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.		110533	1	96
				(2) HWY.70 & HWY.191 SIGNALS & INTERS. IMPVTS. (W.MEMPHIS)(S)				

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 70 & HWY. 191 SIGNALS & INTERS. IMPVTS. (W. MEMPHIS) (S)

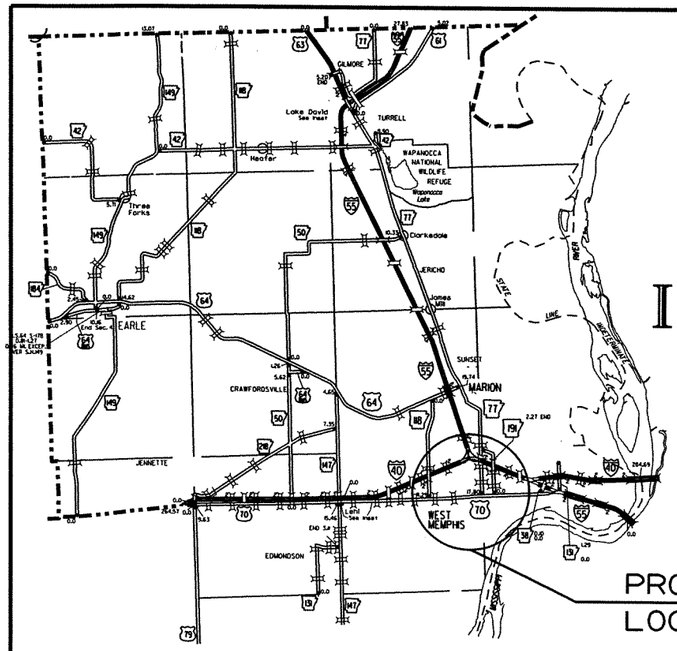
CRITTENDEN COUNTY

ROUTE 70 SECTION 20
ROUTE 191 SECTION 1

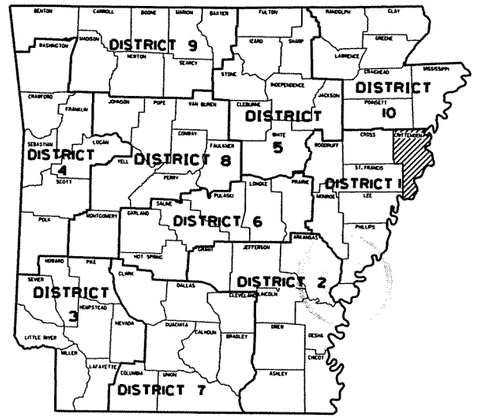
JOB 110533

FED.AID PROJ. CMG-9448(33)

NOT TO SCALE



VICINITY MAP



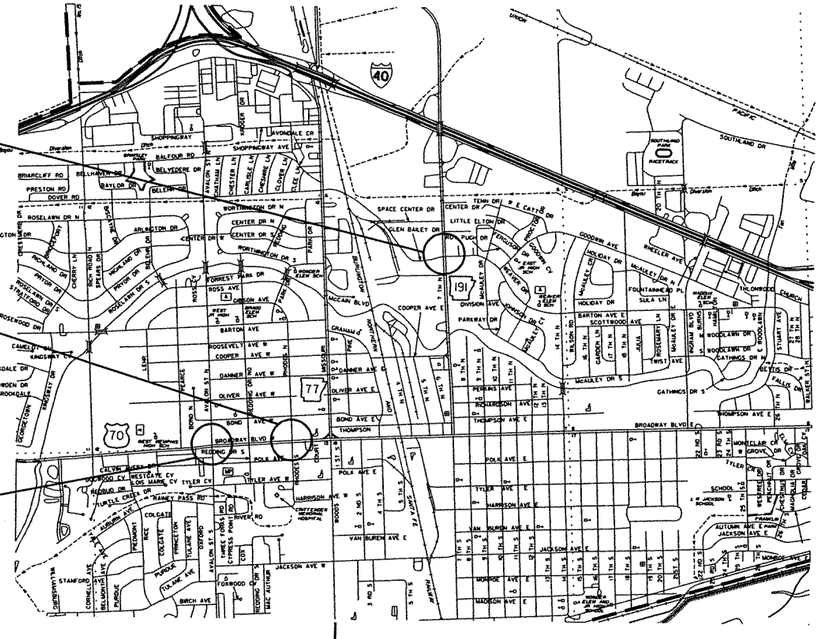
ARK. HWY. DIST. NO. 1

• DESIGN TRAFFIC DATA •	HWY. 70	HWY. 191
DESIGN YEAR	2032	2032
2012 ADT	18,500	8,000
2032 ADT	23,000	10,000
2032 DHV	2,530	1,100
DIRECTIONAL DISTRIBUTION	60%	60%
TRUCKS	4%	5%
DESIGN SPEED	40 MPH	40 MPH

HWY. 191 &
GLEN BAILEY/BARTON AVE.

HWY. 70 & RHODES

HWY. 70 &
NO. AVALON/SO. AVALON



NO LENGTH INVOLVED

GROSS LENGTH OF PROJECT	000.00	FEET	OR	0.000	MILES
NET " " ROADWAY	000.00	"	"	0.000	"
NET " " BRIDGES	000.00	"	"	0.000	"
NET " " PROJECT	000.00	"	"	0.000	"

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 3917
FRANK VOZEL

2/3/12

DEPUTY DIRECTOR
AND CHIEF ENGINEER

MID-POINT OF PROJECT
LT. = N 35°08' 47"
LG. = W 90°10' 32"

P.E. 110533
L400-9448-033

110533

R110533.DGN 3/7/2011

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.		110533	2	96

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-14-12

INDEX OF SHEETS

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

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	FHWA-1273 REVISIONS
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
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
501-1	INSTALLATION OF TIE BARS
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
606-2	PIPE CULVERTS
711-1	CONCRETE PULL BOX
714-1	DESIGN AND MATERIAL REQUIREMENTS FOR TRAFFIC SIGNAL MAST ARMS AND POLES
715-1	DESIGN AND MATERIAL REQUIREMENTS FOR TRAFFIC SIGNAL PEDESTAL POLES
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
JOB 110533	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 110533	CABINET DRAWER ASSEMBLY
JOB 110533	CLOSED LOOP TRAFFIC SYSTEM
JOB 110533	EDGE CARD VIDEO PROCESSOR
JOB 110533	EDGE CARD VIDEO PROCESSOR (ETHERNET ENABLED MULTI PORT EDGE CARD SWITCH)
JOB 110533	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 110533	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 110533	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 110533	INTERNET BIDDING
JOB 110533	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 110533	LED TRAFFIC SIGNAL HEAD
JOB 110533	LUMINAIRE ASSEMBLY (CUTOFF TYPE)
JOB 110533	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 110533	SERVICE POINT ASSEMBLY
JOB 110533	SOIL STABILIZATION
JOB 110533	STORM WATER POLLUTION PREVENTION PLAN
JOB 110533	STREET NAME SIGN (MAST ARE MOUNTED)
JOB 110533	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 110533	SYSTEM LOCAL CONTROLLER
JOB 110533	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)
JOB 110533	UTILITY ADJUSTMENTS
JOB 110533	VIDEO DETECTOR (COLOR)
JOB 110533	VIDEO DETECTOR (COLOR) UPGRADE
JOB 110533	WARM MIX ASPHALT

GENERAL NOTES

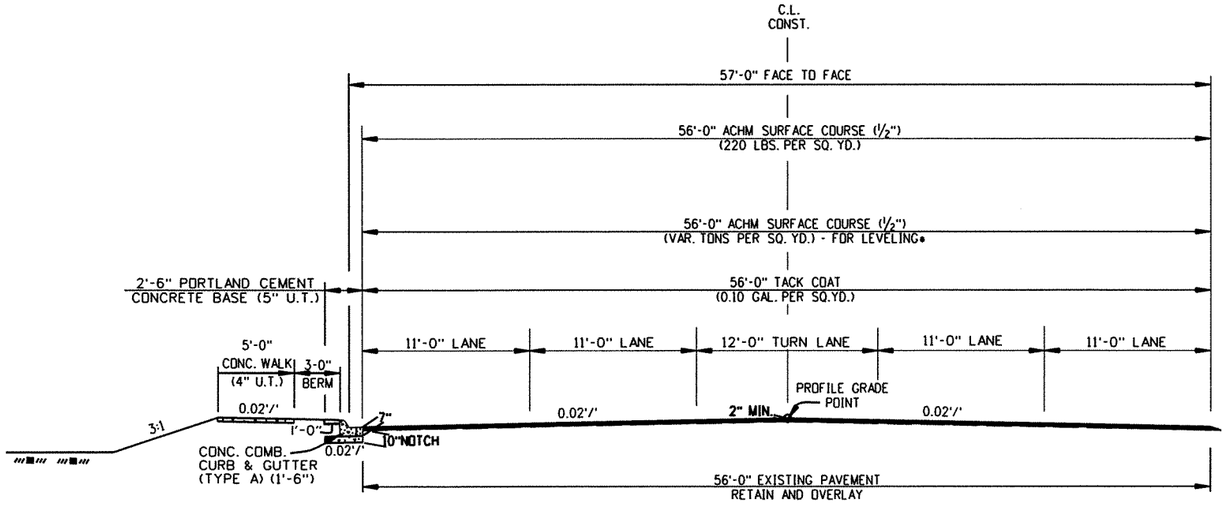
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY 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 SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED IF AND WHERE DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
8. 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.

R110533.DGN 8/16/2011

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.		110533	3	96

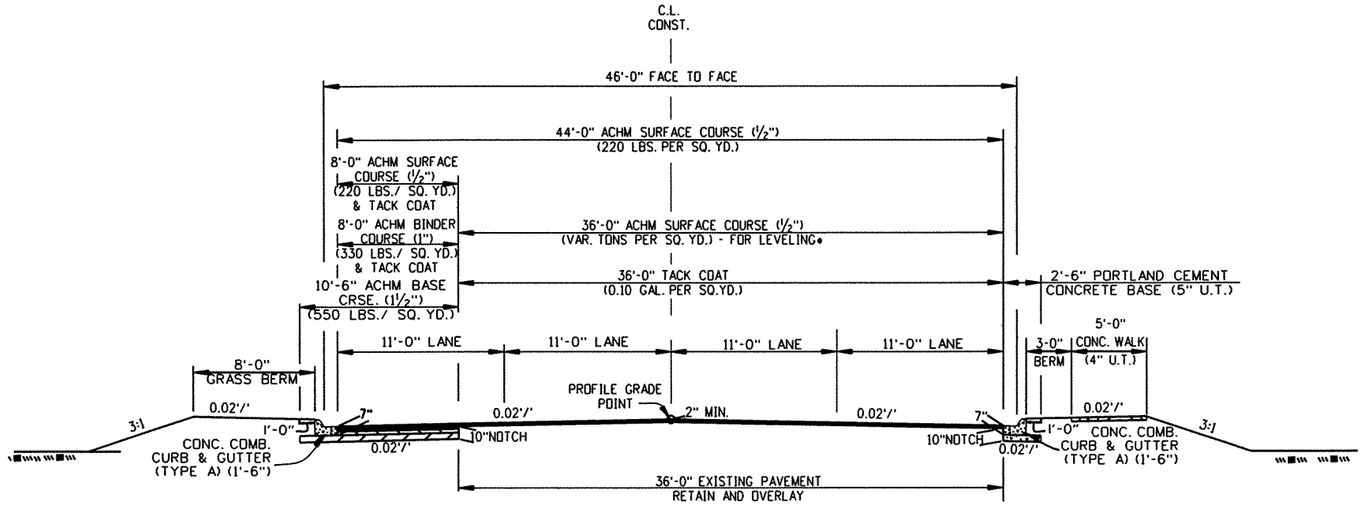
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12



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

TYPICAL SECTION OF IMPROVEMENT
NOTCH AND OVERLAY - HWY. 70



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

TYPICAL SECTION OF IMPROVEMENT
NOTCH AND WIDENING
NO. AVALON, SO. AVALON & BARTON AVE.

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/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING.

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 OR 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.

R110533.DGN 3/8/2011

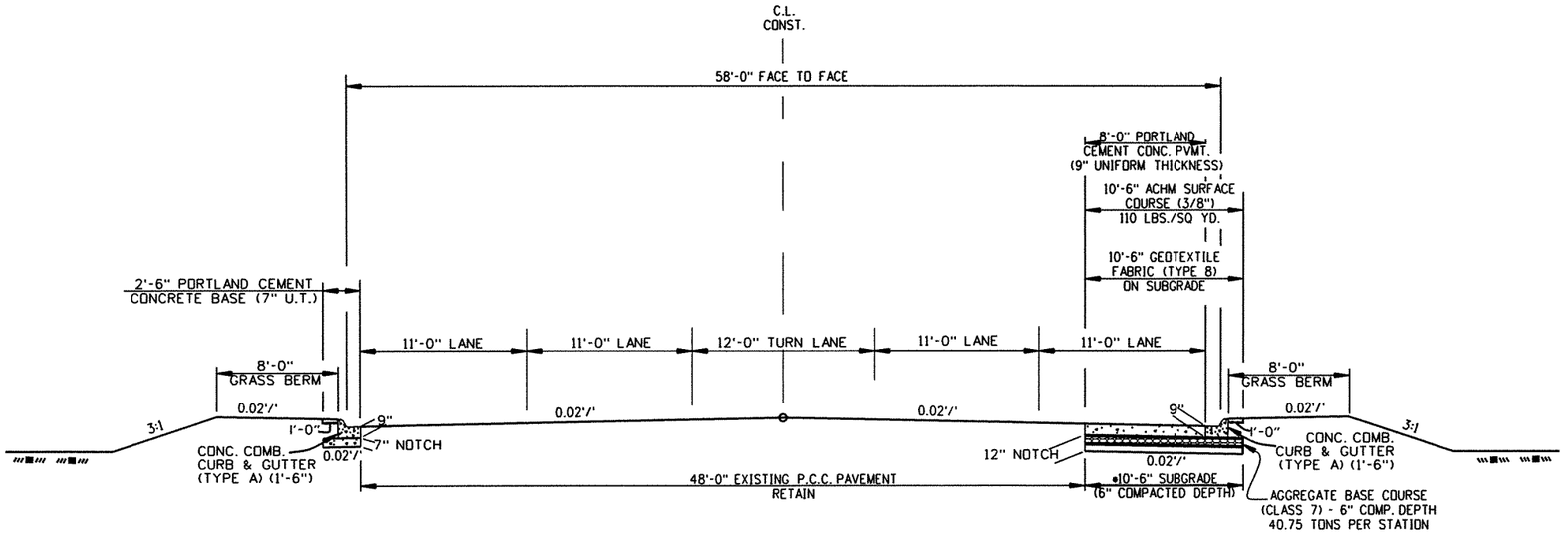
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	4	96

(2) TYPICAL SECTION OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. RUGETT

2-2-12



•SUBGRADE TO BE TREATED IF AND WHERE DIRECTED BY THE ENGINEER. (TO BE PAID FOR AS "SOIL STABILIZATION".)

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING - HWY. 191

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.

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB OR 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.

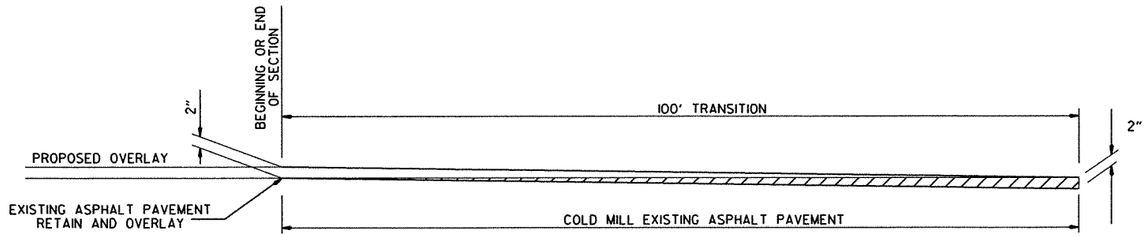
R110533.DGN 3/8/2011

TYPICAL SECTION OF IMPROVEMENT

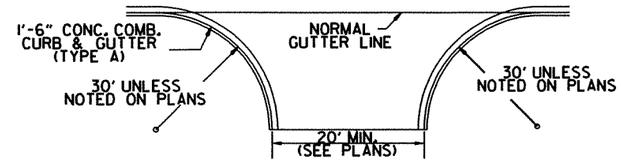
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	5	96

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

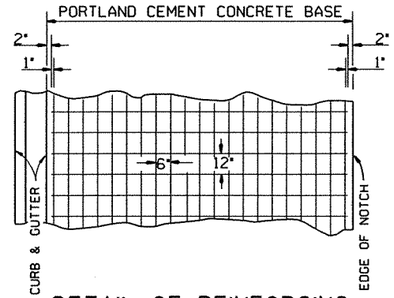


DETAIL FOR TRANSITIONS



DETAIL OF TURNOUTS
ASPHALT STREETS

NOTE: THE TYPICAL SECTION FOR THE CITY STREET CONNECTIONS IN THE CURB & GUTTER SECTION SHALL MATCH THE PROPOSED WIDENING SECTION SHOWN FOR THE MAIN LANES. UNLESS OTHERWISE NOTED ON THE PLANS, ALL CITY STREET RADII WILL BE 30'.



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

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 (5" U.T., 7" U.T. & 10" U.T.)

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EROSION CONTROL GENERAL NOTES:

SAND BAG DITCH CHECKS ESTIMATED AT 25 BAGS PER DITCH CHECK.

DROP INLET SILT FENCE ESTIMATED AT 25 LIN. FT. PER DROP INLET.

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

EROSION CONTROL QUANTITIES - STAGE I:

DROP INLET SILT FENCE = 350 LIN. FT.
SEDIMENT REMOVAL AND DISPOSAL = 25 CU. YDS. *

FOR STAGE CONSTRUCTION SEQUENCE REFER TO MAINTENANCE OF TRAFFIC DETAILS.

* QUANTITY IS ESTIMATED AND IS TO BE USED ANY STAGE, IF AND WHERE DIRECTED BY THE ENGINEER.

E-5 SAND BAG DITCH CHECKS
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE

LEGEND

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
2-2-12

STA. 253+90 END
N. AVALON ST.

STA. 250+30 BEGIN
N. AVALON ST.

STA. 111+00.00 HWY. 70 -
STA. 250+00.00 NORTH AVALON
Δ = 90°00'00"

STA. 105+00 BEGIN
HWY. 70 SECTION

STA. 204+49 END
S. AVALON ST.

STA. 111+11.00 HWY. 70-
STA. 204+78.69 SOUTH AVALON
Δ = 90°00'00"

STA. 115+00 END
HWY. 70 SECTION

STA. 201+00 BEGIN
S. AVALON ST.

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS (STAGE I)

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EROSION CONTROL QUANTITIES - STAGE 2:

SAND BAG DITCH CHECK • 25 BAG
DROP INLET SILT FENCE • 325 LIN. FT.
SILT FENCE • 25 LIN. FT.
SEDIMENT REMOVAL AND DISPOSAL • 50 CU. YDS. •

FOR STAGE CONSTRUCTION SEQUENCE REFER TO MAINTENANCE OF TRAFFIC DETAILS.

• QUANTITY IS ESTIMATED AND IS TO BE USED ANY STAGE, IF AND WHERE DIRECTED BY THE ENGINEER.

(E-5) SAND BAG DITCH CHECKS
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE

LEGEND

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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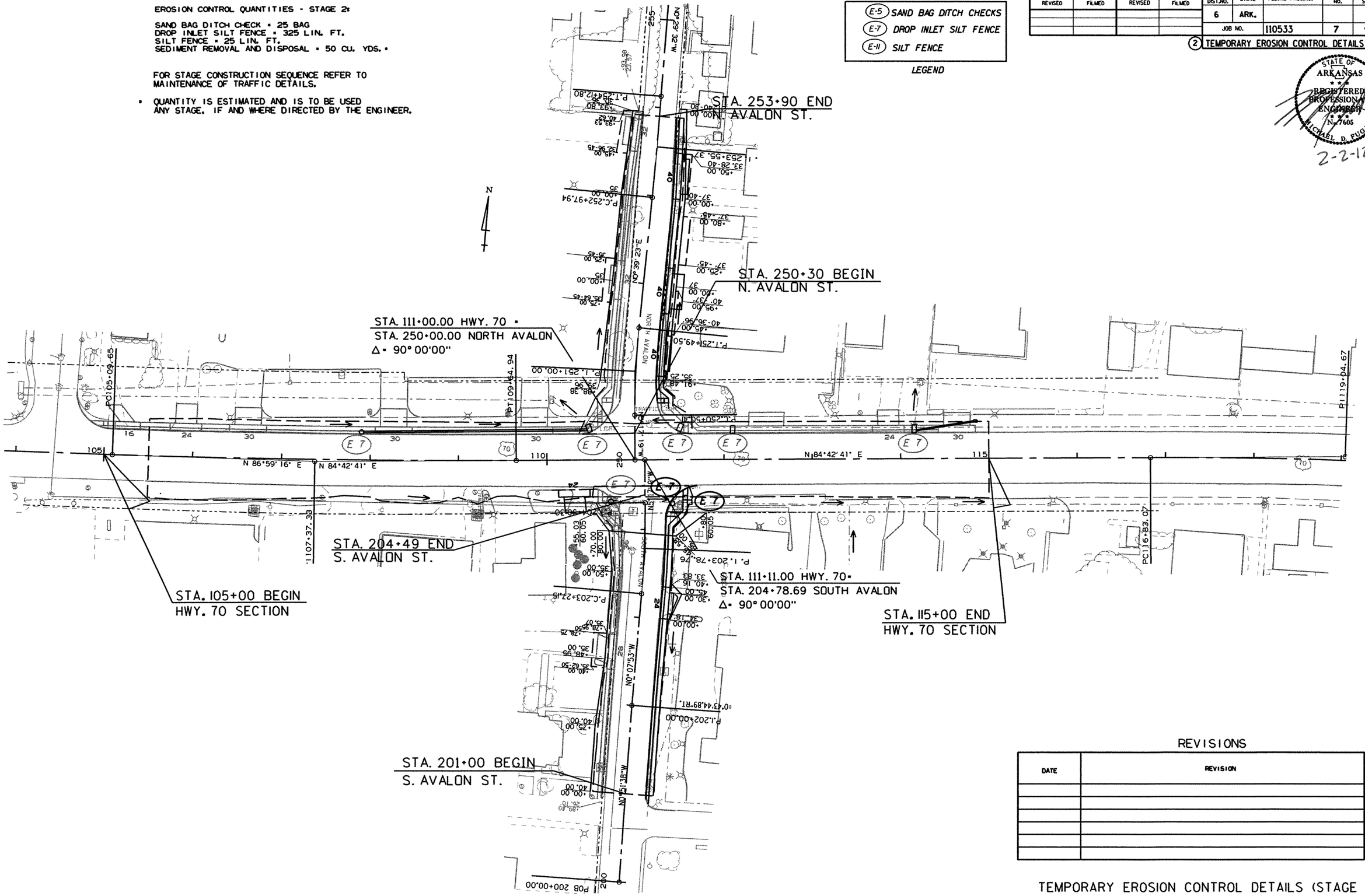
				JOB NO.		110533	7	96

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
2-2-12



REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS (STAGE 2)

R110533.DGN 8/3/2011

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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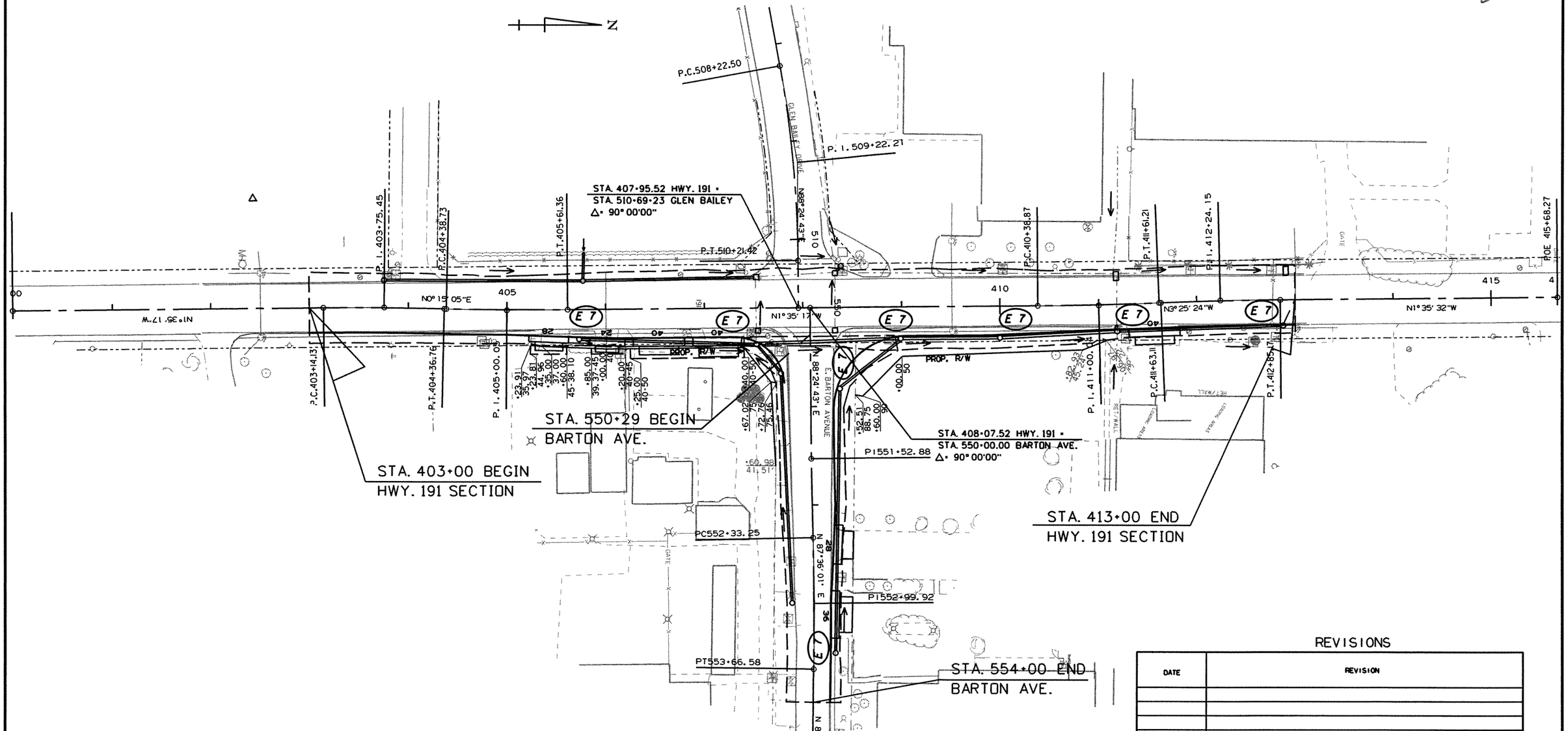
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

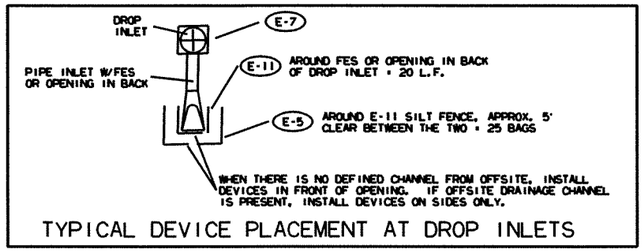


REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS (STAGE I)

R110533.DGN 8/3/2011



TYPICAL DEVICE PLACEMENT AT DROP INLETS

E-5 SAND BAG DITCH CHECKS
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE

LEGEND

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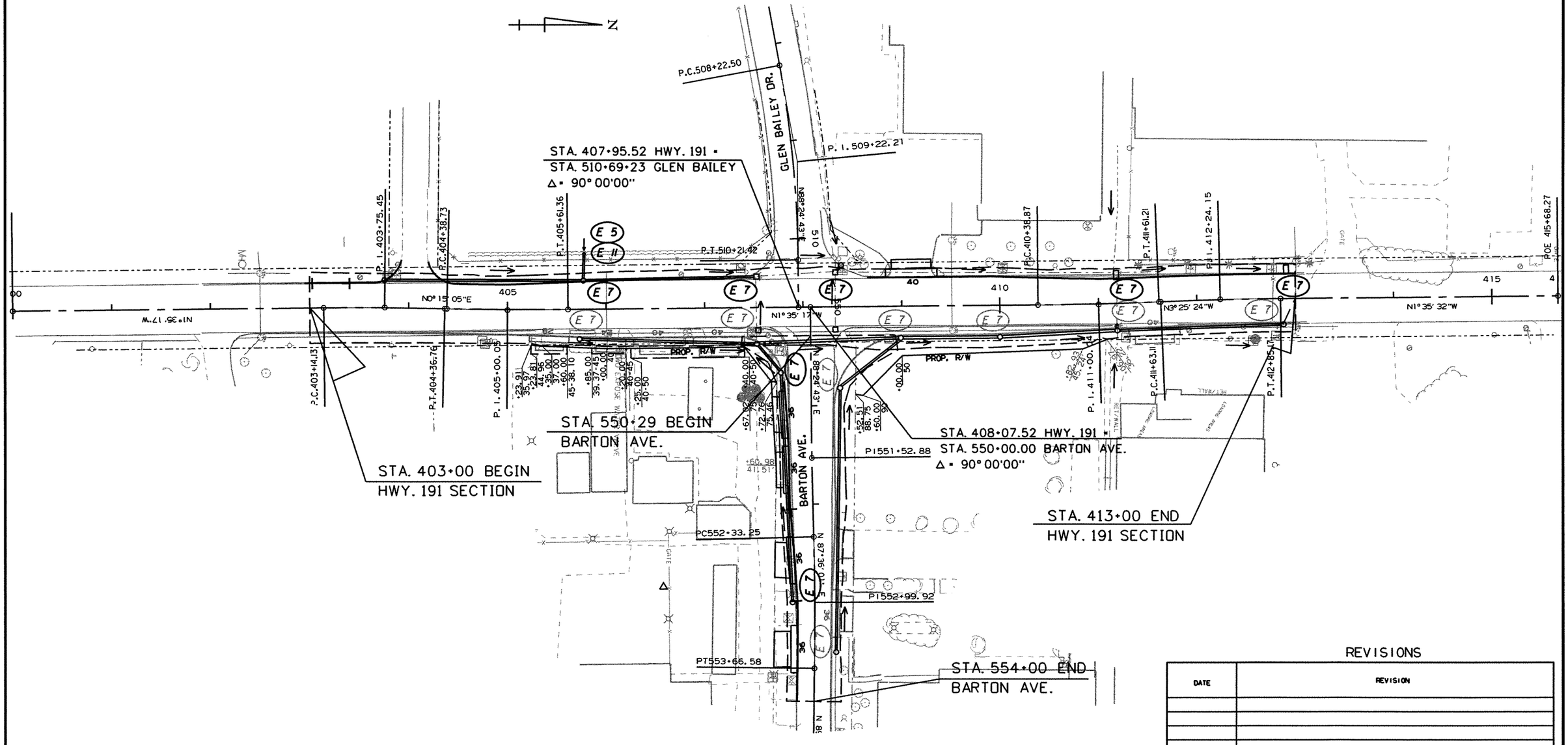
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12



REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS (STAGE 2)

R110533.DGN 8/3/2011

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.		110533	10	96

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

END ROAD WORK — (1) G20-2 (48" X 24")

ROAD WORK 500 FT. — (1) W20-1 (48" X 48")

ROAD WORK 1000 FT — (1) W20-1 (48" X 48")

ROAD WORK 1500 FT — (1) W20-1 (48" X 48")

DETAIL OF SIGN PLACEMENT AT BEGINNING AND END OF HWY.70 & HWY. 191 SECTIONS

STAGE I:

TRAFFIC IS TO BE MAINTAINED IN THE EXISTING LANES THROUGHOUT THE PROJECT.
CONSTRUCT NOTCH AND WIDENING ON LEFT HWY. 70, SO. AVALON AND NO. AVALON.
CONSTRUCT NOTCH AND WIDENING ON RIGHT HWY. 191 AND LEFT ON BARTON AVE.

PLACE VERTICAL PANELS ON THE LEFT SIDE OF HWY. 70, SO. AVALON, NO. AVALON AND ON THE RIGHT SIDE OF HWY. 191 (40' ON CENTER).

CONSTRUCTION PAVEMENT MARKING QUANTITIES BASED ON EXISTING PAVEMENT MARKINGS.

ALL CITY STREET INTERSECTIONS AND DRIVEWAYS ON THE SIDE BEING WIDENED ARE TO BE DELINEATED USING TRAFFIC DRUMS (6 EACH).

W20-1(AHEAD) SIGNS ARE TO BE PLACED AT ALL CITY STREET INTERSECTIONS THROUGH THE WORK ZONE.

END ROAD WORK — (1) G20-2 (48" X 24")

ROAD WORK AHEAD — (1) W20-1 (48" X 48")

STA. 253+90 END N. AVALON ST.

STA. 250+30 BEGIN N. AVALON ST.

TRAFFIC DRUMS 6 EACH PER DRIVE OR TURNOUT

STA. 111+00.00 HWY. 70 = STA. 250+00.00 NORTH AVALON
Δ = 90° 00'00"

VERTICAL PANELS 40' SPACING

TRAFFIC DRUMS 6 EACH PER DRIVE OR TURNOUT

STA. 105+00 BEGIN HWY. 70 SECTION

STA. 204+49 END S. AVALON ST.

STA. 111+11.00 HWY. 70 = STA. 204+78.69 SOUTH AVALON
Δ = 90° 00'00"

STA. 115+00 END HWY. 70 SECTION

VERTICAL PANELS 40' SPACING

STA. 201+00 BEGIN S. AVALON ST.

END ROAD WORK — (1) G20-2 (48" X 24")

ROAD WORK AHEAD — (1) W20-1 (48" X 48")

MAINTENANCE OF TRAFFIC QUANTITIES - STAGE I:
- SIGNS = 368 LIN. FT.
- TRAFFIC DRUMS = 138 EACH
- VERTICAL PANELS = 38 EACH
- CONSTRUCTION PVMT. MRK. = 11,500 LIN.FT.
- CONSTRUCTION PVMT. MRK. (WORD) = 16 EACH
- CONSTRUCTION PVMT. MRK (ARROW) = 16 EACH

R110533.DGN 8/3/2011

MAINTENANCE OF TRAFFIC DETAILS (STAGE I)

MAINTENANCE OF TRAFFIC

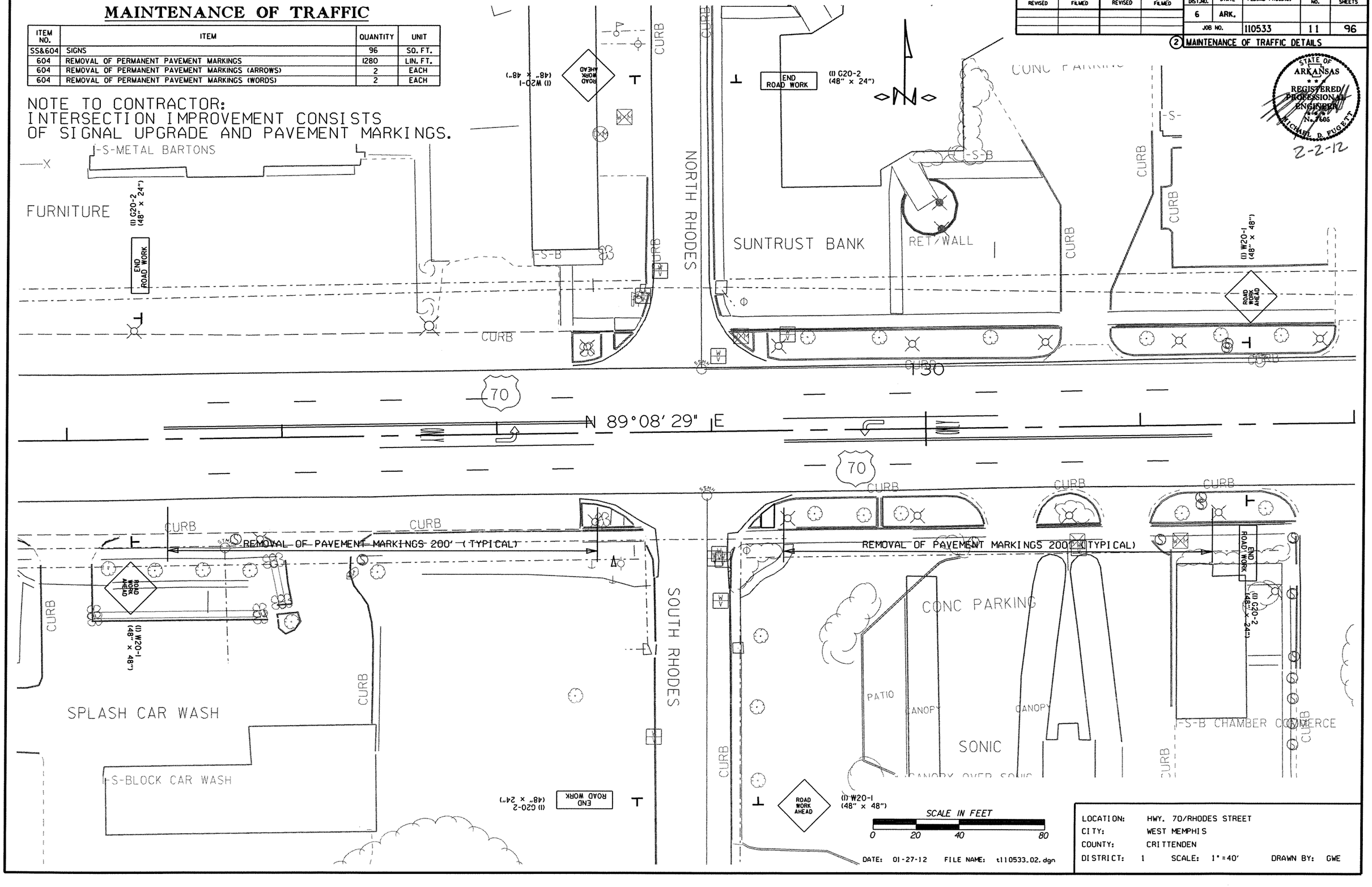
ITEM NO.	ITEM	QUANTITY	UNIT
SS&604	SIGNS	96	SQ. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	1280	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	2	EACH
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)	2	EACH

NOTE TO CONTRACTOR:
INTERSECTION IMPROVEMENT CONSISTS OF SIGNAL UPGRADE AND PAVEMENT MARKINGS.

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.		110533	11	96

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12



LOCATION: HWY. 70/RHODES STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: 1"=40' DRAWN BY: GWE

DATE: 01-27-12 FILE NAME: t110533.02.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.		110533	12	96

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

ROAD WORK AHEAD (I) W20-1 (48" X 48")

END ROAD WORK (I) G20-2 (48" X 24")

N

ROAD WORK AHEAD (I) W20-1 (48" X 48")

END ROAD WORK (I) G20-2 (48" X 24")

P.C.508+22.50

GLEN BAILEY DRIVE

P. I. 509+22.21

STA. 407+95.52 HWY. 191 =
STA. 510+69.23 GLEN BAILEY
Δ = 90° 00'00"

P. I. 403+75.45

P.C.404+38.73

P.T.405+61.36

P.T.510+21.42

N88° 24' 43" E

510

P.C.410+38.87

P.T.411+61.21

P.I. 412+24.15

POE 415+68.27

400

N0° 15' 05"E

405

N1° 35' 17"W

550

410

N3° 25' 24"W

415

N1° 35' 32"W

P.C.403+14.13

P.T.404+36.76

P. I. 405+00.05

TRAFFIC DRUMS
6 EACH PER
DRIVE OR TURNOUT

STA. 550+29 BEGIN
BARTON AVE.

E. BARTON AVENUE

VERTICAL PANELS
40' SPACING

P. I. 411+00.04

P.C.411+63.11

P.T.412+85.17

STA. 408+07.52 HWY. 191
STA. 550+00.00 BARTON AVE.
Δ = 90° 00'00"

STA. 403+00 BEGIN
HWY. 191 SECTION

P1551+52.88

VERTICAL PANELS
40' SPACING

STA. 413+00 END
HWY. 191 SECTION

PC552+33.25

N 87°36' 01" E

TRAFFIC DRUMS
6 EACH PER
DRIVE OR TURNOUT

PT552+99.92

PT553+66.58

STA. 554+00 END
BARTON AVE.

ROAD WORK AHEAD (I) W20-1 (48" X 48")

END ROAD WORK (I) G20-2 (48" X 24")

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MAINTENANCE OF TRAFFIC DETAILS (STAGE I)

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.		110533	13	96

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 2:

TRAFFIC IS TO BE MAINTAINED IN THE EXISTING LANES THROUGHOUT THE PROJECT.
CONSTRUCT NOTCH AND WIDENING ON RIGHT SO. AVALON AND NO. AVALON.
CONSTRUCT NOTCH AND WIDENING ON LEFT HWY. 191 AND ON RIGHT BARTON AVE.
LAY FINAL 2" SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS
AS SHOWN ON PERMANENT PAVEMENT MARKING DETAILS.

PLACE VERTICAL PANELS ON THE LEFT (40' ON CENTER).

CONSTRUCTION PAVEMENT MARKING QUANTITIES BASED ON EXISTING PAVEMENT MARKINGS.

ALL COUNTY ROADS, CITY STREET INTERSECTIONS AND DRIVEWAYS ON THE SIDE BEING WIDENED ARE TO BE DELINEATED USING TRAFFIC DRUMS (6 EACH).

W20-1(AHEAD) SIGNS ARE TO BE PLACED AT ALL COUNTY ROAD AND CITY STREET INTERSECTIONS THROUGH THE WORK ZONE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

END ROAD WORK — (I) G20-2 (48" X 24")

ROAD WORK AHEAD — (I) W20-1 (48" X 48")

STA. 253+90 END
N. AVALON ST.

P.I. 254+12.80

N 29° 32' W

253+55.37

P.C. 252+97.94

TRAFFIC DRUMS
6 EACH PER
DRIVE OR TURNOUT

N 23° 36' E

STA. 250+30 BEGIN
N. AVALON ST.

NORTH AVALON

P.I. 251+49.50

P.C. 250+50.21

STA. 111+00.00 HWY. 70 -
STA. 250+00.00 NORTH AVALON
Δ = 90° 00'00"

P.I. 251+00.00

P.I. 109+64.94

P.I. 105+09.65

P.I. 119+04.67

N 84°42' 41" E

N 86°59' 16" E

N 84°42' 41" E

1107+37.33

STA. 204+49 END
S. AVALON ST.

P.I. 204+30.30

N 17° 19' W

SOUTH AVALON

P.I. 203+78.76

STA. 111+11.00 HWY. 70 -
STA. 204+78.69 SOUTH AVALON
Δ = 90° 00'00"

P.C. 203+22.15

TRAFFIC DRUMS
6 EACH PER
DRIVE OR TURNOUT

N 0° 07' 53" W

VERTICAL PANELS
40' SPACING

=0°43'44.89"RT

P.I. 202+00.00

STA. 105+00 BEGIN
HWY. 70 SECTION

STA. 115+00 END
HWY. 70 SECTION

PC 116+83.07

STA. 201+00 BEGIN
S. AVALON ST.

N 0° 51' 38" W

POB 200+00.00

END ROAD WORK — (I) G20-2 (48" X 24")

ROAD WORK AHEAD — (I) W20-1 (48" X 48")

MAINTENANCE OF TRAFFIC QUANTITIES - STAGE 2:
- SIGNS - 368 LIN. FT.
- TRAFFIC DRUMS - 220 EACH
- VERTICAL PANELS - 28 EACH
- CONSTRUCTION PVMT. MRK. - 11,500 LIN.FT.
- CONSTRUCTION PVMT. MRK. (WORD) - 16 EACH
- CONSTRUCTION PVMT. MRK (ARROW) - 16 EACH

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MAINTENANCE OF TRAFFIC DETAILS (STAGE 2)

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.		110533	14	96

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
14605
MICHAEL D. FUGETT
2-2-12

ROAD WORK AHEAD (I) W20-1 (48" X 48")

END ROAD WORK (I) G20-2 (48" X 24")

N

ROAD WORK AHEAD (I) W20-1 (48" X 48")

END ROAD WORK (I) G20-2 (48" X 24")

STA. 407+95.52 HWY. 191 =
STA. 510+69+23 GLEN BAILEY
Δ = 90°00'00"

P.C.508+22.50

GLEN BAILEY DR.

P. I. 509+22.21

P. I. 403+75.45

P.C.404+38.73

P.T.405+61.36

P.T.510+21.42

N89°24'43"E 510

TRAFFIC DRUMS 6 EACH PER DRIVE OR TURNOUT

P.C.410+38.87

VERTICAL PANELS 40' SPACING

P.T.411+61.21

P.I.412+24.15

POE 415+68.27

N0° 15' 05"E 405

N1° 35' 17"W 580

N3° 25' 24"W 410

N1° 35' 32"W 415

N1° 35' 17"W

P.C.403+14.13

P.T.404+36.76

P. I. 405+00.05

TRAFFIC DRUMS 6 EACH PER DRIVE OR TURNOUT

STA. 550+29 BEGIN
BARTON AVE.

TRAFFIC DRUMS 40' SPACING

P. I. 411+00.04

P.C.411+63.11

P.T.412+85.17

STA. 408+07.52 HWY. 191 =
STA. 550+00.00 BARTON AVE.
Δ = 90°00'00"

STA. 403+00 BEGIN
HWY. 191 SECTION

P1551+52.88

N89°24'43"E

BARTON AVE.

TRAFFIC DRUMS 6 EACH PER DRIVE OR TURNOUT

STA. 413+00 END
HWY. 191 SECTION

PC552+33.25

N 87°36'01" E 282

TRAFFIC DRUMS 6 EACH PER DRIVE OR TURNOUT

PT552+99.92

PT553+66.58

STA. 554+00 END
BARTON AVE.

N 86°

END ROAD WORK (I) G20-2 (48" X 24")

ROAD WORK AHEAD (I) W20-1 (48" X 48")

MAINTENANCE OF TRAFFIC DETAILS (STAGE 2)

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PERMANENT PAVEMENT MARKING QUANTITIES:
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4") = 285 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS WHITE (12") = 818 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4") = 6950 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS ARROWS = 32 EACH
THERMOPLASTIC PAVEMENT MARKINGS WORDS = 32 EACH
RAISED PAVEMENT MARKERS (YELLOW/YELLOW) = 22 EACH
RAISED PAVEMENT MARKERS (WHITE / RED) = 52 EACH

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.		110533	15	96

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. PUGETT
2-2-12

STA. 253+90 END
N. AVALON ST.

STA. 250+30 BEGIN
N. AVALON ST.

STA. 204+49 END
S. AVALON ST.

STA. 201+00 BEGIN
BARTON AVE.

4" SOLID DBL. YELLOW
4" SOLID WHITE
WORDS AND ARROWS
4" WHITE SKIP LINE 10' OF 40'
12" SOLID WHITE STOP BAR
12" SOLID WHITE CROSSWALK
4" WHITE SKIP LINE 10' OF 40' RAISED PVMT. MRK. 80' SPACING
4" SOLID WHITE RAISED PVMT. MRK. 40' SPACING
4" DBL. YELLOW RAISED PVMT. MRK. 80' SPACING

R110533.DGN 8/5/2011

PERMANENT PAVEMENT MARKINGS

ITEM NO.	ITEM	QUANTITY	UNIT
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	400	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	653	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	1000	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	2	EACH
SS&719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	2	EACH

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.		110533	16	96

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
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No. 7605
MICHAEL D. FUGETT
2-2-12

12" WHITE CROSSWALK (TYPICAL)
4" SOLID YELLOW LANE LINES (50')
12" SOLID WHITE STOP LINE (TYPICAL)
4" SOLID YELLOW LANE LINES (100')
4" SOLID WHITE LANE DIVIDER (100')
4" SOLID WHITE LANE DIVIDER (100')
4" SOLID YELLOW LANE LINES (100')
4" SOLID YELLOW LANE LINES (50')
50' (TYPICAL)
50' (TYPICAL)
INSTALL PAVEMENT MARKINGS 200' (TYPICAL)
INSTALL PAVEMENT MARKINGS 200' (TYPICAL)
N 89°08' 29" E
NORTH RHODES
SOUTH RHODES
CURB
FURNITURE
-S-METAL BARTONS
SUNTRUST BANK
RET/WALL
CONC PARKING
SPLASH CAR WASH
-S-BLOCK CAR WASH
PATIO
CANOPY
CANOPY
SONIC
-S-B CHAMBER COMMERCE
70
30

SCALE IN FEET
0 20 40 80

DATE: 01-05-12 FILE NAME: t110533.02.dgn

LOCATION: HWY. 70/RHODES STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: 1"=40' DRAWN BY: 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.		110533	17	96

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

N

P.C.508+22.50
4" SOLID DBL. YELLOW
4" WHITE SKIP LINE 10' OF 40'
P.I.509+22.21
4" SOLID WHITE
STA. 407+95.52 HWY. 191 =
STA. 510+69.23 GLEN BAILEY
Δ= 90°00'00"
WORDS AND ARROWS
12" SOLID WHITE STOP BAR
P.T.510+21.42
4" SOLID WHITE
4" SOLID WHITE RAISED PVMT. MRK. 40' SPACING
P.I.403+75.45
P.C.404+38.73
P.T.405+61.36
P.C.410+38.87
4" DBL. YELLOW RAISED PVMT. MRK. 80' SPACING
P.T.411+61.21
P.I.412+24.15
POE 415+68.27
POB 510+69.23
N1°35'17"W
N0°15'05"E
N3°25'24"W
N1°35'32"W
4" DBL. YELLOW RAISED PVMT. MRK. 80' SPACING
P.C.403+14.13
P.T.404+36.76
P.I.405+00.05
12" SOLID WHITE STOP BAR
4" SOLID WHITE RAISED PVMT. MRK. 40' SPACING
P.I.411+00.04
P.C.411+63.11
P.T.412+85.17
STA. 550+29 BEGIN
BARTON AVE.
WORDS AND ARROWS
4" SOLID WHITE
STA. 408+07.52 HWY. 191 =
STA. 550+00.00 BARTON AVE.
Δ= 90°00'00"
P1551+52.88
STA. 403+00 BEGIN
HWY. 191 SECTION
STA. 413+00 END
HWY. 191 SECTION &
JOB 110533
PC552+33.25
4" SOLID DBL. YELLOW
PT552+99.92
PT553+66.58
STA. 554+00 END
BARTON AVE.

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	18	96

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED*		VERTICAL PANELS	TRAFFIC DRUMS
			LIN.FT. - EACH			NO.	SQ. FT.	EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	64.0		
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4	64.0		
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	64.0		
W20-1	ROAD WORK AHEAD	48"x48"	6	6	6	6	96.0		
G20-2	END ROAD WORK	48"x24"	10	10	10	10	80.0		
	VERTICAL PANELS		38	220	220	220		220	
	TRAFFIC DRUMS		138	28	138	138			138
TOTALS:							368.0	220	138

*NOTE: ADDITIONAL SIGN QUANTITIES FOR INTERSECTION HWY. 70 & RHODES ARE SHOWN ON SUMMARY OF TRAFFIC SIGNAL QUANTITIES (SHEET NO. 36).

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	
252+60	253+00	1	1
405+60	405+90	1	1
409+50	412+40	3	3
553+65	553+75	1	1
TOTALS:		6	6

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	TEMPORARY PAVEMENT MARKINGS			PERMANENT PAVEMENT MARKINGS						
				CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		RAISED PVMT. MRK.		THERMOPLASTIC PAVEMENT MARKINGS				
					WORDS	ARROWS	TYPE II (WHITE/RED	TYPE II (YEL/YEL)	4" WHITE	4" YELLOW	12" WHITE	WORDS	ARROWS
	LIN.FT. - EACH			LIN.FT.	EACH		EACH		LIN.FT.			EACH	
CONSTRUCTION PAVEMENT MARKINGS	11500	11500		23000									
CONSTRUCTION PAVEMENT MARKINGS (WORDS)	16	16			32								
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	16	16				32							
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)			52				52						
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)			22					22					
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")			2115						2115				
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")			6950							6950			
THERMOPLASTIC PAVEMENT MARKINGS WHITE (12")			818								818		
THERMOPLASTIC PAVEMENT MARKINGS (WORDS)			32									32	
THERMOPLASTIC PAVEMENT MARKINGS (ARROWS)			32										32
TOTALS:				23000	32	32	52	22	2115	6950	818	32	32

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

*NOTE: ADDITIONAL PAVEMENT MARKING QUANTITIES FOR INTERSECTION HWY. 70 & RHODES ARE SHOWN ON SUMMARY OF TRAFFIC SIGNAL QUANTITIES (SHEET NO. 36).

