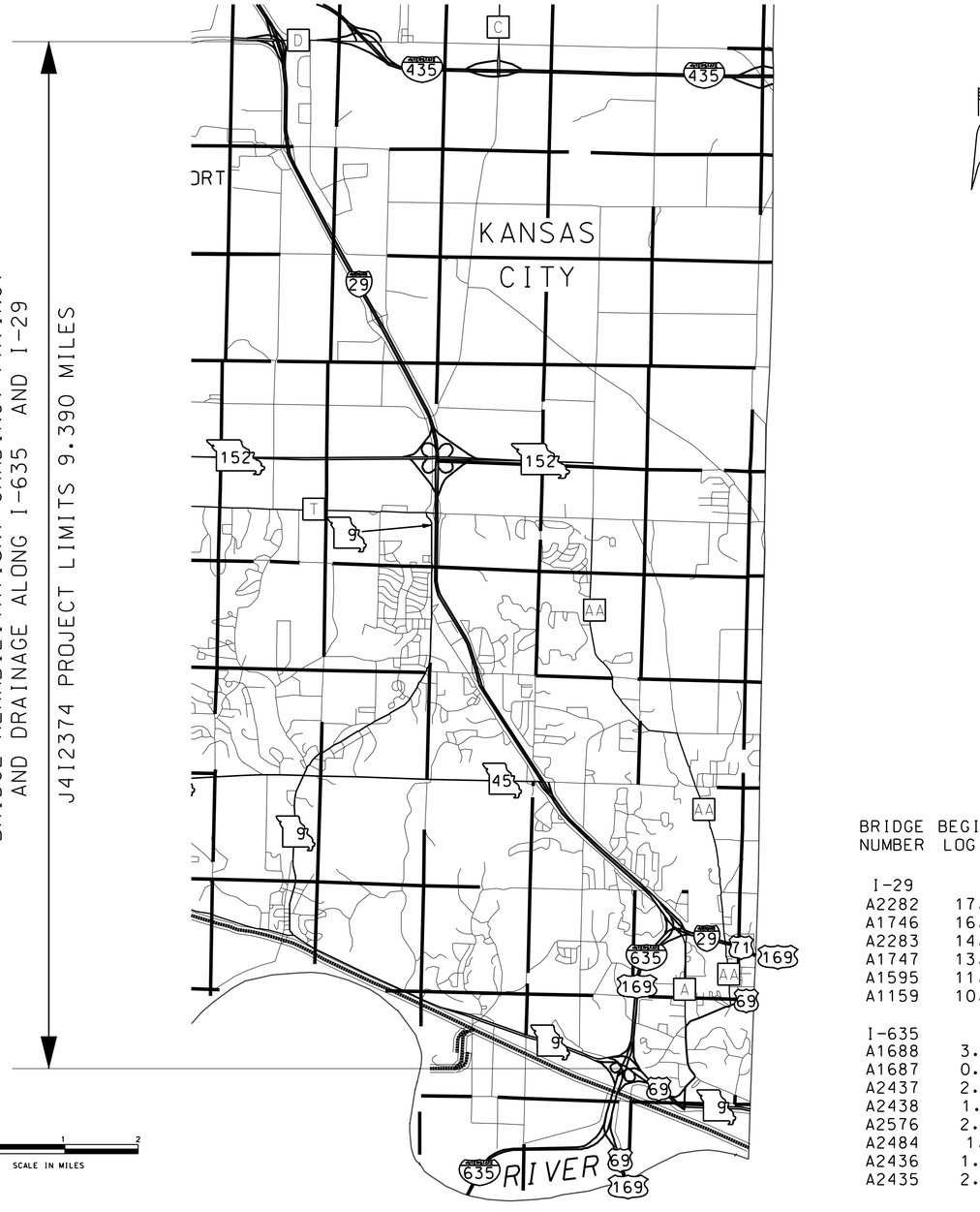
# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
# PLANS FOR PROPOSED
# STATE HIGHWAY
## PLATTE COUNTY

BRIDGE REHABILITATION, GRADING, PAVING, AND DRAINAGE ALONG I-635 AND I-29

J412374 PROJECT LIMITS 9.390 MILES




SCALE IN MILES 1/2 0 1 2

### DESIGN DESIGNATION I-635

A.A.D.T. - 2014 = 54405
A.A.D.T. - 2034 = 57206
T = 13%
V = 65 M.P.H.
D = 55%

FUNCTIONAL CLASSIFICATION-INTERSTATE

### DESIGN DESIGNATION I-29

A.A.D.T. - 2014 = 80493
A.A.D.T. - 2024 = 92567
T = 5.4%
V = 65 M.P.H.
D = 50%

FUNCTIONAL CLASSIFICATION-INTERSTATE

NO RIGHT OF WAY IS TO BE AQUIRED WITH THIS PROJECT

### CONVENTIONAL SYMBOLS
(USED IN PLANS)

| | EXISTING | NEW |
|---|---|---|
| BUILDINGS AND STRUCTURES | | |
| GUARD RAIL | | |
| CONCRETE RIGHT-OF-WAY MARKER | | |
| STEEL RIGHT-OF-WAY MARKER | | |
| LOCATION SURVEY MARKER | | |
| UTILITIES | | |
| FIBER OPTICS | -FO- | FO |
| OVERHEAD TELEPHONE | | |
| UNDERGROUND TELEPHONE | -T- | T |
| OVERHEAD POWER | | |
| UNDERGROUND POWER | -P- | P |
| GAS | -G- | G |
| WATER | -W- | W |
| MANHOLE | SAN | |
| FIRE HYDRANT | HYD | |
| WATER VALVE | WV | |
| WATER METER | WM | |
| DROP INLET | DI | |
| DITCH BLOCK | | |
| GROUND MOUNTED SIGN | SIGN | |
| LIGHT POLE | | |
| H-FRAME POWER POLE | | |
| TELEPHONE PEDESTAL | PED | |
| FENCE | | |
| CHAIN LINK | -V- | |
| WOVEN WIRE | -X- | |
| GATE POST | | |
| BENCHMARK | BM | |

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

| BRIDGE NUMBER | BEGINNING LOG MILE | ENDING LOG MILE |
|---|---|---|
| I-29 | | |
| A2282 | 17.822 | 17.850 |
| A1746 | 16.788 | 16.82 |
| A2283 | 14.995 | 15.03 |
| A1747 | 13.019 | 13.053 |
| A1595 | 11.404 | 11.444 |
| A1159 | 10.213 | 10.247 |
| I-635 | | |
| A1688 | 3.625 | 3.693 |
| A1687 | 0.089 | 0.144 |
| A2437 | 2.286 | 2.317 |
| A2438 | 1.411 | 1.434 |
| A2576 | 2.616 | 2.646 |
| A2484 | 1.09 | 1.117 |
| A2436 | 1.499 | 1.522 |
| A2435 | 2.175 | 2.232 |

## INDEX OF SHEETS



## LENGTH OF PROJECT

| | |
|---|---|
| BEGINNING OF PROJECT (I-29) | SB LOG 110.882 |
| END OF PROJECT (I-29) | SB LOG 118.519 |
| APPARENT LENGTH | 7.637 MILES |
| EQUATIONS AND EXCEPTIONS: | N/A |
| BEGINNING OF PROJECT (I-635) | SB LOG MILE 0.000 |
| END OF PROJECT (I-635) | SB LOG MILE 1.753 |
| APPARENT LENGTH | 1.753 MILES |
| EQUATIONS AND EXCEPTIONS: | N/A |
| NET LENGTH OF PROJECT | 9.390 MILES |
| STATE LENGTH | 9.390 MILES |

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 12/17/2013
ROUTE VAR | STATE MO
DISTRICT KC | SHEET NO. 1
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

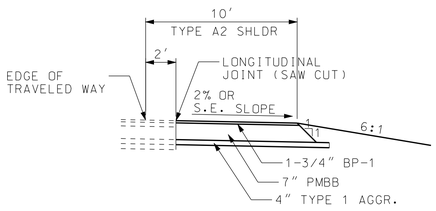
DESCRIPTION | DATE


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

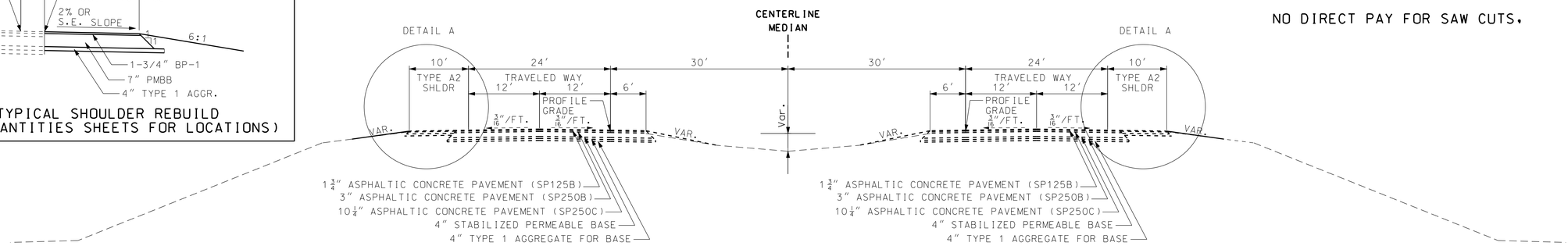

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

## DETAIL A




TYPICAL SHOULDER REBUILD
(SEE QUANTITIES SHEETS FOR LOCATIONS)



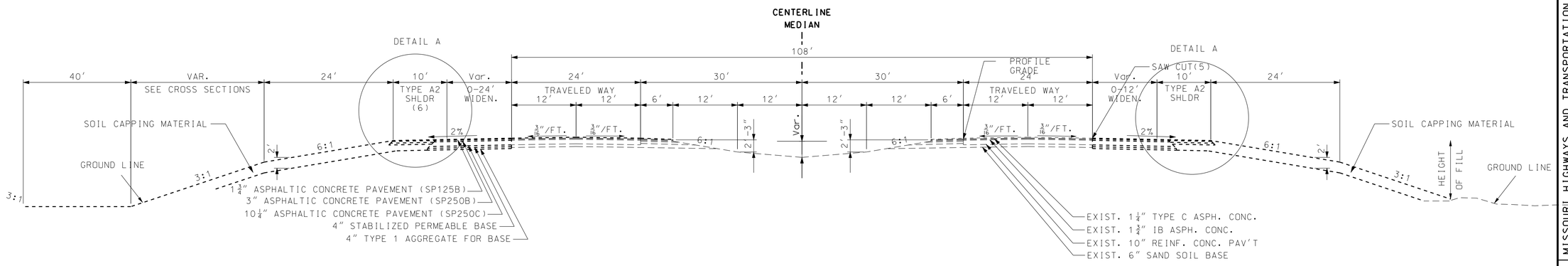

SECTION ON TANGENT
TYPICAL SECTION I-635

NOTES:

NO DIRECT PAY FOR SAW CUTS.

### ASPHALT MATERIAL ESTIMATE FACTORS
### (FOR INFORMATION ONLY)

ASPHALTIC CONCRETE MIXTURE (TYPE SP095BSM MIX) = 1.907 TON/CY COMPACTED MIXTURE
BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-2) = 2.069 TON/CY COMPACTED MIXTURE
BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1) = 1.987 TON/CY COMPACTED MIXTURE
BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE) = 2.005 TON/CY COMPACTED MIXTURE
TACK = 0.08 GAL/S.Y.




SECTION ON TANGENT
TYPICAL SECTION I-635

## TYPICAL SECTION

SHEET 1 OF 2

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
12/17/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 2 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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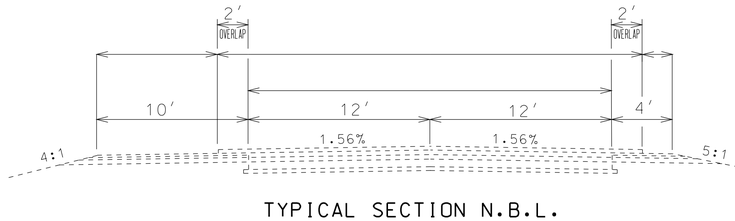
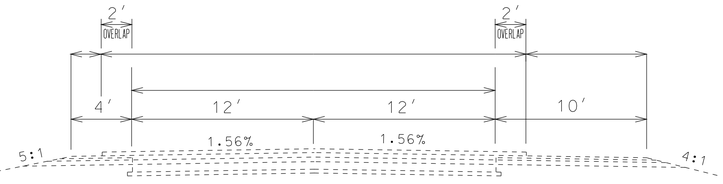



TYPICAL SECTION N.B.L.




TYPICAL SECTION S.B.L.

SB LOG MILES
110.750 - 111.124

## ASPHALT MATERIAL ESTIMATE FACTORS
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ASPHALTIC CONCRETE MIXTURE (TYPE SP095BSM MIX) = 1.907 TON/CY COMPACTED MIXTURE
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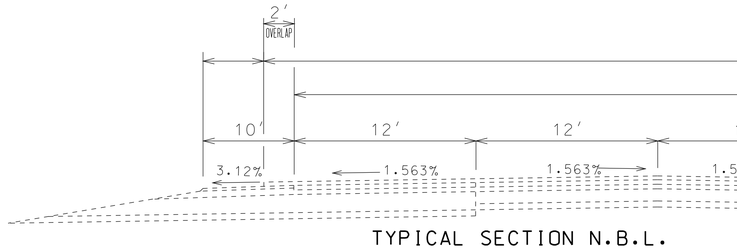
BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1) = 1.987 TON/CY COMPACTED MIXTURE
BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE) = 2.005 TON/CY COMPACTED MIXTURE
TACK = 0.08 GAL/S.Y.

