

JOB 090375

10/30/2014 8:06:32 AM
WORKSPACE: AHTD - Huntsville SignalDrawings\1090375-111.dgn
REVISED DATE:

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS

| 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. | | 090375 | 1 | 24 |
| ② HWY. 23/HWY. 23C SIGNAL (HUNTSVILLE) (S) | | | | | | | | |

PROJECT LOCATION

HWY. 23/HWY. 23C SIGNAL
(HUNTSVILLE) (S)

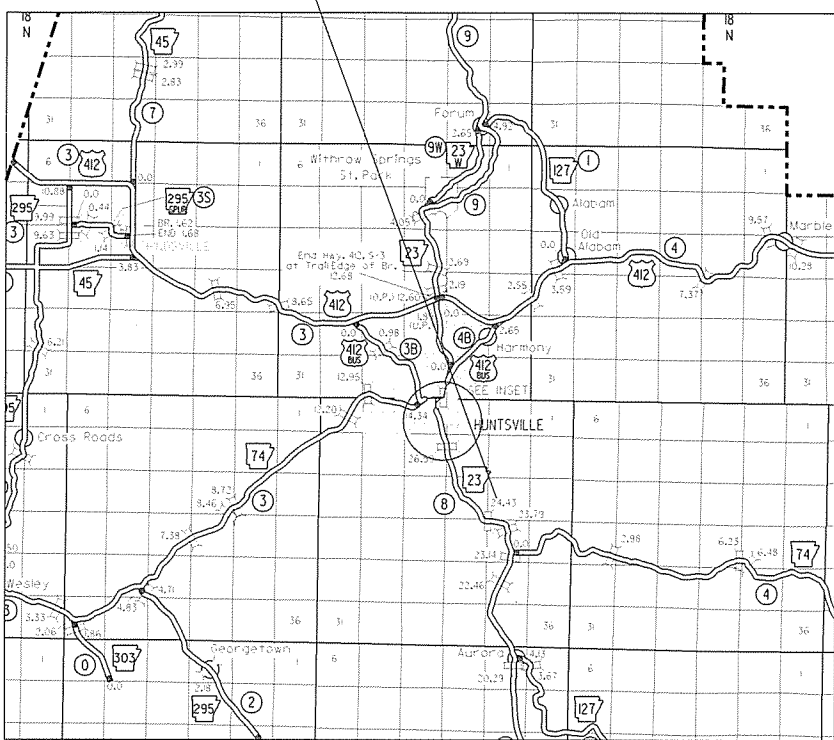
MADISON COUNTY

ROUTE 23, SECTION 8
ROUTE 23C, SECTION 8C

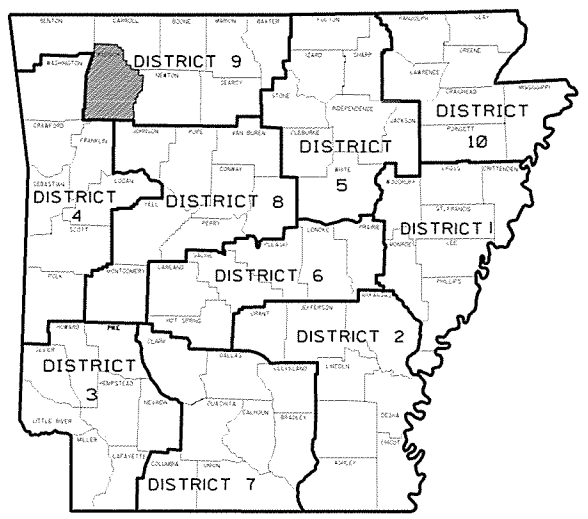
FAP NO. STP-0044(I2)

JOB 09 037 5

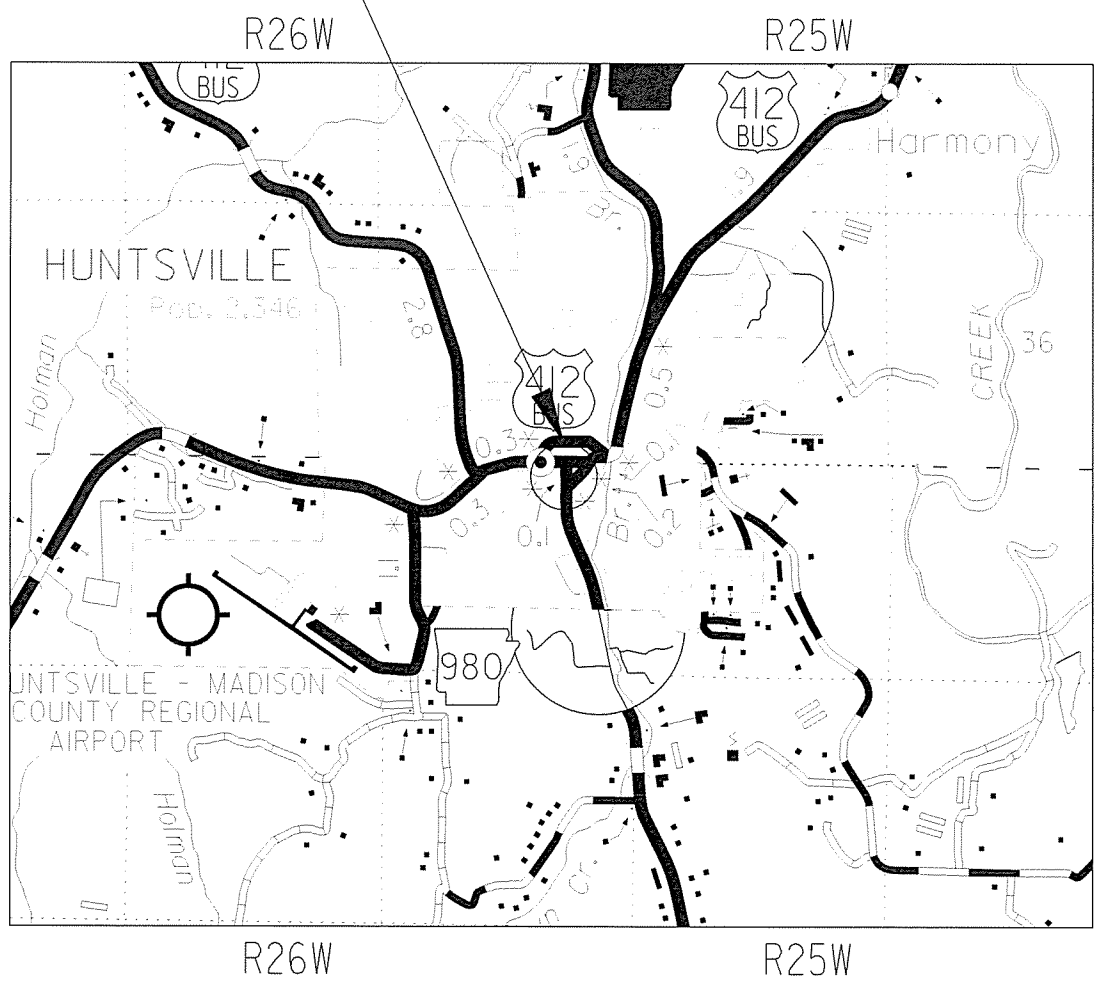
HWY. 23/HWY. 23C



VICINITY MAP

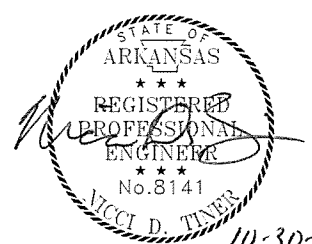
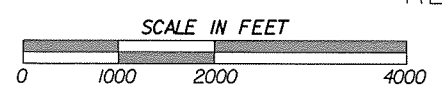


ARKANSAS HIGHWAY DISTRICT 9



MID POINT OF PROJECT

Long. 93°44'07" W
Lat. 36°05'09" N



10-30-14

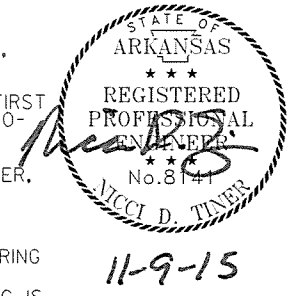
| SHEET NO. | TITLE | DRAWING NO. | DATE |
|-----------|--|-------------|----------|
| 1 | TITLE SHEET | | |
| 2 | INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND NOTES | | |
| 3 | SUMMARY OF QUANTITIES AND REVISIONS | | |
| 4 | SURVEY CONTROL DETAIL SHEET | | |
| 5 | MAINTENANCE OF TRAFFIC | | |
| 6-7 | CURB DETAILS | | |
| 8 | PERMANENT PAVEMENT MARKINGS | | |
| 9-II | SIGNALIZATION PLANS | | |
| 12 | CURBING DETAILS | CG-1 | 11-29-07 |
| 13 | PAVEMENT MARKING DETAILS | PM-1 | 9-12-13 |
| 14 | LOOP DETECTOR INSTALLATION | SD-4 | 9-12-13 |
| 15 | CONTROLLER CABINET UTILITY DRAWER | SD-5 | 9-12-13 |
| 16 | HEAVY DUTY PULL BOX | SD-6 | 9-02-15 |
| 17 | SIGNAL HEAD PLACEMENT | SD-8 | 9-12-13 |
| 18 | SERVICE POINT | SD-9 | 9-12-13 |
| 19 | STEEL POLE WITH MAST ARM | SD-II | 2-27-14 |
| 20 | STANDARD TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION | TC-1 | 9-02-15 |
| 21 | STANDARD TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION | TC-2 | 9-02-15 |
| 22 | STANDARD TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION | TC-3 | 9-02-15 |
| 23 | WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS | WR-1 | 11-10-05 |
| 24 | WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS | WR-2 | 10-09-03 |

| 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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| | | | | | | | | 24 |

2 INDEX OF SHEETS, GOVERNING SPECS., & NOTES

TRAFFIC SIGNAL NOTES

- PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2014) NATIONAL ELECTRICAL CODE, NFPA 101(2012) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
- 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.
- ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY TO A SERVICE POLE WITH EXTERNAL RAIN TIGHT 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, ARE NEEDED 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.
- CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
- TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.
- CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
- 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.
- 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 AS SHOWN IN THE DETAILS MAY BE USED.
- TRAFFIC SIGNAL POLES SHALL BE GALVANIZED, BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
- 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, AHTO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.
- CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
- LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
- 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.
- 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 FEET 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.
- 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.
- 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 IS KEYPED INTO COMPETENT ROCK.
- CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HANDHOLE 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 POLE WITH FOUNDATION.
- CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.
- 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.
- 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.
- 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.



GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON THE PLANS.
- ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- 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.
- 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.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

GOVERNING SPECIFICATIONS

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

| NUMBER | TITLE |
|------------|---|
| ERRATA | ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS |
| FHWA-1273 | REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS |
| FHWA-1273 | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS |
| FHWA-1273 | SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140) |
| FHWA-1273 | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES |
| FHWA-1273 | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS |
| FHWA-1273 | SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS |
| FHWA-1273 | SUPPLEMENT - WAGE RATE DETERMINATION |
| 100-3 | CONTRACTOR'S LICENSE |
| 108-1 | LIQUIDATED DAMAGES |
| 604-1 | RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES |
| JOB 090375 | BIDDING REQUIREMENTS AND CONDITIONS |
| JOB 090375 | CABINET DRAWER ASSEMBLY |
| JOB 090375 | DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES |
| JOB 090375 | EDGE CARD VIDEO PROCESSOR |
| JOB 090375 | ELECTRICAL CONDUCTORS FOR LUMINAIRES |
| JOB 090375 | ELECTRICAL CONDUCTORS-IN-CONDUIT |
| JOB 090375 | LED COUNTDOWN PEDESTRIAN SIGNAL HEAD |
| JOB 090375 | LED TRAFFIC SIGNAL HEAD |
| JOB 090375 | LUMINAIRE ASSEMBLY (CUTOFF TYPE) |
| JOB 090375 | MANDATORY ELECTRONIC CONTRACT |
| JOB 090375 | SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES) |
| JOB 090375 | STREET NAME SIGN (MAST ARM MOUNTED) |
| JOB 090375 | UTILITY ADJUSTMENTS |
| JOB 090375 | VIDEO DETECTOR (COLOR) |

LOCATION: HWY. 23/HWY. 23C
 CITY: HUNTSVILLE
 COUNTY: MADISON
 DISTRICT: 9 SCALE: 1" = 40' DRAWN BY: CEM

| 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. | 090375 | | 3 | 24 |

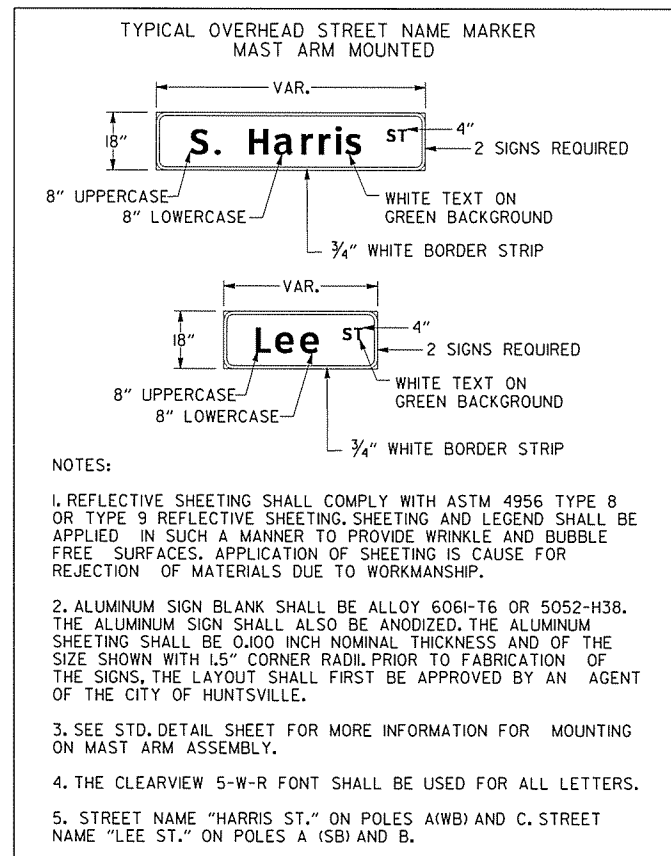
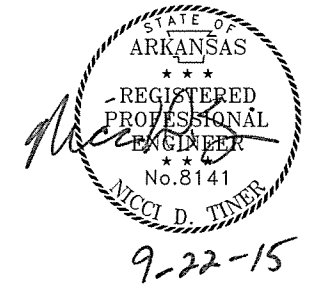
(2) SUMMARY OF QUANTITIES AND REVISIONS

| SUMMARY OF QUANTITIES | | | |
|-----------------------|--|----------|----------|
| ITEM NO. | ITEM | QUANTITY | UNIT |
| 202 | REMOVAL AND DISPOSAL OF CURB AND GUTTER | 51 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE WALKS | 29 | SQ. YD. |
| 210 | UNCLASSIFIED EXCAVATION | 6 | CU. YD. |
| 601 | MOBILIZATION | 1.00 | L.S. |
| 603 | MAINTENANCE OF TRAFFIC | 1.00 | L.S. |
| 604 | REMOVAL OF PERMANENT PAVEMENT MARKINGS | 2380 | LIN. FT. |
| SS&604 | SIGNS | 72 | SQ. FT. |
| SS&604 | TRAFFIC DRUMS | 23 | EACH |
| 620 | WATER | 0.1 | M.G. |
| 624 | SOLID SODDING | 55 | SQ. YD. |
| 633 | CONCRETE WALKS | 26 | SQ. YD. |
| 633 | CONCRETE WALKS (TYPE SPECIAL) | 78 | SQ. YD. |
| 634 | CONCRETE COMBINATION CURB AND GUTTER (TYPE A)(2' 0") | 184 | LIN. FT. |
| 641 | WHEELCHAIR RAMPS (TYPE 3) | 4 | SQ. YD. |
| 641 | WHEELCHAIR RAMPS (TYPE 6) | 16 | SQ. YD. |
| SP & 701 | ACTUATED CONTROLLER TS2-TYPE 2 (8 PHASES) | 1 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) | 8 | EACH |
| SP & 707 | COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED | 2 | EACH |
| 708 | TRAFFIC SIGNAL CABLE (5c/14 A.W.G.) | 1108 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (12c/14 A.W.G.) | 429 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (1.25") | 15 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (1.25") | 8 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (2") | 116 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (3") | 186 | LIN. FT. |
| 711 | CONCRETE PULL BOX (TYPE 1) | 3 | EACH |
| 711 | CONCRETE PULL BOX (TYPE 2) | 1 | EACH |
| 711 | CONCRETE PULL BOX (TYPE 1 HD) | 1 | EACH |
| 711 | CONCRETE PULL BOX (TYPE 2 HD) | 2 | EACH |
| 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (18') | 1 | EACH |
| 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36') | 1 | EACH |
| 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (22'-44') | 1 | EACH |
| 715 | TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION | 2 | EACH |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (4") | 1200 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (12") | 124 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING YELLOW (4") | 1000 | LIN. FT. |
| 721 | RAISED PAVEMENT MARKERS (TYPE II) | 15 | EACH |
| SP & 733 | VEHICLE DETECTOR RACK (16 CHANNEL) | 1 | EACH |
| 733 | VIDEO CABLE | 631 | LIN. FT. |
| SP & 733 | VIDEO DETECTOR (CLR) | 5 | EACH |
| 733 | VIDEO MONITOR (CLR) | 1 | EACH |
| SP & 733 | VIDEO PROCESSOR, EDGE CARD (2 CAMERA) | 3 | EACH |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (2c/6 A.W.G.) | 23 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/8 A.W.G, E.G.C.) | 418 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/12 A.W.G, E.G.C.) | 150 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS FOR LUMINAIRES | 418 | LIN. FT. |
| SP | LUMINAIRE ASSEMBLY | 3 | EACH |
| SP | SERVICE POINT ASSEMBLY (2 CIRCUITS) | 1 | EACH |
| SP | 18" STREET NAME SIGN | 4 | EACH |

* ONE ADDITIONAL VIDEO DETECTOR AND ONE ADDITIONAL VIDEO PROCESSOR, EDGE CARD SHALL BE PROVIDED FOR FUTURE USE.

REVISIONS

| DATE | REVISION | SHEET NUMBER |
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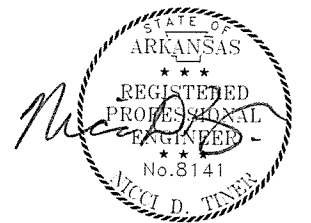
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 REVISION DATE:

LOCATION: HWY. 23/HWY. 23C
 CITY: HUNTSVILLE
 COUNTY: MADISON
 DISTRICT: 9 SCALE: 1" = 100' DRAWN BY: CEM

DATE: 09/22/15 FILE NAME: t090375.qty.dgn

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2 SURVEY CONTROL DETAIL SHEET

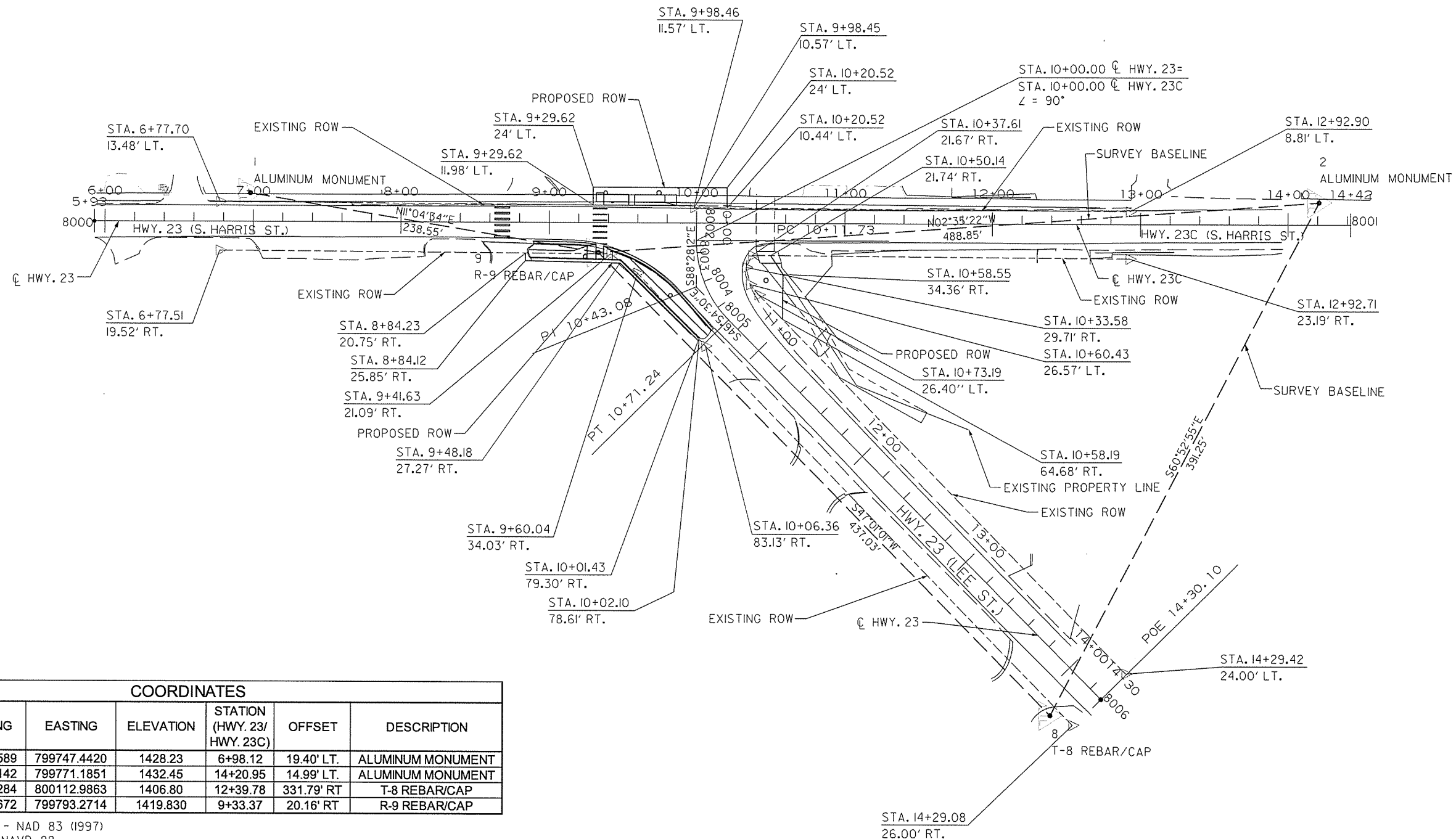


10-30-14

| CENTERLINE POINTS | | | | |
|-------------------|----------------------|----------|-------------|-------------|
| NUMBER | TYPE | STATION | NORTHING | EASTING |
| 8000 | POB HWY. 23/HWY. 23C | 5+92.93 | 642006.489 | 799764.0170 |
| 8001 | POE HWY. 23/HWY. 23C | 14+42.12 | 642855.3952 | 799786.7330 |
| 8002 | POB HWY. 23 | 10+00.00 | 642413.4117 | 799774.9059 |
| 8003 | PC HWY. 23 | 10+11.73 | 642413.0980 | 799786.6280 |
| 8004 | PI HWY. 23 | 10+43.08 | 642412.2592 | 799817.9733 |
| 8005 | PT HWY. 23 | 10+71.24 | 642433.6810 | 799840.8717 |
| 8006 | POE HWY. 23 | 14+30.10 | 642678.8420 | 800102.9330 |

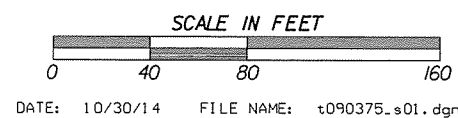
⊕ CONSTRUCTION HWY. 23

P.I. = 10+43.08
 $\Delta = 44^{\circ}37'28''$ LT.
 $D = 74^{\circ}59'09''$
 $T = 31.36'$
 $R = 76.41'$
 $L = 59.51'$
 $P.C. = 10+11.73$
 $P.T. = 10+71.24$



| COORDINATES | | | | | | |
|-------------|-------------|-------------|-----------|----------------------------|------------|-------------------|
| POINT | NORTHING | EASTING | ELEVATION | STATION (HWY. 23/HWY. 23C) | OFFSET | DESCRIPTION |
| 1 | 642112.1589 | 799747.4420 | 1428.23 | 6+98.12 | 19.40' LT. | ALUMINUM MONUMENT |
| 2 | 642834.6142 | 799771.1851 | 1432.45 | 14+20.95 | 14.99' LT. | ALUMINUM MONUMENT |
| 8 | 642644.2284 | 800112.9863 | 1406.80 | 12+39.78 | 331.79' RT | T-8 REBAR/CAP |
| 9 | 642346.2672 | 799793.2714 | 1419.830 | 9+33.37 | 20.16' RT | R-9 REBAR/CAP |

