-9"	12'-5"	#5	9½"	15	#4	12"	20	#4	12"	22	#4	12"	120	120	10'-3"
		11'			140	140	8'-2"			130	130	13'-10"	12'-6"			15			22						120	120	10'-11"
		12'			140	140	8'-3"			130	130	14'-0"	12'-7"			15			24						120	120	11'-7"
	1' @ 9'	6'			140	140	7'-9"			130	130	14'-1"	12'-8"			16			12			14			120	120	7'-7"
		7'			140	140	7'-10"			130	130	14'-1"	12'-8"			16			14						120	120	8'-3"
		8'			140	140	7'-11"			130	130	14'-1"	12'-8"			16			16						120	120	8'-11"
		9'			140	140	8'-0"			130	130	14'-2"	12'-9"			16			18						120	120	9'-7"
		10'	#7	11"	140	140	8'-1"	#7	11"	130	130	14'-2"	12'-9"	#5	9½"	16	#4	12"	20	#4	12"	22	#4	12"	120	120	10'-3"
		11'			140	140	8'-2"			130	130	14'-3"	12'-10"			16			22						120	120	10'-11"
		12'			140	140	8'-3"			130	130	14'-3"	12'-10"			16			24						120	120	11'-7"
	1' @ 10'	6'			140	140	7'-9"			130	130	14'-4"	12'-11"			16			12			14			120	120	7'-7"
		7'			140	140	7'-10"			130	130	14'-4"	12'-11"			16			14						120	120	8'-3"
		8'			140	140	7'-11"			130	130	14'-4"	12'-11"			16			16						120	120	8'-11"
		9'			140	140	8'-0"			130	130	14'-5"	13'-0"			16			18						120	120	9'-7"
		10'	#7	11"	140	140	8'-1"	#7	11"	130	130	14'-5"	13'-0"	#5	9½"	16	#4	12"	20	#4	12"	22	#4	12"	120	120	10'-3"
		11'			140	140	8'-2"			130	130	14'-6"	13'-1"			16			22						120	120	10'-11"
		12'			140	140	8'-3"			130	130	14'-6"	13'-1"			16			24						120	120	11'-7"
	1' @ 11'	6'			140	140	7'-9"			130	130	14'-7"	13'-2"			16			12			14			120	120	7'-7"
		7'			140	140	7'-10"			130	130	14'-7"	13'-2"			16			14						120	120	8'-3"
		8'			140	140	7'-11"			130	130	14'-7"	13'-2"			16			16						120	120	8'-11"
		9'			140	140	8'-0"			130	130	14'-8"	13'-3"			16			18						120	120	9'-7"
		10'	#7	11"	140	140	8'-1"	#7	11"	130	130	14'-8"	13'-3"	#5	9½"	16	#4	12"	20	#4	12"	22	#4	12"	120	120	10'-3"
		11'			140	140	8'-2"			130	130	14'-9"	13'-4"			16			22						120	120	10'-11"
		12'			140	140	8'-3"			130	130	14'-9"	13'-4"			16			24						120	120	11'-7"
	1' @ 12'	6'			140	140	7'-9"			130	130	14'-10"	13'-5"			16			12			14			120	120	7'-7"
		7'			140	140	7'-10"			130	130	14'-10"	13'-5"			16			14						120	120	8'-3"
		8'			140	140	7'-11"			130	130	14'-10"	13'-5"			16			16						120	120	8'-11"
		9'			140	140	8'-0"			130	130	14'-11"	13'-6"			16			18						120	120	9'-7"
		10'	#7	11"	140	140	8'-1"	#7	11"	130	130	14'-11"	13'-6"	#5	9½"	16	#4	12"	20	#4	12"	22	#4	12"	120	120	10'-3"
		11'			140	140	8'-2"			130	130	15'-0"	13'-7"			16			22						120	120	10'-11"
		12'			140	140	8'-3"			130	130	15'-0"	13'-7"			16			24						120	120	11'-7"

Note:- Dimensions are to centers of bars.

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS
#6	3"	5"	1'-2"
#7	3½"	5⅝"	1'-6"

BENDING DIAGRAM Bars "b".



DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X
4'	#4	11"c.	12	2'-6"	1'-3"
5'	#4	11"c.	14	2'-7"	1'-3½"
6'	#4	11"c.	16	2'-8"	1'-4"
7'	#4	11"c.	18	2'-9"	1'-4½"
8'	#4	11⅛"c.	20	2'-11"	1'-5½"
9'	#4	11⅛"c.	22	3'-0"	1'-6"
10'	#4	11⅛"c.	24	3'-1"	1'-6½"
11'	#4	12"c.	26	3'-2"	1'-7"
12'	#4	12"c.	28	3'-3"	1'-7½"

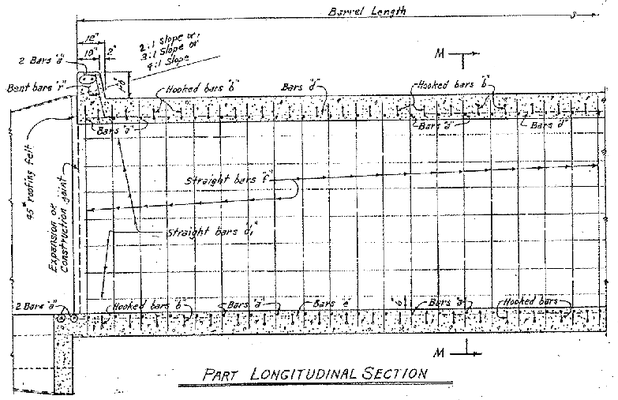
Bars "h" Dowel bars in Headwalls.

DIMENSIONS — BARREL DIMENSIONS

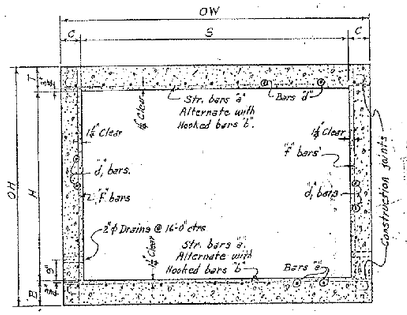
MARK. DESIGN DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	SQ. FT. OPENING A	OVERALL WIDTH OW	THICKNESS OF TOP SLAB T	THICKNESS OF SIDEWALLS C	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH
5'-0"	1' @ 4'	2'	8	5'-0"	7"	6"	6½"	3'-1½"
		3'	12	5'-0"		6"		4'-1½"
		4'	16	5'-0"		6"		5'-1½"
		5'	20	5'-0"		6"		6'-1½"
		6'	24	5'-2"		7"		7'-1⅝"
	1' @ 5'	3'	15	6'-0"	7"	6"	7½"	4'-2⅝"
		4'	20	6'-0"		6"		5'-2⅝"
		5'	25	6'-0"		6"		6'-2⅝"
		6'	30	6'-3"		7"		7'-2⅝"
		7'	35	6'-3"		7½"		8'-2⅝"
	1' @ 6'	3'	18	7'-0"	8"	6"	7½"	4'-3½"
		4'	24	7'-0"		6"		5'-3½"
		5'	30	7'-0"		6"		6'-3½"
		6'	36	7'-3"		7"		7'-3½"
		7'	42	7'-3"		7½"		8'-3½"
		8'	48	7'-6"		8"		9'-3½"
	1' @ 7'	4'	28	8'-0"	8½"	6"	8½"	5'-5"
		5'	35	8'-0"		6"		6'-5"
		6'	42	8'-2"		7"		7'-5"
		7'	49	8'-3"		7½"		8'-5"
		8'	56	8'-6"		8"		9'-5"
		9'	63	8'-9"		9"		10'-5"
	1' @ 8'	4'	32	9'-0"	9"	6"	9½"	5'-7"
		5'	40	9'-2"		7"		6'-7"
		6'	48	9'-2"		7½"		7'-7"
		7'	56	9'-3"		7⅞"		8'-7"
		8'	64	9'-6"		8"		9'-7"
		9'	72	9'-6"		9"		10'-7"
		10'	80	9'-9"		10"		11'-7"
	1' @ 9'	5'	45	10'-3"	10"	7"	10"	6'-8"
		6'	54	10'-3"		7⅝"		7'-8"
		7'	63	10'-3"		7⅞"		8'-8"
		8'	72	10'-6"		8"		9'-8"
		9'	81	10'-6"		9"		10'-8"
		10'	90	10'-8"		10"		11'-8"
		11'	99	10'-10"		11"		12'-8"
	1' @ 10'	5'	50	11'-2"	10½"	7"	11"	6'-8½"
		6'	60	11'-3"		7⅝"		7'-8½"
		7'	70	11'-3"		7⅞"		8'-8½"
		8'	80	11'-6"		8"		9'-8½"
		9'	90	11'-6"		9"		10'-8½"
		10'	100	11'-8"		10"		11'-8½"
		11'	110	11'-10"		11"		12'-8½"
		12'	120	12'-0"		12"		13'-8½"
	1' @ 11'	6'	66	12'-3"	11"	8"	11½"	7'-10½"
		7'	77	12'-6"		9"		8'-10½"
		8'	88	12'-6"		9½"		9'-10½"
		9'	99	12'-6"		10"		10'-10½"
		10'	110	12'-8"		11"		11'-10½"
		11'	121	12'-8"		12"		12'-10½"
		12'	132	13'-0"				13'-10½"
	1' @ 12'	6'	72	13'-4"	12"	8"	12½"	8'-0"
		7'	84	13'-4"		9"		9'-0"
		8'	96	13'-4"		9½"		10'-0"
		9'	108	13'-6"		10"		11'-0"
		10'	120	13'-8"		11"		12'-0"
		11'	132	13'-10"		12"		13'-0"
		12'	144	14'-0"				14'-0"

QUANTITIES — UNIT QUANTITIES

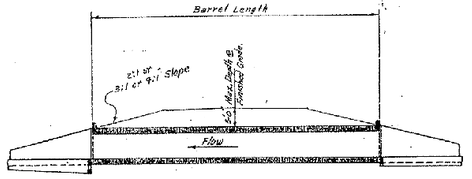
CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	REINFORCING STEEL ADDITIONAL PER LAP	REINFORCING STEEL ADDITIONAL TWO HEADWALLS
CU.YD.	LB.	LB.	LB.
0.282	41.89	17.95	66.35
0.319	44.16	19.62	66.35
0.356	96.83	21.29	66.35
0.396	49.56	22.96	66.35
0.434	52.96	24.63	67.75
0.380	55.55	22.19	101.27
0.417	56.23	23.86	101.27
0.454	60.90	25.53	101.27
0.535	64.99	27.20	103.27
0.609	67.63	28.07	109.27
0.496	66.29	29.76	118.96
0.493	68.96	26.93	118.96
0.520	71.64	28.10	118.96
0.602	75.31	29.77	120.96
0.671	78.98	31.44	121.97
0.746	88.97	33.11	122.97
0.568	81.32	29.01	136.88
0.605	84.00	30.68	136.88
0.688	87.76	32.35	138.88
0.757	90.38	34.02	139.08
0.832	96.65	35.69	140.89
0.906	105.59	37.36	142.89
0.676	95.26	33.32	156.07
0.758	99.12	34.99	156.80
0.787	101.73	36.66	156.80
0.867	105.05	38.33	158.16
0.942	110.51	40.00	159.52
1.057	118.92	41.67	208.25
1.126	126.67	43.34	208.97
0.957	130.64	40.13	292.64
0.844	119.72	37.56	213.61
0.910	118.04	39.23	220.97
0.997	120.71	40.90	220.97
1.033	126.54	42.57	222.33
1.148	135.80	44.24	225.05
1.276	142.68	45.91	227.78
1.416	150.20	47.58	230.51
1.029	133.99	41.60	294.80
1.071	136.64	43.47	294.00
1.147	142.55	45.14	295.36
1.263	151.92	46.81	248.09
1.391	158.89	48.88	260.81
1.532	166.71	50.15	253.59
1.685	178.67	51.82	256.26
1.199	155.16	46.12	268.62
1.202	157.83	47.79	268.62
1.252	163.06	49.46	269.62
1.368	172.60	51.13	271.34
1.497	179.70	52.80	274.07
1.638	187.67	54.47	276.79
1.792	193.79	56.14	279.52
1.284	172.20	48.69	357.62
1.333	179.87	50.36	357.62
1.383	180.15	52.03	357.62
1.500	189.85	53.70	361.18
1.630	197.07	55.37	364.74
1.772	205.16	57.04	368.30
1.926	213.95	58.71	371.86



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



LONGITUDINAL SECTION

W-X002-1, W-X003-1 or W-X004-1 and W-X002-2, W-X003-2 or W-X004-2.

Note:- For details of wings and bar lists, see Drawing Nos.

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 LAPS:- In computing the quantities of steel from the tables add one lap for each additional 32'-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.

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 #/□"

Note:- This drawing to be used in conjunction with Standard Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 OR 4:1 SLOPES

SINGLES — UNDER 5'-0" COVER

STANDARD DRAWING NO. R-100X-0

Designed By:- W.C.H. 1-23-63. Checked By:- RWS 1-28-63.
Drawn By:- W.C.H. 2-8-63. Checked By:- RWS 2-24-63.
Quantities By:- W.C.H. 2-12-63. Checked By:- RWS 5-24-63.

Fed. Road No.	State	Fed. Aid Project	Fiscal Year	Sheet No.	Total Sheets
6	ARK.				
Job No.					