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.		TON
105+00	115+00	HWY. 70	51	643	
201+00	204+49	SO. AVALON	86	253	
250+30	253+90	NO. AVALON	76	474	
403+00	413+00	HWY. 191	644	116	
550+29	554+00	BARTON AVE.	308	200	
ENTIRE	PROJECT	APPROACHES		400	
* ENTIRE	PROJECT	TO BE USED IF AND WHERE			50
		DIRECTED BY THE ENGINEER			
TOTALS:			1165	2086	50

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

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

SOIL LOG

STATION	LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
		FEET				
107+00	40'RT*	0-5	31	15	A-6(7)	GRAY
107+00	22'RT*	0-5	37	22	A-6(5)	GRAY
115+00	23'LT*	0-5	33	17	A-6(6)	GRAY
126+00	23'RT*	0-5	36	22	A-6(6)	GRAY
133+00	22'LT*	0-5	47	29	A-7-6(8)	GRAY
202+00	18'RT**	0-5	59	38	A-7-6(31)	GRAY
253+00	14'LT**	0-5	41	24	A-7-6(11)	GRAY
302+00	7'RT#	0-5	54	36	A-7-6(27)	GRAY
307+00	7'LT#	0-5	57	39	A-7-6(31)	GRAY
307+00	31'LT#	0-5	70	51	A-7-6(53)	GRAY
405+00	38'RT##	0-5	61	43	A-7-6(45)	GRAY
405+00	18'RT##	0-5	35	16	A-6(11)	GRAY
411+00	18'LT##	0-5	29	14	A-6(7)	GRAY
507+00	17'RT*#	0-5	73	53	A-7-6(56)	GRAY
553+00	8'LT*#	0-5	56	36	A-7-6(32)	GRAY

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

R110533.DGN 8/16/2011

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.		110533	19	96

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
2-12-12

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	CONCRETE PAVEMENT	CONCRETE DRIVEWAYS	WALKS	LUMINAIRE POLE & FOUNDATION	SIGNS	SIGN FOUNDATIONS	BACKFLOW PREVENTOR	POSTS	FENCE
			LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	EACH	EACH	LIN. FT.
105+10		CONC. DRIVE ON LT.			54							
105+92		CONC. DRIVE ON LT.			92							
106+62		CONC. DRIVE ON LT.			45							
106+77	110+83	CURB ON LT.	370									
106+77	110+83	CONCRETE PAVEMENT ON LT.		1007								
108+27		CONC. DRIVE ON LT.			47							
109+27		BACKFLOW PREVENTOR ON RT.								1		
109+86		CONC. DRIVE ON LT.			49							
110+75		LUMINAIRE POLE & FOUNDATION ON RT.					1					
111+29	112+14	CURB ON LT.	127									
111+29	115+00	CONCRETE PAVEMENT ON LT.		701								
112+02		LUMINAIRE POLE & FOUNDATION ON LT.					1					
113+07	115+00	CURB ON LT.	138									
201+00	204+37	CURB ON LT. & RT.	710									
201+00		SIGN ON LT.						1				
201+00	204+37	WALK ON RT.				156						
201+00	203+54	WALK ON LT.				113						
201+42		SPRINKLER HEAD ON LT.										
201+82		SIGN POLE & FOUNDATION						1	1			
201+93	202+50	CURB ON LT.	90									
204+07		LUMINAIRE POLE & FOUNDATION ON LT.					1					
204+15		BACKFLOW PREVENTOR ON LT.								1		
250+69	251+77	WALK ON LT.				48						
250+88		LUMINAIRE POLE & FOUNDATION ON RT.					1					
252+91		SIGN FOUNDATION ON RT.							1			
253+65	254+00	FENCE ON RT.										45
253+70		CLOTHES LINE POST ON RT.									1	
253+85		SIGN ON LT.						1				
253+92		FENCE ON LT.										10
403+00	407+38	CURB ON LT.	370									
403+00	407+84	CURB ON RT.	500									
403+00	407+83	CURB ON RT.	472									
407+50		BACKFLOW PREVENTOR ON RT.								1		
407+66		SIGN FOUNDATION ON RT.							1			
407+68		SIGN AND FOUNDATION ON RT.						1	1			
408+33	413+00	CURB ON RT.	482									
408+61	413+00	CURB ON LT.	408									
550+42	554+00	CURB ON LT.	358									
550+49	554+00	CURB ON RT.	350									
552+09		SIGN ON LT.						1				
553+34	554+00	WALK ON RT.				30						
TOTALS:			4375	1708	287	347	4	5	4	3	1	55

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	DROP INLETS
		EACH	EACH
110+50	DROP INLET ON LT.		1
114+15	DROP INLET ON LT.		1
110+73	DROP INLET & 4' OF 24" R.C. PIPE ON RT.	1	
411+18	DROP INLET ON LT.		1
411+18	DROP INLET & 4' OF 24" R.C. PIPE ON RT.	1	1
TOTALS:		2	4

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
110+50	ON TOP DROP INLET ON LT.	1
411+18	ON TOP DROP INLET ON LT.	1

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

EROSION CONTROL

STATION	STATION	LOCATION	PERM. EROSION CONTROL		TEMPORARY EROSION CONTROL					
			WATER	SOLID SODDING	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	DROP INLET SILT FENCE (E-7)	*SEDIMENT REMOVAL & DISPOSAL
			M.GAL.	SQ.YD.	ACRE	ACRE	M.GAL.	BAG	LIN.FT.	CU. YD.
ENTIRE	PROJECT	STAGE 1							350	25
ENTIRE	PROJECT	STAGE 2						25	325	50
ENTIRE	PROJECT		39.2	3110	1.81	1.81	36.9			
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.								50		
TOTALS:			39.2	3110	1.81	1.81	36.9	75	675	75

BASIS OF ESTIMATE:
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING.
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION

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

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

4" PIPE UNDERDRAIN

LOCATIONS	4" PIPE UNDERDRAINS
	LIN.FT.
* ENTIRE PROJECT TO BE USED IF AND	1000
WHERE DIRECTED BY THE ENGINEER	
TOTAL	1000

* NOTE: QUANTITIES ARE 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.

8/16/2011
R110533.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.		110533	20	96

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

CONCRETE ITEMS

STATION	STATION	LOCATION	CONC. COMB. CURB & GUTTER (TY. A)(1' 6")	CONCRETE WALKS	WHEELCHAIR RAMPS (TYPE 3)
			LIN. FT.	SQ.YD.	SQ. YD.
105+00	110+75	HWY. 70 - LT.	644	217	
105+00		HWY. 70 - LT.			9.2
110+58		HWY. 70 - LT.			4.6
110+58		HWY. 70 - RT.			7.1
111+25	115+00	HWY. 70 - LT.	380	87	
111+55		HWY. 70 - LT.			6.6
111+55		HWY. 70 - RT.			7.0
201+00	204+49	SO. AVALON - LT.	350	142	
201+00	204+49	SO. AVALON - RT.	362	177	
204+15		SO. AVALON - LT.			6.5
204+15		SO. AVALON - RT.			8.5
250+30	253+90	NO. AVALON - LT.	325	143	
250+30	253+90	NO. AVALON - RT.	322	98	
250+65		NO. AVALON - LT.			6.8
250+65		NO. AVALON = RT.			7.1
403+00	407+38	HWY. 191 - LT.	272		
403+00	407+81	HWY. 191 - RT.	494		
408+31	413+00	HWY. 191 - RT.	490		
408+61	413+00	HWY. 191 - LT.	432		
550+76	554+00	BARTON AVE. - RT.	325		
551+01	554+00	BARTON AVE. - LT.	265		
TOTALS:			4661	864	63.4

SELECTED PIPE BEDDING & BACKFILL

LOCATION	SELECTED PIPE BEDDING	SELECTED PIPE BACKFILL
	CU.YD.	
ENTIRE PROJECT TO BE USED IF		
AND WHERE DIRECTED BY THE	150	300
ENGINEER		
TOTALS:	150	300

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

STRUCTURES

STATION	DESCRIPTION	DROP INLETS TYPE C	DROP INLETS TYPE MO	DROP INLETS EXT. 4'	DROP INLETS EXT. 8'	MODIFYING DROP INLET	DROP INLETS ADJUSTED TO GRADE	YARD DRAIN	SIDE DRAIN 12"	ALTERNATE PIPE CULVERTS 18"	ALTERNATE PIPE CULVERTS 24"	ALTERNATE FLARED END SECTIONS 18"	STD. DWG. NOS.
		EACH								LIN. FT.		EACH	
107+90	CONST. D.I. LT W/ PIPE OUTLET		1							256			FPC-9E, FPC-9M, PCC-1, PCM-1
110+50	CONST. D.I. LT	1											FPC-9E
110+73	CONST. D.I. RT. W/ PIPE OUTLET		1								4		FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
111+16	ADJUST D.I. TO GRADE						1						
111+41	CONST. D.I. RT.		1										FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
111+50	CONST. D.I. LT	1											FPC-9E
112+10	CONST. D.I. LT	1											FPC-9E
114+15	CONST. D.I. LT	1											FPC-9E
114+85	INSTALL YD. DRAIN ON LT.							1	66				FPC-9, PCC-1, PCM-1
403+75	CONST. D.I. LT W/ PIPE OUTLET		1							198			FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
405+73	CONST. D.I. RT. W/ EXT. & PIPE OUTLET		1	1						176			FPC-9E
405+77	CONST. D.I. LT. W/ EXT., PIPE INLET W/F.E.S. & PIPE OUTLET		1	1						192		1	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
407+53	MODIFY D.I. LT. TO JCT. BOX					1							FPC-9E, FPC-9S, FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
407+53	CONST. D.I. RT. W/ EXT. & PIPE OUTLET		1		1						143		FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
407+54	MODIFY D.I. RT. TO JCT. BOX					1							FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
408+33	MODIFY D.I. LT. TO JCT. BOX					1							FPC-9S
408+33	MODIFY D.I. RT. TO JCT. BOX					1							FPC-9S
408+38	CONST. D.I. W/ EXT. & PIPE OUTLET		1	1						7			FPC-9S
408+99	CONST D.I. RT. W/EXT. & PIPE OUTLET		1	1							97		FPC-9S
410+00	CONST D.I. RT. W/EXT. & PIPE OUTLET		1	1							115		FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
411+18	CONST. D.I. LT W/ EXT.	1		1									FPC-9E, PCC-1, PCM-1, PCP-1, PCP-2
411+18	CONST. D.I. RT. W/EXT. & PIPE OUTLET		1	1							52		FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
412+90	CONST. D.I. LT. W/EXT.	1		1									FPC-9E
412+90	CONST. D.I. RT. W/EXT. & PIPE OUTLET		1	1						165			FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
550+60	CONST. D.I. RT W/EXT. & PIPE OUTLET		1		1					34			FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
550+82	CONST. D.I. LT W/EXT. & PIPE OUTLET		1		1					75			FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
553+00	CONST. D.I. RT. W/OIB & PIPE OUTLET		1							230			FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
553+50	CONST. D.I. LT. W/EXT. & PIPE OUTLET		1	1						264			FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
													FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2
TOTALS:		6	16	10	3	4	1	1	66	1597	411	1	

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.

R110533.DGN 8/16/2011

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.		110533	21	96

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

DRIVEWAYS & TURNOUTS

STATION	SIDE	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)
		FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON
105+10	LT.	16	104+88	105+32	78.20			
105+92	LT.	24	105+66	106+18	88.00			
106+62	LT.	30	106+33	106+91	100.60			
108+27	LT.	30	107+98	108+56	104.00			
109+86	LT.	30	109+57	110+15	107.30			
112+49	RT.	24	112+23	112+75	32.00	42.7	4.7	17.4
113+86	LT.	40	113+52	114+20	46.20	75.6	8.3	30.9
114+64	LT.	24	114+38	114+90	32.00	37.3	4.1	15.2
110+33	LT.	30	110+04	110+62	94.00			
202+59	LT.	28	202+31	202+87	35.60	43.6	4.8	17.8
203+78	LT.	36	203+46	204+10	66.70			
203+19	RT.	24	202+93	203+45	32.00	13.3	1.5	5.4
252+01	LT.	32	251+71	252+31	39.10	24.9	2.7	10.2
253+71	LT.	32	253+41	254+01	39.10	35.6	3.9	14.5
251+69	RT.	40	251+35	252+03	46.20	26.7	2.9	10.9
252+51	RT.	40	252+17	252+85	46.20	57.8	6.4	23.6
253+25	RT.	40	252+91	253+59	46.20	31.1	3.4	12.7
409+10	RT.	28	408+82	409+38	66.70			
405+42	RT.	24	405+16	405+68	32.00	21.3	2.3	8.7
406+00	RT.	40	405+66	406+34	46.20	31.1	3.4	12.7
406+54	RT.	40	406+20	406+88	86.20			
407+14	LT.	40	406+80	407+48	95.10			
411+56	RT.	40	411+22	411+90	46.20	35.6	3.9	14.5
552+40	RT.	36	552+08	552+72	42.70	48.0	5.3	19.6
553+11	RT.	36	552+79	553+43	94.70			
551+02	LT.	28	550+74	551+30	57.40			
551+56	RT.	36	551+24	551+88	70.70			
552+57	LT.	36	552+25	552+89	98.70			
553+48	RT.	36	553+16	553+80	110.70			
* TEMPORARY DRIVES								450.0
TOTALS:					**1880.70**		**57.6**	**664.1**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

'* FOR INFORMATION ONLY

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.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
104+00	105+00	HWY. 70	56	622.22
115+00	116+00	HWY. 70	56	622.22
200+00	201+00	SO. AVALON	44	488.89
253+90	254+90	NO. AVALON	36	400.00
554+00	555+00	BARTON AVE.	33	366.67
TOTAL:				**2500.00**

NOTE: AVERAGE MILLING DEPTH 1".

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	10
DIRECTED BY THE ENGINEER	
TOTAL:	**10**

NOTE: QUANTITY IS 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	10	20
DIRECTED BY THE ENGINEER		
TOTALS:	**10**	**20**

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

R110533.DGN 8/16/2011

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.		110533	22	96

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7606
MICHAEL D. FUGETT

2-2-12

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		GEOTEXTILE FABRIC (TYPE 8)		TACK COAT				PORTLAND CEMENT CONCRETE BASE (5"U.T.)		PORTLAND CEMENT CONCRETE BASE (7"U.T.)		PORTLAND CEMENT CONCRETE BASE (10"U.T.)		PORTLAND CEMENT CONC. PAVEMENT (9" U.T.)		ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (3/8")				ACHM SURFACE COURSE (1/2")			
				TONS		AVG.		TOTAL WID.		GALLONS /		AVG. WID.		AVG. WID.		AVG. WID.		AVG. WID.		AVG. WID.		POUND /		AVG. WID.		POUND /		AVG. WID.		POUND /		AVG. WID.		POUND /	
			FEET	PER STA.	TONS	WIDTH	SQ. YDS.	FEET	SQ.YD.	SQ.YD.	GALLON	FEET	SQ.YD.	FEET	SQ.YD.	FEET	SQ.YD.	FEET	SQ.YD.	FEET	SQ.YD.	SQ.YD.	TON	FEET	SQ.YD.	SQ.YD.	TON	FEET	SQ.YD.	SQ.YD.	TON	FEET	SQ.YD.	SQ.YD.	TON
107+00	108+00	HWY. 70 - OVERLAY	100.0					56.0	622.2	0.03	18.7	2.50	27.8																			56.00	116.4	220	12.8
108+00	115+00	HWY. 70 - NOTCH AND OVERLAY	700.0					56.0	4355.6	0.03	130.7	2.50	194.4																			56.00	813.2	220	89.5
115+00	116+00	HWY. 70 - OVERLAY	100.0					56.0	622.2	0.03	18.7	2.50	27.8																			56.00	116.4	220	12.8
200+00	201+00	SO. AVALON - OVERLAY	100.0					44.0	488.9	0.03	14.7																					44.00	71.9	220	7.9
201+00	203+50	SO. AVALON - NOTCH & WIDENING	250.0					44.0	1222.2	0.03	36.7	5.0	138.9																			44.00	179.4	220	19.7
203+50	204+10	SO. AVALON - NOTCH & WIDENING	60.0					46.0	306.7	0.03	9.2	5.0	33.3			2.00	13.3															44.00	45.0	220	5.0
204+10	204+49	SO. AVALON - RADIUS							650.1	0.03	19.5											244.4	550.0	67.2		216.7	330.0	35.8						433.3	220	47.7
250+50	250+67	NO. AVALON - RADIUS							854.1	0.03	25.6											316.9	550.0	87.1		284.7	330.0	47.0						569.3	220	62.6
250+67	250+97	NO. AVALON - NOTCH & WIDEN	30.0					66.0	220.0	0.03	6.6	2.5	8.3							12.5	41.7	550.0	11.5	10.0	33.3	330.0	5.5					54.0	39.6	220	4.4
250+97	253+00	NO. AVALON - NOTCH & WIDEN	203.0					60.0	1353.3	0.03	40.6	2.5	56.4							10.5	236.8	550.0	65.1	8.0	180.4	330.0	29.8					52.0	234.6	220	25.8
253+00	253+90	NO. AVALON - NOTCH & WIDEN	90.0					40.0	400.0	0.03	12.0	5.0	50.0			4.00	40.0															40.0	53.3	220	5.9
403+00	405+00	HWY. 191 - NOTCH AND WIDEN	200.0	17.50	35.0	4.5	100.0							2.5	55.6					2.00	44.4									2.00	44.4	110	2.4				
405+00	406+10	HWY. 191 - NOTCH AND WIDEN	110.0	25.25	27.8	6.5	79.4							2.5	30.6					4.00	48.9									4.00	48.9	110	2.7				
406+10	409+91	HWY. 191 - NOTCH AND WIDEN	381.0	40.75	155.3	10.5	444.5							2.5	105.8					8.00	338.7									8.00	338.7	110	18.6				
409+91	411+01	HWY. 191 - NOTCH AND WIDEN	110.0	25.25	27.8	6.5	79.4							2.5	30.6					4.00	48.9									4.00	48.9	110	2.7				
411+01	413+00	HWY. 191 - NOTCH AND WIDEN	199.0	17.50	34.8	4.5	99.5							2.5	55.3					2.00	44.2									2.00	44.2	110	2.4				
550+29	550+75	BARTON AVE. - RADIUS	46.0						1584.6	0.03	47.5											579.9	550.0	159.5		528.2	330.0	87.2						1056.4	220	116.2
550+75	551+35	BARTON AVE. - NOTCH & WIDEN	60.0					52.0	346.7	0.03	10.4	5.0	33.3							9.0	60.0	550.0	16.5	6.0	40.0	330.0	6.6					46.0	53.2	220	5.9
551+35	552+00	BARTON AVE. - NOTCH & WIDEN	65.0					44.0	317.8	0.03	9.5	5.0	36.1			4.00	28.9															44.0	46.4	220	5.1
552+00	553+00	BARTON AVE. - NOTCH & WIDEN	100.0					56.0	622.2	0.03	18.7	2.5	27.8																			38.0	79.0	220	8.7
553+00	553+90	BARTON AVE. - NOTCH & WIDEN	90.0					32.0	320.0	0.03	9.6	5.0	50.0																			32.0	34.1	220	3.8
553+90	555+00	BARTON AVE. - OVERLAY	110.0					32.0	391.1	0.03	11.7																					32.0	41.6	220	4.6
404+00		STREET ON LT.							321.3	0.03	9.6	5.0	21.7		21.7							128.7	550.0	35.4		107.1	330.0	17.7						214.2	220.0	23.6
ADDITIONAL FOR LEVELING																																					
108+00	115+00	HWY. 70 - LEVELING	700.0					56.0	4355.6	0.10	435.6																					VAR.	VAR.	VAR.	950.8
201+00	204+49	SO. AVALON - LEVELING	349.0					44.0	1706.2	0.10	170.6																					VAR.	VAR.	VAR.	681.1
250+30	253+90	NO. AVALON - LEVELING	360.0					36.0	1440.0	0.10	144.0																					VAR.	VAR.	VAR.	767.1
550+29	554+00	BARTON AVE. - LEVELING	371.0					32.0	1319.1	0.10	131.9																					VAR.	VAR.	VAR.	525.9
TOTALS:					280.7		802.8				1332.1		705.8		299.6		82.2		525.1				442.3				229.6				28.8				3386.9

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96% MIN. AGGR.....4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

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.

R110533.DGN 8/16/2011

ZBORDER.CEL 8/30/2010

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		6	STATION
201	GRUBBING		6	STATION
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER		4375	LIN. FT.
202	REMOVAL AND DISPOSAL OF FENCE		55	LIN. FT.
202	REMOVAL AND DISPOSAL OF POSTS		1	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT		1708	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		287	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS		347	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		4	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS		4	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		2	EACH
202	REMOVAL AND DISPOSAL OF BACKFLOW PREVENTOR		3	EACH
202	REMOVAL AND DISPOSAL OF LUMINAIRE POLE AND FOUNDATION		4	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		5	EACH
210	UNCLASSIFIED EXCAVATION		1165	CU. YD.
210	COMPACTED EMBANKMENT		2086	CU. YD.
SP & 210	SOIL STABILIZATION		50	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		945	TON
309	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS)		706	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (7" UNIFORM THICKNESS)		300	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (10" UNIFORM THICKNESS)		82	SQ. YD.
401	TACK COAT		1352	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		424	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")		18	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		220	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		10	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8")		27	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8")		2	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		3259	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		3	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		183	TON
412	COLD MILLING ASPHALT PAVEMENT		2500	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		10	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		10	TON
SS & 501	PORTLAND CEMENT CONCRETE PAVEMENT (9" UNIFORM THICKNESS)		525	SQ. YD.
505	PORTLAND CEMENT CONCRETE DRIVEWAY		1880.70	SQ. YD.
601	MOBILIZATION		1.00	LUMP SUM
SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		464	SQ. FT.
SS & 604	TRAFFIC DRUMS		138	EACH
SS & 604	CONSTRUCTION PAVEMENT MARKINGS		23000	LIN. FT.
SS & 604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)		32	EACH
SS & 604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)		32	EACH
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		1280	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)		2	EACH
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)		2	EACH
SS & 604	VERTICAL PANELS		220	EACH
* SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	1597	LIN. FT.
* 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	1597	LIN. FT.
* SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	411	LIN. FT.
* 606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	411	LIN. FT.
SS & 606	12" SIDE DRAIN		66	LIN. FT.
* 606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	1	EACH
* 606	18" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	1	EACH
606	SELECTED PIPE BEDDING		150	CU. YD.
606	SELECTED PIPE BACKFILL		300	CU. YD.
609	DROP INLETS (TYPE C)		6	EACH
609	DROP INLETS (TYPE MO)		16	EACH
609	DROP INLET EXTENSIONS (4')		10	EACH
609	DROP INLET EXTENSIONS (8')		3	EACH
609	YARD DRAINS		1	EACH
610	DROP INLETS ADJUSTED TO GRADE		1	EACH
611	4" PIPE UNDERDRAINS		1000	LIN. FT.
620	MULCH COVER		1.81	ACRE
SS & 620	WATER		76.1	M.GAL.
621	TEMPORARY SEEDING		1.81	ACRE
621	SAND BAG DITCH CHECKS		75	BAG
621	DROP INLET SILT FENCE		675	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL		75	CU. YD.
624	SOLID SODDING		3110	SQ. YD.
625	GEOTEXTILE FABRIC (TYPE 8)		803	SQ. YD.
633	CONCRETE WALKS		864	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")		4661	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
640	MODIFYING DROP INLETS		4	EACH
641	WHEELCHAIR RAMPS (TYPE 3)		63	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS 2 - TYPE 2, E-NET (SPECIAL)		1	EACH
SP & 701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASES)		3	EACH
SP	EMERGENCY BACKUP LOCAL RADIO(E-NET 2.4) UNIT		1	EACH
SP	ON-STREET MASTER CONTROLLER RELOCATION		1	EACH
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)		6	EACH
SP	LOCAL RADIO WITH ANTENNA		3	EACH
SP	LOCAL RADIO (E-NET 2.4) WITH ANTENNA		1	EACH
SP	MASTER RADIO WITH ANTENNA		1	EACH
SP	MASTER RADIO (E-NET 2.4) WITH ANTENNA		1	EACH
SP	ANTENNA CABLE (TYPE 6)		280	LIN. FT.
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)		24	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)		24	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED		16	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)		4777	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)		742	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)		1301	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)		1859	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)		400	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)		60	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES		1475	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")		60	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")		60	LIN. FT.
710	NON-METALLIC CONDUIT (2")		60	LIN. FT.
710	NON-METALLIC CONDUIT (3")		1481	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 1 HD)		2	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)		20	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28')		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 (32')		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 (38')		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
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')		2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')		1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')		1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (62')		1	EACH
SP	LUMINAIRE ASSEMBLY		8	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
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		2515	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")		1471	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		7950	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING (WORDS)		34	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		34	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)		74	EACH
SP	18" STREET NAME SIGN		16	EACH
SP & 733	VIDEO DETECTOR (CLR)		32	EACH
733	VIDEO CABLE		3506	LIN. FT.
733	VIDEO MONITOR (CLR)		3	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)		12	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)		3	EACH

*DENOTES ALTERNATE BID ITEMS.

REVISION BOX

DATE	REVISION	SHEET NUMBER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER MICHAEL D. RUGGETT 14786

2-2-12

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		23	96
				JOB NO. 110533				

(2) SUMMARY OF QUANTITIES AND REVISIONS

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.		110533	24	96

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

MIDPOINT:
LT: 35-08-47
LG: 90-10-32

SURVEY CONTROL COORDINATES

Project Name: sl10533
Date: 9/24/2010
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
1	300882.5172	1851584.2697	214.868	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
2	300959.5084	1852379.0805	211.562	CTL	*5/8" Rebar with 2" Aluminum Cap
3	300892.5056	1853124.8184	211.953	CTL	*5/8" Rebar with 2" Aluminum Cap
4	300343.7949	1852463.4150	210.516	CTL	*5/8" Rebar with 2" Aluminum Cap
5	301814.8501	1852422.7006	208.142	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
6	301065.6588	1856863.3471	215.470	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
7	301006.5619	1857678.5762	214.973	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
8	301094.6223	1857800.5273	214.626	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
9	301014.2736	1858363.5252	216.945	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
10	300188.8282	1857716.5978	210.772	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
11	301782.5411	1857776.2256	217.049	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
12	301038.8917	1853680.1704	211.007	CTL	*5/8" Rebar with 2" Aluminum Cap
13	301025.0511	1854152.4639	211.604	CTL	*5/8" Rebar with 2" Aluminum Cap
14	300943.5207	1854677.9576	211.285	CTL	*5/8" Rebar with 2" Aluminum Cap
15	300516.3081	1854181.9371	210.420	CTL	*5/8" Rebar with 2" Aluminum Cap
16	304504.6294	1857620.7714	215.120	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
17	304982.1672	1857685.9381	213.468	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
18	305757.2930	1857645.9165	214.440	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
19	305543.2418	1856467.1828	217.126	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
20	304896.2914	1856864.1944	218.183	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
21	304978.8875	1858389.6563	214.328	CTL	*5/8" Rebar with 2" Aluminum Cap, 70, WEST MEMPHIS
22	301508.4751	1854218.0876	211.787	CTL	*5/8" Rebar with 2" Aluminum Cap
100	301510.0562	1862949.4987	214.540	GPS	*AHTD GPS 180012, RTK ELEV
101	303482.8339	1862936.2332	216.043	GPS	*AHTD GPS 180012A, RTK ELEV
900	300627.5757	1848429.2962	213.440	BM	*STD BRASS CAP SET IN CONC
901	300630.5998	1848595.3641	214.882	BM	*AHTD ALUM CAP SET ON BR
902	300781.7380	1851333.6223	214.008	BM	*CHSLD SQ SO END CA
903	300861.4263	1852465.6631	212.446	TBM	*
904	300930.0752	1853905.7907	208.373	BM	*CHSLD SQ CONC SLAB BELOW CA
905	300982.1523	1856728.9045	219.059	BM	*TOP FH EAST SIDE RR TRACS
906	301204.3165	1857804.5819	217.509	BM	*TOP OF FIRE HYDRANT
907	303933.7634	1857754.0018	217.369	BM	*TOP OF FIRE HYDRANT
908	306358.3997	1857626.0246	215.502	BM	*CHSLD SQ NW COR BR
919	307975.8506	1857596.0553	237.918	BM	*AHTD ALUM CA NE COR BR
920	307571.4878	1857603.5476	237.790	BM	*SE COR BR OVER I-40
1100	304769.0619	1857613.6730	213.795	TV	*8-SPK
1101	305207.9111	1857674.2075	214.794	TV	*8-SPK
1102	300956.3953	1852052.7530	211.424	TV	*8-SPK
1103	301195.0071	1852375.2644	210.222	TV	*8-SPK
1104	300650.3616	1852472.0524	211.774	TV	*8-SPK
1105	300882.3092	1852761.8964	211.822	TV	*8-SPK
1106	300959.3524	1854371.1019	211.856	TV	*8-SPK
1107	300928.7501	1854596.4443	210.745	TV	*8-SPK

*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 0.99995864 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 sl10533gi.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: 180012 - 180012A
CONVERGENCE ANGLE: 01-03-41.9 RIGHT AT LT: 35-08-47 LG: 90-10-32
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

CENTERLINE CONSTRUCTION (HWY. 70)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	300828.0404	1851311.6055
8001	PC	105+09.65	300854.8216	1851820.5546
8003	PT	109+64.94	300887.7706	1852274.6177
8004	PC	116+83.07	300953.9620	1852989.6869
8006	PT	121+26.06	300977.7091	1853431.9347
8007	POE	136+21.08	301000.1130	1854926.7869

SOUTH AVALON

POINT NO.	TYPE	STATION	NORTHING	EASTING
8010	POB	200+00.00	300422.9200	1852432.6863
8011	PI	202+00.00	300622.9010	1852429.6828
8012	PC	203+27.15	300750.0516	1852429.3913
8014	PT	204+30.30	300853.0468	1852424.5162
8015	POE	204+78.69	300901.2333	1852420.0558

NORTH AVALON

POINT NO.	TYPE	STATION	NORTHING	EASTING
8020	POB	250+00.00	300900.2194	1852409.1026
8021	PC	250+50.41	300950.4189	1852404.4558
8023	PT	251+49.50	301049.3764	1852400.4534
8024	PC	252+97.94	301197.8126	1852402.1539
8026	PT	254+12.80	301312.6704	1852402.3185
8027	POE	255+68.94	301468.7998	1852400.9771

RHODES AVE.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8030	POB	300+00.00	300568.1931	1854203.1515
8031	POE	309+53.14	301521.1246	1854183.3719

CENTERLINE CONSTRUCTION (HWY. 191)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8040	POB	400+00.00	304143.5225	1857662.3860
8041	PC	403+14.13	304457.5314	1857653.6807
8043	PT	404+36.76	304580.1483	1857652.2504
8044	PC	404+38.73	304582.1214	1857652.2591
8046	PT	405+61.36	304704.7383	1857650.8288
8047	PC	410+38.87	305182.0563	1857637.5960
8049	PT	411+61.21	305304.2798	1857632.2476
8050	PC	411+63.11	305306.1749	1857632.1342
8052	PT	412+85.17	305428.1178	1857626.7936
8053	POE	415+68.27	305711.1052	1857618.9275

BARTON AVE.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8060	POB	550+00.00	304950.8030	1857644.0071
8061	PI	551+52.88	304955.0397	1857796.8255
8062	PC	552+33.25	304958.4049	1857877.1250
8064	PT	553+66.58	304961.6619	1858010.4118
8065	PC	556+67.26	304963.7600	1858311.0888
8067	PT	558+69.21	304929.9206	1858509.1151
8068	POE	559+27.36	304910.2259	1858563.8365

GLENN BAILEY DRIVE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8070	POB	500+00.00	305130.2386	1856693.1044
8071	PC	500+86.76	305056.1258	1856738.2205
8073	PT	505+88.21	304867.9388	1857169.6257
8074	PC	508+22.50	304914.7839	1857399.1866
8076	PT	510+21.42	304937.4827	1857596.5484
8077	POE	510+69.23	304938.8077	1857644.3396

R110533.DGN 8/1/2011

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	25	96

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 7605
MICHAEL D. PUGETT
2-2-12

N

P.I.- 253+55.37
Δ - 1°08'55" LT.
D - 1°00'00"
T - 57.43'
L - 114.86'
P.C.252+97.94
P.T.254+12.80
NO SUPER

STA. 253+90 END
N. AVALON ST.

STA. 250+30 BEGIN
N. AVALON ST.

STA. 111+00.00 HWY. 70 -
STA. 250+00.00 NORTH AVALON
Δ- 90° 00'00"

P.I.- 251+00.00
Δ - 5°56'42" RT.
D - 6°00'00"
T - 49.59'
L - 99.08'
P.C.250+50.41
P.T.251+49.50
NO SUPER

SURVEY BASELINE
SURVEY BASELINE N 84°28'02" E 798.53'
C.L. CONSTRUCTION
N 86°59'16" E 227.67'
N 84°42'41" E 227.67'
N 84°42'41" E 718.13'
SURVEY BASELINE S 84°51'57" E 748.74'
N 84°42'41" E 221.61'

PT. NO. 8001
PT. NO. 8003
PT. NO. 8004
PT. NO. 8020
PT. NO. 8021
PT. NO. 8023
PT. NO. 8024
PT. NO. 8026
PT. NO. 8015
PT. NO. 8014
PT. NO. 8012
PT. NO. 8011
PT. NO. 8010

PC105+09.65
PT109+64.94
PT107+37.33
PT119+04.67
BC116+83.07

PN: 1102 PD: 8-SPK 8"SPIKE
PN: 1103 PD: 8-SPK
PN: 1104 PD: 8-SPK
PN: 1105 PD: 8-SPK
PN: 903 PD:
PN: 3 PD: RBR ALUM CAP

P.I.- 107+37.33
Δ - 2°16'35" LT.
D - 0°30'00"
T - 227.67'
L - 455.29'
P.C.105+09.65
P.T.109+64.94

STA. 105+00 BEGIN
HWY. 70 SECTION

STA. 204+49 END
S. AVALON ST.

P.I.- 203+78.76
Δ - 5°09'26" LT.
D - 5°00'00"
T - 51.61'
L - 103.15'
P.C.203+27.15
P.T.204+30.30
NO SUPER

STA. 111+11.00 HWY. 70-
STA. 204+78.69 SOUTH AVALON
Δ- 90° 00'00"

STA. 115+00 END
HWY. 70 SECTION

STA. 201+00 BEGIN
S. AVALON ST.

P1254+12.80
P1253+55.37
PC252+97.94
P1251+49.50
P1251+00.00
PC250+50.41
PC250+00.00
PC204+78.69
P1204+30.30
PC203+27.15
P1203+78.76
P1202+00.00
PC200+00.00

N 0°29'32" W 57.43'
N 0°39'23" E 57.43'
N 0°39'23" E 148.45'
N 0°39'23" E 49.59'
N 51°19'19" W 49.59'
N 51°19'19" W 48.39'
N 51°19'19" W 51.61'
N 0°07'53" W 51.61'
N 0°07'53" W 127.15'
N 0°54'38" W 200.00'

Δ=0°43'44.89"RT.

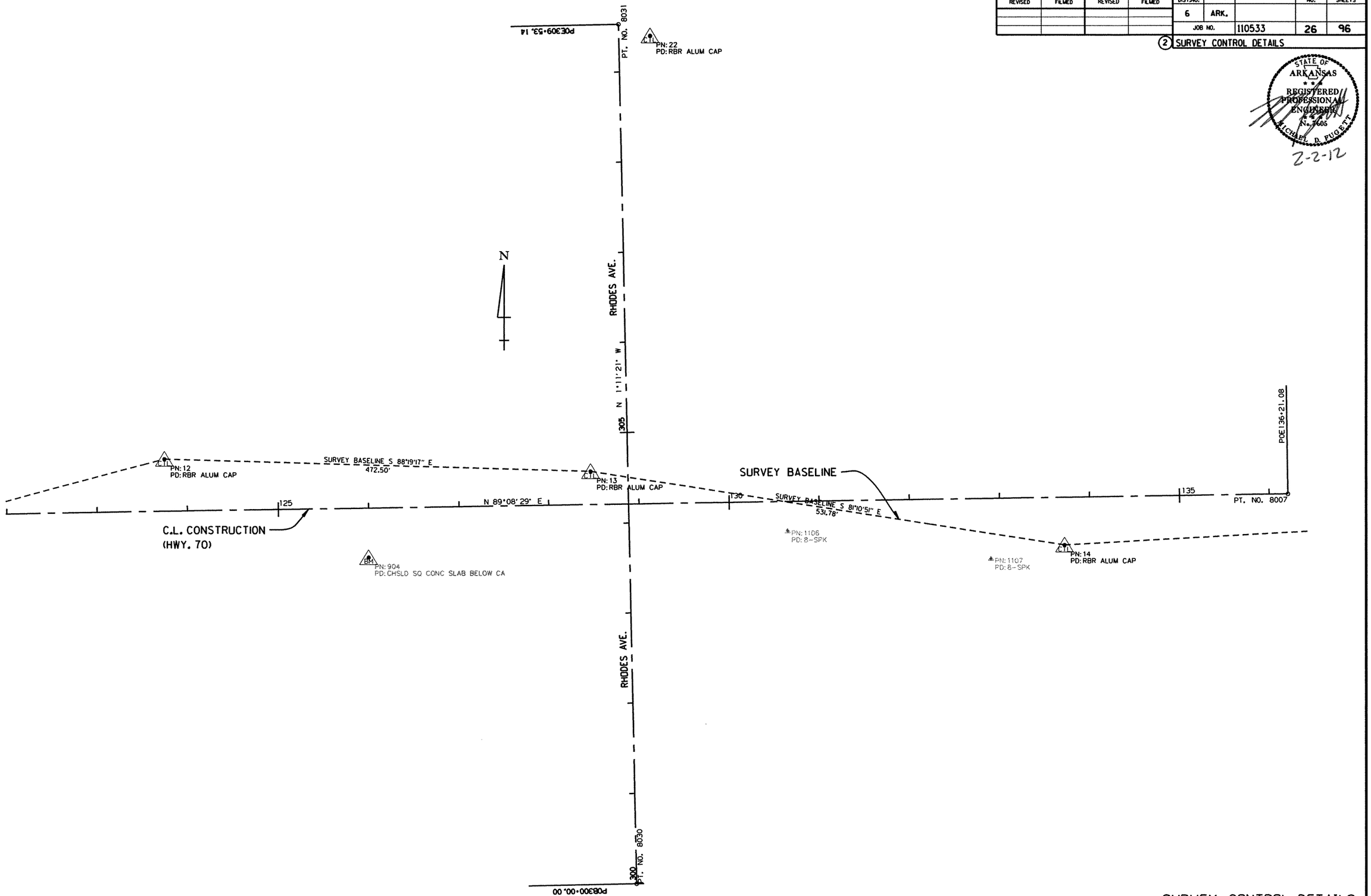
R110533.DGN 8/1/2011

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	26	96

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12



SURVEY CONTROL DETAILS

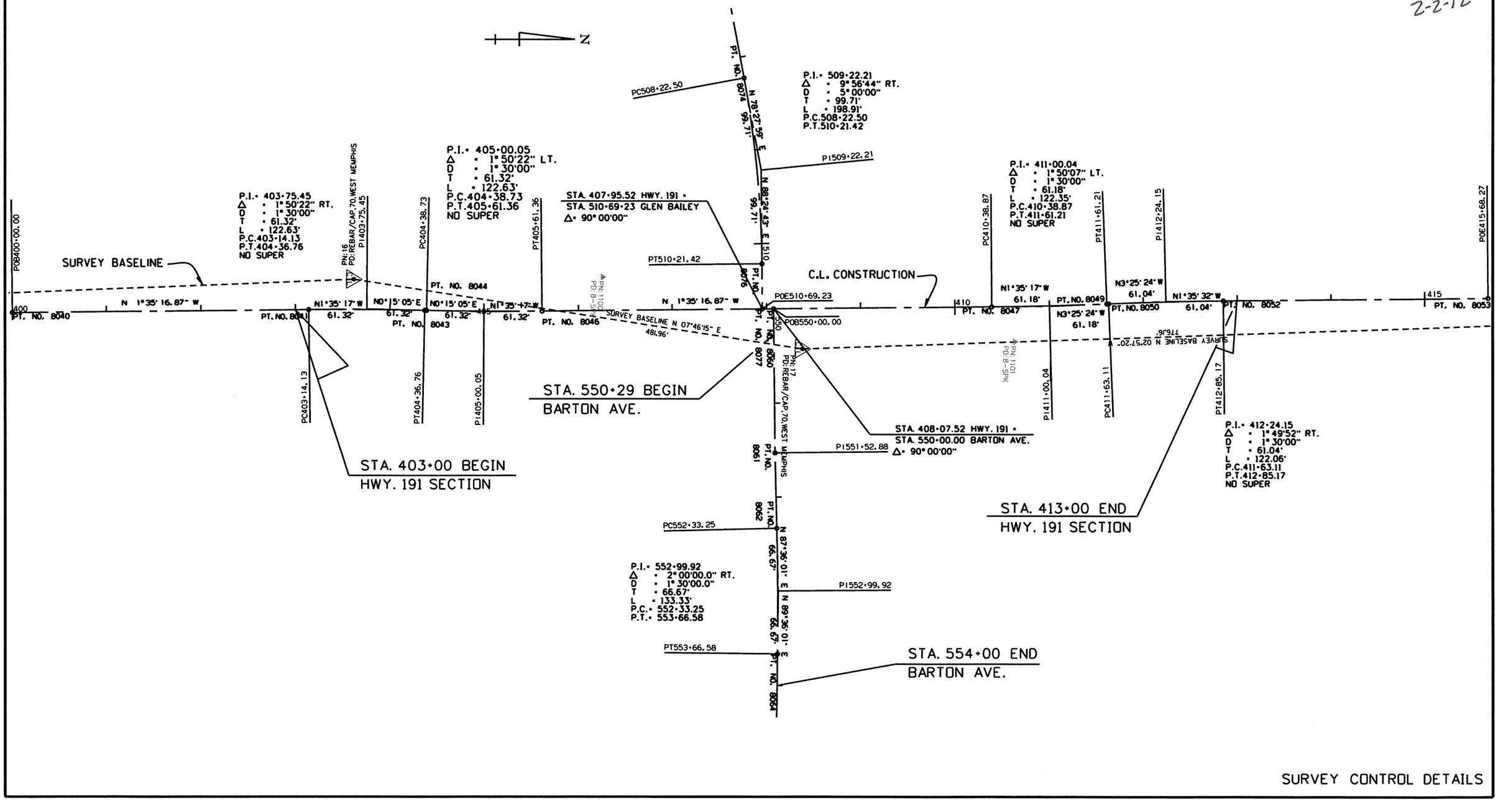
R110533.DGN 8/1/2011

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.		110533	27	96

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT

2-2-12



R110533.DGN 8/1/2011

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	28	96

(2) PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

STA. 104+26 IN PLACE
60"X40' C.M. PIPE ON LT.
RETAIN

STA. 104+61 IN PLACE
60"X28' C.M.PIPE ON LT.
RETAIN

STA. 105+10 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.

STA. 105+33 IN PLACE
60"X110' C.M.PIPE ON LT.
RETAIN

STA. 105+90 IN PLACE
12" R.C.PIPE ON LT.
RETAIN

STA. 105+92 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.

STA. 106+48 IN PLACE
60"X116' C.M.PIPE ON LT.
RETAIN

STA. 106+62 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.

STA. 107+05 IN PLACE
72"X600' PIPE CULVERT ON LT.
RETAIN

STA. 107+07 IN PLACE
12" R.C.PIPE ON LT.
RETAIN

STA. 107+90 CONSTRUCT
DROP INLET ON LT. (H=4'3")
W/ 18"X256' PIPE OUTLET
CONNECT TO D.I. STA. 110+50
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

STA. 108+27 CONSTRUCT
APPROACH ON LT. = 45 CU. YDS.

STA. 109+86 CONSTRUCT
APPROACH ON LT. = 40 CU. YDS.

STA. 110+50 IN PLACE
DROP INLET ON LT.
REMOVE DROP INLET AND CONSTRUCT
TYPE C DROP INLET (4'X8') (H=11'0")
WITH EXIST. 72"X62' C.M.PIPE INLET
RETAIN AND CONNECT TO D.I.
& EXIST. 72"X50' C.M.PIPE OUTLET
RETAIN AND CONNECT TO NEW D.I.

STA. 110+66 IN PLACE
60"X713' R.C.PIPE ON LT.
RETAIN

STA. 111+16 IN PLACE
DROP INLET ON LT.
W/ 72"X62' C.M.PIPE OUTLET TO LT.
& 72"X296' C.M.PIPE INLET TO RT.
RETAIN AND ADJUST D.I. TO GRADE

STA. 111+50 CONSTRUCT
DROP INLET ON LT.
TYPE C (4'X8') (H=10'9")
CONNECT EXISTING 72"X296' C.M.PIPE
AS INLET AND OUTLET

STA. 112+10 CONSTRUCT
DROP INLET ON LT.
TYPE C (4'X8') (H=10'9")
CONNECT EXISTING 72"X296' C.M.PIPE
AS INLET AND OUTLET

STA. 112+49 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.

STA. 113+86 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.

STA. 114+15 IN PLACE
DROP INLET ON LT.
WITH PIPE INLET AND OUTLET
REMOVE DROP INLET AND CONSTRUCT
DROP INLET TYPE C (4'X8') (H=10'6")
CONNECT EXISTING 48"X514' R.C.PIPE INLET TO RT.
CONNECT EXISTING 72"X296' C.M.PIPE OUTLET TO LT.
CONNECT EXISTING 48"X48' C.M.PIPE OUTLET TO D.I. STA. 114+20 LT.

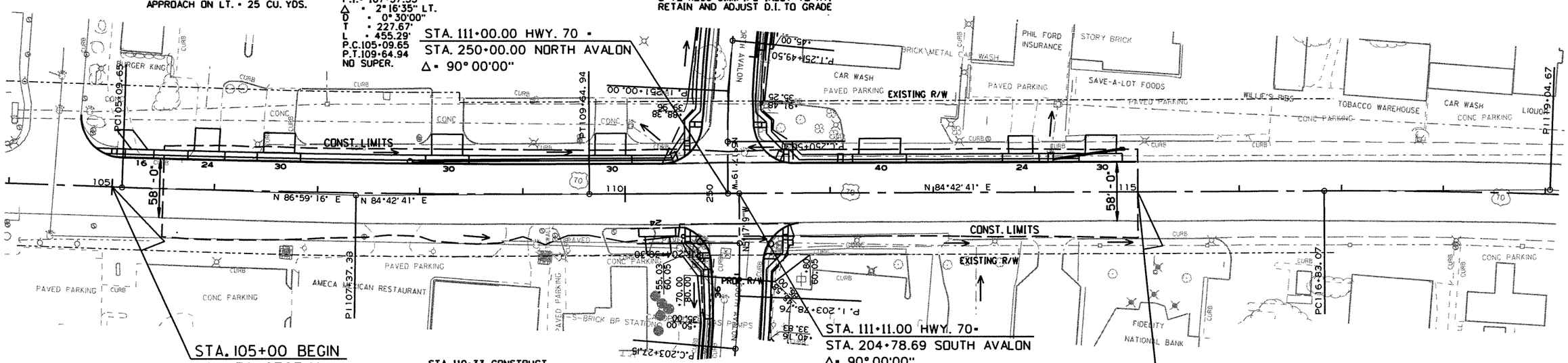
STA. 114+64 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.

STA. 114+85 INSTALL
YARD DRAIN ON LT.
WITH 12"X66' SIDE DRAIN OUTLET
CONNECT TO DROP INLET STA. 114+15

STA. 116+67 IN PLACE
60"X502' C.M.PIPE ON LT.
RETAIN

P.I.= 107+37.33
Δ = 2°16'35" LT.
D = 0°30'00"
T = 227.67'
L = 455.29'
P.C.105+09.65
P.T.109+64.94
NO SUPER.

STA. 111+00.00 HWY. 70 =
STA. 250+00.00 NORTH AVALON
Δ= 90°00'00"



STA. 105+00 BEGIN
HWY. 70 SECTION

STA. 111+11.00 HWY. 70=
STA. 204+78.69 SOUTH AVALON
Δ= 90°00'00"

STA. 115+00 END
HWY. 70 SECTION

STA. 110+33 CONSTRUCT
APPROACH ON RT. = 20 CU. YDS.

STA. 108+94 IN PLACE
18"X30' C.M.PIPE CULVERT
RT. SIDE DRAIN
RETAIN

STA. 109+61 IN PLACE
24"X74' R.C.PIPE CULVERT
RT. SIDE DRAIN
RETAIN

STA. 110+73 IN PLACE
DROP INLET ON RT.
W/24"X74' R.C.PIPE INLET
& 24"X82' R.C.PIPE OUTLET TO
DROP INLET STA. 111+61 RT.
REMOVE DROP INLET AND CONSTRUCT
DROP INLET (H=3'9") ON RT. STA. 110+73
REMOVE 4' OF 24"X74' R.C. PIPE INLET
CONNECT TO DROP INLET STA. 110+73
EXTEND 24"X82' PIPE OUTLET 4' LT.
CONNECT TO DROP INLET STA. 110+73
TYPE MO DROP INLET = 4'DIA.

STA. 111+61 IN PLACE
DROP INLET ON RT.
W/ 18" PIPE INLET FROM SOUTH
& 24"X178' C.M. PIPE OUTLET TO
DROP INLET STA. 113+42 RT.
RETAIN

STA. 111+41 CONSTRUCT
DROP INLET ON RT. (H=3'9")
CONNECT TO EXIST 24"X74
R.C.PIPE OUTLET TO STA. 111+61 RT.
AS INLET AND OUTLET
TYPE MO D.I. = 4'DIA.

STA. 113+41 IN PLACE
DROP INLET ON RT.
W/ 12" STEEL PIPE INLET FROM SOUTH
& 18"X120' R.C. PIPE OUTLET TO
DROP INLET STA. 114+64
RETAIN

STA. 114+63 IN PLACE
DROP INLET ON RT.
WITH 18"X103' R.C.PIPE OUTLET
RETAIN

P.I.= 119+04.67
Δ = 4°25'48" RT.
D = 1°00'00"
T = 221.61'
L = 443.00'
P.C.116+83.07
P.T.121+26.06
NO SUPER

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES AND PLASTIC PIPES ARE TO HAVE A TYPE 2 BEDDING.

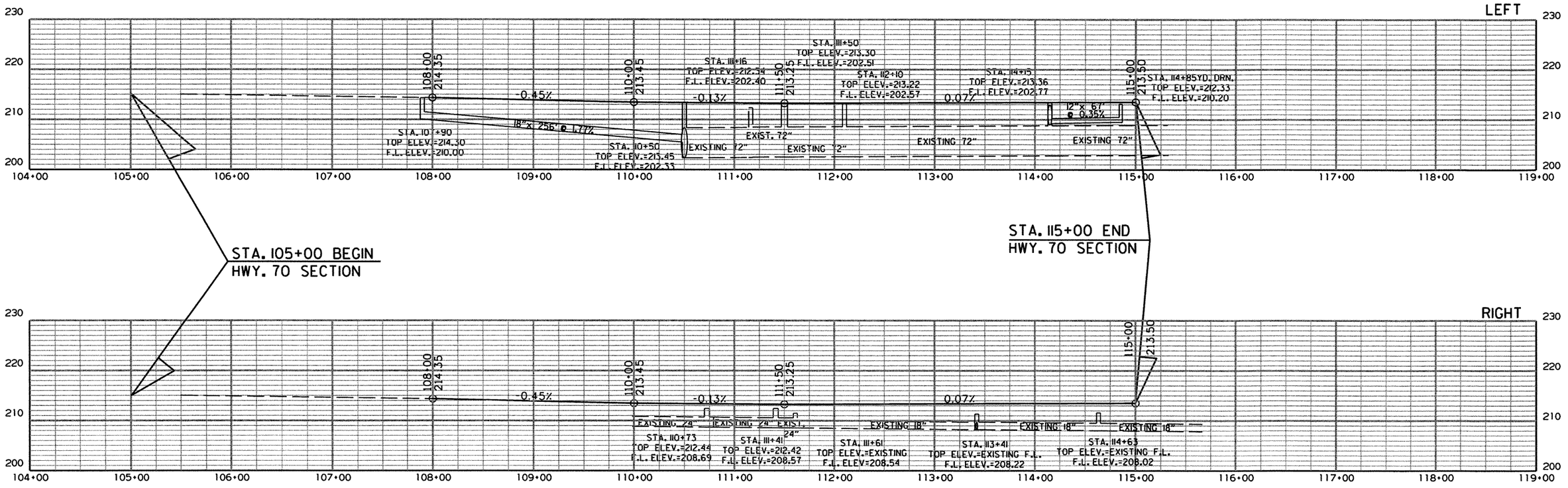
R110533.DGN 3/1/2011

HWY. 70 AT AVALON

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.		110533	29	96

(2) PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12



BM: 903
43.84 RT. OF STA. 111+52.74
ELEVATION = 212.45

R110533.DGN 3/1/2011

HWY. 70 AT AVALON

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.		110533	30	96

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
2-2-12

P.I.= 203+78.76
Δ = 5°09'26" LT.
D = 5°00'00"
T = 51.61'
L = 103.15'
P.C.203+27.15
P.T.204+30.30
NO SUPER

STA. 202+59 CONSTRUCT APPROACH ON LT. = 20 CU.YDS.

STA. 203+78 CONSTRUCT APPROACH ON LT. = 5 CU. YDS.

P.I.= 253+55.37
Δ = 1°08'55" LT.
D = 1°00'00"
T = 57.43'
L = 114.86'
P.C.252+97.94
P.T.254+12.80
NO SUPER

STA. 201+00 BEGIN
S. AVALON ST.

STA. 204+78.69 SO. AVALON =
STA. 111+11.00 HWY. 70
Δ = 90°00'00"

STA. 250+30 BEGIN
N. AVALON ST.

STA. 252+01 CONSTRUCT APPROACH ON LT. = 5 CU. YDS.

STA. 253+71 CONSTRUCT APPROACH ON LT. = 5 CU. YDS.

CONST. LIMITS

PROP. R/W

EXIST. R/W

POB 200+00.00

POB 250+00.00

POE 204+78.69

POE 255+68.94

N0° 51' 38" W

N0° 07' 53" W

N0° 17' 19"W

N0° 39' 23"E

N0° 29' 32"W.

T.C.E.

CAR WASH

WALGREENS

STA. 204+49 END
S. AVALON ST.

STA. 250+00.00 NO. AVALON =
STA. 111+00.00 HWY. 70
Δ = 90°00'00"

STA. 253+90 END
N. AVALON ST.

P.I.= 251+00.00
Δ = 5°56'42" RT.
D = 6°00'00"
T = 49.59'
L = 99.08'
P.C.250+50.41
P.T.251+49.50
NO SUPER

STA. 203+19 CONSTRUCT APPROACH ON RT. = 5 CU. YDS.