HORIZONTAL DATUM - NAD 83 (1997)
 VERTICAL DATUM - NAVD 88
 BASIS OF BEARINGS - ARKANSAS STATE PLANE COORDINATES (GRID)
 DETERMINED FROM GPS CONTROL POINTS 880088-880088A
 ALL DISTANCES ARE GROUND



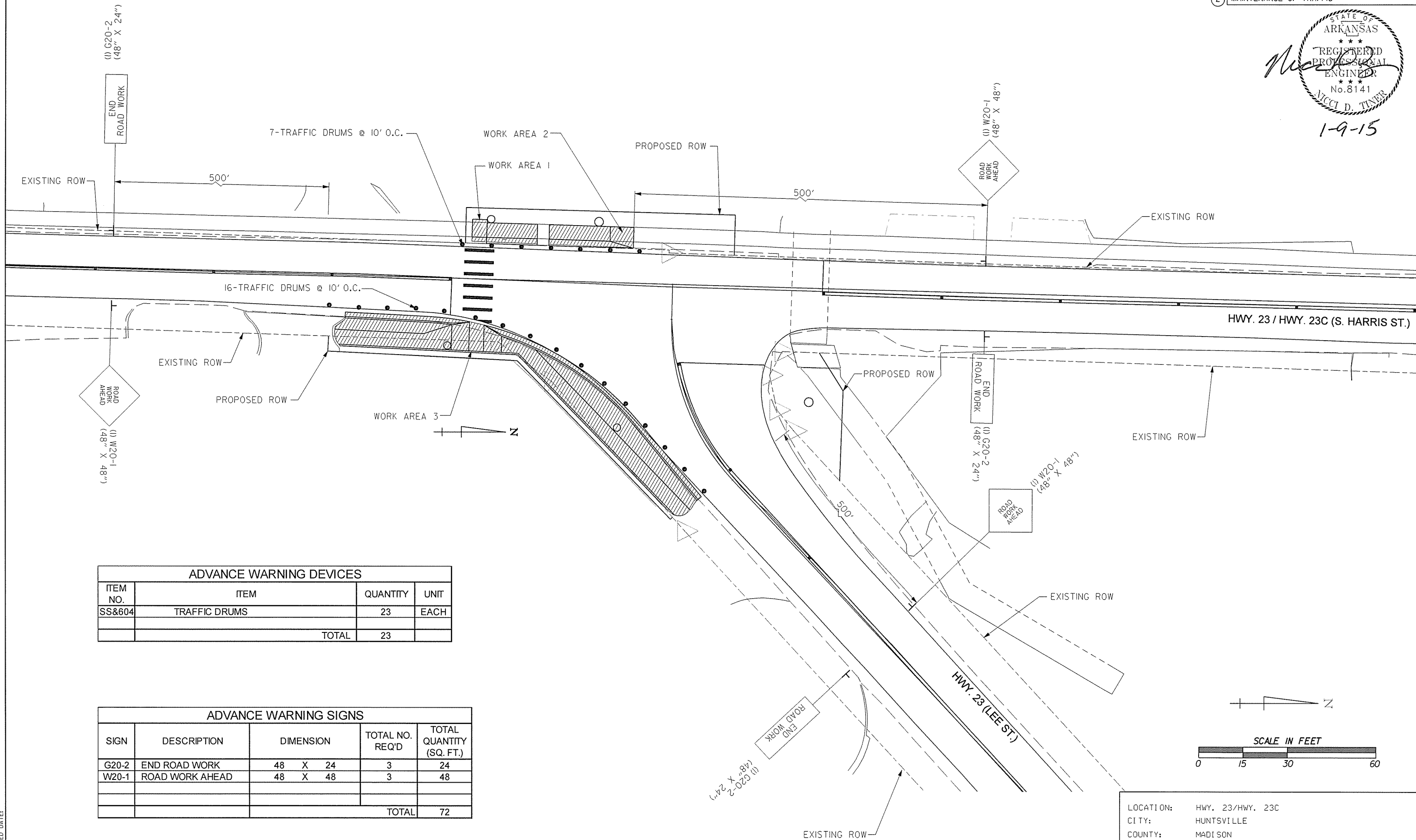
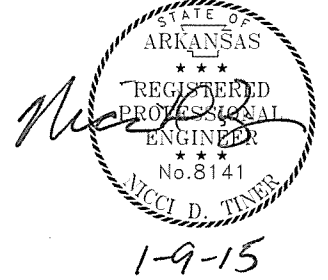
LOCATION: HWY. 23/HWY. 23C
 CITY: HUNTSVILLE
 COUNTY: MADISON
 DISTRICT: 9 SCALE: AS SHOWN DRAWN BY: CEM

10/30/2014 8:10:33 AM
 CEMkinney
 WORKSPACE: AHTD
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 REVISION DATE:

TYPE 2 HD PULL BOX
TYPE 2 PULL BOX

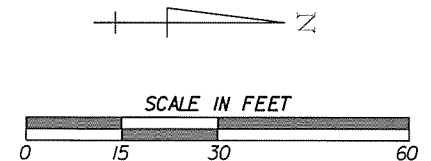
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| | | | | 9 | ARK. | | | |
| | | | | JOB NO. | 090375 | 5 | 24 | |

② MAINTENANCE OF TRAFFIC



| ADVANCE WARNING DEVICES | | | |
|-------------------------|---------------|----------|------|
| ITEM NO. | ITEM | QUANTITY | UNIT |
| SS&604 | TRAFFIC DRUMS | 23 | EACH |
| TOTAL | | 23 | |

| ADVANCE WARNING SIGNS | | | | |
|-----------------------|-----------------|-----------|-----------------|--------------------------|
| SIGN | DESCRIPTION | DIMENSION | TOTAL NO. REQ'D | TOTAL QUANTITY (SQ. FT.) |
| G20-2 | END ROAD WORK | 48 X 24 | 3 | 24 |
| W20-1 | ROAD WORK AHEAD | 48 X 48 | 3 | 48 |
| TOTAL | | | 72 | |



LOCATION: HWY. 23/HWY. 23C
CITY: HUNTSVILLE
COUNTY: MADISON
DISTRICT: 9
SCALE: AS SHOWN
DRAWN BY: AMP

DATE: 01/09/15 FILE NAME: t090375_mot.dgn

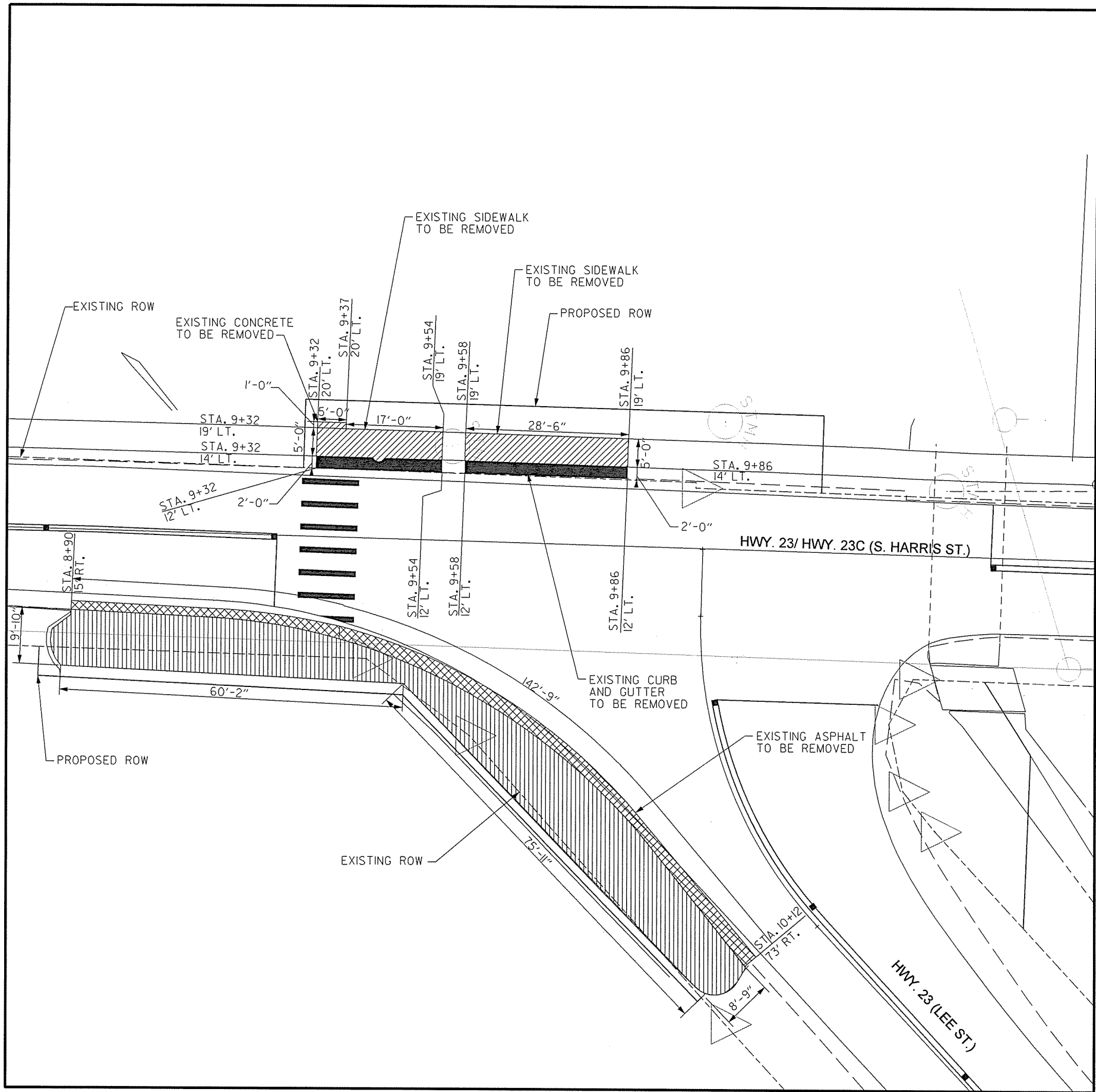
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 CEM@kinney WORKSPACES AHTD
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 REVISION DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS | |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|----|
| | | | | 9 | ARK. | | | | |
| JOB NO. | | | | | | | 090375 | 6 | 24 |

② CURB DETAILS



11-5-14



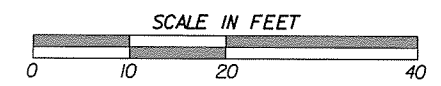
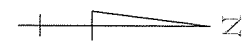
REMOVAL

| REMOVAL AND DISPOSAL ITEMS | | | | | |
|----------------------------|---------|------------------------|---------------|---------------|---------------|
| STA. | STA. | LOCATION S. HARRIS ST. | CURB & GUTTER | CONCRETE WALK | DESCRIPTION |
| | | | LIN. FT. | SQ. YD. | |
| 9+31.75 | 9+53.85 | LT. | 22 | | EXISTING CURB |
| 9+31.78 | 9+53.79 | LT. | | 13 | EXISTING WALK |
| 9+57.85 | 9+86.39 | LT. | 29 | | EXISTING CURB |
| 9+57.79 | 9+86.39 | LT. | | 16 | EXISTING WALK |
| TOTALS: | | | 51 | 29 | |

| EARTHWORK | | | | |
|-----------|----------|------------------------|-------------------------|---------------------------|
| STA. | STA. | LOCATION S. HARRIS ST. | UNCLASSIFIED EXCAVATION | DESCRIPTION |
| | | | CU. YD. | |
| 8+89.64 | 10+11.73 | RT. | 6 | EXISTING ASPHALT PAVEMENT |
| TOTALS: | | | 6 | |

LEGEND

- EXISTING CONCRETE CURB AND GUTTER TO BE REMOVED
- CUT AND REMOVE EXISTING ASPHALT PAVEMENT (PRICE SHALL BE INCLUDED IN APPROPRIATE PAY ITEMS)
- EXISTING SIDEWALK TO BE REMOVED
- EXISTING GRASS TO BE REMOVED



DATE: 11/05/14 FILE NAME: t090375_dt11.dgn

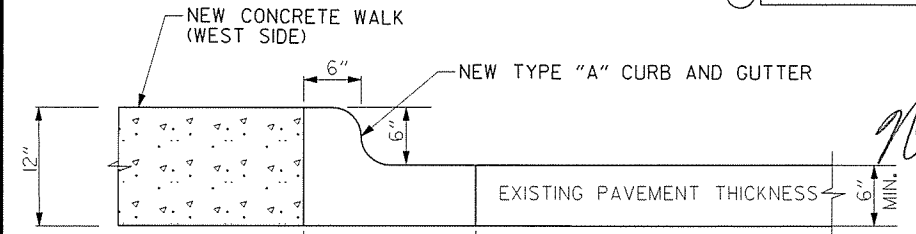
NOTE: STATIONING AND OFFSETS REFERENCED FROM @ S. HARRIS ST.

LOCATION: HWY. 23/HWY. 23C
 CITY: HUNTSVILLE
 COUNTY: MADISON
 DISTRICT: 9 SCALE: AS SHOWN DRAWN BY: AMP

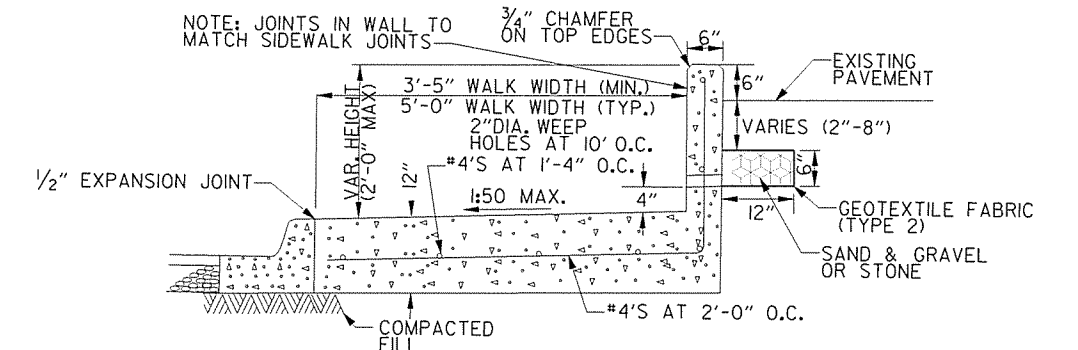
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 REVISION DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| | | | | 9 | ARK. | | | |
| JOB NO. | | | | | | 090375 | 7 | 24 |

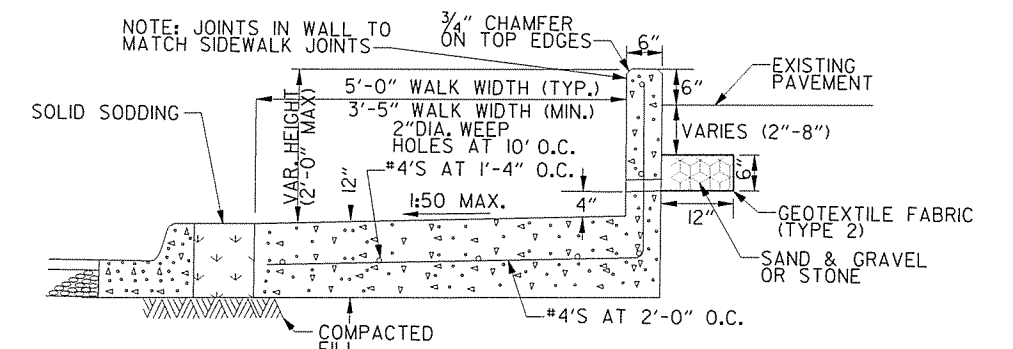
② CURB DETAILS



TYPE "A" CONCRETE COMBINATION CURB AND GUTTER

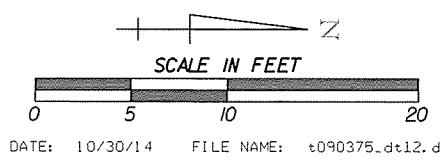


CONCRETE WALK (TYPE SPECIAL) DETAILS



CONCRETE WALK (TYPE SPECIAL) DETAILS

| CURB AND RAMP QUANTITIES | | | |
|--------------------------|--|----------|----------|
| ITEM NO. | ITEM | QUANTITY | UNIT |
| 620 | WATER | 0.1 | M.G. |
| 624 | SOLID SODDING | 55 | SQ. YD. |
| 633 | CONCRETE WALKS | 26 | SQ. YD. |
| 633 | CONCRETE WALKS (TYPE SPECIAL) | 78 | SQ. YD. |
| 634 | CONCRETE COMBINATION CURB AND GUTTER (TYPE A)(2' 0") | 184 | LIN. FT. |
| 641 | WHEELCHAIR RAMPS (TYPE 3) | 4 | SQ. YD. |
| 641 | WHEELCHAIR RAMPS (TYPE 6) | 16 | SQ. YD. |



LOCATION: HWY. 23/HWY. 23C
 CITY: HUNTSVILLE
 COUNTY: MADISON
 DISTRICT: 9 SCALE: AS SHOWN DRAWN BY: AMP

LEGEND

- CONCRETE WALK
- CONCRETE CURB
- CONCRETE WALK (SPECIAL)
- SOLID SODDING

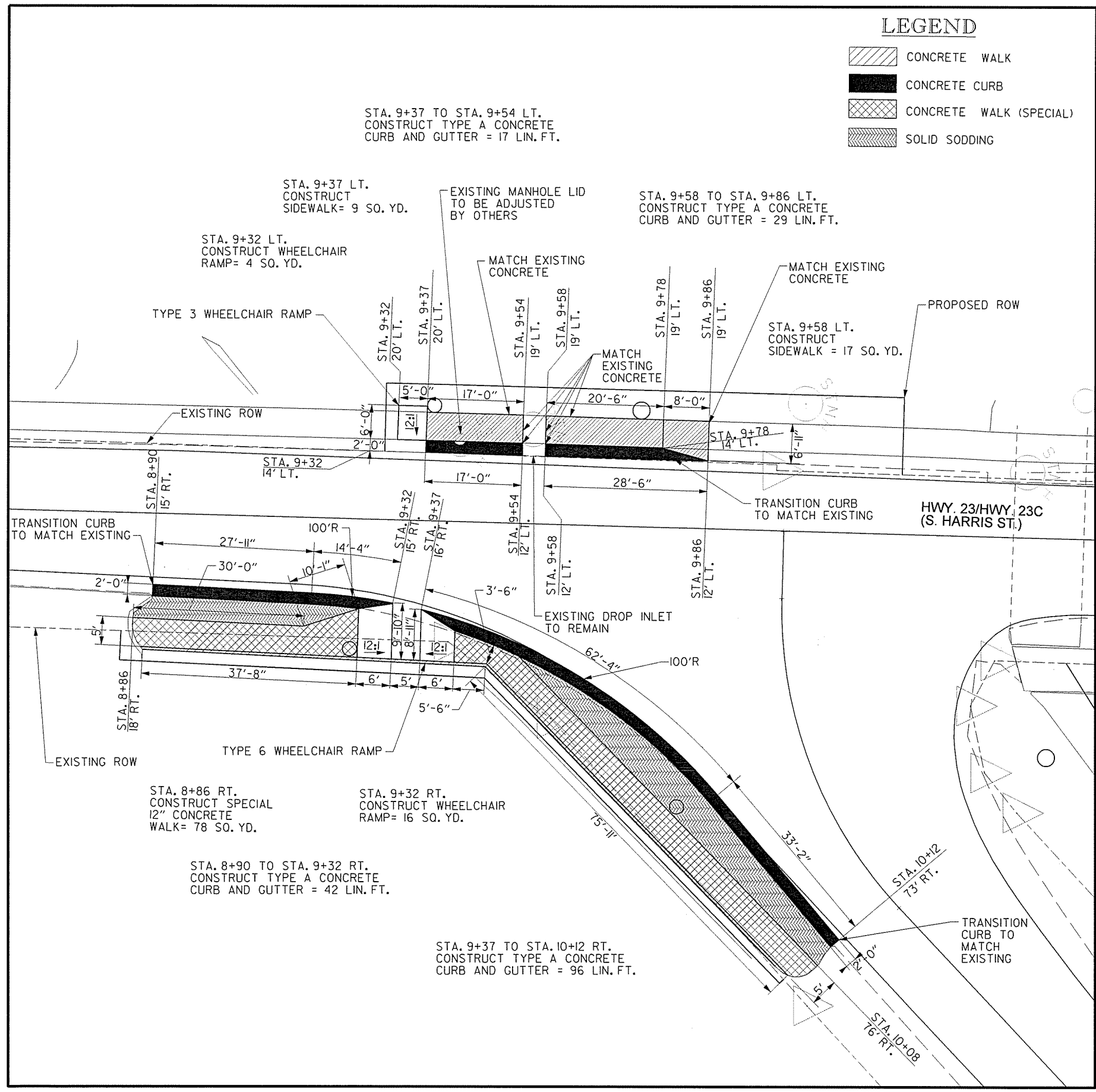
STA. 9+37 TO STA. 9+54 LT.
 CONSTRUCT TYPE A CONCRETE CURB AND GUTTER = 17 LIN. FT.

STA. 9+37 LT.
 CONSTRUCT SIDEWALK = 9 SO. YD.

STA. 9+32 LT.
 CONSTRUCT WHEELCHAIR RAMP = 4 SO. YD.

EXISTING MANHOLE LID TO BE ADJUSTED BY OTHERS

STA. 9+58 TO STA. 9+86 LT.
 CONSTRUCT TYPE A CONCRETE CURB AND GUTTER = 29 LIN. FT.



NOTE: STATIONING AND OFFSETS REFERENCED FROM C S. HARRIS ST.

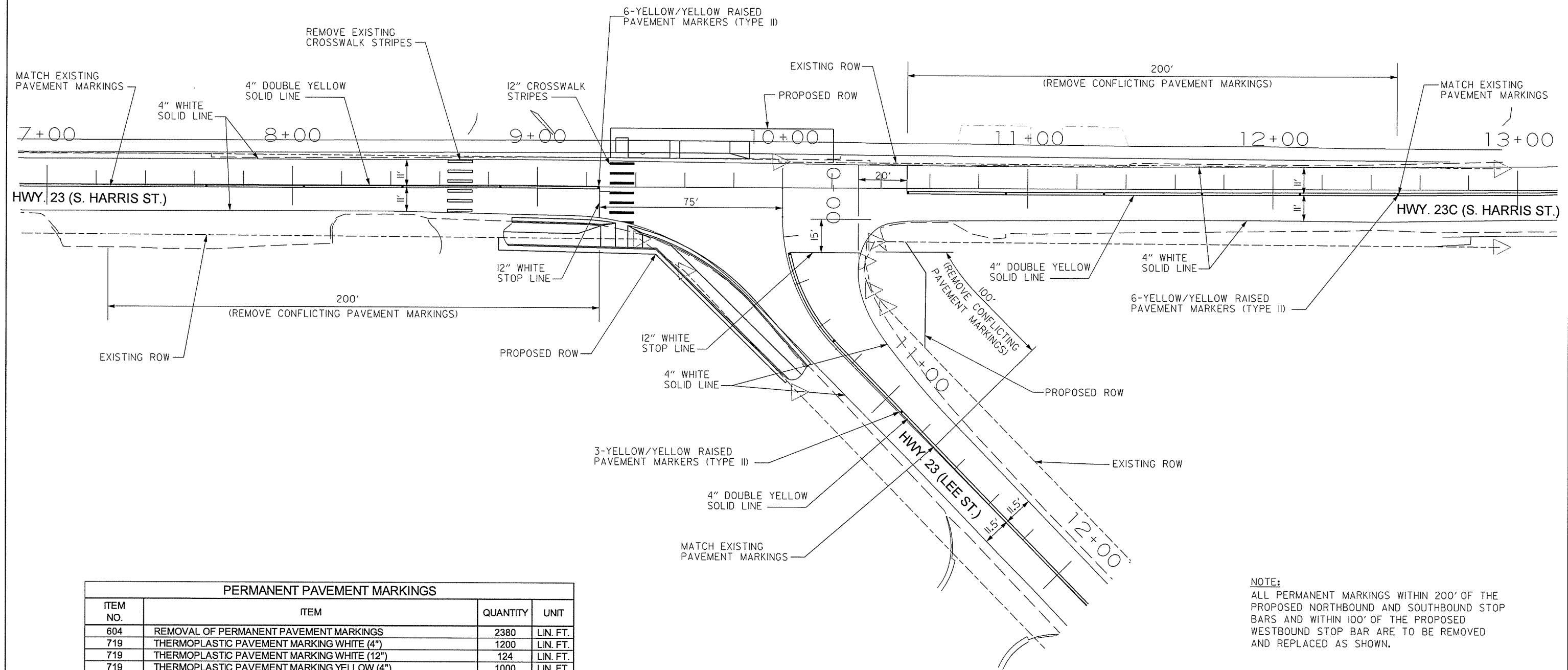
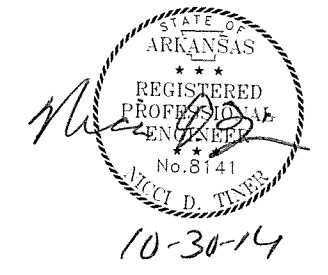
CONSTRUCTION

NOTE: PAYMENT FOR THE REINF. STEEL, EXPANSION JOINT, WEEP HOLES, AND ADDL. CONCRETE REQUIRED FOR THE RETAINING WALL TO BE INCLUDED IN THE UNIT PRICE BID PER SO. YD. FOR CONCRETE WALKS (TYPE SPECIAL).