Bar List for Barrel Section 60'-0" in Length

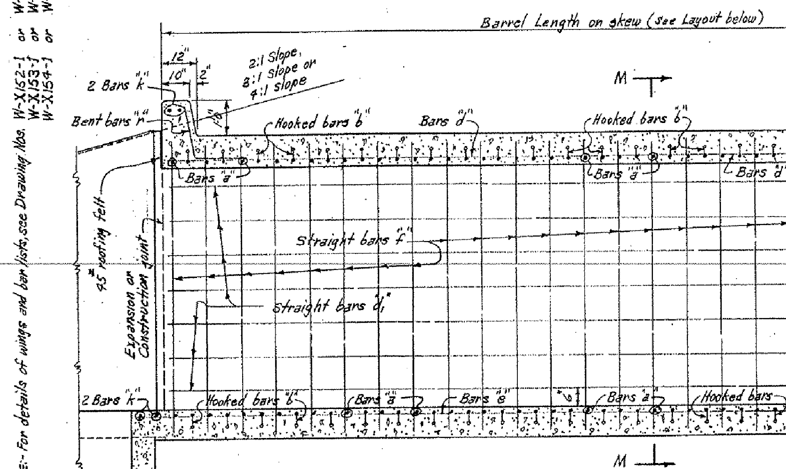
Depth of Cover	Clear Span	Clear Height	"a" bars				"b" bars					"d" bars				"d₁" bars				"e" bars				"f" bars				"k" bars		
			Straight				Bent - See Diagram					Straight												Straight				Straight		
			In Top and Bottom Slabs of Barrel.				In Top and Bottom Slabs of Barrel. Alternate with "a" bars					Longitudinal in Top Slab of Barrel.				Longitudinal in Sidewalls				Longitudinal in Bottom Slab of Barrel				Verticals in Sidewalls				2 in Top of Headwalls and Aprons - Each.		
D	S	H	Size	Spacing	No. Req'd	Length	Size	Spacing	No. Req'd	Length	X	Size	Spacing	No. Req'd	Length	Size	Spacing	No. Req'd	Length	Size	Spacing	No. Req'd	Length	Size	Spacing	No. Req'd	Length	Size	No. Req'd	Length
0'-0" TO 5'-0" MAXIMUM	1 @ 4'	2'	#5	13"	112	4'-11"	#6	13"	110	6'-0"	4'-10"	#5	10½"	6	2 @ 30'-8" for 60'-0" Length Barrel (1'-8" Lap)	#4	12"	4	2 @ 30'-6" for 60'-0" Length Barrel (1'-3" Lap)	#4	12"	5	2 @ 31'-6" for 60'-0" Length Barrel (1'-3" Lap)	#4	12"	120	2'-11"	#5	8	5'-5"
		3'			112	4'-11"			110	6'-0"	4'-10"			6				6				5				120	3'-11"		8	5'-5"
		4'			112	4'-11"			110	6'-0"	4'-10"			6				8				5				120	4'-11"		8	5'-5"
		5'			112	4'-11"			110	6'-0"	4'-10"			6				10				5				120	5'-11"		8	5'-5"
		6'			112	5'-1"			110	6'-2"	5'-0"			6				12				5				120	6'-11"		8	5'-7"
	1 @ 5'	3'	#6	13"	112	5'-11"	#6	13"	110	7'-1"	5'-11"	#5	10½"	7		#4	12"	6		#4	12"	6		#4	12"	120	4'-0"	#6	8	6'-6"
		4'			112	5'-11"			110	7'-1"	5'-11"			7				8				6				120	5'-0"		8	6'-6"
		5'			112	5'-11"			110	7'-1"	5'-11"			7				10				6				120	6'-0"		8	6'-6"
		6'			112	6'-1"			110	7'-3"	6'-1"			7				12				6				120	7'-0"		8	6'-8"
		7'			112	6'-2"			110	7'-4"	6'-2"			7				14				6				120	8'-0"		8	6'-9"
	1 @ 6'	3'	#6	12"	120	7'-0"	#6	12"	118	8'-1"	6'-11"	#5	10½"	8		#4	12"	6		#4	12"	7		#4	12"	120	4'-1"	#6	8	7'-6"
		4'			120	7'-0"			118	8'-1"	6'-11"			8				8				7				120	5'-1"		8	7'-6"
		5'			120	7'-0"			118	8'-1"	6'-11"			8				10				7				120	6'-1"		8	7'-6"
		6'			120	7'-2"			118	8'-3"	7'-1"			8				12				7				120	7'-1"		8	7'-8"
		7'			120	7'-3"			118	8'-4"	7'-2"			8				14				7				120	8'-1"		8	7'-9"
		8'			120	7'-4"			118	8'-5"	7'-3"			8				16				7		#5	12"	120	9'-1"		8	7'-10"
	1 @ 7'	4'	#6	11"	132	8'-0"	#6	11"	130	9'-1"	7'-11"	#5	10½"	9		#4	12"	8		#4	12"	8		#4	12"	120	5'-2"	#6	8	8'-7"
		5'			132	8'-0"			130	9'-1"	7'-11"			9				10				8				120	6'-2"		8	8'-7"
		6'			132	8'-2"			130	9'-3"	8'-1"			9				12				8				120	7'-2"		8	8'-9"
		7'			132	8'-3"			130	9'-4"	8'-2"			9				14				8				120	8'-2"		8	8'-10"
		8'			132	8'-4"			130	9'-5"	8'-3"			9				16				8			10"	144	9'-2"		8	8'-11"
		9'			132	8'-6"			130	9'-7"	8'-5"			9				18				8		#5	12"	120	10'-2"		8	9'-1"
	1 @ 8'	4'	#7	12"	120	9'-1"	#6	12"	118	10'-2"	9'-0"	#5	10"	11		#4	12"	8		#4	12"	9		#4	12"	120	5'-4"	#7	8	9'-7"
		5'			120	9'-3"			118	10'-4"	9'-2"			11				10				9				120	6'-4"		8	9'-9"
		6'			120	9'-3"			118	10'-4"	9'-2"			11				12				9				120	7'-4"		8	9'-9"
		7'			120	9'-4"			118	10'-5"	9'-3"			11				14				9				120	8'-4"		8	9'-10"
		8'			120	9'-5"			118	10'-6"	9'-4"			11				16				9			10"	144	9'-4"		8	9'-11"
		9'			120	9'-7"			118	10'-8"	9'-6"			11				18				9		#5	12"	120	10'-4"		8	10'-1"
		10'			120	9'-9"			118	10'-10"	9'-8"			11				20				9			11"	132	11'-4"		8	10'-3"
	1 @ 9'	5'	#7	11"	132	10'-3"	#6	11"	130	11'-4"	10'-2"	#5	10"	12		#4	12"	10		#4	12"	10		#4	12"	120	6'-5"	#7	8	10'-9"
		6'			132	10'-4"			130	11'-5"	10'-3"			12				12				10				120	7'-5"		8	10'-10"
		7'			132	10'-4"			130	11'-5"	10'-3"			12				14				10				120	8'-5"		8	10'-10"
		8'			132	10'-5"			130	11'-6"	10'-4"			12				16				10			10"	144	9'-5"		8	10'-11"
		9'			132	10'-7"			130	11'-8"	10'-6"			12				18				10		#5	12"	120	10'-5"		8	11'-2"
		10'			132	10'-9"			130	11'-10"	10'-8"			12				20				10			11"	132	11'-5"		8	11'-4"
		11'			132	10'-11"			130	12'-0"	10'-10"			12				22				10			10"	144	12'-5"		8	11'-6"
	1 @ 10'	5'	#7	12"	120	11'-3"	#7	12"	118	12'-7"	11'-3"	#5	10"	13		#4	12"	10		#4	12"	11		#4	12"	120	6'-6"	#7	8	11'-10"
		6'			120	11'-4"			118	12'-8"	11'-4"			13				12				11				120	7'-6"		8	11'-11"
		7'			120	11'-4"			118	12'-8"	11'-4"			13				14				11				120	8'-6"		8	11'-11"
		8'			120	11'-5"			118	12'-9"	11'-5"			13				16				11			10"	144	9'-6"		8	12'-0"
		9'			120	11'-8"			118	12'-11"	11'-7"			13				18				11		#5	12"	120	10'-6"		8	12'-2"
		10'			120	11'-10"			118	13'-1"	11'-9"			13				20				11			11"	132	11'-6"		8	12'-4"
		11'			120	12'-0"			118	13'-3"	11'-11"			13				22				11			10"	144	12'-6"		8	12'-6"
		12'			120	12'-2"			118	13'-5"	12'-1"			13				24				11		#6	12"	120	13'-6"		8	12'-8"
	1 @ 11'	6'	#7	11"	132	12'-6"	#7	11"	130	13'-9"	12'-5"	#5	9½"	15		#4	12"	12		#4	12"	12		#4	12"	120	7'-7"	#7	8	13'-0"
		7'			132	12'-6"			130	13'-9"	12'-5"			15				14				12				120	8'-7"		8	13'-0"
		8'			132	12'-6"			130	13'-9"	12'-5"			15				16				12			10"	144	9'-7"		8	13'-0"
		9'			132	12'-8"			130	13'-11"	12'-7"			15				18				12		#5	12"	120	10'-7"		8	13'-2"
		10'			132	12'-10"			130	14'-1"	12'-9"			15				20				12			11"	132	11'-7"		8	13'-4"
		11'			132	13'-0"			130	14'-3"	12'-11"			15				22				12			10"	144	12'-7"		8	13'-7"
		12'			132	13'-2"			130	14'-5"	13'-1"			15				24				12		#6	12"	120	13'-7"		8	13'-9"
	1 @ 12'	6'	#8	12"	120	13'-6"	#7	12"	118	14'-10"	13'-6"	#5	9½"	16		#4	12"	12		#4	12"	13		#4	12"	120	7'-9"	#8	8	14'-1"
		7'			120	13'-6"			118	14'-10"	13'-6"			16				14				13				120	8'-9"		8	14'-1"
		8'			120	13'-6"			118	14'-10"	13'-6"			16				16				13			10"	144	9'-9"		8	14'-1"
		9'			120	13'-8"			118	15'-0"	13'-8"			16				18				13		#5	12"	120	10'-9"		8	14'-3"
		10'			120	13'-10"			118	15'-2"	13'-10"			16				20				13			11"	132	11'-9"		8	14'-5"
		11'			120	14'-0"			118	15'-4"	14'-0"			16				22				13			10"	144	12'-9"		8	14'-7"
		12'			120	14'-2"			118	15'-6"	14'-2"			16				24				13		#6	12"	120	13'-9"		8	14'-9"

NOTE:- The "a" and "b" bars are to be placed parallel with the headwalls, spacing to be parallel with barrel.