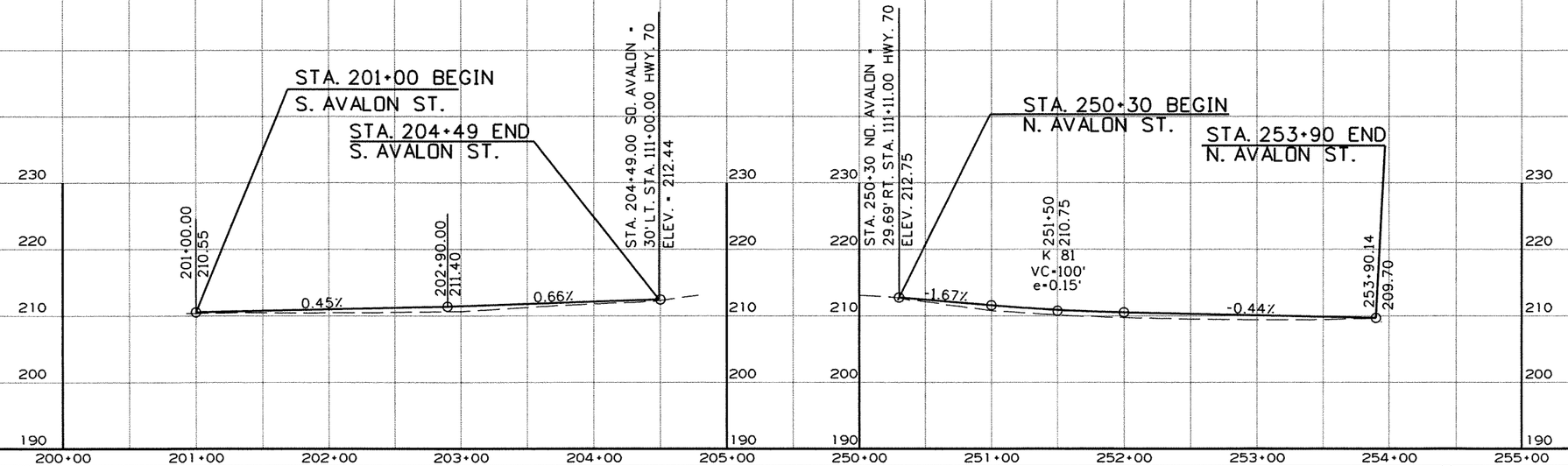
STA. 251+69 CONSTRUCT APPROACH ON RT. = 10 CU. YDS.

STA. 252+51 CONSTRUCT APPROACH ON RT. = 25 CU. YDS.

STA. 253+25 CONSTRUCT APPROACH ON RT. = 15 CU. YDS.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES AND PLASTIC PIPES ARE TO HAVE A TYPE 2 BEDDING.

AVALON ST.



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Z:\BORDER.CEL 11/3/2010

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.		110533	31	96

(2) PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7405
M. CHAEV D. FUGETT
2-2-12

STA. 403+75 CONSTRUCT
DROP INLET ON LT. (H=3'9")
18"X198' PIPE OUTLET
TO D.I. STA. 405+77 LT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

STA. 405+77 CONSTRUCT
DROP INLET ON LT. (H=5'6")
WITH 4' EXTENSION
18"X20' STUB-IN W/F.E.S.
18"X172' PIPE OUTLET
TO JCT. BOX STA. 407+53 LT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

STA. 407+53 IN PLACE
DROP INLET ON LT.
TYPE ST WITH
24"X76' R.C. PIPE OUTLET
TO LT. - RETAIN
RETAIN D.I. AND MODIFY TO
JCT. BOX (TYPE ST)

STA. 407+66 IN PLACE
DROP INLET ON LT.
W/ 18"X64' R.C.PIPE OUTLET
TO DROP INLET AT STA. 408+33 LT.
RETAIN

STA. 408+34 IN PLACE
DROP INLET ON LT.
W/ 18"X238' R.C. PIPE INLET
& 18"X11' R.C.PIPE OUTLET TO
JCT. BOX STA. 408+33 LT.
RETAIN

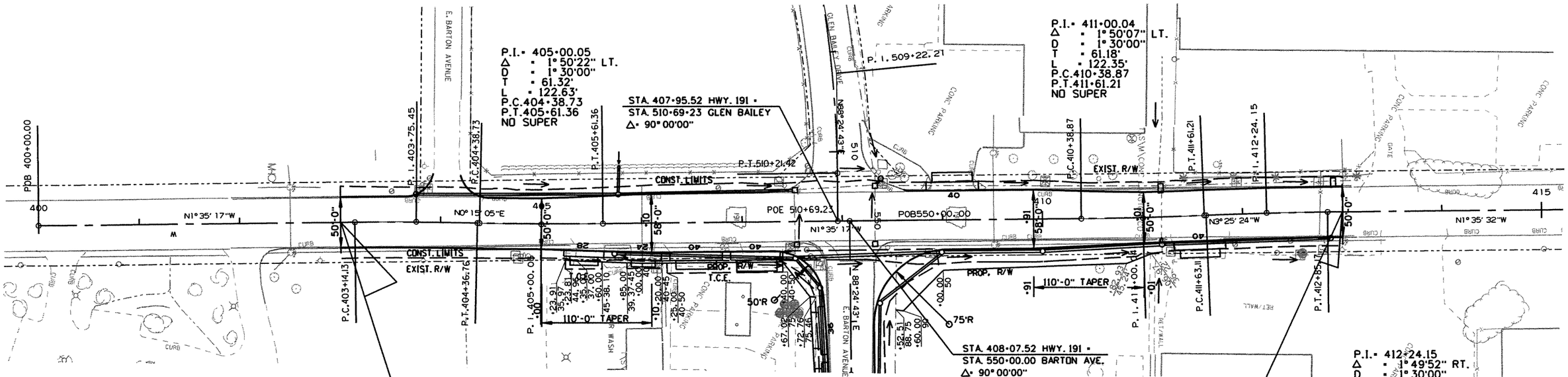
STA. 408+33 IN PLACE
DROP INLET ON LT.
W/ 18"X282' R.C.PIPE OUTLET
TO STA. 411+18 LT. - RETAIN
RETAIN D.I. AND MODIFY TO
JCT. BOX (TYPE ST)

STA. 408+38 CONSTRUCT
DROP INLET (H=4'6") ON LT.
WITH 4' EXTENSION
18"X7' PIPE OUTLET TO DROP INLET
STA. 408+33 LT.
TYPE MO D.I. = 4'DIA
TYPE C D.I. = 4'X3'

STA. 411+18 IN PLACE
DROP INLET ON LT.
W/ 24" R.C.PIPE OUTLET
TO RT. - RETAIN
REMOVE D.I. AND CONSTRUCT
DROP INLET (TYPE C)(4'X8')(H=6'0")
WITH 4' EXTENSION

STA. 412+90 CONSTRUCT
DROP INLET ON LT.
TYPE C (4'X8')
WITH 4' EXTENSION
CONNECT TO EXISTING 24"
R.C.PIPE AS INLET AND OUTLET

STA. 409+10 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.



STA. 403+00 BEGIN
HWY. 191 SECTION

P.I. = 403+75.45
Δ = 1° 50'22" RT.
D = 1° 30'00"
T = 61.32'
L = 122.63'
P.C.403+14.13
P.T.404+36.76
NO SUPER

STA. 405+42 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 406+00 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 405+73 CONSTRUCT
DROP INLET ON RT. (H=3'6")
WITH 4' EXTENSION
18"X176' PIPE OUTLET TO
STA. 407+53 RT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

STA. 406+54 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 407+14 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 407+54 IN PLACE
DROP INLET ON RT.
W/ 18"X52' R.C.PIPE OUTLET
TO D.I. STA. 407+53 LT. - RETAIN
RETAIN DROP INLET AND MODIFY
TO JCT. BOX (TYPE ST)

STA. 407+53 CONSTRUCT
DROP INLET ON RT. (H=3'6")
WITH 8' EXTENSION
24"X143' PIPE OUTLET TO
DROP INLET STA. 408+99 RT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

STA. 408+33 IN PLACE
DROP INLET ON RT.
W/ 18"X55' R.C.PIPE OUTLET TO
D.I. STA. 408+33 LT. - RETAIN
RETAIN D.I. AND MODIFY TO
JCT. BOX (TYPE ST)

STA. 411+56 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 413+00 END
HWY. 191 SECTION

P.I. = 412+24.15
Δ = 1° 49'52" RT.
D = 1° 30'00"
T = 61.04'
L = 122.06'
P.C.411+63.11
P.T.412+85.17
NO SUPER

STA. 408+99 CONSTRUCT
DROP INLET ON RT. (H=4'0")
WITH 4' EXTENSION
24"X97' PIPE OUTLET TO
DROP INLET STA. 410+00 RT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

STA. 410+00 CONSTRUCT
DROP INLET ON RT. (H=4'9")
WITH 4' EXTENSION
24"X115' PIPE OUTLET TO
DROP INLET STA. 411+18 RT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

STA. 411+18 IN PLACE
DROP INLET ON RT.
REMOVE AND CONSTRUCT
DROP INLET (H=5'9")
WITH 4' EXTENSION
18" R.C. PIPE INLET
RETAIN AND REMOVE 4' LT.
CONNECT TO DROP INLET
24"X52' R.C.PIPE OUTLET TO
DROP INLET STA. 411+18 LT.
RETAIN AND EXTEND 4' RT.
CONNECT TO DROP INLET
TYPE MO D.I. = 5'DIA.
TYPE C D.I. = 4'X4'

STA. 412+90 CONSTRUCT
DROP INLET ON RT. (H=5'3")
WITH 4' EXTENSION
18"X165' PIPE OUTLET TO
DROP INLET STA. 411+18 RT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES AND PLASTIC PIPES ARE TO HAVE A TYPE 2 BEDDING.

R110533.DGN 3/1/2011

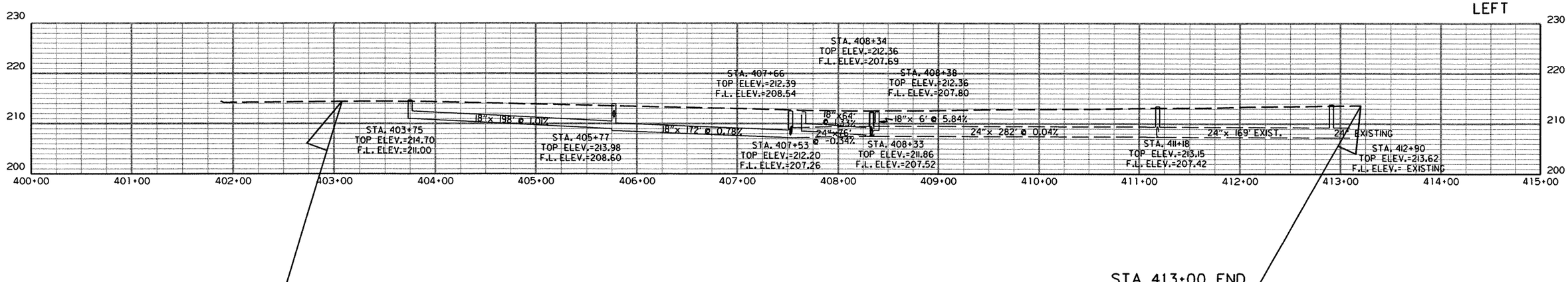
HWY. 191 AT GLENN BAILEY

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.		110533	32	96

(2) PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-22-12

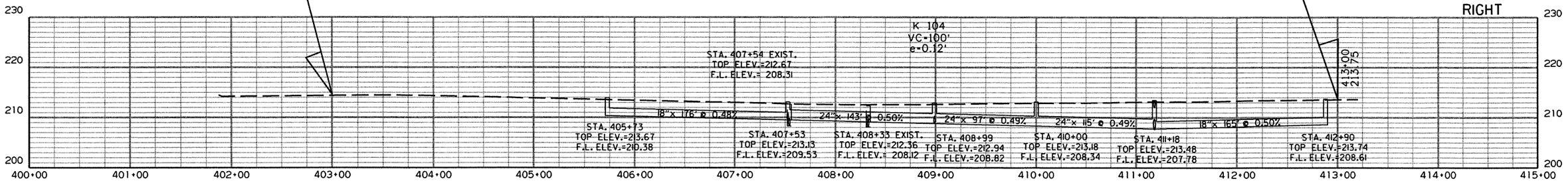
LEFT



STA. 403+00 BEGIN
HWY. 191 SECTION

STA. 413+00 END
JOB 110533

RIGHT



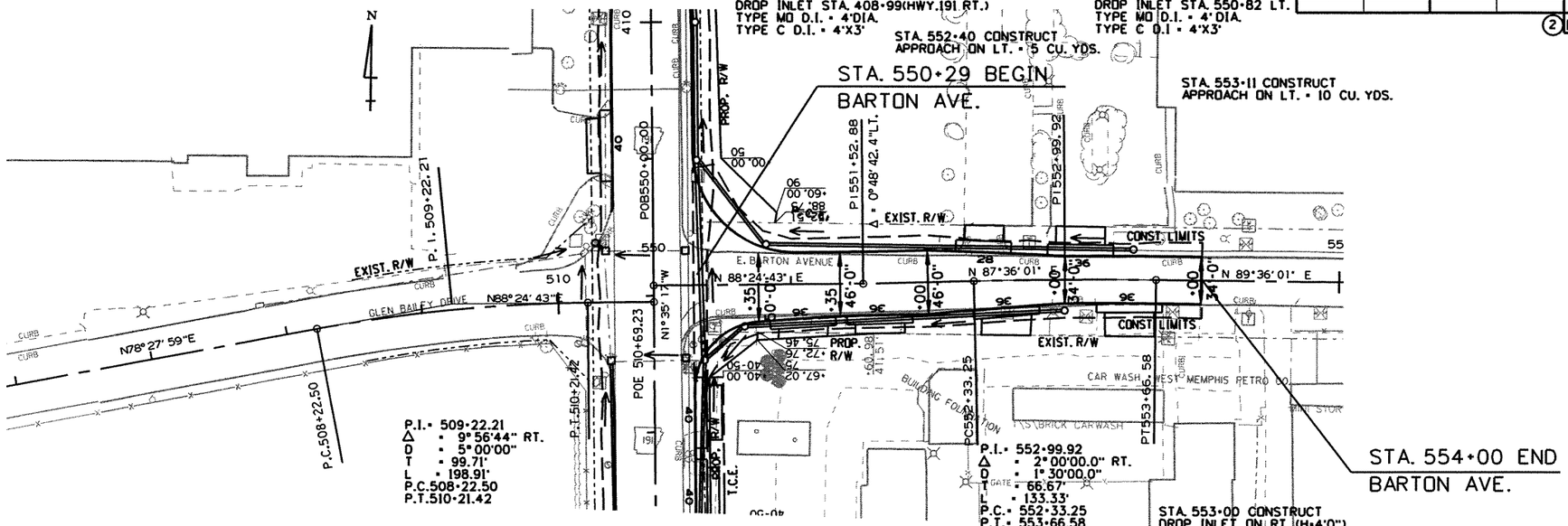
R110533.DGN 3/1/2011

HWY. 191 AT GLENN BAILEY

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.		110533	33	96

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
2-2-12



UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES AND PLASTIC PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 550+66 CONSTRUCT
DROP INLET ON RT. (H=4'0")
WITH 8' EXTENSION
18"X34' PIPE OUTLET TO
DROP INLET STA. 407+53(HWY.191 RT.)
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

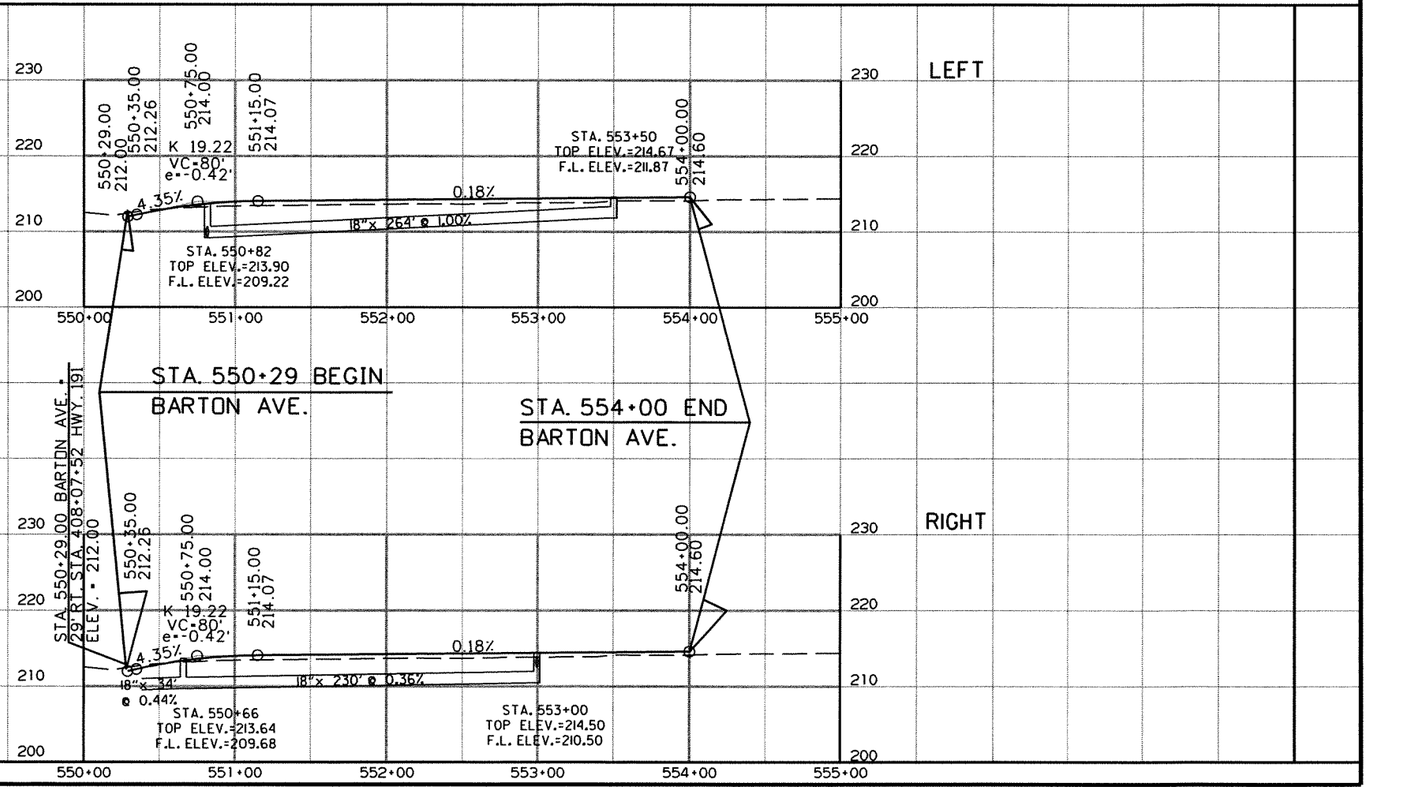
STA. 551+02 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 551+66 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 552+57 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 553+48 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

GLEN BAILEY DR. / BARTON AVE.



r110533.dgn 3/28/2011
ZBORDER.CEL 11/3/2010
r110533.dgn 3-22-11

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.		110533	34	96

(2) SYSTEM MAP

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

WEST MEMPHIS

ANTENNA ORIENTATION

HWY. 70/RHODES STREET
ORIENTED TO MASTER ANTENNA LOCATED AT
HWY. 70/HWY. 77

86°12'13"

ANTENNA ORIENTATION

HWY. 70/AVALON STREET
ORIENTED TO MASTER ANTENNA LOCATED AT
HWY. 70/HWY. 77

86°12'13"

ANTENNA ORIENTATION

HWY. 191/GLEN BAILEY DR. & BARTON AVE.
ORIENTED TO MASTER ANTENNA LOCATED AT
HWY. 70/HWY. 77

148°47'43"

MASTER RADIO ANTENNA

LOCATED AT HWY. 70/HWY. 77

N ROSELAWN DR
BRIDGEPORT DR
ARLINGTON DR
CRESTMERE
CHERRY LN
SPEARS
BISCAYNE DR
ARLINGTON DR
W CENTER DR
N CENTER DR
S CENTER DR
REDDING
S WORTHINGTON DR
PARK DR
RICHLAND DR
PRYOR DR
HIGHLAND DR
PRYOR DR
S ROSELAWN DR
STRATFORD DR
ROSEWOOD DR
S ROSELAWN DR
BELLEHR DR
ROSS CV
FORREST PARK DR
ROSS AVE
WORTHINGTON PARK
PARK CV
A
WEST MEMPHIS JR HIGH
BRAGG ELEM
GIBSON AVE
W BARTON AVE
W ROOSEVELT AVE
W COOPER AVE
W DANNER AVE
W OLIVER AVE
W BOND AVE
W BROADWAY AVE
77
CAMELOT
CAMELOT CV
KINGSWAY CV
OAKDALE DR
SNOWDEN DR
WINDSOR DR
BROOKDALE
RIDGEWAY
GEORGETOWN
KINGSWAY DR
NORMANDY DR
GRASSY LAKE ALY
WEST MEMPHIS HIGH SCHOOL
LEE CV
PEARCE
N BOND
HICKS PARK
N AVALON
N REDDING
RHODES
MISSOURI
HIGHTOWER PARK
MP
POLK AVE
COURT
WOODS
S 1ST
S 2ND
S 4TH
S 5TH
CALVIN
AVERY DR
WESTGATE CV
70
DOGWOOD CV
LOIS MARIE CV
TYLER CV
REDBUD DR
W TYLER AVE
CRITTENDEN REGIONAL HOSPITAL
RAINEY PASS RD
W HARRISON AVE
MEADOWBROOK
LAKESIDE DR
LAKEWOOD DR
LAKEWOOD PT
S RICH RD
S STONEBRIDGE CV
TURTLE CREEK CV
LAKEVIEW CR
LAKELAND DR
YALE
AUBURN AVE
CORNELL AVE
BELMONT DR
STANFORD AVE
PURDUE AVE
PIEDMONT
RICE
COLGATE DR
PRINCETON
TULANE DR
OXFORD
THREE FORKS RD
CYPRESS PT
ROCKY CHUTE
RIVER RD
SERVICE DR
COX
W JACKSON AVE
MATTHEWS PARK
VANDERBILT AVE
BIRCH
FOXWOOD CV
S REDDING
McAUTHUR
W MADISON AVE
W JEFFERSON AVE
WINCHELL CV
FOXWOOD CR
WINCHELL CR
WASHINGTON AVE
FAULK ELEMENTARY
RICH RD
W WALNUT DR
MAPLE DR
MIMOSA DR
PECAN DR
WALNUT DR
CV
SPACE CENTER DR
GLEN BAILEY DR
E BARTON AVE
DON JENKINS CV
McCAIN BLVD
GRAHAM
ROY PUGH DR
EAST JR HIGH
GOODWIN CR
W McAULEY DR
WEAVER DR
WEAVER ELEMENTARY
DIVISION
PARKWAY
JOHNSON RD
WEAVER CV
McAULEY CV
McAULEY CR
HOLIDAY DR
E BARTON AVE
SCOTTWOOD
HORTON PARK
WILSON RD
N 14 TH
N 16 TH
GARDEN LN
N 17 TH
N 18 TH
JULIA
ROSEMARY LN
TWIST
E McAULEY DR
DRINGRAM BLVD
S McAULEY DR
ROWE PARK
ST MATTHEWS CATHOLIC SCHOOL
E COOPER AVE
E DANNER AVE
E OLIVER AVE
PINE
E BOND AVE
THOMPSON AVE
E BROADWAY AVE
BNSF
N 4TH
N 5TH
N 9TH
PERKINS AVE
RICHARDSON AVE
N 7 TH
N 8 TH
N 9 TH
N 10 TH
N 11 TH
N 12 TH
N 13 TH
THOMPSON AVE
E POLK AVE
TENTH STREET PARK
E HARRISON AVE
E VAN BUREN AVE
E JACKSON AVE
E MONROE AVE
E MADISON AVE
E JEFFERSON AVE
S 2 RD
S 3 RD
S 5 TH
RAILWAY
S 7 TH
S 8 TH
S 9 TH
S 10 TH
S 11 TH
S 12 TH
S 13 TH
S 14 TH
S 15 TH
S 16 TH
S 17 TH
S 18 TH
S 19 TH
S 20 TH
S 21 ST
VAN BUREN AVE
WONDER ELEMENTARY
WONDER JR HIGH

WEST MEMPHIS

SCALE IN FEET
0 500 1000 2000

DATE: 02-02-12 FILE NAME: t110533_job.dgn

LOCATION:	HWY. 70 & HWY. 191 SIGNALS & INTERS. IMPVTS.		
CITY:	WEST MEMPHIS		
COUNTY:	CRITTENDEN		
DISTRICT:	1	SCALE: 1"=1000'	DRAWN BY: 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.		110533	35	96

(2) TRAFFIC SIGNAL NOTES

TRAFFIC SIGNAL NOTES:

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2002) NATIONAL ELECTRICAL CODE, NFPA 101(2000) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC 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.
3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY 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 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'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 WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 AWG 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.
4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
5. THE STANDARD TRAFFIC CONTROLLER CABINET SHALL HAVE 16 LOAD BAYS 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.
6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS, AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.
8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD MAY BE USED.
9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
10. PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PAVEMENT MARKING PLAN SHEETS.
11. 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 SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
12. ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.
13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
15. 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.
16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY.
17. 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, 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 21' SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 6 FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.
18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS 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.
19. 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.
20. 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.
21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO ISMA STANDARDS.
22. ONE VIDEO PROGRAMMING 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.
23. TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY 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.
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.

DATE: 01-05-12 FILE NAME: t110533_job.dgn

LOCATION:	HWY. 70 & HWY. 191 SIGNALS & INTERS. IMPVTS.
CITY:	WEST MEMPHIS
COUNTY:	CRITTENDEN
DISTRICT: 1	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
				6	ARK.			
				JOB NO.		110533	36	96

(2) SUMMARY OF TRAFFIC SIGNAL QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
M.7605
MICHAEL D. FUGETT
2-2-12

ITEM NO.	ITEM	HWY.70 AT HWY.77	HWY.70 AT HWY.191	HWY.70 AT M.L.K.JR.DR.	HWY.77 AT SHOPPINGWAY	HWY.77 AT BARTON	HWY.77 AT GRAHAM	HWY.70 AT AVALON ST.	HWY.70 AT RHODES ST.	HWY.191 AT BAILEY DR.	HWY.64/I-55 INTERCHANGE	TOTAL JOB QUANTITY	UNIT
SS&604	SIGNS								96			96	SQ. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS								1280			1280	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)								2			2	EACH
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)								2			2	EACH
SP&701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2, E-NET (SPECIAL)										1	1	EACH
SP&701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASE)							1	1	1		3	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1WAY)							8	8	8		24	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1WAY)	3	4	1	1	1	1	4	2	4	3	24	EACH
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED							8	8			16	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)							2296	2087	394		4777	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)							232	246	264		742	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)							642	513	146		1301	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")							20	20	20		60	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")							20	20	20		60	LIN. FT.
710	NON-METALLIC CONDUIT (2")							20	20	20		60	LIN. FT.
710	NON-METALLIC CONDUIT (3")							649	445	387		1481	LIN. FT.
SS&711	CONCRETE PULL BOX (TYPE 1HD)							1	1			2	EACH
SS&711	CONCRETE PULL BOX (TYPE 2 HD)							8	7	5		20	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28')							1				1	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 (32')									1		1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')								1			1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38')								1			1	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')							1				1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')									1		1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (62')									1		1	EACH
SS&715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION							4	4			8	EACH
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")								400			400	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")								653			653	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")								1000			1000	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING (WORDS)								2			2	EACH
SS&719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)								2			2	EACH
733	VIDEO CABLE							1748	138	1620		3506	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)							• 8	6	8	10	32	EACH
733	VIDEO MONITOR (CLR)							1	1	1		3	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)							• 5	3	4		12	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)							1	1	1		3	EACH
SP	ANTENNA CABLE (TYPE 6)							70	70	70	70	280	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)							985	490	384		1859	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)							135	150	115		400	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)							20	20	20		60	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES							596	627	252		1475	LIN. FT.
SP	EMERGENCY BACKUP LOCAL RADIO (E-NET 2.4) UNIT										1	1	EACH
SP	LUMINAIRE ASSEMBLY							3	3	2		8	EACH
SP	LOCAL RADIO (E-NET 2.4) WITH ANTENNA										1	1	EACH
SP	LOCAL RADIO WITH ANTENNA							1	1	1		3	EACH
SP	MASTER RADIO (E-NET 2.4) WITH ANTENNA										1	1	EACH
SP	MASTER RADIO WITH ANTENNA										1	1	EACH
SP	ON-STREET MASTER CONTROLLER RELOCATION										1	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.03	0.03	0.03	0.03	0.03	0.03	0.25	0.25	0.25	0.07	1.00	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)							1	1	1		3	EACH
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	1	1	1	1	1					6	EACH
SP	18" STREET NAME SIGN							4	6	6		16	EACH

• ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED.

DATE: 01-27-12 FILE NAME: t110533_job.dgn

LOCATION: HWY. 70 & HWY. 191 SIGNALS & INTERS. IMPVTS.
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 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
				6	ARK.			
				JOB NO.		110533	37	96

(2) SIGNAL HEAD REPLACEMENT MAP

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

SIGNAL HEAD REPLACEMENT
HWY. 77/SHOPPINGWAY BLVD.

SIGNAL HEAD REPLACEMENT
HWY. 70/M. L. K. JR. DRIVE

SIGNAL HEAD REPLACEMENT
HWY. 77/W. BARTON AVE.

SIGNAL HEAD REPLACEMENT
HWY. 77/GRAHAM

SIGNAL HEAD REPLACEMENT
HWY. 70/HWY. 191

SIGNAL HEAD REPLACEMENT
HWY. 70/HWY. 77

SCALE IN FEET
0 1000 2000 4000

DATE: 01-05-12 FILE NAME: t110533_job.dgn

LOCATION:	HWY. 70 & HWY. 191 SIGNALS & INTERS. IMPVTS.
CITY:	WEST MEMPHIS
COUNTY:	CRITTENDEN
DISTRICT: 1	SCALE: 1"=1000' DRAWN BY: 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.		110533	38	96

(2) SIGNAL HEAD REPLACEMENT QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

HWY. 70/HWY. 77 TRAFFIC SIGNAL QUANTITIES

ITEM	ITEM	QUANTITY	UNIT
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	3	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.03	LUMP SUM
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH

HWY. 70/HWY. 191 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.03	LUMP SUM
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH

HWY. 70/M. L. K. JR. DRIVE TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.03	LUMP SUM
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH

HWY. 77/SHOPPINGWAY TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.03	LUMP SUM
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH

HWY. 77/W. BARTON AVE. TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.03	LUMP SUM
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH

HWY. 77/GRAHAM TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.03	LUMP SUM
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH

DATE: 01-06-12 FILE NAME: tl10533_job.dgn

LOCATION: HWY. 70 & HWY. 191 SIGNALS & INTERS. IMPVTS.
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 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
				6	ARK.			
				JOB NO.		110533	39	96

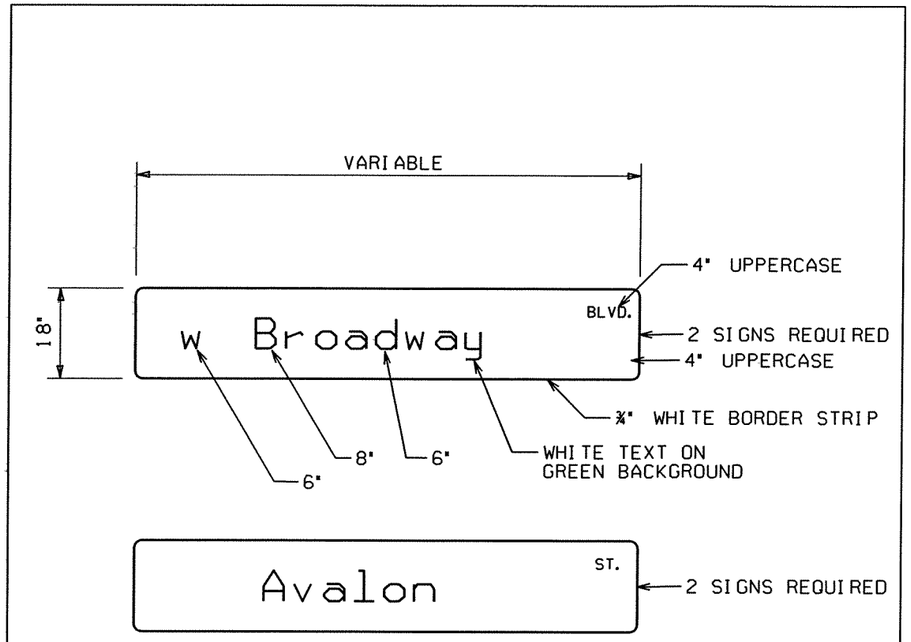
(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASE)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1WAY)	8	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1WAY)	4	EACH
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2296	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	232	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	642	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	649	LIN. FT.
SS&711	CONCRETE PULL BOX (TYPE 1HD)	1	EACH
SS&711	CONCRETE PULL BOX (TYPE 2 HD)	8	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28')	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 (42')	1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1	EACH
SS&715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	EACH
733	VIDEO CABLE	1748	LIN. FT.
• SP&733	VIDEO DETECTOR (CLR)	8	EACH
733	VIDEO MONITOR (CLR)	1	EACH
• SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	5	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	985	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	135	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	LIN. FT.
SP	LUMINAIRE ASSEMBLY	3	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	596	LIN. FT.
SP	18" STREET NAME SIGN	4	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	ANTENNA CABLE (TYPE 6)	70	LIN. FT.
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.25	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

• ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED.



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 ALSO BE ANODIZED. 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.

3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM OF THE NEARSIDE LEFT POLE.
SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

DATE: 01-27-12 FILE NAME: t110533_01.dgn

LOCATION: HWY. 70/AVALON STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 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
				6	ARK.			
				JOB NO.		110533	40	96

(2) SIGNALIZATION PLAN SHEET

PHASING DIAGRAM

SIGNAL FACES

12" LENSES

2&3
5&6
8&9
11&12

1, 4, 7&10

One Section (Solid Symbol)

13&14
15&16
17&18
19&20

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

DETECTOR SPACING CHART

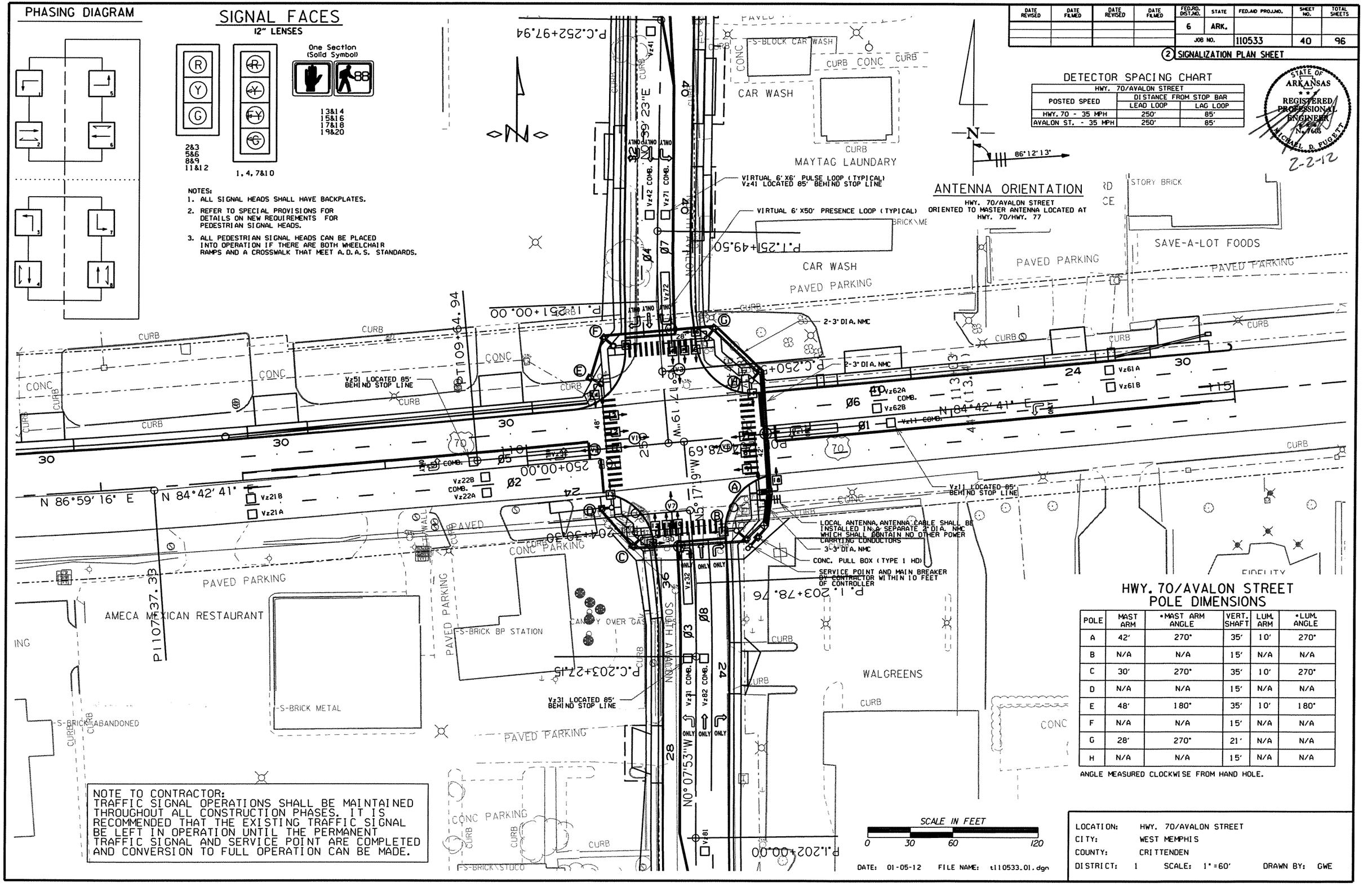
HWY. 70/AVALON STREET		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD LOOP	LAG LOOP
HWY. 70 - 35 MPH	250'	85'
AVALON ST. - 35 MPH	250'	85'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

ANTENNA ORIENTATION

HWY. 70/AVALON STREET
ORIENTED TO MASTER ANTENNA LOCATED AT HWY. 70/HWY. 77

86°12'13"



HWY. 70/AVALON STREET POLE DIMENSIONS

POLE	MAST ARM	*MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	*LUM. ANGLE
A	42'	270°	35'	10'	270°
B	N/A	N/A	15'	N/A	N/A
C	30'	270°	35'	10'	270°
D	N/A	N/A	15'	N/A	N/A
E	48'	180°	35'	10'	180°
F	N/A	N/A	15'	N/A	N/A
G	28'	270°	21'	N/A	N/A
H	N/A	N/A	15'	N/A	N/A

ANGLE MEASURED CLOCKWISE FROM HAND HOLE.

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES. IT IS RECOMMENDED THAT THE EXISTING TRAFFIC SIGNAL BE LEFT IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL AND SERVICE POINT ARE COMPLETED AND CONVERSION TO FULL OPERATION CAN BE MADE.

SCALE IN FEET
0 30 60 120

DATE: 01-05-12 FILE NAME: t110533_01.dgn

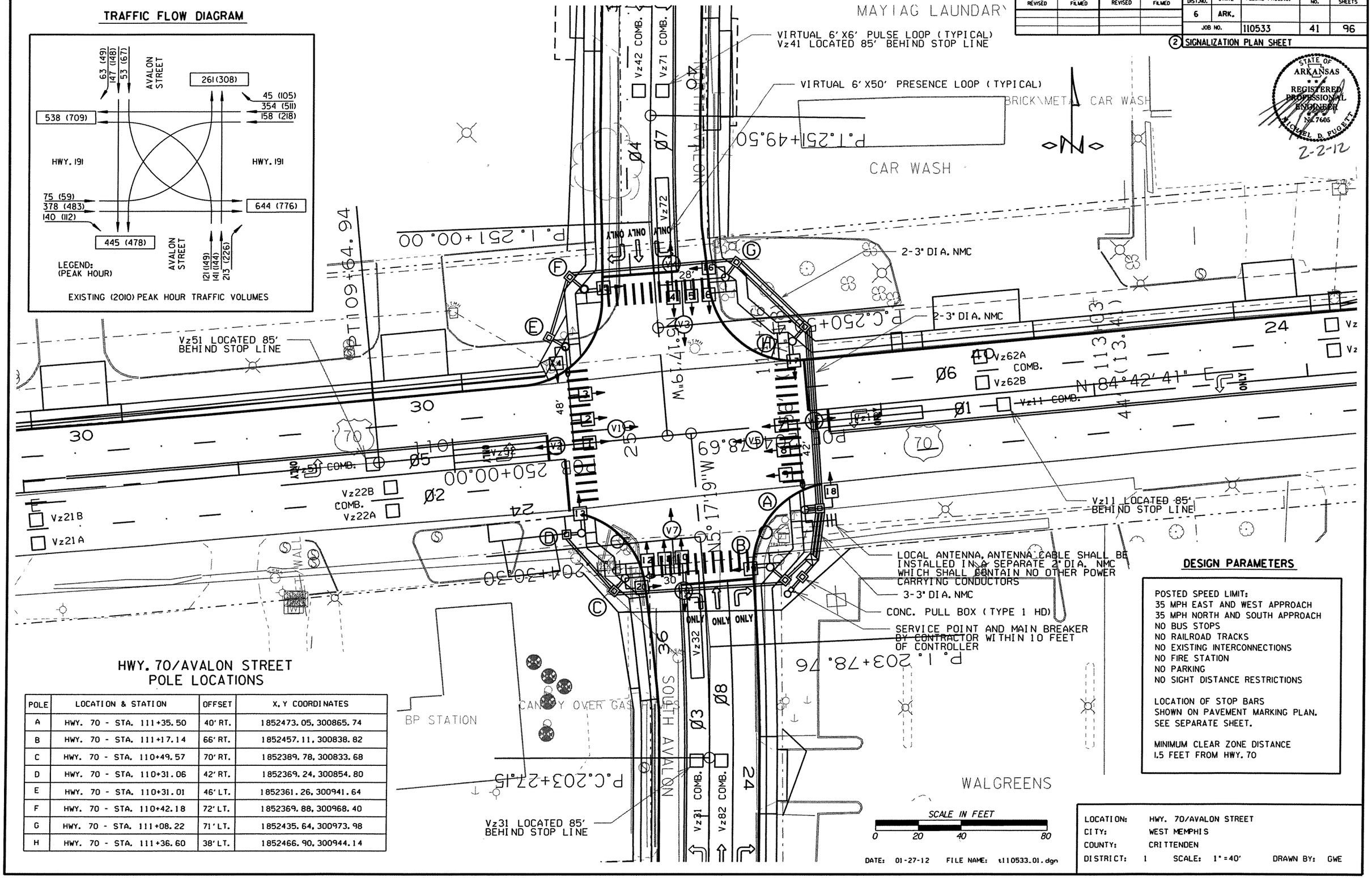
LOCATION: HWY. 70/AVALON STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: 1"=60' DRAWN BY: GWE

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.		110533	41	96

(2) SIGNALIZATION PLAN SHEET

TRAFFIC FLOW DIAGRAM

EXISTING (2010) PEAK HOUR TRAFFIC VOLUMES



HWY. 70/AVALON STREET POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 70 - STA. 111+35.50	40' RT.	1852473.05, 300865.74
B	HWY. 70 - STA. 111+17.14	66' RT.	1852457.11, 300838.82
C	HWY. 70 - STA. 110+49.57	70' RT.	1852389.78, 300833.68
D	HWY. 70 - STA. 110+31.06	42' RT.	1852369.24, 300854.80
E	HWY. 70 - STA. 110+31.01	46' LT.	1852361.26, 300941.64
F	HWY. 70 - STA. 110+42.18	72' LT.	1852369.88, 300968.40
G	HWY. 70 - STA. 111+08.22	71' LT.	1852435.64, 300973.98
H	HWY. 70 - STA. 111+36.60	38' LT.	1852466.90, 300944.14

DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
35 MPH NORTH AND SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP BARS SHOWN ON PAVEMENT MARKING PLAN. SEE SEPARATE SHEET.

MINIMUM CLEAR ZONE DISTANCE 1.5 FEET FROM HWY. 70

SCALE IN FEET
0 20 40 80

DATE: 01-27-12 FILE NAME: t110533_01.dgn

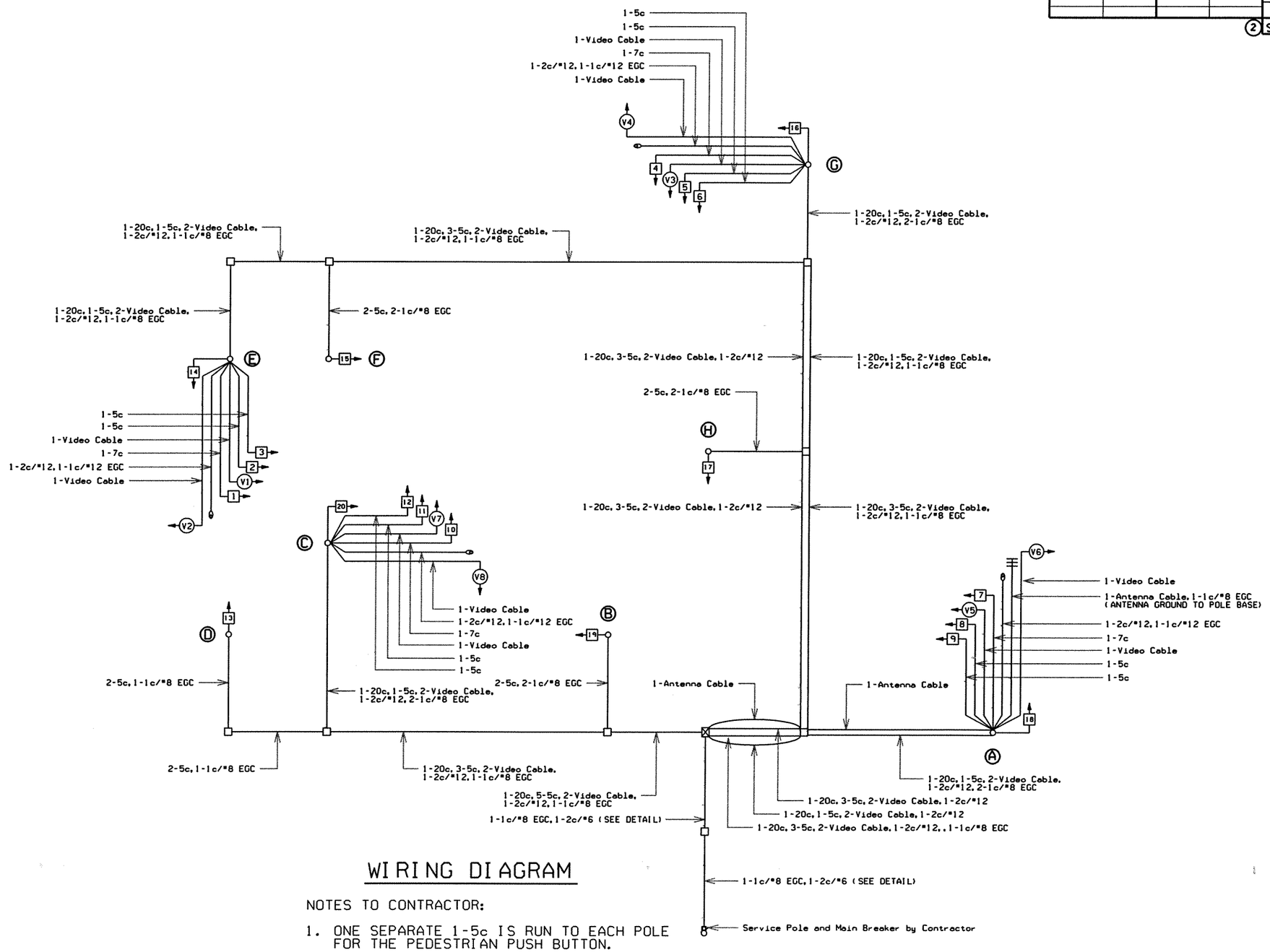
LOCATION: HWY. 70/AVALON STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: 1"=40' DRAWN BY: GWE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

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.		110533	42	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12



WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

DATE: 01-05-12 FILE NAME: t110533_01.dgn

LOCATION: HWY. 70/AVALON STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 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
				6	ARK.			
				JOB NO.		110533	43	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

DETECTOR SYSTEM DESCRIPTION: JOB 110533

WEST MEMPHIS - HWY. 70/AVALON STREET 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. INP.*	PHS	SYSTEM DET. *			
Vz11	WB LEFT TURN FAR	COMB.			1	D1	1	1		CAMERA V1	74'
Vz12	WB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23'
Vz21A&B	EB ADVANCE	LOCAL			7	V2	2			CAMERA V2	74'
Vz22A&B	EB NEAR	COMB.			8	D2	2	2		CAMERA V5	23'
Vz31	NB LEFT TURN FAR	COMB.			9	D3	3	3		CAMERA V3	23'
Vz32	NB LEFT TURN	LOCAL			10	V3	3			CAMERA V3	23'
Vz41	SB ADVANCE	LOCAL			15	V4	4			CAMERA V4	74'
Vz42	SB NEAR	COMB.			16	D4	4	4		CAMERA V7	23'
Vz51	EB LEFT TURN FAR	COMB.			5	D5	5	5		CAMERA V5	23'
Vz52	EB LEFT TURN	LOCAL			6	V5	5			CAMERA V5	23'
Vz61A&B	WB ADVANCE	LOCAL			3	V6	6			CAMERA V6	74'
Vz62A&B	WB NEAR	COMB.			4	D6	6	6		CAMERA V1	74'
Vz71	SB LEFT TURN FAR	COMB.			13	D7	7	7		CAMERA V7	23'
Vz72	SB LEFT TURN	LOCAL			14	V7	7			CAMERA V7	23'
Vz81A&B	NB ADVANCE	LOCAL			11	V8	8			CAMERA V8	74'
Vz82A&B	NB NEAR	COMB.			12	D8	8	8		CAMERA V3	23'
PB2A&B	S. AVALON S. LEG	PED.				P2	2				
PB4A&B	HWY. 70 W. LEG	PED.				P4	4				
PB6A&B	N. AVALON N. LEG	PED.				P6	6				
PB8A&B	HWY. 70 E. LEG	PED.				P8	8				
					SPARE						

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

INTERVAL CHART

SIGNAL FACES	HWY. 70/AVALON STREET																FLASH SEQ.
	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	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~~	•	~~G~~	•	~~FY~~	•••	~~FY~~	•••	~~R~~
5&6	R	R	R	R	R	R	R	R	R	R	G	••	R	R	G	••	R
7	~~G~~	•	~~FY~~	•••	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
8&9	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~~	•	~~FY~~	•••	~~G~~	•	~~FY~~	•••	~~R~~
11&12	R	R	R	R	R	R	R	R	R	R	R	R	G	••	G	••	R
13&14	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	W	FDW	BLK
15&16	DW	DW	W	FDW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
17&18	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	W	FDW	BLK
19&20	DW	DW	DW	DW	W	FDW	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: 01-05-12 FILE NAME: t110533_01.dgn

LOCATION: HWY. 70/AVALON STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: N/A DRAWN BY: GWE

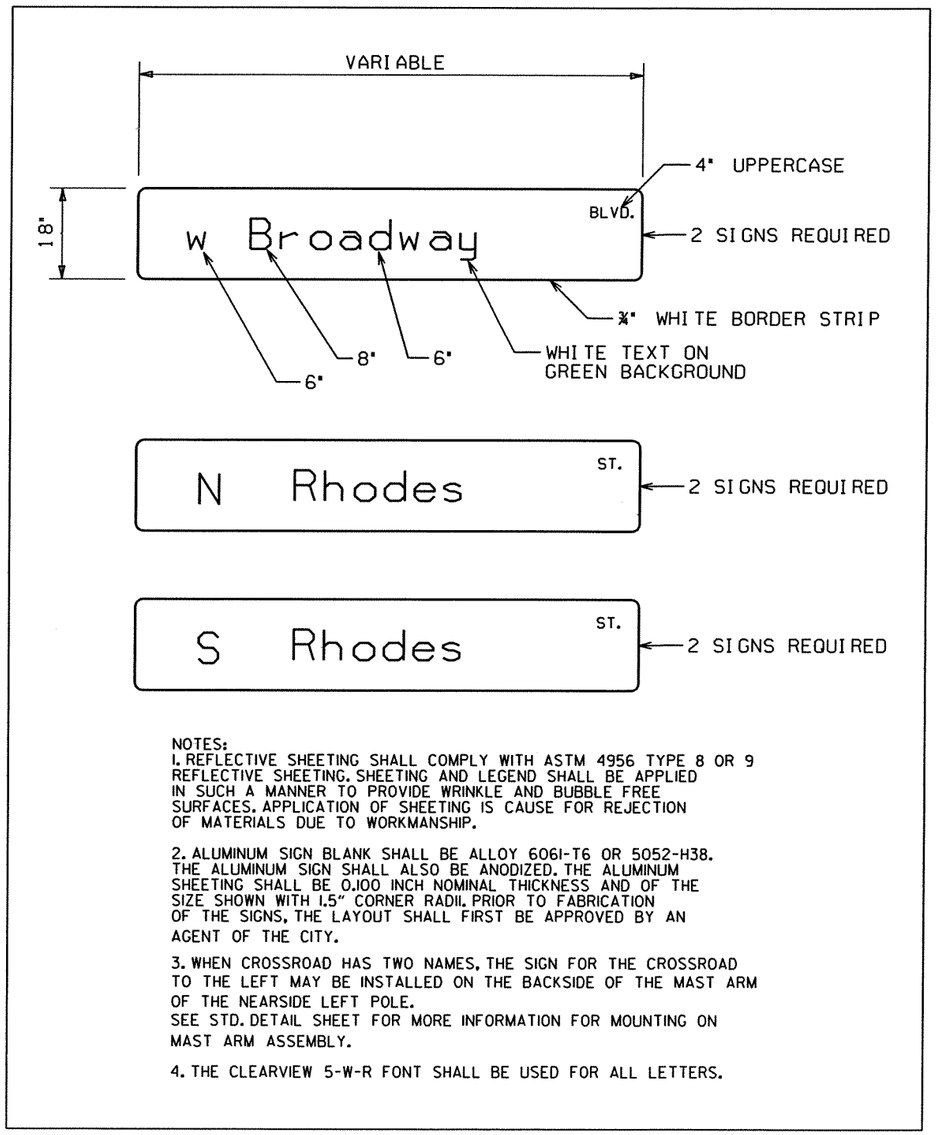
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	44	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
2-2-12

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASE)	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
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2087	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	246	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	513	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	445	LIN. FT.
SS&711	CONCRETE PULL BOX (TYPE 1HD)	1	EACH
SS&711	CONCRETE PULL BOX (TYPE 2 HD)	7	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 (44')	2	EACH
SS&715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	EACH
733	VIDEO CABLE	138	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	6	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	3	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	490	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	150	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	LIN. FT.
SP	LUMINAIRE ASSEMBLY	3	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	627	LIN. FT.
SP	18" STREET NAME SIGN	6	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	ANTENNA CABLE (TYPE 6)	70	LIN. FT.
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.25	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH



NOTES:

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2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ANODIZED. 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.