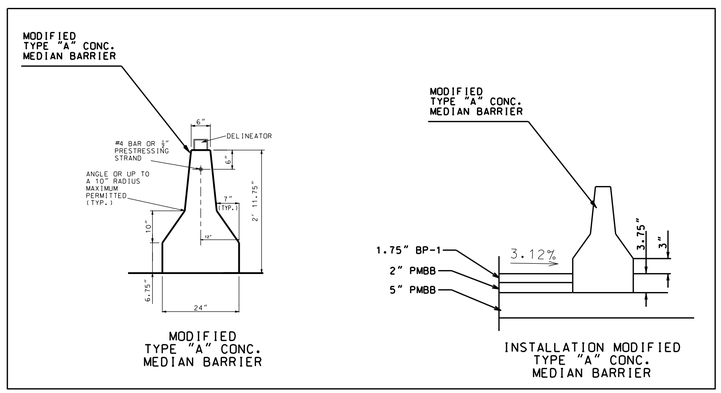


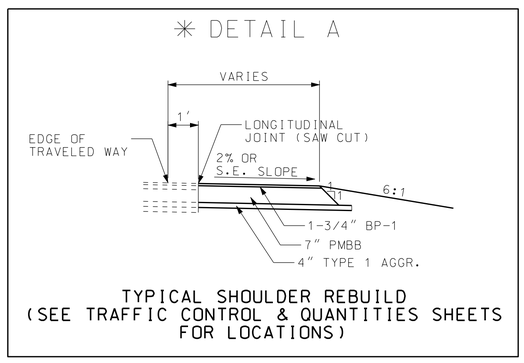

TYPICAL SECTION N.B.L.

SB LOG MILES
111.424 - 119.574

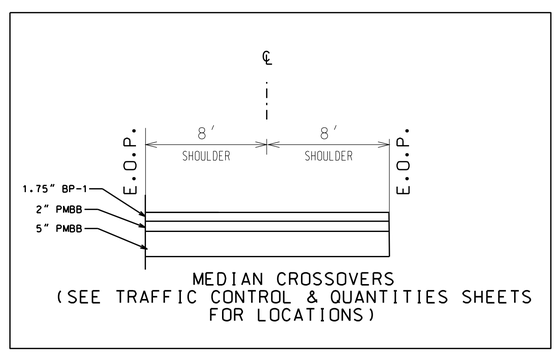
MODIFIED
TYPE "A" CONC.
MEDIAN BARRIER


TYPICAL SECTION S.B.L.




TYPICAL SHOULDER REBUILD
(SEE TRAFFIC CONTROL & QUANTITIES SHEETS
FOR LOCATIONS)




MEDIAN CROSSOVERS
(SEE TRAFFIC CONTROL & QUANTITIES SHEETS
FOR LOCATIONS)

NOT TO SCALE - FOLLOW DIMENSIONS

TYPICAL SECTION
2 OF 2

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DATE PREPARED
12/17/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 2 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES

| Removal of Improvements | | | | | | | |
|---|---|---|---|---|---|---|---|
| Route | Dir | Plan Sheet No. | Cross Street | Bridge No. | Removal Item | Quantity | Remarks |
| I-29 | SB | 1 | NW Mid Continent Tfwy | A22823 | Guardrail | 180 LF + GC Anchor | Complete Guardrail Run - NW Corner |
| I-29 | SB | 1 | NW Mid Continent Tfwy | A22823 | Guardrail | 530 LF | Complete Guardrail Run - NW Corner |
| I-29 | NB | 1 | NW Mid Continent Tfwy | A22824 | Guardrail | 175 LF | Complete Guardrail Run - SE Corner |
| I-29 | NB | 1 | NW Mid Continent Tfwy | A22824 | Guardrail | 165 LF + GC Anchor | Complete Guardrail Run - SW Corner |
| I-29 | NB | 2 | 112th St | A17463 | Guardrail | 200 LF | Complete Guardrail Run - SE Corner |
| I-29 | SB | 2 | 112th St | A17462 | Guardrail | 230 LF | Complete Guardrail Run - NW Corner |
| I-29 | SB | 2 | 112th St | A17462 | Guardrail | 395 LF | Complete Guardrail Run - SW Corner |
| I-29 | SB | 3 | Tiffany Springs Parkway | A22832 | Guardrail | 180 LF | Complete Guardrail Run - NW Corner |
| I-29 | NB | 3 | Tiffany Springs Parkway | A22833 | Guardrail | 175 SF | Complete Guardrail Run - SE Corner |
| I-29 | SB | 4 | Barry Road | A17473 | Guardrail | 215 LF | Complete Guardrail Run - NW Corner |
| I-29 | NB | 4 | Barry Road | A17474 | Guardrail | 480 LF | Complete Guardrail Run - NE Corner |
| I-29 | NB | 4 | Barry Road | A17474 | Guardrail | 160 LF | Complete Guardrail Run - SE Corner |
| I-29 | SB | 5 | NW 72nd St | A15954 | Guardrail | 590 SF | Complete Guardrail Run - NW Corner |
| I-29 | SB | 5 | NW 72nd St | A15954 | Guardrail | 180 SF | Complete Guardrail Run - SW Corner |
| I-29 | NB | 5 | NW 72nd St | A15955 | Guardrail | 390 SF | Complete Guardrail Run - SE Corner |
| I-29 | SB | 6 | ROUTE 45 | A11594 | APPROACH SLAB | 370 SY | INCLUDE MEDIAN AREA |
| I-29 | SB | 6 | ROUTE 45 | A11594 | APPROACH PAVEMENT | 384 SY | NB & SB |
| I-29 | SB | 6 | ROUTE 45 | A1159 | GUIDE SIGN | 2 EACH | EAST & WEST SIDE OF BRIDGE |
| I-29 | SB | 6 | ROUTE 45 | A1159 | CLEARANCE SIGN | 2 EACH | EAST & WEST SIDE OF BRIDGE |
| I-29 | SB | 6 | ROUTE 45 | A1159 | SIGN BRACKETS | 2 EACH | EAST & WEST SIDE OF BRIDGE |
| I-29 | NB | 6 | ROUTE 45 | A11595 | APPROACH SLAB | 370 SY | INCLUDE MEDIAN AREA |
| I-29 | NB | 6 | ROUTE 45 | A11595 | APPROACH PAVEMENT | 384 SY | NB & SB |
| I-29 | SB | 6 | ROUTE 45 | A1159 | Type A Barrier | 75 LF | N end of bridge |
| I-29 | NB | 6 | ROUTE 45 | A1159 | Type A Barrier | 75 LF | S end of bridge |
| I-29 | SB | 6 | ROUTE 45 | A1159 | Guardrail | 570 LF | Complete Guardrail Run - NW Corner |
| I-29 | NB | 6 | ROUTE 45 | A1159 | Guardrail | 845 LF | Complete Guardrail Run - SW Corner |
| I-29 | NB | 6 | ROUTE 45 | A1159 | Guardrail | 545 LF | Complete Guardrail Run - SE Corner |
| I-29 | SB | 7 | RAMP 1: I-29 NB TO I-635 SB OVER I-29 SB | A16873 | Guardrail | 100 LF | Complete Guardrail Run - SE Corner |
| I-29 | SB | 7 | RAMP 1: I-29 NB TO I-635 SB OVER I-29 SB | A16873 | TRANSITION SECT | 520 LF | Complete Guardrail Run - NE Corner |
| I-29 | SB | 7 | RAMP 1: I-29 NB TO I-635 SB OVER I-29 SB | A16873 | GUARDRAIL | 290 LF | Complete Guardrail Run - NW Corner |
| I-635 | NB | 9 | ROUTE 9 | A2435 | APPROACH PAVEMENT | 220 S.Y. | 110 S.Y. EACH APPROACH |
| I-635 | SB | 9 | ROUTE 9 | A2436 | APPROACH PAVEMENT | 220 S.Y. | 110 S.Y. EACH APPROACH |
| I-29 | | 50 | 112TH ST | A1746 | TYPE A BARRIER | 260 L.F. | N OF A1746 |
| I-29 | | 51 | 112TH ST | A1746 | TYPE A BARRIER | 260 L.F. | S OF A1746 |
| I-29 | | 52 | Tiffany Springs Parkway | A2283 | TYPE A BARRIER | 520 L.F. | N OF A2283 |
| I-29 | | 53 | Tiffany Springs Parkway | A2283 | TYPE A BARRIER | 420 L.F. | S OF A2283 |
| I-29 | | 54 | Barry Road | A1747 | TYPE A BARRIER | 450 L.F. | N OF A1747 |
| I-29 | | 55 | Barry Road | A1747 | TYPE A BARRIER | 550 L.F. | S OF A1747 (INCLUDES FENCE) |
| I-29 | | 56 | 72nd | A1595 | TYPE A BARRIER | 400 L.F. | N OF A1595 |
| I-29 | | 57 | 72nd | A1595 | TYPE A BARRIER | 550 L.F. | S OF A1595 |
| I-29 | | 58 | Route 45 | A1159 | TYPE A BARRIER | 375 L.F. | N OF A1159 |
| I-29 | | 59 | Route 45 | A1159 | TYPE A BARRIER | 575 L.F. | S OF A1159 |
| | | | | | TOTAL | 1 LUMP SUM | |

| MOBILIZATION |
|---|
| 1 LUMP SUM |

| CONTRACTOR FURNISHED SURVEYING AND STAKING |
|---|
| 1 LUMP SUM |

| Signing STR2L3 | | | | | | |
|---|---|---|---|---|---|---|
| Route | Bridge No | Plan Sheet No. | Direction | Sign No | Signing | Remarks |
| | | | | | S.F | |
| I-29 | A1159 | 6 | EB | 1 | 48 | NW Corner of bridge A1159 |
| I-29 | A1159 | 6 | EB | 2 | 14 | SE Corner of bridge A1159 |
| I-29 | A1159 | 6 | WB | 3 | 48 | SW Corner of bridge A1159 |
| I-29 | A1159 | 6 | WB | 4 | 14 | SW Corner of bridge A1159 |
| | | | | TOTAL | 124 | |

SUMMARY SHEET
SHEET 1 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
12/17/2013

ROUTE 29/635 | STATE MO
DISTRICT KC | SHEET NO. 3
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DATE | DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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REV.

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES

| Spill Slope Protection | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Route | Bridge No | Plan Sheet No. | Location | Thickness | TYPE 3 E.C. BLANKET | Furnishing Type 2 Rock Blanket | Placing Type 2 Rock Blanket | Remarks |
| | | | | (Feet) | S.Y. | C.Y. | C.Y. | |
| I-29 | A22832 | 3 | SOUTH ABUTMENT | 2 | 55.6 | 3 | 9.2 | |
| I-29 | A22833 | 3 | NORTH ABUTMENT | 2 | 5.6 | 1 | 1.6 | BETWEEN BRIDGES |
| I-29 | A1595 | 5 | N & S ABUTMENT | 2 | 55.6 | 3 | 9.2 | BETWEEN BRIDES & ON EDGES OF EXIST SLOPE PROT |
| Ramp 4 | A1688 | 7 | N ABUTMENT | 2 | 27.8 | 2.5 | 5.6 | |
| Ramp 4 | A1688 | 7 | S ABUTMENT | 2 | 35.6 | 2.5 | 6.5 | |
| I-635 | A2484/A2576 | 8 | N ABUTMENT | 2 | 222.2 | 5 | 29.7 | Both Bridges - Outside columns & between bridges |
| I-635 | A2484/A2576 | 8 | S ABUTMENT | 2 | 208.3 | 4 | 27.2 | Both Bridges - Outside columns & between bridges |
| I-635 | A2435 | 9 | N ABUTMENT | 2 | 1283.6 | 20 | 162.6 | |
| I-635 | A2435 | 9 | S ABUTMENT | 2 | 231.3 | 8 | 33.7 | |
| I-635 | A2437 | 9 | N ABUTMENT | 2 | 128 | 3 | 17.2 | |
| I-635 | A2437 | 9 | S ABUTMENT | 2 | 128 | 3 | 17.2 | |
| | | | | TOTALS | 2381.5 | 55.0 | 319.7 | |
| | | | | PAY TOTALS | 2382 | 55 | 320 | |