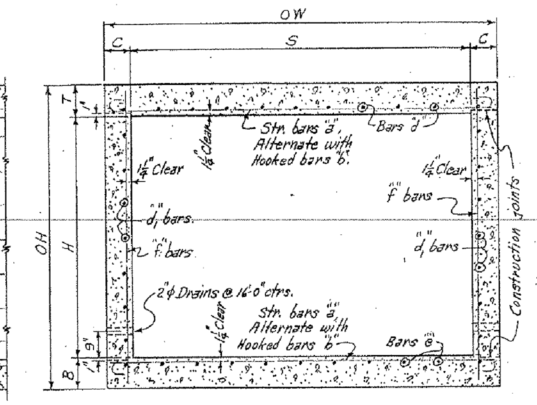
Dimensions / Quantities

Max. Design Depth of Cover	Barrel Dimensions										Unit Quantities			
												Reinforcing Steel		
													Additional	
	Clear Span	Clear Height	Sq. Ft. of Opening	Overall Width	Thickness of Top Slab	Thickness of Sidewalls	Thickness of Bottom Slab	Overall Height	Roadway Length	Length of Headwall	Class S Conc. per Lin. Ft. of Barrel	Per Lin. Ft. of Barrel	Per Lap	Two Headwalls & Aprons
D	S	H	A	OW	T	C	B	OH	RL	K	Cu.Yd.	LB.	LB.	LB.
5'-0"	1 @ 4'	2'	8	5'-0"	7"	6"	6½"	3'-1½"	5'-2⅛"	5'-8⅝"	0.282	42.27	17.95	71.92
		3'	12	5'-0"		6"		4'-1½"	"	"	0.319	44.94	19.62	71.92
		4'	16	5'-0"		6"		5'-1½"	"	"	0.356	47.62	21.29	71.92
		5'	20	5'-0"		6"		6'-1½"	"	"	0.394	50.29	22.96	71.92
		6'	24	5'-2"		7"		7'-1½"	5'-4½"	5'-10⅝"	0.474	53.74	24.63	73.31
	1 @ 5'	3'	15	6'-0"	7½"	6"	7"	4'-2½"	6'-2½"	6'-9"	0.380	56.71	22.19	110.28
		4'	20	6'-0"		6"		5'-2½"	"	"	0.417	59.38	23.86	110.28
		5'	25	6'-0"		6"		6'-2½"	"	"	0.454	62.05	25.53	110.28
		6'	30	6'-2"		7"		7'-2½"	6'-4⅝"	6'-11⅛"	0.535	65.65	27.20	112.28
		7'	35	6'-3"		7½"		8'-2½"	6'-5⅝"	7'-0⅛"	0.604	68.78	28.87	113.28
	1 @ 6'	3'	18	7'-0"	8"	6"	7½"	4'-3½"	7'-3"	7'-9½"	0.446	67.79	24.76	127.97
		4'	24	7'-0"		6"		5'-3½"	"	"	0.483	70.47	26.43	127.97
		5'	30	7'-0"		6"		6'-3½"	"	"	0.520	73.14	28.10	127.97
		6'	36	7'-2"		7"		7'-3½"	7'-5"	7'-11½"	0.602	76.81	29.77	129.98
		7'	42	7'-3"		7½"		8'-3½"	7'-6"	8'-0½"	0.671	79.98	31.44	130.98
		8'	48	7'-4"		8"		9'-3½"	7'-7⅛"	8'-1⅝"	0.746	89.97	33.11	131.98
	1 @ 7'	4'	28	8'-0"	8½"	6"	8½"	5'-5"	8'-3⅜"	8'-9⅜"	0.568	82.96	29.01	146.89
		5'	35	8'-0"		6"		6'-5"	"	"	0.605	85.63	30.68	146.89
		6'	42	8'-2"		7"		7'-5"	8'-5½"	9'-0"	0.688	89.40	32.35	148.89
		7'	49	8'-3"		7½"		8'-5"	8'-6½"	9'-1"	0.757	92.62	34.02	149.90
		8'	56	8'-4"		8"		9'-5"	8'-7½"	9'-2"	0.832	98.28	35.69	150.90
		9'	63	8'-6"		9"		10'-5"	8'-9⅜"	9'-4"	0.946	107.22	37.36	152.90
	1 @ 8'	4'	32	9'-0"	9½"	6"	9½"	5'-7"	9'-3¾"	9'-10½"	0.676	97.65	33.32	207.70
		5'	40	9'-2"		7"		6'-7"	9'-5⅞"	10'-0¼"	0.754	101.48	34.99	210.42
		6'	48	9'-2"		7"		7'-7"	"	"	0.797	104.15	36.66	210.42
		7'	56	9'-3"		7½"		8'-7"	9'-6⅞"	10'-1¼"	0.867	107.92	38.33	211.79
		8'	64	9'-4"		8"		9'-7"	9'-8"	10'-2½"	0.942	113.17	40.00	213.15
		9'	72	9'-6"		9"		10'-7"	9'-10"	10'-4½"	1.057	122.28	41.67	215.87
		10'	80	9'-8"		10"		11'-7"	10'-0⅛"	10'-6½"	1.184	129.04	43.34	218.60
	1 @ 9'	5'	45	10'-2"	10"	7"	10"	6'-8"	10'-6¼"	11'-0¾"	0.844	117.30	37.56	233.23
		6'	54	10'-3"		7½"		7'-8"	10'-7⅜"	11'-1¾"	0.910	120.62	39.23	234.60
		7'	63	10'-3"		7½"		8'-8"	"	"	0.957	123.29	40.90	234.60
		8'	72	10'-4"		8"		9'-8"	10'-8⅜"	11'-2¾"	1.033	129.12	42.57	235.96
		9'	81	10'-6"		9"		10'-8"	10'-10⅝"	11'-5"	1.148	138.38	44.24	240.05
		10'	90	10'-8"		10"		11'-8"	11'-0⅝"	11'-7"	1.276	145.26	45.91	242.77
		11'	99	10'-10"		11"		12'-8"	11'-2⅝"	11'-9"	1.416	152.98	47.58	245.50
	1 @ 10'	5'	50	11'-2"	10½"	7"	11"	6'-9½"	11'-6¾"	12'-1¼"	0.957	133.70	40.13	257.63
		6'	60	11'-3"		7½"		7'-9½"	11'-7¾"	12'-2¼"	1.024	137.06	41.80	258.99
		7'	70	11'-3"		7½"		8'-9½"	"	"	1.071	139.73	43.47	258.99
		8'	80	11'-4"		8"		9'-9½"	11'-8¾"	12'-3¼"	1.147	145.62	45.14	260.35
		9'	90	11'-6"		9"		10'-9½"	11'-10⅞"	12'-5¼"	1.263	155.33	46.81	263.08
		10'	100	11'-8"		10"		11'-9½"	12'-1"	12'-7½"	1.391	162.30	48.48	265.80
		11'	110	11'-10"		11"		12'-9½"	12'-3"	12'-9½"	1.532	170.12	50.15	268.53
		12'	120	12'-0"		12"		13'-9½"	12'-5⅛"	12'-11½"	1.685	182.08	51.82	271.25
	1 @ 11'	6'	66	12'-4"	11"	8"	11½"	7'-10½"	12'-9¼"	13'-3¾"	1.153	158.87	46.12	283.61
		7'	77	12'-4"		8"		8'-10½"	"	"	1.202	161.55	47.79	283.61
		8'	88	12'-4"		8"		9'-10½"	"	"	1.252	166.78	49.46	283.61
		9'	99	12'-6"		9"		10'-10½"	12'-11¼"	13'-5¾"	1.368	176.31	51.13	286.33
		10'	110	12'-8"		10"		11'-10½"	13'-1⅜"	13'-7¾"	1.497	183.42	52.80	289.06
		11'	121	12'-10"		11"		12'-10½"	13'-3⅜"	13'-10"	1.638	191.38	54.47	293.15
		12'	132	13'-0"		12"		13'-10½"	13'-5½"	14'-0"	1.792	203.51	56.14	295.87
	1 @ 12'	6'	72	13'-4"	11¾"	8"	12¼"	8'-0"	13'-9⅝"	14'-4"	1.284	176.47	48.69	378.98
		7'	84	13'-4"		8"		9'-0"	"	"	1.333	179.14	50.36	378.98
		8'	96	13'-4"		8"		10'-0"	"	"	1.383	184.42	52.03	378.98
		9'	108	13'-6"		9"		11'-0"	13'-11¾"	14'-6¼"	1.500	194.12	53.70	382.54
		10'	120	13'-8"		10"		12'-0"	14'-1¾"	14'-8¼"	1.630	201.34	55.37	386.10
		11'	132	13'-10"		11"		13'-0"	14'-3⅞"	14'-10¼"	1.772	209.48	57.04	389.66
		12'	144	14'-0"		12"		14'-0"	14'-5⅞"	15'-0½"	1.926	221.72	58.71	393.22

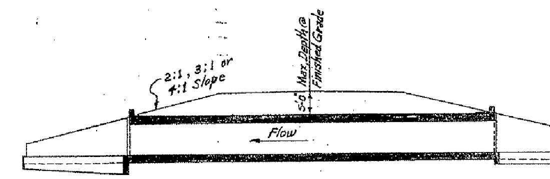
NOTE:- For details of wings and bar lists, see Drawing Nos. W-X152-1 or W-X152-2, and W-X15; W-X153-1 or W-X153-2; W-X154-1 or W-X154-2



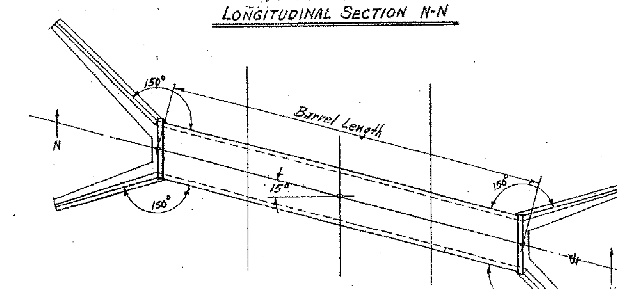
PART LONGITUDINAL SECTION N-N



TYPICAL SECTION M-M



LONGITUDINAL SECTION N-N



LAYOUT OF SINGLE BARREL CULVERT
15° SKEW LEFT FORWARD
15° Skew Right Forward is reversed.

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.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs.

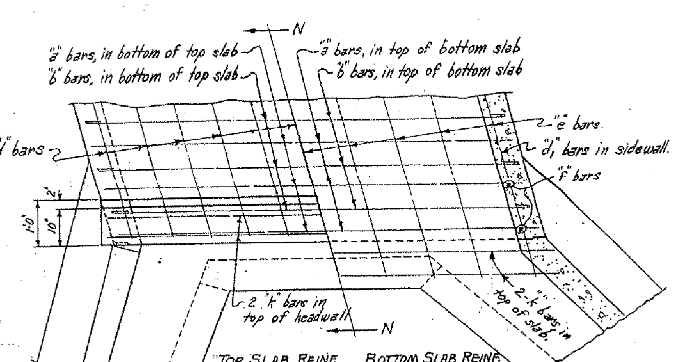
UNIT STRESSES:-
Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

Bar Size	Pin Diam.	K	Add for 2 Hooks	Bending Diagram Bars "b"
#6	3"	5"	1'-2"	
#7	3½"	5¾"	1'-4"	

NOTE:- Dimensions are to centers of bars

Dowel Bars for Two Headwalls

Span 1 @	Size	Spacing	No. Req'd	Length	X	Bars "r" Dowel bars in headwalls
4'	#4	11"±	12	2'-6"	1'-3"	
5'	#4	11"±	14	2'-7"	1'-3½"	
6'	#4	11"±	16	2'-8"	1'-4"	
7'	#4	11½"±	18	2'-9"	1'-4½"	
8'	#4	11½"±	20	2'-11"	1'-5½"	
9'	#4	11½"±	22	3'-0"	1'-6"	
10'	#4	12"±	24	3'-1"	1'-6½"	
11'	#4	12"±	26	3'-2"	1'-7"	
12'	#4	12"±	28	3'-3"	1'-7½"	



PART PLAN AT CULVERT END

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X152-1 or W-X152-2; W-X153-1 or W-X153-2 and W-X154-1 or W-X154-2. Also W-X15.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

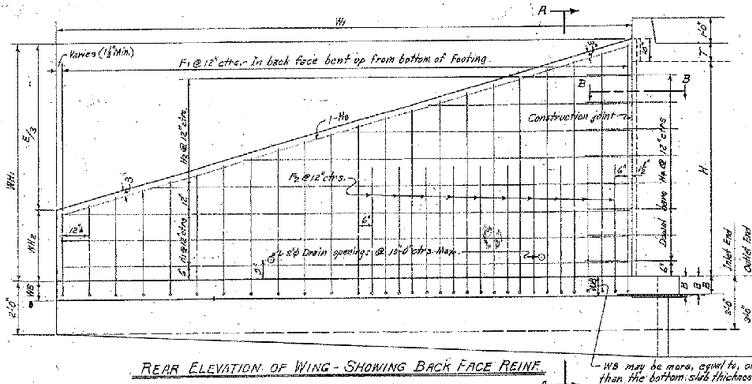
DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW

4',5',6',7',8',9',10',11'&12' SPANS — 2:1, 3:1 OR 4:1 SLOPES
SINGLES — UNDER 5'-0" COVER

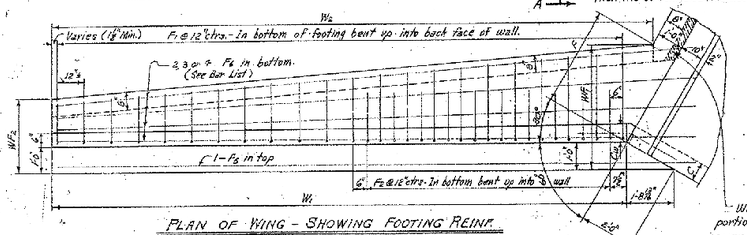
STANDARD DRAWING NO. R-115X-0

Designed By:- W.C.H. 1-23-63 — Checked By:- R.R.S. 5-8-63
Drawn By:- W.C.H. 8-14-63 — Checked By:- B.H.S. 10-7-63
Quantities By:- W.C.H. 8-21-63 — Checked By:- R.G. 12-10-63

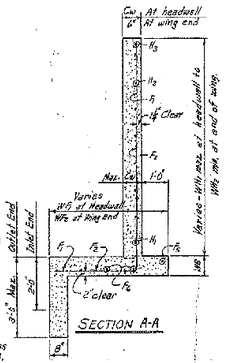
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



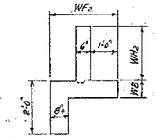
REAR ELEVATION OF WING - SHOWING BACK FACE REINF.



PLAN OF WING - SHOWING FOOTING REINF.

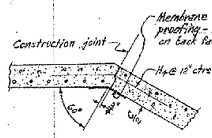


SECTION A-A

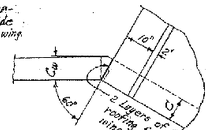


END VIEW OF WING

When B is more than W8, the shaded portion of the apron shall be made the same thickness as the barrel base B.



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 F	PERPENDICULAR DIST. FROM HDWL. 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	C_W	WH_1	WH_2	W_3	W_5	F	E	W_1	W_2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	0'-11⅞"	6'-6"	7'-6"	7'-1½"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1⅝"	1'-4⅜"	8'-6"	9'-3⅝"	9'-2⅝"	1.338	1.466
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-9"	10'-6"	12'-1⅝"	12'-1⅝"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-6⅜"	2'-1⅞"	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'-2⅝"	14'-6"	16'-9"	17'-1½"	3.440	3.661
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-2⅝"	14'-6"	16'-9"	17'-1½"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-2⅝"	14'-6"	16'-9"	17'-1½"	3.582	3.803
7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	2'-3⅛"	16'-6"	19'-0⅝"	19'-1⅝"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	2'-3⅛"	16'-6"	19'-0⅝"	19'-1⅝"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-0"	18'-6"	21'-4⅝"	22'-0⅝"	5.761	6.097

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_3.