3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM OF THE NEARSIDE LEFT POLE.
SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

DATE: 01-27-12 FILE NAME: t110533.02.dgn

LOCATION: HWY. 70/RHODES STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 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
				6	ARK.			
				JOB NO.		110533	45	96

(2) SIGNALIZATION PLAN SHEET

PHASING DIAGRAM

SIGNAL FACES

12" LENSES

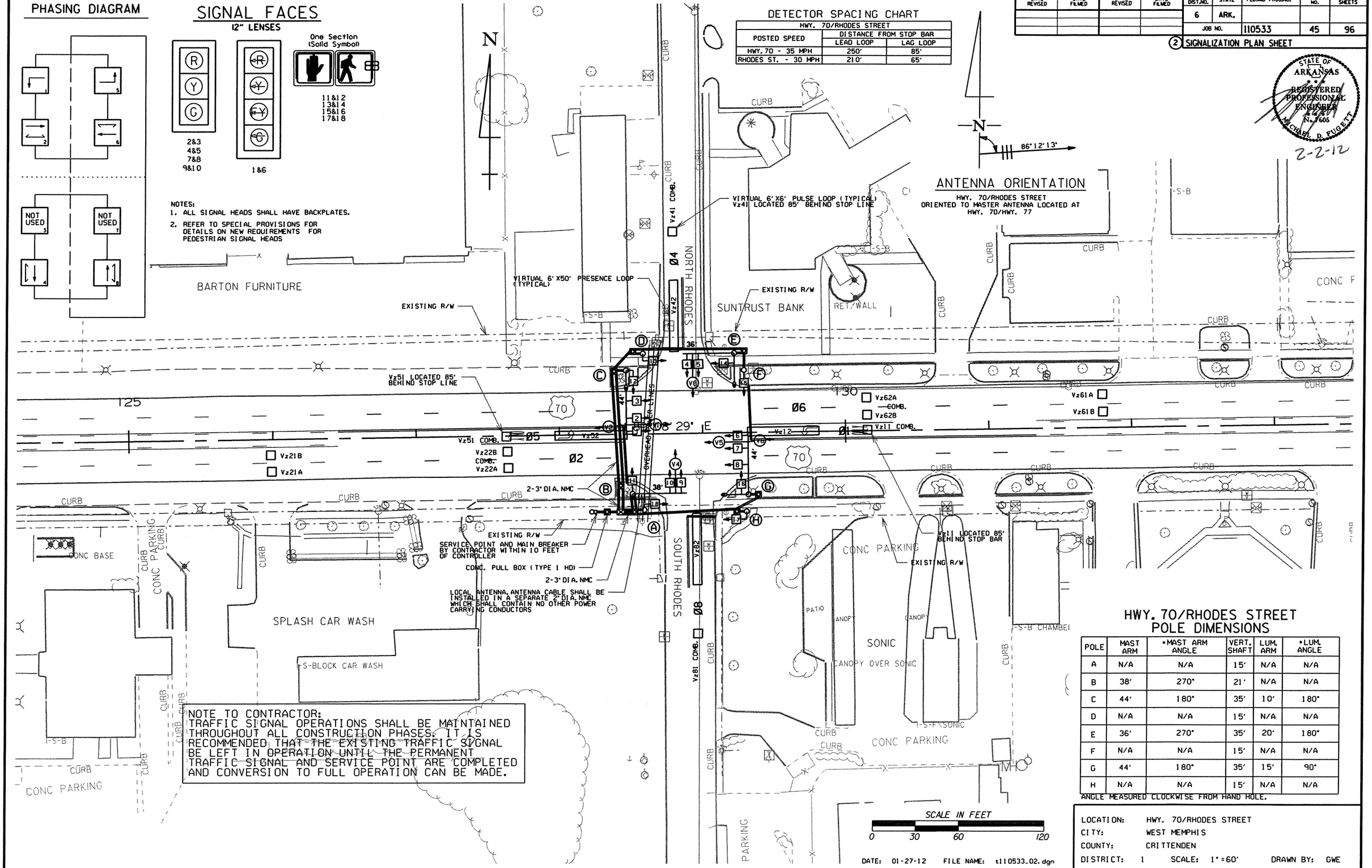
One Section (Solid Symbol)

11&12
13&14
15&16
17&18

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS

DETECTOR SPACING CHART

HWY. 70/RHODES STREET		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD LOOP	LAG LOOP
HWY. 70 - 35 MPH	250'	85'
RHODES ST. - 30 MPH	210'	65'



NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES. IT IS RECOMMENDED THAT THE EXISTING TRAFFIC SIGNAL BE LEFT IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL AND SERVICE POINT ARE COMPLETED AND CONVERSION TO FULL OPERATION CAN BE MADE.

HWY. 70/RHODES STREET POLE DIMENSIONS

POLE	MAST ARM	•MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	•LUM. ANGLE
A	N/A	N/A	15'	N/A	N/A
B	38'	270°	21'	N/A	N/A
C	44'	180°	35'	10'	180°
D	N/A	N/A	15'	N/A	N/A
E	36'	270°	35'	20'	180°
F	N/A	N/A	15'	N/A	N/A
G	44'	180°	35'	15'	90°
H	N/A	N/A	15'	N/A	N/A

ANGLE MEASURED CLOCKWISE FROM HAND HOLE.

SCALE IN FEET
0 30 60 120

DATE: 01-27-12 FILE NAME: t110533_02.dgn

LOCATION: HWY. 70/RHODES STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: 1"=60' DRAWN BY: GWE

HWY. 70/RHODES STREET
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 70 - STA. 128+58.75	58' RT.	1854165.34, 300935.75
B	HWY. 70 - STA. 128+50.58	42' RT.	1854157.00, 300946.99
C	HWY. 70 - STA. 128+46.65	44' LT.	1854151.81, 301032.93
D	HWY. 70 - STA. 128+58.51	56' LT.	1854163.46, 301044.73
E	HWY. 70 - STA. 129+20.40	56' LT.	1854227.35, 301045.23
F	HWY. 70 - STA. 129+29.22	44' LT.	1854234.35, 301033.38
G	HWY. 70 - STA. 129+31.78	43' RT.	1854238.21, 300946.64
H	HWY. 70 - STA. 129+30.45	55' RT.	1854237.05, 300934.81

FURNITURE

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.		110533	46	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

VIRTUAL 6'X6' PULSE LOOP (TYPICAL)
Vz41 LOCATED 85' BEHIND STOP LINE

VIRTUAL 6'X50' PRESENCE LOOP (TYPICAL)

EXISTING R/W

Vz51 LOCATED 85' BEHIND STOP LINE

Vz41 COMB.

Ø4

NORTH RHODES

Vz42

CURB

CONC PARKING

SUNTRUST BANK

RET/WALL

-S-B

36'

44'

70

Ø6

Ø5

Ø2

Ø1

Vz51 COMB.

Vz52

Vz22B COMB.

Vz22A

Vz21B

Vz21A

Vz62A COMB.

Vz62B

Vz11 COMB.

Vz61A

Vz61B

OVERHEAD UTILITY LINES

38'

2-3" DIA. NMC

EXISTING R/W

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF CONTROLLER

CONC. PULL BOX (TYPE 1 HD)

2-3" DIA. NMC

LOCAL ANTENNA, ANTENNA CABLE SHALL BE INSTALLED IN A SEPARATE 2" DIA. NMC WHICH SHALL CONTAIN NO OTHER POWER CARRYING CONDUCTORS

SOUTH RHODES

Vz82

Ø8

Vz81 COMB.

Vz11 LOCA BEHIND ST

CONC PARKING

EXISTING R/W

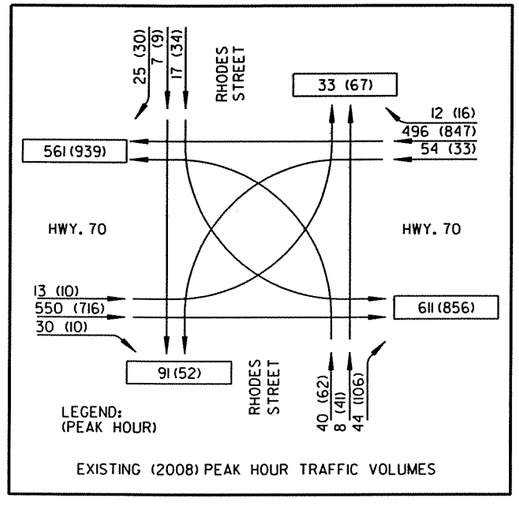
PATIO

CANOPY

SONIC

CANOPY OVER SONIC

TRAFFIC FLOW DIAGRAM



EXISTING (2008) PEAK HOUR TRAFFIC VOLUMES

DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
30 MPH NORTH AND SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP BARS SHOWN ON PAVEMENT MARKING PLAN. SEE SEPARATE SHEET.

MINIMUM CLEAR ZONE DISTANCE 1.5 FEET FROM HWY. 70

SCALE IN FEET
0 20 40 80

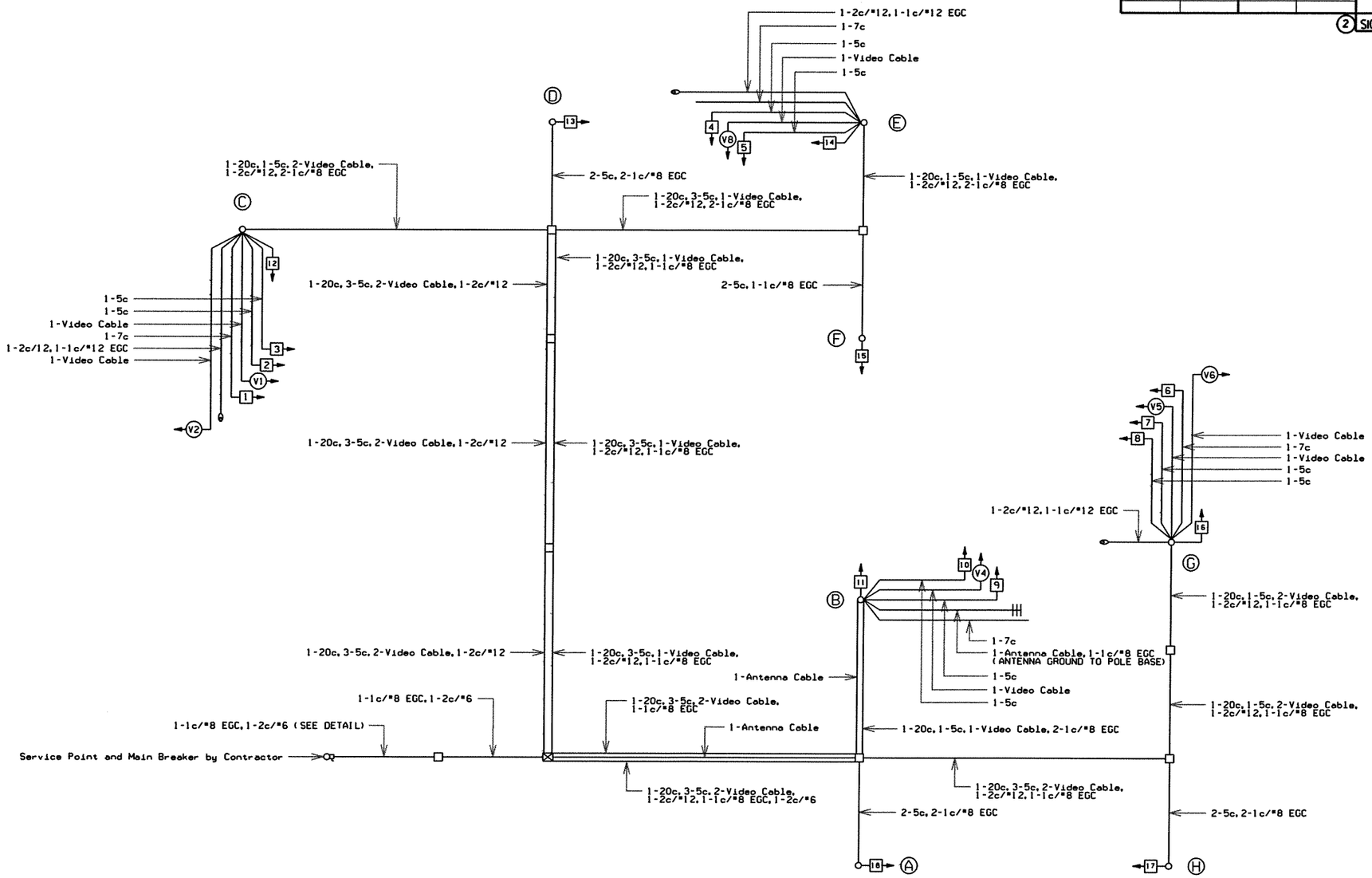
DATE: 01-27-12 FILE NAME: t110533_02.dgn

LOCATION: HWY. 70/RHODES STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: 1"=40' DRAWN BY: 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.		110533	47	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
2-2-12



WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

DATE: 01-05-12 FILE NAME: t110533_02.dgn

LOCATION: HWY. 70/RHODES STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 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
				6	ARK.			
				JOB NO.		110533	48	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

DETECTOR SYSTEM DESCRIPTION: JOB 110533

WEST MEMPHIS - HWY. 70/RHODES STREET 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. INP.*	PHS	SYSTEM DET. *			
Vz11	SB LEFT TURN FAR	COMB.			1	D1	1	1		CAMERA V1	23'
Vz12	SB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23'
Vz21A&B	NB FAR ADVANCE	LOCAL			7	V2	2			CAMERA V2	23'
Vz22A&B	NB NEAR	COMB.			8	D2	2	2		CAMERA V5	23'
Vz41	EB LEFT TURN FAR	COMB.			9	D4	4	4		CAMERA V4	23'
Vz42	EB LEFT TURN	LOCAL			10	V4	4			CAMERA V4	23'
Vz51	NB LEFT TURN FAR	COMB.			5	D5	5	5		CAMERA V5	23'
Vz52	NB LEFT TURN	LOCAL			6	V5	5			CAMERA V5	23'
Vz61A&B	SB FAR ADVANCE	LOCAL			3	V6	6			CAMERA V6	23'
Vz62A&B	SB NEAR	COMB.			4	D6	6	6		CAMERA V1	23'
Vz81	WB LEFT TURN FAR	COMB.			13	D8	8	8		CAMERA V8	23'
Vz82	WB LEFT TURN	LOCAL			14	V8	8			CAMERA V8	23'
P82A&B	S. RHODES S. LEG	PED.				P2	2				
P84A&B	HWY. 70 W. LEG	PED.				P4	4				
P86A&B	N. RHODES N. LEG	PED.				P6	6				
P88A&B	HWY. 70 E. LEG	PED.				P8	8				
SPARE 11,12,15&16											

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

INTERVAL CHART

SIGNAL FACES	HWY. 70/RHODES STREET											FLASH SEQ.
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	4+8	CLR.		
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	**		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	**		R
11&12	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW		BLK
13&14	DW	DW	W	FDW	DW	DW	W	FDW	DW	DW		BLK
15&16	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW		BLK
17&18	DW	DW	DW	DW	W	FDW	W	FDW	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: 01-05-12 FILE NAME: t110533.02.dgn

LOCATION: HWY. 70/RHODES STREET
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: N/A DRAWN BY: GWE

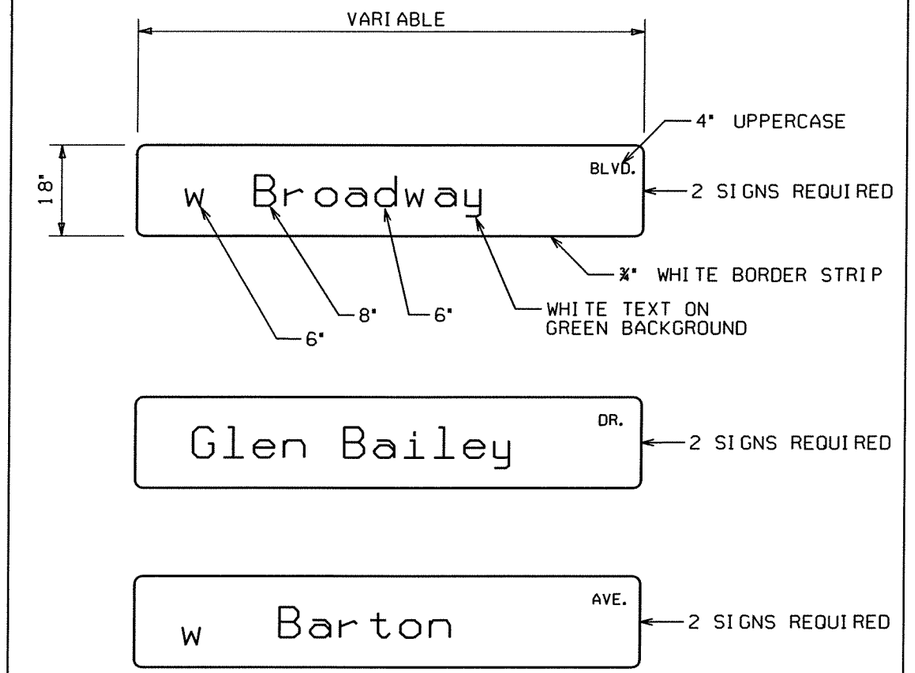
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	49	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASE)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	394	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	264	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	146	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	387	LIN. FT.
SS&711	CONCRETE PULL BOX (TYPE 2 HD)	5	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (32')	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 (54')	1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (62')	1	EACH
733	VIDEO CABLE	1620	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	8	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	384	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	115	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	LIN. FT.
SP	LUMINAIRE ASSEMBLY	2	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	252	LIN. FT.
SP	18" STREET NAME SIGN	6	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	ANTENNA CABLE (TYPE 6)	70	LIN. FT.
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.25	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH



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 ALSO BE ANODIZED. 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.

3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM OF THE NEARSIDE LEFT POLE.
SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

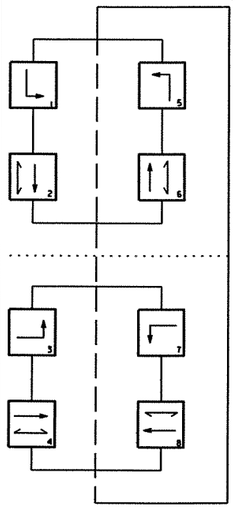
DATE: 01-27-12 FILE NAME: t110533.03.dgn

LOCATION: HWY. 191/GLEN BAILEY DR. & E. BARTON AVE.
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 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
				6	ARK.			
				JOB NO.		110533	50	96

(2) SIGNALIZATION PLAN SHEET

PHASING DIAGRAM



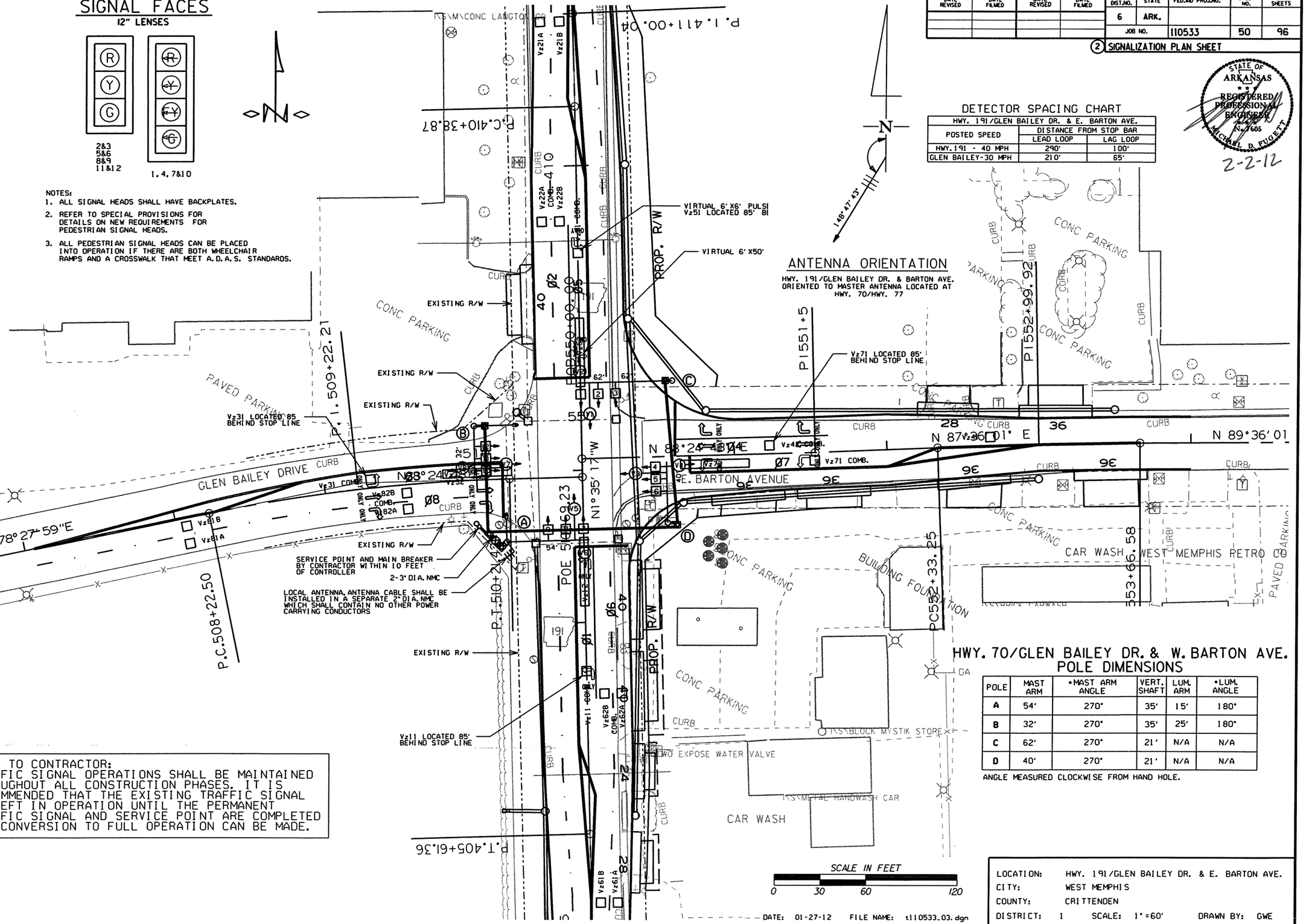
SIGNAL FACES

12" LENSES

2&3
5&6
8&9
11&12

1, 4, 7&10

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



DETECTOR SPACING CHART

HWY. 191/GLEN BAILEY DR. & E. BARTON AVE.		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD LOOP	LAG LOOP
HWY. 191 - 40 MPH	290'	100'
GLEN BAILEY-30 MPH	210'	65'

ANTENNA ORIENTATION

HWY. 191/GLEN BAILEY DR. & BARTON AVE.
ORIENTED TO MASTER ANTENNA LOCATED AT HWY. 70/HWY. 77

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES. IT IS RECOMMENDED THAT THE EXISTING TRAFFIC SIGNAL BE LEFT IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL AND SERVICE POINT ARE COMPLETED AND CONVERSION TO FULL OPERATION CAN BE MADE.

HWY. 70/GLEN BAILEY DR. & W. BARTON AVE. POLE DIMENSIONS

POLE	MAST ARM	•MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	•LUM. ANGLE
A	54'	270°	35'	15'	180°
B	32'	270°	35'	25'	180°
C	62'	270°	21'	N/A	N/A
D	40'	270°	21'	N/A	N/A

ANGLE MEASURED CLOCKWISE FROM HAND HOLE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
2-2-12

LOCATION:	HWY. 191/GLEN BAILEY DR. & E. BARTON AVE.
CITY:	WEST MEMPHIS
COUNTY:	CRITTENDEN
DISTRICT: 1	SCALE: 1"=60' DRAWN BY: GWE

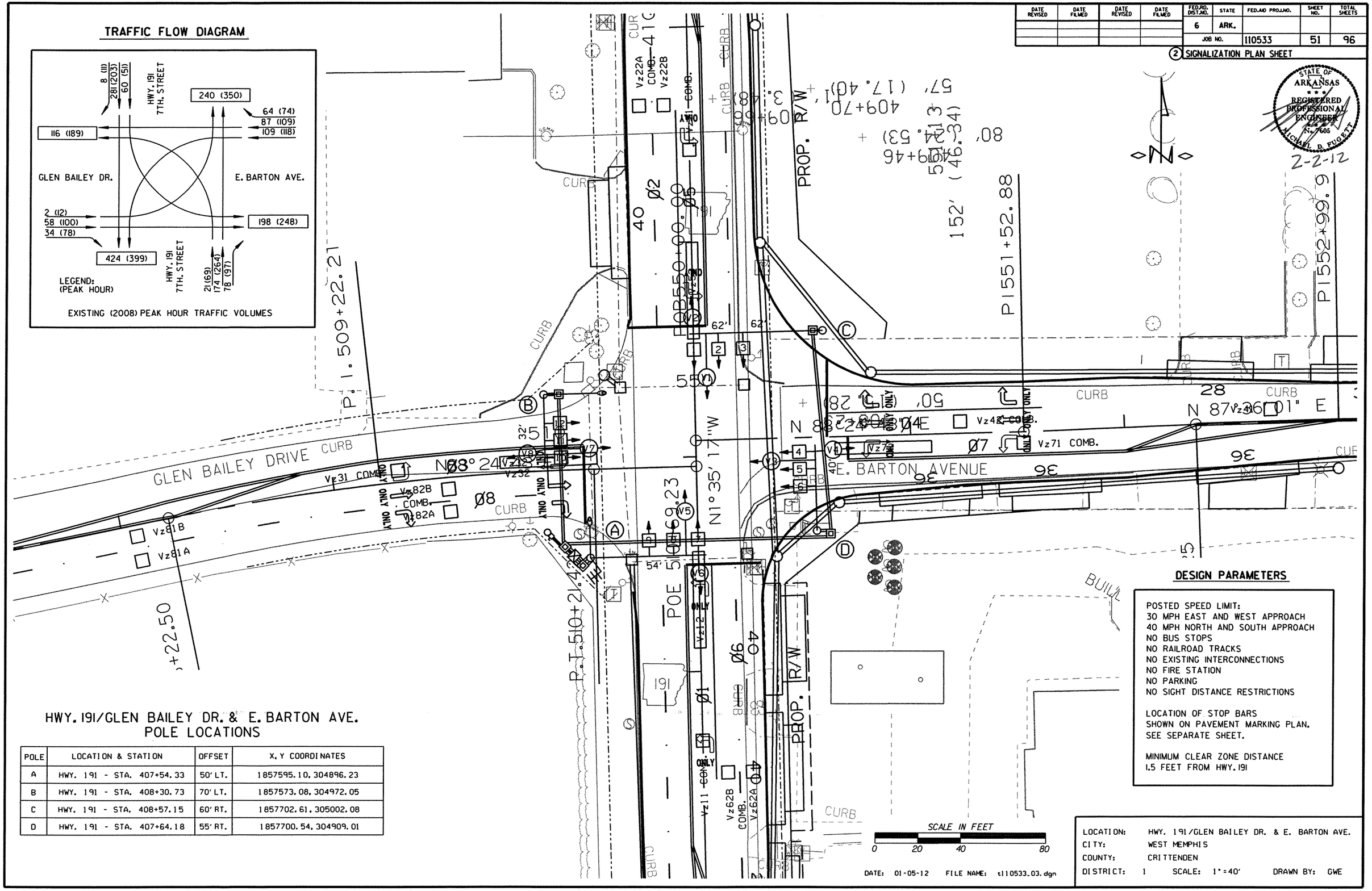
DATE: 01-27-12 FILE NAME: t110533_03.dgn

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.		110533	51	96

(2) SIGNALIZATION PLAN SHEET

TRAFFIC FLOW DIAGRAM

EXISTING (2008) PEAK HOUR TRAFFIC VOLUMES



HWY. 191/GLEN BAILEY DR. & E. BARTON AVE. POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 191 - STA. 407+54.33	50' LT.	1857595.10, 304896.23
B	HWY. 191 - STA. 408+30.73	70' LT.	1857573.08, 304972.05
C	HWY. 191 - STA. 408+57.15	60' RT.	1857702.61, 305002.08
D	HWY. 191 - STA. 407+64.18	55' RT.	1857700.54, 304909.01

DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH EAST AND WEST APPROACH
40 MPH NORTH AND SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP BARS
SHOWN ON PAVEMENT MARKING PLAN.
SEE SEPARATE SHEET.

MINIMUM CLEAR ZONE DISTANCE
1.5 FEET FROM HWY. 191

SCALE IN FEET
0 20 40 80

DATE: 01-05-12 FILE NAME: t110533.03.dgn

LOCATION: HWY. 191/GLEN BAILEY DR. & E. BARTON AVE.
CITY: WEST MEMPHIS
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: 1"=40' DRAWN BY: GWE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

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.		110533	52	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

INTERVAL CHART

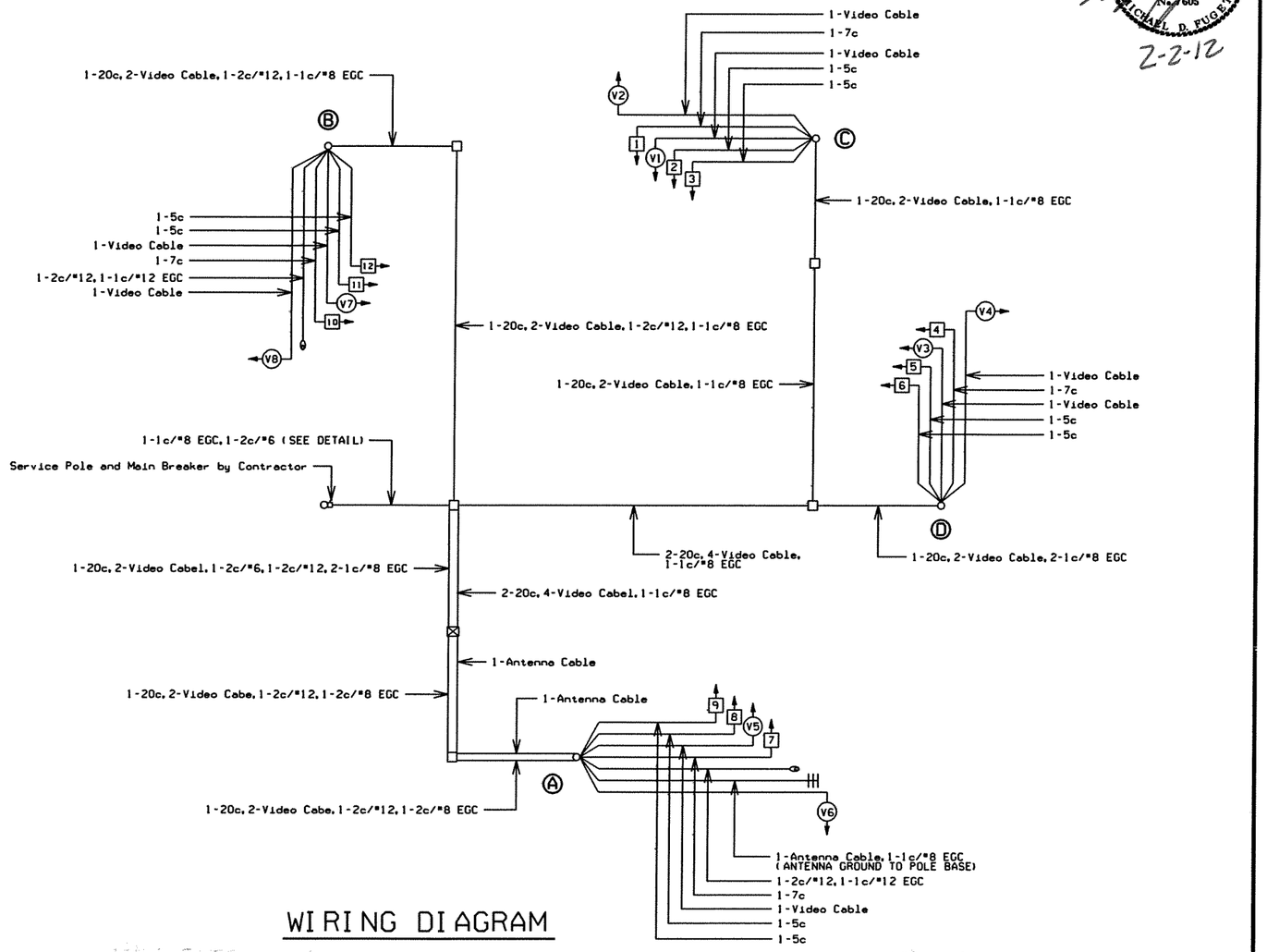
SIGNAL FACES	HWY. 191/GLEN BAILEY DR. & E. BARTON AVE.																	FLASH SEQ.
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+7	CLR.	3+8	CLR.	4+7	CLR.	4+8	CLR.		
1	~~G~~	•	~~G~~	•	~~FY~~	•••	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~		~~R~~
2&3	R	R	G	••	R	R	G	••	R	R	R	R	R	R	R	R		R
4	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	•	~~G~~	•	~~FY~~	•••	~~FY~~	•••		~~R~~
5&6	R	R	R	R	R	R	R	R	R	R	G	••	R	R	G	••		R
7	~~G~~	•	~~FY~~	•••	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~		~~R~~
8&9	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~~	•	~~FY~~	•••	~~G~~	•	~~FY~~	•••		~~R~~
11&12	R	R	R	R	R	R	R	R	R	R	R	R	G	••	G	••		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

DETECTOR SYSTEM DESCRIPTION: JOB 110533

WEST MEMPHIS - HWY. 191/GLEN BAILEY DR. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL			COMMENTS	TUBE LENGTHS
DET. ID*	LOCATION DIRECTION	TYPE	DET. *	CAB. TRM *	AMP CHN. *	CON. INP.*	PHS	SYSTEM DET. *	MASTER SYSTEM DETECTOR NUMBERS		
Vz11	NB LEFT TURN FAR	COMB.			1	D1	1	1		CAMERA V1	23'
Vz12	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23'
Vz21A&B	NB ADVANCE	LOCAL			7	V2	2			CAMERA V2	74'
Vz22A&B	NB INSIDE NEAR	COMB.			8	D2	2	2		CAMERA V5	23'
Vz31	WB LEFT TURN FAR	COMB.			9	D3	3	3		CAMERA V3	23'
Vz32	WB LEFT TURN	LOCAL			10	V3	3			CAMERA V3	23'
Vz41	EB ADVANCE	LOCAL			15	V4	4			CAMERA V4	74'
Vz42	EB NEAR	COMB.			16	D4	4	4		CAMERA V7	23'
Vz51	NB LEFT TURN FAR	COMB.			5	D5	5	5		CAMERA V5	23'
Vz52	NB LEFT TURN	LOCAL			6	V5	5			CAMERA V5	23'
Vz61A&B	SB ADVANCE	LOCAL			3	V6	6			CAMERA V6	74'
Vz62A&B	SB INSIDE NEAR	COMB.			4	D6	6	6		CAMERA V1	23'
Vz71	EB LEFT TURN FAR	COMB.			13	D7	7	7		CAMERA V7	23'
Vz72	EB LEFT TURN	LOCAL			14	V7	7			CAMERA V7	23'
Vz81A&B	WB ADVANCE	LOCAL			11	V8	8			CAMERA V8	74'
Vz82A&B	WB NEAR	COMB.			12	D8	8	8		CAMERA V3	23'
PB2A&B	G. BAILEY DR. W. LEG	PED.				P2	2				
PB4A&B	HWY. 191 S. LEG	PED.				P4	4				
PB6A&B	E. BARTON E. LEG	PED.				P6	6				
PB8A&B	HWY. 191 N. LEG	PED.				P8	8				
					SPARE						

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



WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

DATE: 01-27-12 FILE NAME: tl10533_03.dgn

LOCATION:	HWY. 191/GLEN BAILEY DR. & E. BARTON AVE.
CITY:	WEST MEMPHIS
COUNTY:	CRITTENDEN
DISTRICT: 1	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
				6	ARK.			
				JOB NO.		110533	53	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2, E-NET (SPECIAL)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	3	EACH
SP&733	VIDEO DETECTOR (CLR)	10	EACH
SP	ANTENNA CABLE (TYPE 6)	70	LIN. FT.
SP	EMERGENCY BACKUP LOCAL RADIO (E-NET 2.4) UNIT	1	EACH
SP	LOCAL RADIO (E-NET 2.4) WITH ANTENNA	1	EACH
SP	MASTER RADIO (E-NET 2.4) WITH ANTENNA	1	EACH
SP	MASTER RADIO WITH ANTENNA	1	EACH
SP	ON-STREET MASTER CONTROLLER RELOCATION	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.07	LUMP SUM

DATE: 01-27-12 FILE NAME: t110533_04.dgn

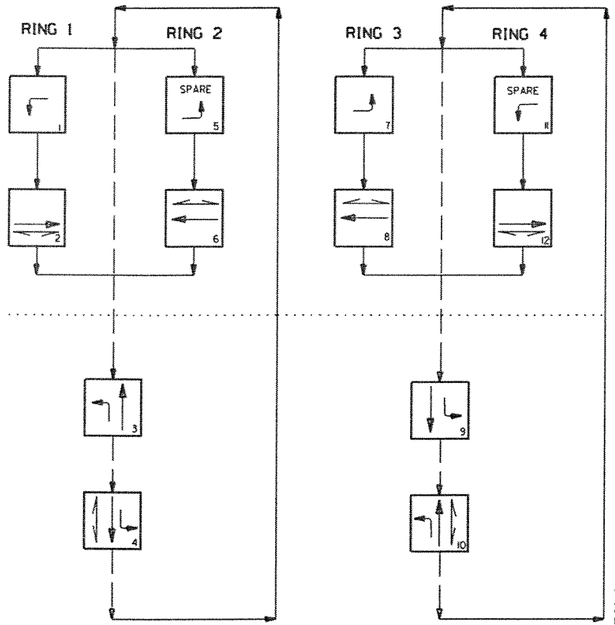
LOCATION: HWY. 64/I-55 INTERCHANGE
CITY: MARION
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: N/A DRAWN BY: GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	54	96

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

PHASING DIAGRAM



LED SIGNAL FACES

12" LENSES

EXISTING #1,2,3,4,7,9,10,13,14,15,18,19,20,21,22,23,24,25&44

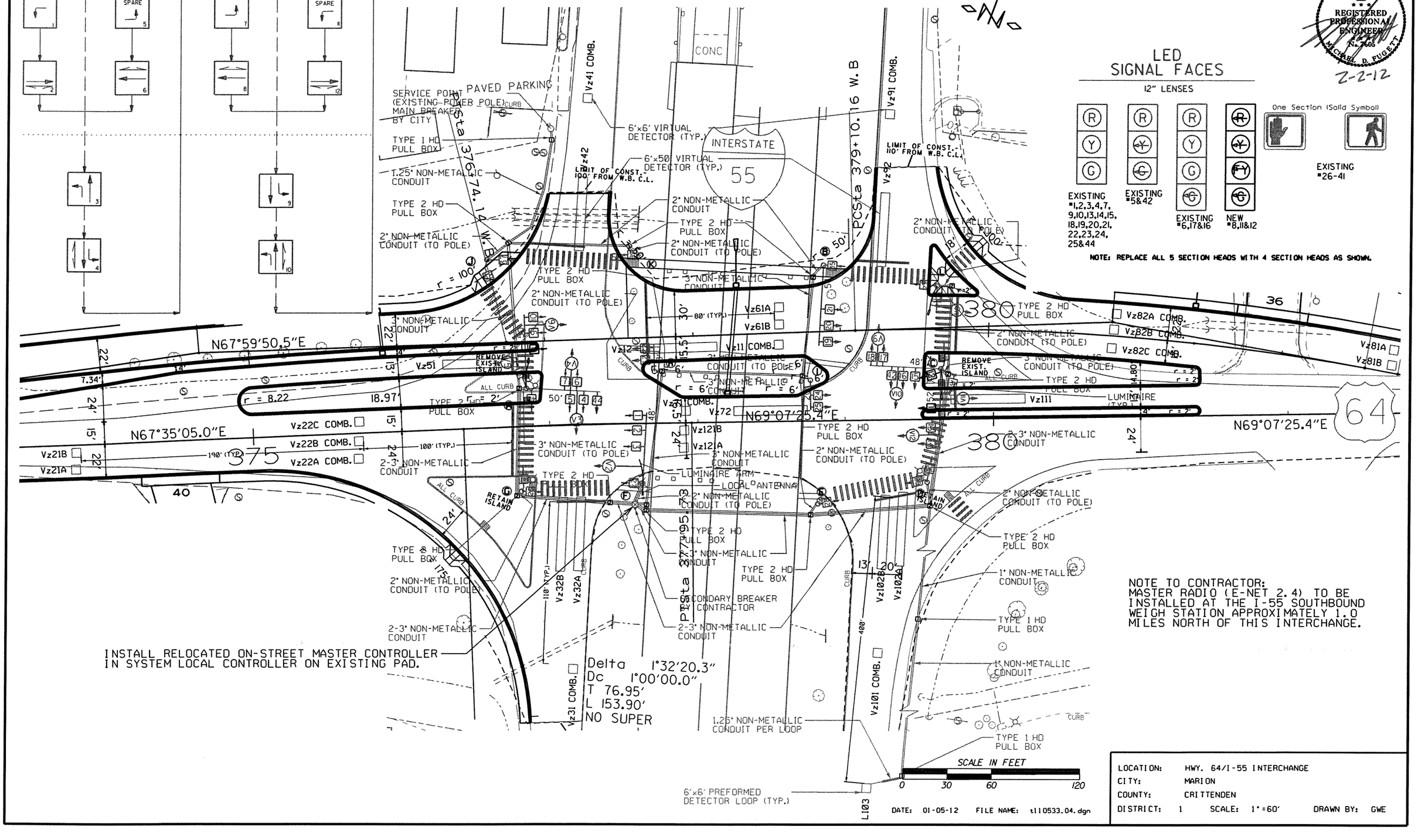
EXISTING #5&42

EXISTING #6,17&16

NEW #8,11&12

EXISTING #26-41

NOTE: REPLACE ALL 5 SECTION HEADS WITH 4 SECTION HEADS AS SHOWN.



INSTALL RELOCATED ON-STREET MASTER CONTROLLER IN SYSTEM LOCAL CONTROLLER ON EXISTING PAD.

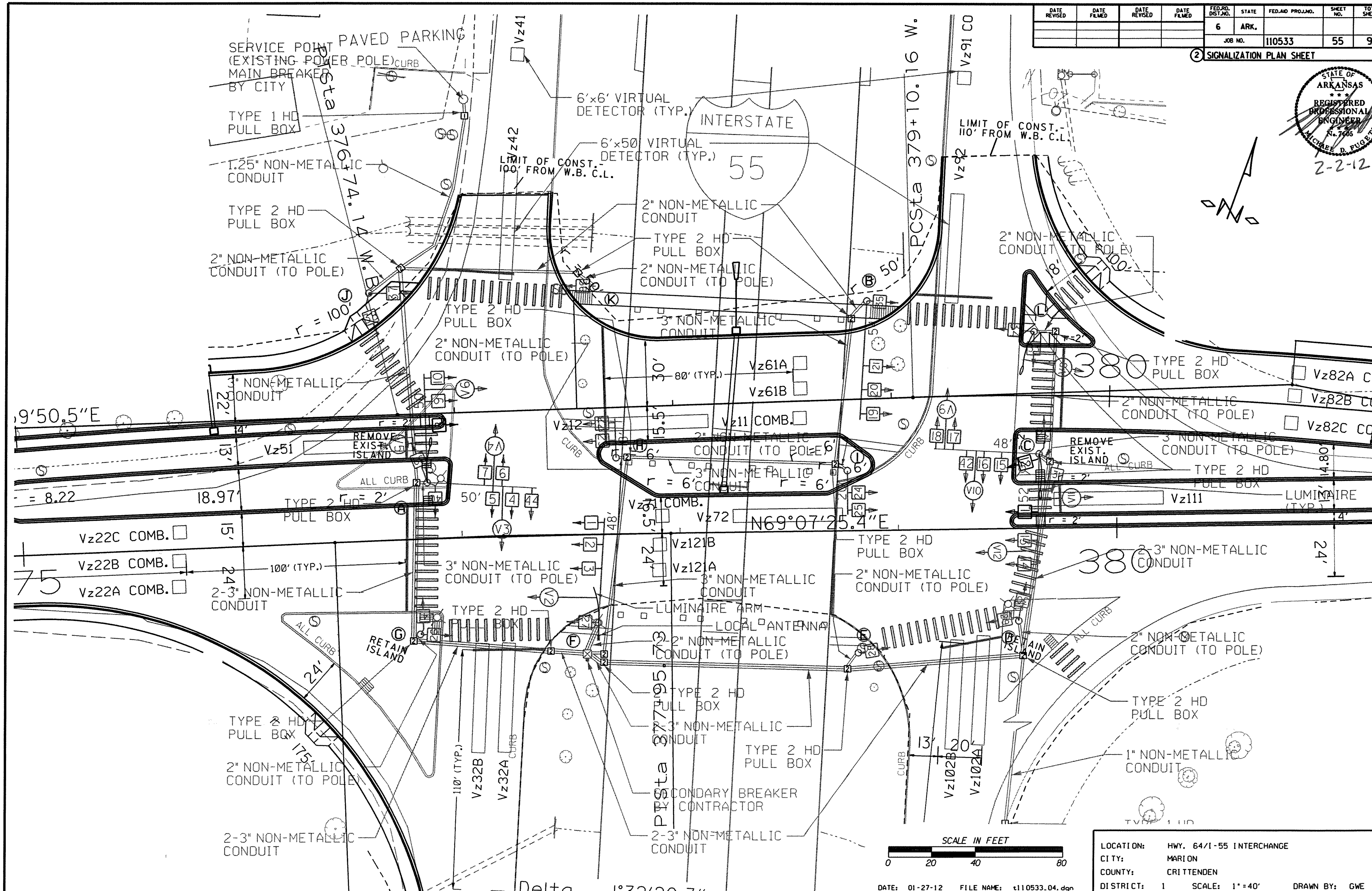
NOTE TO CONTRACTOR:
MASTER RADIO (E-NET 2.4) TO BE INSTALLED AT THE I-55 SOUTHBOUND WEIGH STATION APPROXIMATELY 1.0 MILES NORTH OF THIS INTERCHANGE.

LOCATION:	HWY. 64/I-55 INTERCHANGE
CITY:	MARION
COUNTY:	CRITTENDEN
DISTRICT: 1	SCALE: 1"=60' DRAWN BY: GWE

DATE: 01-05-12 FILE NAME: tl10533_04.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.		110533	55	96

(2) SIGNALIZATION PLAN SHEET



SCALE IN FEET

0 20 40 80

DATE: 01-27-12 FILE NAME: t110533.04.dgn

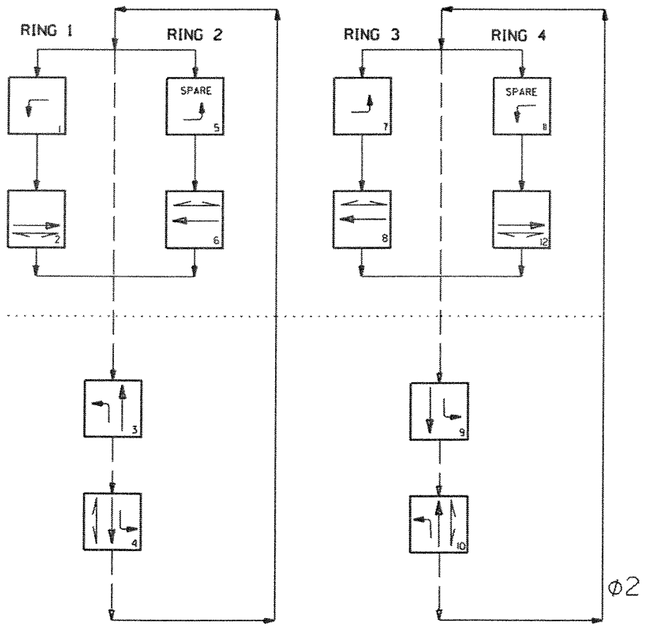
LOCATION:	HWY. 64/I-55 INTERCHANGE
CITY:	MARION
COUNTY:	CRITTENDEN
DISTRICT:	1 SCALE: 1" = 40' DRAWN BY: GWE

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.		110533	56	96

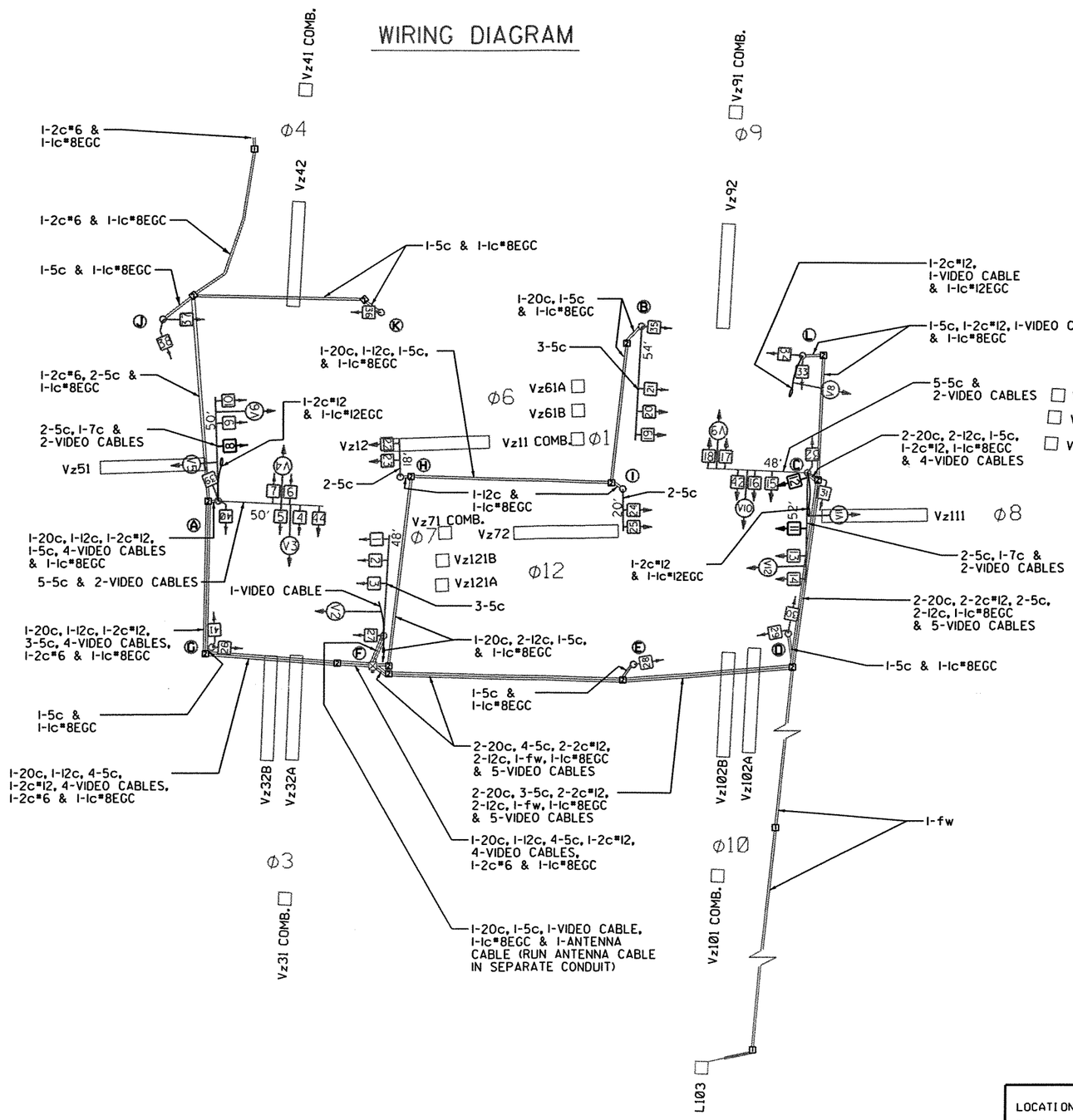
(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
RICHARD D. FUGETT
2-2-12

PHASING DIAGRAM

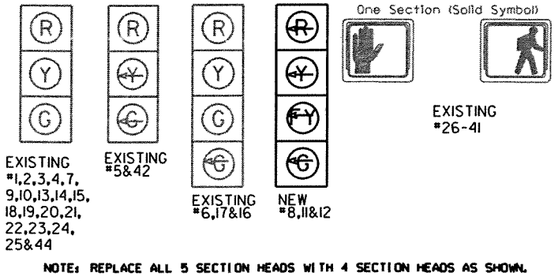


WIRING DIAGRAM



LED SIGNAL FACES

12" LENSES



EXISTING #1,2,3,4,7, 9,10,13,14,15, 18,19,20,21, 22,23,24, 25&44

EXISTING #5&42

EXISTING #6,17&16

NEW #8,11&12

EXISTING #26-41

NOTE: REPLACE ALL 5 SECTION HEADS WITH 4 SECTION HEADS AS SHOWN.