11/6/2014 7:55:05 AM
 WORKSPACE: AHTD
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 REVISED DATE:

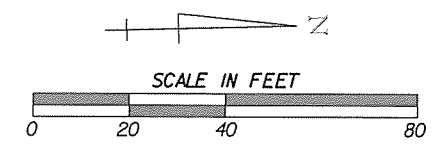
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|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| | | | | 9 | ARK. | | | |
| | | | | JOB NO. | | 090375 | 8 | 24 |

② PERMANENT PAVEMENT MARKINGS



| PERMANENT PAVEMENT MARKINGS | | | |
|-----------------------------|--|----------|----------|
| ITEM NO. | ITEM | QUANTITY | UNIT |
| 604 | REMOVAL OF PERMANENT PAVEMENT MARKINGS | 2380 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (4") | 1200 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (12") | 124 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING YELLOW (4") | 1000 | LIN. FT. |
| 721 | RAISED PAVEMENT MARKERS (TYPE II) | 15 | EACH |

NOTE:
 ALL PERMANENT MARKINGS WITHIN 200' OF THE PROPOSED NORTHBOUND AND SOUTHBOUND STOP BARS AND WITHIN 100' OF THE PROPOSED WESTBOUND STOP BAR ARE TO BE REMOVED AND REPLACED AS SHOWN.

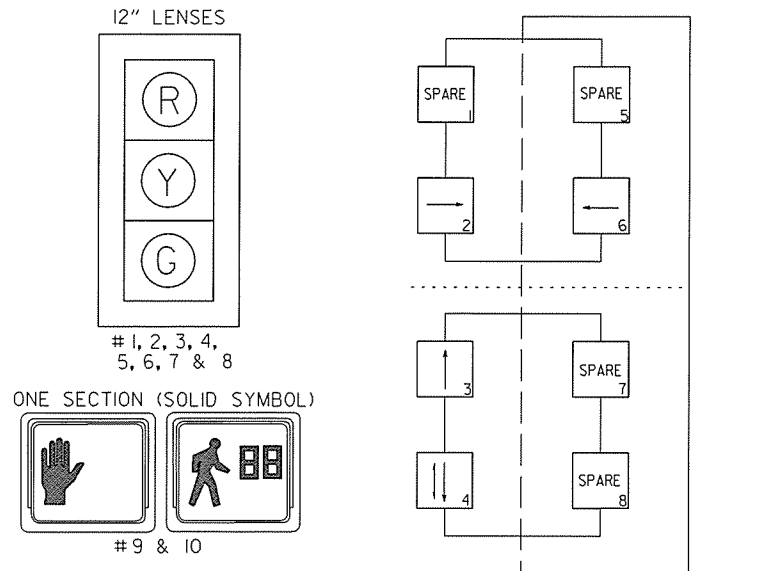


DATE: 10/30/14 FILE NAME: t090375_pmt.dgn

LOCATION: HWY. 23/HWY. 23C
 CITY: HUNTSVILLE
 COUNTY: MADISON
 DISTRICT: 9 SCALE: AS SHOWN DRAWN BY: CEM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | 9 | 24 |

SIGNAL FACES PHASING DIAGRAM



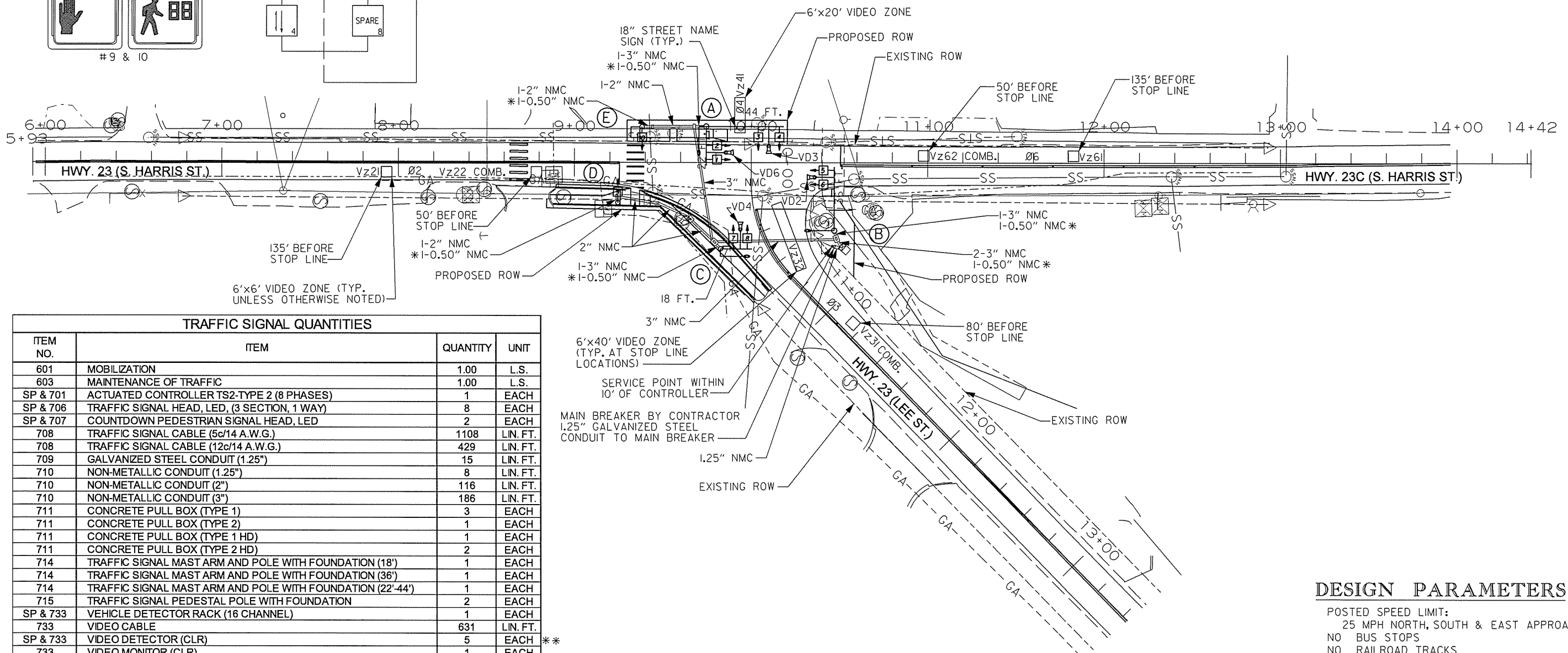
LEGEND

- ☐ TYPE 1 HD PULL BOX
- ☐ TYPE 1 PULL BOX
- ☐ TYPE 2 HD PULL BOX
- ☐ TYPE 2 PULL BOX
- ☐ CONTROLLER CABINET
- ☐ SIGNAL HEAD
- ☐ SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- ☐ VIDEO DETECTOR

② SIGNALIZATION PLANS



9-22-15



TRAFFIC SIGNAL QUANTITIES

| ITEM NO. | ITEM | QUANTITY | UNIT |
|----------|--|----------|----------|
| 601 | MOBILIZATION | 1.00 | L.S. |
| 603 | MAINTENANCE OF TRAFFIC | 1.00 | L.S. |
| SP & 701 | ACTUATED CONTROLLER TS2-TYPE 2 (8 PHASES) | 1 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) | 8 | EACH |
| SP & 707 | COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED | 2 | EACH |
| 708 | TRAFFIC SIGNAL CABLE (5c/14 A.W.G.) | 1108 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (12c/14 A.W.G.) | 429 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (1.25") | 15 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (1.25") | 8 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (2") | 116 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (3") | 186 | LIN. FT. |
| 711 | CONCRETE PULL BOX (TYPE 1) | 3 | EACH |
| 711 | CONCRETE PULL BOX (TYPE 2) | 1 | EACH |
| 711 | CONCRETE PULL BOX (TYPE 1 HD) | 1 | EACH |
| 711 | CONCRETE PULL BOX (TYPE 2 HD) | 2 | EACH |
| 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (18') | 1 | EACH |
| 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36') | 1 | EACH |
| 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (22'-44') | 1 | EACH |
| 715 | TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION | 2 | EACH |
| SP & 733 | VEHICLE DETECTOR RACK (16 CHANNEL) | 1 | EACH |
| 733 | VIDEO CABLE | 631 | LIN. FT. |
| SP & 733 | VIDEO DETECTOR (CLR) | 5 | EACH |
| 733 | VIDEO MONITOR (CLR) | 1 | EACH |
| SP & 733 | VIDEO PROCESSOR, EDGE CARD (2 CAMERA) | 3 | EACH |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (2c/6 A.W.G.) | 23 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/8 A.W.G, E.G.C.) | 418 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/12 A.W.G, E.G.C.) | 150 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS FOR LUMINAIRES | 418 | LIN. FT. |
| SP | LUMINAIRE ASSEMBLY | 3 | EACH |
| SP | SERVICE POINT ASSEMBLY (2 CIRCUITS) | 1 | EACH |
| SP | 18" STREET NAME SIGN | 4 | EACH |

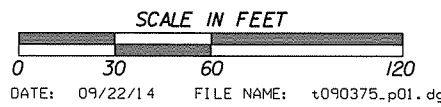
* * ONE ADDITIONAL VIDEO DETECTOR AND ONE ADDITIONAL VIDEO PROCESSOR, EDGE CARD SHALL BE PROVIDED FOR FUTURE USE.

* 0.50" NMC FOR CONTROLLER OR POLE GROUND ROD CONNECTION. THE COST OF 0.50" NMC IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

DESIGN PARAMETERS

- POSTED SPEED LIMIT: 25 MPH NORTH, SOUTH & EAST APPROACHES
- NO BUS STOPS
- NO RAILROAD TRACKS
- NO PARKING
- NO FIRE STATION
- 2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)
- 12' MIN. CLEAR ZONE DISTANCE (HWY. 23/HWY. 23C)
- 12' MIN. CLEAR ZONE DISTANCE (HWY. 23)

LOCATION: HWY. 23/HWY. 23C
 CITY: HUNTSVILLE
 COUNTY: MADISON
 DISTRICT: 9 SCALE: AS SHOWN DRAWN BY: CEM



9/22/2015 8:58:43 AM
 WORKSPACE: AHTD
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 REVISION DATE:

POLE DIMENSIONS

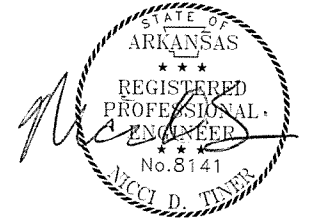
| POLE | MAST ARM(S) LENGTH | MAST ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE) | VERTICAL SHAFT LENGTH | LUM. ARM LENGTH | LUM. ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE) | STATION HWY. 23/ HWY. 23C | OFFSET | NORTHING | EASTING |
|------|--------------------|--|-----------------------|-----------------|--|---------------------------|---------|-------------|-------------|
| A | 22 FT. 44 FT. | 180 DEGREES 90 DEGREES | 35'-0" | 15'-0" | 180 DEGREES | 9+74.43 | 20' LT. | 642388.3922 | 799753.8074 |
| B | 36 FT. | 270 DEGREES | 35'-0" | 15'-0" | 180 DEGREES | 10+47.07 | 38' RT. | 642459.4328 | 799814.6110 |
| C | 18 FT. | 270 DEGREES | 35'-0" | 15'-0" | 270 DEGREES | 9+82.50 | 49' RT. | 642394.6063 | 799823.3247 |
| D | - | - | 15'-0" | - | - | 9+24.41 | 23' RT. | 642337.2427 | 799795.6754 |
| E | - | - | 15'-0" | - | - | 9+38.11 | 20' LT. | 642352.0847 | 799752.9647 |

| 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. | 090375 | | 10 | 24 |

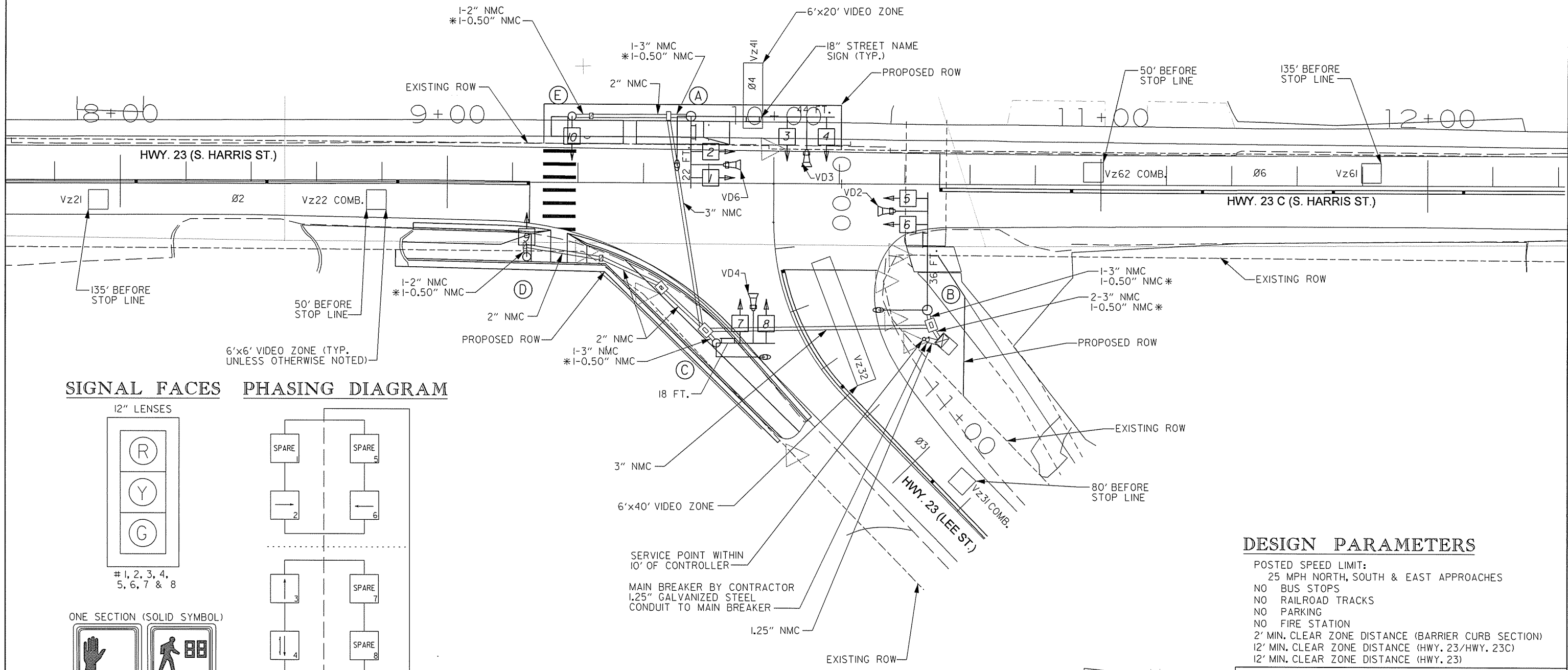
② SIGNALIZATION PLANS

LEGEND

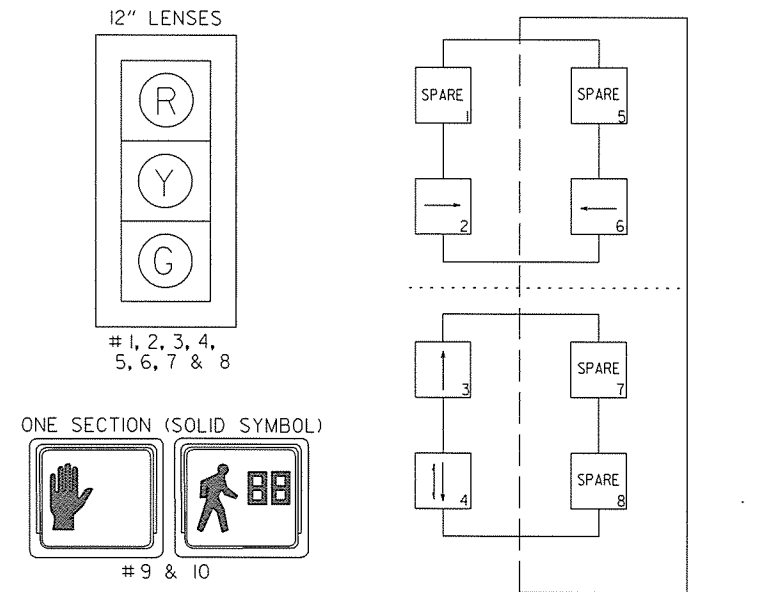
- ☐ TYPE 1 HD PULL BOX
- ☐ TYPE 1 PULL BOX
- ☐ TYPE 2 HD PULL BOX
- ☐ TYPE 2 PULL BOX
- ☐ CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT



11-5-14



SIGNAL FACES PHASING DIAGRAM

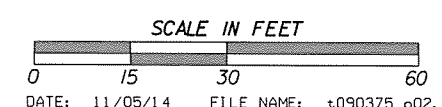


* 0.50" NMC FOR CONTROLLER OR POLE GROUND ROD CONNECTION. THE COST OF 0.50" NMC IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

DESIGN PARAMETERS

- POSTED SPEED LIMIT: 25 MPH NORTH, SOUTH & EAST APPROACHES
- NO BUS STOPS
- NO RAILROAD TRACKS
- NO PARKING
- NO FIRE STATION
- 2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)
- 12' MIN. CLEAR ZONE DISTANCE (HWY. 23/HWY. 23C)
- 12' MIN. CLEAR ZONE DISTANCE (HWY. 23)

LOCATION: HWY. 23/HWY. 23C
 CITY: HUNTSVILLE
 COUNTY: MADISON
 DISTRICT: 9 SCALE: AS SHOWN DRAWN BY: CEM



CEM/Inney 11/5/2014 8:05:44 AM
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 REVISED DATE:

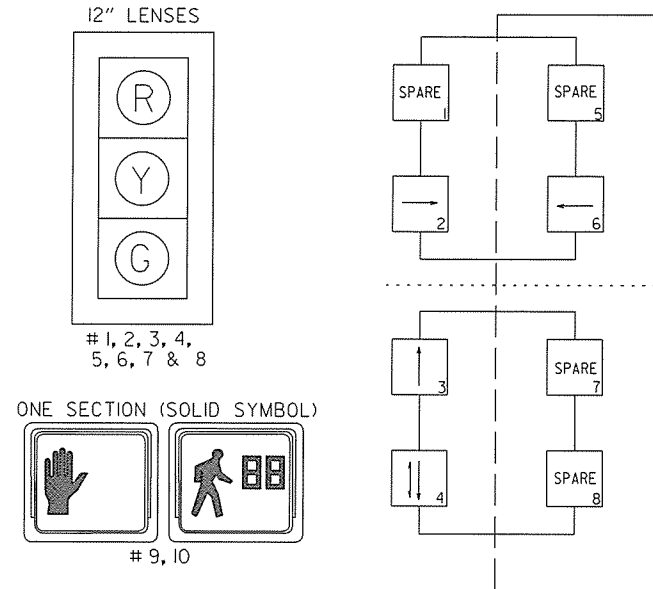
DETECTOR CHART

| DETECTOR I.D. # | DIRECTION & LOCATION | TYPE | DET. # | HARDWARE INPUTS BY SUPPLIER | | | PROGRAM ASSIGNMENTS | | | VIDEO DET. TUBE LENGTH | COMMENT |
|-----------------|----------------------|-------|--------|-----------------------------|------------|-------------|---------------------|-------------|-------------------|------------------------|---------|
| | | | | CAB. TRM. # | AMP CHN. # | CON. INP. # | LOCAL | | MSTR. SYS. DET. # | | |
| | | | | | | | PHS. | SYS. DET. # | | | |
| Vz21 | NB FAR | LOCAL | | | 1 | V2 | 2 | | 23" | VD2 | |
| Vz22 | NB NEAR | COMB. | | | 2 | V10 | 2 | 2 | 23" | VD2 | |
| Vz31 | WB FAR | COMB. | | | 13 | VII | 3 | 3 | 23" | VD3 | |
| Vz32 | WB NEAR | LOCAL | | | 14 | V3 | 3 | | 23" | VD3 | |
| Vz41 | EB NEAR | LOCAL | | | 9 | V12 | 4 | 4 | 23" | VD4 | |
| Vz61 | SB FAR | LOCAL | | | 5 | V6 | 6 | | 23" | VD6 | |
| Vz62 | SB NEAR | COMB. | | | 6 | V14 | 6 | 6 | 23" | VD6 | |

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

SPARE AMP CHN. # = 3, 4, 7, 8, 10, 11, 12, 15 & 16

SIGNAL FACES PHASING DIAGRAM

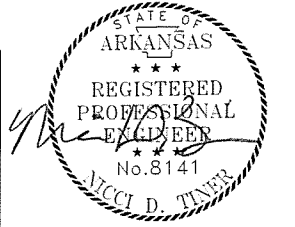


| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 090375 | | II | 24 |

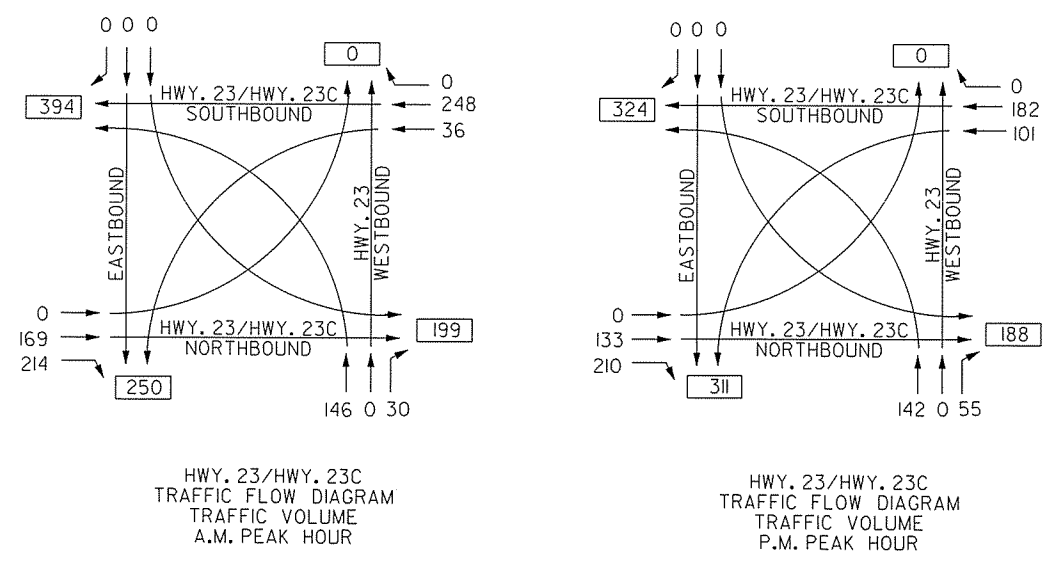
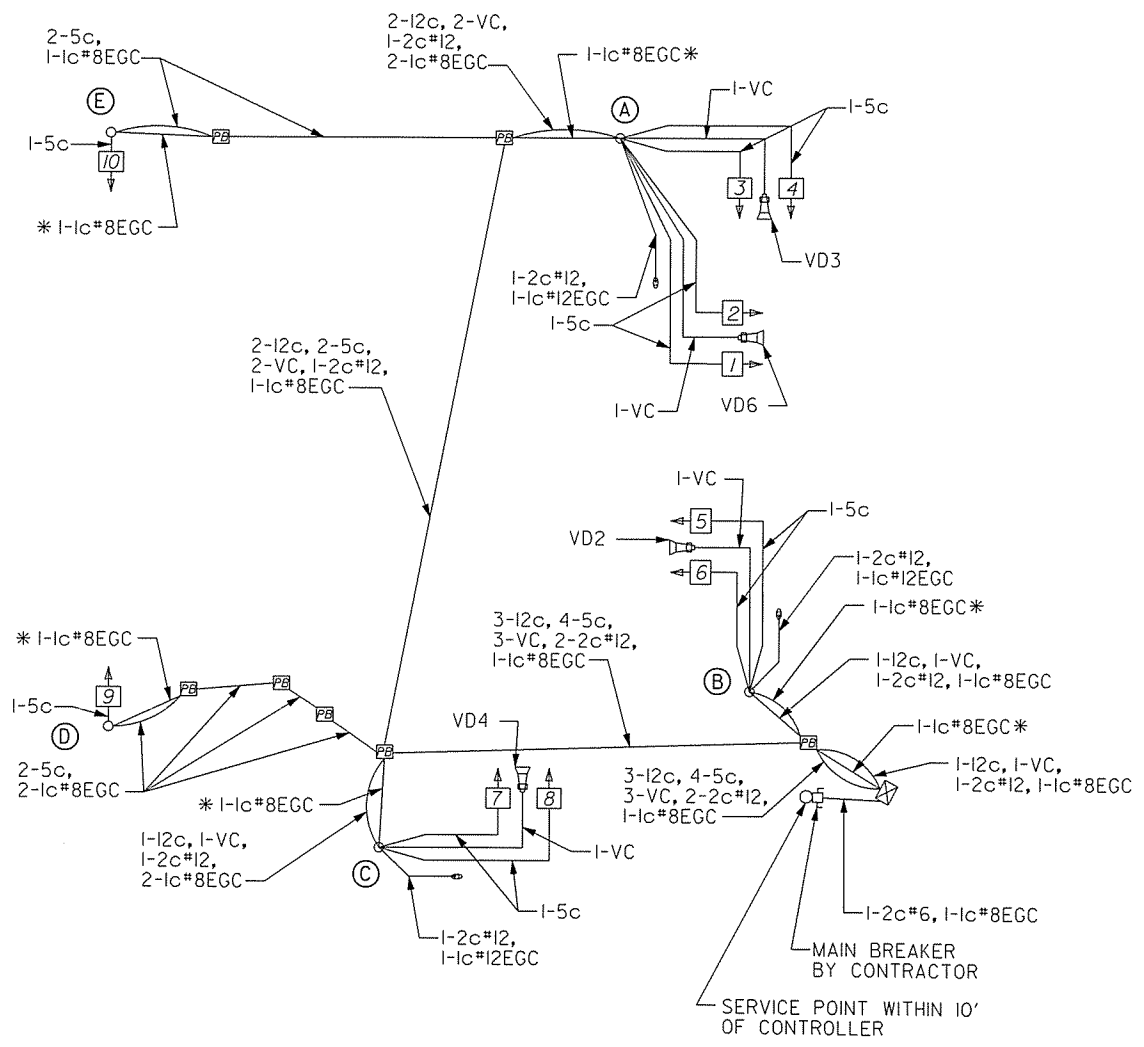
2 SIGNALIZATION PLANS