APRON DIMENSION W_3

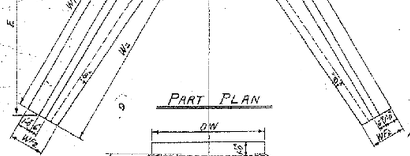
$W_3 = (OW - 2F)$

CLEAR SPAN S	CLEAR HEIGHT H	2 × FOOTING DIMENSION 2F	SINGLE BARREL CULVERT OW	SINGLE BARREL CULVERT W_3	DOUBLE BARREL CULVERT OW	DOUBLE BARREL CULVERT W_3	TRIPLE BARREL CULVERT OW	TRIPLE BARREL CULVERT W_3	QUADRUPLE BARREL CULVERT OW	QUADRUPLE BARREL CULVERT W_3	QUINTUPLE BARREL CULVERT OW	QUINTUPLE BARREL CULVERT W_3
4'	2'	1'-11⅛"	5'-0"	3'-0⅜"	9'-8"	7'-8⅜"	14'-4"	12'-4⅜"	19'-0"	17'-0⅜"	23'-8"	21'-8⅜"
	3'	2'-8⅜"	5'-0"	2'-3⅜"	9'-8"	6'-11⅝"	14'-4"	11'-7⅝"	19'-0"	16'-8⅝"	23'-8"	20'-11⅝"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	16'-2"	23'-8"	20'-2"
	5'	4'-3⅜"	5'-0"	0'-8⅝"	9'-8"	5'-7⅛"	14'-3"	10'-4⅝"	19'-0"	14'-9⅝"	23'-8"	19'-1⅝"
	6'	5'-0⅝"	5'-2"	0'-1⅛"	9'-11"	4'-10⅝"	14'-8"	9'-7⅝"	19'-5"	14'-1⅛"	24'-2"	19'-1⅛"
5'	3'	2'-8⅜"	6'-0"	3'-3⅝"	11'-8"	8'-11⅝"	17'-4"	14'-7⅝"	23'-0"	20'-3⅝"	28'-8"	26'-11⅝"
	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'-5⅛"	17'-4"	13'-0⅝"	23'-0"	18'-0⅝"	28'-8"	24'-0⅝"
	6'	5'-0⅝"	6'-2"	1'-1⅛"	11'-11"	6'-10⅝"	17'-8"	12'-7⅝"	23'-5"	16'-5⅛"	29'-2"	24'-1⅛"
	7'	6'-2⅝"	6'-5"	0'-0⅝"	12'-5"	5'-10⅝"	17'-11"	11'-8⅝"	23'-8"	15'-7⅛"	29'-7"	23'-4⅛"
6'	3'	2'-8⅜"	7'-0"	4'-3⅝"	13'-6"	10'-11⅝"	20'-4"	17'-7⅝"	27'-0"	24'-3⅝"	33'-8"	30'-11⅝"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-4"	33'-8"	30'-2"
	5'	4'-3⅜"	7'-0"	2'-8⅝"	13'-8"	9'-5⅛"	20'-4"	16'-0⅝"	27'-0"	22'-0⅝"	33'-8"	29'-0⅝"
	6'	5'-0⅝"	7'-2"	2'-1⅛"	13'-11"	8'-10⅝"	20'-8"	15'-7⅝"	27'-5"	20'-5⅛"	34'-2"	29'-1⅛"
	7'	6'-2⅝"	7'-5"	1'-0⅝"	14'-5"	7'-10⅝"	20'-11"	14'-8⅝"	27'-8"	21'-6⅛"	34'-7"	28'-4⅛"
	8'	7'-1"	7'-8"	0'-0"	14'-8"	6'-10"	21'-0"	13'-8"	27'-10"	20'-0"	34'-10"	27'-10"
7'	3'	2'-8⅜"	8'-0"	5'-3⅝"	15'-6"	12'-5⅝"	23'-4"	19'-1⅝"	31'-0"	27'-6⅝"	38'-8"	34'-5⅝"
	4'	3'-6"	8'-0"	4'-6"	15'-8"	11'-8"	23'-4"	18'-2"	31'-0"	26'-4"	38'-8"	33'-8"
	5'	4'-3⅜"	8'-0"	3'-8⅝"	15'-8"	10'-11⅝"	23'-4"	18'-0⅝"	31'-0"	25'-0⅝"	38'-8"	33'-0⅝"
	6'	5'-0⅝"	8'-2"	3'-1⅛"	15'-11"	10'-4⅝"	23'-8"	16'-7⅝"	31'-5"	23'-5⅛"	39'-2"	33'-1⅛"
	7'	6'-2⅝"	8'-5"	2'-0⅝"	16'-5"	9'-4⅝"	23'-11"	15'-8⅝"	31'-8"	22'-6⅛"	39'-7"	32'-4⅛"
	8'	7'-1"	8'-8"	1'-0"	16'-8"	8'-4"	24'-0"	14'-8"	31'-10"	21'-0"	39'-10"	31'-10"
8'	4'	3'-6"	9'-0"	5'-6"	17'-6"	14'-2"	26'-8"	22'-10"	35'-6"	31'-10"	44'-8"	40'-2"
	5'	4'-3⅜"	9'-0"	4'-8⅝"	17'-8"	13'-7⅝"	26'-8"	22'-0⅝"	35'-6"	30'-6⅝"	44'-8"	39'-6⅝"
	6'	5'-0⅝"	9'-2"	4'-1⅛"	17'-11"	12'-10⅝"	26'-8"	21'-7⅝"	35'-5"	30'-5⅛"	44'-8"	39'-7⅛"
	7'	6'-2⅝"	9'-5"	3'-0⅝"	18'-1"	11'-10⅝"	26'-11"	20'-8⅝"	35'-8"	28'-6⅛"	45'-0"	38'-4⅛"
	8'	7'-1"	9'-8"	2'-0"	18'-2"	10'-10"	27'-0"	19'-8"	35'-10"	26'-10"	45'-2"	37'-2"
9'	5'	4'-3⅜"	10'-0"	5'-0⅝"	19'-10"	15'-9⅝"	29'-8"	25'-4⅝"	39'-5"	35'-1⅝"	49'-2"	44'-10⅝"
	6'	5'-0⅝"	10'-2"	5'-2⅛"	20'-1"	15'-0⅝"	29'-11"	24'-5⅝"	39'-8"	34'-0⅛"	49'-7"	43'-11⅛"
	7'	6'-2⅝"	10'-5"	4'-0⅝"	20'-5"	14'-0⅝"	29'-11"	23'-5⅝"	39'-8"	33'-0⅛"	49'-7"	42'-11⅛"
	8'	7'-1"	10'-8"	3'-0"	20'-10"	13'-0"	30'-0"	22'-4"	39'-10"	31'-6"	49'-10"	41'-6"
10'	6'	5'-0⅝"	11'-2"	6'-10⅛"	22'-1"	17'-7⅝"	32'-8"	28'-4⅝"	43'-5"	39'-1⅝"	54'-2"	49'-7⅛"
	7'	6'-2⅝"	11'-5"	5'-6⅝"	22'-5"	17'-0⅝"	32'-11"	27'-10⅝"	43'-8"	38'-0⅛"	54'-7"	48'-6⅛"
	8'	7'-1"	11'-8"	4'-6"	22'-8"	16'-0"	33'-0"	26'-8"	43'-10"	36'-6"	54'-10"	47'-2"
11'	6'	5'-0⅝"	12'-2"	7'-3⅛"	24'-2"	19'-1⅝"	36'-0"	30'-11⅝"	47'-10"	42'-7⅝"		
	7'	6'-2⅝"	12'-5"	6'-1⅝"	24'-5"	18'-1⅝"	36'-0"	29'-11⅝"	47'-10"	41'-7⅝"		
	8'	7'-1"	12'-8"	5'-0"	24'-8"	16'-10"	36'-0"	28'-8"	47'-10"	40'-6"		
12'	6'	5'-0⅝"	13'-0"	8'-3⅛"	26'-2"	21'-1⅝"	39'-0"	33'-7⅝"	51'-10"	46'-3⅝"		
	7'	6'-2⅝"	13'-0"	7'-1⅝"	26'-2"	19'-11⅝"	39'-0"	32'-5⅝"	51'-10"	45'-1⅝"		
	8'	7'-1"	13'-6"	6'-0"	26'-2"	18'-10"	39'-0"	31'-2"	51'-10"	44'-0"		

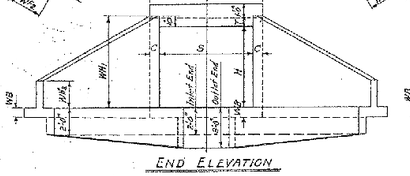
QUANTITIES

CLEAR SPAN S	CLEAR HEIGHT H	THICKNESS OF WING AT HEADWALL C_W	THICKNESS OF WING FOOTING WB	REINFORCING STEEL - LB. 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
					CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.96	6.92	7.38	8.34
	3'	6"	7"	169.8	6.66	7.21	8.17	9.13	10.09
	4'	6"	7"	254.6	8.33	9.29	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"	169.8	6.97	7.68	8.19	9.96	11.12
	4'	6"	7"	254.6	8.54	9.70	10.87	10.03	13.20
	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'	7½"	8½"	1139.6	16.94	20.15	21.37	22.59	23.80
6'	3'	6"	7"	169.8	6.68	8.06	9.48	10.80	12.18
	4'	6"	7"	254.6	8.75	10.15	11.48	12.87	14.25
	5'	6"	7"	357.8	11.15	12.53	13.88	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7½"	8½"	1139.6	13.16	20.53	22.00	23.43	24.84
	8'	8"	9"	1492.6	21.09	25.63	26.96	28.39	29.83
7'	4'	6"	7"	254.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.59	16.13	17.75
	6'	7"	8"	583.1	15.20	16.82	18.42	20.06	21.66
	7'	7½"	8½"	1139.6	19.28	21.02	22.69	24.38	25.97
	8'	8"	9"	1925.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	254.6	9.13	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.34
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7½"	8½"	1139.6	19.59	21.46	23.30	25.16	26.99
	8'	8"	9"	1925.6	24.94	26.91	28.26	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.39	16.87	18.93	20.97
	6'	7½"	8"	583.1	15.94	18.09	20.09	22.19	24.23
	7'	7½"	8½"	1139.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1925.6	24.96	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.99	14.80	17.05	19.26	21.52
	6'	7½"	8"	583.1	16.17	18.50	20.77	22.98	25.28
	7'	7½"	8½"	1139.6	20.04	22.37	24.69	26.87	29.15
	8'	8"	9"	1925.6	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"	8½"	1139.6	20.64	23.22	25.71	28.16	
	8'	8"	9"	1925.6	25.19	27.77	30.27	32.74	
12'	6'	8"	9"	583.1	16.92	19.75	22.45	25.18	
	7'	8"	8½"	1139.6	20.87	23.69	26.40	29.18	
	8'	8"	9"	1925.6	25.92	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.

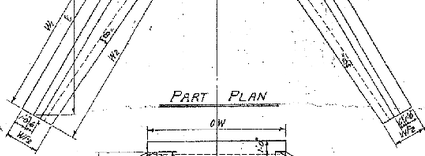


PART PLAN

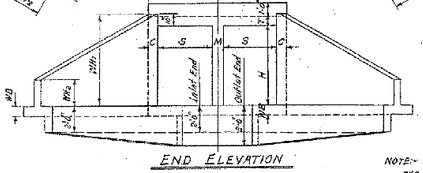


END ELEVATION

SINGLE BARREL CULVERT



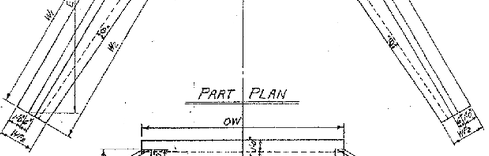
PART PLAN



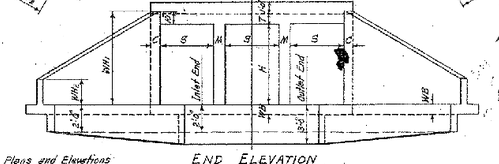
END ELEVATION

DOUBLE BARREL CULVERT

NOTE:- Plans and Elevations are not to scale.

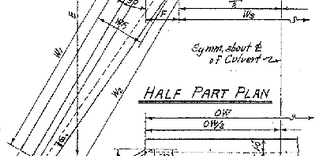


PART PLAN

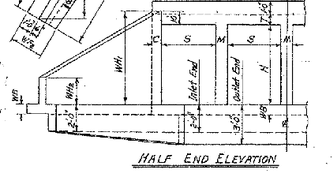


END ELEVATION

TRIPLE BARREL CULVERT

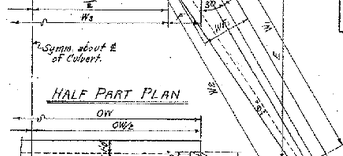


HALF PART PLAN

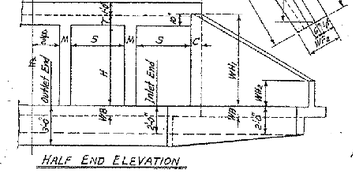


HALF END ELEVATION

QUADRUPLE BARREL CULVERT



HALF PART PLAN



HALF END ELEVATION

QUINTUPLE BARREL CULVERT

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopings 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.

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT H	F_1 BENT: In bottom of footing, bent up into back face of wing. One bar of each length. SIZE	SPACING	NO. REQ'D	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	F_2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F_1 bars. SIZE	SPACING	NO. REQ'D	LENGTH	X	Y	F_5 STRAIGHT: Longitudinal in top of wing footing heel. SIZE	NO. REQ'D	LENGTH	F_6 STRAIGHT: Longitudinal in bottom of wing footing toe. SIZE	NO. REQ'D	LENGTH	H_1 STRAIGHT: Horizontal in back face of wing. SIZE	SPACING	NO. REQ'D	LENGTH	H_2 STRAIGHT: Horizontal in back face of wing. One bar of each length. SIZE	SPACING	NO. REQ'D	LENGTHS VARY MAX.	LENGTHS VARY MIN.	H_3 STRAIGHT: In back face of wing at top or slope. SIZE	NO. REQ'D	LENGTH	H_4 BENT: Dowels thru construction joint at headwall. SIZE	SPACING	NO. REQ'D	LENGTH	X	QUANTITY REINFORCING STEEL PER WING LB.
H				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.																															
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	—	—	#3	1	9'-8"	#3	2	8'-6"	#3	12"	1	7'-2"	#3	12"	1	—	9'-0"	#3	1	7'-9"	#3	12"	2	2'-6"	1'-9"	27.0
3'	#3	12"	10	2'-2"	5'-2"	0'-8"	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'-5"	41.1
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"	—	—	—	—	—	—	#3	1	14'-9"	#3	3	13'-6"	#3	12"	1	11'-10"	#3	12"	3	10'-11"	4'-0"	#3	1	12'-1"	#3	12"	4	2'-8"	1'-6"	69.7
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	1'-11"	6'-0"	#3	12"	4	3'-6"	1'-1"	2'-6"	#3	1	16'-8"	#3	3	16'-0"	#3	12"	2	14'-2"	#3	12"	2	13'-6"	4'-0"	#3	1	14'-7"	#3	12"	5	2'-8"	1'-4"	89.5
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	1'-4"	3'-3"	#3	1	19'-0"	#3	3	18'-6"	#3	12"	2	16'-5"	#3	12"	4	15'-5"	4'-0"	#3	1	17'-0"	#9	12"	6	2'-8"	1'-2"	145.8
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-8"	2'-9"	8'-1"	#4	12"	7	5'-6"	1'-7"	4'-0"	#4	1	21'-4"	#4	4	21'-0"	#4	12"	3	18'-9"	#4	12"	5	17'-9"	4'-0"	#4	1	19'-5"	#4	12"	7	3'-6"	1'-9"	283.7
8'	#4	12"	22	4'-5"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	1'-10"	4'-9"	#4	1	23'-8"	#4	4	23'-6"	#4	12"	3	21'-1"	#4	12"	5	19'-9"	4'-0"	#4	1	21'-8"	#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- RMS 1-3-63
Drawn By- W.C.H. 12-4-62. Checked By- RMS 1-31-63
Quantities By- W.C.H. 12-14-62. Checked By- RMS 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

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#/□"