DATE: 01-05-12 FILE NAME: t110533_04.dgn

LOCATION:	HWY. 64/I-55 INTERCHANGE		
CITY:	MARION		
COUNTY:	CRITTENDEN		
DISTRICT:	1	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
				6	ARK.			
				JOB NO.		110533	57	96

(2) SIGNALIZATION PLAN SHEET

DETECTOR CHART

DETECTOR I.D. NUMBER	DIRECTION & LOCATION	TYPE	DET. NUM.	HARDWARE INPUTS: CAB. TER. NUM.	HARDWARE INPUTS: AMP. CHN. NUM.	HARDWARE INPUTS: CON. INP. NUM.	PROGRAM ASSIGNMENTS: LOCAL PHS.	PROGRAM ASSIGNMENTS: LOCAL SYS. DET.	PROGRAM ASSIGNMENTS: MSTR. SYS. DET.	COMMENT
Vz11	WB LT ADV	COMB.	21			D1	1	1		VIDEO 6
Vz12	WB LT PRES	LOCAL	1			V1	1			VIDEO 6
Vz21A & B	EB ADV	LOCAL	2			V2	2			VIDEO 2
Vz22AB&C	EB NEAR	COMB.	22			D2	2	2		VIDEO 2
Vz31	NB ADV	COMB.	23			D3	3	3		VIDEO 3
Vz32A & B	NB PRES	LOCAL	3			V3	3			VIDEO 3
Vz41	SB ADV	COMB.	12			D4	4	4		VIDEO 4
Vz42	SB PRES	LOCAL	4			V4	4			VIDEO 4
Vz51	EB LT PRES	LOCAL	5			V5	2			VIDEO 5
Vz61A & B	WB ADV	LOCAL	6			V6	6			VIDEO 6
Vz71	EB LT ADV	COMB.	27			D7	7	7		VIDEO 12
Vz72	EB LT PRES	LOCAL	7			V7	7			VIDEO 12
Vz81A & B	WB ADV	LOCAL	8			V8	8			VIDEO 8
Vz82AB&C	WB NEAR	COMB.	28			D8	8	8		VIDEO 8
Vz111	WB LT PRES	LOCAL	11			V11	8			VIDEO 11
Vz91	SB ADV	COMB.	25			D5	9	5		VIDEO 9
Vz92	SB PRES	LOCAL	9			V9	9			VIDEO 9
Vz101	NB ADV	COMB.	26			D6	10	6		VIDEO 10
Vz102A & B	NB PRES	LOCAL	10			V10	10			VIDEO 10
LI03	NB QUEUE	LOCAL	13			V13	12			LOOP DETECTOR
Vz121A & B	EB ADV	LOCAL	12			V12	12			VIDEO 12
PB1	SW TO SE	PED	14			P2	2			WEST FRONTAGE RD.
PB2	NW TO NE	PED	15			P6	6			WEST FRONTAGE RD.
PB3	SW TO NW	PED	16			P4	4			US64
PB4	SW TO SE	PED	17			P1	8			EAST FRONTAGE RD.
PB5	NW TO NE	PED	18			P5	12			EAST FRONTAGE RD.
PB6	SE TO NE	PED	19			P7	10			US64

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

INTERVAL CHART

SIGNAL FACES	INTERVALS 1+6	CLR.	2+6	CLR.	3	CLR.	4	CLR.	7+12	CLR.	8+12	CLR.	9	CLR.	10	CLR.	FLASH SEQ.
1	R	R	G	Y	R	R	R	R									Y
2	R	R	G	Y	R	R	R	R									Y
3	R	R	G	Y	R	R	R	R									Y
4	R	R	R	R	G	Y	R	R									R
44	R	R	R	R	G	Y	R	R									R
5	R	R	R	R	~~G~~	~~Y~~	R	R									R
6	R	R	R	R	R	R	G/~~G~~	Y									R
7	R	R	R	R	R	R	G	Y									R
8	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~									~~R~~
9	G	••	G	••	R	R	R	R									Y
10	G	••	G	••	R	R	R	R									Y
11									~~G~~	•	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
12									~~G~~	•	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
13									G	••	G	••	R	R	R	R	Y
14									G	••	G	••	R	R	R	R	Y
15									R	R	R	R	R	R	G	Y	R
16									R	R	R	R	R	R	G/~~G~~	Y	R
42									R	R	R	R	R	R	~~G~~	~~Y~~	R
17									R	R	R	R	G/~~G~~	Y	R	R	R
18									R	R	R	R	G	Y	R	R	R
19									R	R	G	Y	R	R	R	R	Y
20									R	R	G	Y	R	R	R	R	Y
21									R	R	G	Y	R	R	R	R	Y
22	R	R	G	Y	R	R	R	R									Y
23	R	R	G	Y	R	R	R	R									
24									R	R	G	Y	R	R	R	R	Y
25									R	R	G	Y	R	R	R	R	Y
26	DW	DW	W	FDW	DW	DW	DW	DW									BLANK
27	DW	DW	W	FDW	DW	DW	DW	DW									BLANK
28									DW	DW	W	FDW	DW	DW	DW	DW	BLANK
29									DW	DW	W	FDW	DW	DW	DW	DW	BLANK
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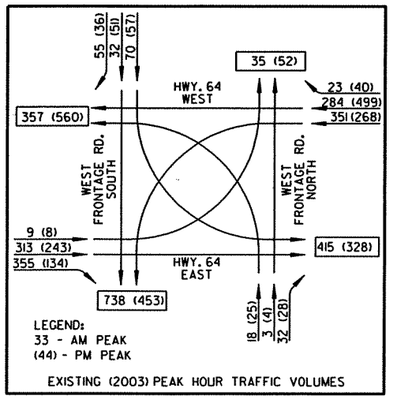
36	DW	DW	W	FDW	DW	DW	DW	DW									BLANK
37	DW	DW	W	FDW	DW	DW	DW	DW									BLANK
38	DW	DW	DW	DW	DW	DW	DW	W	FDW								BLANK
39	DW	DW	DW	DW	DW	DW	W	FDW									BLANK
40	DW	DW	DW	DW	DW	DW	W	FDW									BLANK
41	DW	DW	DW	DW	DW	DW	W	FDW									BLANK

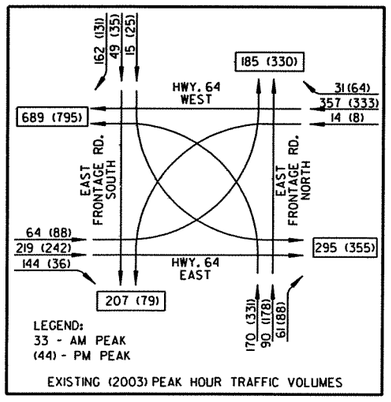
• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

TRAFFIC FLOW DIAGRAM



EXISTING (2003) PEAK HOUR TRAFFIC VOLUMES

TRAFFIC FLOW DIAGRAM



EXISTING (2003) PEAK HOUR TRAFFIC VOLUMES

DESIGN PARAMETERS

DESIGN SPEED:
40 MPH EAST AND WEST APPROACH
40 MPH NORTH AND SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP BARS AND CROSSWALKS SHOWN ON PAVEMENT MARKING PLAN. SEE SEPARATE SHEETS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

DATE: 01-27-12 FILE NAME: tl10533_04.dgn

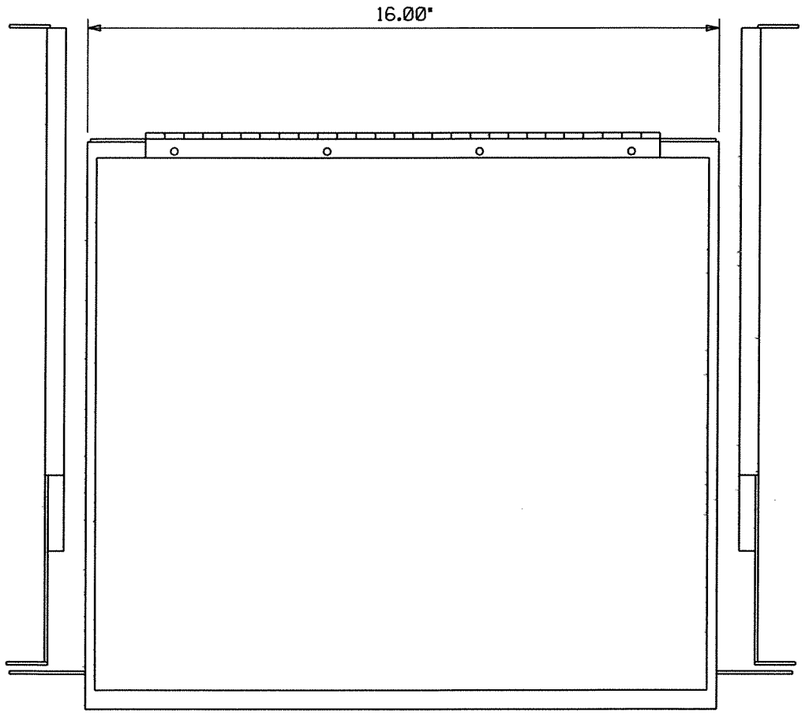
LOCATION: HWY. 64/I-55 INTERCHANGE
CITY: MARION
COUNTY: CRITTENDEN
DISTRICT: 1 SCALE: N/A DRAWN BY: GWE

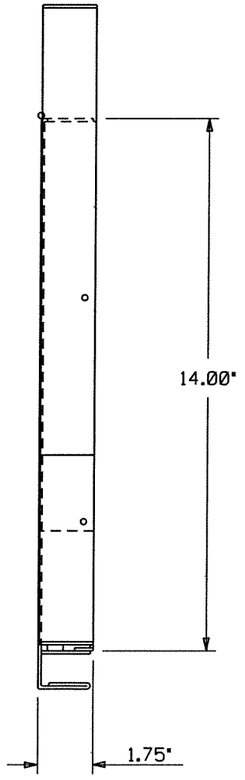
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	58	96

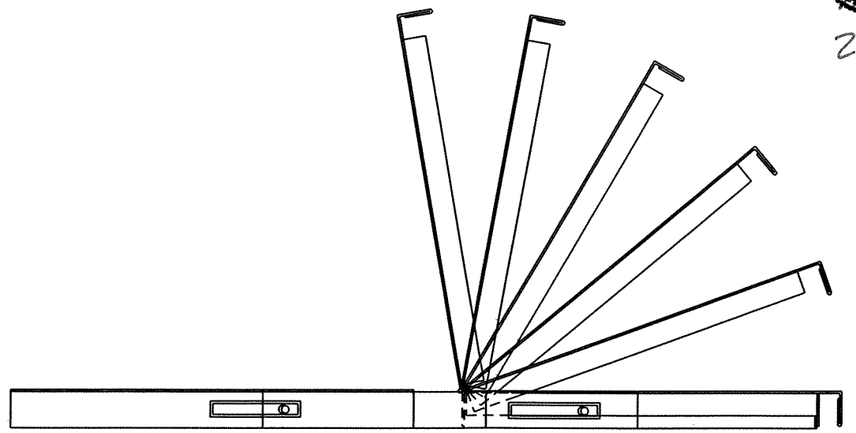
(2) SIGNALIZATION DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
2-2-12

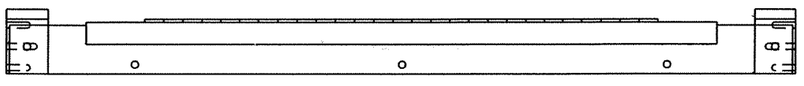
DRAWER PLAN VIEW



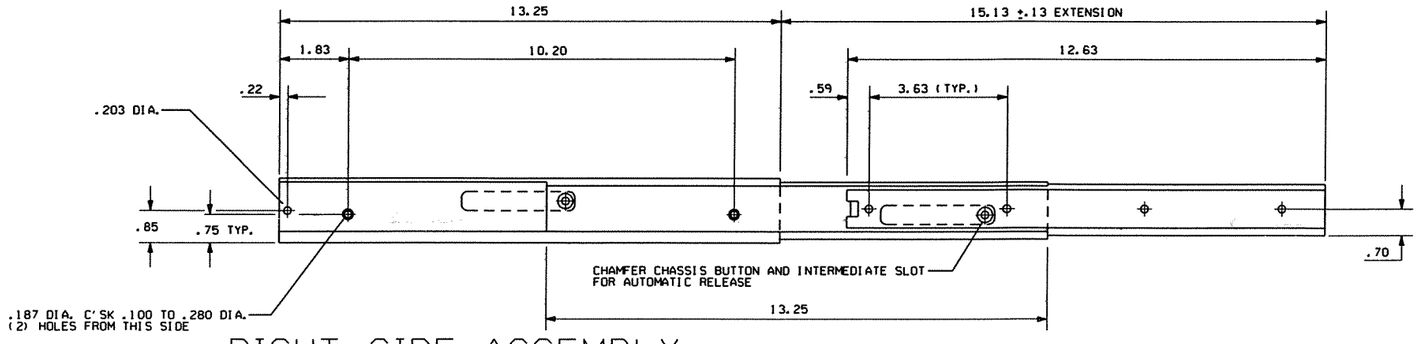




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



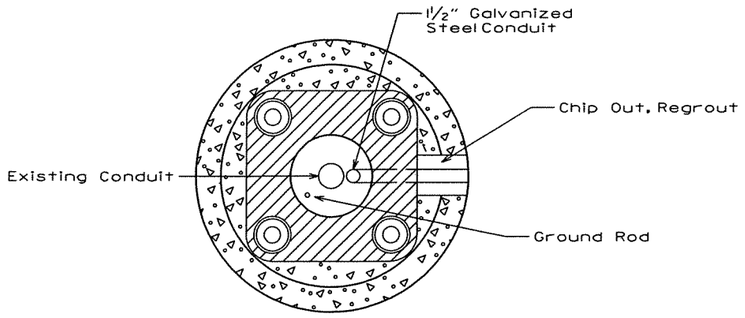
RIGHT SIDE ASSEMBLY

			ARKANSAS STATE HIGHWAY COMMISSION
			SIGNALIZATION DETAIL (Controller Cabinet Utility Drawer)
6-15-05	ISSUED		
DATE	REVISION	DATE FILM	

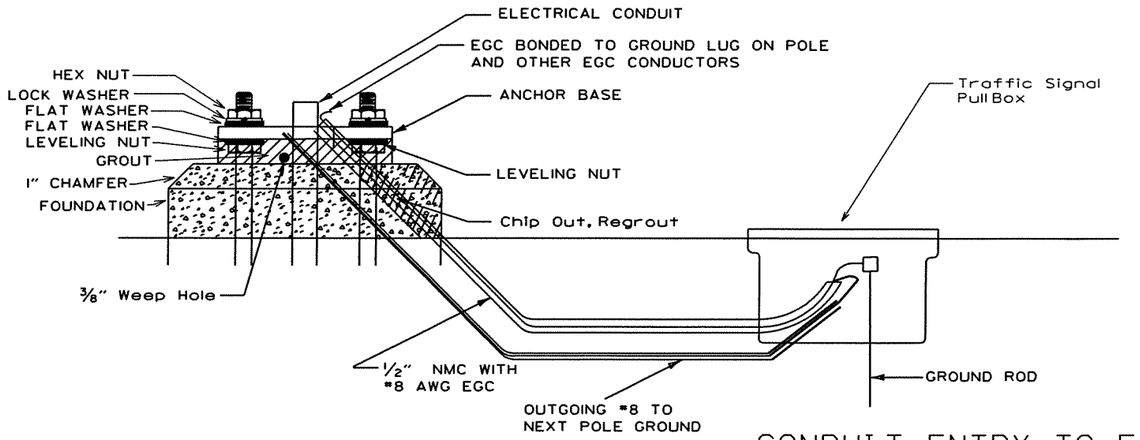
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	59	96

(2) SIGNALIZATION DETAILS

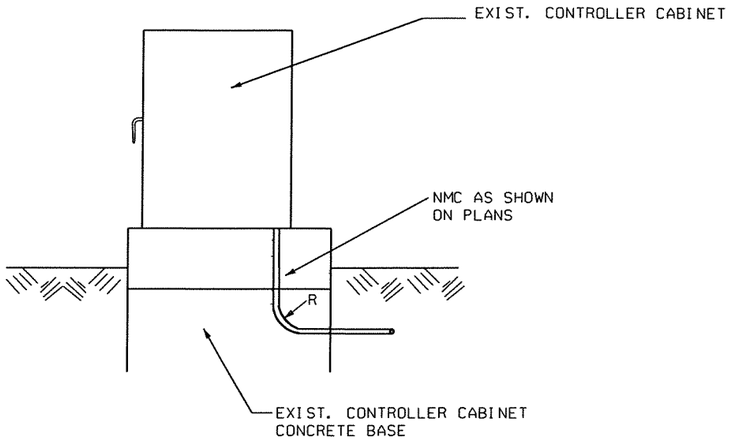
CONDUIT ENTRY TO EXISTING POLE BASE



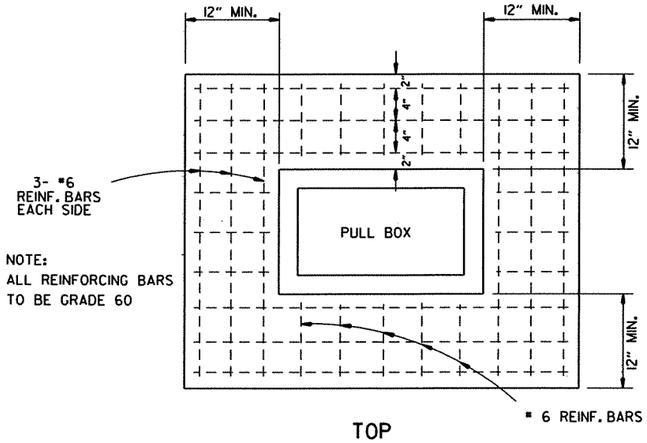
ANCHOR BASE



CONDUIT ENTRY TO EXISTING CONTROLLER CABINET

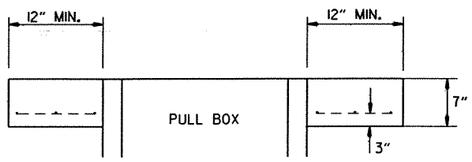


NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



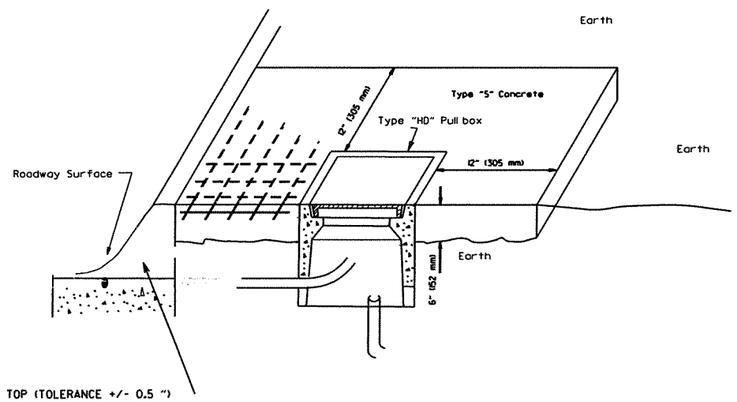
NOTE:
ALL REINFORCING BARS TO BE GRADE 60

TOP



ELEVATION

Type "HD" Concrete Pull Box Detail



Note: All Type 1 and Type 2 HD pullboxes are installed with an apron of concrete 12" (305 mm) wide and 6" (152 mm) in depth. All payment shall be included in the price of the Type HD pullbox. Pullbox 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 pullbox is required in concrete.

DATE	REVISION	DATE FILM
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL (Heavy Duty Pull Box)

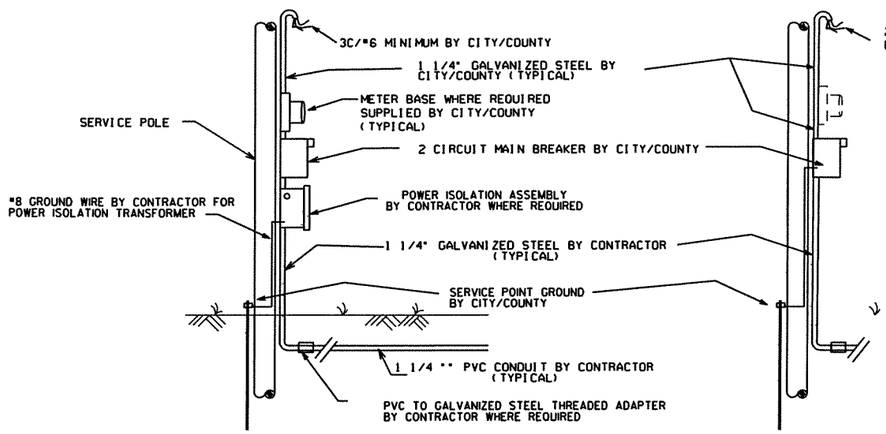
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
14760
MICHAEL D. FUGETT
2-2-12

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.		110533	60	96

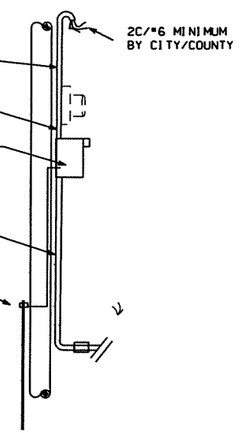
(2) SIGNALIZATION DETAILS

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY

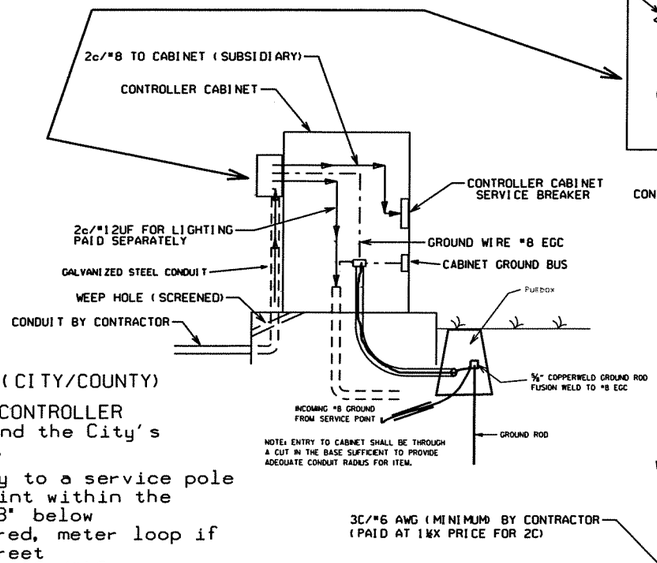


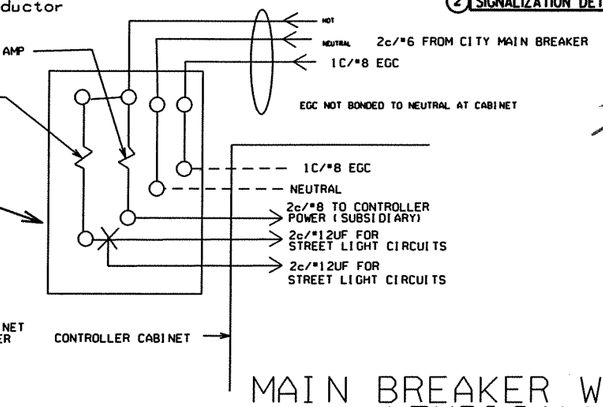
WITHOUT POWER ISOLATION ASSEMBLY



Ground Rod-A 10' x ⅝" ground rod shall be installed in the pull box for each pole and the controller. Payment for the ground rod and ½" NMC shall be included in Item 701. The pull box and conductor box shall be paid for separately.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)





MAIN BREAKER WIRING (TYPICAL)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
2-2-12

Service Ground is typically tied to neutral at the Main Breaker. As such, controller ground IS NOT tied to Neutral at secondary Breaker or in controller cabinet.

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY)

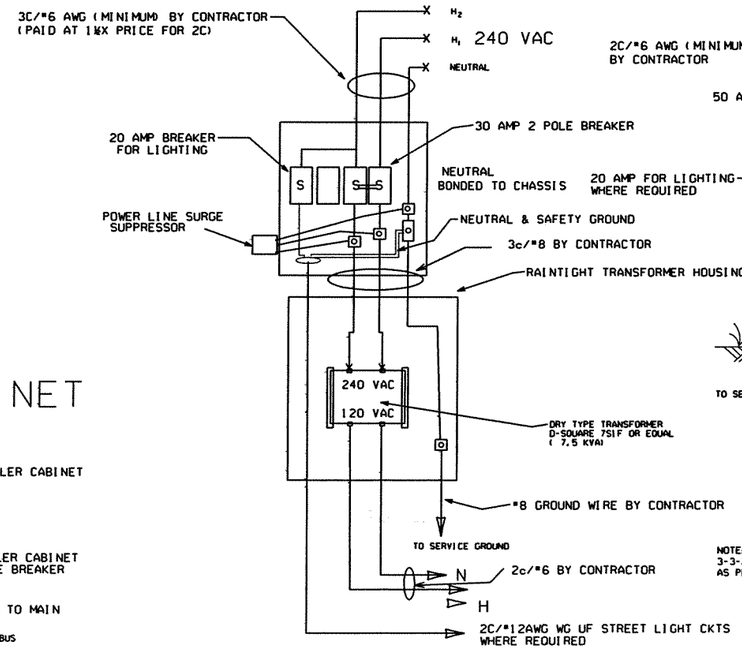
Electrical service typically falls into two categories: MAIN BREAKER NEAR CONTROLLER CABINET; and MAIN BREAKER NOT NEAR CONTROLLER CABINET. The Contractor's and the City's or County's responsibility varies accordingly as indicated on these details.

1. 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, power isolation assembly where required, meter loop if required by local utility, electrical conductors and weatherhead. Where street lighting is included as part of signal installation, street lighting circuit (2c/#12 awg 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.

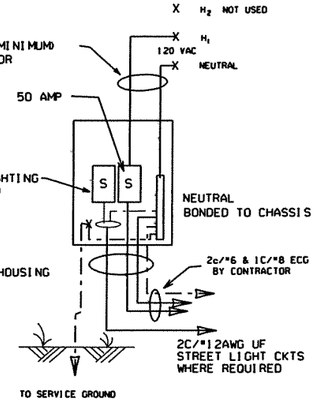
2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: The Main Breaker assembly, galvanized steel conduit, weatherhead and wire above Main Breaker and connection to the utility shall be provided by City/County. Contractor shall provide as part of contract Secondary Breaker, conduit, wire and wiring to the Main Breaker.

3. MAIN BREAKER NEAR CONTROLLER CABINET: All components of the service point with the exception of the wire and wiring above the Main Breaker is furnished and installed by the Contractor. Wiring from Main Breaker including connection to the utility, is the responsibility of the City/County. If meter loop is required, meter base and hardware is provided by the City/County and installed by the contractor.

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

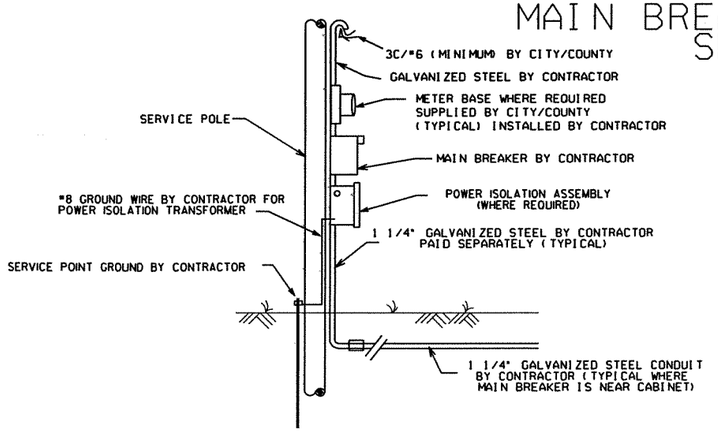


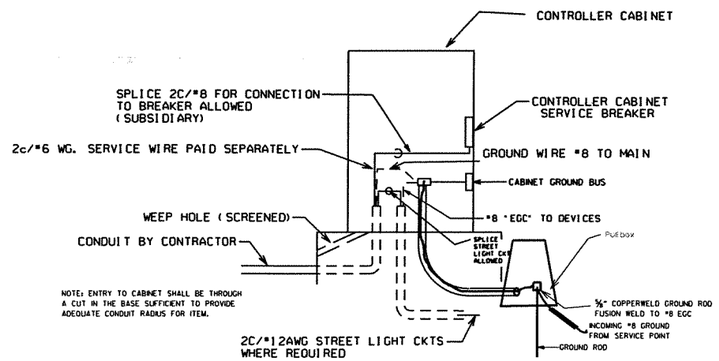
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (EGC) ADDED 3-3-2003, CONSISTING OF A 1C/#8AWG CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED





DATE	REVISION	DATE FILM
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
3-3-03	ADDED EGC NOTE	
9-26-01	REVISED	
12-27-99	REVISED	
7-28-99	REVISED	
2-5-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

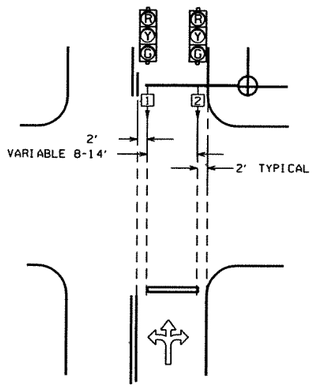
SIGNALIZATION DETAIL (Service Point)

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.		110533	61	96

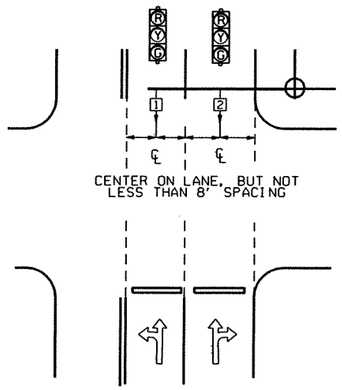
(2) SIGNALIZATION DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
2-2-12

(A)



(B)



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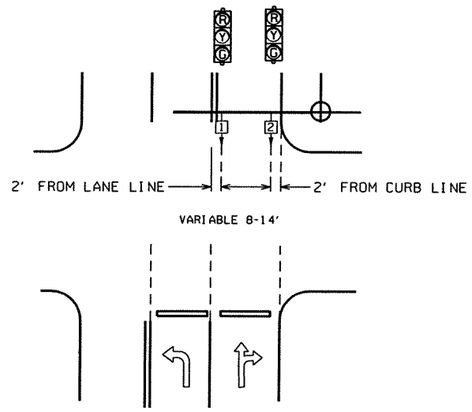

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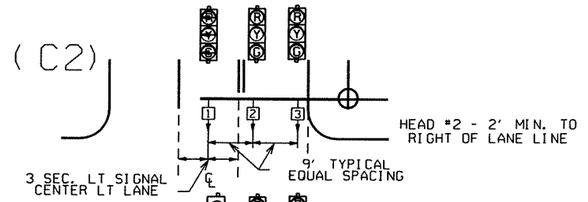
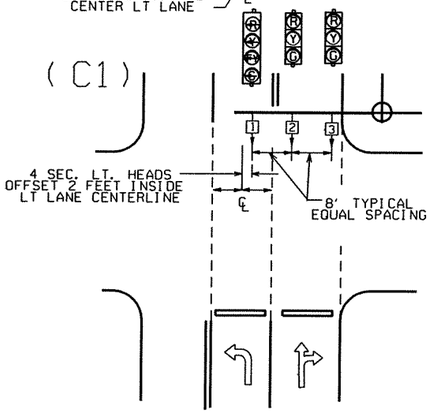


(C1)



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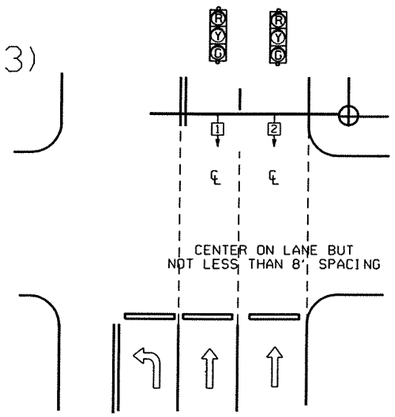
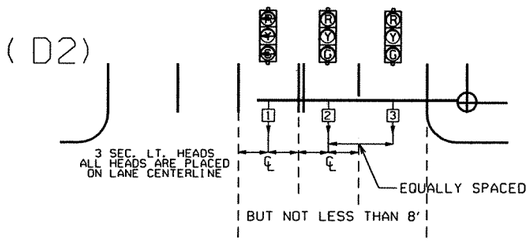


(D2)



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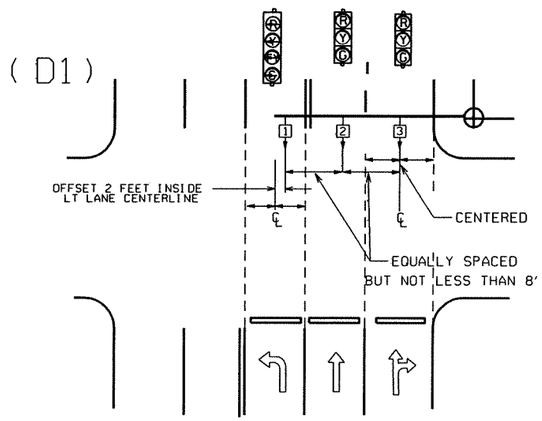
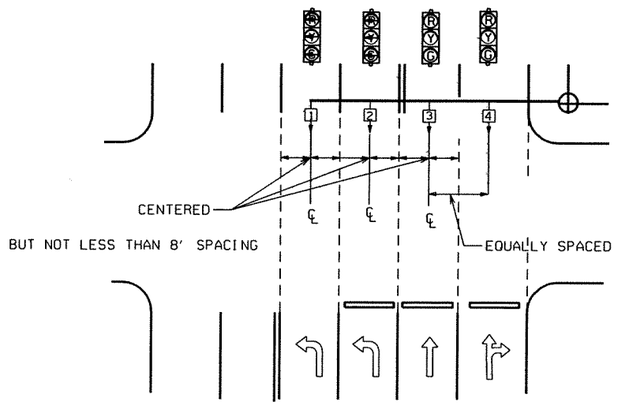


NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS

(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-1 OF 2009 MUTCD.

DATE	REVISION	DATE FILM
3-11-10	2009 MUTCD	
12-9-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Signal Head Placement)

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.		110533	62	96

(2) SIGNALIZATION DETAILS

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

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 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND 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 SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES:

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT. ONE SIGN MOUNTED 3 FT. FROM SIGNAL • 2' X 0" X 2' • 6", 20 LB. REMAINING HEADS SPACED A 8 FT. • 3 SEC., 56 LB., TWO 5 SEC):
14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING
2 HEADS FOR ARMS 10 TO 16 FT.
2 HEADS FOR ARMS 10 TO 16 FT., INCLUDING LB.
3 HEADS FOR 18 TO 24 FT. ARMS;
4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 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.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE.
POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

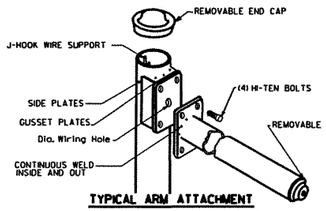
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES 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. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

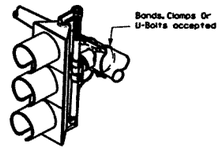
6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

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 ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

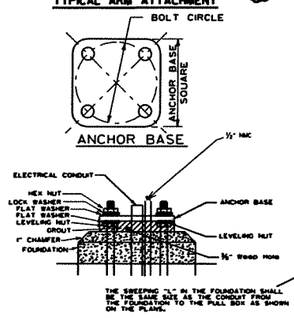
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.

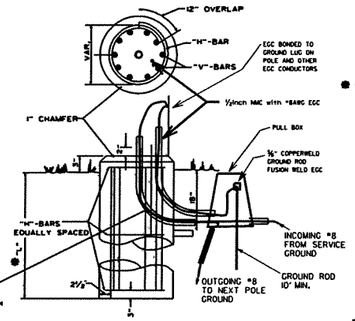


TYPICAL ARM ATTACHMENT



NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



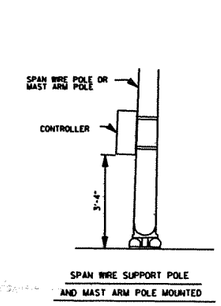


THE GROUND ROD SHALL BE FUSION WELDED TO A 10'-#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

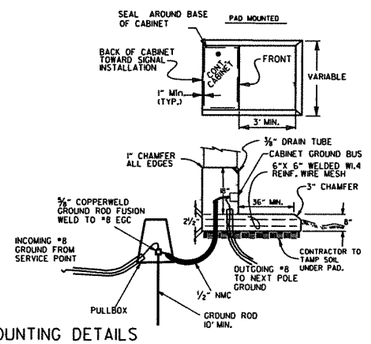
TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FDN. DIAMETER	DEPTH "L" *	STEEL VERT.	STEEL HORZ.	STEEL O/C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' to 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
over 12' to 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
over 20' to 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
over 35' to 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
over 50' to 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
Twins to 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
Twins over 20' to 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
Twins over 44' to 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
Twins over 50' to 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED



CONTROLLER CABINET MOUNTING DETAILS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE 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 PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

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

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

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 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.

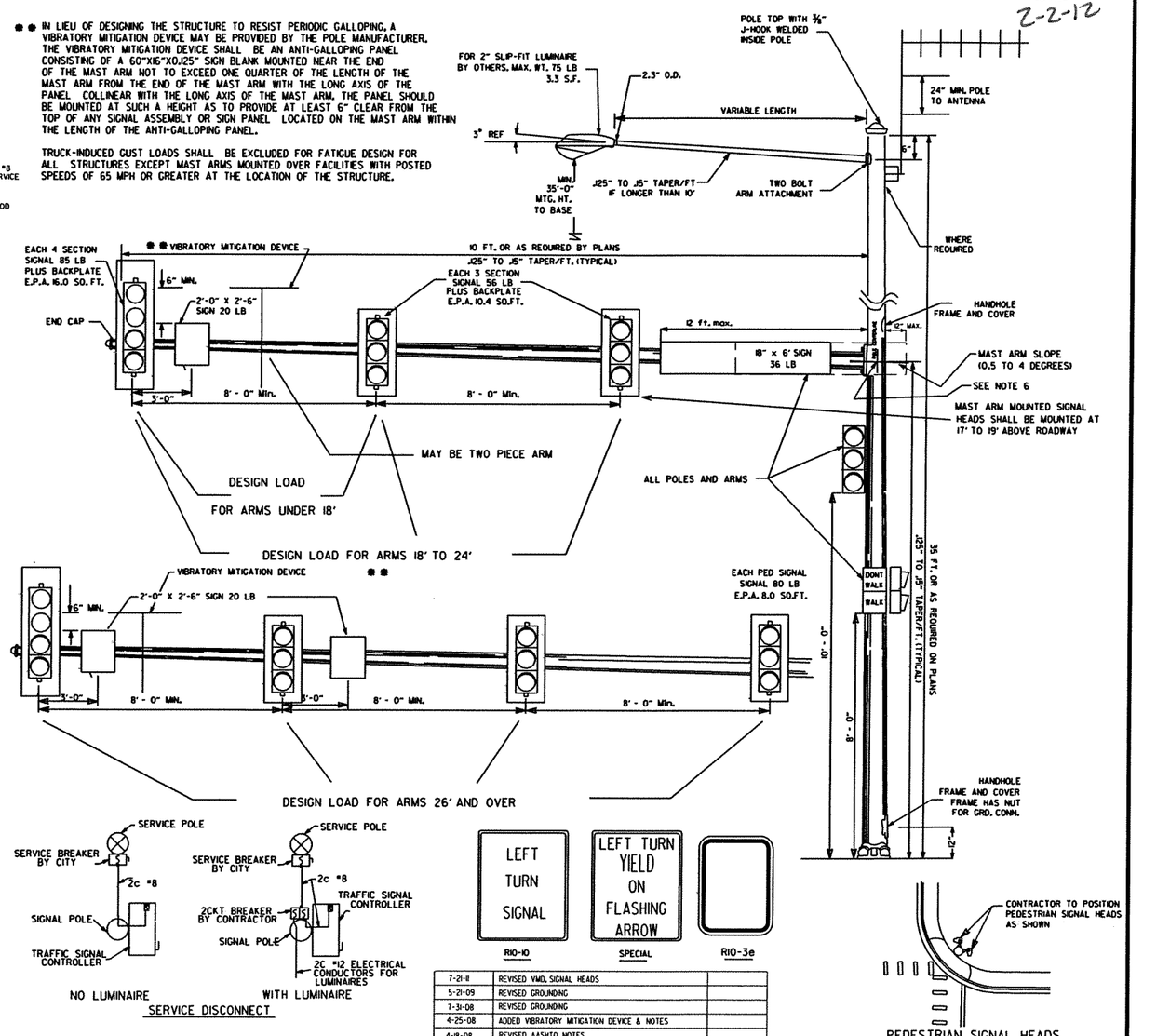
SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 17605 MICHAEL D. PUGETT 2-2-12

* 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 OF THE STANDARD SPECIFICATIONS.

** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"X0.125" 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 A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR 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.

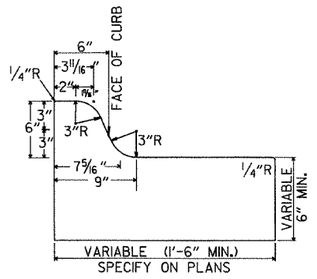


SERVICE DISCONNECT

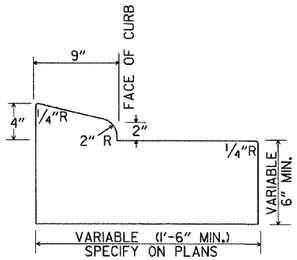
DATE	REVISION	DATE FILM
7-21-11	REVISED VMD, SIGNAL HEADS	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
4-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
6-23-04	REVISED	
5-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
6-11-01	REV. NOTES & POLE MAST ARM SLOPE	
4-11-01	REVISED POLE TAPERS	
4-25-00	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

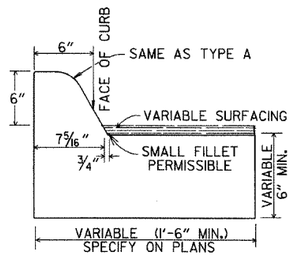
SIGNALIZATION DETAILS
(Steel Pole With Mast Arm)



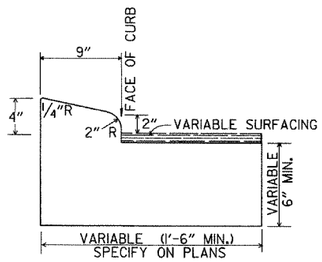
TYPE A



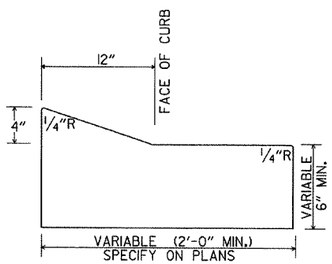
TYPE B-1



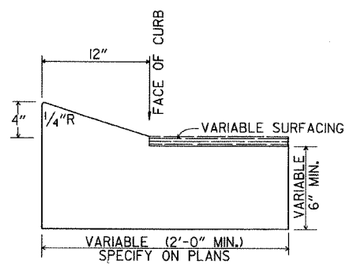
TYPE C



TYPE B-2

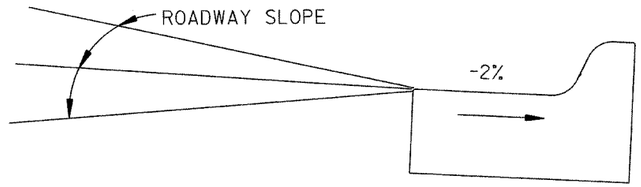


TYPE E-1



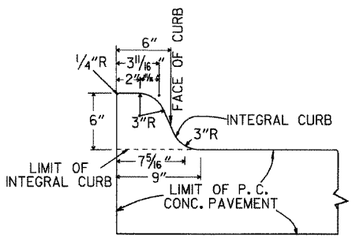
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

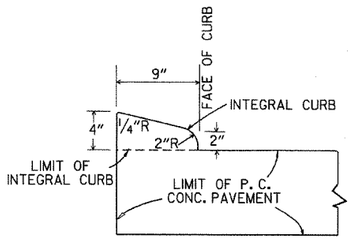


DETAIL OF GUTTER SLOPE

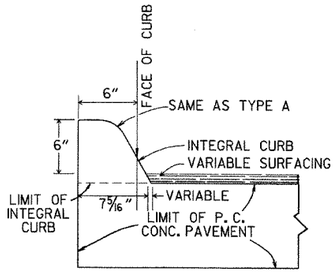
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

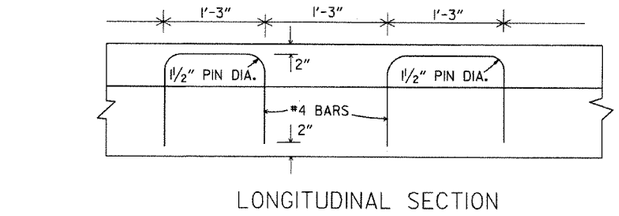


TYPE B



TYPE C

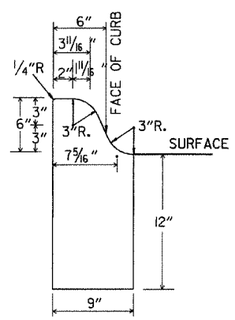
INTEGRAL CURB



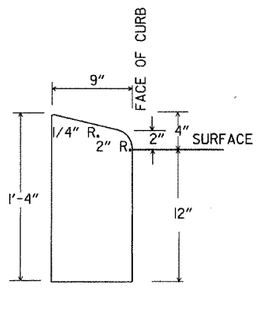
LONGITUDINAL SECTION

ELEVATION

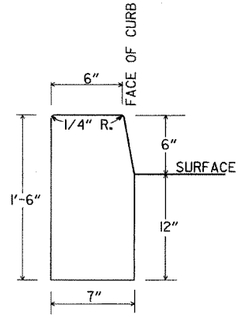
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



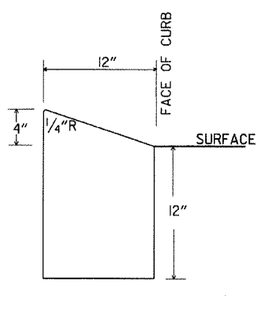
TYPE A



TYPE B

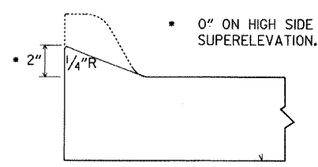


TYPE D



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.