Note: Rubblizing existing slope protection is paid for under the pay item for "Placing Type 2 Rock Blanket"

| Guardrail | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Route | Bridge No | Plan Sheet No. | Direction | Bridge Anch. Section | Bridge Anchor Section 7.5 FT Posts | Transition Section | Transition Section 7-5 Ft Posts | Guardrail | Guardrail 7 Ft Posts | SRT 350 CW End Terminal | Crashworthy End Terminal | End Anchor | Guardcable to Guardrail Anchor | Remarks |
| | | | | Each | Each | Each | Each | L.F. | L.F. | Each | Each | Each | Each | |
| I-29 | A22823 | 1 | SB | 1 | | 1 | | 162.5 | | 1 | | | 1 | NE Corner |
| I-29 | A22823 | 1 | SB | 1 | | 1 | | 500 | | | 1 | | | NW Corner |
| I-29 | A22824 | 1 | NB | 1 | | 1 | | 137.5 | | | 1 | | | SE Corner |
| I-29 | A22824 | 1 | NB | 1 | | 1 | | 100 | | 1 | | | 1 | SW Corner |
| I-29 | A17462 | 2 | SB | 1 | | 1 | | 175 | | | 1 | | | NW Corner |
| I-29 | A17462 | 2 | SB | 1 | | 1 | | 425 | | | | 1 | | SW Corner |
| I-29 | A17463 | 2 | NB | 1 | | 1 | | 175 | | | 1 | | | SE Corner |
| I-29 | A22832 | 3 | SB | 1 | | 1 | | 150 | | | 1 | | | NW Corner |
| I-29 | A22833 | 3 | NB | 1 | | 1 | | 150 | | | 1 | | | SE Corner |
| I-29 | A17473 | 4 | SB | 1 | | 1 | | 150 | | | 1 | | | NW Corner |
| I-29 | A17474 | 4 | NB | 1 | | 1 | | 425 | | | | 1 | | NE Corner |
| I-29 | A17474 | 4 | NB | 1 | | 1 | | 300 | | | 1 | | | SE Corner |
| I-29 | A15954 | 5 | SB | 1 | | 1 | | 525 | | | 1 | | | NW Corner |
| I-29 | A15954 | 5 | SB | 1 | | 1 | | 150 | | | | 1 | | SW Corner |
| I-29 | A15955 | 5 | NB | 1 | | 1 | | 325 | | | 1 | | | SE Corner |
| I-29 | A1159 | 6 | SB | | 1 | | 1 | | 500 | | 1 | | | NW Corner of bridge A1159 |
| I-29 | A1159 | 6 | NB | | 1 | | 1 | | 462.5 | | 1 | | | SE Corner of bridge A1159 |
| I-29 | A1159 | 6 | SB | | 1 | | 1 | | 800 | | | 1 | | SW Corner of bridge A1159 |
| I-29 | A1159 | 6 | NE | | 1 | | 1 | | 200 | | | 1 | | NE Corner of bridge A1159 |
| I-29 | A1687 | 7 | SE | 1 | | 1 | | 87.5 | | | | 1 | | SE Corner of bridge A1687 |
| I-29 | A1687 | 7 | NW | 2 | | 2 | | | | | | | | NW Corner of bridge A1687 |
| I-29 | A1687 | 7 | NE | 2 | | 2 | | | | | | | | NE Corner of bridge A1687 |
| | | | Totals | 20 | 4 | 20 | 4 | 3937.5 | 662.5 | 2 | 10 | 5 | 2 | |
| | | | Pay Totals | 20 | 4 | 20 | 4 | 3938 | 663 | 2 | 10 | 5 | 2 | |

SUMMARY SHEET
SHEET 2 OF 7

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DATE PREPARED 12/17/2013

ROUTE 29/635 | STATE MO

DISTRICT KC | SHEET NO. 3

COUNTY PLATTE

JOB NO. J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES

| Modified Type A Barrier | | | | | | | |
|---|---|---|---|---|---|---|---|
| Route | Bridge No | Plan Sheet No. | Location | Mod. Type A Barrier | Delineator | 60" Fence on Structure | Remarks |
| | | | | | Yellow/Yellow | | |
| | | | | L.F. | Each | L.F. | |
| I-29 | A1159 | 6 | SOUTH ABUTMENT | 75 | 2 | | |
| I-29 | A1159 | 6 | NORTH ABUTMENT | 75 | 2 | | BETWEEN BRIDGES |
| I-29 | A1746 | 49 | N of Bridge | 260 | 3 | | N OF A1746 |
| I-29 | A1746 | 49 | S of Bridge | 260 | 3 | | S OF A1746 |
| I-29 | A2283 | 52 | Tiffany Springs Parkway | 520 | 5 | | N OF A2283 |
| I-29 | A2283 | 53 | Tiffany Springs Parkway | 420 | 4 | | S OF A2283 |
| I-29 | A1747 | 54 | Barry Road | 450 | 5 | | N OF A1747 |
| I-29 | A1747 | 55 | Barry Road | 550 | 6 | 550 | S OF A1747 (INCLUDES FENCE - PAID FOR AS FENCE ON STRUCTURE) |
| I-29 | A1595 | 56 | 72nd | 400 | 4 | | N OF A1595 |
| I-29 | A1595 | 57 | 72nd | 550 | 6 | | S OF A1595 |
| I-29 | A1159 | 58 | Route 45 | 375 | 4 | | N OF A1159 |
| I-29 | A1159 | 59 | Route 45 | 575 | 6 | | S OF A1159 |
| | | | PAY TOTALS | 4510 | 50 | 550 | |

| PERMANENT PAVEMENT MARKING | | | |
|---|---|---|---|
| ROADWAY | DIRECTION | 6" WHITE ACRYLIC WATERBORNE (LF) | 6" YELLOW ACRYLIC WATERBORNE (LF) |
| I-635 | See J4I2353 | | |
| I-29 | NB | 36720 | 22100 |
| I-29 | SB | 36720 | 22100 |
| | TOTAL | 73440 | 44200 |

| TEMPORARY PAVEMENT MARKING | | | | | |
|---|---|---|---|---|---|
| ROADWAY | PHASE | DIRECTION | 6" S.W. (LF) | 6" S.Y. (LF) | PAV. MARKING REMOVAL (LF) |
| I-635 | 1 | NB | 9394 | | 1890 |
| I-635 | 1 | SB | 5602 | | 1746 |
| I-635 | 2 | NB | 1416 | 3762 | 9394 |
| I-635 | 2 | SB | 575 | 5740 | 5602 |
| I-635 | 3 | SB | 479 | 1917 | 3440 |
| I-29 | 1 | NB | 36720 | 22100 | 85280 |
| I-29 | 2 | SB | 36720 | 22100 | 85280 |
| | | TOTAL | 90906 | 55619 | 192632 |

| Approach Pavement | | | | | |
|---|---|---|---|---|---|
| Route | Bridge No | Plan Sheet No. | Direction | Approach Pvt | Remarks |
| | | | | S.Y. | |
| I-29 | A1159 | 6 | SB | 192 | N Approach |
| I-29 | A1159 | 6 | SB | 192 | S Approach |
| I-29 | A1159 | 6 | NB | 192 | N Approach |
| I-29 | A1159 | 6 | NB | 192 | S Approach |
| I-635 | A2435 | 9 | NB | 110 | N Approach |
| I-635 | A2435 | 9 | NB | 110 | S Approach |
| I-635 | A2436 | 9 | SB | 110 | N Approach |
| I-635 | A2436 | 9 | SB | 110 | S Approach |
| | | | TOTAL | 1208 | |

SUMMARY SHEET
SHEET 3 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
12/17/2013

| ROUTE | STATE |
|---|---|
| 29/635 | MO |
| DISTRICT | SHEET NO. |
| KC | 3 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES

PAVEMENT QUANTITIES

| ROUTE | SHEET | BRIDGE NO. | LENGTH FT | WIDTH of PAV'T TREATMENT FT | WIDTH of Shoulder TREATMENT FT | UBAWS SY | Shoulder Grading Sta. | Type 1 Aggr. S.Y. | SP095 BSM 1.907 TONS | BP-1 1.987 TONS | Bit Base 2.005 TONS | MODIFIED COLDMILL SY | COLDMILL LT 3" SY | COLDMILL GT 3" SY | TACK COAT (0.08 GAL/SY) GAL | SHOULDER RUMBLE STRIPE STA | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I-29 | 4 | A22824 | 100 | 28 | 10 | | | | 57.7 | 21.5 | | 844.4 | | | 68 | 4 | Includes both N & S end |
| I-29 | 4 | A22823 | 100 | 28 | 10 | | | | 57.7 | 21.5 | | 844.4 | | | 68 | 4 | Includes both N & S end |
| I-29 | 5 | A17463 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 5 | A17462 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 6 | A22833 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 6 | A22832 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 7 | A17474 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 7 | A17473 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 8 | A175955 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 8 | A175954 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 9 | A1159 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-29 | 9 | A1159 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| RAMP1 | 10 | A1687 | 400 | 32 | 32 | 1422 | | | | | | 266.7 | | | | | BRIDGE + 100' NORTH OF BRIDGE |
| RAMP | 10 | A1688 | 100 | 28 | 4 | | | | 57.7 | 8.6 | | 711.1 | | | 57 | 4 | Includes both N & S end |
| I-635 | 11 | A2484 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-635 | 11 | A2576 | 100 | 40 | 10 | | | | 82.4 | 21.5 | | 1111.1 | | | 89 | 4 | Includes both N & S end |
| I-635 | 12 | A2438 | 100 | 40 | 16 | | | | 82.4 | 34.3 | | 1244.4 | | | 100 | 4 | Includes both N & S end |
| I-635 | 12 | A2436 | 100 | 40 | 16 | | | | 82.4 | 34.3 | | 1244.4 | | | 100 | 4 | Includes both N & S end |
| I-635 | 12 | A2437 | 100 | 40 | 16 | | | | 82.4 | 34.3 | | 1244.4 | | | 100 | 4 | Includes both N & S end |
| I-635 | 12 | A2435 | 100 | 40 | 16 | | | | 82.4 | 34.3 | | 1244.4 | | | 100 | 4 | Includes both N & S end |
| I-29 | 50 | A1746 | 260 | | 16 | | | | | 44.6 | 180.2 | | | 462.2 | 74 | | North Crossover |
| I-29 | 50 | A1746 | 260 | | 16 | | | | | 44.65 | 51.5 | | | 462.2 | 74 | 5.2 | Rebuild Median |
| I-29 | 50 | A1746 | 780 | | 10 | | 7.8 | 866.7 | | 83.7 | 337.9 | | | | 69 | 7.8 | Rebuild Shldr N of Bridge |
| I-29 | 51 | A1746 | 260 | | 16 | | | | | 44.6 | 180.2 | | | 462.2 | 74 | | South Crossover |
| I-29 | 51 | A1746 | 260 | | 16 | | | | | 44.65 | 51.5 | | | 462.2 | 74 | 5.2 | Rebuild Median |
| I-29 | 51 | A1746 | 515 | | 10 | | 5.2 | 572.2 | | 55.3 | 223.1 | | | | 46 | 5.2 | Rebuild Shldr S of Bridge |
| I-29 | 52 | A2283 | 285 | | 16 | | | | | 48.9 | 197.5 | | | 506.7 | 81 | | North Crossover |
| I-29 | 52 | A2283 | 285 | | 16 | | | | | 48.94 | 56.4 | | | 506.7 | 81 | 5.7 | Rebuild Median |
| I-29 | 52 | A2283 | 440 | | 10 | | 4.4 | 488.9 | | 47.2 | 190.6 | | | | 39 | 4.4 | Rebuild Shldr N of Bridge |
| I-29 | 53 | A2283 | 260 | | 16 | | | | | 44.6 | 180.2 | | | 462.2 | 74 | | South Crossover |
| I-29 | 53 | A2283 | 260 | | 16 | | | | | 44.65 | 51.5 | | | 462.2 | 74 | 5.2 | Rebuild Median |
| I-29 | 53 | A2283 | 500 | | 10 | | 5.0 | 555.6 | | 53.7 | 216.6 | | | | 44 | 5.0 | Rebuild Shldr S of Bridge |
| I-29 | 54 | A1747 | 260 | | 16 | | | | | 44.6 | 180.2 | | | 462.2 | 74 | | North Crossover |
| I-29 | 54 | A1747 | 260 | | 16 | | | | | 44.65 | 51.5 | | | 462.2 | 74 | 5.2 | Rebuild Median |
| I-29 | 54 | A1747 | 300 | | 10 | | 3.0 | 333.3 | | 32.2 | 130.0 | | | | 27 | 3.0 | Rebuild Shldr N of Bridge |
| I-29 | 55 | A1747 | 280 | | 16 | | | | | 48.1 | 194.1 | | | 497.8 | 80 | | South Crossover |
| I-29 | 55 | A1747 | 280 | | 16 | | | | | 48.08 | 55.4 | | | 497.8 | 80 | 5.6 | Rebuild Median |
| I-29 | 55 | A1747 | 360 | | 10 | | 3.6 | 400.0 | | 38.6 | 155.9 | | | | 32 | 3.6 | Rebuild Shldr S of Bridge |
| I-29 | 56 | A1595 | 360 | | 16 | | | | | 61.8 | 249.5 | | | 640.0 | 102 | | North Crossover |
| I-29 | 56 | A1595 | 360 | | 16 | | | | | 61.82 | 71.3 | | | 640.0 | 102 | 7.2 | Rebuild Median |
| I-29 | 56 | A1595 | 500 | | 10 | | 5.0 | 555.6 | | 53.7 | 216.6 | | | | 44 | 5.0 | Rebuild Shldr N of Bridge |
| I-29 | 57 | A1595 | 280 | | 16 | | | | | 48.1 | 194.1 | | | 497.8 | 80 | | South Crossover |
| I-29 | 57 | A1595 | 280 | | 16 | | | | | 48.08 | 55.4 | | | 497.8 | 80 | 5.6 | Rebuild Median |
| I-29 | 57 | A1595 | 425 | | 10 | | 4.3 | 472.2 | | 45.6 | 184.1 | | | | 38 | 4.3 | Rebuild Shldr S of Bridge |
| I-29 | 58 | A1159 | 300 | | 16 | | | | | 51.5 | 207.9 | | | 533.3 | 85 | | North Crossover |
| I-29 | 58 | A1159 | 300 | | 16 | | | | | 51.51 | 59.4 | | | 533.3 | 85 | 6.0 | Rebuild Median |
| I-29 | 58 | A1159 | 425 | | 10 | | 4.3 | 472.2 | | 45.6 | 184.1 | | | | 38 | 4.3 | Rebuild Shldr N of Bridge |
| I-29 | 59 | A1159 | 240 | | 16 | | | | | 41.2 | 166.3 | | | 426.7 | 68 | | South Crossover |
| I-29 | 59 | A1159 | 240 | | 16 | | | | | 41.21 | 47.5 | | | 426.7 | 68 | 4.8 | Rebuild Median |
| I-29 | 59 | A1159 | 510 | | 10 | | 5.1 | 566.7 | | 54.7 | 220.9 | | | | 45 | 5.1 | Rebuild Shldr S of Bridge |
| I-29 | 60 | A1746 | 440 | | 10 | | 4.4 | 488.9 | | 47.22 | 190.6 | | | | 78 | 8.8 | REBUILD SHOULDER |
| I-29 | 61 | A1746 | 750 | | 10 | | 7.5 | 833.3 | | 80.49 | 324.9 | | | | 133 | 15.0 | REBUILD SHOULDER |
| I-29 | 62 | A2283 | 510 | | 10 | | 5.1 | 566.7 | | 54.73 | 220.9 | | | | 91 | 10.2 | REBUILD SHOULDER |
| I-29 | 63 | A2283 | 400 | | 10 | | 4.0 | 444.4 | | 42.93 | 173.3 | | | | 71 | 8.0 | REBUILD SHOULDER |
| | | | | SUB TOTAL | | 1422 | 69 | 7617 | 1491 | 2139 | 5451 | 20978 | 0 | 9902 | 4037 | 221 | |