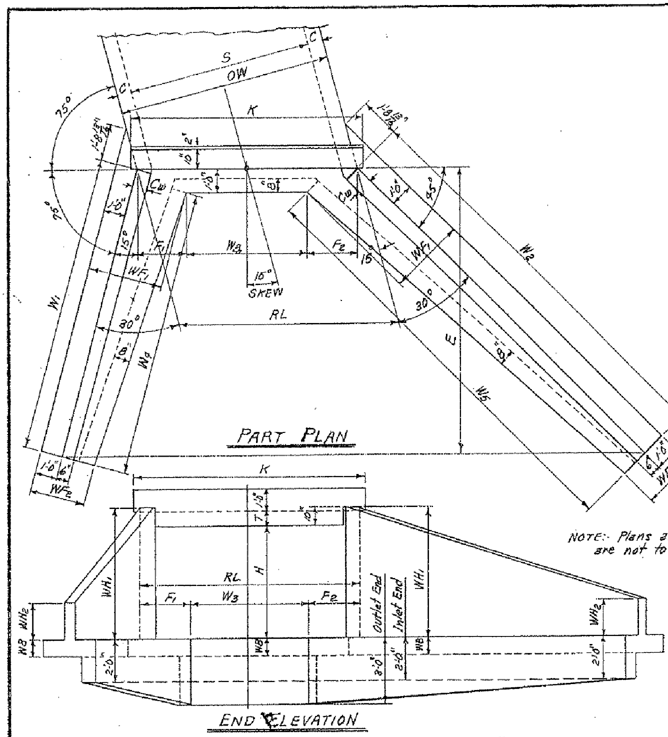
Reinforcing Steel 20,000#/□"

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

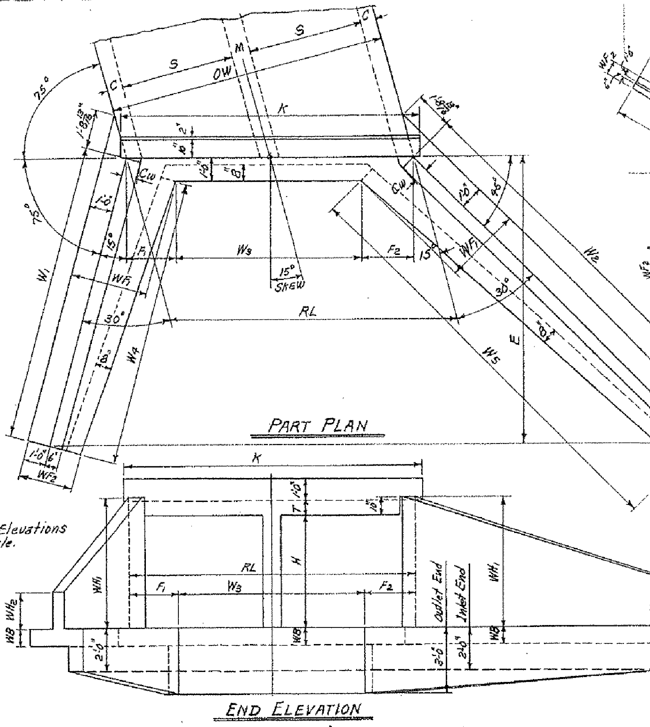
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



END ELEVATION

SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed, see Layout below.

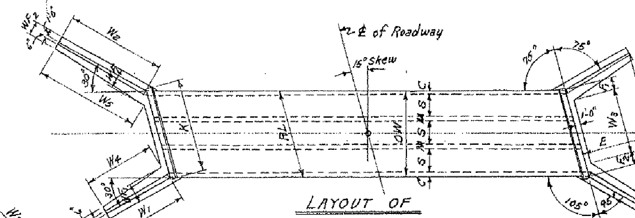


END ELEVATION

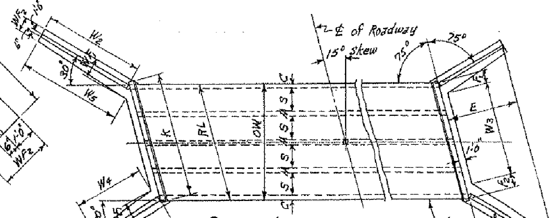
DOUBLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed, see Layout below.

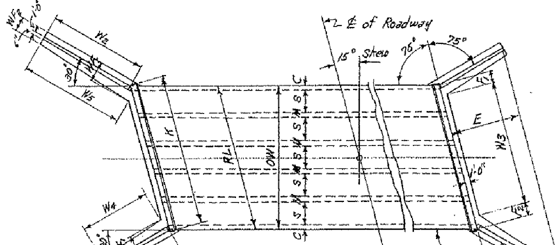
NOTE:- Plans and Elevations are not to scale.



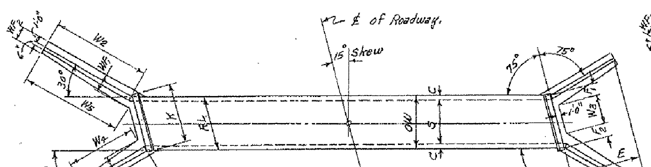
LAYOUT OF TRIPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



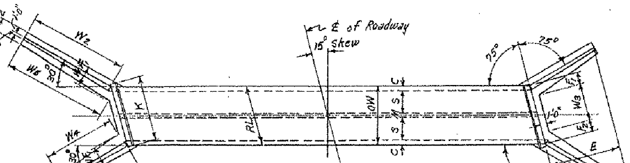
PART LAYOUT OF QUADRUPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



PART LAYOUT OF QUINTUPLE BARREL CULVERT - 15° SKEW LEFT FORWARD

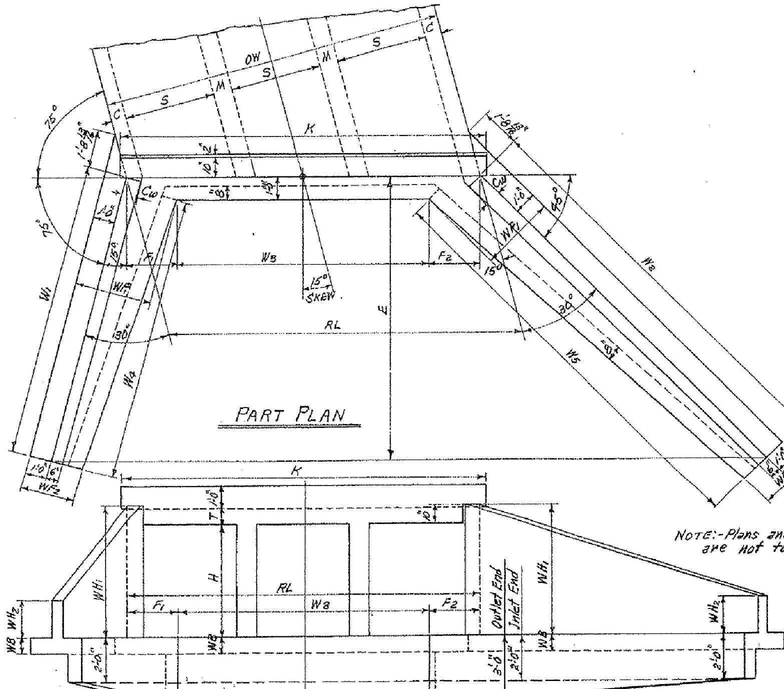


LAYOUT OF SINGLE BARREL CULVERT - 15° SKEW LEFT FORWARD



LAYOUT OF DOUBLE BARREL CULVERT - 15° SKEW LEFT FORWARD

NOTE:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.



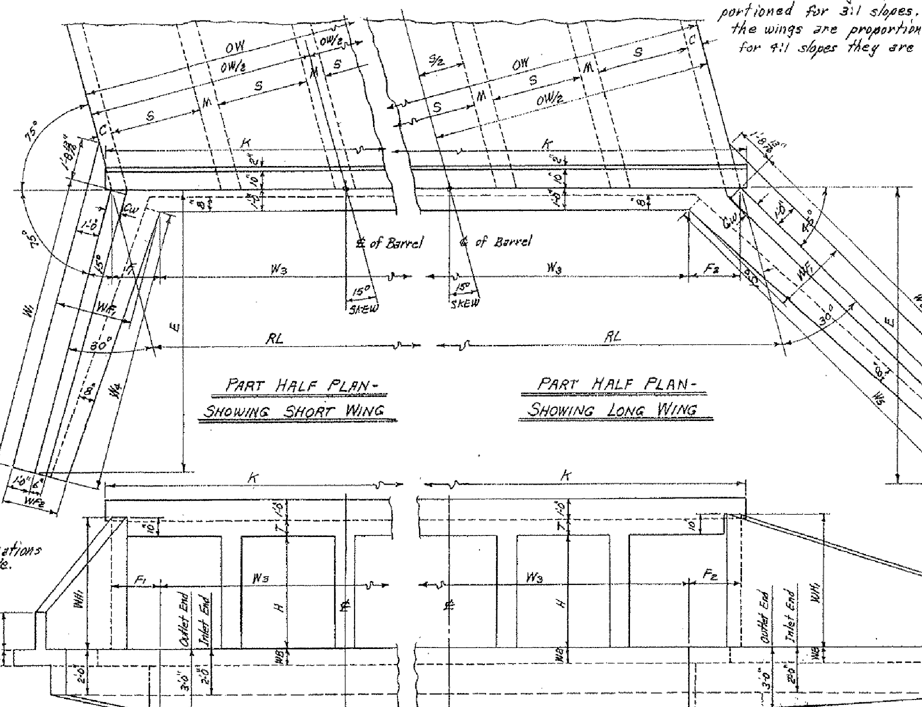
PART PLAN

END ELEVATION

TRIPLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed, see Layout at top center of sheet.

NOTE:- Plans and Elevations are not to scale.



PART HALF PLAN - SHOWING SHORT WING

PART HALF PLAN - SHOWING LONG WING

PART END ELEVATION

QUADRUPLE BARREL CULVERT - 15° SKEW RT. FWD.

Details of Culvert with 15° Skew Left Forward is reversed, see Layout at above center.

PART END ELEVATION

QUINTUPLE BARREL CULVERT - 15° SKEW RT. FWD.

Details of Culvert with 15° Skew Left Forward is reversed, see Layout above.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

$RL = OW \times 1.035276$ — $K = RL + (6\frac{1}{2}")$ — $W_3 = RL - (F_1 + F_2)$