INTERVAL CHART

| SIGNAL FACES | INTERSECTION INTERVALS | | | | | | FLASH SEQ. |
|--------------|------------------------|------|----|------|---|------|------------|
| | 2+6 | CLR. | 3 | CLR. | 4 | CLR. | |
| 1 & 2 | G | Y | R | R | R | R | R |
| 3 & 4 | R | R | G | Y | R | R | R |
| 5 & 6 | G | Y | R | R | R | R | R |
| 7 & 8 | R | R | R | R | G | Y | R |
| 9 & 10 | DW | DW | DW | DW | W | FDW | BLK |



10-30-14



NOTE: 2011 TRAFFIC VOLUMES

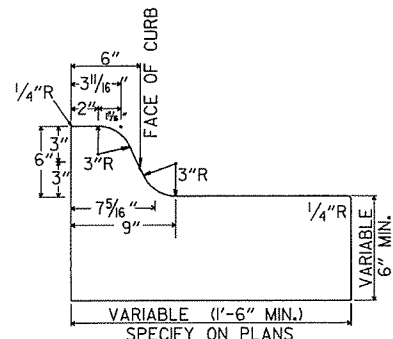
* 1-1c#8EGC SHOWN SEPARATELY FROM CONTROLLER OR POLE TO NEAREST PULL BOX IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

WIRING DIAGRAM

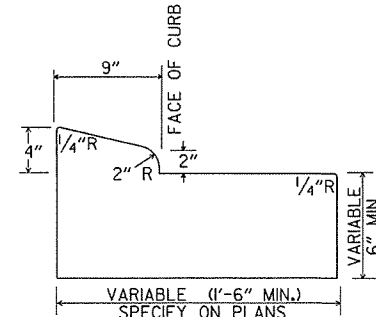
- TYPICAL WIRING INCLUDES:
- SEPARATE 5c/#14 AWG FROM EACH 3 SEC SIGNAL HEAD TO BASE OF POLE.
 - SEPARATE 5c/#14 AWG TO EACH POLE WITH PEDESTRIAN PUSH BUTTONS.
 - ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
 - THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

| | |
|-----------|------------------|
| LOCATION: | HWY. 23/HWY. 23C |
| CITY: | HUNTSVILLE |
| COUNTY: | MADISON |
| DISTRICT: | 9 |
| SCALE: | 1" = 40' |
| DRAWN BY: | CEM |

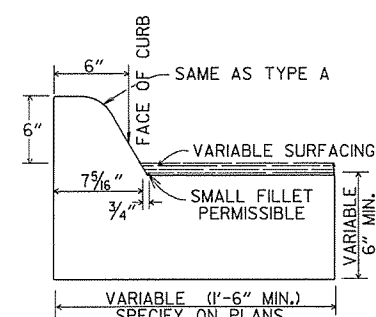
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 CEM@kinney
 WORKSPACE_AHTD
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 REVISION DATE:



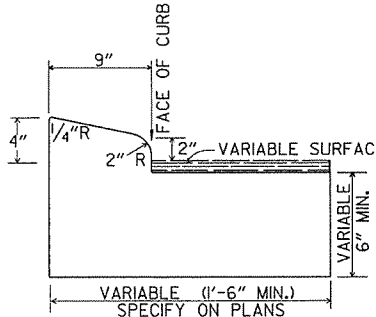
TYPE A



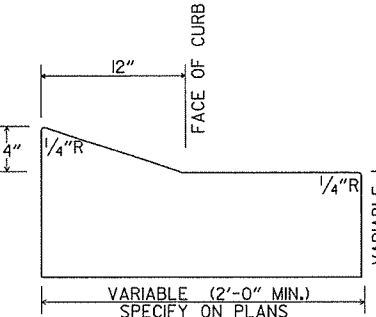
TYPE B-1



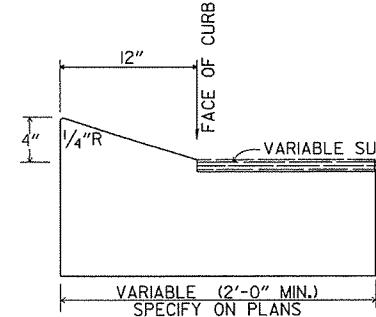
TYPE C



TYPE B-2

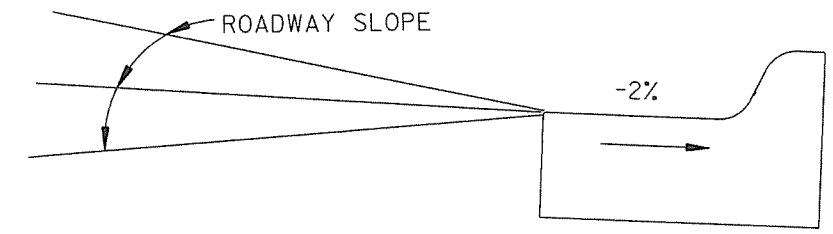


TYPE E-1

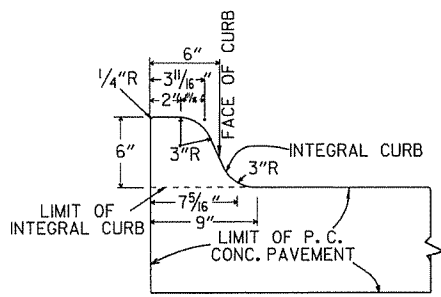


TYPE E-2

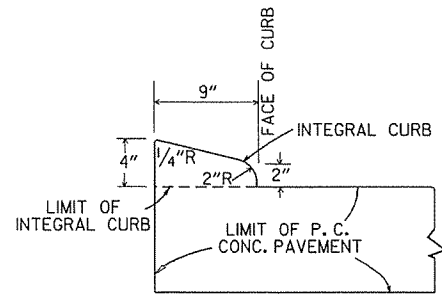
CONCRETE COMBINATION CURB AND GUTTER



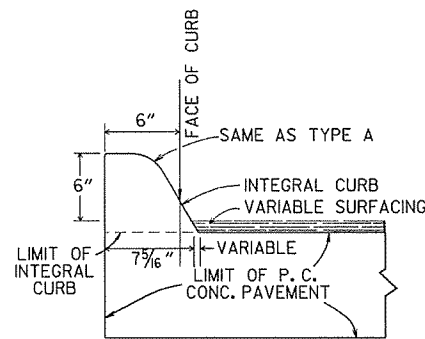
DETAIL OF GUTTER SLOPE
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

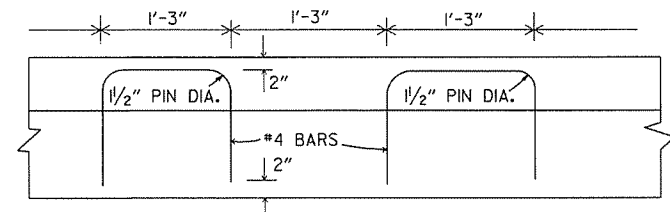


TYPE B

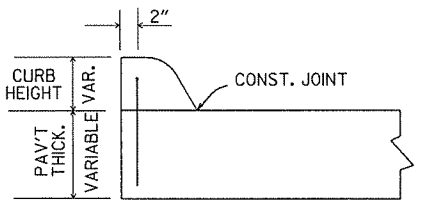


TYPE C

INTEGRAL CURB

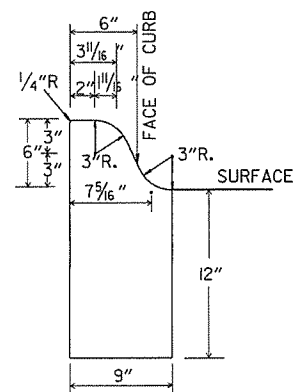


LONGITUDINAL SECTION

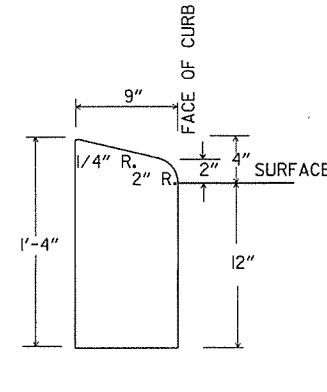


ELEVATION

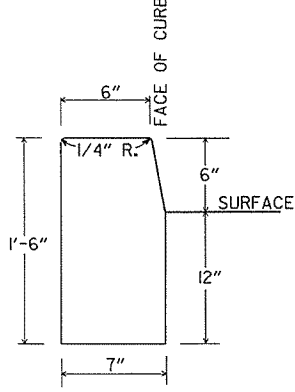
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



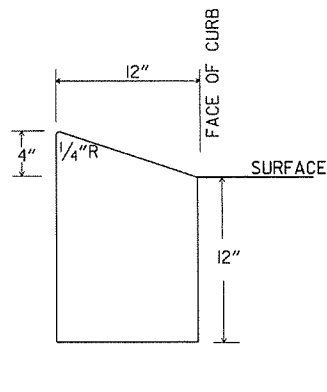
TYPE A



TYPE B

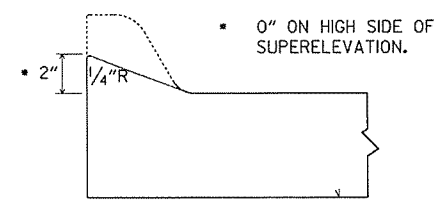


TYPE D



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.

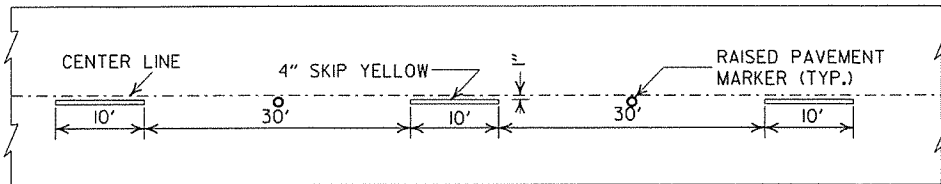
DETAILS OF MODIFIED CURB

| 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 | VARIABLE DEPTH TYPE A & B 1 | 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 |

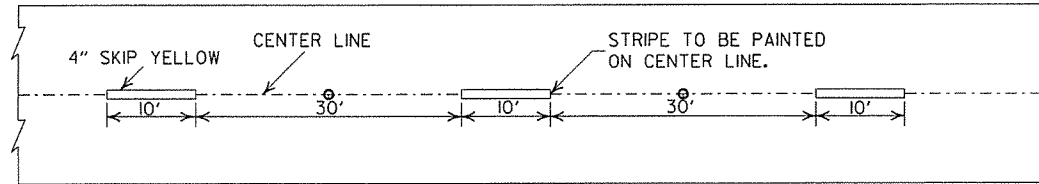
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

STANDARD DRAWING CG-1

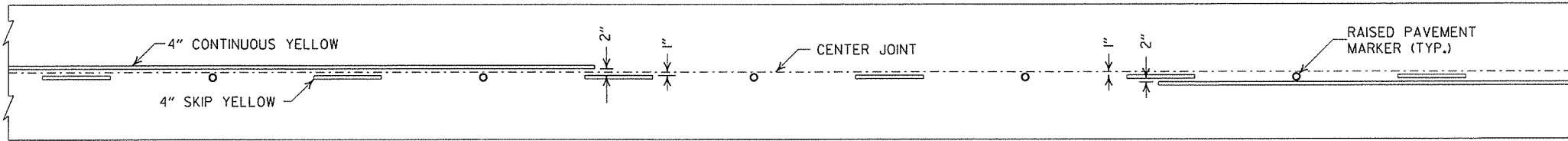


CONCRETE PAVEMENT

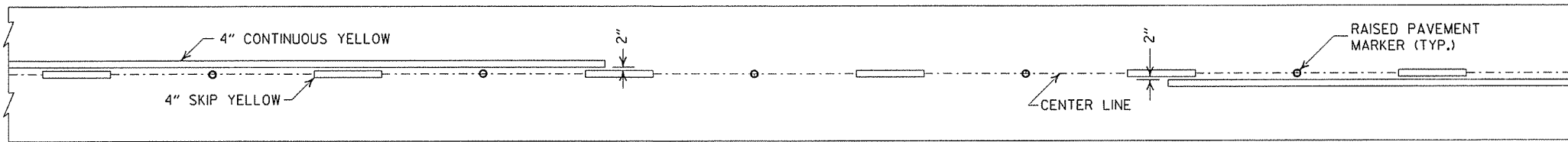


ASPHALT PAVEMENT

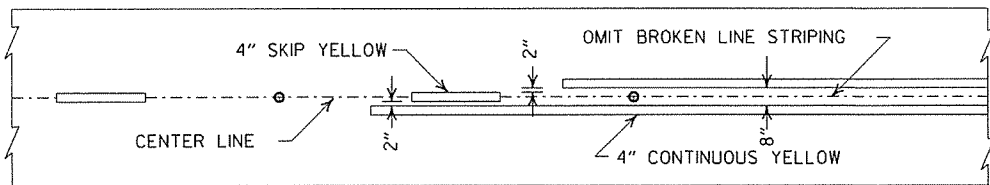
BROKEN LINE STRIPING



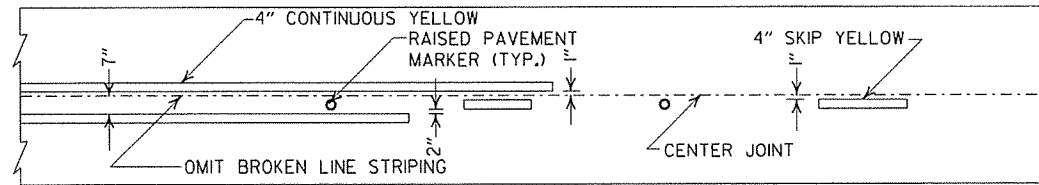
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

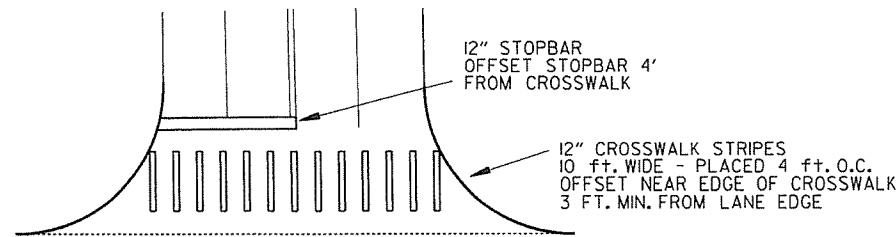


ASPHALT PAVEMENT



CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

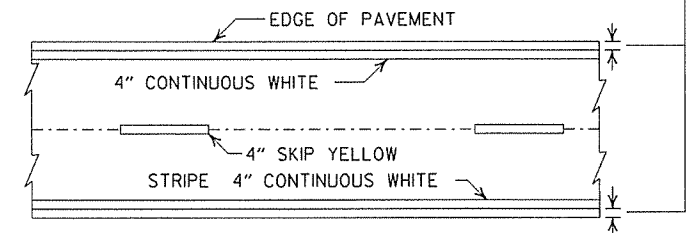


CROSSWALK AND STOPBAR DETAILS

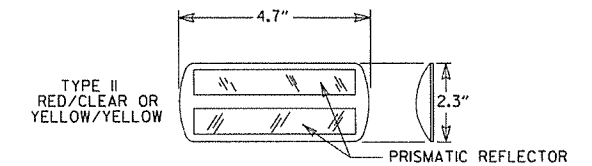
NOTES:

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.

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



PAVEMENT EDGE LINE MARKING



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

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.

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

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

LOOP DETECTOR INSTALLATION AND TESTING

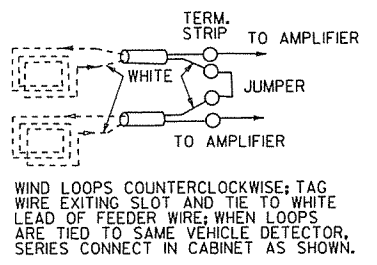
NOTES:

- LOOPS WITH A PERIMETER GREATER THAN 40' SHALL HAVE TWO TURNS. LOOPS WITH A PERIMETER LESS THAN OR EQUAL TO 40' SHALL HAVE THREE TURNS, UNLESS OTHERWISE NOTED ON THE PLANS. QUADRUPOLE LOOPS SHALL BE TWO TURNS (2-4-2 CONFIGURATION) UNLESS OTHERWISE NOTED.
- LOOP AND FEEDER WIRE SHALL BE CONTINUOUS WITHOUT SPLICES EXCEPT AT THE LOOP/FEEDER WIRE SPLICE AS SHOWN. SPLICE SHALL BE ROSIN SOLDERED AND WATERPROOFED WITH AN ACCEPTED SPLICE KIT. DRAIN WIRE SHALL BE GROUNDED IN CABINET AND INSULATED AT LOOP TO FEEDER SPLICE.
- THE LOOP TO FEEDER SPLICE, FEEDER JACKET AND JACKET OF LOOP WIRE IN DUCT SHALL BE COMPLETELY SEALED AND WATERPROOFED.
- CONTRACTOR MAY MAKE CONNECTIONS TO SIGNAL CABLE AND LOOP TO FEEDER CONNECTION AT TERMINAL STRIPS MOUNTED TO POLE INSIDE HAND HOLD COVER AS SHOWN IN DETAIL. TERMINALS MUST BE EASILY ACCESSIBLE, BUT PROTECTED AGAINST ACCIDENTAL CONTACT. CONNECTION OF POWER CARRYING CIRCUITS MUST BE SEPARATED FROM LOOP OR LOGIC CIRCUITS. ALL CONNECTIONS TO TERMINAL STRIPS SHALL UTILIZE SPADE LUGS OR AS APPROVED BY THE ENGINEER.
- EACH LOOP SHALL HAVE A SEPARATE "FEEDER WIRE" UNLESS OTHERWISE NOTED. ALL FEEDER WIRES SHALL BE LABELED AS TO LOOP NUMBER AS DESIGNATED ON THE PLANS.
- ALL LOOP WIRE ENTERING PULL BOXES SHALL BE ENCLOSED IN CONDUIT. EACH LOOP WIRE SHALL ENTER PULL BOX OR POLE BASE THROUGH A SEPARATE PIECE OF ONE INCH (1"Ø) CONDUIT.
- LOOP WIRE FROM LOOP TO CONDUIT IS NOT TWISTED. LOOP WIRE IN THE CONDUIT MUST BE TWISTED TWO TO FIVE TURNS PER FOOT.
- WARRANTY PERIOD FOR LOOPS SHALL NOT COMMENCE UNTIL TESTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER. CONTRACTOR SHALL PERFORM TEST AND PROVIDE A RECORD TO THE ENGINEER AS LISTED IN THE DETECTOR LOOP TESTING PROCEDURE.
- UNLESS OTHERWISE APPROVED BY THE ENGINEER, BACKER ROD SHALL BE INSTALLED IN SHORT SECTIONS SPACED NOT MORE THAN 18" APART AND WEDGED INTO SLOT TO HOLD CABLE IN PLACE. CABLE SHALL BE TOTALLY ENCAPSULATED IN SEALER.
- "HOT POUR" SEALER SHALL NOT BE ALLOWED WITH 705-LOOP WIRING IN DUCT.
- WHERE UNDERGROUND SPLICES OF SIGNAL CABLE ARE REQUIRED, CONNECTIONS SHALL BE SOLDERED AND COMPLETELY WATERPROOFED TO THE SATISFACTION OF THE ENGINEER. WATERPROOFING SHALL EXTEND A MINIMUM OF TWO INCHES PAST THE SIGNAL CABLE JACKET AND SHALL COMPLETELY COVER ALL INDIVIDUAL CONDUCTORS OF THE SIGNAL CABLE. WATERPROOFING DOES NOT APPLY TO CONNECTIONS MADE IN POLE BASES.
- CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE. ONLY ONE NEUTRAL IS REQUIRED FOR PEDESTRIAN SIGNALS. A SEPARATE 5C (TYPICAL) IS PROVIDED FOR PEDESTRIAN PUSH BUTTONS.
- TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO CONTROLLER. CONTROLLER CABINET SHALL BE WIRED SUCH POWER TO LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS DURING FLASH OPERATION.

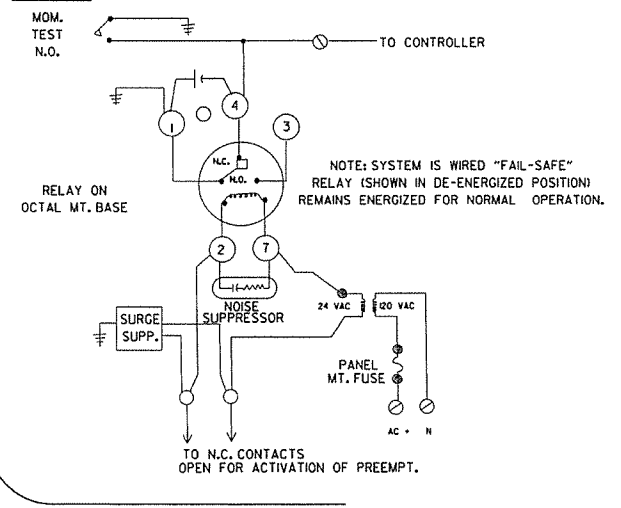
TYPICAL PROCEDURE FOR DETECTOR LOOP TESTING

- DISCONNECT AND TEST CONTINUITY (< 10 OHMS) IF CONTINUITY IS BAD, GO TO TEST 3
 - TEST INSULATION (@ 500 VOLT TEST > 10 MEG-OHM) IF TESTS 1 & 2 ARE GOOD, NO FURTHER TESTING IS NECESSARY. RECORDED RESULTS CONSIST OF TESTS 1 & 2 FROM CONTROL CABINET WITH FEEDER WIRE CONNECTED TO LOOP.
 - OPEN SPLICE (DO NOT BREAK CONNECTION) REPEAT TEST 1 & 2 IF TEST 3 IS BAD, GO TO TEST 4
 - BREAK SPLICE, INSTALL JUMPER IN CABINET, REPEAT TESTS 1 & 2 SEPARATELY FOR FEEDER AND FOR LOOP
- FAILURES TYPICALLY RESULT FROM BROKEN WIRE IN PAVEMENT, FAULTY INSULATION OF LOOP OR FEEDER WIRE, OR POORLY INSULATED SPLICE CONNECTION.