SUMMARY SHEET
SHEET 4 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 12/17/2013

ROUTE 29/635 | STATE MO

DISTRICT KC | SHEET NO. 3

COUNTY PLATTE

JOB NO. J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES

| PAVEMENT | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROUTE | SHEET | BRIDGE NO. | LENGTH FT | WIDTH of PAV'T TREATMENT FT | WIDTH of Shoulder TREATMENT FT | UBAWS SY | Shoulder Grading Sta. | Type 1 Aggr. S.Y. | SP095 BSM 1.907 TONS | BP-1 1.987 TONS | Bit Base 2.005 TONS | MODIFIED COLDMILL SY | COLDMILL LT 3" SY | COLDMILL GT 3" SY | TACK COAT (0.08 GAL/SY) GAL | SHOULDER RUMBLE STRIPE STA | REMARKS |
| I-29 | 64 | A1747 | 440 | | 10 | | 4.4 | 488.9 | | 47.22 | 190.6 | | | | 78 | 8.8 | REBUILD SHOULDER |
| I-29 | 65 | A1747 | 430 | | 10 | | 4.3 | 477.8 | | 46.15 | 186.3 | | | | 76 | 8.6 | REBUILD SHOULDER |
| I-29 | 66 | A1595 | 460 | | 10 | | 4.6 | 511.1 | | 49.37 | 199.3 | | | | 82 | 9.2 | REBUILD SHOULDER |
| I-29 | 67 | A1595 | 550 | | 10 | | 5.5 | 611.1 | | 59.03 | 238.2 | | | | 98 | 11.0 | REBUILD SHOULDER |
| I-29 | 68 | A1159 | 500 | | 10 | | 5.0 | 555.6 | | 53.7 | 216.6 | | | | 89 | 10 | REBUILD SHOULDER |
| I-29 | 69 | A1159 | 580 | | 10 | | 5.8 | 644.4 | | 62.2 | 251.2 | | | | 103 | 12 | REBUILD SHOULDER |
| I-635 | | | 3290 | | 6 | | 32.9 | 2193.3 | | 211.9 | 855.1 | | | | 351 | 66 | NB Inside Shldr |
| I-635 | | | 3634 | | 6 | | 36.3 | 2422.7 | | 234.0 | 944.5 | | | | 388 | 73 | SB Inside Shldr |
| I-635 | | | 3750 | | 10 | | 37.5 | 4166.7 | | 402.5 | 1624.4 | | | | 667 | 75 | NB Outside Shldr |
| I-635 | | | 2895 | | 10 | | 29.0 | 3216.7 | | 310.7 | 1254.1 | | | | 515 | 58 | SB Outside Shldr |
| | | | | | | | | | | | | | | | | | |
| | | | | | SUB TOTAL | 0 | 165 | 15288 | 0 | 1477 | 5960 | 0 | 0 | 0 | 2446 | 331 | |
| | | | | | SUB TOTAL | 1422 | 69 | 7617 | 1491 | 2139 | 5451 | 20978 | 1 | 9902 | 4037 | 221 | |
| | | | | | PAY TOTALS | 1422 | 234 | 22905 | 1491 | 3616 | 11411 | 20978 | 1 | 9902 | 6483 | 552 | |

SUMMARY SHEET
SHEET 5 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 12/17/2013

ROUTE 29/635 | STATE MO

DISTRICT KC | SHEET NO. 3

COUNTY PLATTE

JOB NO. J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES

### I-635 TRAFFIC CONTROL QUANTITIES

EFFECTIVE: 05-01-2012

| | SIZE (IN.) | AREA (SQ. FT.) | QTY | TOTAL AREA | QTY RELOC | TOTAL RELOC AREA | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| WARNING SIGN | | | | | | | |
| W01-1L | 48X48 | 16.00 | | | | | TURN (SYMBOL LEFT ARROW) |
| W01-1R | 48X48 | 16.00 | | | | | TURN (SYMBOL RIGHT ARROW) |
| W01-2L | 48X48 | 16.00 | | | | | CURVE (SYMBOL LEFT ARROW) |
| W01-2R | 48X48 | 16.00 | | | | | CURVE (SYMBOL RIGHT ARROW) |
| W01-3L | 48X48 | 16.00 | | | | | REVERSE TURN (SYMBOL LEFT ARROW) |
| W01-3R | 48X48 | 16.00 | | | | | REVERSE TURN (SYMBOL RIGHT ARROW) |
| W01-4L | 48X48 | 16.00 | 1 | 16 | | | REVERSE CURVE (SYMBOL LEFT ARROW) |
| W01-4R | 48X48 | 16.00 | | | | | REVERSE CURVE (SYMBOL RIGHT ARROW) |
| W01-4bL | 48X48 | 16.00 | | | | | DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS) |
| W01-bR | 48X48 | 16.00 | | | | | DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS) |
| W01-4cL | 48X48 | 16.00 | | | | | TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS) |
| W01-4cR | 48X48 | 16.00 | | | | | TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS) |
| W01-6 | 60X30 | 12.50 | | | | | HORIZONTAL ARROW (SYMBOL) |
| W01-6a | 72X36 | 18.00 | | | | | HORIZONTAL ARROW (SYMBOL ON BARRICADE) |
| W01-7 | 60X30 | 12.50 | | | | | DOUBLE HEAD HORIZONTAL ARROW (SYMBOL) |
| W01-7a | 72X36 | 18.00 | | | | | DOUBLE HEAD HORIZONTAL ARROW (SYMBOL ON BARRICADE |
| W01-8 | 18X24 | 3.00 | | | | | CHEVRON (SYMBOL) |
| W01-8a | 30X36 | 7.50 | | | | | CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS) |
| W03-1 | 48X49 | 16.00 | | | | | STOP AHEAD (SYMBOL) |
| W03-2 | 48X48 | 16.00 | 1 | 16 | | | YIELD AHEAD (SYMBOL) |
| W03-3 | 48X48 | 16.00 | | | | | SIGNAL AHEAD (SYMBOL) |
| W03-4 | 48X48 | 16.00 | | | | | BE PREPARED TO STOP |
| W03-5 | 48X48 | 16.00 | 5 | 80 | | | SPEED LIMIT AHEAD 5-55 |
| W04-1L | 48X48 | 16.00 | | | | | MERGE (SYMBOL FROM LEFT) |
| W04-1R | 48X48 | 16.00 | 2 | 32 | | | MERGE (SYMBOL FROM RIGHT) |
| W05-1 | 48X48 | 16.00 | 2 | 32 | | | ROAD/BRIDGE/RAMP NARROWS |
| W05-3 | 48X48 | 16.00 | | | | | ONE LANE BRIDGE |
| W05-5 | 48X48 | 16.00 | | | | | NARROW LANES |
| W06-1 | 48X48 | 16.00 | | | | | DIVIDED HIGHWAY (SYMBOL) |
| W06-2 | 48X48 | 16.00 | | | | | DIVIDED HIGHWAY END (SYMBOL) |
| W06-3 | 48X48 | 16.00 | | | | | TWO WAY TRAFFIC (SYMBOL) |
| W07-3a | 30X24 | 5.00 | | | | | NEXT XX MILES (PLAQUE) |
| W08-1 | 48X48 | 16.00 | | | | | BUMP |
| W08-2 | 48X48 | 16.00 | | | | | DIP |
| W08-3 | 48X48 | 16.00 | | | | | PAVEMENT ENDS |
| W08-4 | 48X48 | 16.00 | | | | | SOFT SHOULDER |
| W08-5 | 48X48 | 16.00 | | | | | SLIPPERY WHEN WET (SYMBOL) |
| W08-6 | 48X48 | 16.00 | | | | | TRUCK CROSSING |
| W08-6c | 48X48 | 16.00 | | | | | TRUCK ENTRANCE |
| W08-7 | 36X36 | 9.00 | | | | | LOOSE GRAVEL |
| W08-9 | 48X48 | 16.00 | | | | | LOW SHOULDER |
| W08-9a | 48X48 | 16.00 | | | | | SHOULDER DROP-OFF |
| W08-11 | 48X48 | 16.00 | | | | | UNEVEN LANES |
| W08-12 | 48X48 | 16.00 | | | | | NO CENTER LINE |
| W08-15 | 48X48 | 16.00 | | | | | GROOVED PAVEMENT |
| W08-15p | 30X24 | 5.00 | | | | | MOTORCYCLE (PLAQUE) |
| W08-17 | 48X48 | 16.00 | | | | | SHOULDER DROP OFF (SYMBOL) |
| W08-17p | 30X24 | 5.00 | | | | | SHOULDER DROP OFF (PLAQUE) |
| W10-1 | 42 RND. | 9.62 | | | | | RAILROAD CROSSING |
| W012-1 | 24X24 | 4.00 | 1 | 4 | | | DOUBLE DOWN ARROW (SYMBOL) |
| W012-2 | 48X48 | 16.00 | | | | | LOW CLEARANCE (SYMBOL) |
| W012-2x | 24X18 | 3.00 | | | | | LOW CLEARANCE (PLAQUE) |
| W012-2A | 84X24 | 14.00 | | | | | OVERHEAD LOW CLEARANCE (FEET AND INCHES) |
| SPECIAL | 120X60 | 50.00 | | | | | LOW CLEARANCE XX FT XX IN XX MILES AHEAD |
| SPECIAL | 120X60 | 50.00 | | | | | WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD |
| W013-1 | 30X30 | 6.25 | | | | | ADVISORY SPEED (PLAQUE) |
| W016-2 | 30X24 | 5.00 | | | | | 500 FEET/1000 FEET (PLAQUE) |
| W016-3 | 30X24 | 5.00 | | | | | X MILE (PLAQUE) |
| W020-1 | 48X48 | 16.00 | 7 | 112 | | | ROAD/BRIDGE/RAMP WORK AHEAD |
| W020-2 | 48X48 | 16.00 | 2 | 32 | | | DETOUR AHEAD |
| W020-3 | 48X48 | 16.00 | 2 | 32 | | | ROAD CLOSED AHEAD |
| W020-4 | 48X48 | 16.00 | | | | | ONE LANE ROAD AHEAD |
| W020-5 | 48X48 | 16.00 | 2 | 32 | | | RIGHT/CENTER/LEFT LANE CLOSED AHEAD |