Use with Drawing No.	Clear Span S	Clear Height H	Sum of Footing Dimensions F_1 & F_2	Single Barrel Culvert OW	Single RL	Single K	Single W_3	Double Barrel Culvert OW	Double RL	Double K	Double W_3	Triple Barrel Culvert OW	Triple RL	Triple K	Triple W_3	Quadruple Barrel Culvert OW	Quadruple RL	Quadruple K	Quadruple W_3	Quintuple Barrel Culvert OW	Quintuple RL	Quintuple K	Quintuple W_3
W-X152-1, W-X153-1 or W-X154-1 (For H=8'-0" or less)	4'	2'	2'-0"	5'-0"	5'-2 1/8"	5'-8 5/8"	3'-2 1/8"	9'-8"	10'-0"	10'-6 1/2"	8'-0"	14'-4"	14'-10"	15'-4 1/2"	12'-10"	19'-0"	19'-8"	20'-2 1/2"	17'-8"	23'-8"	24'-6"	25'-0 1/2"	22'-6"
		3'	2'-9 3/4"	5'-0"	"	"	2'-4 3/8"	9'-8"	"	"	7'-2 1/4"	14'-4"	"	"	12'-0 1/4"	19'-0"	"	"	16'-10 1/4"	23'-8"	"	"	21'-8 1/4"
		4'	3'-7 5/8"	5'-0"	"	"	1'-6 1/2"	9'-8"	"	"	6'-4 1/2"	14'-4"	"	"	11'-2 1/2"	19'-0"	"	"	16'-0 1/2"	23'-8"	"	"	20'-10 1/2"
		5'	4'-5 3/8"	5'-0"	"	"	0'-8 3/4"	9'-8"	"	"	5'-6 3/4"	14'-4"	"	"	10'-4 3/4"	19'-0"	"	"	15'-2 3/4"	23'-8"	"	"	20'-0 3/4"
		6'	5'-3 1/8"	5'-2"	5'-4 1/8"	5'-10 5/8"	0'-1"	9'-11"	10'-3 1/8"	10'-9 5/8"	5'-0"	14'-8"	15'-2 1/4"	15'-8 3/4"	9'-11"	19'-5"	20'-1 1/4"	20'-7 3/4"	14'-10"	24'-2"	25'-0 1/4"	25'-6 3/4"	19'-9"
	5'	3'	2'-9 3/4"	6'-0"	6'-2 1/2"	6'-9"	3'-4 3/4"	11'-8"	12'-1"	12'-7 1/2"	9'-3 1/4"	17'-4"	17'-11 3/8"	18'-5 3/4"	15'-1 1/2"	23'-0"	23'-9 3/4"	24'-4 1/4"	21'-0"	28'-8"	29'-8 1/8"	30'-2 1/2"	26'-10 1/4"
		4'	3'-7 5/8"	6'-0"	"	"	2'-7"	11'-8"	"	"	8'-5 3/8"	17'-4"	"	"	14'-3 3/4"	23'-0"	"	"	20'-2 1/4"	28'-8"	"	"	26'-0 1/2"
		5'	4'-5 3/8"	6'-0"	"	"	1'-9 1/8"	11'-8"	"	"	7'-7 5/8"	17'-4"	"	"	13'-6"	23'-0"	"	"	19'-4 1/4"	28'-8"	"	"	25'-2 3/4"
		6'	5'-3 1/8"	6'-2"	6'-4 5/8"	6'-11 1/8"	1'-1 1/2"	11'-11"	12'-4"	12'-10 1/2"	7'-0 7/8"	17'-8"	18'-3 1/2"	18'-10"	13'-0 1/4"	23'-5"	24'-2 7/8"	24'-9 1/4"	18'-11 3/4"	29'-2"	30'-2 3/8"	30'-8 3/4"	24'-11 1/4"
		7'	6'-5 7/8"	6'-3"	6'-5 5/8"	7'-0 1/8"	Ⓐ 0"	12'-1"	12'-6 1/8"	13'-0 1/2"	6'-0 1/4"	17'-11"	18'-6 5/8"	19'-1"	12'-0 3/4"	23'-9"	24'-7"	25'-1 1/2"	18'-1 1/4"	29'-7"	30'-7 1/2"	31'-2"	24'-1 3/4"
	6'	3'	2'-9 3/4"	7'-0"	7'-3"	7'-9 1/2"	4'-5 1/4"	13'-8"	14'-1 3/4"	14'-8 1/4"	11'-4"	20'-4"	21'-0 5/8"	21'-7"	18'-2 3/4"	27'-0"	27'-11 3/8"	28'-5 3/4"	25'-1 3/4"	33'-8"	34'-10 1/4"	35'-4 3/4"	32'-0 1/2"
		4'	3'-7 5/8"	7'-0"	"	"	3'-7 3/8"	13'-8"	"	"	10'-6 1/4"	20'-4"	"	"	17'-5"	27'-0"	"	"	24'-3 3/4"	33'-8"	"	"	31'-2 3/4"
		5'	4'-5 3/8"	7'-0"	"	"	2'-9 5/8"	13'-8"	"	"	9'-8 3/8"	20'-4"	"	"	16'-7 1/4"	27'-0"	"	"	23'-6"	33'-8"	"	"	30'-4 3/4"
		6'	5'-3 1/8"	7'-2"	7'-5"	7'-11 1/2"	2'-1 7/8"	13'-11"	14'-5"	14'-11 1/8"	9'-1 3/4"	20'-8"	21'-4 3/4"	21'-11 1/4"	16'-1 1/2"	27'-5"	28'-4 5/8"	28'-11"	23'-1 1/2"	34'-2"	35'-4 1/2"	35'-11"	30'-1 1/4"
		7'	6'-5 7/8"	7'-3"	7'-6"	8'-0 1/2"	1'-0 1/4"	14'-1"	14'-7"	15'-1 1/2"	8'-1 1/8"	20'-11"	21'-7 7/8"	22'-2 1/4"	15'-2"	27'-9"	28'-8 3/4"	29'-3 1/4"	22'-3"	34'-7"	35'-9 5/8"	36'-4"	29'-3 3/4"
		8'	7'-8 5/8"	7'-4"	7'-7 1/8"	8'-1 5/8"	Ⓐ 0"	14'-2"	14'-8"	15'-2 1/2"	6'-11 3/8"	21'-0"	21'-8 7/8"	22'-3 1/4"	14'-0 1/4"	27'-10"	28'-9 3/4"	29'-4 1/4"	21'-1 1/4"	34'-8"	35'-10 5/8"	36'-5"	28'-2"
	7'	4'	3'-7 5/8"	8'-0"	8'-3 3/8"	8'-9 7/8"	4'-7 3/4"	15'-8"	16'-2 5/8"	16'-9"	12'-7"	23'-4"	24'-1 7/8"	24'-8 1/4"	20'-6 1/4"	31'-0"	32'-1 1/8"	32'-7 1/2"	28'-5 1/2"	38'-8"	40'-0 3/8"	40'-6 3/4"	36'-4 3/4"
		5'	4'-5 3/8"	8'-0"	"	"	3'-10"	15'-8"	"	"	11'-9 1/4"	23'-4"	"	"	19'-8 1/2"	31'-0"	"	"	27'-7 3/4"	38'-8"	"	"	35'-7"
		6'	5'-3 1/8"	8'-2"	8'-5 1/2"	9'-0"	3'-2 1/4"	15'-11"	16'-5 3/4"	17'-0 1/4"	11'-2 1/2"	23'-8"	24'-6"	25'-0 1/8"	19'-2 3/4"	31'-5"	32'-6 1/4"	33'-0 3/4"	27'-3"	39'-2"	40'-6 5/8"	41'-1"	35'-3 1/2"
		7'	6'-5 7/8"	8'-3"	8'-6 1/2"	9'-1"	2'-0 5/8"	16'-1"	16'-7 3/4"	17'-2 1/4"	10'-2"	23'-11"	24'-9 1/8"	25'-3 1/2"	18'-3 1/4"	31'-9"	32'-10 1/8"	33'-5"	26'-4 1/2"	39'-7"	40'-11 3/4"	41'-6 1/4"	34'-6"
		8'	7'-8 5/8"	8'-4"	8'-7 1/8"	9'-2"	0'-11"	16'-2"	16'-8 7/8"	17'-3 1/4"	9'-0 1/4"	24'-0"	24'-10 1/8"	25'-4 1/2"	17'-1 1/8"	31'-10"	32'-11 1/2"	33'-6"	25'-3"	39'-8"	41'-0 3/4"	41'-7 1/4"	33'-4 1/4"
	8'	4'	3'-7 5/8"	9'-0"	9'-3 3/4"	9'-10 1/4"	5'-8 1/4"	17'-8"	18'-3 1/2"	18'-10"	14'-8"	26'-4"	27'-3 1/8"	27'-9 1/2"	23'-7 1/4"	35'-0"	36'-2 7/8"	36'-9 1/4"	32'-7 1/4"	43'-8"	45'-2 1/2"	45'-9"	41'-7"
		5'	4'-5 3/8"	9'-2"	9'-5 7/8"	10'-0 1/4"	5'-0 1/8"	17'-11"	18'-6 5/8"	19'-1"	14'-1 1/4"	26'-8"	27'-7 1/4"	28'-1 3/4"	23'-2"	35'-5"	36'-8"	37'-2 1/2"	32'-2 3/8"	44'-2"	45'-8 3/4"	46'-3 1/4"	41'-3 1/4"
		6'	5'-3 1/8"	9'-2"	"	"	4'-2 3/4"	17'-11"	"	"	13'-3 1/2"	26'-8"	"	"	22'-4"	35'-5"	"	"	31'-4 3/4"	44'-2"	"	"	40'-5 1/2"
		7'	6'-5 7/8"	9'-3"	9'-6 7/8"	10'-1 1/4"	3'-1"	18'-1"	18'-8 5/8"	19'-3"	12'-2 3/4"	26'-11"	27'-10 3/8"	28'-4 3/4"	21'-4 1/2"	35'-9"	37'-0 1/8"	37'-6 1/2"	30'-6 1/4"	44'-7"	46'-1 7/8"	46'-8 1/2"	39'-8"
		8'	7'-8 5/8"	9'-4"	9'-8"	10'-2 1/2"	1'-11 1/2"	18'-2"	18'-9 3/4"	19'-4 1/4"	11'-1 1/4"	27'-0"	27'-11 3/8"	28'-5 3/4"	20'-2 3/4"	35'-10"	37'-1 1/8"	37'-7 1/2"	29'-4 1/2"	44'-8"	46'-2 7/8"	46'-9 1/2"	38'-6 1/4"
	9'	5'	4'-5 3/8"	10'-2"	10'-6 1/4"	11'-0 3/4"	6'-1"	19'-11"	20'-7 1/2"	21'-2"	16'-2"	29'-8"	30'-8 1/2"	31'-3"	26'-3 1/4"	39'-5"	40'-9 3/4"	41'-4 1/4"	36'-4 1/4"	49'-2"	50'-10 3/4"	51'-5 1/4"	46'-5 1/2"
		6'	5'-3 1/8"	10'-3"	10'-7 3/8"	11'-1 3/4"	5'-4 1/2"	20'-1"	20'-9 1/2"	21'-4"	15'-6 1/4"	29'-11"	30'-11 5/8"	31'-6"	25'-8 1/2"	39'-9"	41'-1 3/4"	41'-8 1/4"	35'-10 3/4"	49'-7"	51'-4"	51'-10 1/2"	46'-0 3/4"
		7'	6'-5 7/8"	10'-3"	"	"	4'-1 1/2"	20'-1"	"	"	14'-3 3/4"	29'-11"	"	"	24'-5 3/4"	39'-9"	"	"	34'-8"	49'-7"	"	"	44'-10"
		8'	7'-8 5/8"	10'-4"	10'-8 3/8"	11'-2 3/4"	2'-11 3/4"	20'-2"	20'-10 1/2"	21'-5"	13'-2"	30'-0"	31'-0 3/4"	31'-7 1/4"	23'-4 1/2"	39'-10"	41'-2 7/8"	41'-9 1/4"	33'-6 1/4"	49'-8"	51'-5"	51'-11 1/8"	43'-8 1/2"
	10'	5'	4'-5 3/8"	11'-2"	11'-6 3/4"	12'-1 1/4"	7'-1 3/8"	21'-11"	22'-8 1/4"	23'-2 3/4"	18'-3"	32'-8"	33'-9 3/4"	34'-4 1/4"	29'-4 1/2"	43'-5"	44'-11 1/2"	45'-6"	40'-6"	54'-2"	56'-1"	56'-7 1/2"	51'-7 1/2"
		6'	5'-3 1/8"	11'-3"	11'-7 3/4"	12'-2 1/4"	6'-4 5/8"	22'-1"	22'-10 3/8"	23'-4 3/4"	17'-7 1/4"	32'-11"	34'-1"	34'-7 1/2"	28'-9 3/4"	43'-9"	45'-3 1/2"	45'-10"	40'-0 1/4"	54'-7"	56'-6"	57'-0 1/2"	51'-3"
		7'	6'-5 7/8"	11'-3"	"	"	5'-1 7/8"	22'-1"	"	"	16'-4 1/2"	32'-11"	"	"	27'-7"	43'-9"	"	"	38'-9 3/4"	54'-7"	"	"	50'-0 1/4"
		8'	7'-8 5/8"	11'-4"	11'-8 3/4"	12'-3 1/4"	4'-0 1/4"	22'-2"	22'-11 3/8"	23'-5 3/4"	15'-2 3/4"	33'-0"	34'-2"	34'-8 1/2"	26'-5 1/2"	43'-10"	45'-4 1/2"	45'-11"	37'-8"	54'-8"	56'-7 1/8"	57'-1 1/8"	48'-10 1/2"
	11'	6'	5'-3 1/8"	12'-4"	12'-9 1/4"	13'-3 3/4"	7'-6"	24'-2"	25'-0 1/4"	25'-6 3/4"	19'-9"	36'-0"	37'-3 1/4"	37'-9 3/4"	32'-0"	47'-10"	49'-6 1/4"	50'-0 3/4"	44'-3"	—	—	—	—
		7'	6'-5 7/8"	12'-4"	"	"	6'-3 3/8"	24'-2"	"	"	18'-6 1/4"	36'-0"	"	"	30'-9 1/4"	47'-10"	"	"	43'-0 1/2"	—	—	—	—
		8'	7'-8 5/8"	12'-4"	"	"	5'-0 5/8"	24'-2"	"	"	17'-3 3/4"	36'-0"	"	"	29'-6 3/4"	47'-10"	"	"	41'-9 3/4"	—	—	—	—
	12'	6'	5'-3 1/8"	13'-4"	13'-9 5/8"	14'-4"	8'-6 1/2"	26'-2"	27'-1"	27'-7 1/2"	21'-10"	39'-0"	40'-4 1/8"	40'-11"	35'-1 1/4"	51'-10"	53'-8"	54'-2 1/2"	48'-4 3/4"	—	—	—	—
		7'	6'-5 7/8"	13'-4"	"	"	7'-3 3/4"	26'-2"	"	"	20'-7 1/4"	39'-0"	"	"	33'-10 3/4"	51'-10"	"	"	47'-2"	—	—	—	—
		8'	7'-8 5/8"	13'-4"	"	"	6'-1"	26'-2"	"	"	19'-4 1/2"	39'-0"	"	"	32'-8"	51'-10"	"	"	45'-11 1/2"	—	—	—	—
W-X152-2, W-X153-2 or W-X154-2 (For H=9'-0" & over)	7'	9'	8'-11 1/4"	8'-6"	8'-9 5/8"	9'-4"	Ⓐ 0"	16'-5"	17'-0"	17'-6 1/2"	8'-0 3/4"	24'-4"	25'-2 1/4"	25'-8 3/4"	16'-3"	32'-3"	33'-4 5/8"	33'-11"	24'-5 1/2"	40'-2"	41'-7"	42'-1 1/8"	32'-7 3/4"
	8'	9'	8'-11 1/4"	9'-6"	9'-10"	10'-4 1/2"	0'-10 3/4"	18'-5"	19'-0 3/4"	19'-7 1/4"	10'-1 1/2"	27'-4"	28'-3 5/8"	28'-10"	19'-4 1/2"	36'-3"	37'-6 3/8"	38'-0 3/4"	28'-7"	45'-2"	46'-9 1/8"	47'-3 1/2"	37'-9 3/4"
		10'	10'-2"	9'-8"	10'-0 1/8"	10'-6 1/2"	Ⓐ 0"	18'-8"	19'-3 3/8"	19'-10 1/2"	9'-2"	27'-8"	28'-7 3/4"	29'-2 1/4"	18'-5 3/4"	36'-8"	37'-11 1/2"	38'-6"	27'-9 1/2"	45'-8"	47'-3 3/8"	47'-9 3/4"	37'-1 1/2"
	9'	9'	8'-11 1/4"	10'-6"	10'-10 1/2"	11'-5"	1'-11 1/4"	20'-5"	21'-1 7/8"	21'-8 1/4"	12'-2 1/2"	30'-4"	31'-4 7/8"	31'-11 1/4"	22'-5 1/2"	40'-3"	41'-8"	42'-2 1/2"	32'-8 3/4"	50'-2"	51'-11 1/4"	52'-5 3/4"	43'-0"
		10'	10'-2"	10'-8"	11'-0 1/2"	11'-7"	0'-10 1/2"	20'-8"	21'-4 3/4"	21'-11 1/4"	11'-2 3/4"	30'-8"	31'-9"	32'-3 1/2"	21'-7"	40'-8"	42'-1 1/4"	42'-7 3/4"	31'-11 1/4"	50'-8"	52'-5 1/2"	53'-0"	42'-3 1/2"
		11'	11'-4 5/8"	10'-10"	11'-2 5/8"	11'-9"	Ⓐ 0"	20'-10"	21'-6 3/8"	22'-1 1/2"	10'-2 1/4"	30'-10"	31'-11"	32'-5 1/2"	20'-6 1/2"	40'-10"	42'-3 1/4"	42'-9 3/4"	30'-10 3/4"	50'-10"	52'-7 1/2"	53'-2"	41'-2 3/4"
	10'	9'	8'-11 1/4"	11'-6"	11'-10 7/8"	12'-5 1/4"	2'-11 3/8"	22'-5"	23'-2 1/2"	23'-9"	14'-3 1/4"	33'-4"	34'-6 1/8"	35'-0 1/8"	25'-6 3/4"	44'-3"	45'-9 3/4"	46'-4 1/4"	36'-10 1/8"	55'-2"	57'-1 3/8"	57'-7 3/4"	48'-2"
		10'	10'-2"	11'-8"	12'-1"	12'-7 1/2"	1'-11"	22'-8"	23'-5 5/8"	24'-0"	13'-3 3/4"	33'-8"	34'-10 1/8"	35'-4 3/4"	24'-8 1/4"	44'-8"	46'-2 7/8"	46'-9 1/2"	36'-1"	55'-8"	57'-7 5/8"	58'-2"	47'-5 1/2"
		11'	11'-4 5/8"	11'-10"	12'-3"	12'-9 1/2"	0'-10 3/8"	22'-10"	23'-7 5/8"	24'-2"	12'-3"	33'-10"	35'-0 3/8"	35'-6 3/4"	23'-7 3/4"	44'-10"	46'-5"	46'-11 1/2"	35'-0 1/4"	55'-10"	57'-9 5/8"	58'-4"	46'-5"
		12'	12'-7 3/8"	12'-0"	12'-5 1/8"	12'-11 1/2"	Ⓐ 0"	23'-0"	23'-9 3/4"	24'-4 1/4"	11'-2 1/2"	34'-0"	35'-2 3/8"	35'-8 3/4"	22'-7"	45'-0"	46'-7"	47'-1 1/2"	33'-11 3/4"	56'-0"	57'-11 3/4"	58'-6"	45'-4 1/4"
	11'	9'	8'-11 1/4"	12'-6"	12'-11 1/4"	13'-5 3/4"	4'-0"	24'-5"	25'-3 3/8"	25'-9 3/4"	16'-4"	36'-4"	37'-7 3/8"	38'-1 3/4"	28'-8"	48'-3"	49'-11 3/8"	50'-5 3/4"	41'-0 1/4"	—	—	—	—
		10'	10'-2"	12'-8"	13'-1 3/8"	13'-7 3/4"	2'-11 3/8"	24'-8"	25'-6 1/2"	26'-1"	15'-4 1/2"	36'-8"	37'-11 1/8"	38'-6"	27'-9 1/2"	48'-8"	50'-4 5/8"	50'-11"	40'-2 3/4"	—	—	—	—
		11'	11'-4 5/8"	12'-10"	13'-3 3/8"	13'-10"	1'-10 3/4"	24'-10"	25'-8 1/2"	26'-3"	14'-3 3/4"	36'-10"	38'-1 5/8"	38'-8"	26'-9"	48'-10"	50'-6 5/8"	51'-1"	39'-2"	—	—	—	—
		12'	12'-7 3/8"	13'-0"	13'-5 1/2"	14'-0"	0'-10 1/8"	25'-0"	25'-10 5/8"	26'-5"	13'-3 1/4"	37'-0"	38'-3 5/8"	38'-10"	25'-8 1/4"	49'-0"	50'-8 3/4"	51'-3 1/4"	38'-1 1/2"	—	—	—	—
	12'	9'	8'-11 1/4"	13'-6"	13'-11 3/4"	14'-6 1/4"	5'-0 1/2"	26'-5"	27'-4 1/8"	27'-10 3/4"	18'-5"	39'-4"	40'-8 5/8"	41'-3"	31'-9 1/2"	52'-3"	54'-1 1/8"	54'-7 1/2"	45'-1 3/4"	—	—	—	—
		10'	10'-2"	13'-8"	14'-1 3/4"	14'-8 1/4"	3'-11 3/4"	26'-8"	27'-7 1/4"	28'-1 3/4"	17'-5 1/4"	39'-8"	41'-0 3/4"	41'-7 1/4"	30'-10 3/4"	52'-8"	54'-6 1/4"	55'-0 3/4"	44'-4 1/2"	—	—	—	—
		11'	11'-4 5/8"	13'-10"	14'-3 7/8"	14'-10 1/4"	2'-11 1/4"	26'-10"	27'-9 3/4"	28'-3 3/8"	16'-4 3/4"	39'-10"	41'-2 7/8"	41'-9 1/4"	29'-10 1/4"	52'-10"	54'-8 3/4"	55'-2 3/4"	43'-3 3/4"	—	—	—	—
		12'	12'-7 3/8"	14'-0"	14'-5 7/8"	15'-0 1/4"	1'-10 1/2"	27'-0"	27'-11 3/8"	28'-6"	15'-4"	40'-0"	41'-4 7/8"	41'-11 1/4"	28'-9 1/2"	53'-0"	54'-10 3/8"	55'-4 3/4"	42'-3"	—	—	—	—