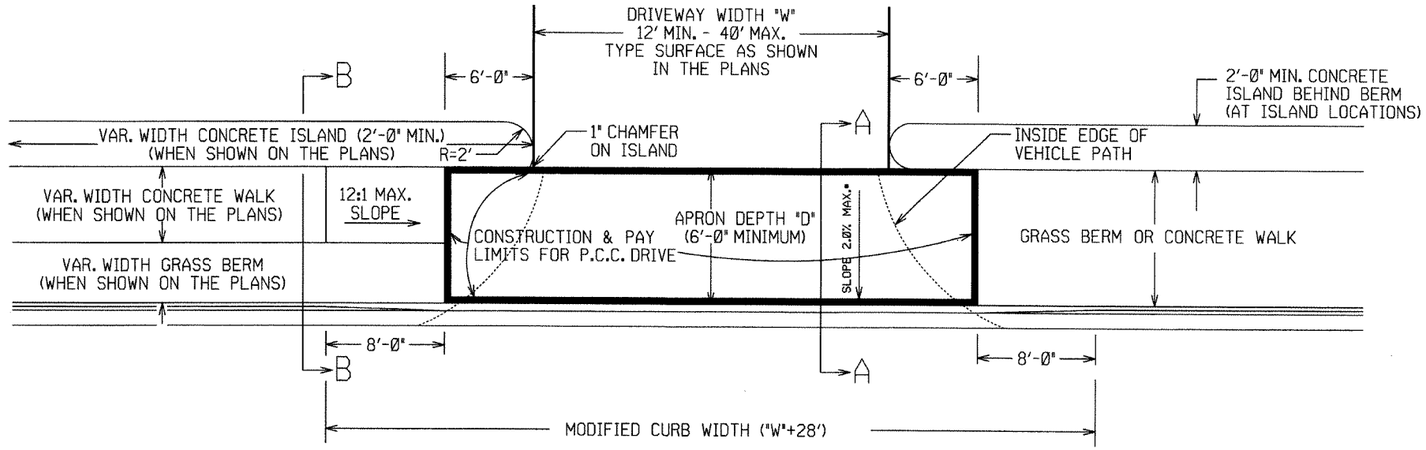
DETAILS OF MODIFIED CURB

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

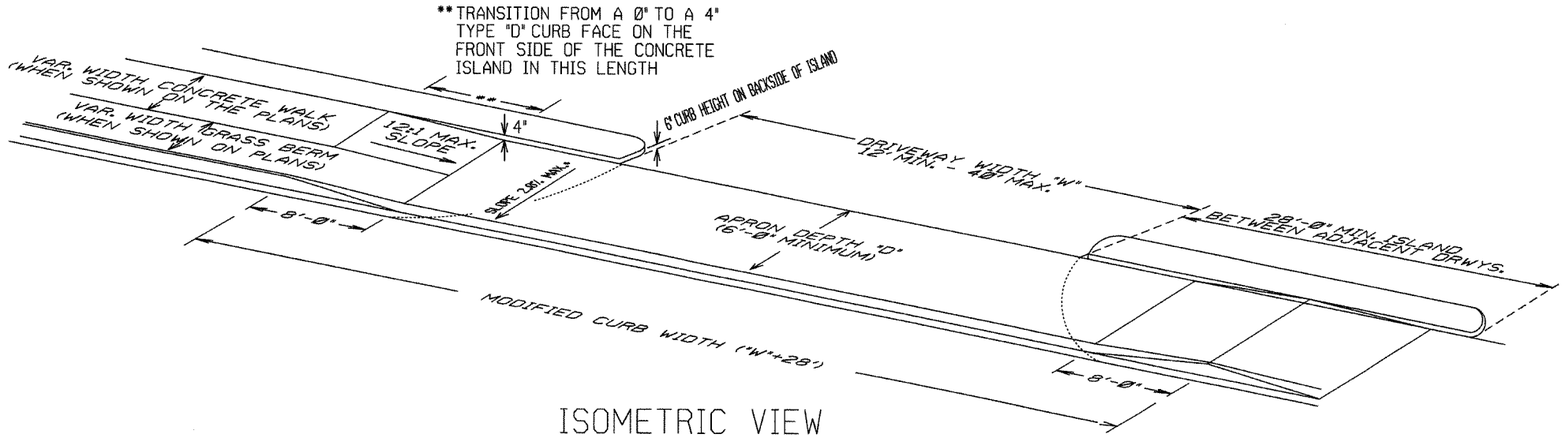
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

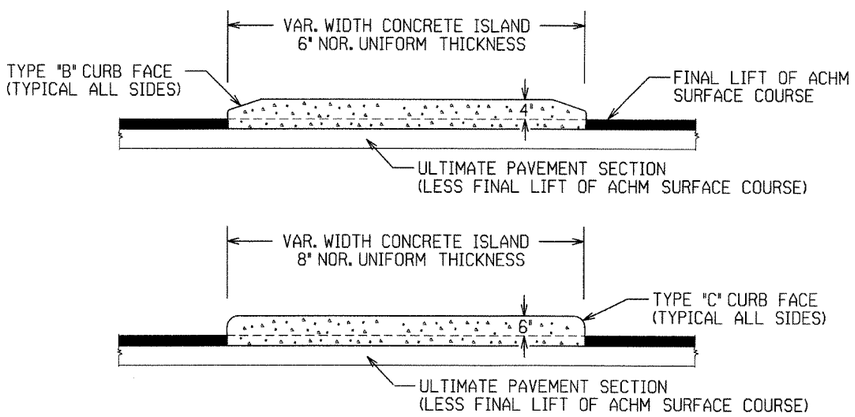
STANDARD DRAWING CG-1



PLAN VIEW

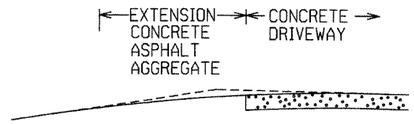


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

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



EXTENSION TYPICAL SECTIONS

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

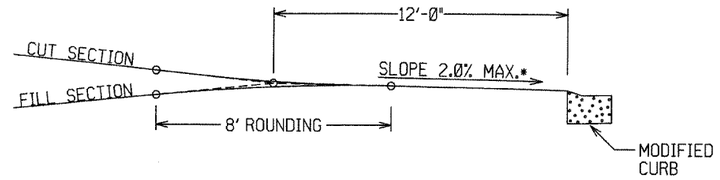
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

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

4: AGGREGATE - 6" AGGREGATE BASE COURSE

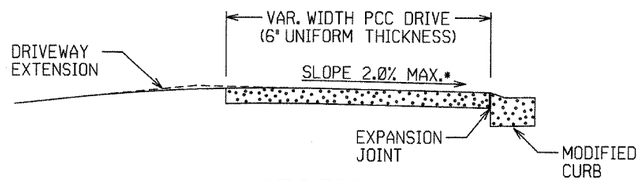
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

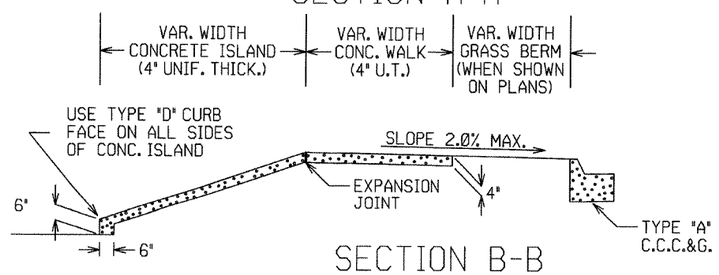


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



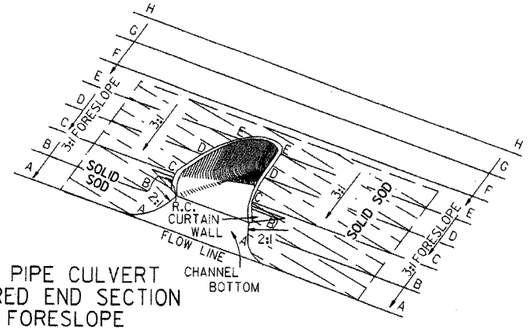
SECTION A-A



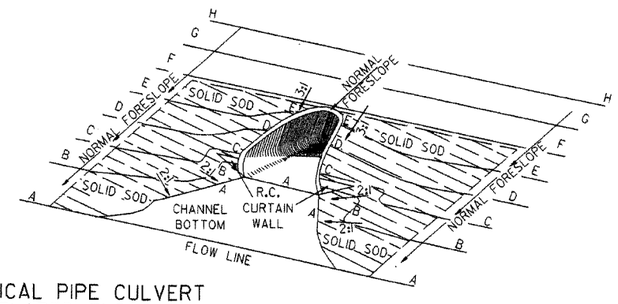
SECTION B-B
CURBED ISLAND BEHIND WALK

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

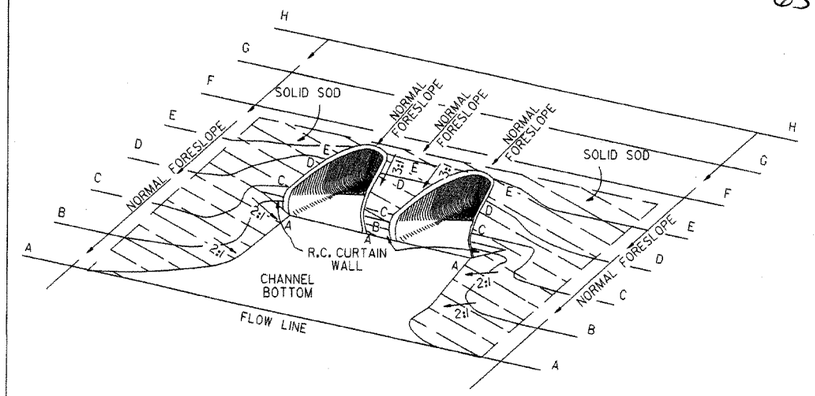
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



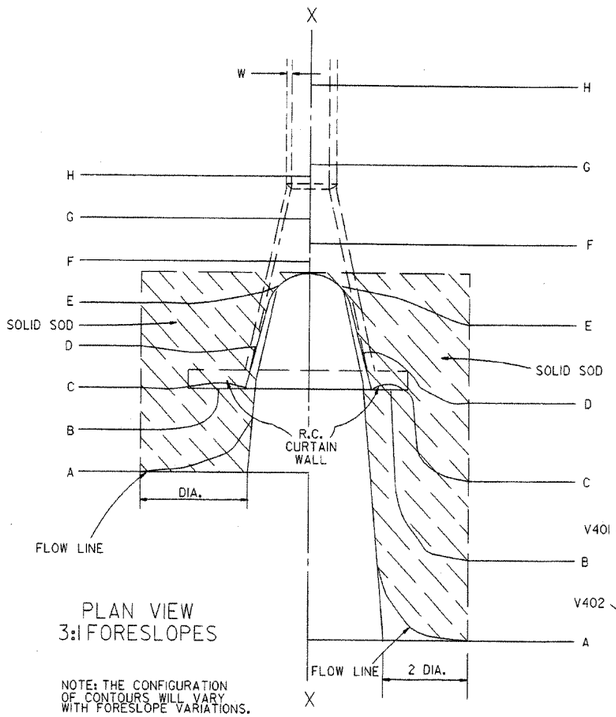
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

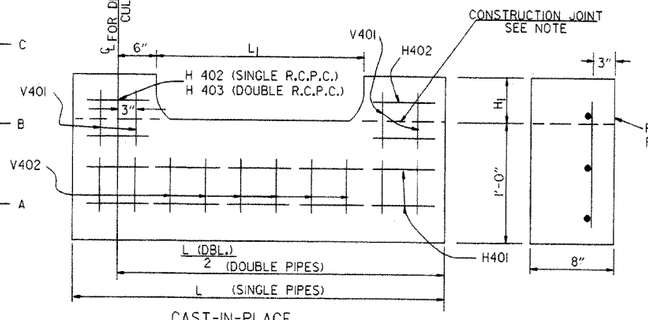
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

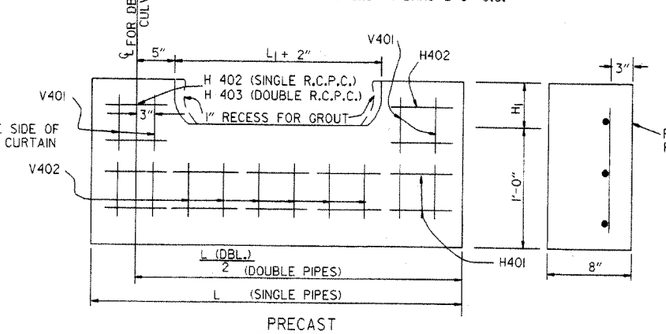
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0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

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



CAST-IN-PLACE

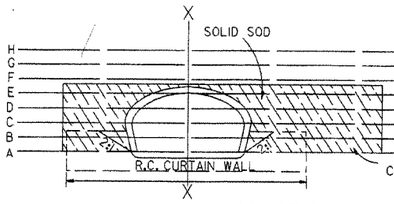
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



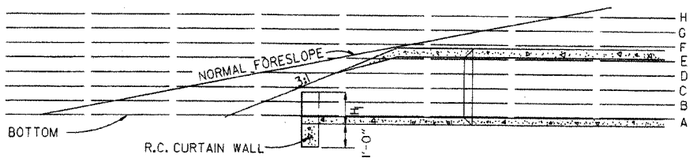
PRECAST

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



END VIEW



SECTIONAL VIEW "X-X"

REINFORCING STEEL SCHEDULE

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

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

SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	4:1	6:1	DOUBLE R.C.P.C. 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

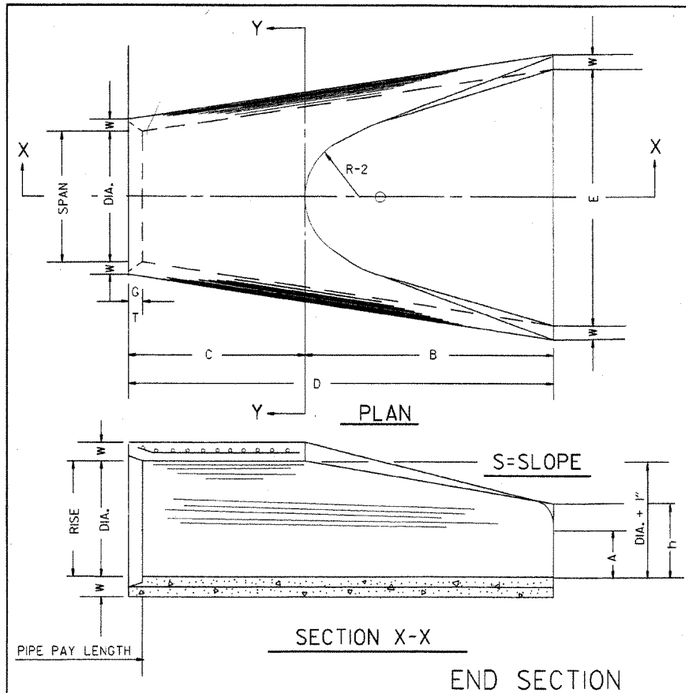
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: 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.

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	10-18-96
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 W WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

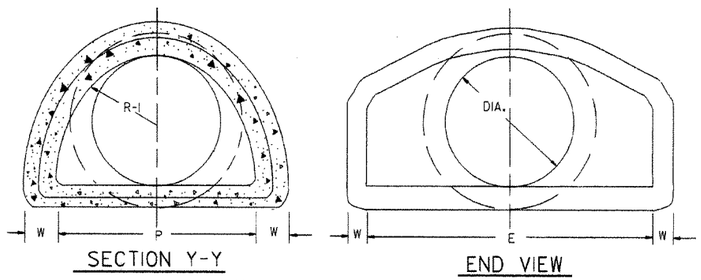
STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-3"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

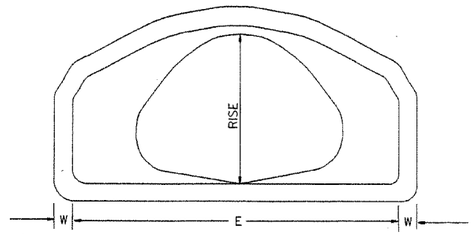


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

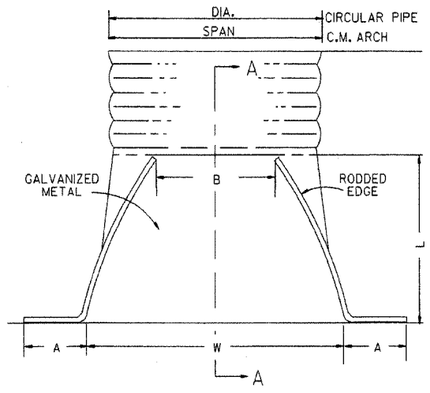
ARCH PIPE

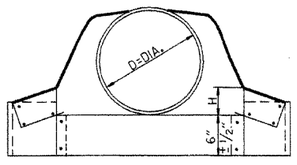
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-01/2"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅞"	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"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2¼:1

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



END VIEW
CONCRETE ARCH PIPE

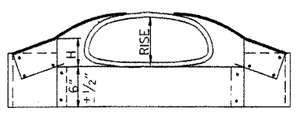




CIRCULAR PIPE

CIRCULAR PIPE

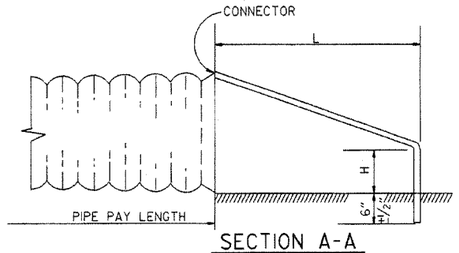
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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



C.M. ARCH PIPE

C.M. ARCH PIPE

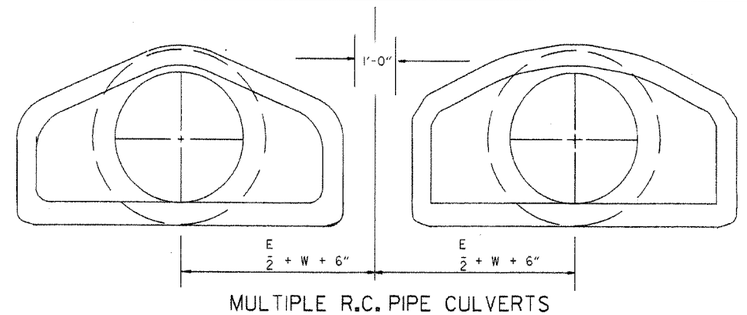
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12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



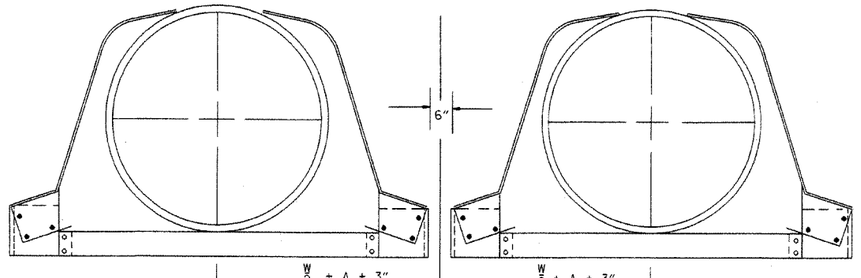
SECTION A-A

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

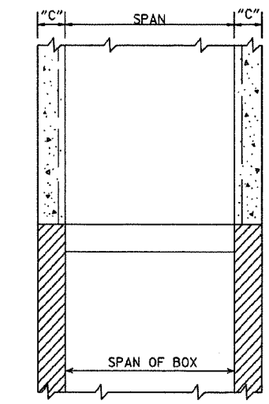
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
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 COMMISION

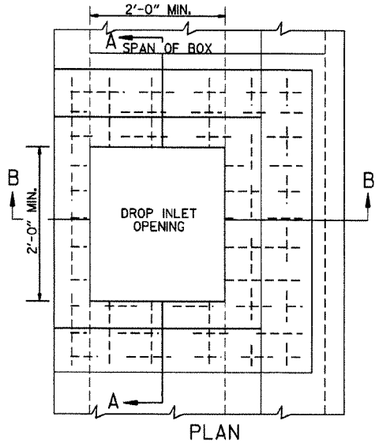
FLARED END SECTION

STANDARD DRAWING FES-2

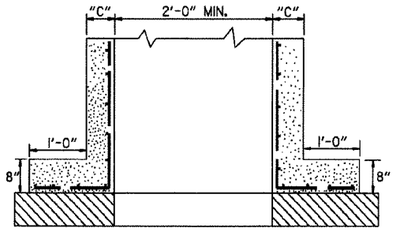
stdfes2.dgn



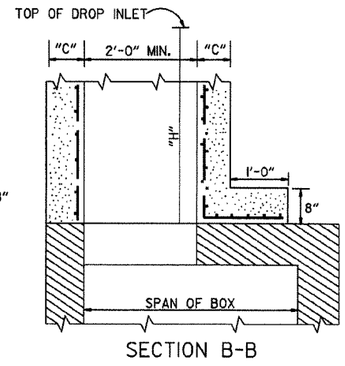
SECTION B-B



PLAN



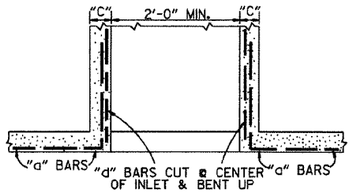
SECTION A-A



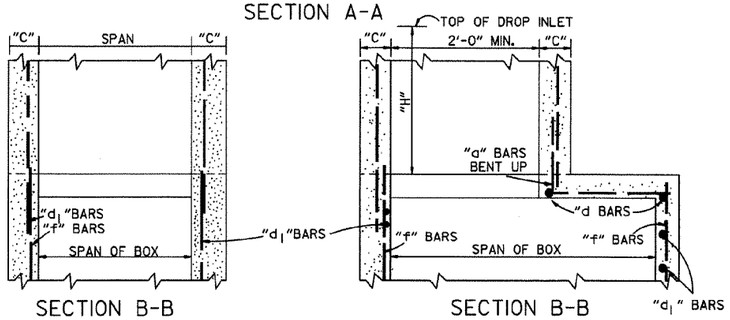
SECTION B-B

METHOD OF CONSTRUCTING DROP INLET

ON EXISTING R.C. BOX CULVERT



SECTION A-A

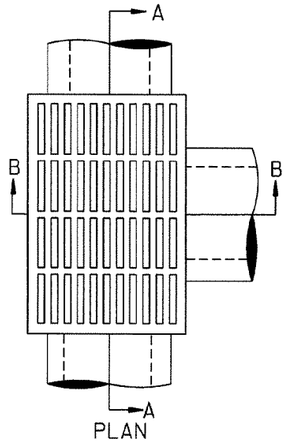


SECTION B-B SECTION B-B

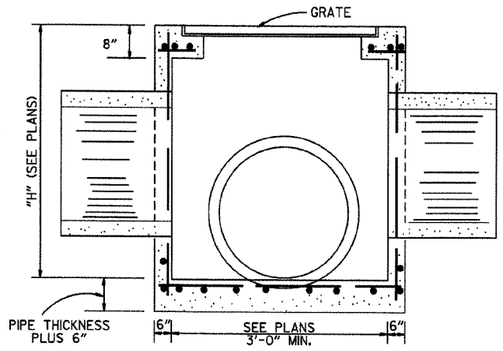
METHOD OF CONSTRUCTING DROP INLET

ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

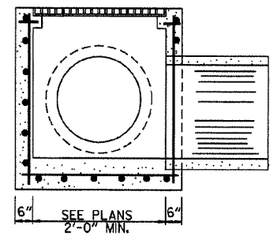


PLAN



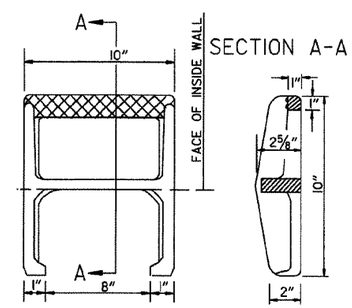
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)



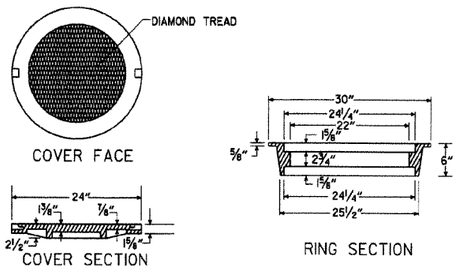
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

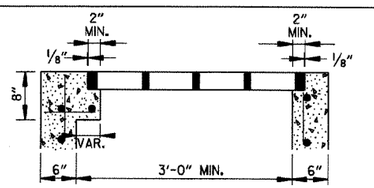
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

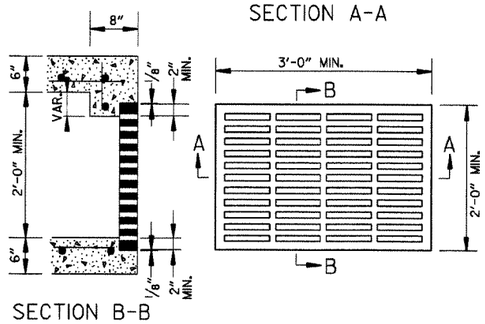


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



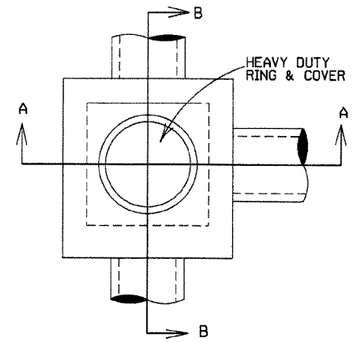
SECTION A-A



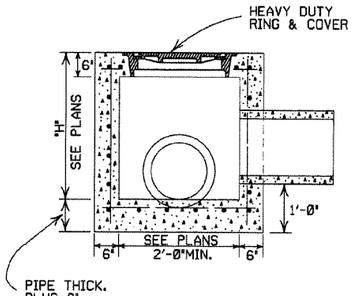
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

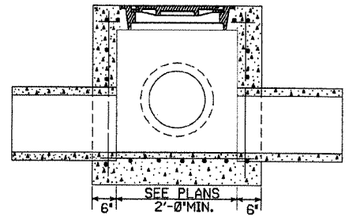


PLAN



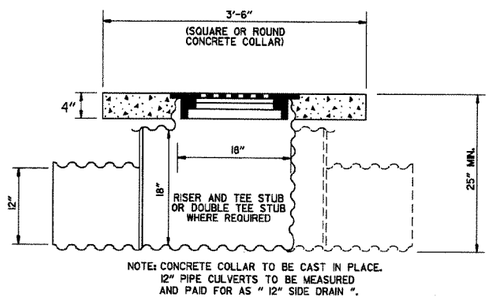
SECTION A-A

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.

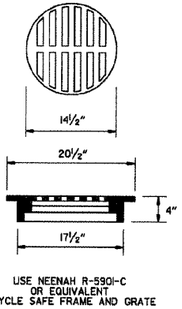


SECTION B-B

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

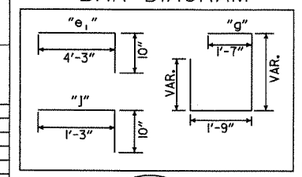
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

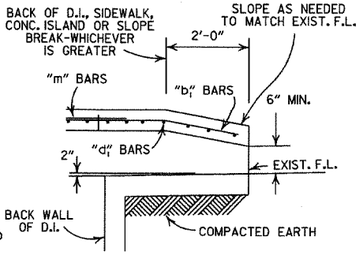
DROP INLET EXTENSION

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

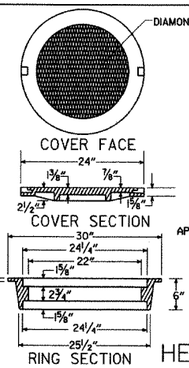
BAR DIAGRAM





BACK OPENING

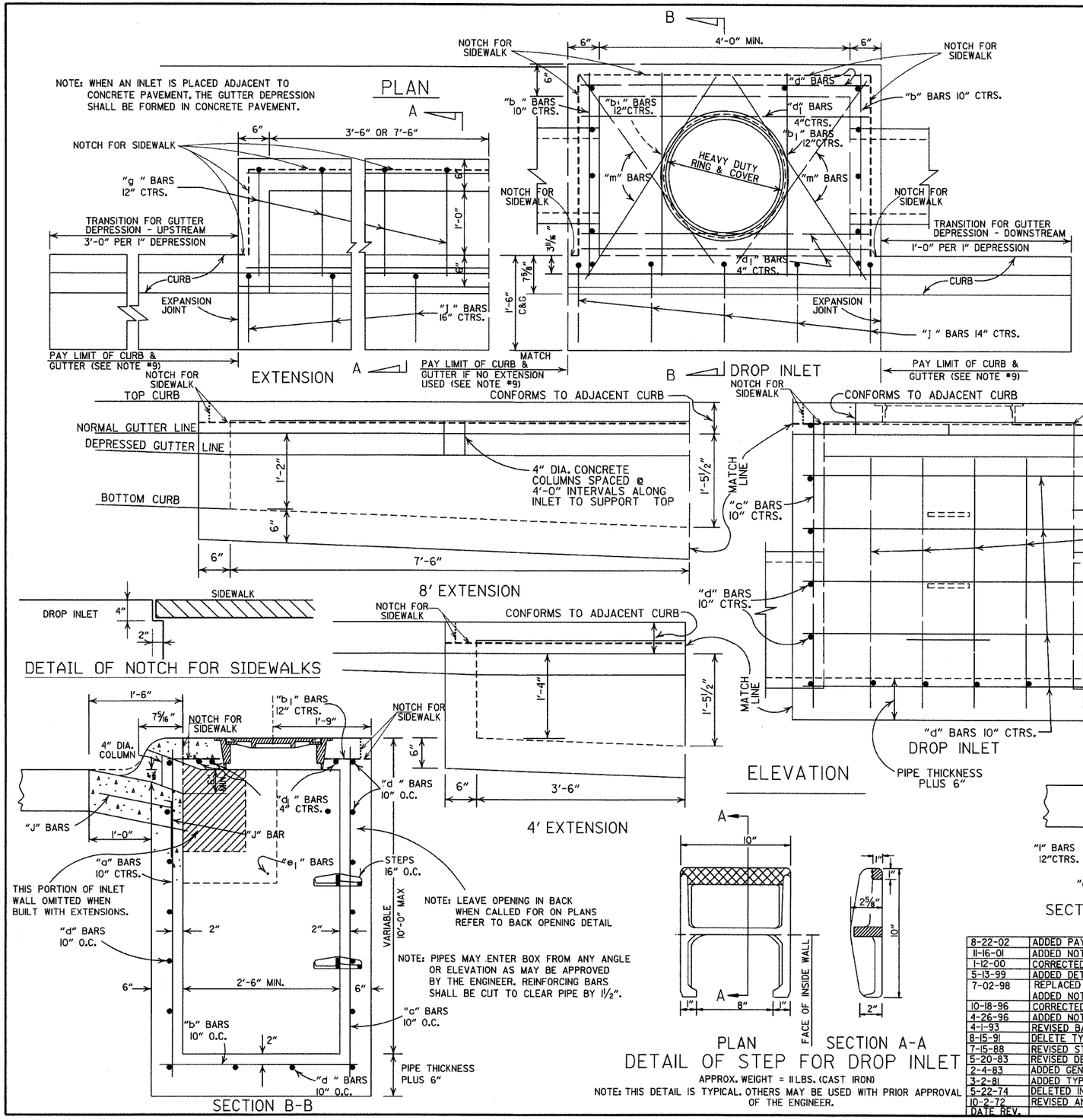
WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).



APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE ¾" 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 1½" 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 (F.P.C.-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.



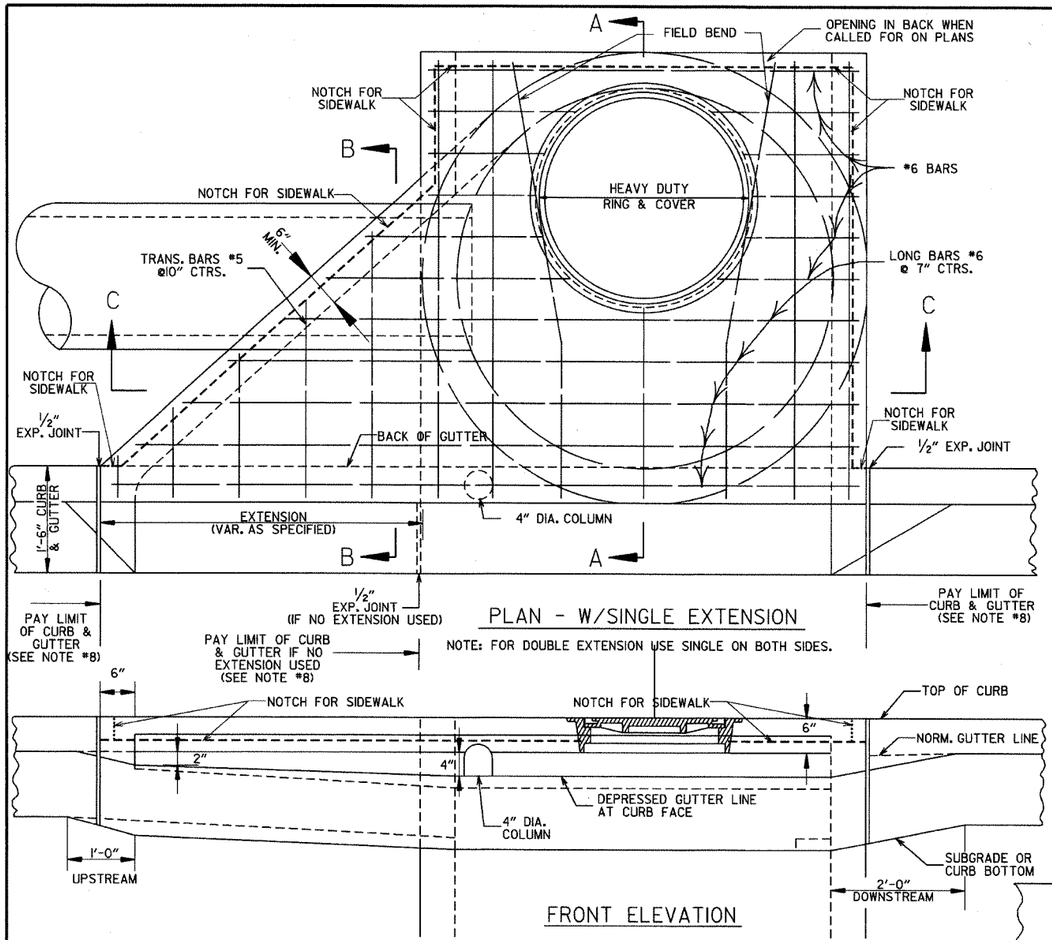
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER 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)

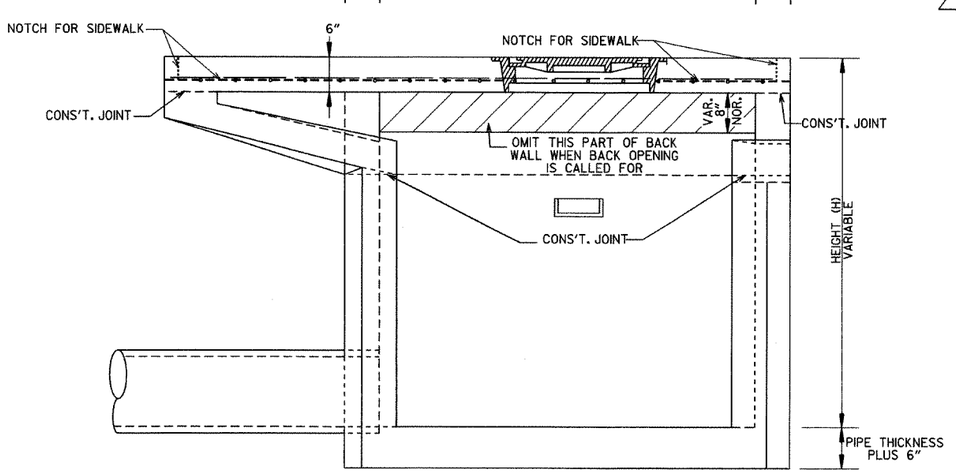
STANDARD DRAWING FPC-9E



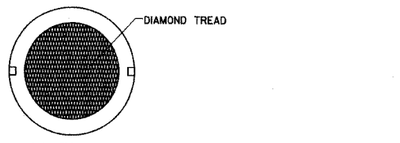
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



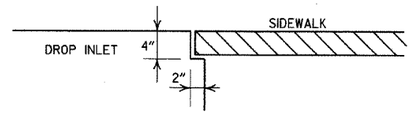
SECTION C-C



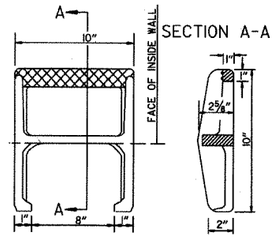
APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS

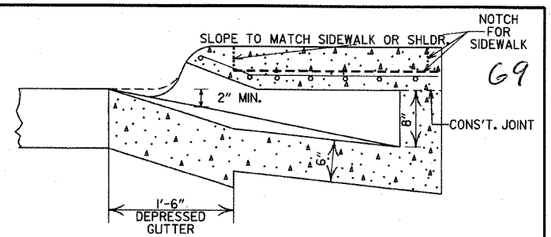


APPROX. WEIGHT = 11 LBS. (CAST IRON)

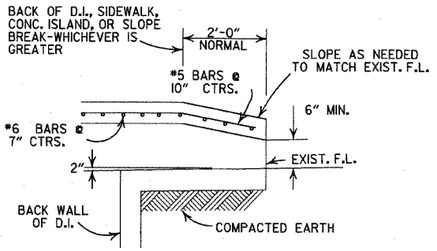
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B

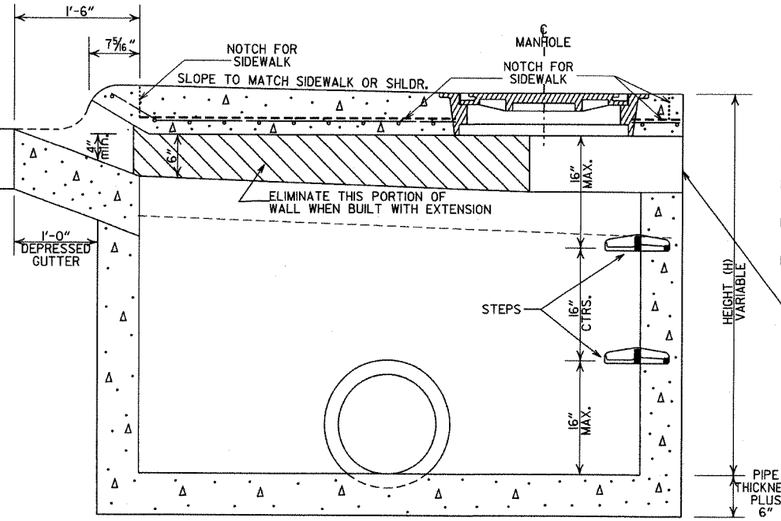


BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



SECTION A-A

DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS CAST IN PLACE	MINIMUM WALL THICKNESS PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

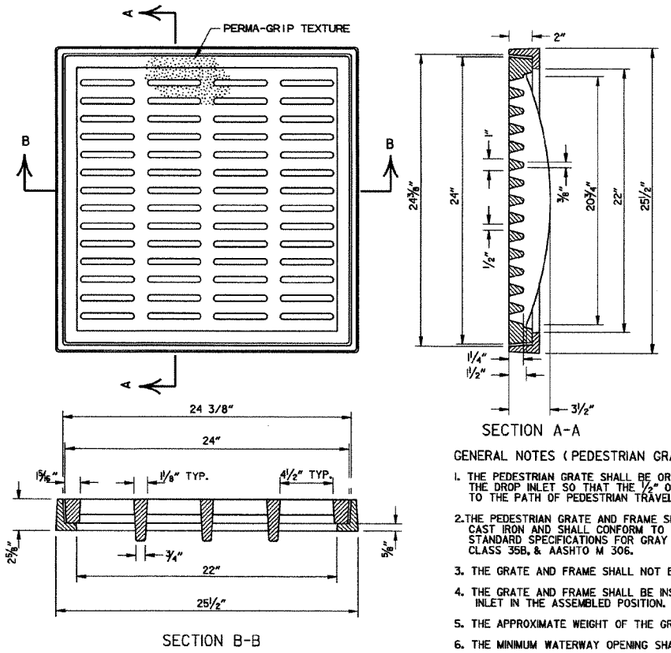
DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REAL PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11 ALL OPENING DIMENSION	
10-16-95	CORRECTED *6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 10	11-30-89
5-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	5/23-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	635-7-15-88
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

G9



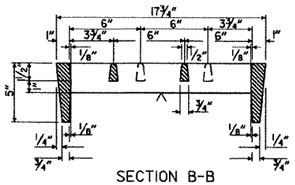
SECTION A-A

SECTION B-B

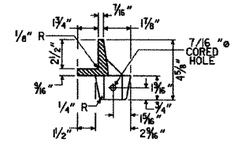
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE 1/2" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

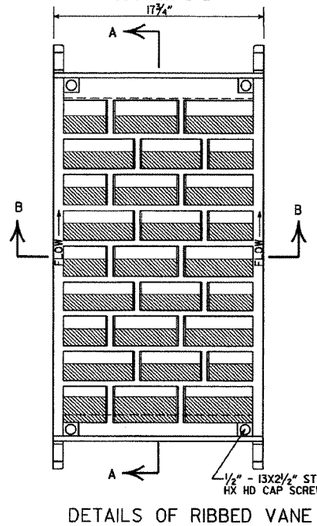
DETAILS OF PEDESTRIAN GRATE AND FRAME

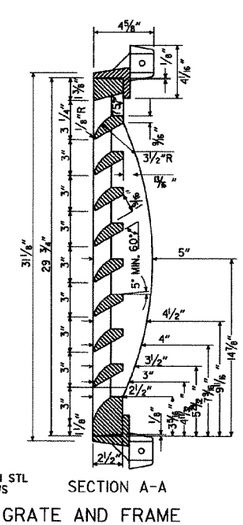


SECTION B-B



SECTION THRU FRAME



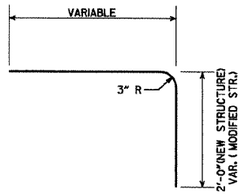


SECTION A-A

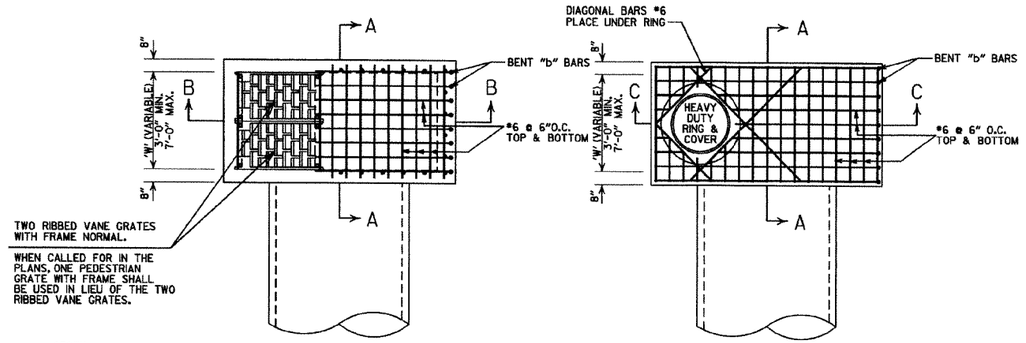
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

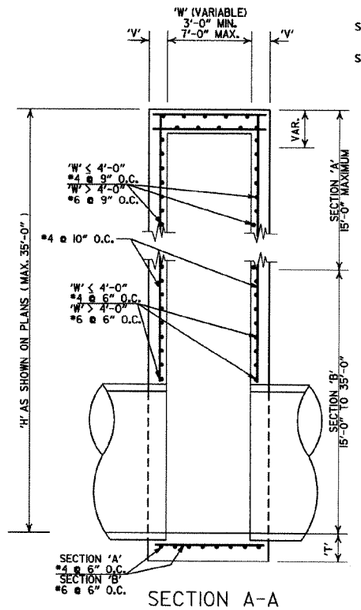
1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

DETAILS OF RIBBED VANE GRATE AND FRAME



DETAIL OF BENT "b" BAR





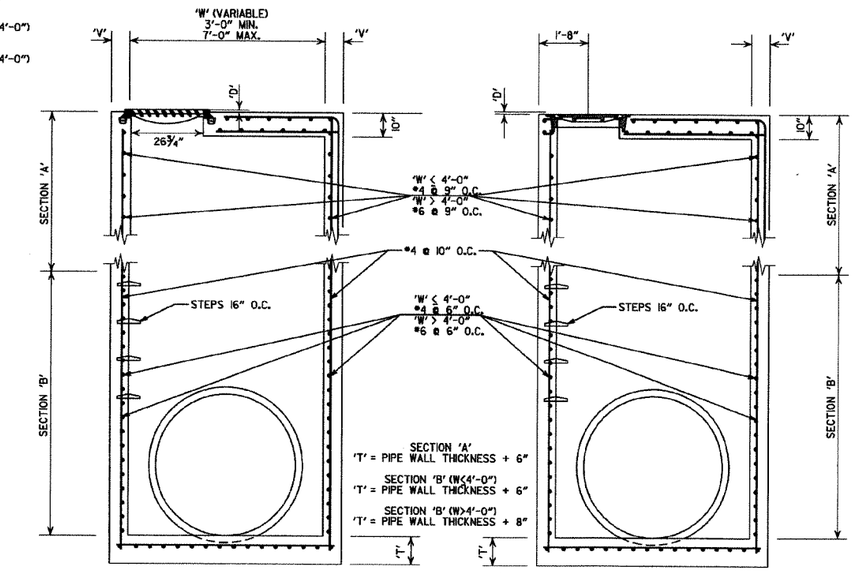
SECTION 'A'
'V' = 8"

SECTION 'B' (W≤4'-0")
'V' = 8"

SECTION 'B' (W>4'-0")
'V' = 10"

SECTION A-A

DETAILS OF DROP INLET (TYPE ST)



SECTION B-B

SECTION C-C

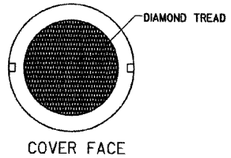
DETAILS OF JUNCTION BOX (TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

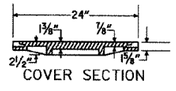
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 3/4" CHAMFER.
4. ALL #4 & #5 REINFORCING BARS ARE TO HAVE A MIN. 1 1/2" COVER. ALL LARGER SIZE BARS ARE TO HAVE A 2" MIN. COVER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

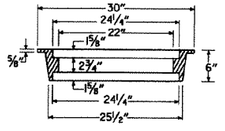
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

DATE REVISED	DATE FILMED	DESCRIPTION
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

STANDARD DRAWING FPC-9S

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31 5/16	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.

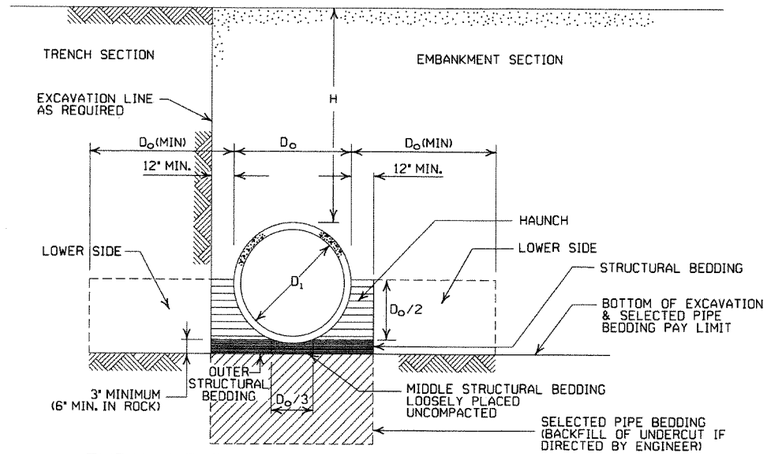
- LEGEND -

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 STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 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
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

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

CORRUGATED ALUMINUM PIPE (ROUND)

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

CONSTRUCTION SEQUENCE

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

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

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

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

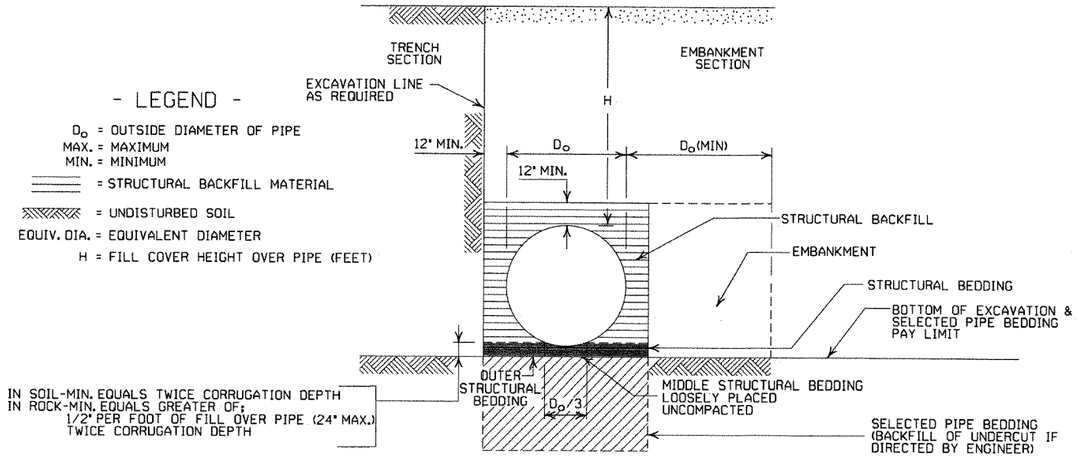
METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

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

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

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

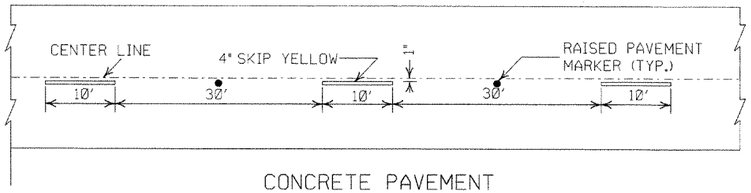
1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

DATE	REVISION	DATE FILMED
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

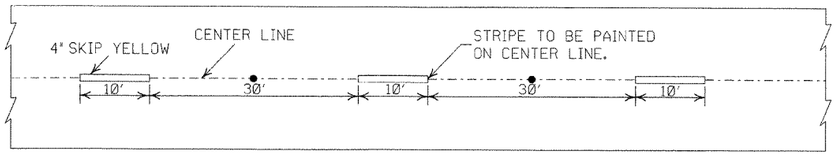
ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

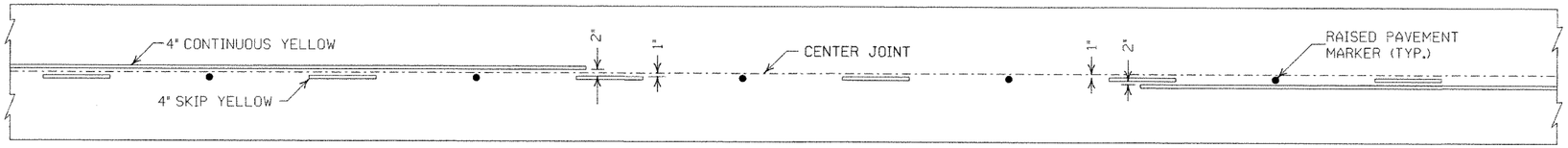


CONCRETE PAVEMENT

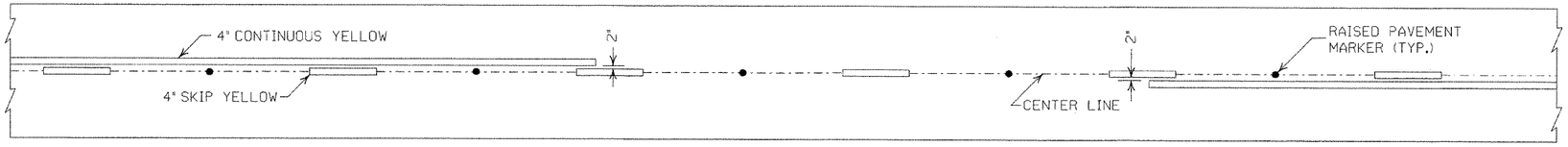


ASPHALT PAVEMENT

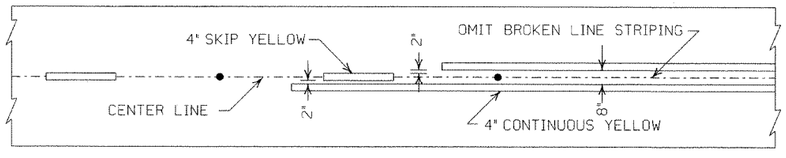
BROKEN LINE STRIPING



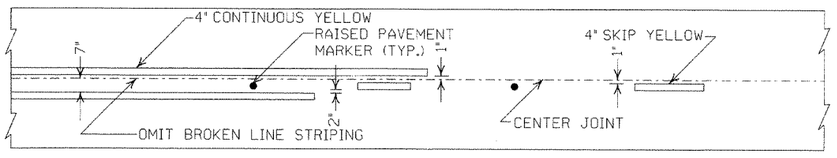
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

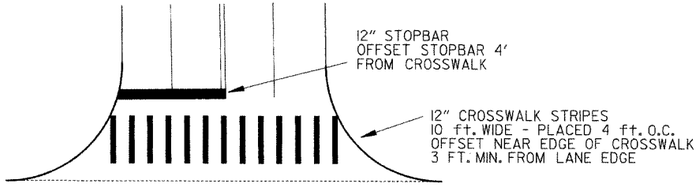


ASPHALT PAVEMENT



CONCRETE PAVEMENT

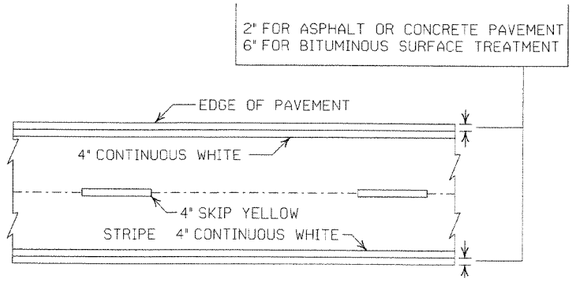
STRIPING AT ADJACENT NO PASSING LANES



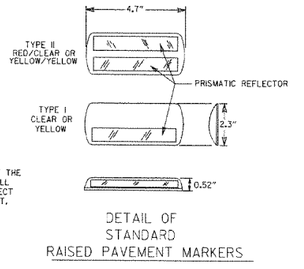
CROSSWALK AND STOPBAR DETAILS

NOTES:

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



PAVEMENT EDGE LINE MARKING



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

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

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

NOTE:

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

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

ARKANSAS STATE HIGHWAY COMMISSION

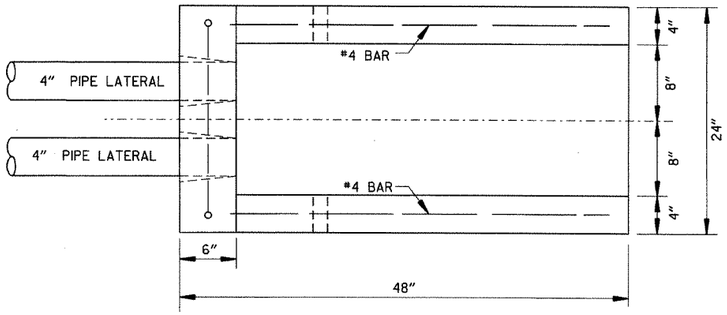
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

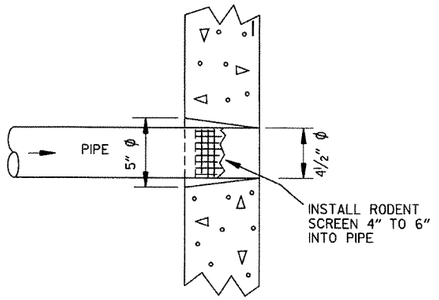
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

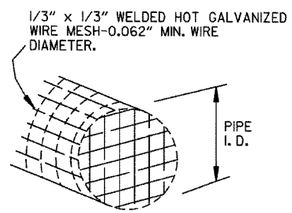
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



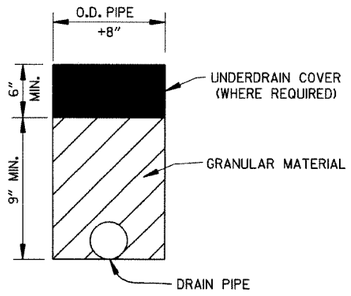
PLAN VIEW

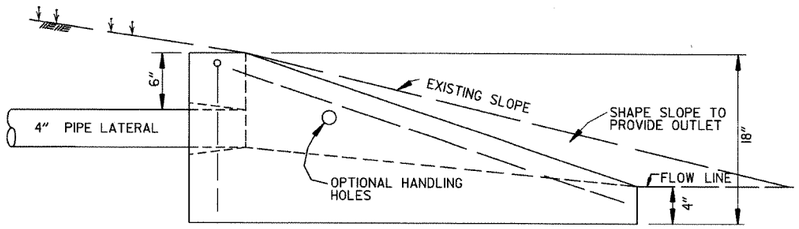


DETAIL OF HOLE FOR 4" PIPE

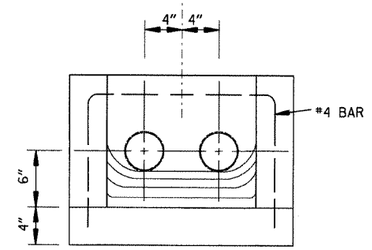


DETAIL OF RODENT SCREEN

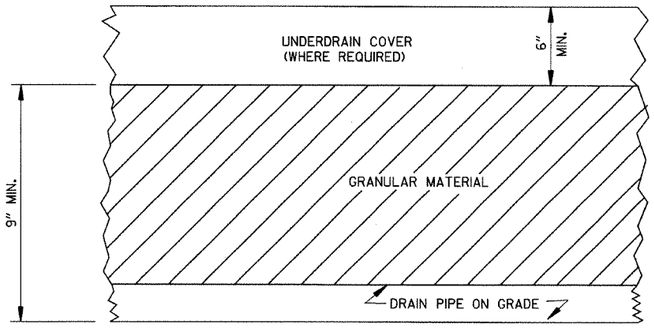




SIDE VIEW

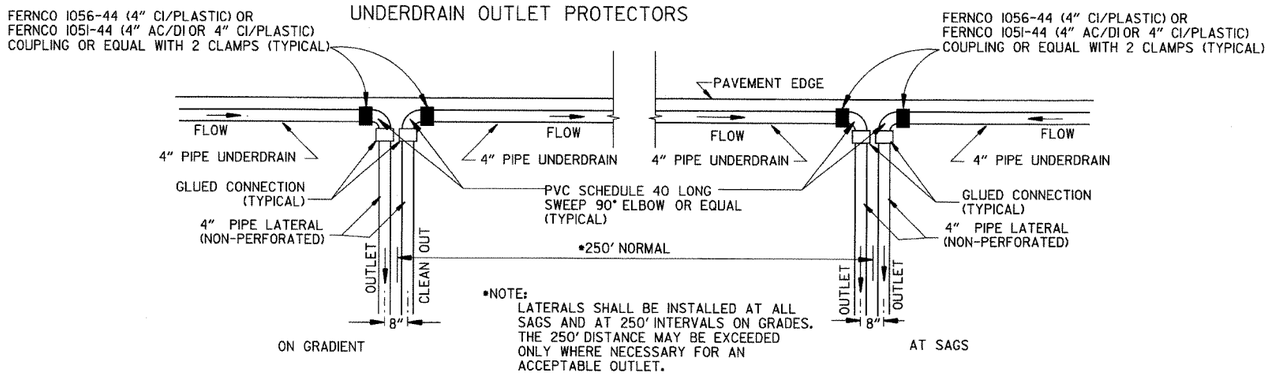


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

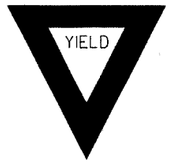
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

RI-1

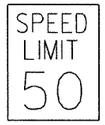
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

RI-2



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

R2-1



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

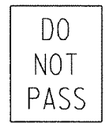
R2-5A

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

R2-5C

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

R4-1



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

R4-2

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

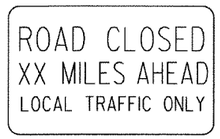
R5-1

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

RII-2

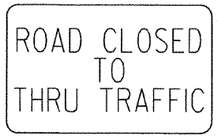
48"X30"

RII-3A



60"X30"

RII-4

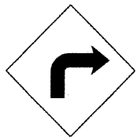


60"X30"

RSP-1

48"X30"

WI-1



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

WI-2

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

WI-3

STD. 48"X48"

WI-4

STD. 48"X48"

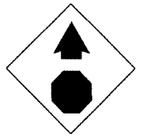
WI-6

STD. 48"X24"
SPECIAL 60"X30"

WI-8

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

W3-1

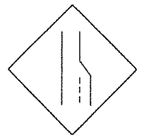


STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

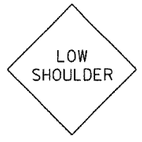
R56-1

STD. 18"X18"

W8-11

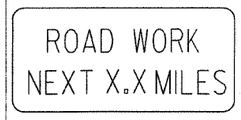
STD. 36"X36"
FWY. 48"X48"

W8-9



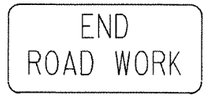
STD. 36"X36"
FWY. 48"X48"

G20-1



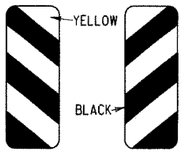
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

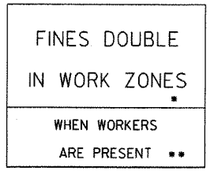
M4-9

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

M4-10

48"X18"

R55-1



36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

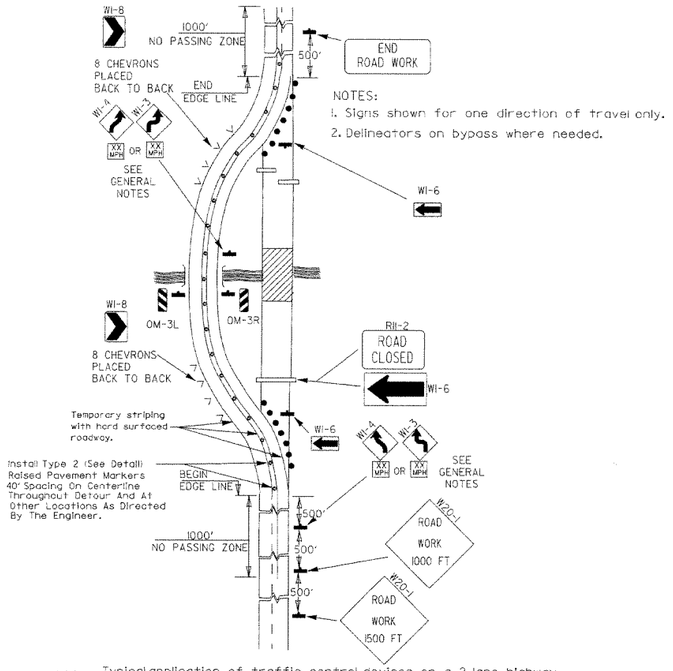
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
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

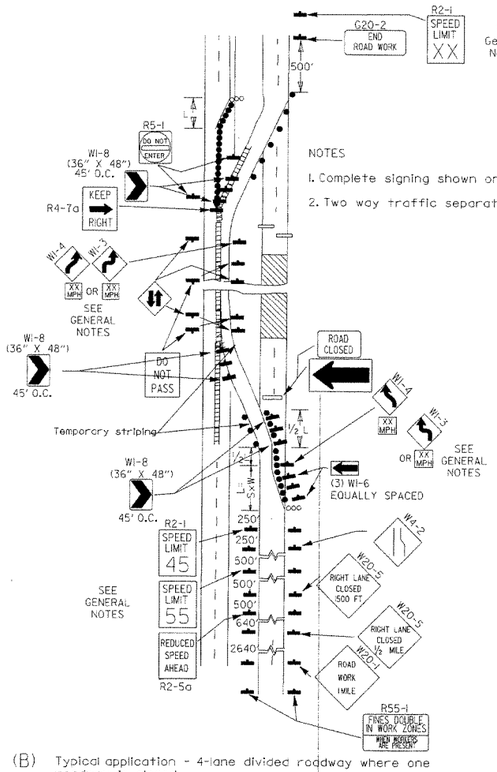
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



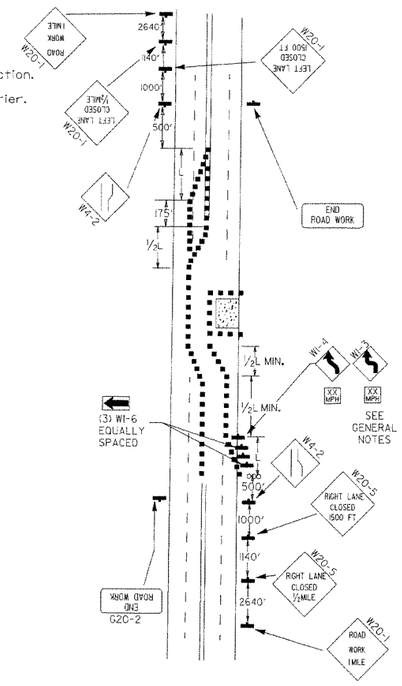
NOTES:
1. Signs shown for one direction of travel only.
2. Delineators on bypass where needed.