| SIGN | SIZE (IN.) | AREA (SQ. FT.) | QTY | TOTAL AREA | QTY RELOC | TOTAL RELOC AREA | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| W020-5a | 48X48 | 16.00 | 4 | 64 | | | 2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD |
| W020-6a | 48X48 | 16.00 | 5 | 80 | | | RIGHT/CENTER/LEFT LANE CLOSED |
| W020-7a | 48X48 | 16.00 | 2 | 32 | | | FLAGGER (SYMBOL) |
| W021-2 | 36X36 | 9.00 | | | | | FRESH OIL |
| W021-5b | 48X48 | 16.00 | | | | | SHOULDER WORK AHEAD |
| W022-1 | 48X48 | 16.00 | | | | | BLASTING ZONE AHEAD |
| W022-2 | 42X36 | 10.50 | | | | | TURN OFF 2-WAY RADIO AND PHONE |
| W022-3 | 42X36 | 10.50 | | | | | END BLASTING ZONE |
| W022-6e | 21X15 | 2.19 | | | | | WET PAINT (ARROW PIVOTS) |
| GUIDE SIGNS | | | | | | | |
| SPECIAL | 36X36 | 9.00 | | | | | FRESH OIL / LOOSE GRAVEL |
| E05-1 | 36X48 | 12.00 | 2 | 24 | | | GORE EXIT |
| E05-2 | 48X36 | 12.00 | 1 | 12 | | | EXIT OPEN |
| E05-2a | 48X36 | 12.00 | | | | | EXIT CLOSED |
| G020-1 | 60X24 | 10.00 | 4 | 40 | | | ROAD WORK NEXT 4 MILES |
| G020-2 | 48X24 | 8.00 | 4 | 32 | | | END ROAD WORK |
| G020-4 | 36X18 | 4.50 | | | | | PILOT CAR FOLLOW ME |
| SPECIAL | 42X30 | 8.75 | | | | | PLEASE WAIT FOR PILOT CAR |
| G020-5aP | 36X24 | 6.00 | 8 | 48 | | | WORK ZONE (PLAQUE) |
| M04-8a | 24X18 | 3.00 | 2 | 6 | | | END DETOUR |
| M04-9L | 48X36 | 12.00 | | | | | DETOUR (LEFT ARROW) |
| M04-9R | 48X36 | 12.00 | | | | | DETOUR (RIGHT ARROW) |
| M04-10L | 48X18 | 6.00 | | | | | DETOUR (ARROW LEFT) |
| M04-10R | 48X18 | 6.00 | | | | | DETOUR (ARROW RIGHT) |
| M05-5 | 48X48 | 16.00 | 4 | 64 | | | NARROW LANES |
| Special | 39 x 90 | 22.50 | 15 | 337.5 | | | DETOUR ASSEMBLIES |
| REGULATORY SIGNS | | | | | | | |
| R1-1 | 48X48 | 13.25 | | | | | STOP |
| R1-2 | 48 TRI. | 6.93 | 1 | 6.93 | | | YIELD |
| R1-2a | 36X36 | 9.00 | | | | | TO ONCOMING TRAFFIC (PLAQUE) |
| R1-3 | 30X9 | 1.25 | | | | | X-WAY (PLAQUE) |
| R2-1 | 36X48 | 12.00 | 12 | 144 | | | SPEED LIMIT 8-55: 4-65 |
| R3-1 | 48X48 | 16.00 | | | | | NO RIGHT TURN (SYMBOL) |
| R3-2 | 48X48 | 16.00 | | | | | NO LEFT TURN (SYMBOL) |
| R3-3 | 36X36 | 9.00 | | | | | NO TURNS |
| R3-4 | 48X48 | 16.00 | | | | | NO U-TURN (SYMBOL) |
| R3-7L | 30X30 | 6.25 | | | | | LEFT LANE MUST TURN LEFT |
| R3-7R | 30X30 | 6.25 | | | | | RIGHT LANE MUST TURN RIGHT |
| R4-1 | 36X48 | 12.00 | | | | | DO NOT PASS |
| R4-2 | 36X48 | 12.00 | | | | | PASS WITH CARE |
| R4-7aL | 36X48 | 12.00 | | | | | KEEP LEFT (HORIZONTAL ARROW) |
| R4-7a | 36X48 | 12.00 | | | | | KEEP RIGHT (HORIZONTAL ARROW) |
| R5-1 | 30X30 | 6.25 | | | | | DO NOT ENTER |
| R5-1a | 36X24 | 6.00 | | | | | WRONG WAY |
| R6-1L | 48X18 | 6.00 | | | | | ONE WAY ARROW (LEFT) |
| R6-1R | 48X18 | 6.00 | | | | | ONE WAY ARROW (RIGHT) |
| R6-2L | 24X30 | 5.00 | | | | | ONE WAY (LEFT) |
| R6-2R | 24X30 | 5.00 | | | | | ONE WAY (RIGHT) |
| R10-6 | 24X36 | 6.00 | | | | | STOP HERE ON RED (45° ARROW) |
| R11-2 | 48X30 | 10.00 | 3 | 30 | | | ROAD CLOSED |
| R11-3a | 60X30 | 12.50 | | | | | ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY |
| R11-4 | 60X30 | 12.50 | | | | | ROAD CLOSED TO THRU TRAFFIC |
| S4-4 | 36X15 | 3.75 | | | | | WHEN FLASHING |
| CONST-3A | 60X48 | 20.00 | | | | | FINE SIGN |
| CONST-3X | 57X12 | 4.67 | | | | | SPEEDING/PASSING (PLATE) |
| MISCELLANEOUS SIGNS | | | | | | | |
| SHR4L3 | 60X15 | 8.33 | 3 | 24.99 | | | |
| CONST-5-96 | 96X48 | 32.00 | | | | | POINT OF PRESENCE |
| CONST-7-48 | 48X24 | 8.00 | | | | | RATE OUR WORK ZONE |
| CONST-7-72 | 72X36 | 18.00 | | | | | RATE OUR WORK ZONE |
| 616-10.05 CONSTRUCTION SIGNS TOTAL | | | | 1269 | | | |
| 616-10.10 RELOCATED SIGNS TOTAL | | | | | | | |

| ITEM NUMBER | TOTAL QTY | DESCRIPTION |
|---|---|---|
| 612-20.08 | | IMPACT ATTENUATOR (8 SAND BARRELS) |
| 612-20.09 | | IMPACT ATTENUATOR (9 SAND BARRELS) |
| 612-20.10 | | IMPACT ATTENUATOR (10 SAND BARRELS) |
| 612-20.12 | | IMPACT ATTENUATOR (12 SAND BARRELS) |
| 612-20.14 | | IMPACT ATTENUATOR (14 SAND BARRELS) |
| 612-20.17 | 9 | IMPACT ATTENUATOR (17 SAND BARRELS) |
| 612-20.19 | | IMPACT ATTENUATOR (19 SAND BARRELS) |
| 612-20.20 | 18 | REPLACEMENT SAND BARREL |
| 612-20.30 | 18 | IMPACT ATTENUATOR ARRAY (RELOCATION) |
| 612-30.00A | 2 | TRUCK MOUNTED ATTENUATOR (TMA) |
| 616-10.07 | | SPEED LIMIT & STROBE LIGHT ASSEMBLY |
| 616-10.08 | 2 | ADVANCED WARNING RAIL SYSTEM |
| 616-10.09 | 40 | FLAG ASSEMBLY |
| 612-10.20 | | CHANNELIZER (DRUM-LIKE) |
| 616-10.22 | | CHANNELIZER (CONES) |
| 616-10.24 | | CHANNELIZER (TRIM-LINE) WITH LIGHT |
| 616-10.25 | 90 | CHANNELIZER (TRIM-LINE) |
| 616-10.26 | | CHANNELIZER (VERTICAL PANEL) |
| 616-10.27 | | CHANNELIZER (VERTICAL PANEL) WITH LIGHT |
| 616-10.28 | | CHANNELIZER |
| 616-10.30 | 9 | TYPE III MOVEABLE BARRICADE |
| 616-10.31 | | TYPE III MOVEABLE BARRICADE WITH LIGHT |
| 616-10.33 | 46 | DIRECTION INDICATOR BARRICADE |
| 616-10.34 | | DIRECTION INDICATOR BARRICADE. WITH LIGHT |
| 616-10.40 | 6 | FLASHING ARROW PANEL |
| 616-10.47 | | TYPE III OBJECT MARKER |
| 616-10.51 | | WARNING LIGHT. TYPE A |
| 616-10.52 | | WARNING LIGHT. TYPE B |
| 616-10.53 | | WARNING LIGHT. TYPE C |
| 616-10.70 | | TUBULAR MARKER |
| 616-10.95 | | RADAR SPEED ADVISORY SYSTEM |
| 616-10.96 | | CHANGEABLE MESSAGE SIGN. COMMISSION FURNISHED/RETAINED |
| 616-10.98 | 4 | CHANGEABLE MESSAGE SIGN. CONTRACTOR FURNISHED/RETAINED |
| 616-11.00 | | CHANGEABLE MESSAGE SIGN. CONTRACTOR FURNISHED/COMMISSION RETAINED |
| 616-20.10 | | WORK ZONE LIGHTING |
| 616-99.02 | 90 | SEQUENTIAL FLASHING WARNING LIGHTS |
| 617-36.00D | 2875 | CONTRACTOR FURNISHED/RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER. TYPE F |
| 617-36.02B | | CONTRACTOR FURNISHED/COMMISSION RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER. TYPE F |
| 617-40.00A | | TEMPORARY CONCRETE BARRIER HEIGHT TRANSITION |
| 617-50.10A | 3000 | RELOCATING TEMPORARY CONCRETE TRAFFIC BARRIER |
| 617-60.00B | | COMMISSION FURNISHED/RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER. TYPE F |
| 617-70.00B | | COMMISSION FURNISHED/RETAINED PRECAST BARRIER HEIGHT TRANSITION |
| 620-80.65 | | TEMPORARY RAISED PAVEMENT MARKER |
| 901-94.00 | | TEMPORARY LIGHTING |
| 902-94.00 | | TEMPORARY TRAFFIC SIGNALS |
| 902-94.01 | | TEMPORARY TRAFFIC SIGNALS AND LIGHTING |

NOTE: TRAFFIC CONTROL (TC) QUANTITIES ARE PAID FOR SEPARATELY FOR I-635 AND I-29. FINAL TC QUANTITIES ARE THE SUM OF BOTH.

SUMMARY SHEET
SHEET 6 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
12/17/2013

| ROUTE | STATE |
|---|---|
| 29/635 | MO |
| DISTRICT | SHEET NO. |
| KC | 3 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES

### I-29 TRAFFIC CONTROL QUANTITIES

EFFECTIVE: 05-01-2012

| | SIZE (IN.) | AREA (SQ. FT.) | QTY | TOTAL AREA | QTY RELOC | TOTAL RELOC SIGN AREA | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| **WARNING SIGN** | | | | | | | |
| W01-1L | 48X48 | 16.00 | | | | | TURN (SYMBOL LEFT ARROW) |
| W01-1R | 48X48 | 16.00 | | | | | TURN (SYMBOL RIGHT ARROW) |
| W01-2L | 48X48 | 16.00 | | | | | CURVE (SYMBOL LEFT ARROW) |
| W01-2R | 48X48 | 16.00 | | | | | CURVE (SYMBOL RIGHT ARROW) |
| W01-3L | 48X48 | 16.00 | | | | | REVERSE TURN (SYMBOL LEFT ARROW) |
| W01-3R | 48X48 | 16.00 | | | | | REVERSE TURN (SYMBOL RIGHT ARROW) |
| W01-4L | 48X48 | 16.00 | 16 | 256 | | | REVERSE CURVE (SYMBOL LEFT ARROW) |
| W01-4R | 48X48 | 16.00 | | | | | REVERSE CURVE (SYMBOL RIGHT ARROW) |
| W01-4bL | 48X48 | 16.00 | | | | | DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS) |
| W01-bR | 48X48 | 16.00 | | | | | DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS) |
| W01-4cL | 48X48 | 16.00 | | | | | TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS) |
| W01-4cR | 48X48 | 16.00 | | | | | TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS) |
| W01-6 | 60X30 | 12.50 | 10 | 125 | | | HORIZONTAL ARROW (SYMBOL) |
| W01-6a | 72X36 | 18.00 | | | | | HORIZONTAL ARROW (SYMBOL ON BARRICADE) |
| W01-7 | 60X30 | 12.50 | | | | | DOUBLE HEAD HORIZONTAL ARROW (SYMBOL) |
| W01-7a | 72X36 | 18.00 | | | | | DOUBLE HEAD HORIZONTAL ARROW (SYMBOL ON BARRICADE |
| W01-8 | 18X24 | 3.00 | | | | | CHEVRON (SYMBOL) |
| W01-8a | 30X36 | 7.50 | | | | | CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS) |
| W03-1 | 48X49 | 16.00 | | | | | STOP AHEAD (SYMBOL) |
| W03-2 | 48X48 | 16.00 | | | | | YIELD AHEAD (SYMBOL) |
| W03-3 | 48X48 | 16.00 | | | | | SIGNAL AHEAD (SYMBOL) |
| W03-4 | 48X48 | 16.00 | | | | | BE PREPARED TO STOP |
| W03-5 | 48X48 | 16.00 | 24 | 384 | | | SPEED LIMIT AHEAD - 45 |
| W04-1L | 48X48 | 16.00 | | | | | MERGE (SYMBOL FROM LEFT) |
| W04-1R | 48X48 | 16.00 | | | | | MERGE (SYMBOL FROM RIGHT) |
| W05-1 | 48X48 | 16.00 | | | | | ROAD/BRIDGE/RAMP NARROWS |
| W05-3 | 48X48 | 16.00 | | | | | ONE LANE BRIDGE |
| W05-5 | 48X48 | 16.00 | | | | | NARROW LANES |
| W06-1 | 48X48 | 16.00 | | | | | DIVIDED HIGHWAY (SYMBOL) |
| W06-2 | 48X48 | 16.00 | | | | | DIVIDED HIGHWAY END (SYMBOL) |
| W06-3 | 48X48 | 16.00 | | | | | TWO WAY TRAFFIC (SYMBOL) |
| W07-3a | 30X24 | 5.00 | | | | | NEXT XX MILES (PLAQUE) |
| W08-1 | 48X48 | 16.00 | | | | | BUMP |
| W08-2 | 48X48 | 16.00 | | | | | DIP |
| W08-3 | 48X48 | 16.00 | | | | | PAVEMENT ENDS |
| W08-4 | 48X48 | 16.00 | | | | | SOFT SHOULDER |
| W08-5 | 48X48 | 16.00 | | | | | SLIPPERY WHEN WET (SYMBOL) |
| W08-6 | 48X48 | 16.00 | | | | | TRUCK CROSSING |
| W08-6c | 48X48 | 16.00 | | | | | TRUCK ENTRANCE |
| W08-7 | 36X36 | 9.00 | | | | | LOOSE GRAVEL |
| W08-9 | 48X48 | 16.00 | | | | | LOW SHOULDER |
| W08-9a | 48X48 | 16.00 | | | | | SHOULDER DROP-OFF |
| W08-11 | 48X48 | 16.00 | | | | | UNEVEN LANES |
| W08-12 | 48X48 | 16.00 | | | | | NO CENTER LINE |
| W08-15 | 48X48 | 16.00 | | | | | GROOVED PAVEMENT |
| W08-15p | 30X24 | 5.00 | | | | | MOTORCYCLE (PLAQUE) |
| W08-17 | 48X48 | 16.00 | | | | | SHOULDER DROP OFF (SYMBOL) |
| W08-17p | 30X24 | 5.00 | | | | | SHOULDER DROP OFF (PLAQUE) |
| W10-1 | 42 RND. | 9.62 | | | | | RAILROAD CROSSING |
| W012-1 | 24X24 | 4.00 | | | | | DOUBLE DOWN ARROW (SYMBOL) |
| W012-2 | 48X48 | 16.00 | | | | | LOW CLEARANCE (SYMBOL) |
| W012-2x | 24X18 | 3.00 | | | | | LOW CLEARANCE (PLAQUE) |
| W012-2A | 84X24 | 14.00 | | | | | OVERHEAD LOW CLEARANCE (FEET AND INCHES) |
| SPECIAL | 120X60 | 50.00 | | | | | LOW CLEARANCE XX FT XX IN XX MILES AHEAD |
| SPECIAL | 120X60 | 50.00 | | | | | WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD |
| W013-1 | 30X30 | 6.25 | 16 | 100 | | | ADVISORY SPEED (PLAQUE) - 45 |
| W016-2 | 30X24 | 5.00 | | | | | 500 FEET/1000 FEET (PLAQUE) |
| W016-3 | 30X24 | 5.00 | | | | | X MILE (PLAQUE) |
| W020-1 | 48X48 | 16.00 | 24 | 384 | | | ROAD/BRIDGE/RAMP WORK AHEAD |
| W020-2 | 48X48 | 16.00 | | | | | DETOUR AHEAD |
| W020-3 | 48X48 | 16.00 | | | | | ROAD CLOSED AHEAD |
| W020-4 | 48X48 | 16.00 | | | | | ONE LANE ROAD AHEAD |
| W020-5 | 48X48 | 16.00 | 24 | 384 | | | RIGHT/CENTER/LEFT LANE CLOSED AHEAD |