Ⓐ Special case for these boxes, See Detail "A" and Table "A" for revised values of F_1, F_2, W_4 and W_5, when apron width is more than 1'-0" and W_3 = 0". For Detail "A" and Tables "A" for each slope, see Drawing Nos. W-X152-1, W-X152-2, or W-X153-1, W-X153-2, or W-X154-1, W-X154-2.

NOTE:- This drawing to be used in conjunction with Standard Wing Drawings for 15° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X152-1 or W-X152-2	W-X153-1 or W-X153-2	W-X154-1 or W-X154-2.

This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW

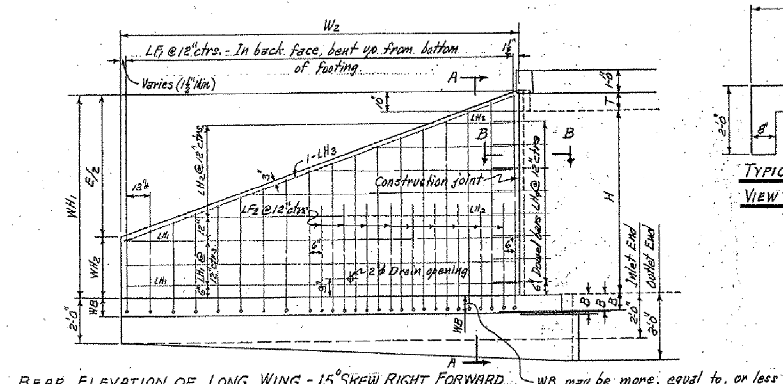
4, 5, 6, 7, 8, 9, 10, 11 & 12 SPANS — 2:1, 3:1 & 4:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER. H=2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12.

STANDARD DRAWING NO. W-X15

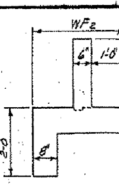
Designed by:- W.C.H. 5-22-63 Checked by:-
Traced by:- W.C.H. 6-13-63 Checked by:- J.E.M. 6-20-63
Quantities by:- Checked by:-

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

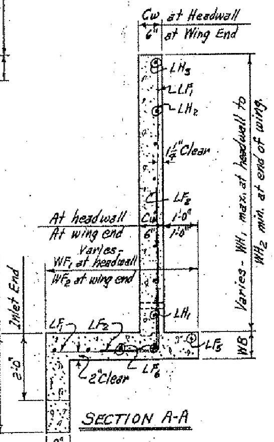


REAR ELEVATION OF LONG WING - 15° SKEW RIGHT FORWARD

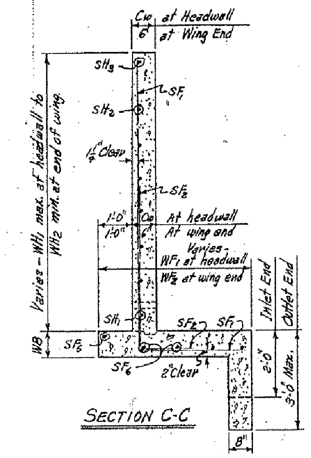
SHOWING BACK FACE REINFORCING



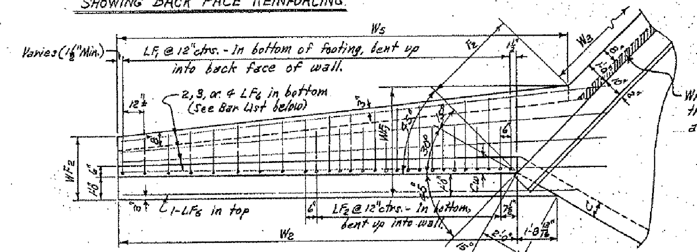
TYPICAL END VIEW OF WING



SECTION A-A

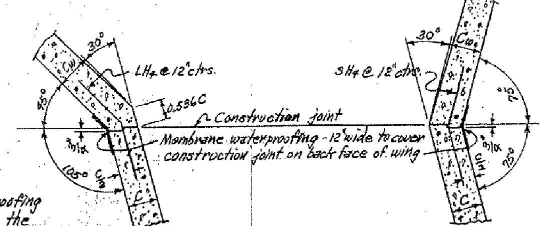


SECTION C-C



PLAN OF LONG WING - 15° SKEW RIGHT FORWARD

SHOWING FOOTING REINFORCING.

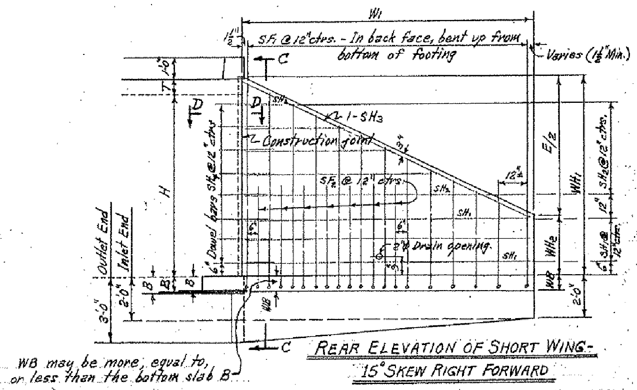


SECTION B-B

SECTION D-D

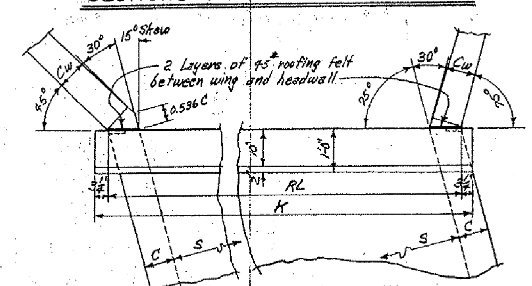
SECTIONS THRU CONSTRUCTION JOINTS

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



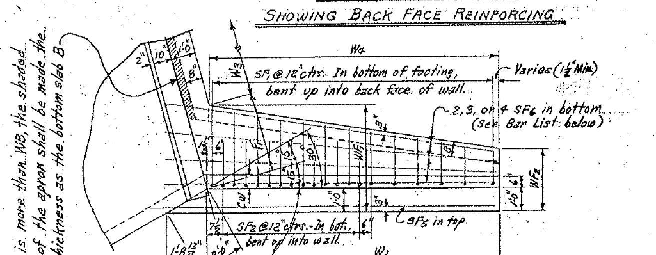
REAR ELEVATION OF SHORT WING - 15° SKEW RIGHT FORWARD

SHOWING BACK FACE REINFORCING



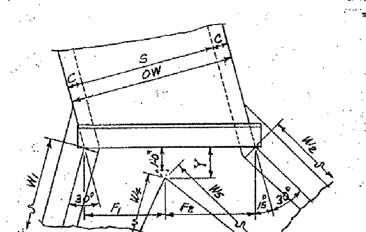
DETAILS AT TOP OF WINGS

15° SKEW RIGHT FORWARD



PLAN OF SHORT WING - 15° SKEW RIGHT FORWARD

SHOWING FOOTING REINFORCING



DETAIL "A"

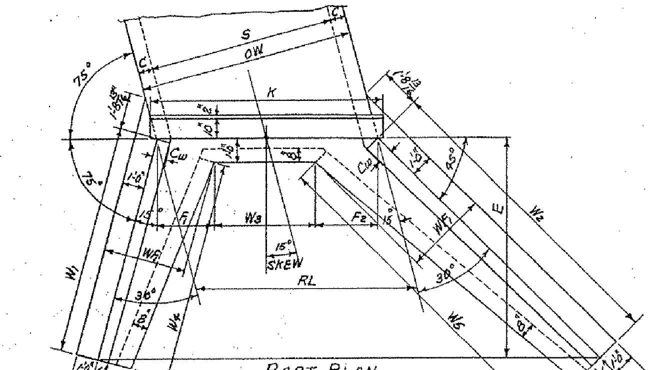
TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F_1	F_2	W_4	W_5	W_3	Y
5'	7'	3'-0"	3'-5 5/8"	11'-2 1/4"	17'-3 1/2"	0"	1'-0 1/4"
6'	8'	3'-6"	4'-1 1/8"	12'-7 1/2"	19'-7"	0"	1'-1"