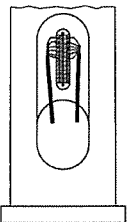
SERIES CONNECTED LOOPS



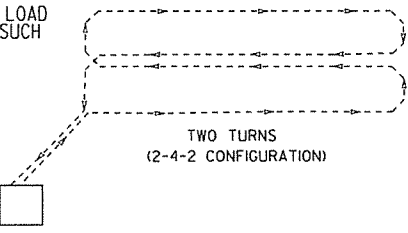
TRAFFIC SIGNAL PRE-EMPTION INTERFACE WIRING DIAGRAM



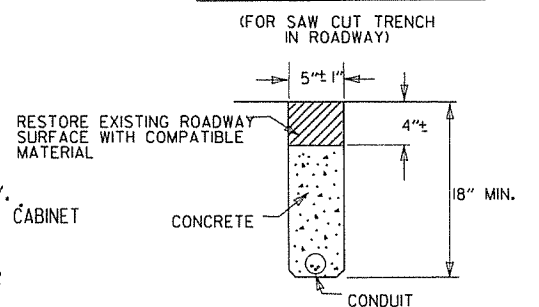
HANDHOLE TERMINAL



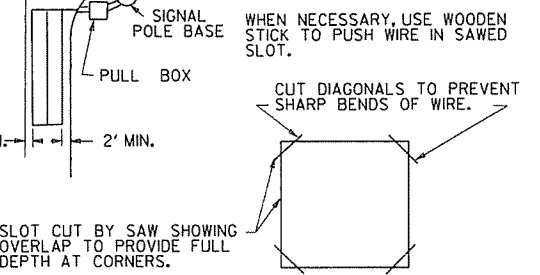
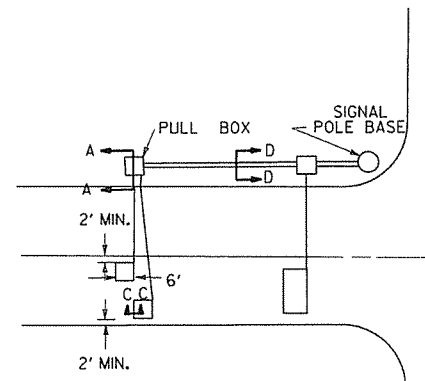
QUADRUPOLE LOOP



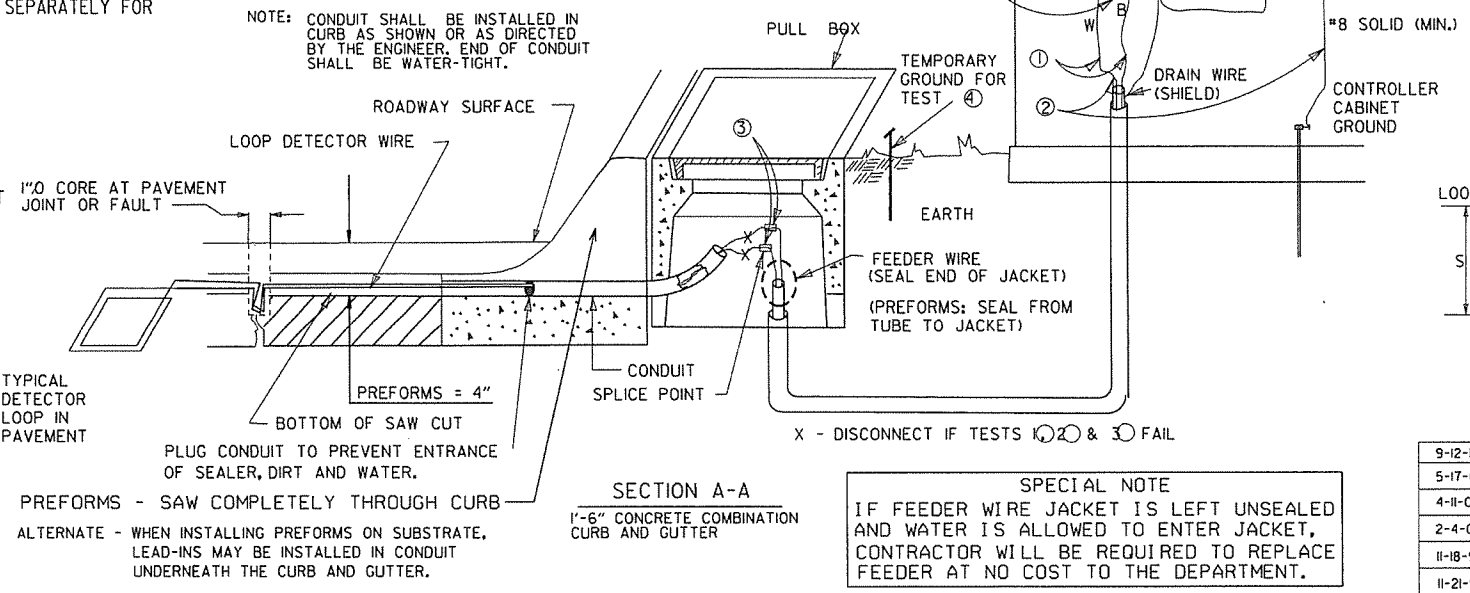
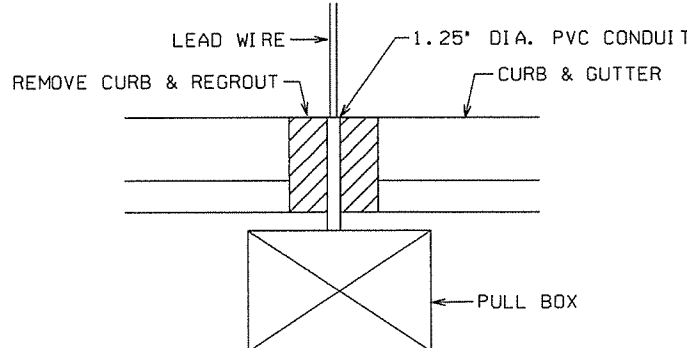
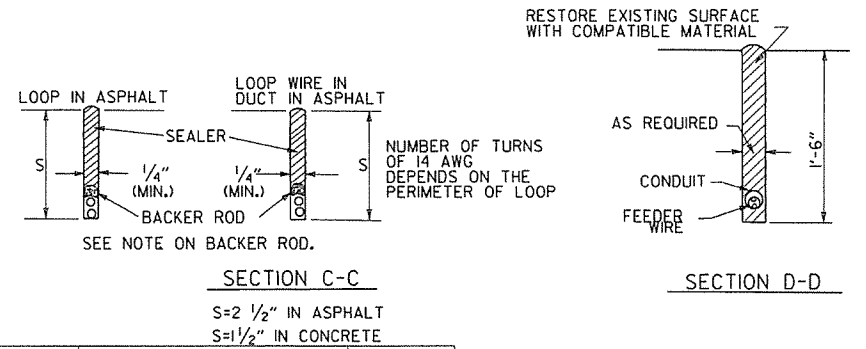
TRENCHING DETAIL



TYPICAL INTERSECTION



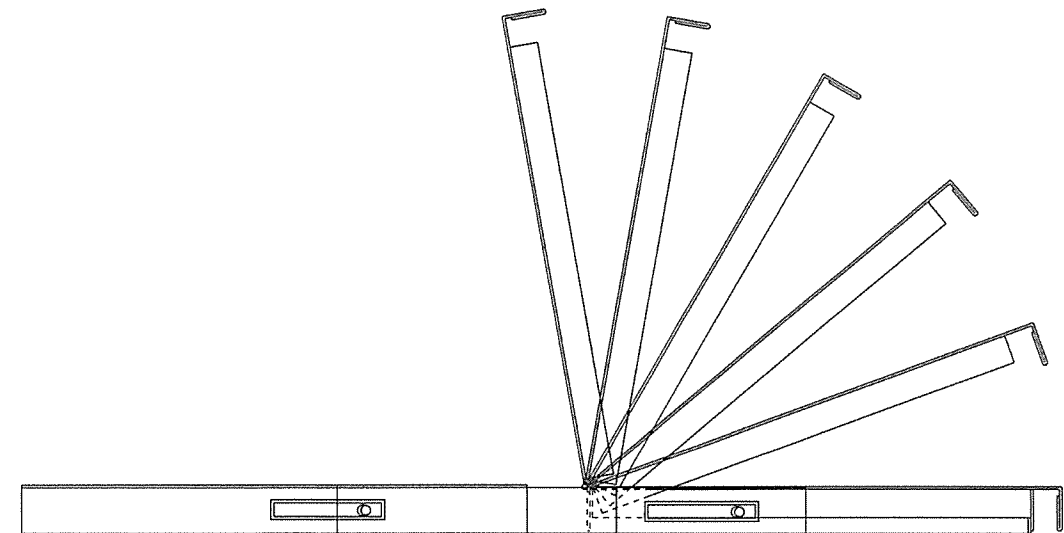
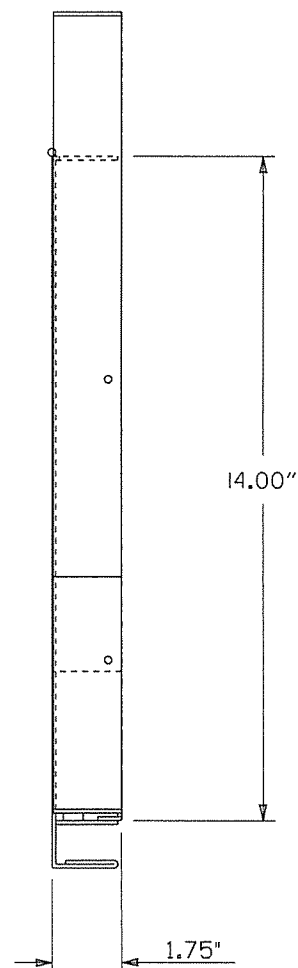
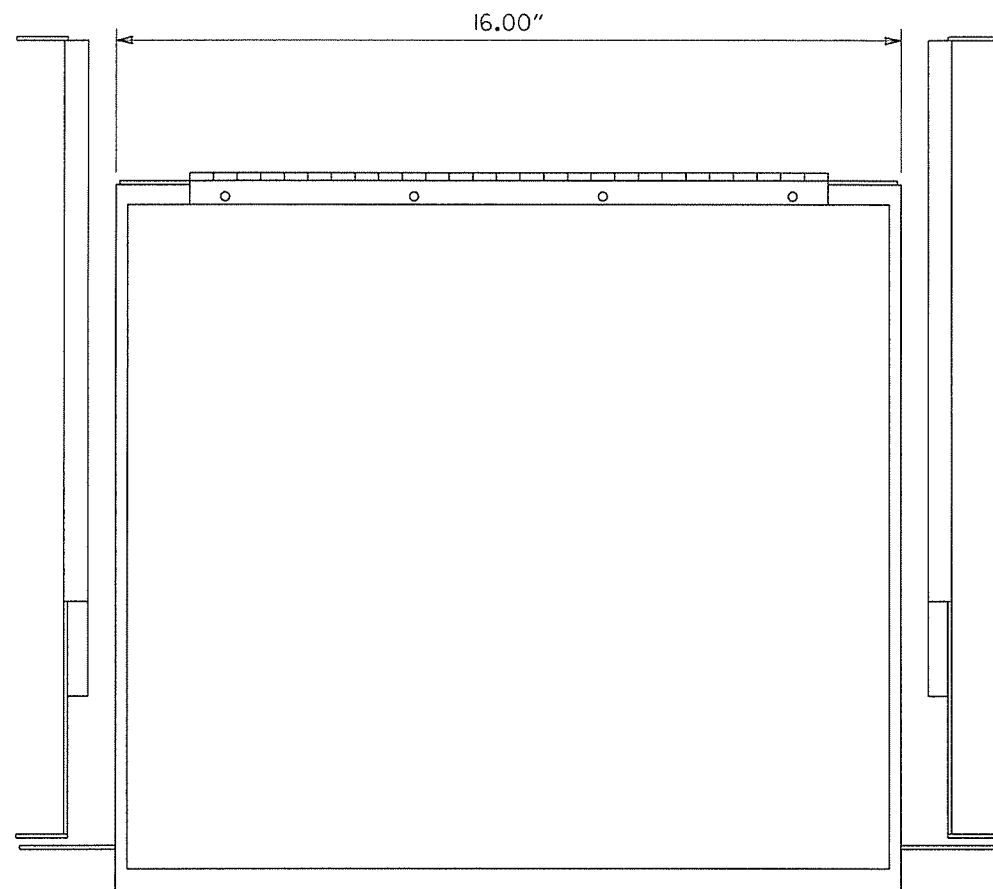
TYPICAL SECTIONS FOR PULSE AND PRESENCE LOOP DETECTORS



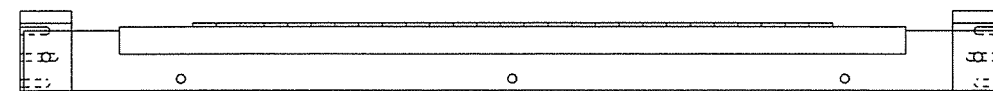
SPECIAL NOTE
IF FEEDER WIRE JACKET IS LEFT UNSEALED AND WATER IS ALLOWED TO ENTER JACKET, CONTRACTOR WILL BE REQUIRED TO REPLACE FEEDER AT NO COST TO THE DEPARTMENT.

| DATE | REVISION | DATE FILM | STANDARD DRAWING SD-4 |
|----------|---------------------------------|-----------|-----------------------------------|
| 9-12-13 | ISSUED AS STANDARD DRAWING | | |
| 5-17-01 | REVISED | | ARKANSAS STATE HIGHWAY COMMISSION |
| 4-11-01 | REVISED | | |
| 2-4-00 | REVISED PRE-EMPTION TEST SWITCH | | LOOP DETECTOR INSTALLATION |
| 11-18-98 | REVISED NOTES | | |
| 11-21-95 | ISSUED | | |

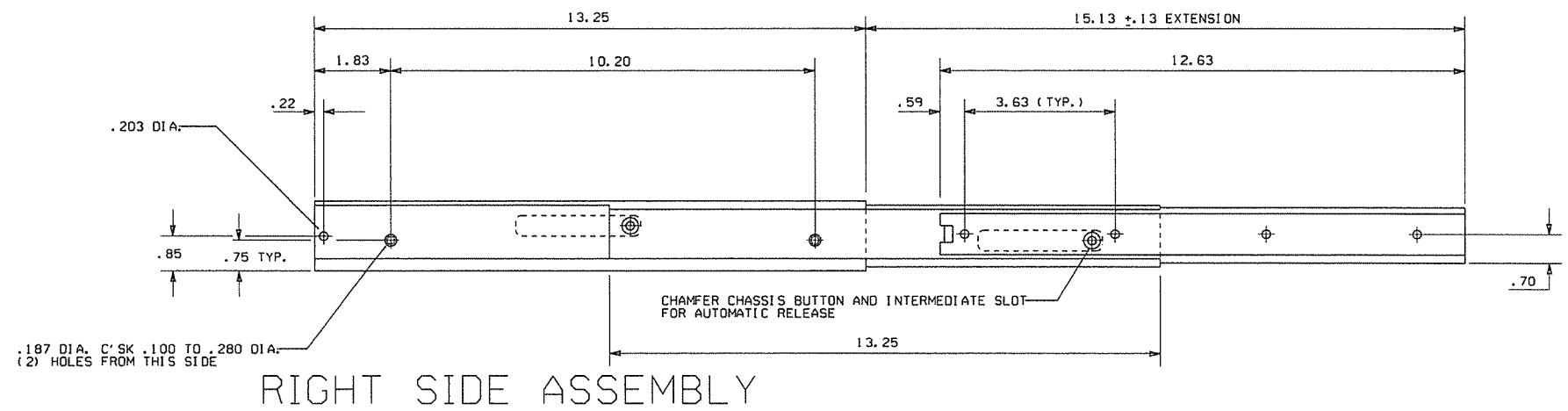
DRAWER PLAN VIEW



- 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.



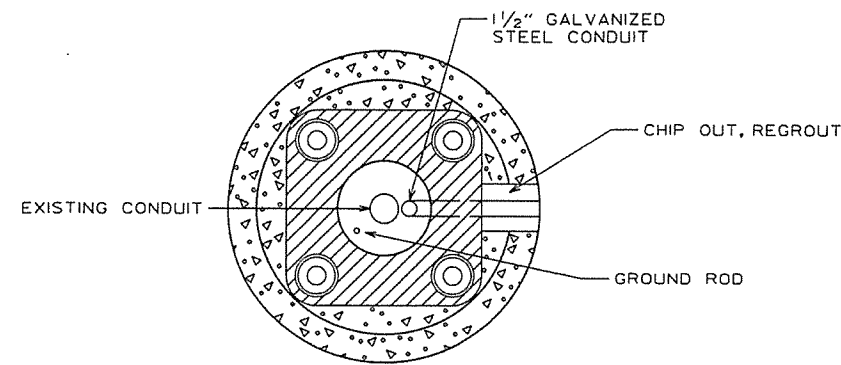
FRONT VIEW



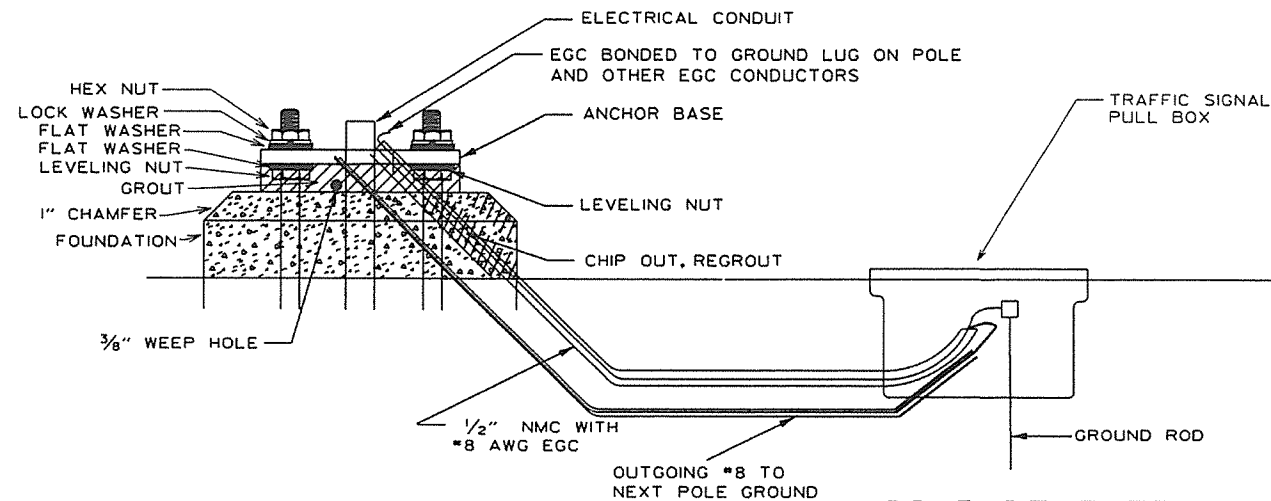
RIGHT SIDE ASSEMBLY

| | | | |
|---------|----------------------------|-----------|--------------------------------------|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | CONTROLLER CABINET UTILITY DRAWER |
| 9-12-13 | ISSUED AS STANDARD DRAWING | | |
| 6-15-05 | ISSUED | | |
| DATE | REVISION | DATE FILM | STANDARD DRAWING SD-5 |

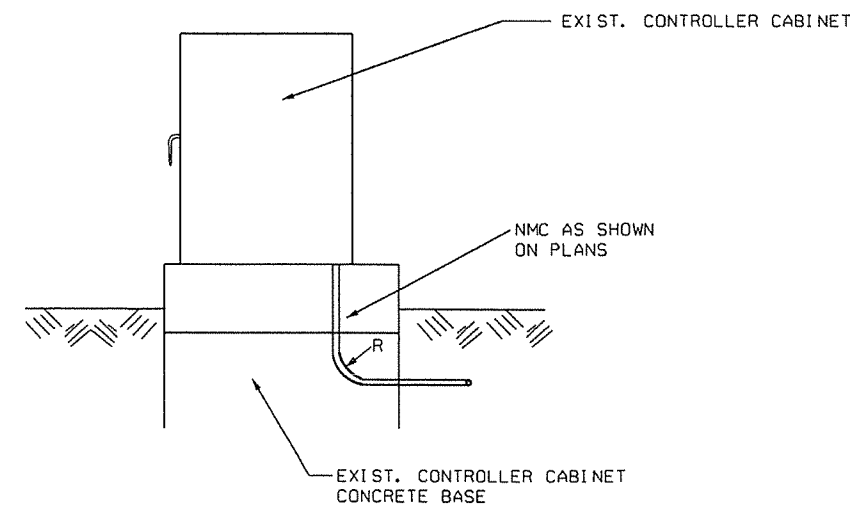
CONDUIT ENTRY TO EXISTING POLE BASE



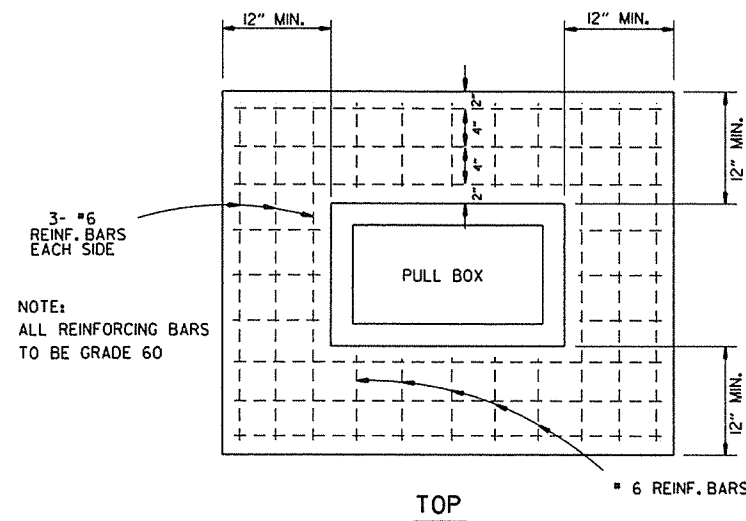
ANCHOR BASE



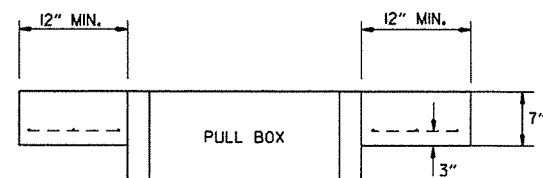
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



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

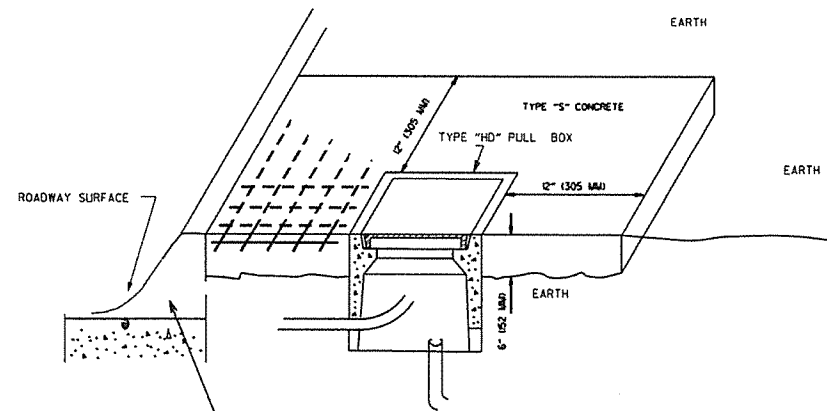


NOTE: ALL REINFORCING BARS TO BE GRADE 60



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



2" CLEAR FROM TOP (TOLERANCE +/- 0.5")