| SIGN | SIZE (IN.) | AREA (SQ. FT.) | QTY | TOTAL AREA | QTY RELOC | TOTAL RELOC AREA | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| W020-5a | 48X48 | 16.00 | | | | | 2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD |
| W020-6a | 48X48 | 16.00 | 24 | 384 | | | RIGHT/CENTER/LEFT LANE CLOSED |
| W020-7a | 48X48 | 16.00 | | | | | FLAGGER (SYMBOL) |
| W021-2 | 36X36 | 9.00 | | | | | FRESH OIL |
| W021-5b | 48X48 | 16.00 | | | | | SHOULDER WORK AHEAD |
| W022-1 | 48X48 | 16.00 | | | | | BLASTING ZONE AHEAD |
| W022-2 | 42X36 | 10.50 | | | | | TURN OFF 2-WAY RADIO AND PHONE |
| W022-3 | 42X36 | 10.50 | | | | | END BLASTING ZONE |
| W022-6e | 21X15 | 2.19 | | | | | WET PAINT (ARROW PIVOTS) |
| **GUIDE SIGNS** | | | | | | | |
| SPECIAL | 36X36 | 9.00 | | | | | FRESH OIL / LOOSE GRAVEL |
| E05-1 | 36X48 | 12.00 | 7 | 84 | | | GORE EXIT |
| E05-2 | 48X36 | 12.00 | | | | | EXIT OPEN |
| E05-2a | 48X36 | 12.00 | | | | | EXIT CLOSED |
| G020-1 | 60X24 | 10.00 | 4 | 40 | | | ROAD WORK NEXT 8 MILES |
| G020-2 | 48X24 | 8.00 | 4 | 32 | | | END ROAD WORK |
| G020-4 | 36X18 | 4.50 | | | | | PILOT CAR FOLLOW ME |
| SPECIAL | 42X30 | 8.75 | | | | | PLEASE WAIT FOR PILOT CAR |
| G020-5aP | 36X24 | 6.00 | 48 | 288 | | | WORK ZONE (PLAQUE) |
| M04-8a | 24X18 | 3.00 | | | | | END DETOUR |
| M04-9L | 48X36 | 12.00 | | | | | DETOUR (LEFT ARROW) |
| M04-9R | 48X36 | 12.00 | | | | | DETOUR (RIGHT ARROW) |
| M04-10L | 48X18 | 6.00 | | | | | DETOUR (ARROW LEFT) |
| M04-10R | 48X18 | 6.00 | | | | | DETOUR (ARROW RIGHT) |
| M05-5 | 48X48 | 16.00 | | | | | NARROW LANES |
| **REGULATORY SIGNS** | | | | | | | |
| R1-1 | 48X48 | 13.25 | | | | | STOP |
| R1-2 | 48 TRI. | 6.93 | | | | | YIELD |
| R1-2a | 36X36 | 9.00 | | | | | TO ONCOMING TRAFFIC (PLAQUE) |
| R1-3 | 30X9 | 1.25 | | | | | X-WAY (PLAQUE) |
| R2-1 | 36X48 | 12.00 | 24 | 288 | | | SPEED LIMIT - 45 |
| R3-1 | 48X48 | 16.00 | | | | | NO RIGHT TURN (SYMBOL) |
| R3-2 | 48X48 | 16.00 | | | | | NO LEFT TURN (SYMBOL) |
| R3-3 | 36X36 | 9.00 | | | | | NO TURNS |
| R3-4 | 48X48 | 16.00 | | | | | NO U-TURN (SYMBOL) |
| R3-7L | 30X30 | 6.25 | | | | | LEFT LANE MUST TURN LEFT |
| R3-7R | 30X30 | 6.25 | | | | | RIGHT LANE MUST TURN RIGHT |
| R4-1 | 36X48 | 12.00 | | | | | DO NOT PASS |
| R4-2 | 36X48 | 12.00 | | | | | PASS WITH CARE |
| R4-7aL | 36X48 | 12.00 | | | | | KEEP LEFT (HORIZONTAL ARROW) |
| R4-7a | 36X48 | 12.00 | | | | | KEEP RIGHT (HORIZONTAL ARROW) |
| R5-1 | 30X30 | 6.25 | | | | | DO NOT ENTER |
| R5-1a | 36X24 | 6.00 | | | | | WRONG WAY |
| R6-1L | 48X18 | 6.00 | | | | | ONE WAY ARROW (LEFT) |
| R6-1R | 48X18 | 6.00 | | | | | ONE WAY ARROW (RIGHT) |
| R6-2L | 24X30 | 5.00 | | | | | ONE WAY (LEFT) |
| R6-2R | 24X30 | 5.00 | | | | | ONE WAY (RIGHT) |
| R10-6 | 24X36 | 6.00 | | | | | STOP HERE ON RED (45° ARROW) |
| R11-2 | 48X30 | 10.00 | 5 | 50 | | | ROAD CLOSED |
| R11-3a | 60X30 | 12.50 | | | | | ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY |
| R11-4 | 60X30 | 12.50 | | | | | ROAD CLOSED TO THRU TRAFFIC |
| S4-4 | 36X15 | 3.75 | | | | | WHEN FLASHING |
| CONST-3A | 60X48 | 20.00 | | | | | FINE SIGN |
| CONST-3X | 57X12 | 4.67 | | | | | SPEEDING/PASSING (PLATE) |
| **MISCELLANEOUS SIGNS** | | | | | | | |
| SPECIAL | 36X48 | 12.00 | | | | | POINT OF PRESENCE |
| CONST-5-96 | 96X48 | 32.00 | | | | | POINT OF PRESENCE |
| CONST-7-48 | 48X24 | 8.00 | | | | | RATE OUR WORK ZONE |
| CONST-7-72 | 72X36 | 18.00 | | | | | RATE OUR WORK ZONE |
| 616-10.05 CONSTRUCTION SIGNS TOTAL | | | 2799 | | | | |
| 616-10.10 RELOCATED SIGNS TOTAL | | | | | | | |

| ITEM NUMBER | TOTAL QTY | DESCRIPTION |
|---|---|---|
| 612-20.08 | | IMPACT ATTENUATOR (8 SAND BARRELS) |
| 612-20.09 | | IMPACT ATTENUATOR (9 SAND BARRELS) |
| 612-20.10 | | IMPACT ATTENUATOR (10 SAND BARRELS) |
| 612-20.12 | | IMPACT ATTENUATOR (12 SAND BARRELS) |
| 612-20.14 | | IMPACT ATTENUATOR (14 SAND BARRELS) |
| 612-20.17 | 17 | IMPACT ATTENUATOR (17 SAND BARRELS) |
| 612-20.19 | | IMPACT ATTENUATOR (19 SAND BARRELS) |
| 612-20.20 | 29 | REPLACEMENT SAND BARREL |
| 612-20.30 | 17 | IMPACT ATTENUATOR ARRAY (RELOCATION) |
| 612-30.00A | | TRUCK MOUNTED ATTENUATOR (TMA) |
| 616-10.07 | | SPEED LIMIT & STROBE LIGHT ASSEMBLY |
| 616-10.08 | | ADVANCED WARNING RAIL SYSTEM |
| 616-10.09 | 136 | FLAG ASSEMBLY |
| 616-10.20 | | CHANNELIZER (DRUM-LIKE) |
| 616-10.22 | | CHANNELIZER (CONES) |
| 616-10.24 | | CHANNELIZER (TRIM-LINE) WITH LIGHT |
| 616-10.25 | 263 | CHANNELIZER (TRIM-LINE) |
| 616-10.26 | | CHANNELIZER (VERTICAL PANEL) |
| 616-10.27 | | CHANNELIZER (VERTICAL PANEL) WITH LIGHT |
| 616-10.28 | | CHANNELIZER |
| 616-10.30 | 15 | TYPE III MOVEABLE BARRICADE |
| 616-10.31 | | TYPE III MOVEABLE BARRICADE WITH LIGHT |
| 616-10.33 | | DIRECTION INDICATOR BARRICADE |
| 616-10.34 | | DIRECTION INDICATOR BARRICADE, WITH LIGHT |
| 616-10.40 | 12 | FLASHING ARROW PANEL |
| 616-10.47 | | TYPE III OBJECT MARKER |
| 616-10.51 | | WARNING LIGHT, TYPE A |
| 616-10.52 | | WARNING LIGHT, TYPE B |
| 616-10.53 | | WARNING LIGHT, TYPE C |
| 616-10.70 | | TUBULAR MARKER |
| 616-10.95 | | RADAR SPEED ADVISORY SYSTEM |
| 616-10.96 | | CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED |
| 616-10.98 | | CHANGEABLE MESSAGE SIGN, CONTRACTOR FURNISHED/RETAINED |
| 616-11.00 | | CHANGEABLE MESSAGE SIGN, CONTRACTOR FURNISHED/COMMISSION RETAINED |
| 616-20.10 | 1 | WORK ZONE LIGHTING |
| 616-99.02 | | SEQUENTIAL FLASHING WARNING LIGHTS |
| 617-36.00D | 6150 | CONTRACTOR FURNISHED/RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER, TYPE F |
| 617-36.02B | | CONTRACTOR FURNISHED/COMMISSION RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER, TYPE F |
| 617-40.00A | | TEMPORARY CONCRETE BARRIER HEIGHT TRANSITION |
| 617-50.10A | 6150 | RELOCATING TEMPORARY CONCRETE TRAFFIC BARRIER |
| 617-60.00B | | COMMISSION FURNISHED/RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER, TYPE F |
| 617-70.00B | | COMMISSION FURNISHED/RETAINED PRECAST BARRIER HEIGHT TRANSITION |
| 620-80.65 | | TEMPORARY RAISED PAVEMENT MARKER |
| 901-94.00 | | TEMPORARY LIGHTING |
| 902-94.00 | | TEMPORARY TRAFFIC SIGNALS |
| 902-94.01 | | TEMPORARY TRAFFIC SIGNALS AND LIGHTING |

NOTE: TRAFFIC CONTROL (TC) QUANTITIES ARE PAID FOR SEPARATELY FOR I-635 AND I-29. FINAL TC QUANTITIES ARE THE SUM OF BOTH.

SUMMARY SHEET
SHEET 7 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
12/17/2013

| ROUTE | STATE |
|---|---|
| 29/635 | MO |
| DISTRICT | SHEET NO. |
| KC | 3 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DATE | DESCRIPTION |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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REV.