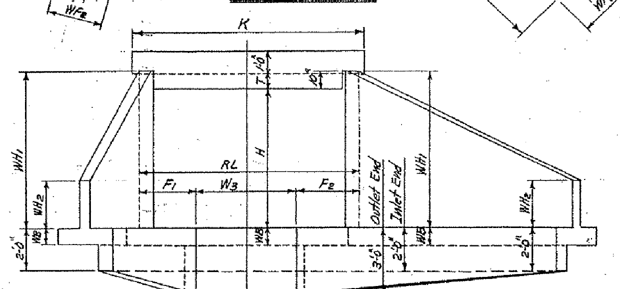
REGULAR WING DIMENSIONS - 2:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HDWL = 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	FOOTING DIMENSION PARALLEL WITH HEADWALL: SHORT WING	FOOTING DIMENSION PARALLEL WITH HEADWALL: LONG WING	PERPENDICULAR DIST. FROM HDWL TO END OF WING	LENGTHS OF WINGWALLS: SHORT WING	LENGTHS OF WINGWALLS: LONG WING	INSIDE FOOTING DIMENSIONS: SHORT WING	INSIDE FOOTING DIMENSIONS: LONG WING	* QUANTITY PER WING, CLASS S CONCRETE, INLET END: SHORT WING	INLET END: LONG WING	OUTLET END: SHORT WING	OUTLET END: LONG WING
H	WB	Cw	WH_1	WH_2	WF_1	WF_2	F_1	F_2	E	W_1	W_2	W_4	W_5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	1'-1 3/8"	0'-10 5/8"	4'-4"	4'-5 3/4"	6'-1 1/2"	3'-9 3/4"	6'-0 1/2"	0.533	0.744	0.593	0.825
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1 1/2"	1'-5 1/2"	1'-4 1/4"	5'-8"	5'-10 1/8"	8'-0 1/4"	5'-3 1/4"	8'-3 1/4"	0.802	1.124	0.879	1.233
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-9 5/8"	1'-10"	7'-0"	7'-3"	9'-10 3/4"	6'-9"	10'-5 3/4"	1.118	1.567	1.214	1.703
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4 1/2"	2'-1 3/4"	2'-3 5/8"	8'-4"	8'-7 1/2"	11'-9 1/2"	8'-2 1/2"	12'-8 1/2"	1.480	2.080	1.595	2.244
		7"	5'-10"	1'-8"	3'-4"	2'-4 1/2"	2'-1 3/4"	2'-3 5/8"	8'-4"	8'-7 1/2"	11'-9 1/2"	8'-2 1/2"	12'-8 1/2"	1.542	2.169	1.656	2.332
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5 7/8"	2'-9 1/4"	9'-8"	10'-0"	13'-8"	9'-8 1/4"	14'-11"	2.055	2.883	2.188	3.074
		7 1/2"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5 7/8"	2'-9 1/4"	9'-8"	10'-0"	13'-8"	9'-8 1/4"	14'-11"	2.097	2.943	2.230	3.134
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5 7/8"	2'-9 1/4"	9'-8"	10'-0"	13'-8"	9'-8 1/4"	14'-11"	2.140	3.004	2.272	3.195
⊙ 7'	8 1/2"	7 1/2"	7'-10"	2'-4"	4'-2"	2'-7 1/2"	3'-0 1/8"	3'-5 3/4"	11'-0"	11'-4 3/4"	15'-6 3/4"	11'-2 1/2"	17'-3 3/4"	2.696	3.781	2.848	4.002
		8"	7'-10"	2'-4"	4'-2"	2'-7 1/2"	3'-0 1/8"	3'-5 3/4"	11'-0"	11'-4 3/4"	15'-6 3/4"	11'-2 1/2"	17'-3 3/4"	2.751	3.860	2.903	4.081
⊙ 8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-6 5/8"	4'-2 1/4"	12'-4"	12'-9 1/4"	17'-5 1/4"	12'-8 3/4"	19'-8 1/4"	3.447	4.832	3.618	5.082

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_3.
⊙ See Table "A" for special values of F_1 & F_2 and W_4 & W_5 for Single 5'x7' and 6'x8' Box Culverts.



PART PLAN



END ELEVATION

SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed, see Drwg. No. W-X15.

TYPICAL WING DETAILS

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X15. For values of RL, K, and W_3 for each box, see the above Std. also.

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.

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"	83	3.51	4.50	5.50	6.49	7.48
	3'	6"	7"	126	4.75	5.73	6.73	7.72	8.71
	4'	6"	7"	190	6.20	7.18	8.18	9.17	10.17
	5'	6"	7"	264	7.88	8.87	9.86	10.86	11.85
	6'	7"	8"	434	10.59	11.61	12.63	13.65	14.67
5'	3'	6"	7"	126	4.96	6.16	7.37	8.58	9.79
	4'	6"	7"	190	6.42	7.62	8.82	10.03	11.24
	5'	6"	7"	264	8.10	9.30	10.51	11.71	12.92
	6'	7"	8"	434	10.81	12.04	13.28	14.52	15.76
	7'	7 1/2"	8 1/2"	841	13.78	15.04	16.30	17.56	18.82
6'	3'	6"	7"	126	5.18	6.62	8.02	9.45	10.88
	4'	6"	7"	190	6.63	8.07	9.47	10.90	12.33
	5'	6"	7"	264	8.32	9.75	11.15	12.59	14.01
	6'	7"	8"	434	11.04	12.49	13.93	15.39	16.84
	7'	7 1/2"	8 1/2"	841	14.01	15.49	16.95	18.43	19.91
	8'	8"	9"	1062	17.49	18.98	20.95	21.94	23.43
7'	4'	6"	7"	190	6.86	8.52	10.15	11.82	13.43
	5'	6"	7"	264	8.54	10.20	11.83	13.50	15.12
	6'	7"	8"	434	11.26	12.94	14.59	16.27	17.92
	7'	7 1/2"	8 1/2"	841	14.24	15.93	17.62	19.31	21.00
	8'	8"	9"	1062	17.72	19.43	21.12	22.83	24.52
8'	4'	6"	7"	190	7.09	8.99	10.85	12.75	14.57
	5'	7"	7"	264	9.10	11.02	12.90	14.82	16.66
	6'	7"	8"	434	11.49	13.41	15.29	17.20	19.05
	7'	7 1/2"	8 1/2"	841	14.46	16.39	18.29	20.23	22.09
	8'	8"	9"	1062	17.95	19.89	21.79	23.73	25.62
9'	5'	7"	7"	264	9.34	11.49	13.59	15.75	17.79
	6'	7 1/2"	8"	434	11.94	14.12	16.24	18.41	20.47
	7'	7 1/2"	8 1/2"	841	14.69	16.86	18.98	21.15	23.22
	8'	8"	9"	1062	18.18	20.35	22.48	24.64	26.71
10'	5'	7"	7"	264	9.57	11.97	14.30	16.58	18.93
	6'	7 1/2"	8"	434	12.18	14.59	16.94	19.24	21.61
	7'	7 1/2"	8 1/2"	841	14.92	17.33	19.68	21.99	24.36
	8'	8"	9"	1062	18.41	20.82	23.17	25.49	27.85
11'	6'	8"	8"	434	12.62	15.30	17.87	20.43	—
	7'	8"	8 1/2"	841	15.43	18.10	20.68	23.24	—
	8'	8"	9"	1062	18.63	21.30	23.88	26.44	—
12'	6'	8"	8"	434	12.86	15.79	18.59	21.41	—
	7'	8"	8 1/2"	841	15.66	18.59	21.40	24.22	—
	8'	8"	9"	1062	18.86	21.79	24.60	27.42	—

⊛ For reinforcing steel in Headwalls and Aprons, see Drawings listed below.

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 Std. Barrel Sections, Drawing Nos.

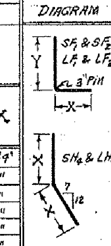
SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT	WING LOCATION	SF1 & LF1 (BENT; In bottom of footing, bent up into back face of wing. One bar of each length.): SIZE	SPACING	No. REQ'D	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	SF2 & LF2 (BENT; In bottom of footing, bent up into back face of wing. Alt. with F1 bars.): SIZE	SPACING	No. REQ'D	LENGTH	X	Y
H	SHORT or LONG															
2'	Short	#3	12"	5	1'-7"	3'-10"	0'-8"	1'-0"	1'-0"	2'-11"	—	—	—	—	—	—
	Long	#3	12"	7	1'-7"	3'-11"	0'-8"	1'-0"	0'-10"	3'-0"	—	—	—	—	—	—
3'	Short	#3	12"	7	1'-10"	5'-2"	0'-10"	1'-4"	1'-1"	3'-11"	—	—	—	—	—	—
	Long	#3	12"	9	1'-11"	5'-2"	0'-10"	1'-3"	1'-2"	4'-0"	—	—	—	—	—	—
4'	Short	#3	12"	8	2'-5"	6'-6"	0'-11"	1'-8"	1'-7"	4'-11"	—	—	—	—	—	—
	Long	#3	12"	11	2'-3"	6'-6"	0'-11"	1'-7"	1'-5"	5'-0"	—	—	—	—	—	—
5'	Short	#3	12"	9	3'-2"	7'-10"	1'-1"	2'-0"	2'-2"	5'-11"	#3	12"	3	3'-6"	1'-1"	2'-6"
	Long	#3	12"	12	3'-1"	7'-10"	1'-1"	1'-11"	2'-1"	6'-0"	#3	12"	3	3'-6"	1'-1"	2'-6"
6'	Short	#4	12"	11	3'-4"	9'-3"	1'-2"	2'-9"	2'-3"	7'-0"	#3	12"	3	4'-6"	1'-4"	3'-3"
	Long	#4	12"	14	3'-7"	9'-3"	1'-2"	2'-3"	2'-6"	7'-1"	#3	12"	3	4'-6"	1'-4"	3'-3"
7'	Short	#4	12"	12	3'-11"	10'-9"	1'-3"	2'-10"	2'-9"	8'-0"	#4	12"	5	5'-6"	1'-7"	4'-0"
	Long	#4	12"	16	3'-11"	10'-8"	1'-3"	2'-8"	2'-9"	8'-1"	#4	12"	6	5'-6"	1'-7"	4'-0"
8'	Short	#4	12"	13	4'-8"	12'-4"	1'-5"	3'-4"	3'-4"	9'-1"	#4	12"	7	6'-6"	1'-10"	4'-9"
	Long	#4	12"	18	4'-6"	12'-2"	1'-5"	3'-1"	3'-2"	9'-2"	#4	12"	9	6'-6"	1'-10"	4'-9"

CLEAR HEIGHT	WING LOCATION	SF5 & LF5 (STRAIGHT; Longitudinal in top of wing footing heel.): SIZE	No. REQ'D	LENGTH	SF6 & LF6 (STRAIGHT; Longitudinal in bottom of wing footing toe.): SIZE	No. REQ'D	LENGTH	SH1 & LH1 (STRAIGHT; Horizontal in back face of wing.): SIZE	SPACING	No. REQ'D	LENGTH	SH2 & LH2 (STRAIGHT; Horizontal in back face of wing. One bar of each length): SIZE	SPACING	No. REQ'D	LENGTHS VARY MAX.	LENGTHS VARY MIN.	SH3 & LH3 (STRAIGHT; In back face of wing at top - on slope.): SIZE	No. REQ'D	LENGTH	SH4 & LH4 (BENT; Dowels thru construction joint at headwall.): SIZE	SPACING	No. REQ'D	LENGTH	X	QUANTITY - REINFORCING STEEL PER WING - LBS.: SHORT WING	LONG WING
2'	Short	#3	1	7'-0"	#3	2	5'-6"	#3	12"	1	4'-3"	#3	12"	1	—	2'-2"	#3	1	4'-8"	#3	12"	2	2'-8"	1'-4"	18.0	23.6
	Long	#3	1	8'-8"	#3	2	7'-3"	#3	12"	1	5'-10"	#3	12"	1	—	3'-0"	#3	1	6'-2"	#3	12"	2	"	"		
3'	Short	#3	1	8'-9"	#3	2	7'-0"	#3	12"	1	5'-7"	#3	12"	2	4'-3"	2'-2"	#3	1	6'-2"	#3	12"	3	"	"	27.9	35.4
	Long	#3	1	10'-6"	#3	2	9'-6"	#3	12"	1	7'-9"	#3	12"	2	5'-10"	3'-0"	#3	1	8'-2"	#3	12"	3	"	"		
4'	Short	#3	1	9'-9"	#3	3	8'-6"	#3	12"	1	7'-0"	#3	12"	3	6'-4"	2'-2"	#3	1	7'-9"	#3	12"	4	"	"	41.0	59.0
	Long	#3	1	12'-5"	#3	3	11'-9"	#3	12"	1	9'-7"	#3	12"	3	8'-8"	3'-0"	#3	1	10'-2"	#3	12"	4	"	"		
5'	Short	#3	1	11'-1"	#3	3	10'-0"	#3	12"	2	8'-4"	#3	12"	3	6'-4"	2'-2"	#3	1	9'-3"	#3	12"	5	"	"	57.6	74.5
	Long	#3	1	14'-3"	#3	3	14'-0"	#3	12"	2	11'-6"	#3	12"	3	8'-8"	3'-0"	#3	1	12'-2"	#3	12"	5	"	"		
6'	Short	#3	1	12'-6"	#3	3	11'-6"	#3	12"	2	9'-9"	#3	12"	4	8'-5"	2'-2"	#3	1	10'-10"	#3	12"	6	"	"	95.1	121.8
	Long	#3	1	16'-2"	#3	3	16'-3"	#3	12"	2	13'-5"	#3	12"	4	11'-6"	3'-0"	#3	1	14'-2"	#3	12"	6	2'-8"	1'-4"		
7'	Short	#4	1	13'-10"	#4	4	13'-1"	#4	12"	2	11'-1"	#4	12"	5	10'-6"	2'-2"	#4	1	12'-4"	#4	12"	7	3'-6"	1'-9"	181.9	238.4
	Long	#4	1	18'-0"	#4	4	18'-8"	#4	12"	2	15'-3"	#4	12"	5	14'-4"	3'-0"	#4	1	16'-2"	#4	12"	7	"	"		
8'	Short	#4	1	15'-3"	#4	4	14'-8"	#4	12"	3	12'-6"	#4	12"	5	10'-6"	2'-2"	#4	1	13'-10"	#4	12"	8	"	"	227.7	303.1
	Long	#4	1	19'-11"	#4	4	21'-1"	#4	12"	3	17'-2"	#4	12"	5	14'-4"	3'-0"	#4	1	18'-2"	#4	12"	8	3'-6"	1'-9"		

BAR BENDING DIAGRAM



NOTE:- Dimensions are to bar centers.

NOTE:- Bars for short wing shall be marked with prefix letter "S", while those for long wing shall be marked with letter "L".

REVISIONS:- Membrane Added. 5-10-66 W.C.H.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS

FOR

REINFORCED CONCRETE BOX CULVERTS

15° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1 SLOPES

SINGLES, DOUBLES, TRIPLES, — ALL DEPTHS OF COVER

QUADRUPLES & QUINTUPLES. — FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X152-1

Designed By:- W.C.H. 5-13-63 Checked By:-
Drawn By:- W.C.H. 6-25-63 Checked By:- R.H.S. 8-7-63
Quantities By:- W.C.H. 9-13-63 Checked By:-