(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.

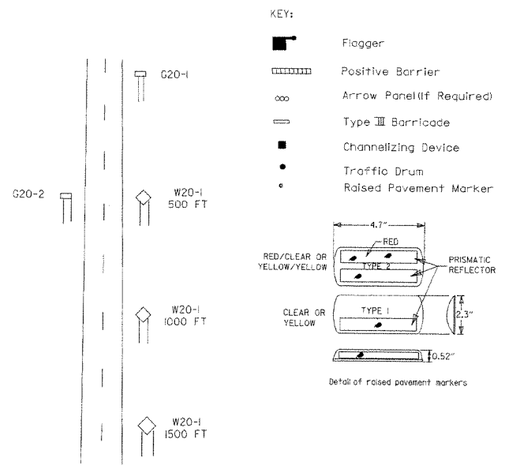


NOTES
1. Complete signing shown only in crossover direction.
2. Two way traffic separated with positive barrier.

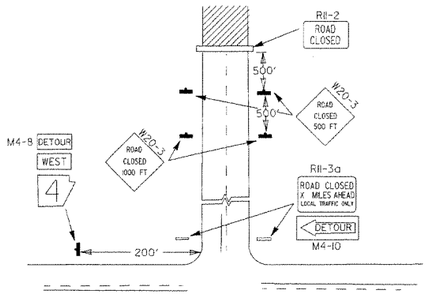
(B) Typical application - 4-lane divided roadway where one roadway is closed.



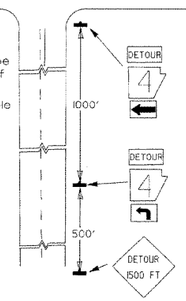
(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.



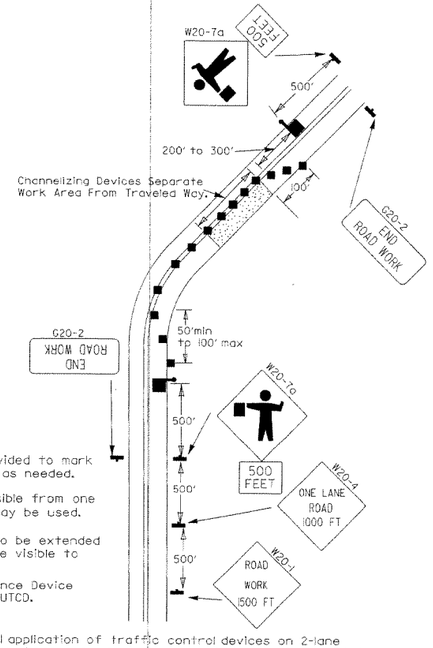
Typical advance warning sign placement



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.

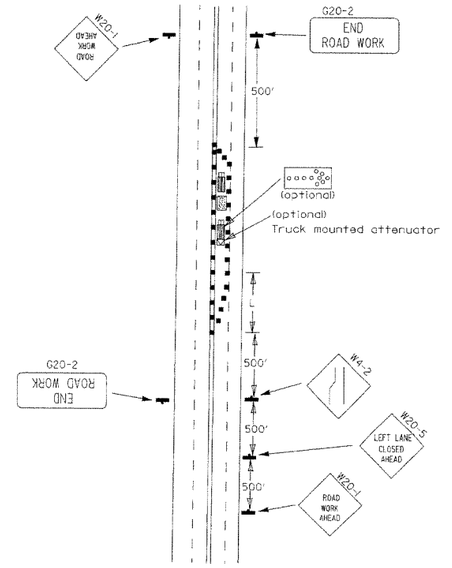


(D) Typical application - roadway closed beyond detour point.



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.

Taper formulae:

L=SxW for speeds of 45mph or more.

$L = \frac{WS^2}{60}$ for speeds of 40mph or less.

Where:
L= Minimum length of taper.
S= Numerical value of posted speed limit prior to work or 85th percentile speed.
W= Width of offset.

GENERAL NOTES:

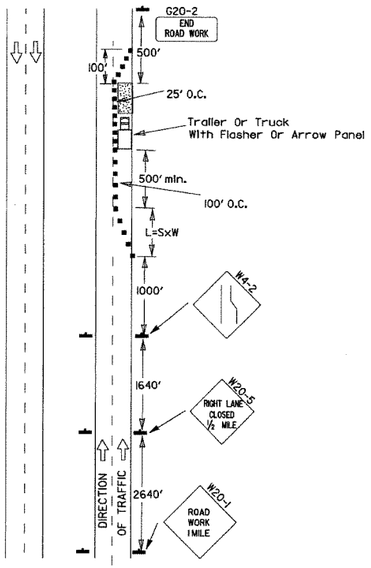
1. Advisory speed posted on W1-3 or W1-4 curve warning signs to be determined at site. Use W1-4 when speed is greater than 30mph and W1-3 when 30mph or less.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed 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 65mpn 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.

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

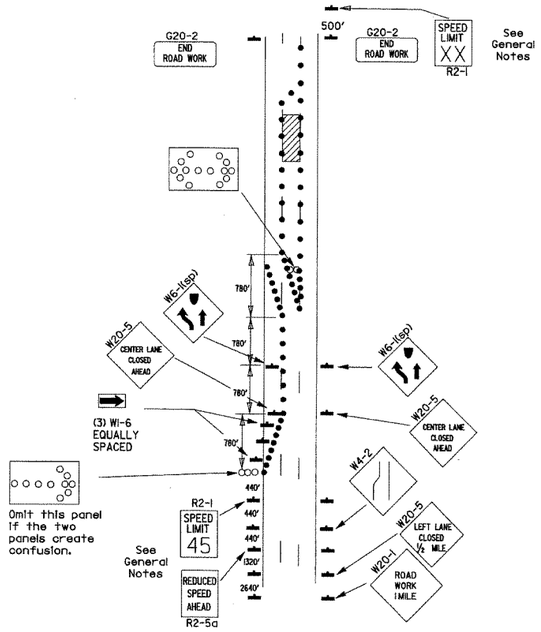
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

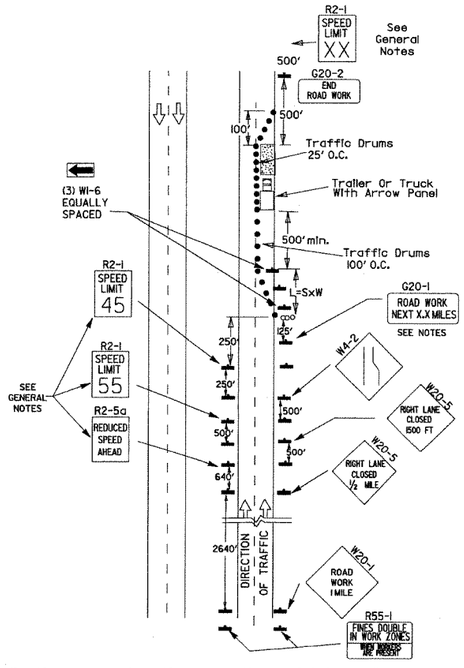
STANDARD DRAWING TC-2



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



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



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

KEY:

○○○ Arrow Panel (If Required)

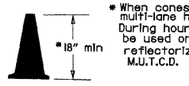
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

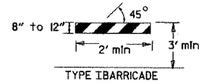
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional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

Channelizing devices



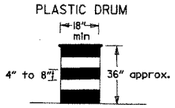
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

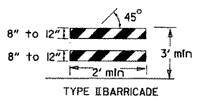
CONES



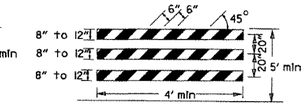
TYPE I BARRICADE

PLASTIC DRUM



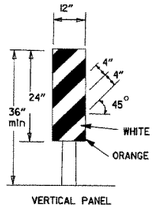


TYPE II BARRICADE



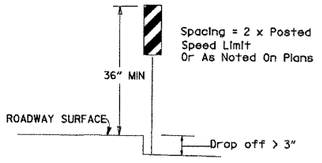
TYPE III BARRICADE

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



VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



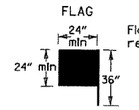
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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

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

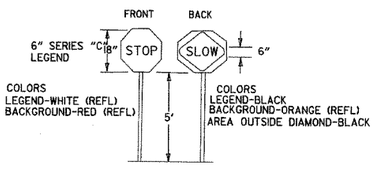
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

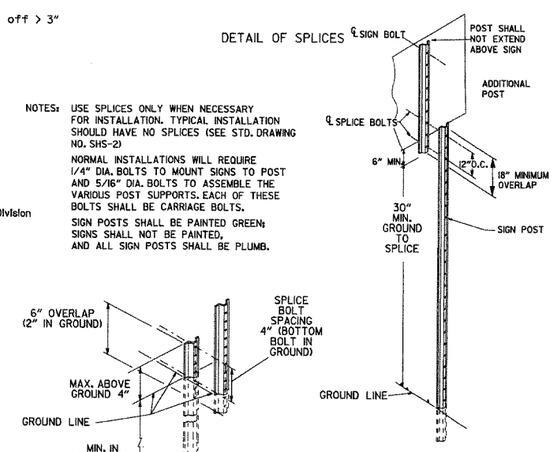
FLAG



Flag shall be of good grade red material

STOP SLOW PADDLE

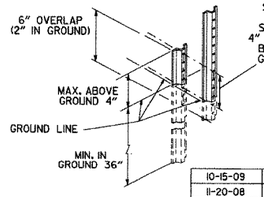


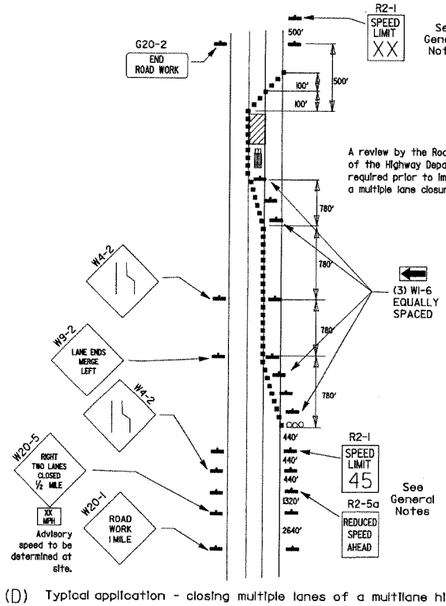


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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

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





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

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

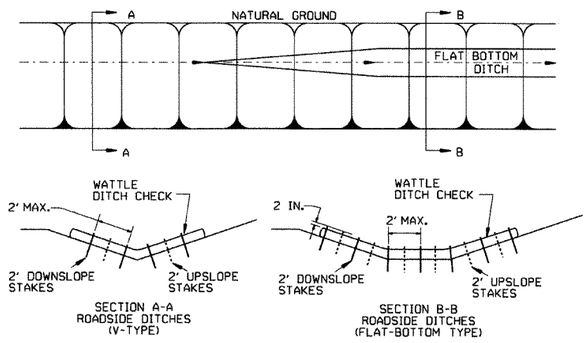
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

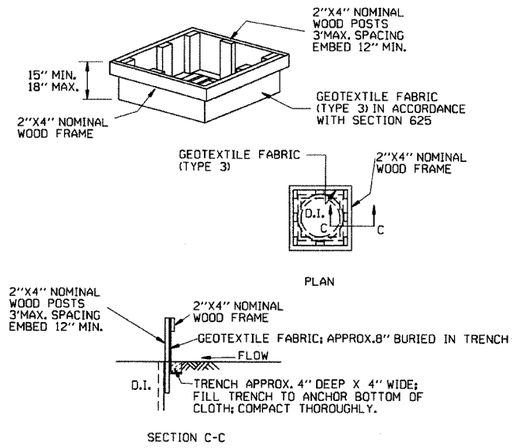
STANDARD DRAWING TC-3

GENERAL NOTES

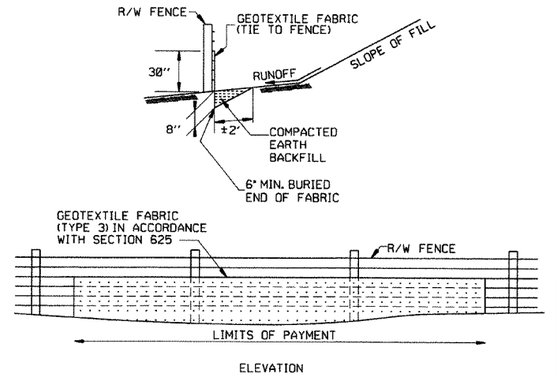
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

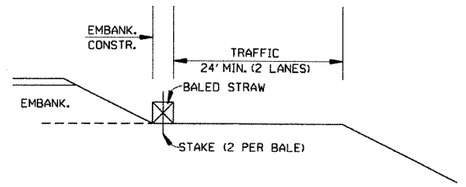
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

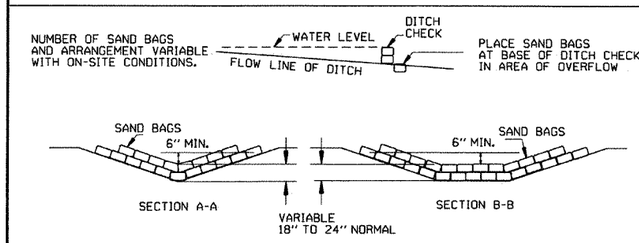
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

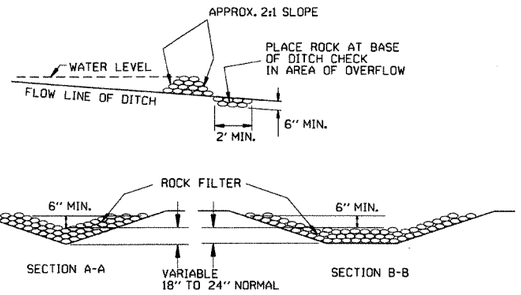
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



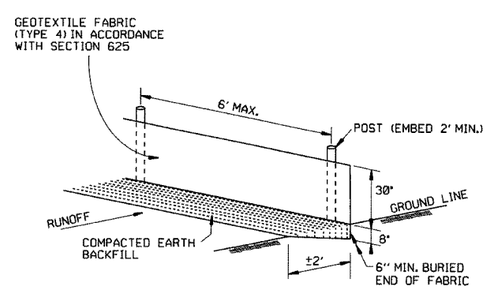
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

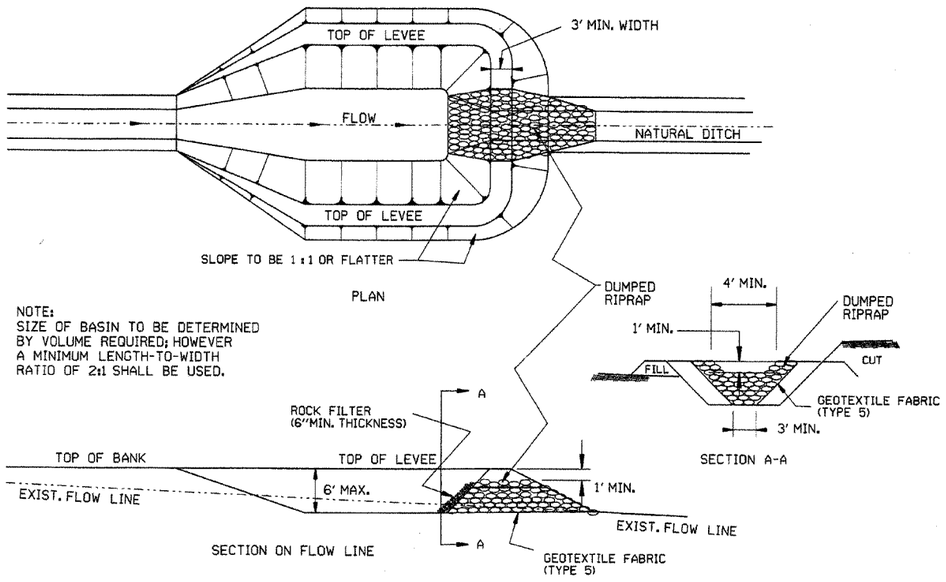
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

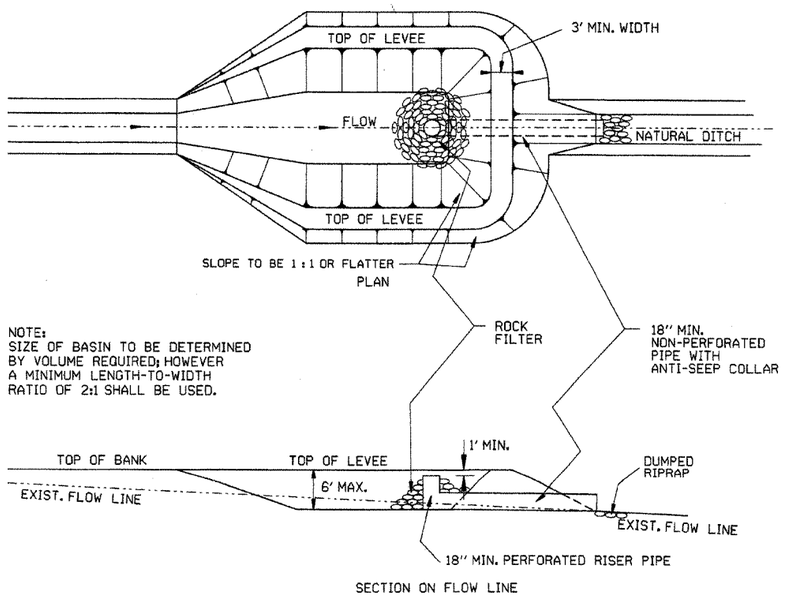
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

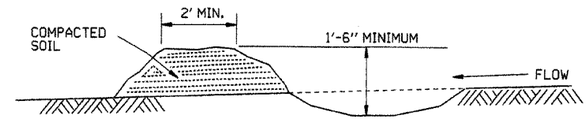
STANDARD DRAWING TEC-1



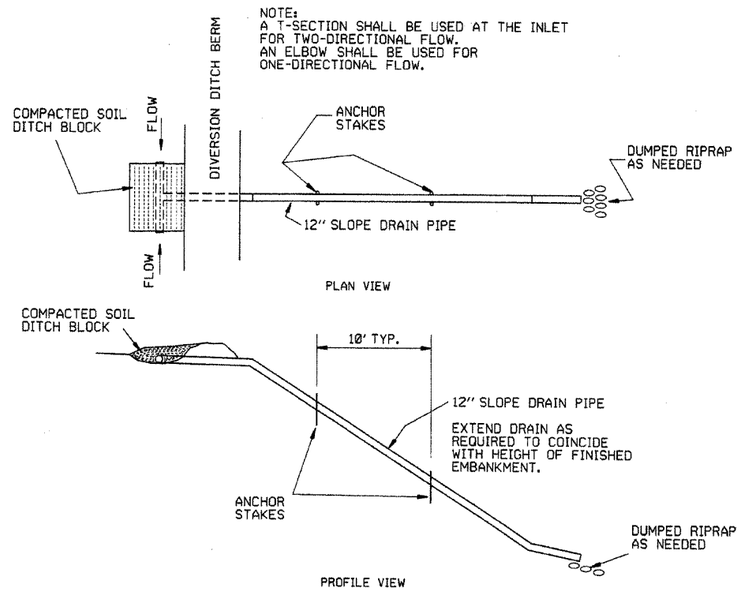
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



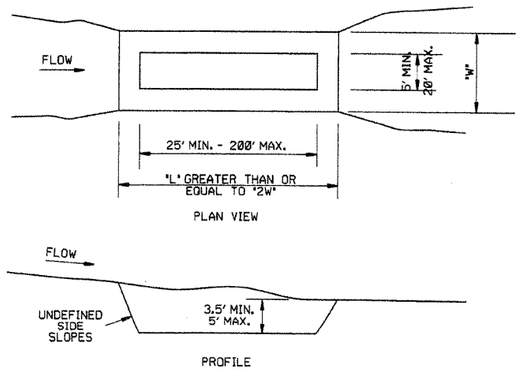
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

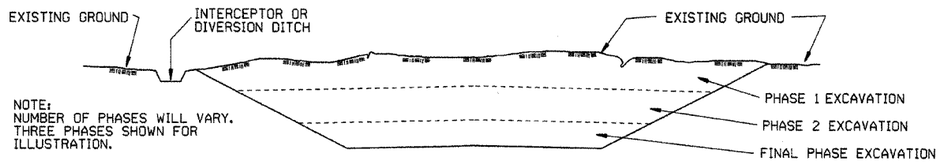
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



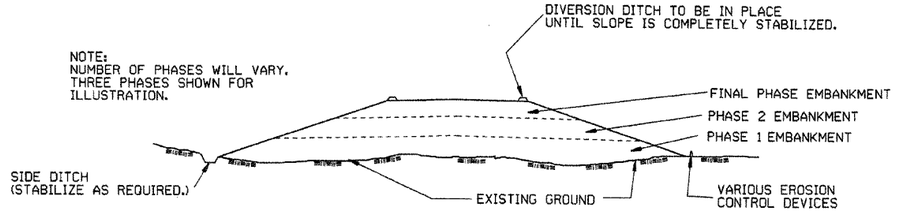
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

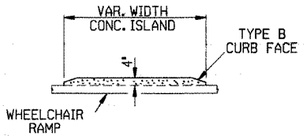
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

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

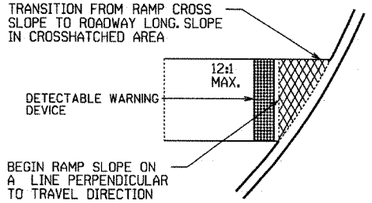
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



CONCRETE ISLAND DETAIL



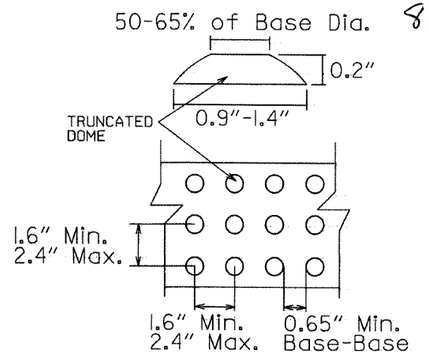
SLOPE TRANSITION DETAILS

TYPE 1 RAMP DIMENSIONS AND QUANTITIES

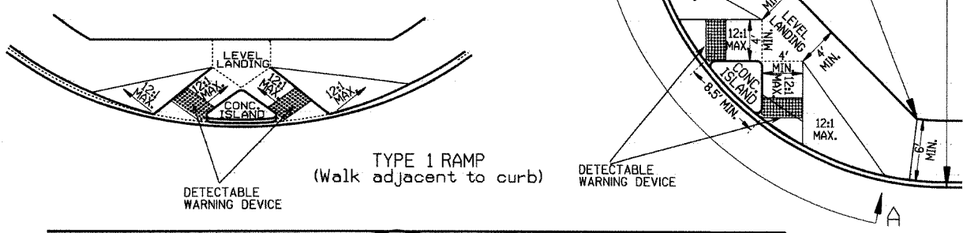
RADIUS "R" FEET	DISTANCE "X" FEET	DISTANCE "Y" FEET	LENGTH "L" FEET	RAMP AREA "A" SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

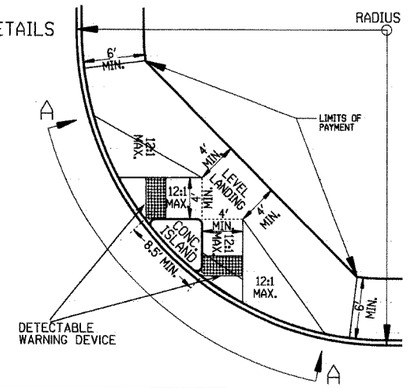
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT 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 AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).

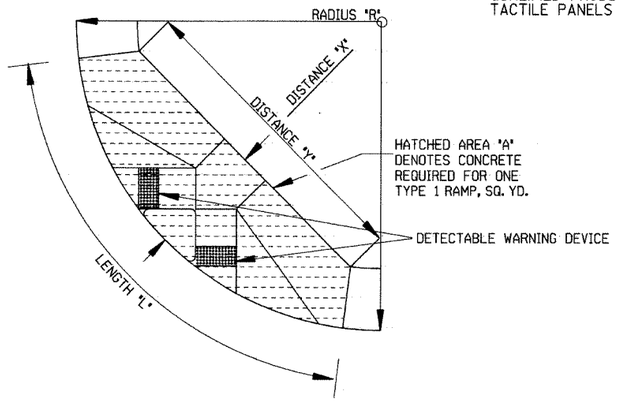


DETECTABLE WARNING DEVICE DETAIL



TYPE 1 RAMP
(Walk adjacent to curb)

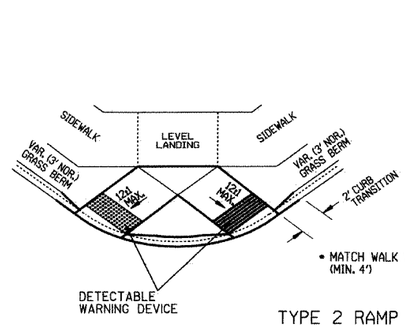




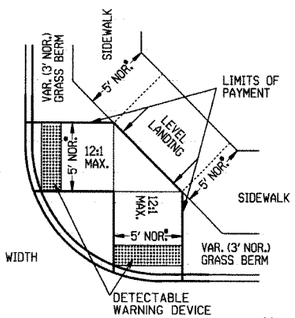
SECTION A-A

GENERAL NOTES:

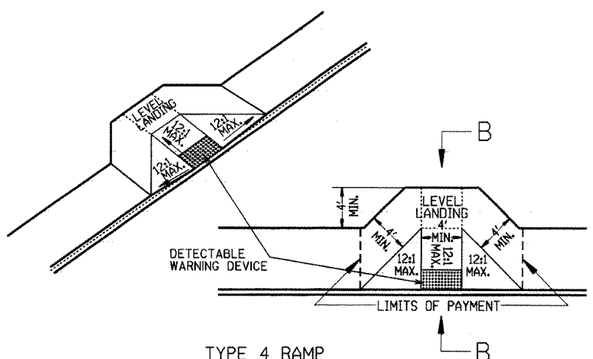
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.



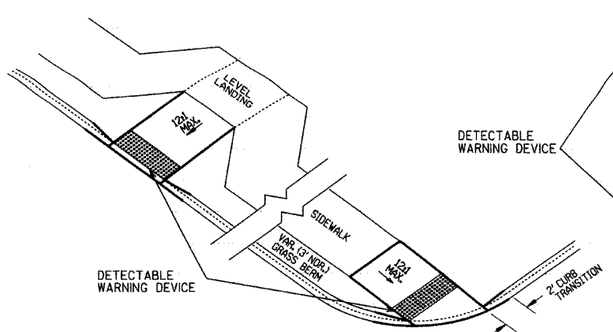
TYPE 2 RAMP



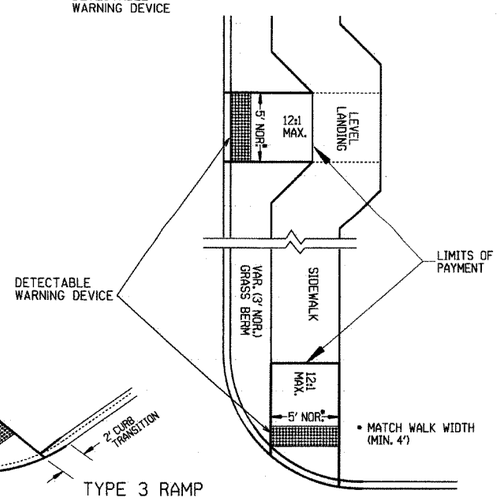
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

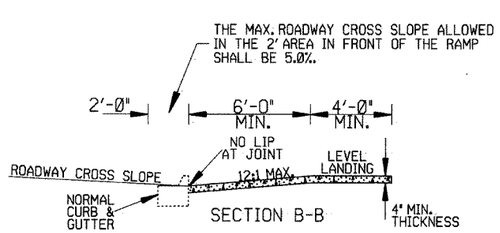


TYPE 4 RAMP
(Walk adjacent to curb)



TYPE 3 RAMP





SECTION B-B

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	FROM8:1TO12:1MAX.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

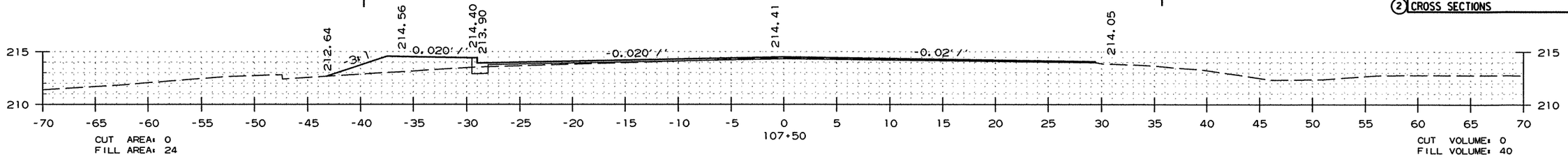
ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS

STANDARD DRAWING WR-1

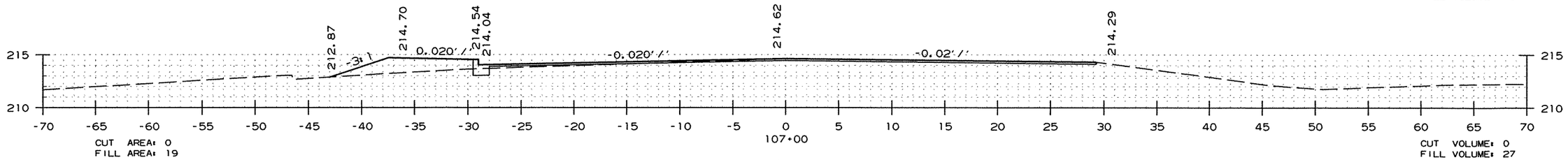
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	82	96

(2) CROSS SECTIONS



CUT AREA: 0
FILL AREA: 24

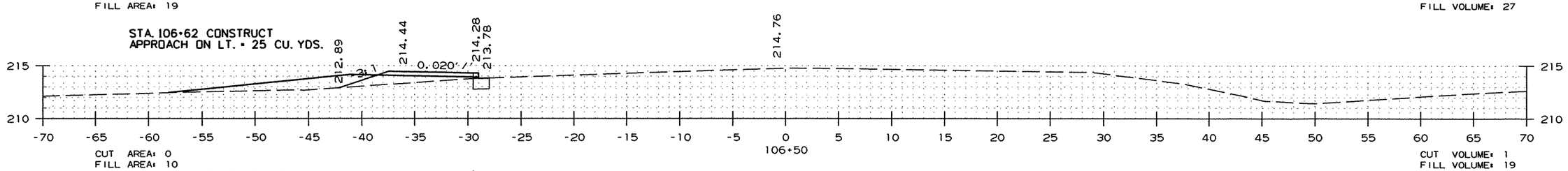
CUT VOLUME: 0
FILL VOLUME: 40



CUT AREA: 0
FILL AREA: 19

CUT VOLUME: 0
FILL VOLUME: 27

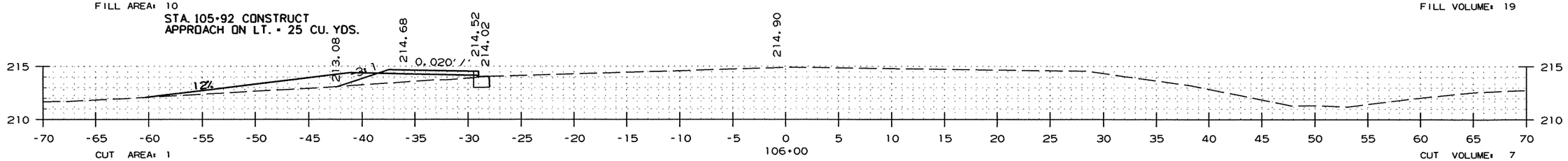
STA. 106+62 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.



CUT AREA: 0
FILL AREA: 10

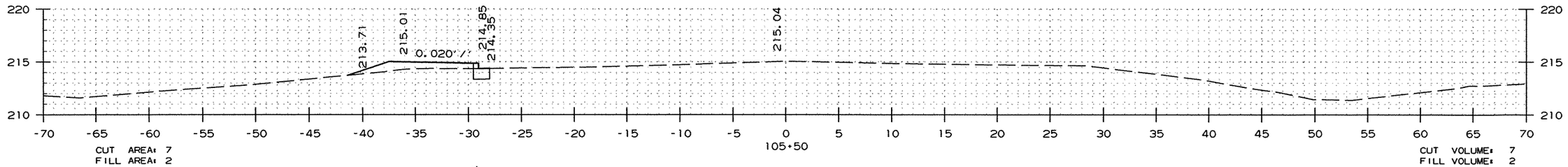
CUT VOLUME: 1
FILL VOLUME: 19

STA. 105+92 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.



CUT AREA: 1
FILL AREA: 11

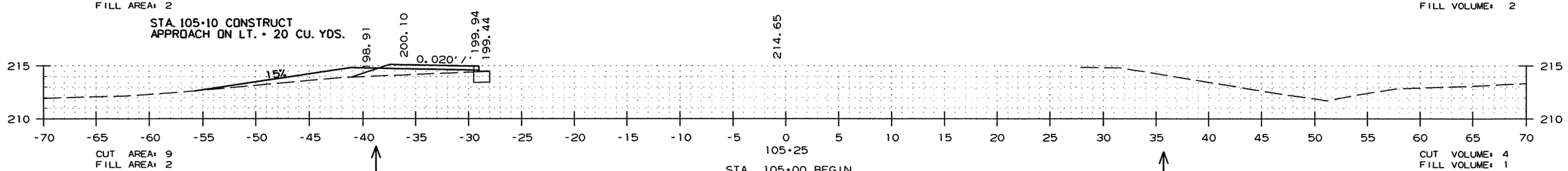
CUT VOLUME: 7
FILL VOLUME: 12



CUT AREA: 7
FILL AREA: 2

CUT VOLUME: 7
FILL VOLUME: 2

STA. 105+10 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.



CUT AREA: 9
FILL AREA: 2
CUT AREA: 0
FILL AREA: 0

STA. 105+00 BEGIN
HWY. 70 SECTION

CUT VOLUME: 4
FILL VOLUME: 1

CROSS SECTION STA. 105+25 TO STA. 107+50

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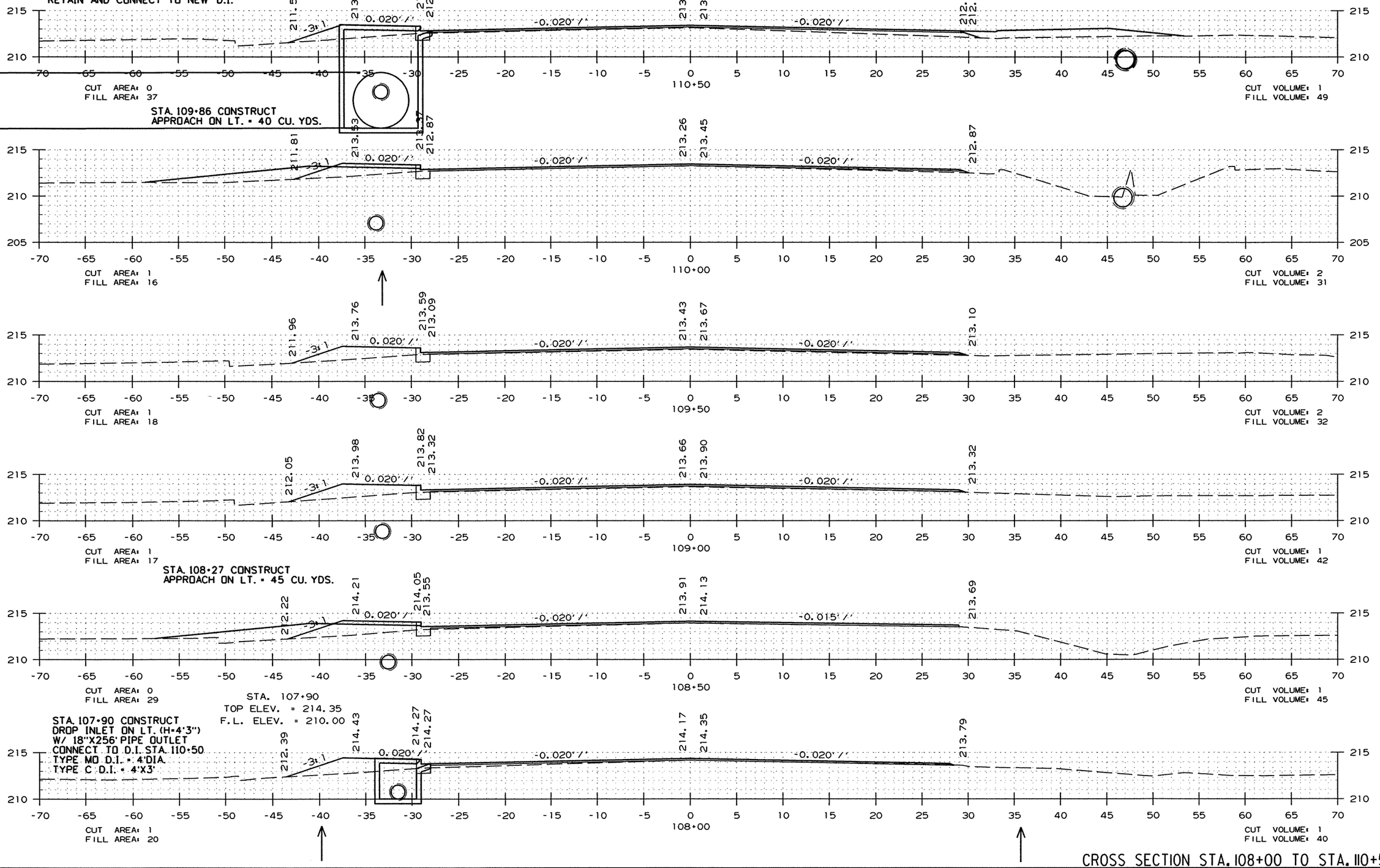
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	83	96

(2) CROSS SECTIONS

STA.110+50 IN PLACE
DROP INLET ON LT.
REMOVE DROP INLET AND CONSTRUCT TYPE C DROP INLET (4'X8') (H=11'0") WITH 72"X62' C.M.PIPE INLET
RETAIN AND CONNECT TO D.I. & 72"X50' C.M.PIPE OUTLET
RETAIN AND CONNECT TO NEW D.I.
TOP ELEV. = 213.45
F.L. ELEV. = 202.33

STA. 110+33 CONSTRUCT APPROACH ON RT. = 20 CU. YDS.



CROSS SECTION STA. 108+00 TO STA. 110+50

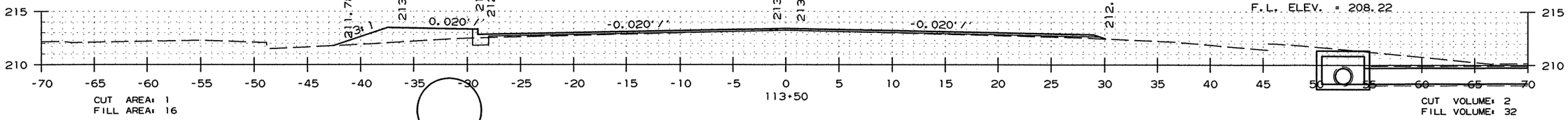
R110533.DGN 3/3/2011

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.		110533	84	96

(2) CROSS SECTIONS

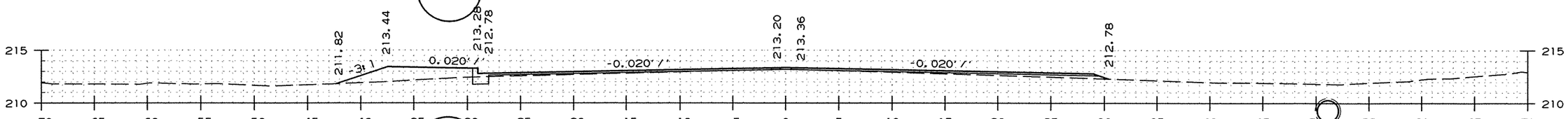
STA. 113+41 IN PLACE
DROP INLET ON RT.
W/ 12" STEEL PIPE INLET FROM SOUTH
& 18"X120' R.C. PIPE OUTLET TO
DROP INLET STA. 114+64
RETAIN

STA. 113+41-EXISTING
TOP ELEV. = 211.33
F.L. ELEV. = 208.22



CUT AREA: 1
FILL AREA: 16

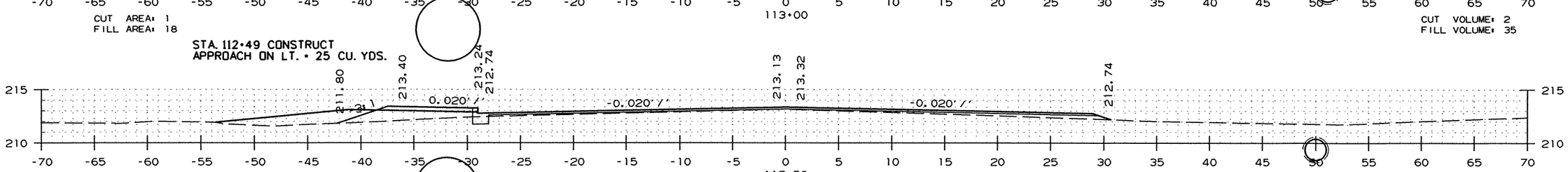
CUT VOLUME: 2
FILL VOLUME: 32



CUT AREA: 1
FILL AREA: 18

CUT VOLUME: 2
FILL VOLUME: 35

STA. 112+49 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.

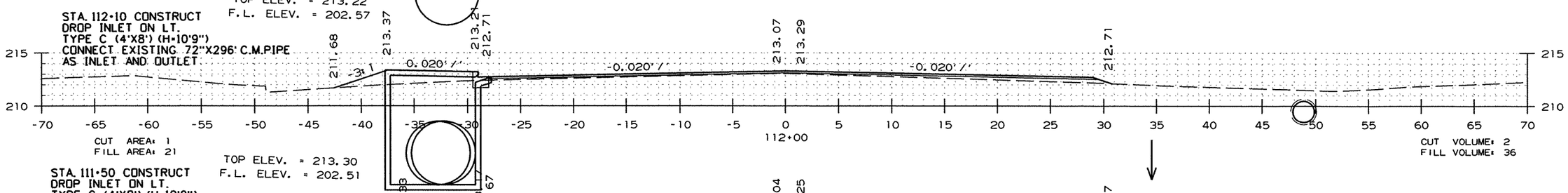


CUT AREA: 1
FILL AREA: 20

CUT VOLUME: 2
FILL VOLUME: 38

STA. 112+10
TOP ELEV. = 213.22
F.L. ELEV. = 202.57

STA. 112+10 CONSTRUCT
DROP INLET ON LT.
TYPE C (4'X8') (H=10'9")
CONNECT EXISTING 72"X296' C.M.PIPE
AS INLET AND OUTLET

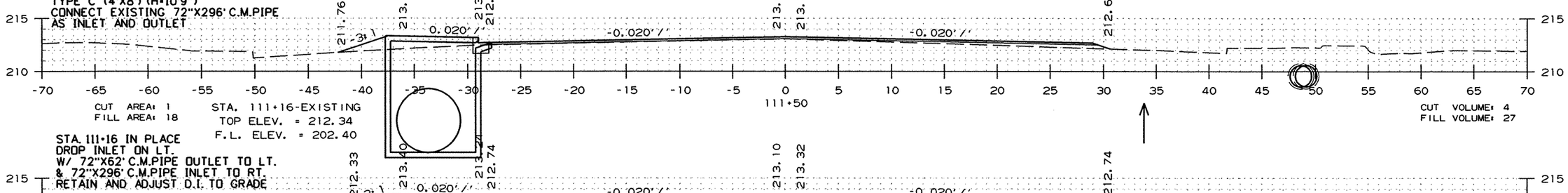


CUT AREA: 1
FILL AREA: 21

CUT VOLUME: 2
FILL VOLUME: 36

TOP ELEV. = 213.30
F.L. ELEV. = 202.51

STA. 111+50 CONSTRUCT
DROP INLET ON LT.
TYPE C (4'X8') (H=10'9")
CONNECT EXISTING 72"X296' C.M.PIPE
AS INLET AND OUTLET

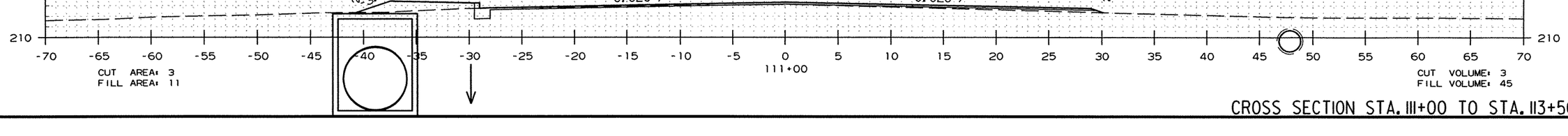


CUT AREA: 1
FILL AREA: 18

CUT VOLUME: 4
FILL VOLUME: 27

STA. 111+16-EXISTING
TOP ELEV. = 212.34
F.L. ELEV. = 202.40

STA. 111+16 IN PLACE
DROP INLET ON LT.
W/ 72"X62' C.M.PIPE OUTLET TO LT.
& 72"X296' C.M.PIPE INLET TO RT.
RETAIN AND ADJUST D.I. TO GRADE



CUT AREA: 3
FILL AREA: 11

CUT VOLUME: 3
FILL VOLUME: 45

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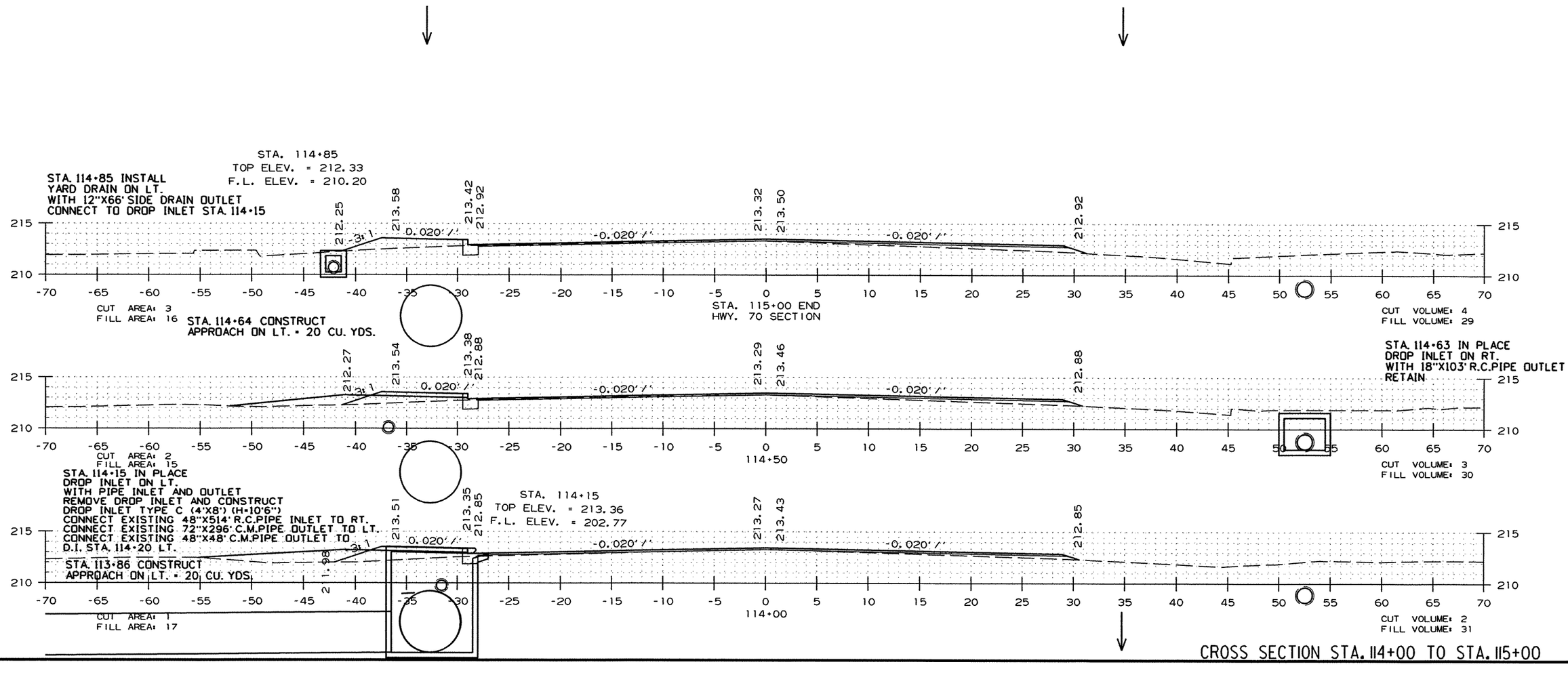
CROSS SECTION STA. 111+00 TO STA. 113+50

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.		110533	85	96

(2) CROSS SECTIONS

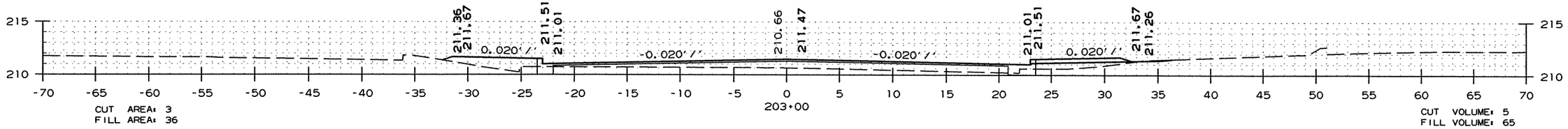


R110533.DGN 3/3/2011

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.		110533	86	96

(2) CROSS SECTIONS

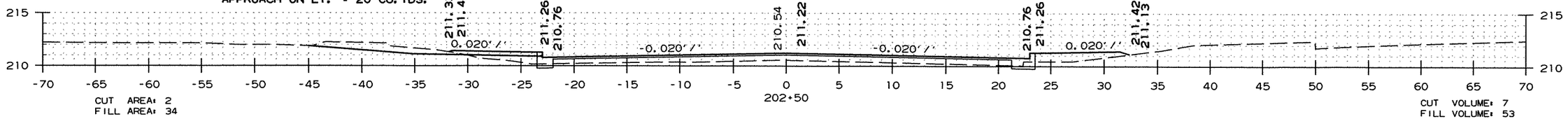
STA. 203+19 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.