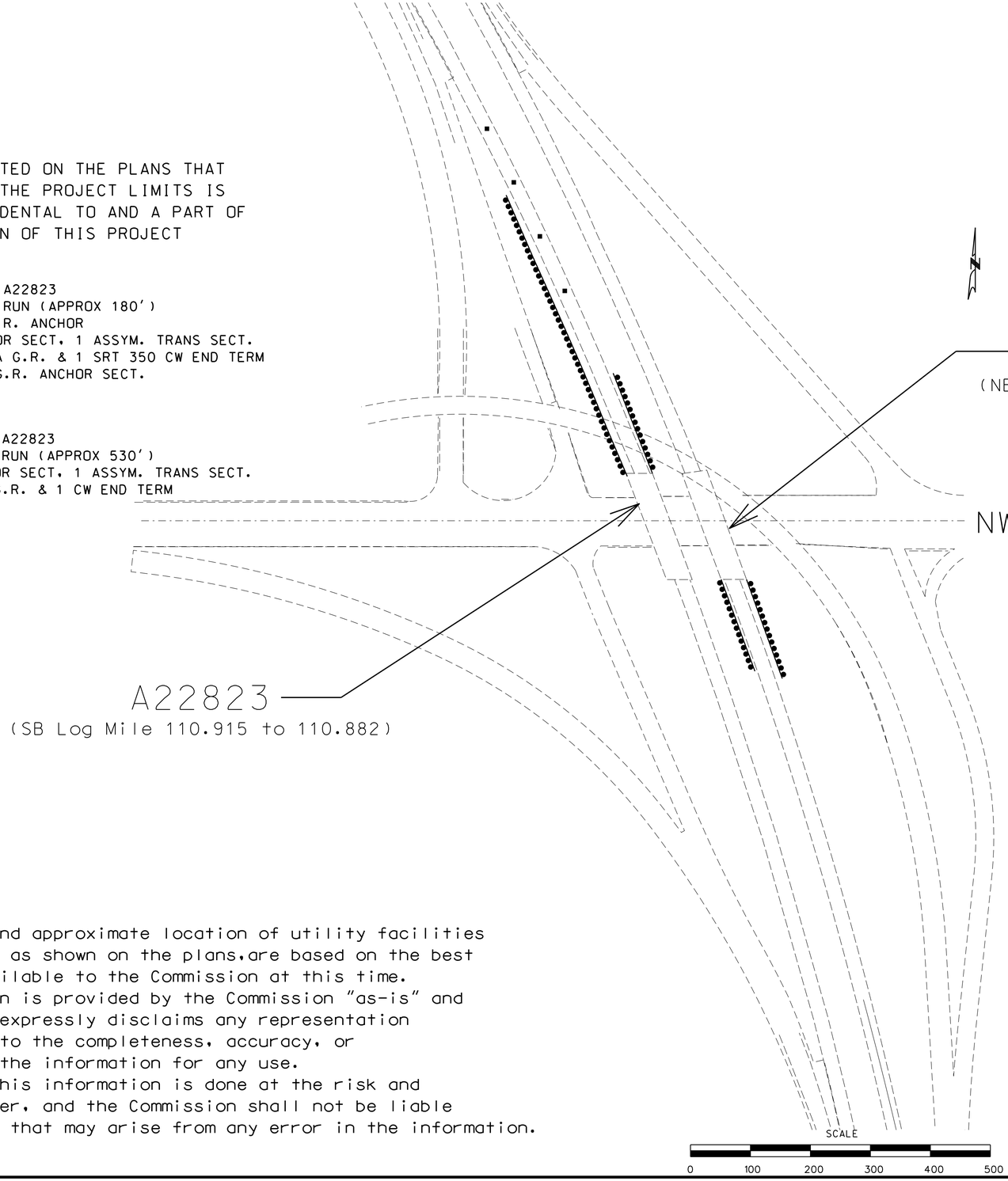
ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT

NE CORNER BRIDGE A22823
REMOVE GUARDRAIL RUN (APPROX 180')
REMOVE G.C. TO G.R. ANCHOR
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
162.5 L.F. TYPE A G.R. & 1 SRT 350 CW END TERM
BUILD 1 G.C. TO G.R. ANCHOR SECT.

NW CORNER BRIDGE A22823
REMOVE GUARDRAIL RUN (APPROX 530')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
500 L.F. TYPE A G.R. & 1 CW END TERM

SE CORNER BRIDGE A22824
REMOVE GUARDRAIL RUN (APPROX 175')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
112.5 L.F. TYPE A G.R. & 1 CW END TERM

SW CORNER BRIDGE A22824
REMOVE GUARDRAIL RUN (APPROX 163')
REMOVE G.C. TO G.R. ANCHOR
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
137.5 L.F. TYPE A G.R. & 1 SRT 350 CW END TERM
BUILD 1 G.C. TO G.R. ANCHOR




The existence and approximate location of utility facilities known to exist, as shown on the plans,are based on the best information available to the Commission at this time. This information is provided by the Commission "as-is" and the Commission expressly disclaims any representation or warranty as to the completeness, accuracy, or suitability of the information for any use. Reliance upon this information is done at the risk and peril of the user, and the Commission shall not be liable for any damages that may arise from any error in the information.

PLAN SHEET
1 OF 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 4 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

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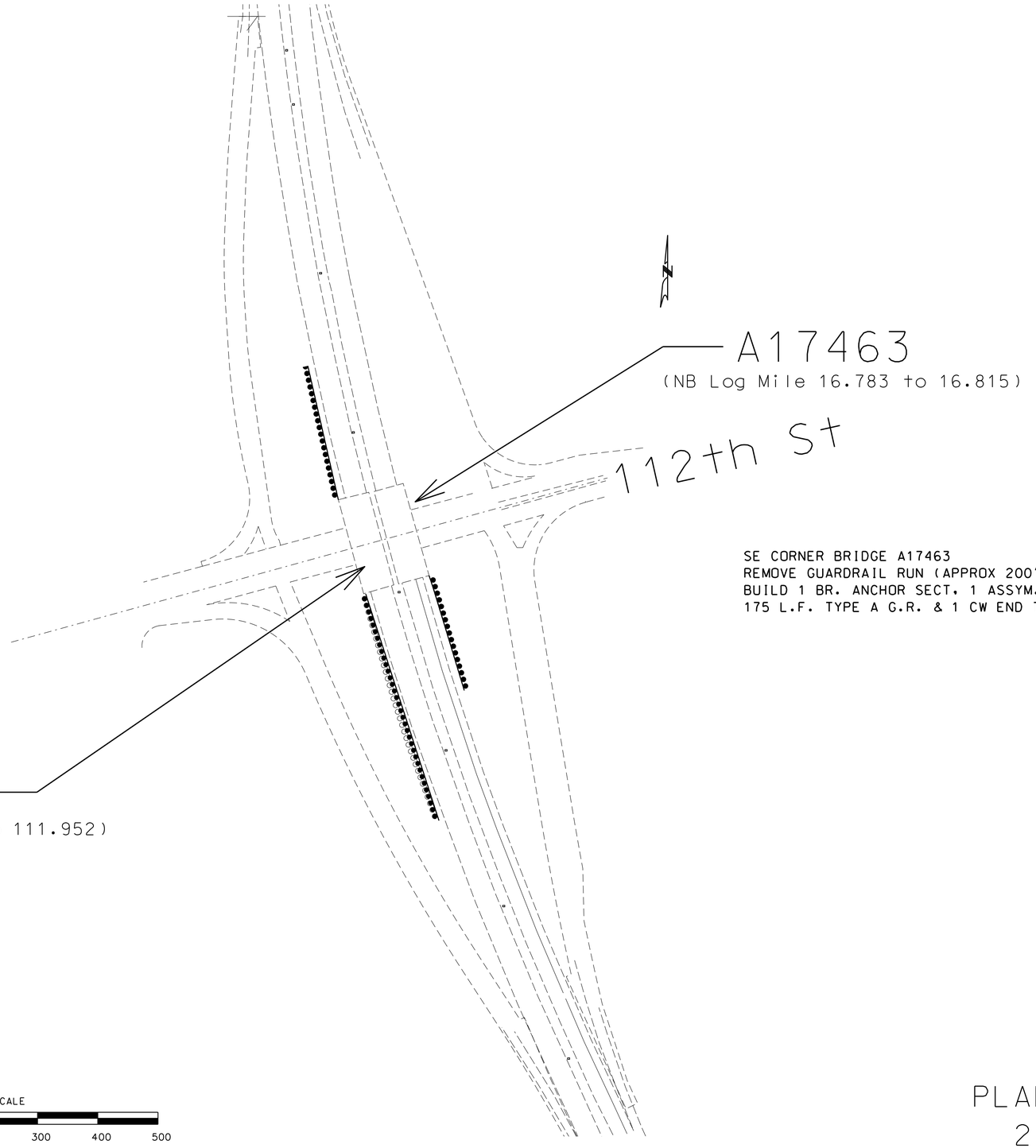
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

NW CORNER BRIDGE A17462
REMOVE GUARDRAIL RUN (APPROX 230')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
175 L.F. TYPE A G.R. & 1 CW END TERM




SE CORNER BRIDGE A17463
REMOVE GUARDRAIL RUN (APPROX 200')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
175 L.F. TYPE A G.R. & 1 CW END TERM

SW CORNER BRIDGE A17462
REMOVE GUARDRAIL RUN (APPROX 395')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
425 L.F. TYPE A G.R. & 1 END ANCHOR

PLAN SHEET
2 OF 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 5 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

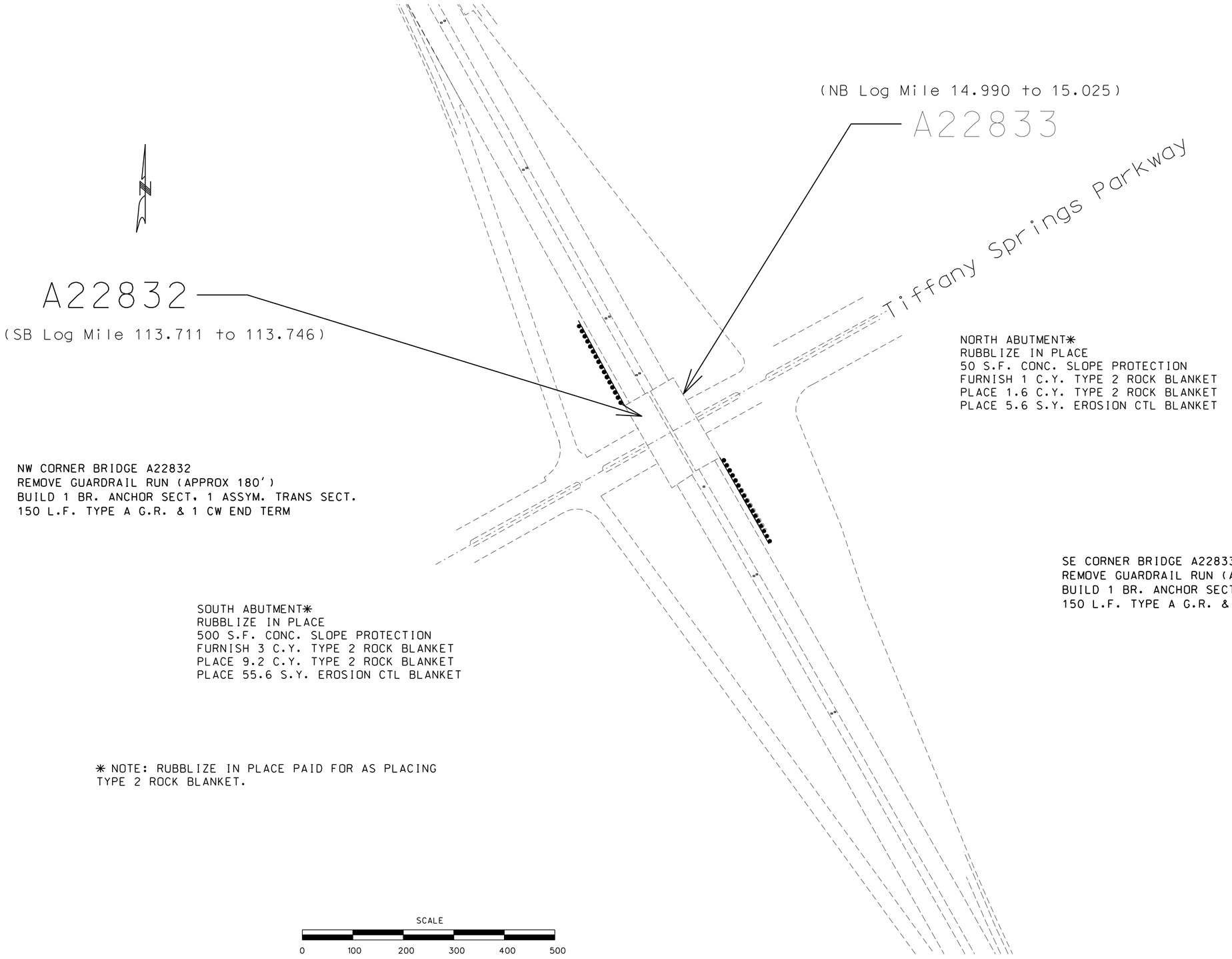
PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)


IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




NORTH ABUTMENT*
RUBBLIZE IN PLACE
50 S.F. CONC. SLOPE PROTECTION
FURNISH 1 C.Y. TYPE 2 ROCK BLANKET
PLACE 1.6 C.Y. TYPE 2 ROCK BLANKET
PLACE 5.6 S.Y. EROSION CTL BLANKET

NW CORNER BRIDGE A22832
REMOVE GUARDRAIL RUN (APPROX 180')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
150 L.F. TYPE A G.R. & 1 CW END TERM

SOUTH ABUTMENT*
RUBBLIZE IN PLACE
500 S.F. CONC. SLOPE PROTECTION
FURNISH 3 C.Y. TYPE 2 ROCK BLANKET
PLACE 9.2 C.Y. TYPE 2 ROCK BLANKET
PLACE 55.6 S.Y. EROSION CTL BLANKET

SE CORNER BRIDGE A22833
REMOVE GUARDRAIL RUN (APPROX 175')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
150 L.F. TYPE A G.R. & 1 CW END TERM

* NOTE: RUBBLIZE IN PLACE PAID FOR AS PLACING TYPE 2 ROCK BLANKET.