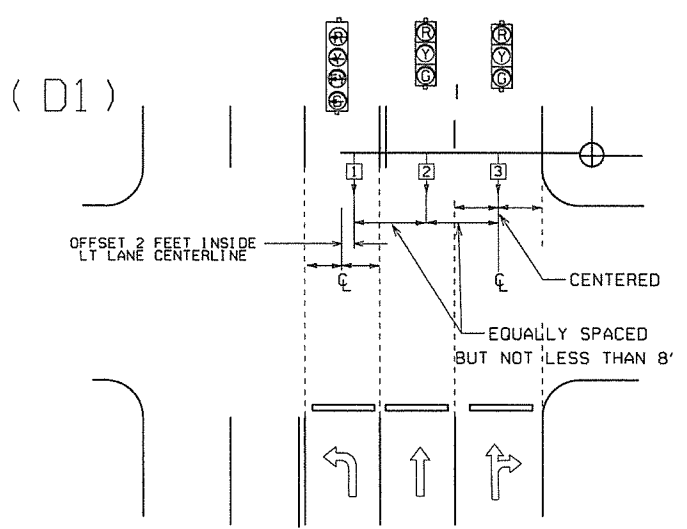
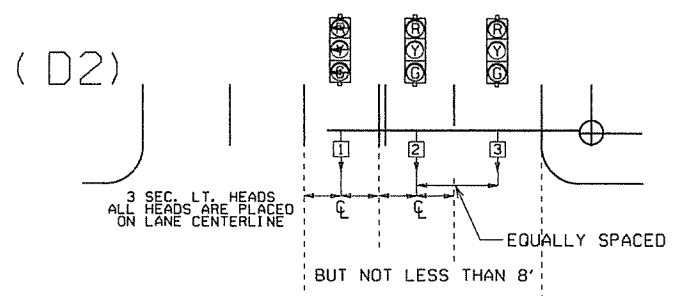
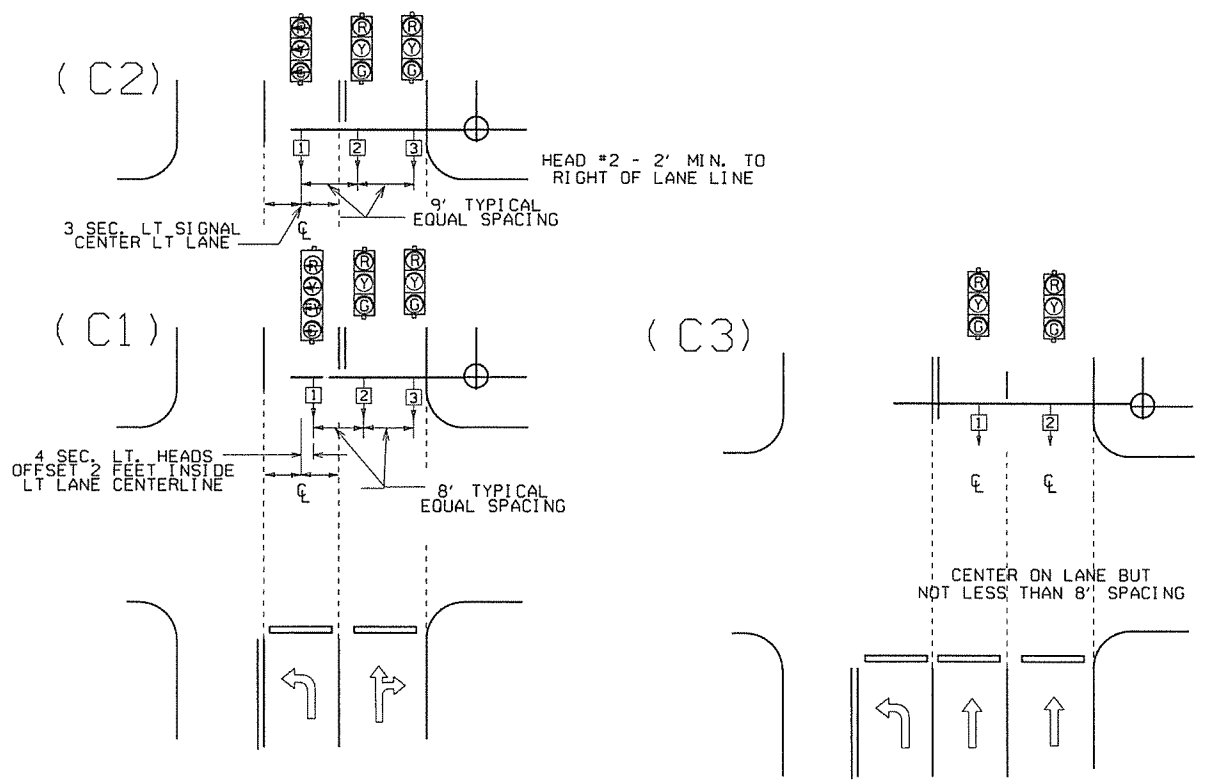
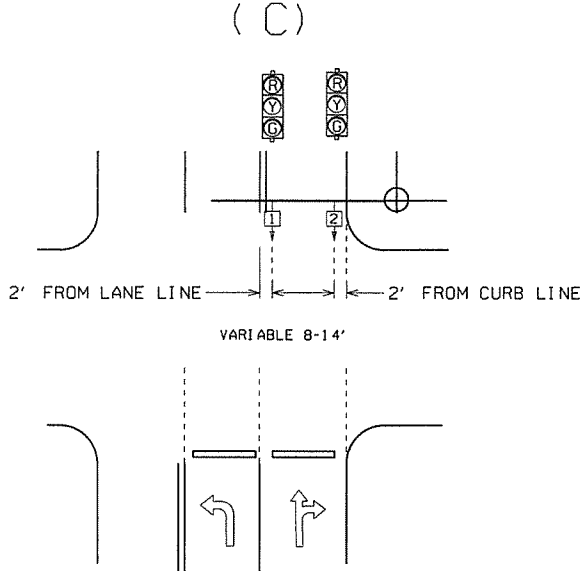
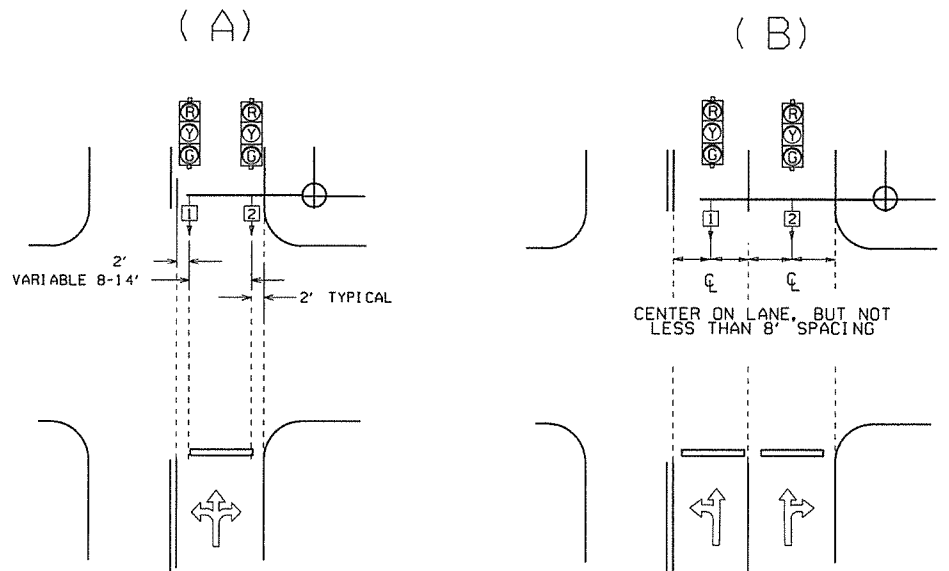
NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 7" (178 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S." THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE PULL BOX IS REQUIRED IN CONCRETE.

| | | |
|----------|---------------------------------|-----------|
| 9-2-15 | REVISED PULL BOX DEPTH | |
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 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 | |
| DATE | REVISION | DATE FILM |

ARKANSAS STATE HIGHWAY COMMISSION

HEAVY DUTY PULL BOX

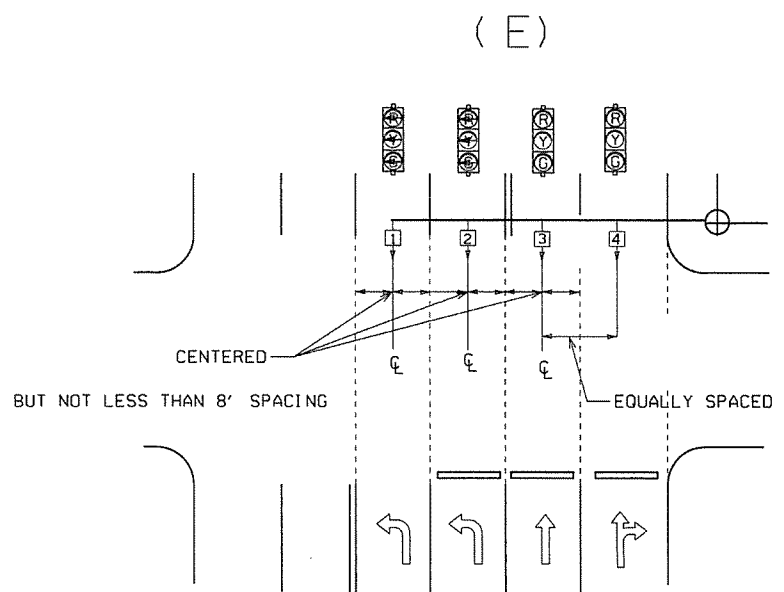
STANDARD DRAWING SD-6



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.

GENERAL NOTES:

- 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.
- THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.
- 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.
- SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.
- 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.
- 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.



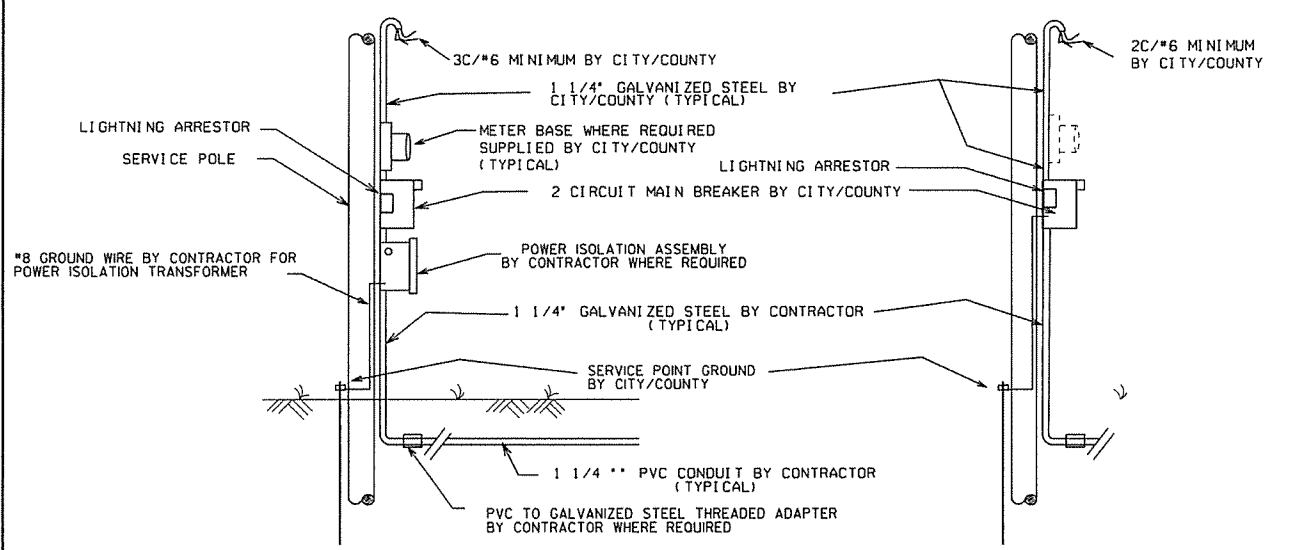
℄ = CENTER OF LANE FROM APPROACH SIDE

| | | | |
|---------|----------------------------|-----------|-----------------------------------|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| 9-12-13 | ISSUED AS STANDARD DRAWING | | SIGNAL HEAD PLACEMENT |
| 3-11-10 | 2009 MUTCD | | |
| 12-9-99 | ISSUED | | STANDARD DRAWING SD-8 |
| DATE | REVISION | DATE FILM | |

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

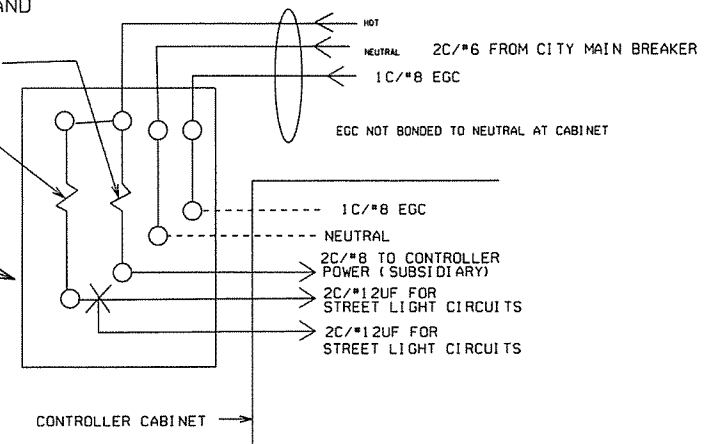
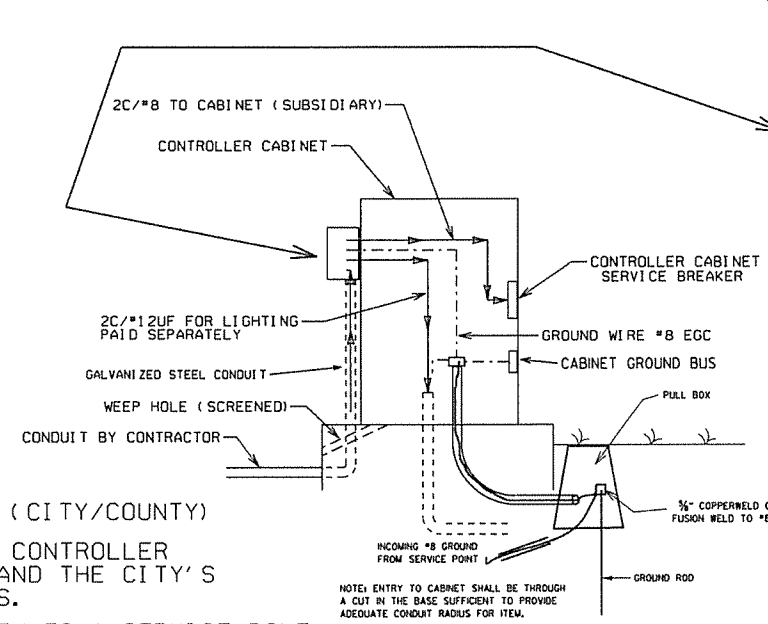
WITH POWER ISOLATION ASSEMBLY

WITHOUT POWER ISOLATION ASSEMBLY



GROUND ROD-A 10' X 3/4" 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 701. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



MAIN BREAKER WIRING (TYPICAL)

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 RAIN-TIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY, 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.

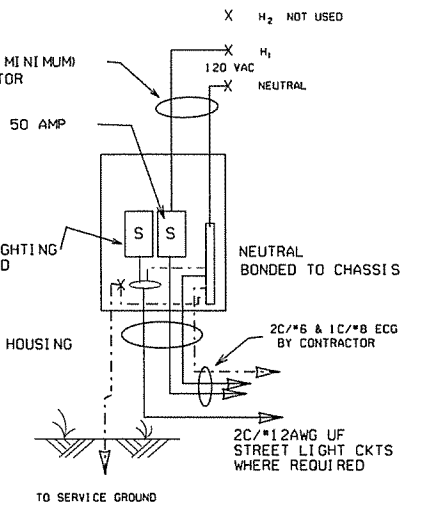
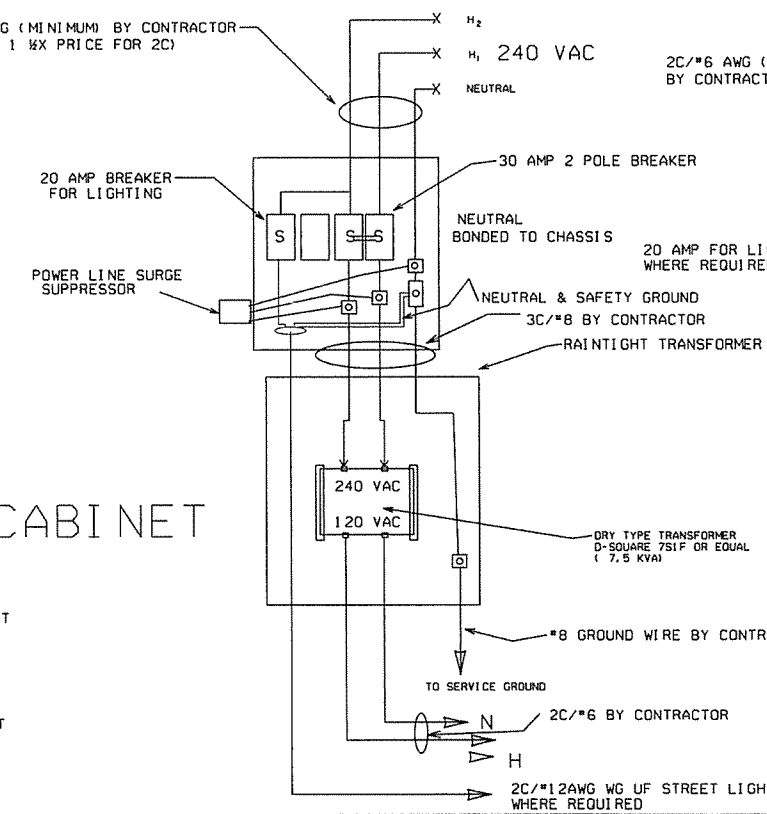
3. MAIN BREAKER NEAR CONTROLLER CABINET: ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

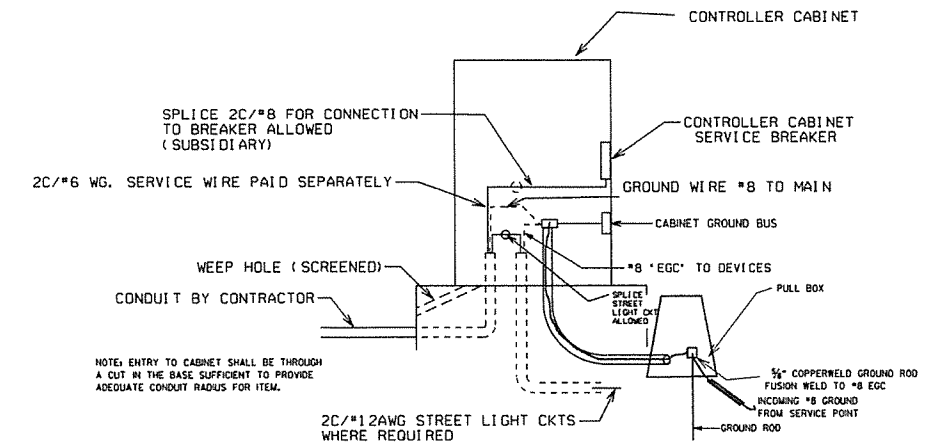
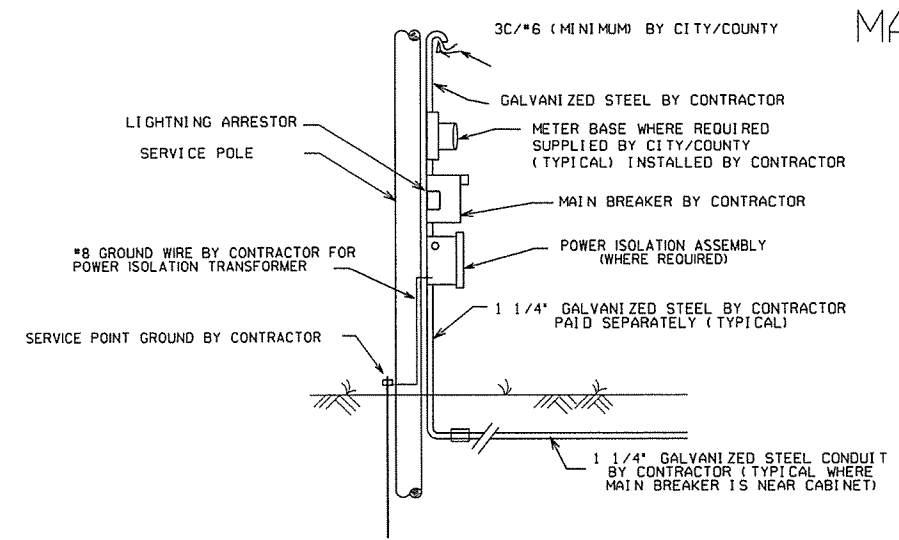
WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER

3C/#6 AWG (MINIMUM) BY CONTRACTOR (PAID AT 1 1/2 X PRICE FOR 2C)



MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED



| DATE | REVISION | DATE FILM |
|----------|----------------------------|-----------|
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 4-18-13 | ADDED LIGHTNING ARRESTOR | |
| 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 | |

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

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

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 (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

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

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

ALL SIGNAL HEADS TO BE ONE WAY, 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.

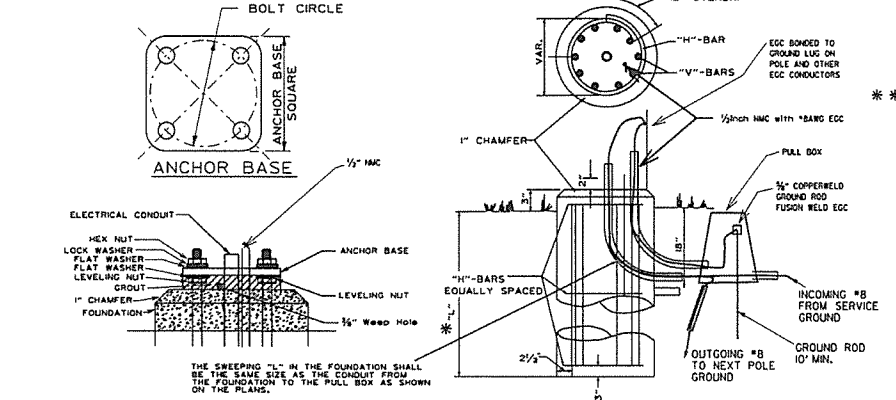
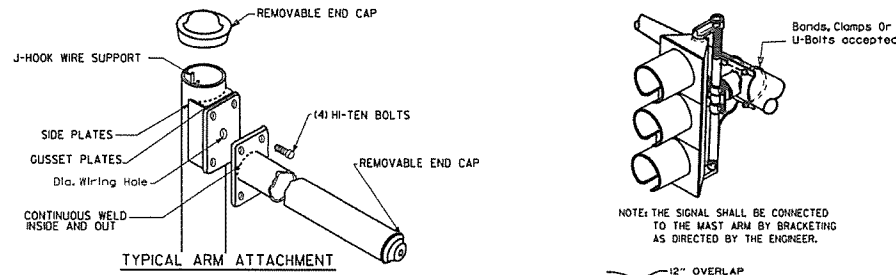
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

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.