CUT AREA: 3
FILL AREA: 36

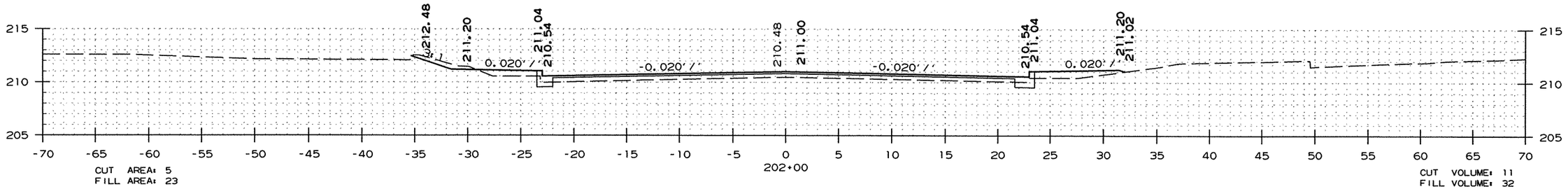
CUT VOLUME: 5
FILL VOLUME: 65

STA. 202+59 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.



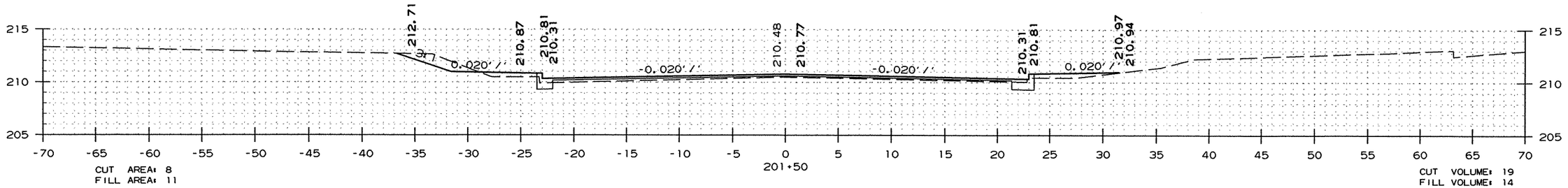
CUT AREA: 2
FILL AREA: 34

CUT VOLUME: 7
FILL VOLUME: 53



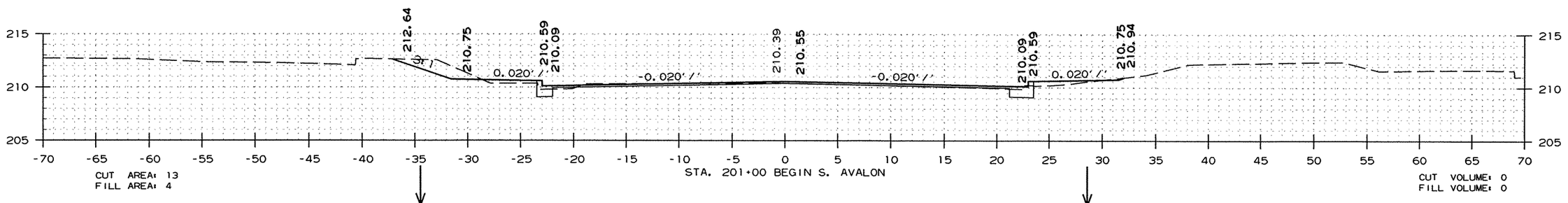
CUT AREA: 5
FILL AREA: 23

CUT VOLUME: 11
FILL VOLUME: 32



CUT AREA: 8
FILL AREA: 11

CUT VOLUME: 19
FILL VOLUME: 14



CUT AREA: 13
FILL AREA: 4

CUT VOLUME: 0
FILL VOLUME: 0

CROSS SECTION STA. 201+00 TO STA. 203+00

R110533.DGN 3/3/2011

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				6	ARK.			
				JOB NO.		110533	87	96

(2) CROSS SECTIONS

STA. 110+73 (HWY. 70) IN PLACE
DROP INLET ON RT.
W/24"X74' R.C.PIPE INLET
& 24"X82' R.C.PIPE OUTLET TO
DROP INLET STA. 111+61 RT.
REMOVE DROP INLET AND CONSTRUCT
DROP INLET (H=3'9") ON RT. STA. 110+73
REMOVE 4' OF 24"X74' R.C. PIPE INLET
CONNECT TO DROP INLET STA. 110+73
EXTEND 24"X82' PIPE OUTLET 4' LT.
CONNECT TO DROP INLET STA. 110+73
TYPE MO DROP INLET = 4' DIA.

STA. 110+73 (HWY. 70)
TOP ELEV. = 212.44
F.L. ELEV. = 208.69

STA. 111+41 (HWY. 70) CONSTRUCT
DROP INLET ON RT. (H=3'9")
CONNECT TO EXIST 24"X74
R.C.PIPE OUTLET TO STA. 111+61 RT.
AS INLET AND OUTLET
TYPE MO D.I. = 4' DIA.

STA. 111+40 (HWY. 70)
TOP ELEV. = 212.42
F.L. ELEV. = 208.57

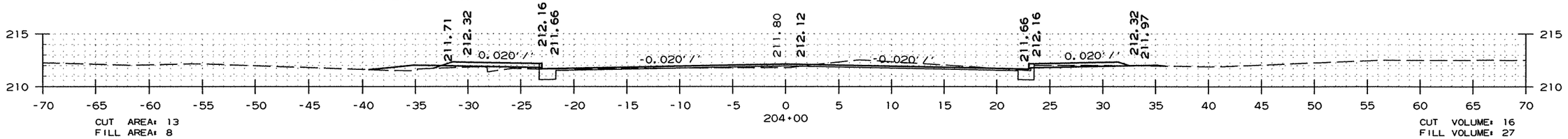
STA. 111+61 IN PLACE
DROP INLET ON RT.
W/ 18" PIPE INLET FROM SOUTH
& 24"X178' C.M. PIPE OUTLET TO
DROP INLET STA. 113+42 RT.
RETAIN

STA. 111+61-EXISTING (HWY. 70)
TOP ELEV. = 211.47
F.L. ELEV. = 208.54

CUT AREA: 11
FILL AREA: 2

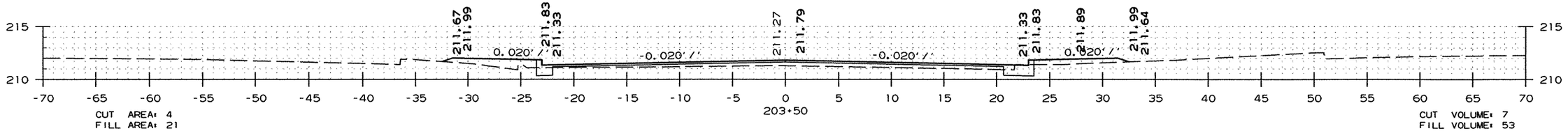
CUT VOLUME: 21
FILL VOLUME: 9

STA. 203+78 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.



CUT AREA: 13
FILL AREA: 8

CUT VOLUME: 16
FILL VOLUME: 27



CUT AREA: 4
FILL AREA: 21

CUT VOLUME: 7
FILL VOLUME: 53

CROSS SECTION STA. 203+50 TO STA. 204+49

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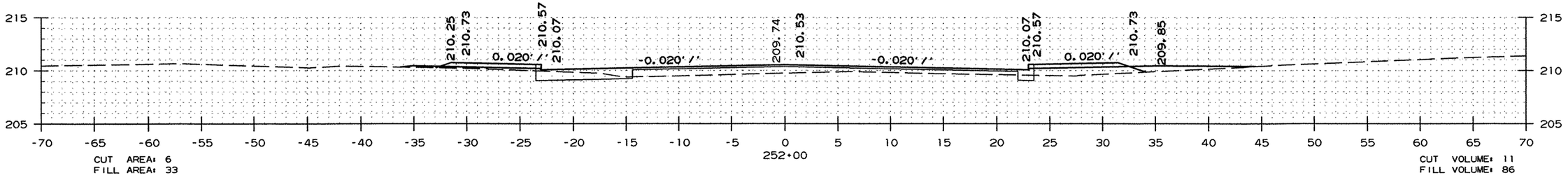
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	88	96

(2) CROSS SECTIONS

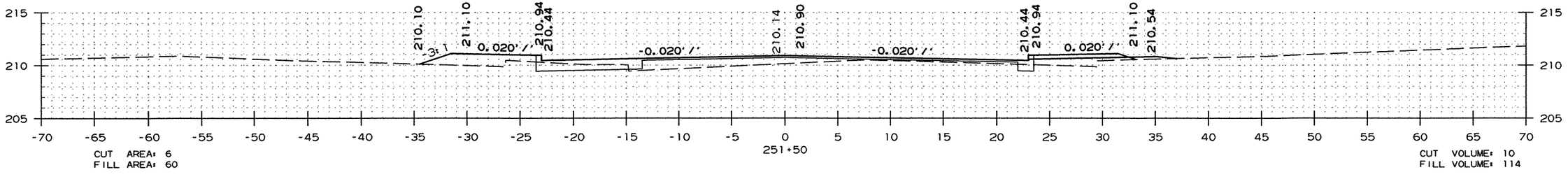
STA. 252+01 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.



CUT AREA: 6
FILL AREA: 33

CUT VOLUME: 11
FILL VOLUME: 86

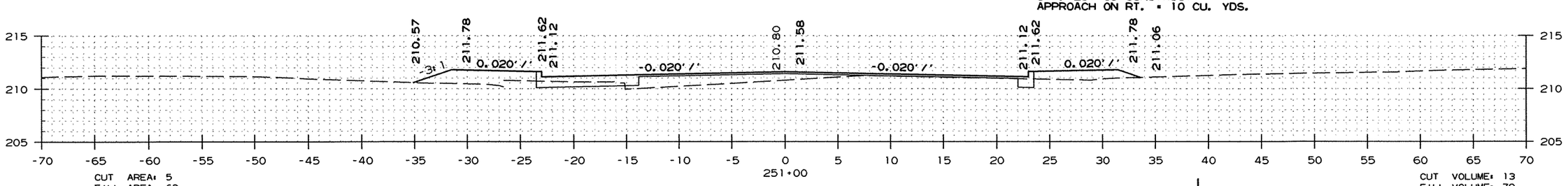
STA. 252+51 CONSTRUCT
APPROACH ON RT. = 25 CU. YDS.



CUT AREA: 6
FILL AREA: 60

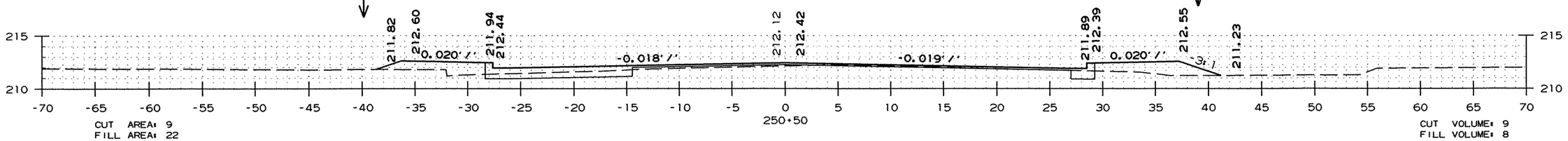
CUT VOLUME: 10
FILL VOLUME: 114

STA. 251+69 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.



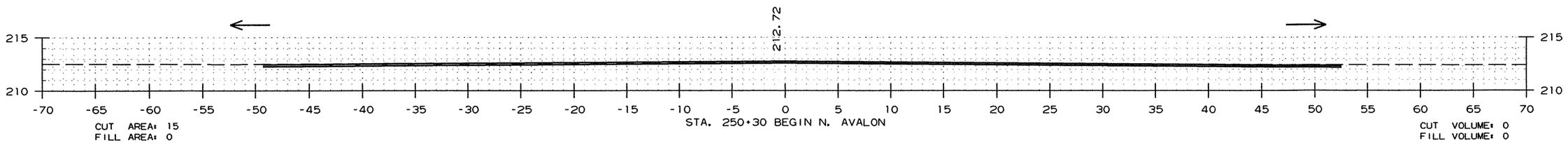
CUT AREA: 5
FILL AREA: 63

CUT VOLUME: 13
FILL VOLUME: 79



CUT AREA: 9
FILL AREA: 22

CUT VOLUME: 9
FILL VOLUME: 8



CUT AREA: 15
FILL AREA: 0

CUT VOLUME: 0
FILL VOLUME: 0

CROSS SECTION STA. 250+30 TO STA. 252+00

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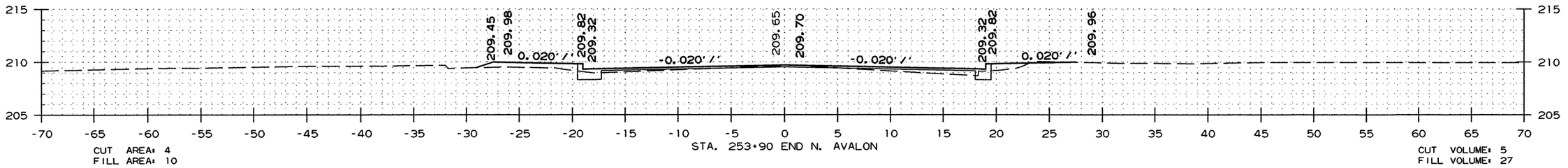
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	89	96

(2) CROSS SECTIONS

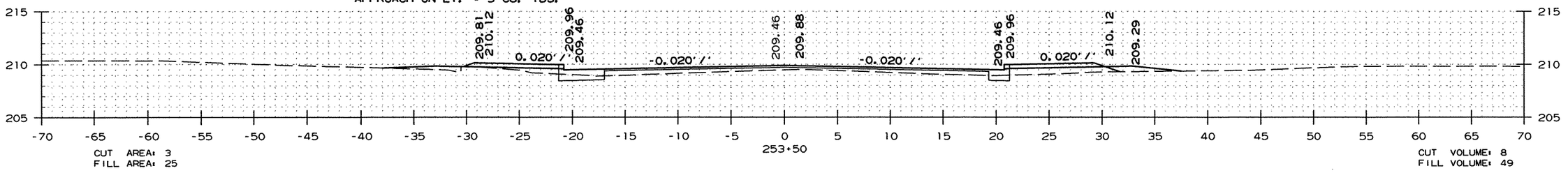


CUT AREA: 4
FILL AREA: 10

CUT VOLUME: 5
FILL VOLUME: 27

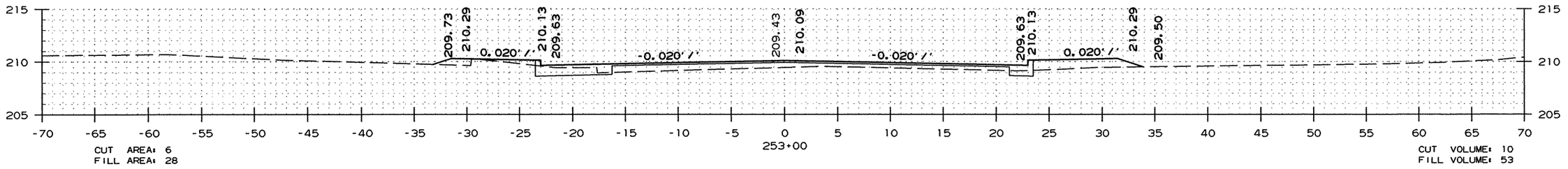
STA. 253+71 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STA. 253+25 CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.



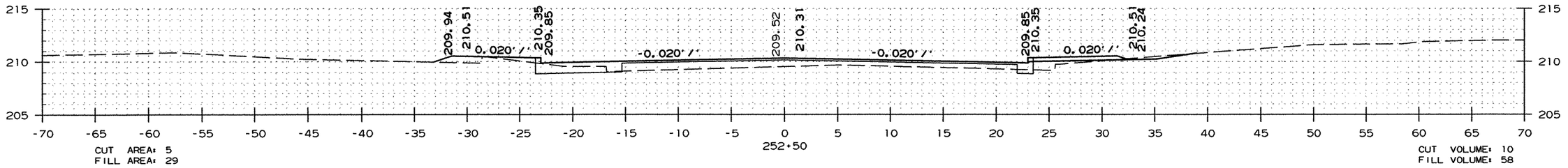
CUT AREA: 3
FILL AREA: 25

CUT VOLUME: 8
FILL VOLUME: 49



CUT AREA: 6
FILL AREA: 28

CUT VOLUME: 10
FILL VOLUME: 53



CUT AREA: 5
FILL AREA: 29

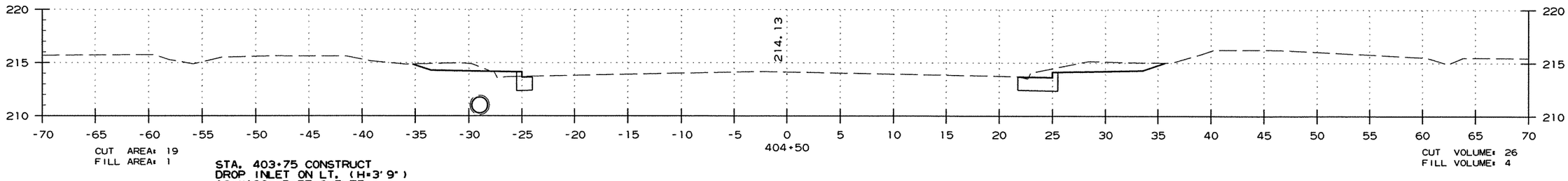
CUT VOLUME: 10
FILL VOLUME: 58

CROSS SECTION STA. 252+50 TO STA. 253+90

R110533.DGN 3/3/2011

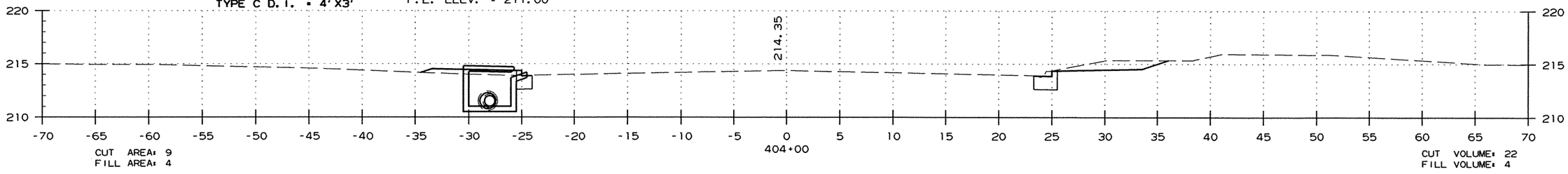
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	90	96

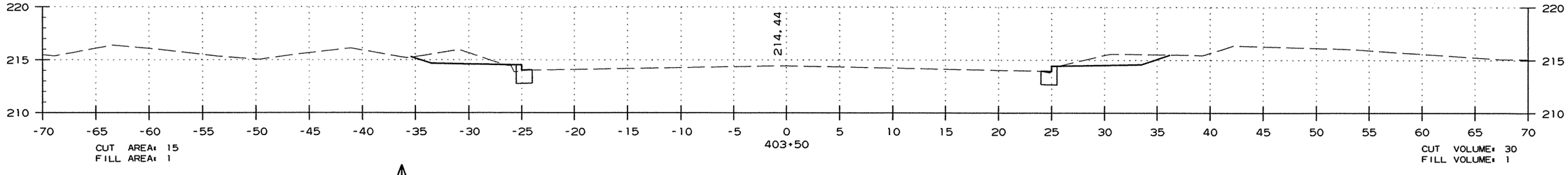
(2) CROSS SECTIONS

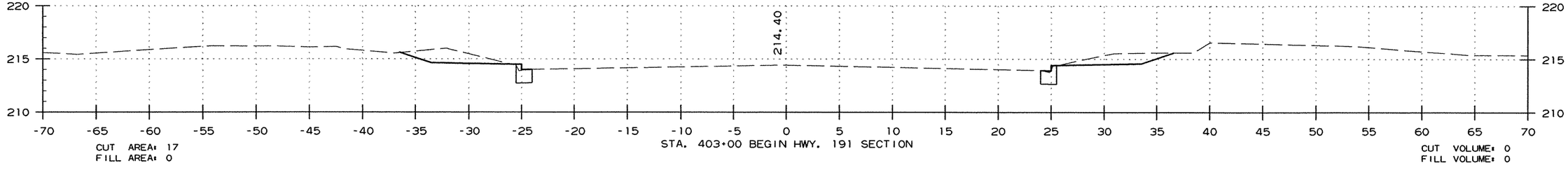


STA. 403+75 CONSTRUCT
DROP INLET ON LT. (H=3'9")
18"X198' PIPE OUTLET
TO D.I. STA. 405+77 LT.
TYPE MO D.I. = 4' DIA.
TYPE C D.I. = 4'X3'

TOP ELEV. = 214.70
F.L. ELEV. = 211.00







CROSS SECTION STA. 403+00 TO STA. 404+50

ZBORDER.CEL 8/30/2010

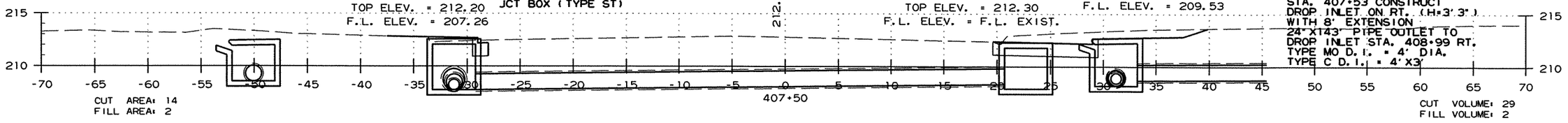
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110533	91	96

(2) CROSS SECTIONS

STA. 407+66 IN PLACE
DROP INLET ON LT.
W/ 18"X64' R.C.PIPE OUTLET
TO DROP INLET AT STA. 408+33 LT.
RETAIN

STA. 407+53 IN PLACE
DROP INLET ON LT.
TYPE ST WITH
24"X76' R.C. PIPE OUTLET
TO LT. - RETAIN
RETAIN D.I. AND MODIFY TO
JCT BOX (TYPE ST)

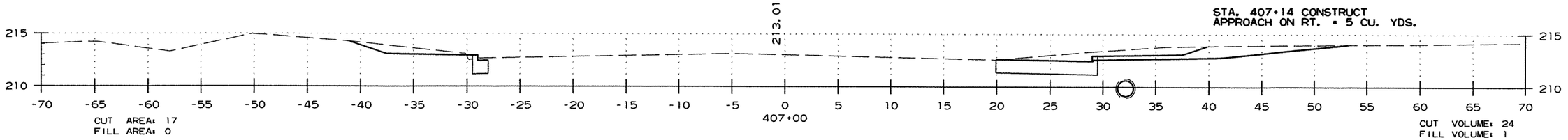
STA. 407+54 IN PLACE
DROP INLET ON RT.
W/ 18"X52' R.C.PIPE OUTLET
TO D.I. STA. 407+53 LT. - RETAIN
RETAIN DROP INLET AND MODIFY
TO JCT. BOX (TYPE ST)



CUT AREA: 14
FILL AREA: 2

STA. 407+53 CONSTRUCT
DROP INLET ON RT. (H=3'3")
WITH 8' EXTENSION
24"X143' PIPE OUTLET TO
DROP INLET STA. 408+99 RT.
TYPE MO D.I. = 4' DIA.
TYPE C D.I. = 4'X3'

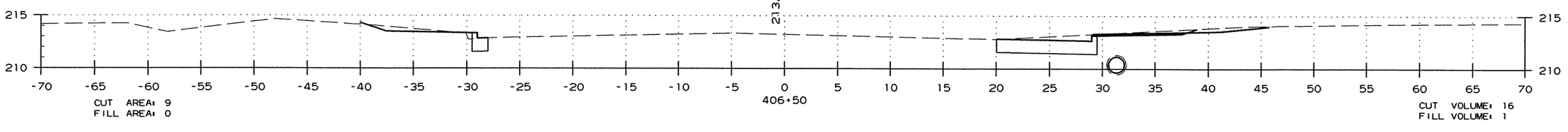
CUT VOLUME: 29
FILL VOLUME: 2



CUT AREA: 17
FILL AREA: 0

STA. 407+14 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

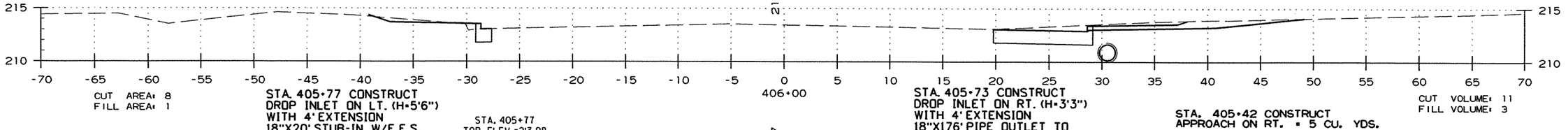
CUT VOLUME: 24
FILL VOLUME: 1



CUT AREA: 9
FILL AREA: 0

STA. 406+54 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

CUT VOLUME: 16
FILL VOLUME: 1



CUT AREA: 8
FILL AREA: 1

STA. 406+00 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

CUT VOLUME: 11
FILL VOLUME: 3

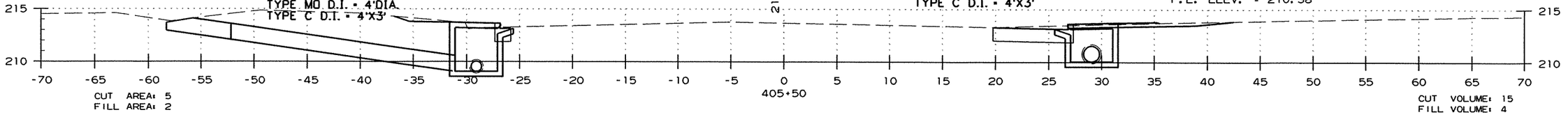
STA. 405+77 CONSTRUCT
DROP INLET ON LT. (H=5'6")
WITH 4' EXTENSION
18"X20' STUB-IN W/F.E.S.
18"X172' PIPE OUTLET
TO JCT. BOX STA. 407+53 LT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

STA. 405+77
TOP ELEV.=213.98
F.L. ELEV.=208.60

STA. 405+73 CONSTRUCT
DROP INLET ON RT. (H=3'3")
WITH 4' EXTENSION
18"X176' PIPE OUTLET TO
STA. 407+53 RT.
TYPE MO D.I. = 4'DIA.
TYPE C D.I. = 4'X3'

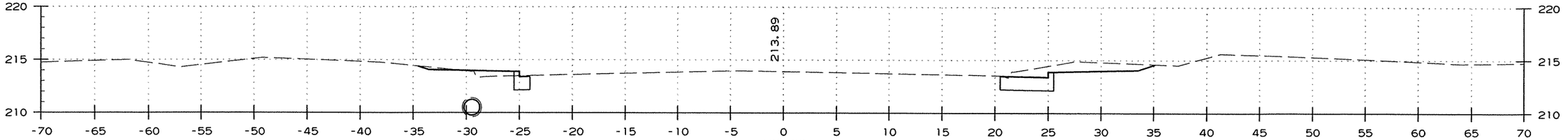
STA. 405+42 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

TOP ELEV. = 213.57
F.L. ELEV. = 210.38



CUT AREA: 5
FILL AREA: 2

CUT VOLUME: 15
FILL VOLUME: 4



CUT AREA: 12
FILL AREA: 2

CUT VOLUME: 29
FILL VOLUME: 3

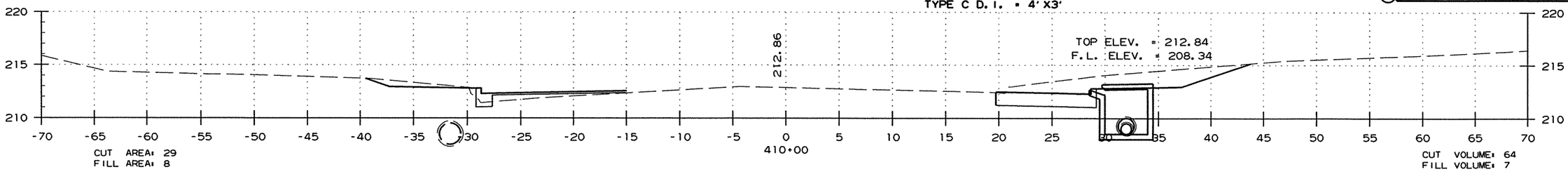
CROSS SECTION STA. 405+00 TO STA. 407+50

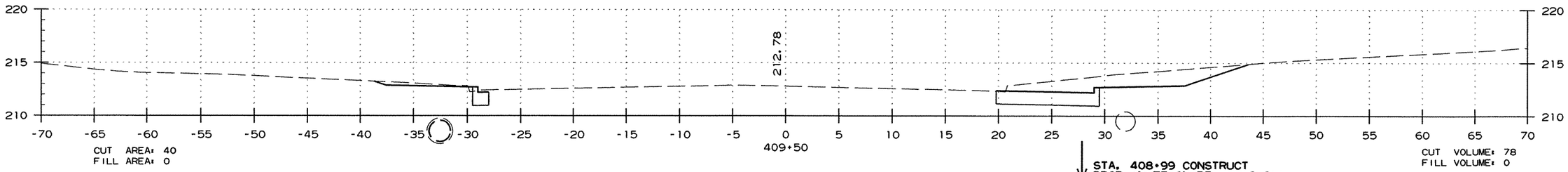
ZBORDER.CEL 8/30/2010

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.		110533	92	96

(2) CROSS SECTIONS

STA. 410+00 CONSTRUCT
DROP INLET ON RT. (H=4'6")
WITH 4' EXTENSION
24"X115' PIPE OUTLET TO
DROP INLET STA. 411+18 RT.
TYPE MO D.I. = 4' DIA.
TYPE C D.I. = 4'X3'

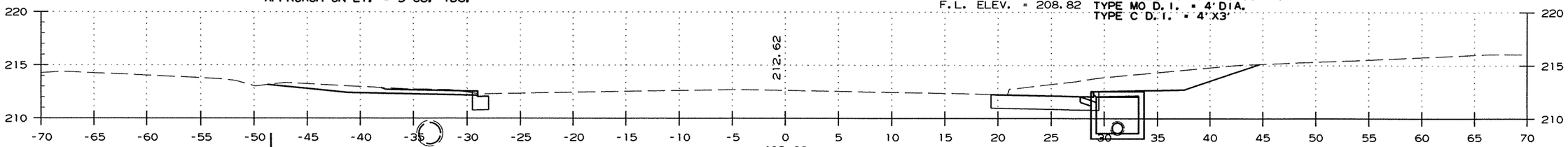




STA. 408+99 CONSTRUCT
DROP INLET ON RT. (H=3'9")
WITH 4' EXTENSION
24"X97' PIPE OUTLET TO
DROP INLET STA. 410+00 RT.
TYPE MO D.I. = 4' DIA.
TYPE C D.I. = 4'X3'

STA. 409+10 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

TOP ELEV. = 212.56
F.L. ELEV. = 208.82



STA. 408+34 IN PLACE
DROP INLET ON LT.
W/ 18"X238' R.C. PIPE INLET
& 18"X11' R.C.PIPE OUTLET TO
JCT BOX STA. 408+33 LT.
RETAIN

STA. 408+38 CONSTRUCT
DROP INLET ON LT.(H=4'6")
W/ 4' EXTENSION
18"X7' PIPE OUTLET TO DROP INLET
STA. 408+33 LT.
DROP INLET (TYPE MO) = 4' DIA.
DROP INLET (TYPE C) = 4'X3'

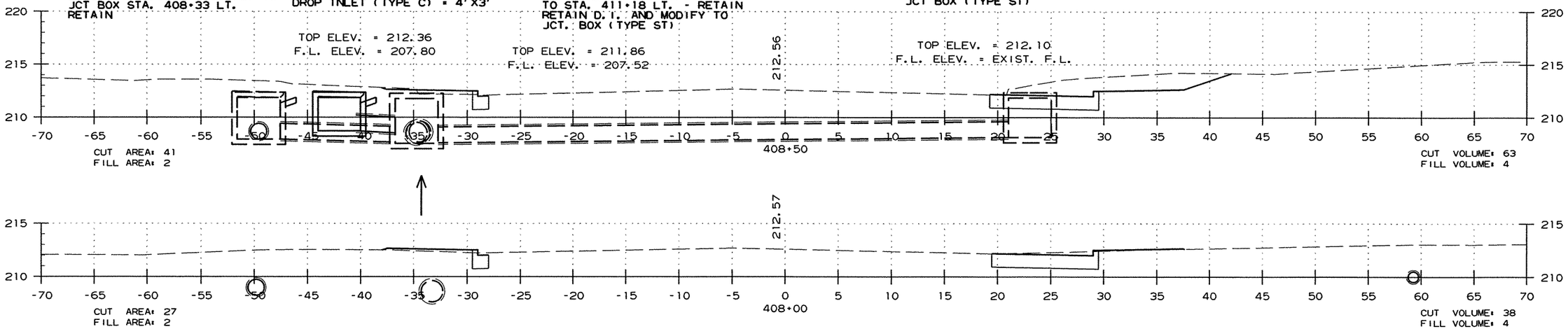
STA. 408+33 IN PLACE
DROP INLET ON LT.
W/ 18"X282' R.C.PIPE OUTLET
TO STA. 411+18 LT. - RETAIN
RETAIN D.I. AND MODIFY TO
JCT. BOX (TYPE ST)

STA. 408+33 IN PLACE
DROP INLET ON RT.
W/ 18"X55' R.C.PIPE OUTLET TO
D.I. STA. 408+33 LT. - RETAIN
RETAIN D.I. AND MODIFY TO
JCT BOX (TYPE ST)

TOP ELEV. = 212.36
F.L. ELEV. = 207.80

TOP ELEV. = 211.86
F.L. ELEV. = 207.52

TOP ELEV. = 212.10
F.L. ELEV. = EXIST. F.L.

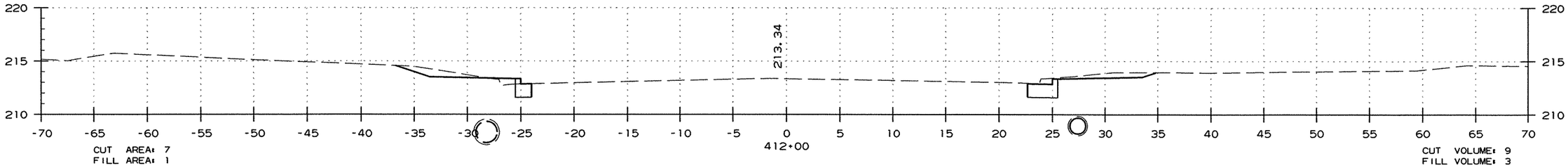


CROSS SECTION STA. 408+00 TO STA. 410+00

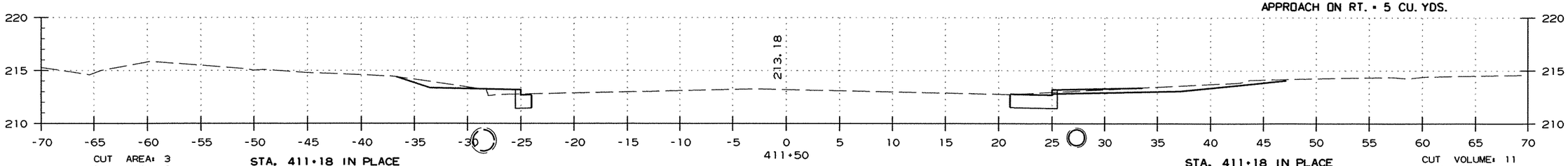
ZBORDER.CEL 8/30/2010

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.		110533	93	96

(2) CROSS SECTIONS



STA. 411+56 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

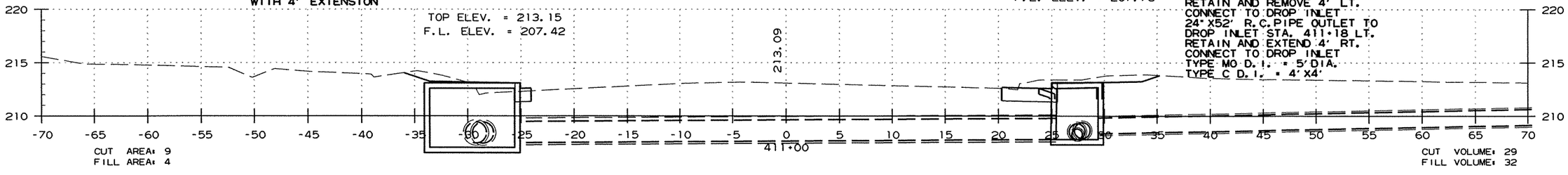


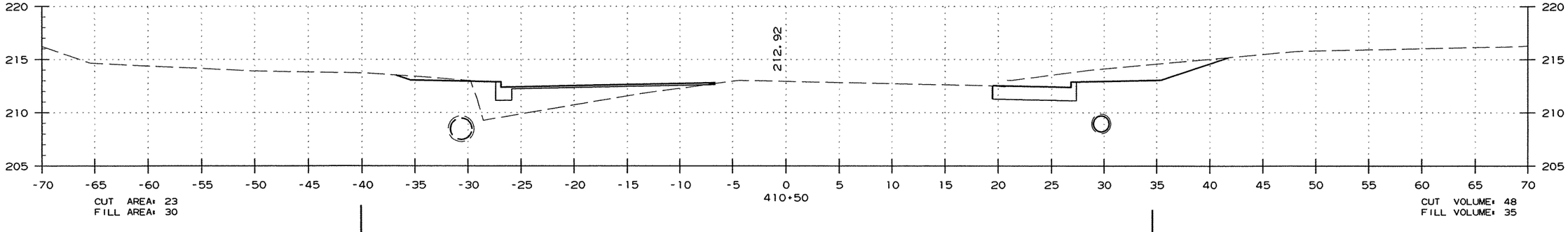
STA. 411+18 IN PLACE
DROP INLET ON LT.
W/ 24" R.C. PIPE OUTLET
TO RT. - RETAIN
REMOVE D.I. AND CONSTRUCT
DROP INLET (TYPE C)(4'X8')(H=5'9")
WITH 4' EXTENSION

TOP ELEV. = 213.15
F.L. ELEV. = 207.42

TOP ELEV. = 213.18
F.L. ELEV. = 207.78

STA. 411+18 IN PLACE
DROP INLET ON RT.
REMOVE AND CONSTRUCT
DROP INLET (H=5'6")
WITH 4' EXTENSION
18" R.C. PIPE INLET
RETAIN AND REMOVE 4' LT.
CONNECT TO DROP INLET
24"X52' R.C. PIPE OUTLET TO
DROP INLET STA. 411+18 LT.
RETAIN AND EXTEND 4' RT.
CONNECT TO DROP INLET
TYPE MO D.I. = 5' DIA.
TYPE C D.I. = 4'X4'



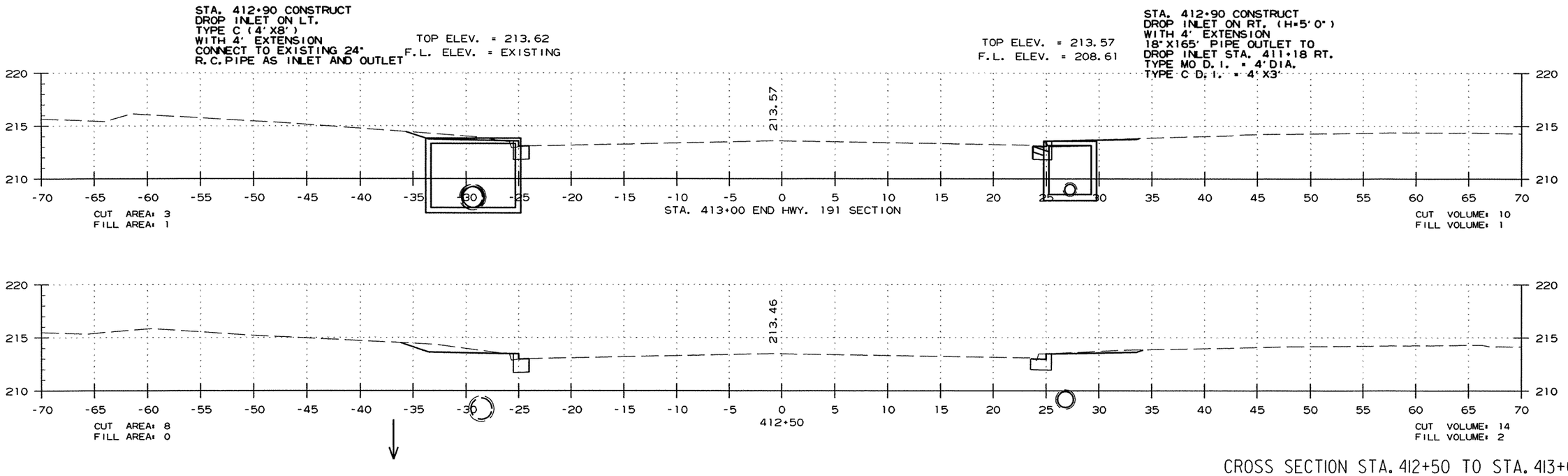


CROSS SECTION STA. 410+50 TO STA. 412+00

ZBORDER.CEL 8/30/2010

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.		110533	94	96

(2) CROSS SECTIONS

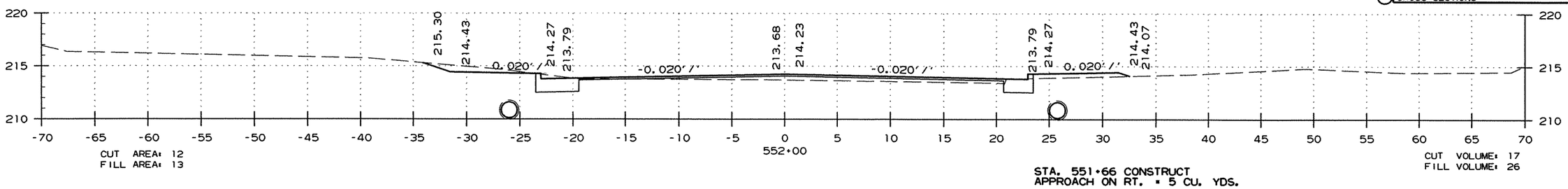


CROSS SECTION STA. 412+50 TO STA. 413+00

ZBORDER.CEL 8/30/2010

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.		110533	95	96

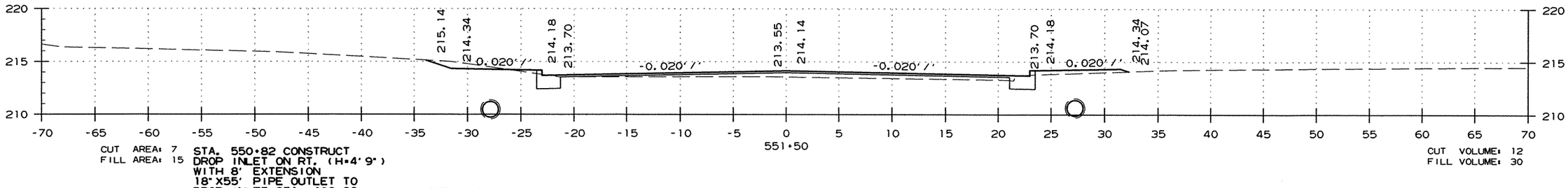
(2) CROSS SECTIONS



CUT AREA: 12
FILL AREA: 13

CUT VOLUME: 17
FILL VOLUME: 26

STA. 551+66 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.



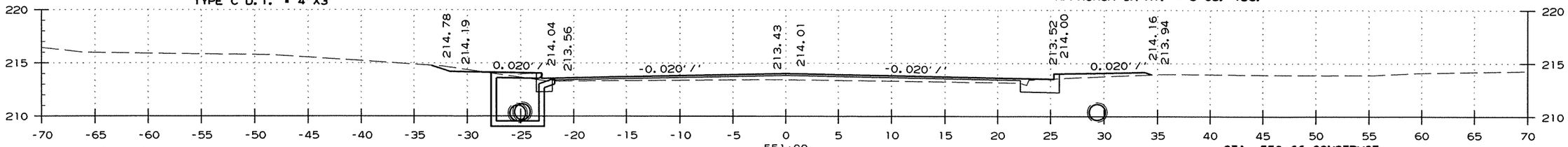
CUT AREA: 7
FILL AREA: 15

STA. 550+82 CONSTRUCT
DROP INLET ON RT. (H=4'9")
WITH 8' EXTENSION
18"X55' PIPE OUTLET TO
DROP INLET STA. 408+33
TYPE MO D.I. = 4' DIA.
TYPE C D.I. = 4'X3'

TOP ELEV. = 213.90
F.L. ELEV. = 209.22

CUT VOLUME: 12
FILL VOLUME: 30

STA. 551+02 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

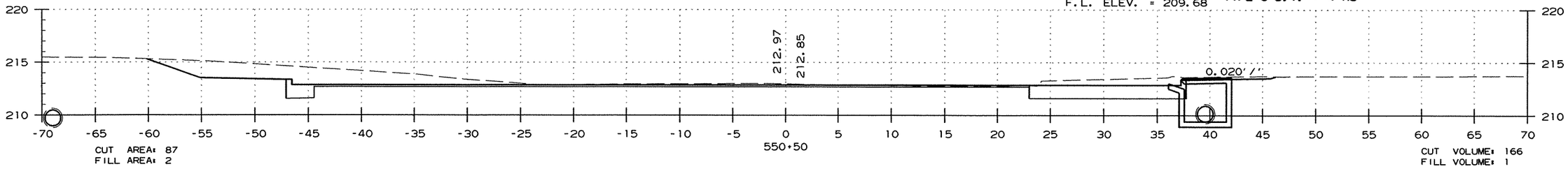


CUT AREA: 5
FILL AREA: 17

STA. 550+66 CONSTRUCT
DROP INLET ON RT. (H=4'0")
WITH 8' EXTENSION
18"X34' PIPE OUTLET TO
DROP INLET STA. 407+53 RT.
TYPE MO D.I. = 4' DIA.
TYPE C D.I. = 4'X3'

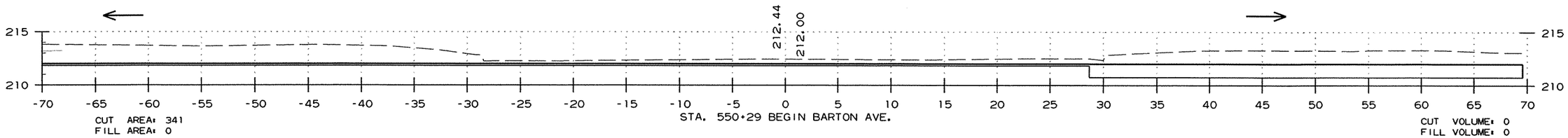
CUT VOLUME: 85
FILL VOLUME: 18

TOP ELEV. = 213.64
F.L. ELEV. = 209.68



CUT AREA: 87
FILL AREA: 2

CUT VOLUME: 166
FILL VOLUME: 1



CUT AREA: 341
FILL AREA: 0

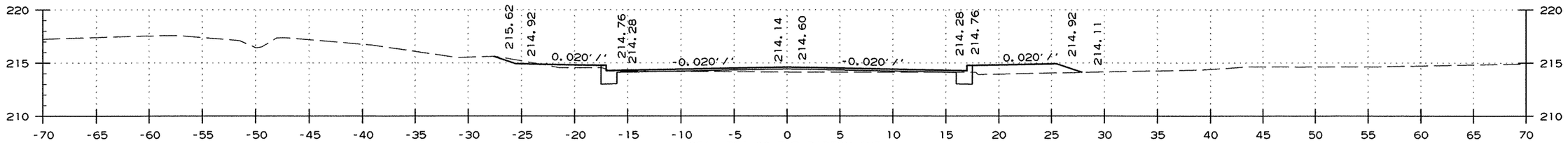
CUT VOLUME: 0
FILL VOLUME: 0

CROSS SECTION STA. 550+29 TO STA. 552+00

ZBORDER.CEL 8/30/2010

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.		110533	96	96

(2) CROSS SECTIONS



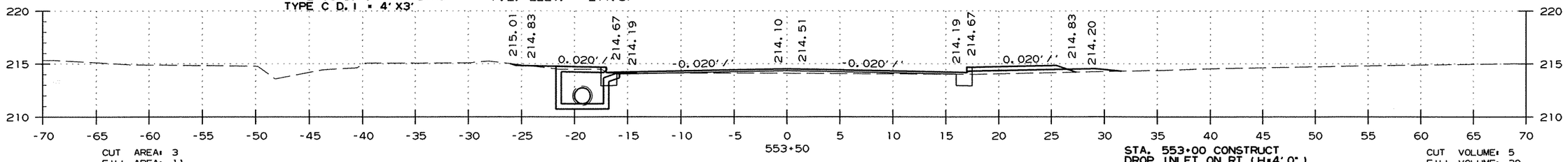
CUT AREA: 4
FILL AREA: 13

CUT VOLUME: 6
FILL VOLUME: 22

STA. 553+50 CONSTRUCT
DROP INLET ON LT. (H=2'9")
WITH 4' EXTENSION
18"X264' PIPE OUTLET TO
STA. 408+37 RT. HWY. 191
TYPE MO D.I. = 4' DIA.
TYPE C D.I. = 4'X3'

TOP ELEV. = 214.67
F.L. ELEV. = 211.87

STA. 553+48 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.



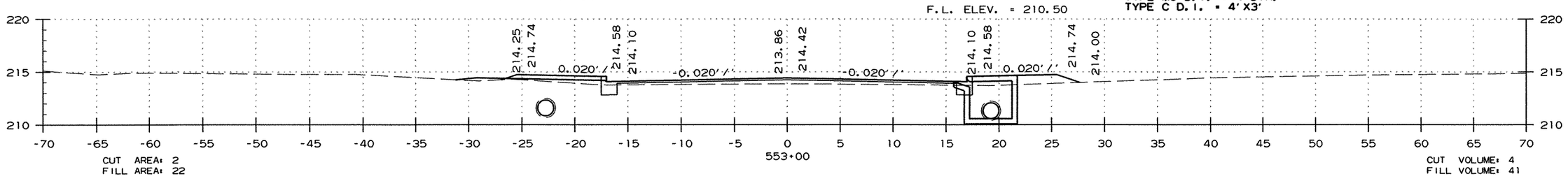
CUT AREA: 3
FILL AREA: 11

STA. 553+00 CONSTRUCT
DROP INLET ON RT (H=4'0")
WITH OPENING IN BACK
18"X230' PIPE OUTLET TO
DROP INLET STA. 407+80 RT. HWY. 191
TYPE MO D.I. = 4' DIA.
TYPE C D.I. = 4'X3'

CUT VOLUME: 5
FILL VOLUME: 30

STA. 553+11 CONSTRUCT
APPROACH ON LT. = 10 CU. YDS.

TOP ELEV. = 214.50
F.L. ELEV. = 210.50

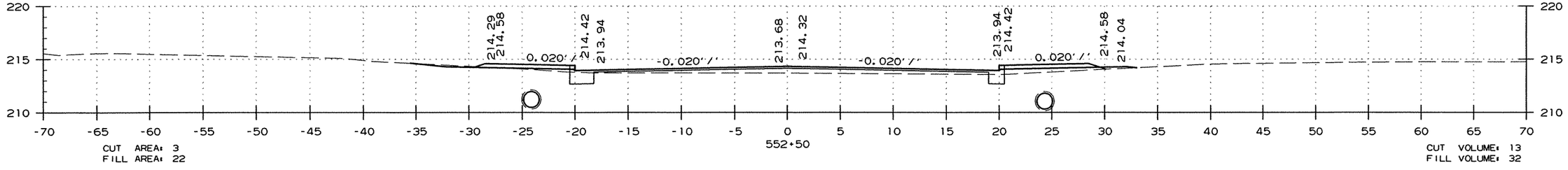


CUT AREA: 2
FILL AREA: 22

CUT VOLUME: 4
FILL VOLUME: 41

STA. 552+40 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STA. 552+57 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.



CUT AREA: 3
FILL AREA: 22

CUT VOLUME: 13
FILL VOLUME: 32

CROSS SECTION STA. 552+50 TO STA. 554+00

ZBORDER.CEL 8/30/2010