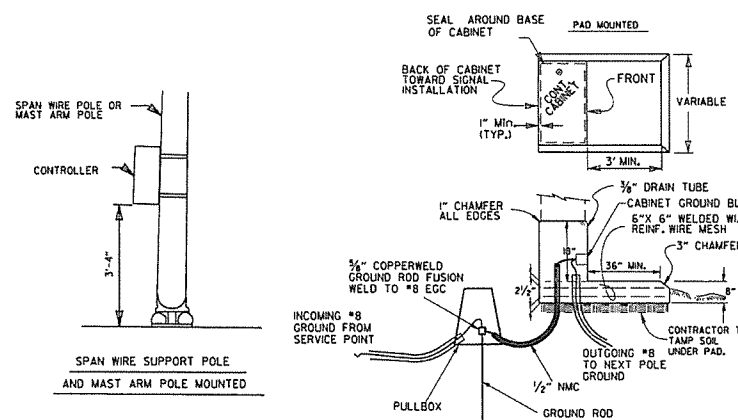


THE GROUND ROD SHALL BE FUSION WELDED TO A 1/2\"/>

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. | HORZ. | 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' |



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:

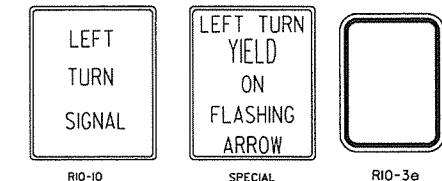
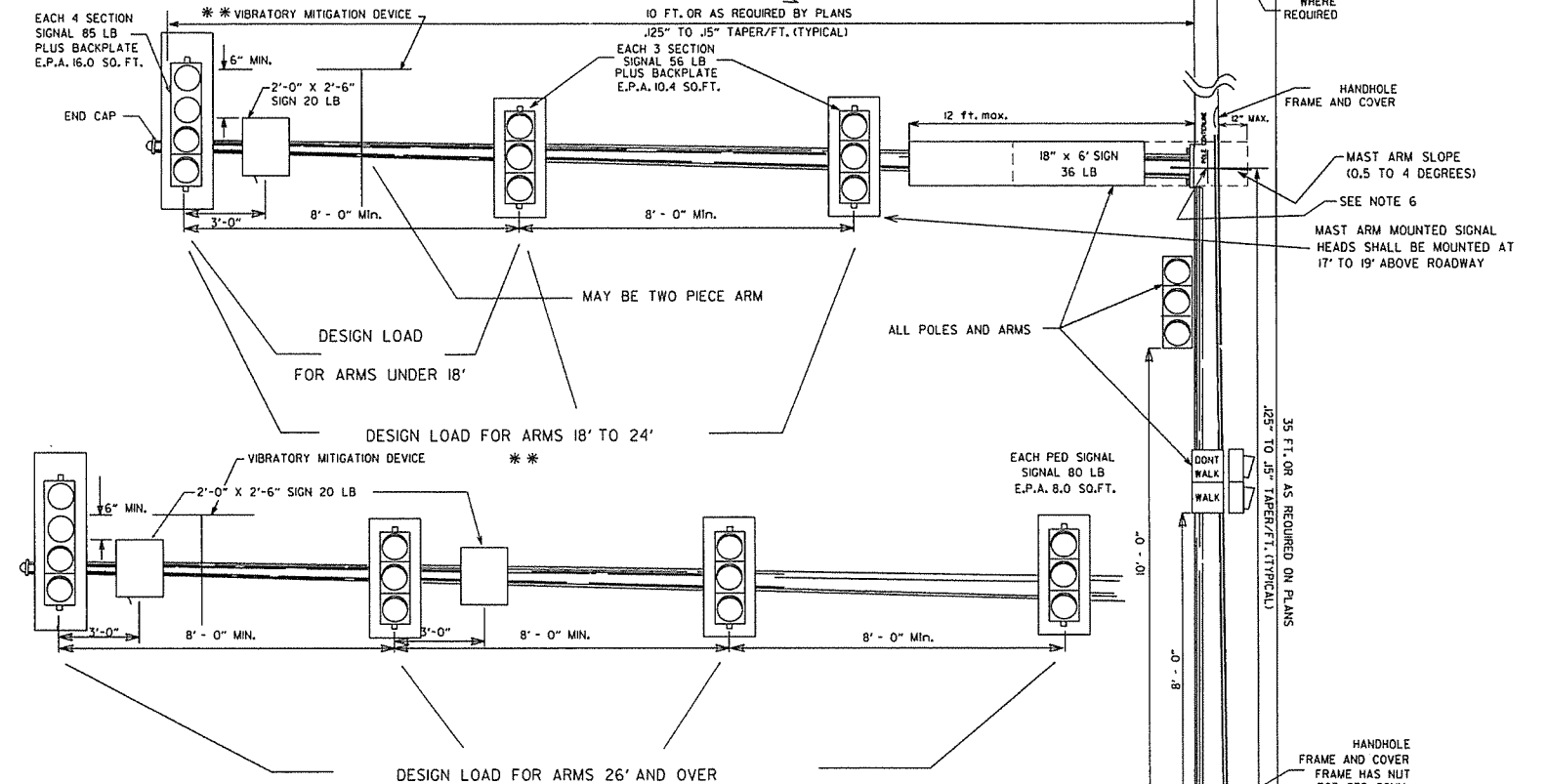
FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

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.

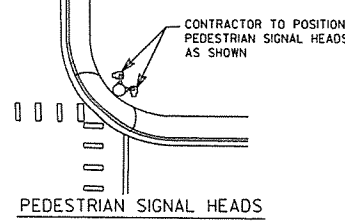
* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL 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.



| DATE | REVISION | DATE FILED |
|----------|---|------------|
| 2-21-14 | REVISED NOTES | |
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 7-21-13 | REVISED YIELD 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 | |
| 10-10-04 | REVISED CABINET ORIENTATION | |
| 6-23-04 | REVISED | |
| 5-4-04 | 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 | |
| 1-22-99 | REVISED FOUNDATION DETAILS | |
| 11-17-98 | REVISED DETAILS AND NOTES | |
| 11-21-95 | ISSUED | |



ADVANCE DISTANCES
(XXXX)

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


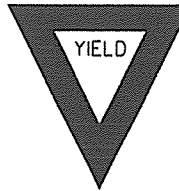
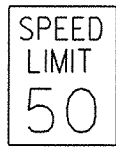


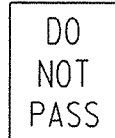
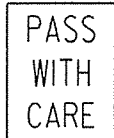
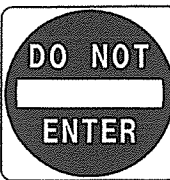

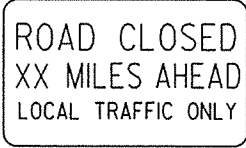
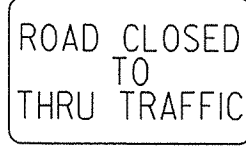
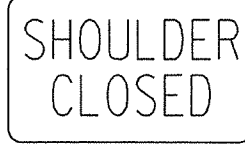
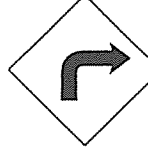

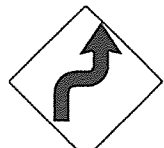

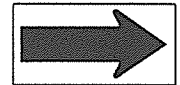
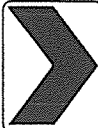
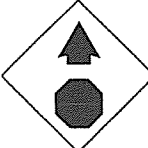
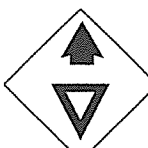
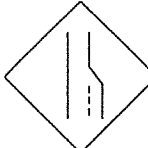



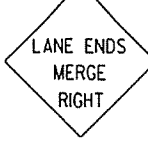






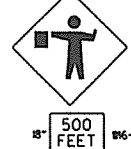


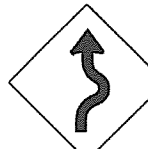




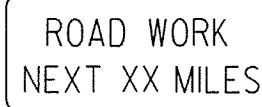
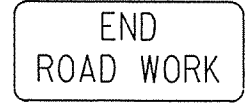
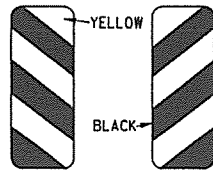
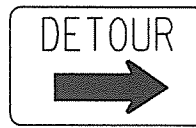

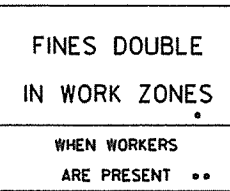
GENERAL NOTES:

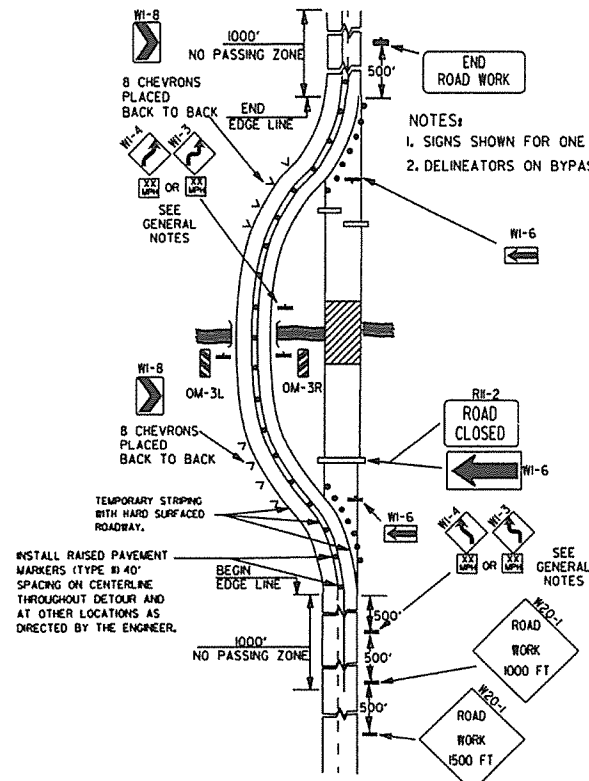
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START 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.
- 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.
- SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SO. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 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.
- 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.
- 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.
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- 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.
- 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.

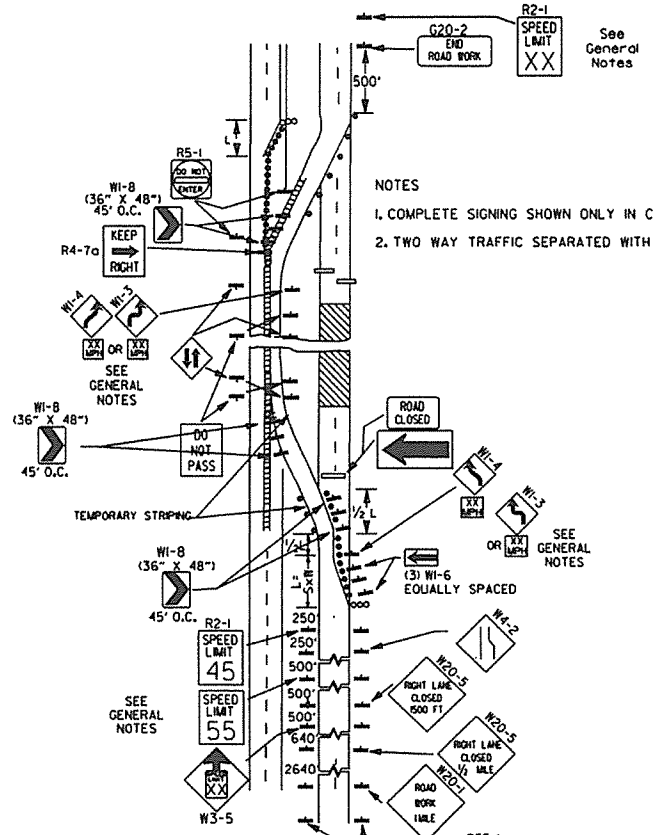
| | | |
|----------|--|--------|
| 9-2-15 | REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES | |
| 12-15-1 | REVISED W24-1 | |
| 11-17-10 | DELETED W8-9a & ADDED W8-9 | |
| 10-15-09 | ADDED REFERENCE TO MASH & ADDED SIGN W24-1 | |
| 4-17-08 | REVISED SIGN DESIGNATIONS | |
| 11-18-04 | 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 | |
| 8-15-94 | DRAWN AND PLACED IN USE | |
| DATE | REVISION | FILMED |

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1

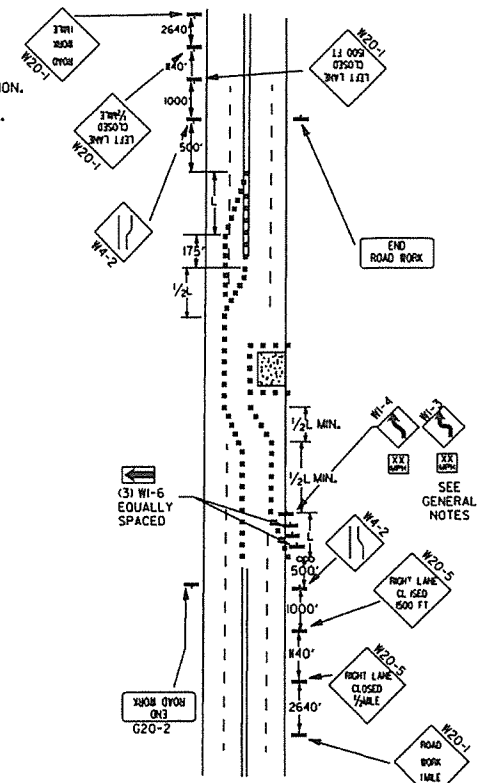
| | | | | | | | |
|--|---|---|--|--|---|---|---|
| <p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p> | <p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p> | <p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p> | <p>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p> | <p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p> | <p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p> | <p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p> | |
| <p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p> | <p>R11-2</p>  <p>48"x30"</p> | <p>R11-3A</p>  <p>60"x30"</p> | <p>R11-4</p>  <p>60"x30"</p> | <p>RSP-1</p>  <p>48"x30"</p> | <p>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | |
| <p>W1-3</p>  <p>STD. 48"x48"</p> | <p>W1-4</p>  <p>STD. 48"x48"</p> | <p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p> | <p>W1-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p> | <p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p> | <p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p> | <p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | |
| <p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p> | <p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p> | <p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p> | <p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W13-1</p>  <p>STD. 24"x24"</p> | <p>W20-1</p>  <p>STD. 48"x48"</p> | <p>W20-2</p>  <p>STD. 48"x48"</p> | <p>W20-3</p>  <p>STD. 48"x48"</p> |
| <p>W20-4</p>  <p>STD. 48"x48"</p> | <p>W20-5</p>  <p>STD. 48"x48"</p> | <p>W20-7a</p>  <p>500 FEET 24" W6-2</p> <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p> | <p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p> | <p>W24-1</p>  <p>STD. 36"x36"</p> | <p>W1-4b</p>  <p>STD. 48"x48"</p> | <p>R56-1</p>  <p>STD. 18"x18"</p> |
| <p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>G20-1</p>  <p>60"x24"</p> | <p>G20-2</p>  <p>48"x24"</p> | <p>OM-3L OM-3R</p>  <p>12"x36"</p> | <p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p> | <p>M4-10</p>  <p>48"x18"</p> | <p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p> |



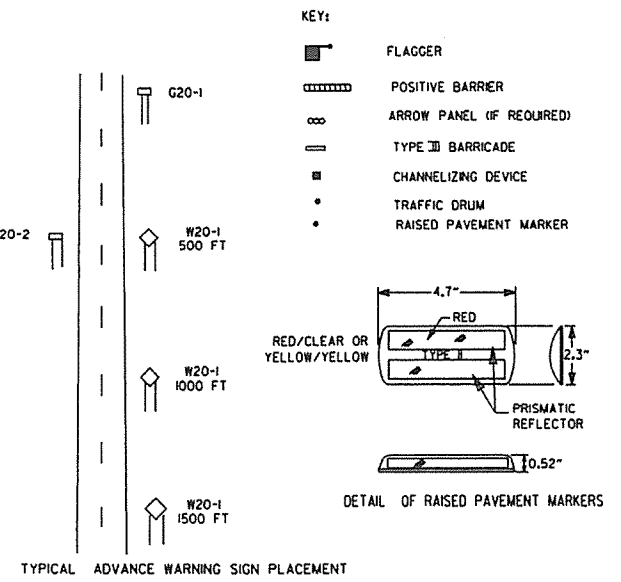
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



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



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

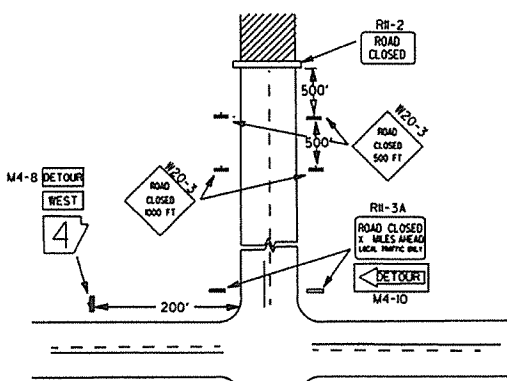


TAPER FORMULAE:
 L = SXW FOR SPEEDS OF 45MPH OR MORE.
 L = $\frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.
 WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
 W = WIDTH OF OFFSET.

- GENERAL NOTES:
- 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.
 - WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1(45)MPH 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.
 - WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(65) SHALL BE OMITTED. ADDITIONAL R2-1(55)MPH 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.
 - 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.
 - WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 - PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
 - 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.
 - 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.

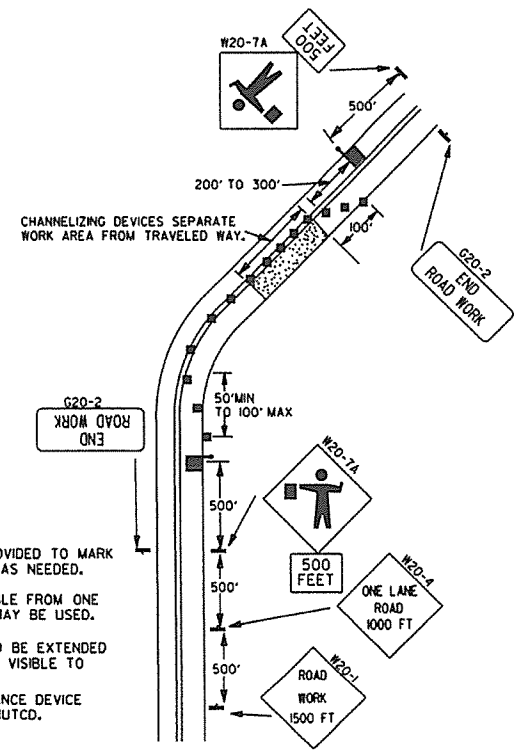
| | | |
|----------|--|--------|
| 9-2-15 | REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5 | |
| 9-12-13 | REVISED DETAIL OF RAISED PAVEMENT MARKERS | |
| 3-8-10 | ADDED (AFAD) | |
| 8-20-08 | REVISED SIGN DESIGNATIONS | |
| 8-18-04 | ADDED GENERAL NOTE | |
| 10-18-96 | ADDED R55-1 | |
| 4-26-96 | CORRECTED (1) 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 | |
| DATE | REVISION | FILMED |

ARKANSAS STATE HIGHWAY COMMISSION
 STANDARD TRAFFIC CONTROL
 FOR HIGHWAY CONSTRUCTION
 STANDARD DRAWING TC-2

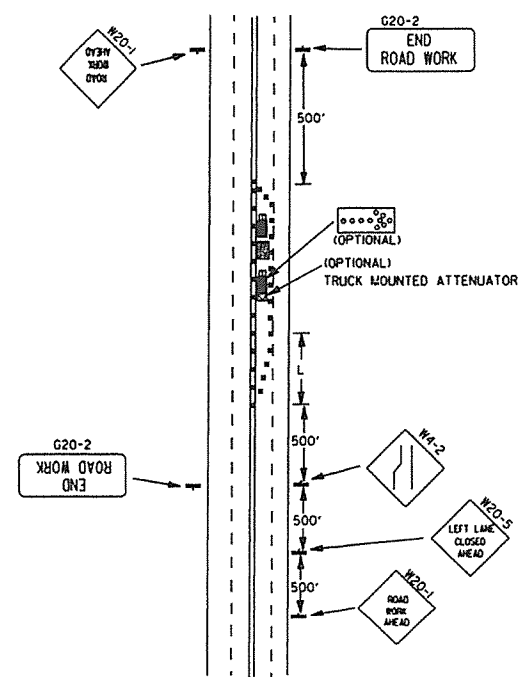


- NOTES:
 1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
 2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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

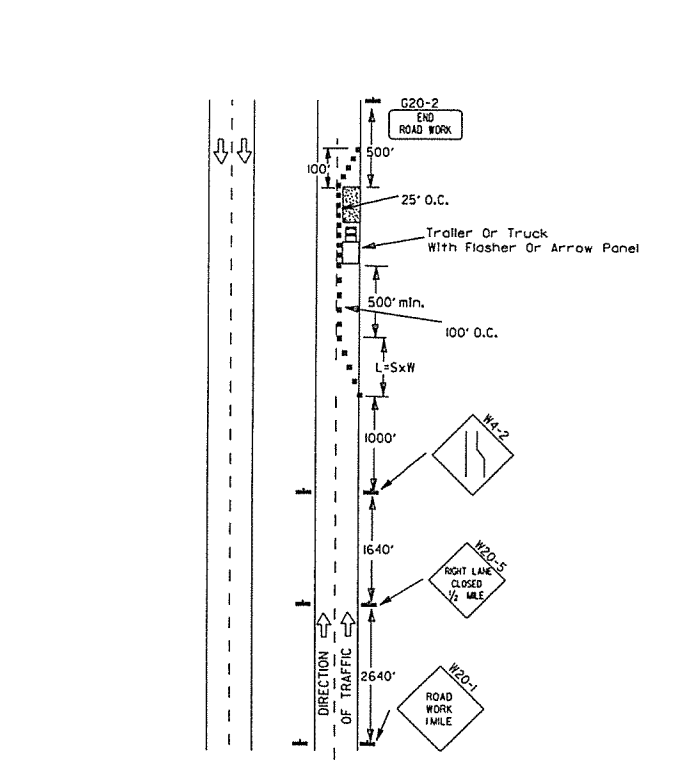


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.

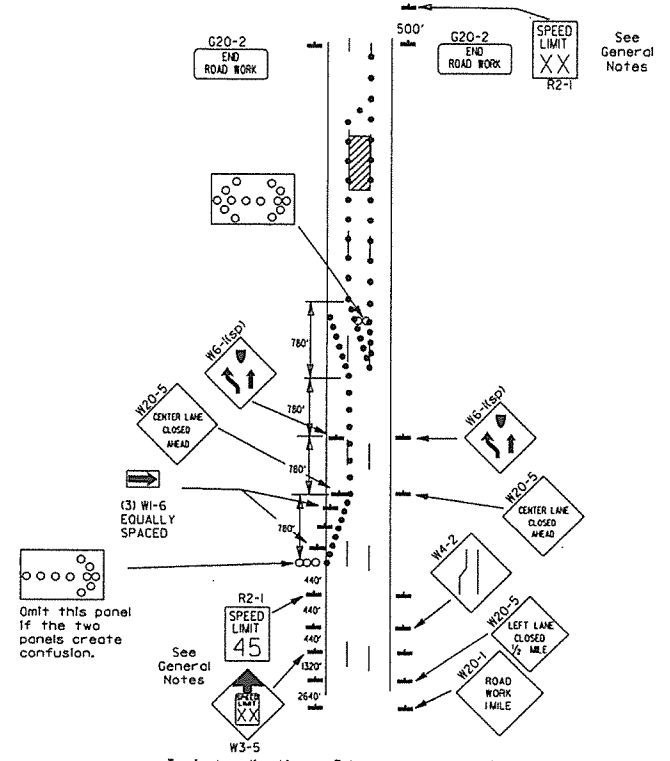


(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

Channelizing devices



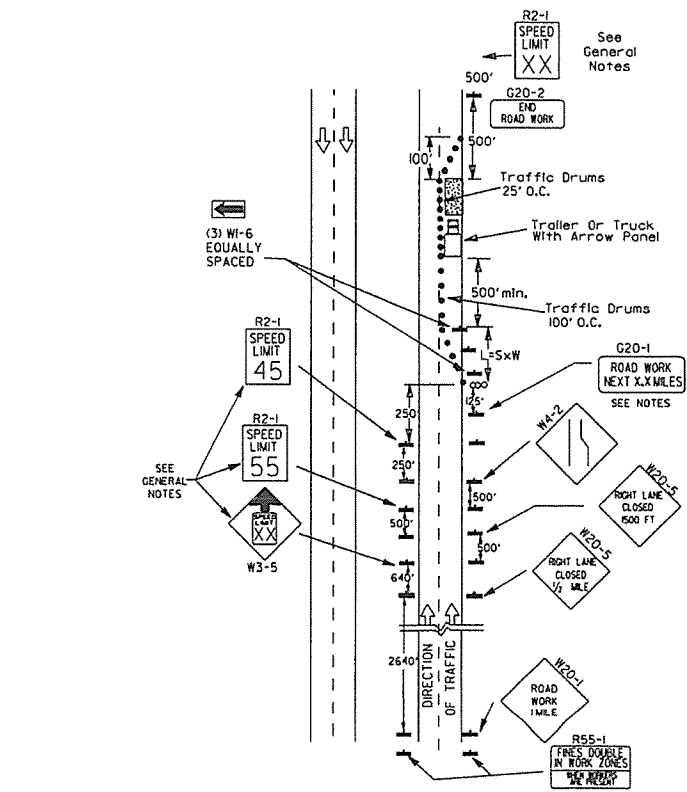
(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



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

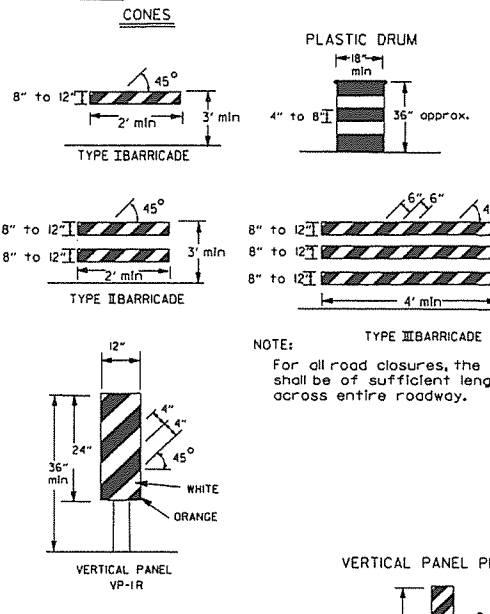
- KEY:
- ◻ Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

- GENERAL NOTES:
- A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
 - When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
 - When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(65) shall be omitted. Additional R2-155mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
 - 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.
 - Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
 - Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
 - 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 (1/2 MILE) signs are not required in advance of lane closures that begin inside the project limits.
 - Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
 - All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
 - 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.



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

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

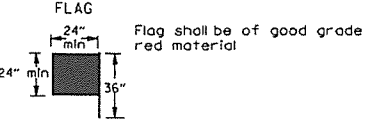


NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

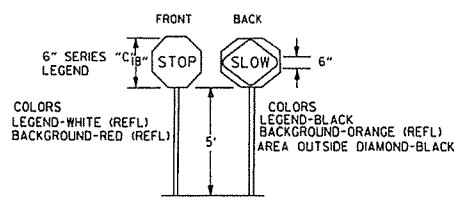
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

| 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-land vertical panels, drums or concrete barrier |
| Greater than 3" | Edge of shoulder | *Vertical panels, drums or concrete barrier |

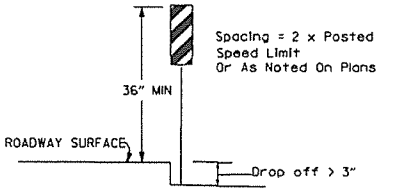
* When shown on the plans concrete barrier will be used. When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



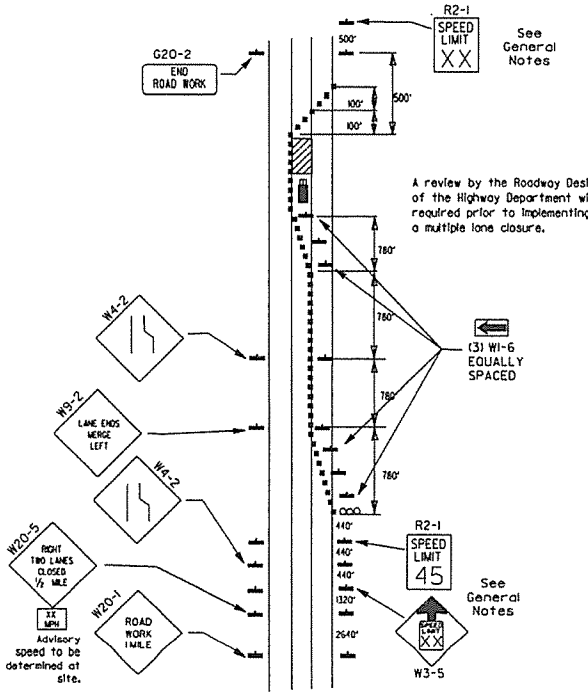
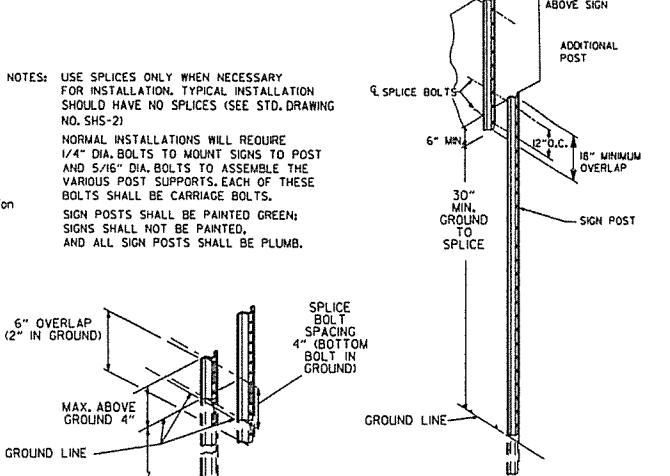
STOP SLOW PADDLE



VERTICAL PANEL PLACEMENT



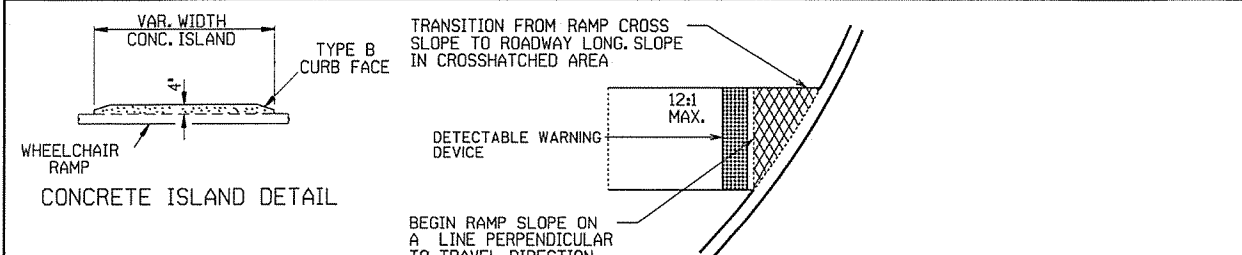
DETAIL OF SPLICES



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

| DATE | REVISION | FILMED |
|----------|--|--------|
| 9-2-15 | REVISED NOTE 2 & REPLACED R2-5A WITH W3-5 | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 11-20-08 | REVISED SIGN DESIGNATIONS | |
| 11-18-04 | ADDED NOTE | |
| 10-1-98 | ADDED NOTE | |
| 4-03-97 | ADDED (SPI) 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

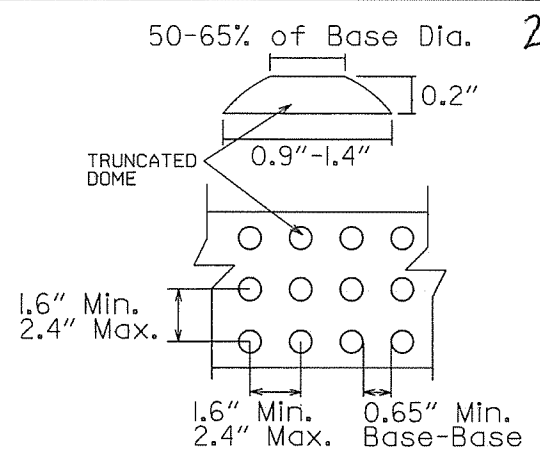


TYPE 1 RAMP DIMENSIONS AND QUANTITIES

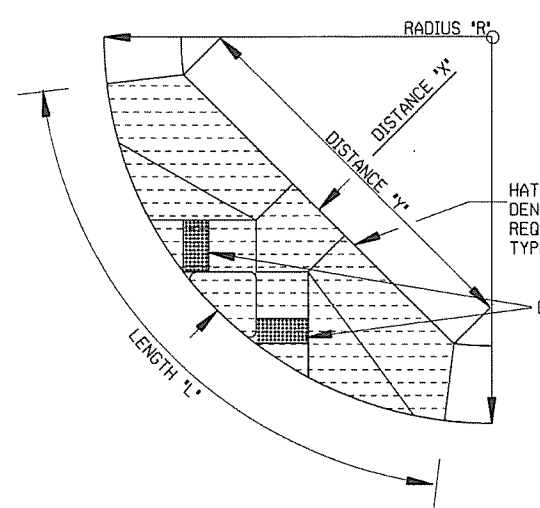
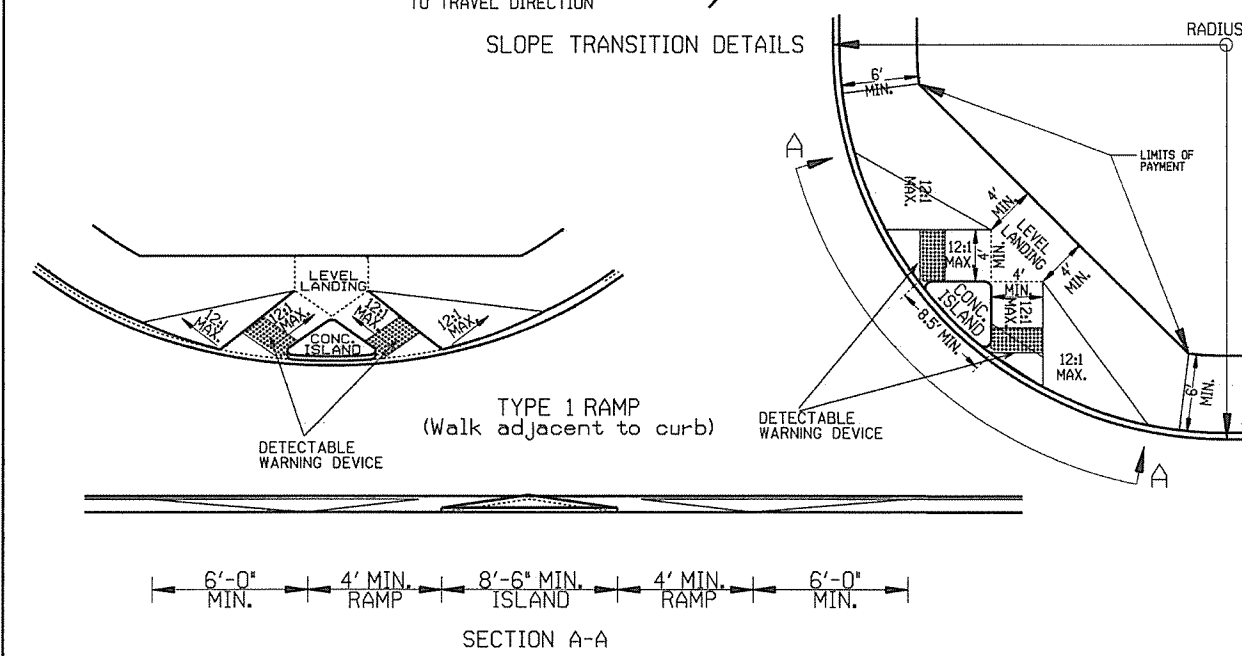
| RADIUS 'R' | DISTANCE 'X' | DISTANCE 'Y' | LENGTH 'L' | RAMP AREA 'A' |
|------------|--------------|--------------|------------|---------------|
| FEET | FEET | FEET | FEET | SQ. YD. |
| 15 | 11.67 | 18.82 | 32.18 | 26.21 |
| 20 | 11.52 | 22.28 | 35.46 | 30.07 |
| 25 | 11.43 | 26.60 | 38.77 | 33.80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

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

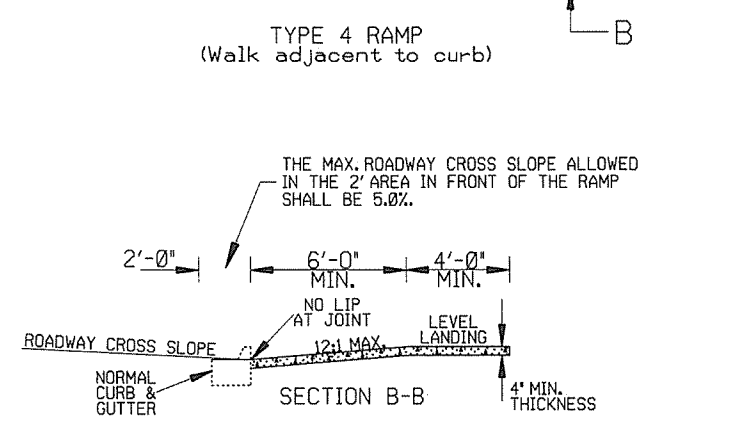
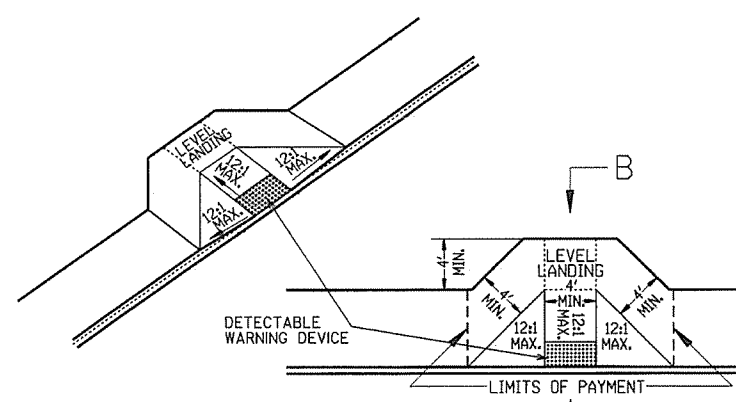
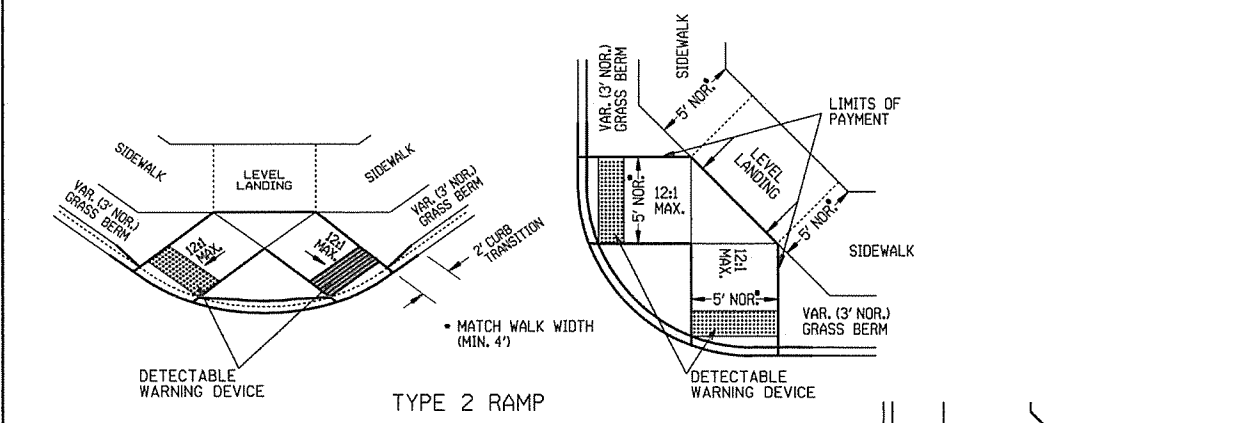
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB. TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES. DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE. DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



DETECTABLE WARNING DEVICE DETAIL



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



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 PAYEMENT 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 OPPOSITE SIDE OF THE INTERSECTION. THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

RAMP SELECTION CRITERIA

| CHOICE | TYPE | DESCRIPTION |
|---------------|--------|---|
| 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.

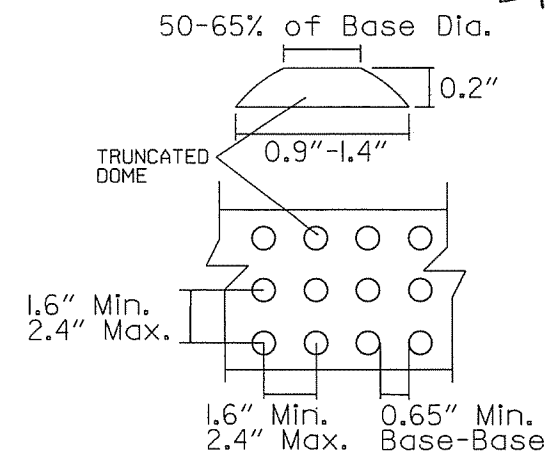
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|----------|------------------------------------|-------------|
| 11-10-05 | REVISED TO NEW SIDEWALK POLICY | |
| 10-9-03 | REVISED GEN. NOTES & ADDED NOTE | |
| 4-10-03 | REV. DETECTABLE WARNING DEVICES | |
| 8-22-02 | ADD DETECTABLE WARNING DEVICES | |
| 3-30-00 | ADD SLOPE TRANS. & REV. ISL. DIMS. | |
| 11-18-98 | REVISED NOTES | |
| 8-12-98 | REVISED TEXTURE | |
| 7-02-98 | REDRAWN & REISSUED | |
| 10-18-96 | CORRECTED DIMENSIONS | 10-18-96 |
| 5-24-90 | FROM 8:1 TO 12:1 MAX. SLOPES | 5-24-90 |
| 7-15-88 | ADJUSTED MAX. SLOPE | 652-7-15-88 |
| 7-14-88 | INCL. "CONC. ISLD." IN PAY ITEM | |
| 6-02-76 | ISSUED P.H.D. | 299-7-28-76 |
| DATE | REVISION | DATE FILM |

ARKANSAS STATE HIGHWAY COMMISSION

**WHEELCHAIR RAMPS
 NEW CONSTRUCTION
 AND ALTERATIONS**

STANDARD DRAWING WR-1

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

GENERAL NOTES:

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 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 022.19.
 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 EXISTING WALK WIDTH OR 36", WHICHEVER IS GREATER.
 MINOR MODIFICATIONS OF THESE DETAILS, AS APPROVED BY THE ENGINEER, MAY BE MADE TO ADJUST TO LOCAL CONDITIONS.

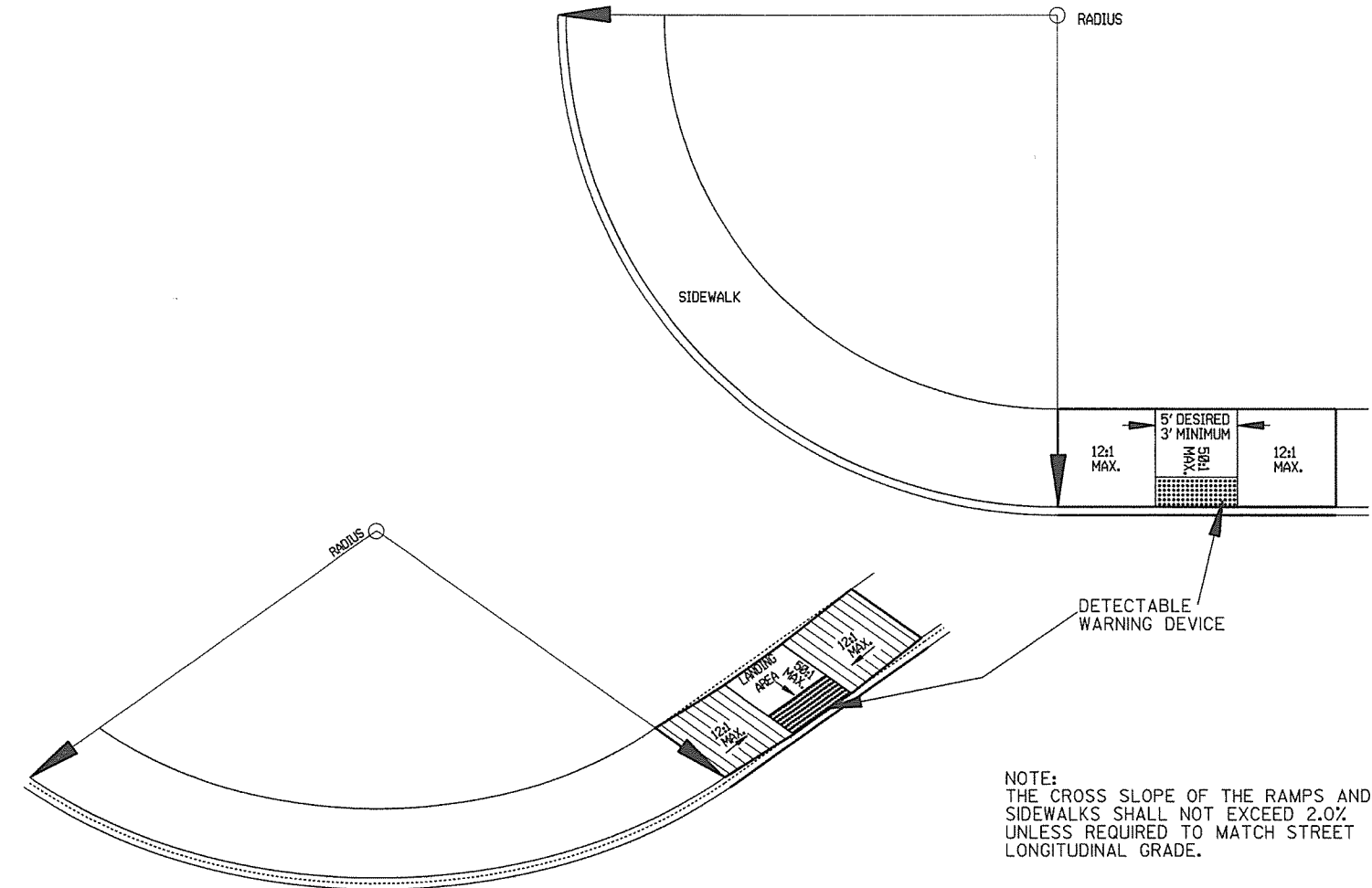
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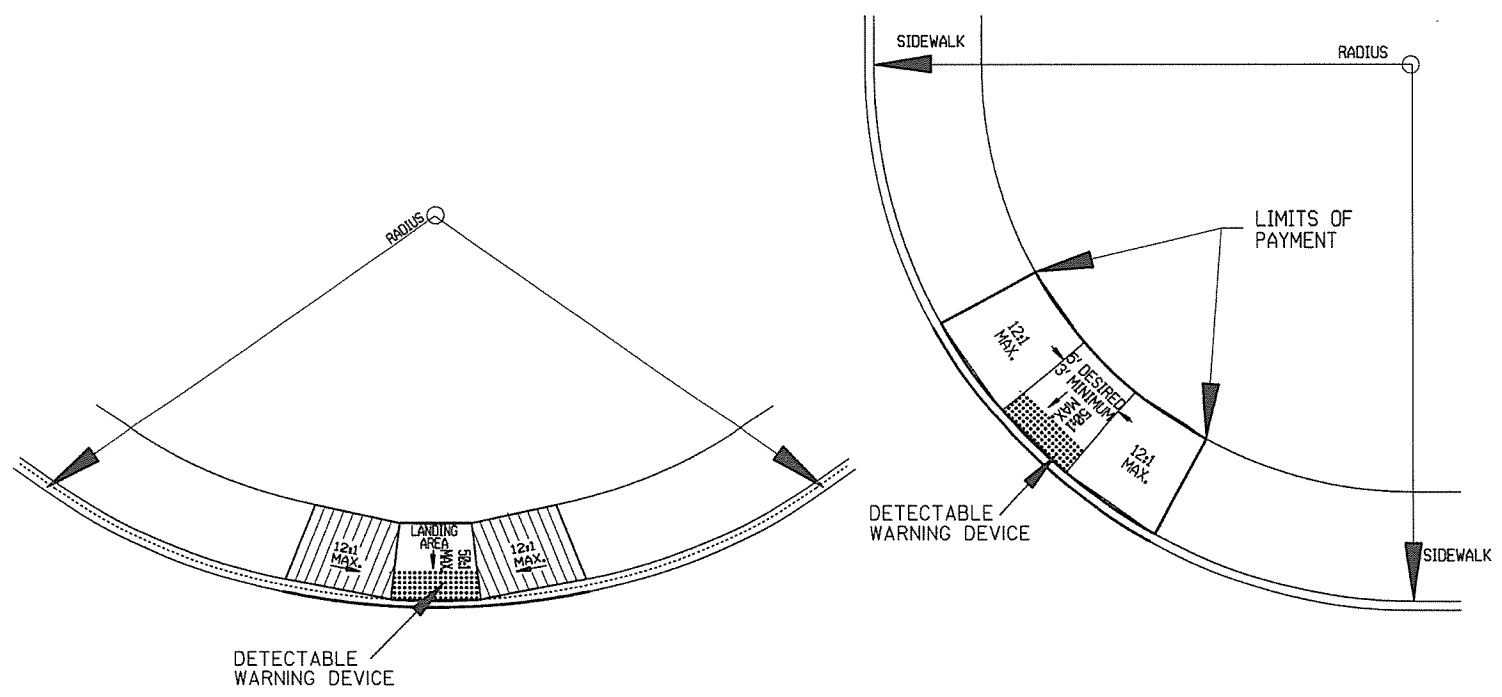
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| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| 10-9-03 | REVISED GENERAL NOTES & ADDED NOTE. | 10-09-03 | WHEELCHAIR RAMPS ALTERATIONS ONLY |
| 4-10-03 | REVISED DETECTABLE WARNING DEVICE DETAIL | | |
| 8-22-02 | ADDED DETECTABLE WARNING DEVICES DETAILS | | STANDARD DRAWING WR-2 |
| 11-18-98 | REV. FOURTH CHOICE NOTE | | |
| 8-12-98 | REVISED TEXTURE | | |
| 7-02-98 | ISSUED | | |
| DATE | REVISION | DATE | FILM |



TYPE 5 RAMP



TYPE 6 RAMP