SCALE
0 100 200 300 400 500

PLAN SHEET
3 OF 9

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DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 6 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

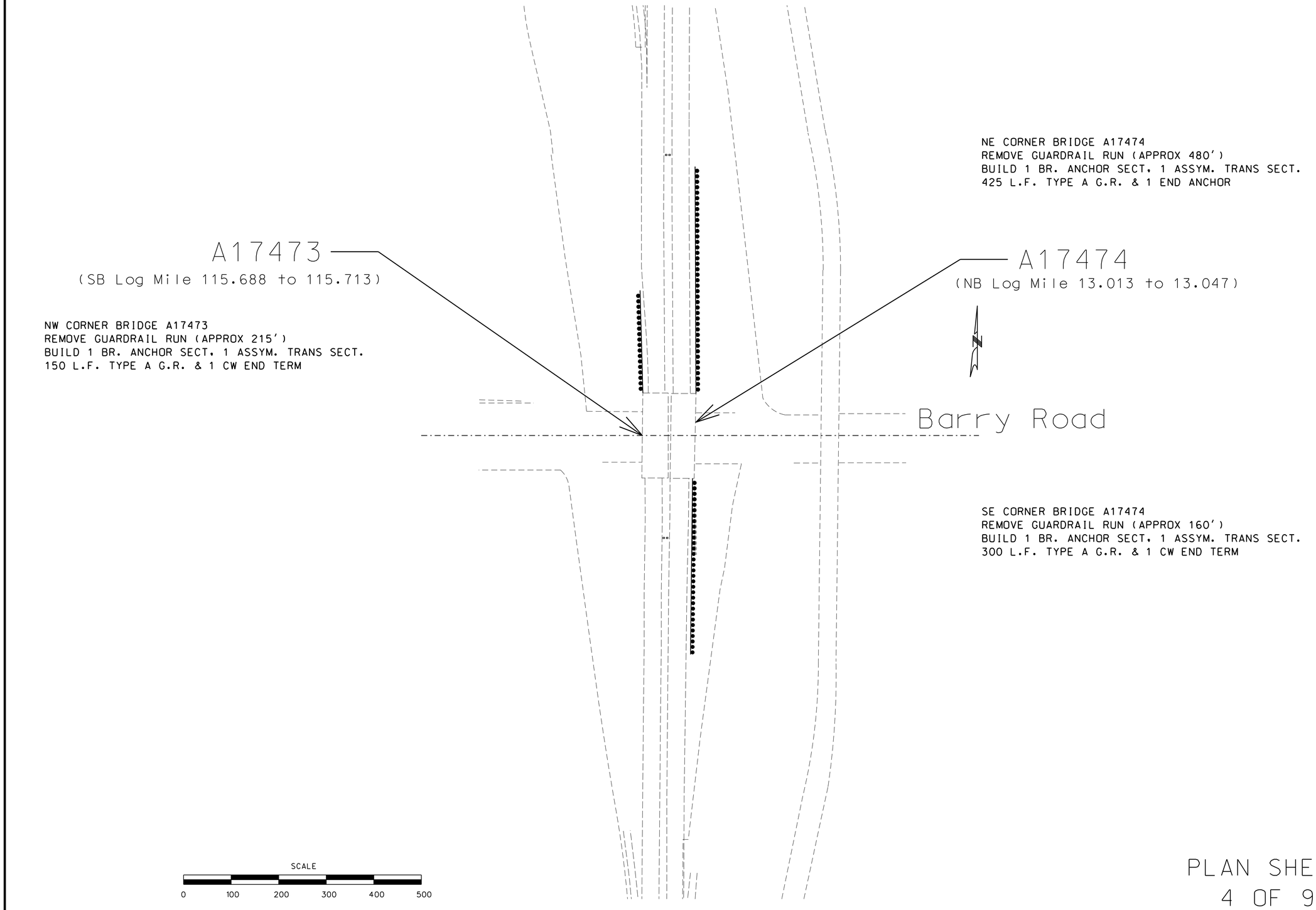
PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




NW CORNER BRIDGE A17473
REMOVE GUARDRAIL RUN (APPROX 215')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
150 L.F. TYPE A G.R. & 1 CW END TERM

NE CORNER BRIDGE A17474
REMOVE GUARDRAIL RUN (APPROX 480')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
425 L.F. TYPE A G.R. & 1 END ANCHOR

SE CORNER BRIDGE A17474
REMOVE GUARDRAIL RUN (APPROX 160')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
300 L.F. TYPE A G.R. & 1 CW END TERM

PLAN SHEET
4 OF 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 7 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

A15954

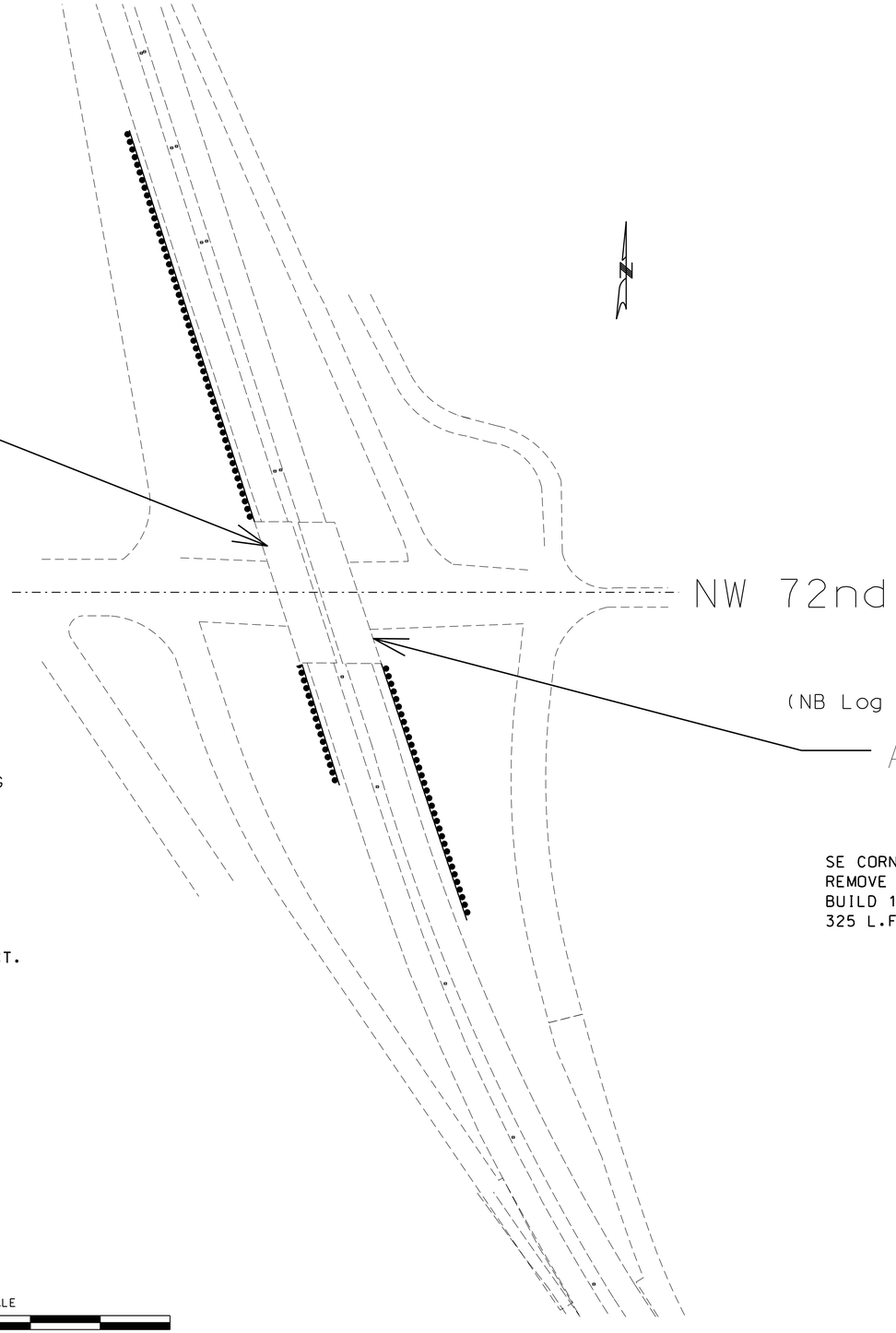
(SB Log Mile 117.289 to 117.329)

NW CORNER BRIDGE A15954
REMOVE GUARDRAIL RUN (APPROX 590')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
525 L.F. TYPE A G.R. & 1 CW END TERM

* RUBBLIZE 500 S.F.
CONC. SLOPE PROTECTION
FURNISH 3 C.Y. TYPE 2 ROCK BLANKET
PLACE 9.2 C.Y. TYPE 2 ROCK BLANKET
PLACE 55.6 S.Y. EROSION CTL BLANKET

* NOTE: RUBBLIZE IN PLACE PAID FOR AS PLACING TYPE 2 ROCK BLANKET.

SW CORNER BRIDGE A15954
REMOVE GUARDRAIL RUN (APPROX 180')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
150 L.F. TYPE A G.R. & 1 END ANCHOR




(NB Log Mile 11.399 to 11.439)

A15955

SE CORNER BRIDGE A15955
REMOVE GUARDRAIL RUN (APPROX 390')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
325 L.F. TYPE A G.R. & 1 CW END TERM

SCALE
0 100 200 300 400 500

PLAN SHEET
5 OF 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 8 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

NE CORNER BRIDGE A1159
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
200 L.F. TYPE A G.R. & 1 END ANCHOR

REMOVE EXISTING SIGNS
AND MOUNTING BRACKETS
BUILD NEW BRACKETS
(SEE BRIDGE PLANS)
INSTALL NEW SIGNS

A1159
(SB LOG MILE 118.485 TO 118.519)
(NB LOG MILE 10.208 TO 10.242)


3

15 FT 0 IN

4

SB - BUILD 192 S.Y.
BRIDGE APPROACH PAVEMENT
(NORTH APPROACH)

NW CORNER BRIDGE A1159
REMOVE GUARDRAIL RUN (APPROX 570')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
500 L.F. TYPE A G.R. & 1 CW END TERM

BUILD 75 L.F. TYPE A BARRIER

NB - BUILD 192 S.Y.
BRIDGE APPROACH PAVEMENT
(NORTH APPROACH)

Route 45

SE CORNER BRIDGE A1159
REMOVE GUARDRAIL RUN (APPROX 525')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
462.5 L.F. TYPE A G.R. & CW END TERMINAL

BUILD 75 L.F. TYPE A BARRIER

NB - BUILD 192 S.Y.
BRIDGE APPROACH PAVEMENT
(SOUTH APPROACH)

REMOVE EXISTING SIGNS
AND MOUNTING BRACKETS
BUILD NEW BRACKETS
(SEE BRIDGE PLANS)
INSTALL NEW SIGNS


1

15 FT 0 IN

2

SB - BUILD 192 S.Y.
BRIDGE APPROACH PAVEMENT
(SOUTH APPROACH)

SW CORNER BRIDGE A1159
REMOVE GUARDRAIL RUN (APPROX 395')
BUILD 1 BR. ANCHOR SECT. 1 ASSYM. TRANS SECT.
425 L.F. TYPE A G.R. & 1 END ANCHOR

SCALE

0 100 200 300 400 500

PLAN SHEET
6 OF 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 9 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

NE CORNER BRIDGE A1687
REMOVE GUARDRAIL (530' RUN)
BUILD 1 BRIDGE ANCHOR SECT.
BUILD 1 ASYMMETRIC TRANS. SECT.
BUILD 250 L.F. TYPE A GUARDRAIL
BUILD 1 ASYMMETRIC TRANSITION SECT.
BUILD 1 BRIDGE ANCHOR SECT.

NE CORNER BRIDGE A1687
REMOVE GUARDRAIL (530' RUN)
BUILD 1 BRIDGE ANCHOR SECT.
BUILD 1 ASYMMETRIC TRANS. SECT.
BUILD 487.5 L.F. TYPE A GUARDRAIL
BUILD 1 ASYMMETRIC TRANSITION SECT.
BUILD 1 BRIDGE ANCHOR SECT.

NORTH ABUTMENT✳
RUBBLIZE IN PLACE 250 S.F.
CONCRETE SLOPE PROTECTION
FURNISH 2.5 C.Y. TYPE 2 ROCK BLANKET
PLACE 5.6 C.Y. TYPE 2 ROCK BLANKET
PLACE 27.8 S.Y. EROSION CTL BLANKET

(LOG MILE 0.089 TO 0.144)

A1687

A1688
(LOG MILE 3.624 TO 3.691)

L0692

L0689

I-29

SOUTH ABUTMENT✳
RUBBLIZE IN PLACE 320 S.F.
CONCRETE SLOPE PROTECTION
FURNISH 2.5 C.Y. TYPE 2 ROCK BLANKET
PLACE 6.5 C.Y. TYPE 2 ROCK BLANKET
PLACE 35.6 S.Y. EROSION CTL BLANKET

✳ NOTE: RUBBLIZE IN PLACE PAID FOR AS PLACING TYPE 2 ROCK BLANKET

I-635

SE CORNER BRIDGE A1687
REMOVE GUARDRAIL (100' RUN)
BUILD 1 BRIDGE ANCHOR SECT.
1 ASYMMETRIC TRANS. SECT.
87.5 L.F. TYPE A GUARDRAIL
1 END ANCHOR

A1689

US 69

SCALE
0 200 400 600 800 1000

PLAN SHEET
7 OF 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| VAR. | MO |
| DISTRICT | SHEET NO. |
| KC | 10 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

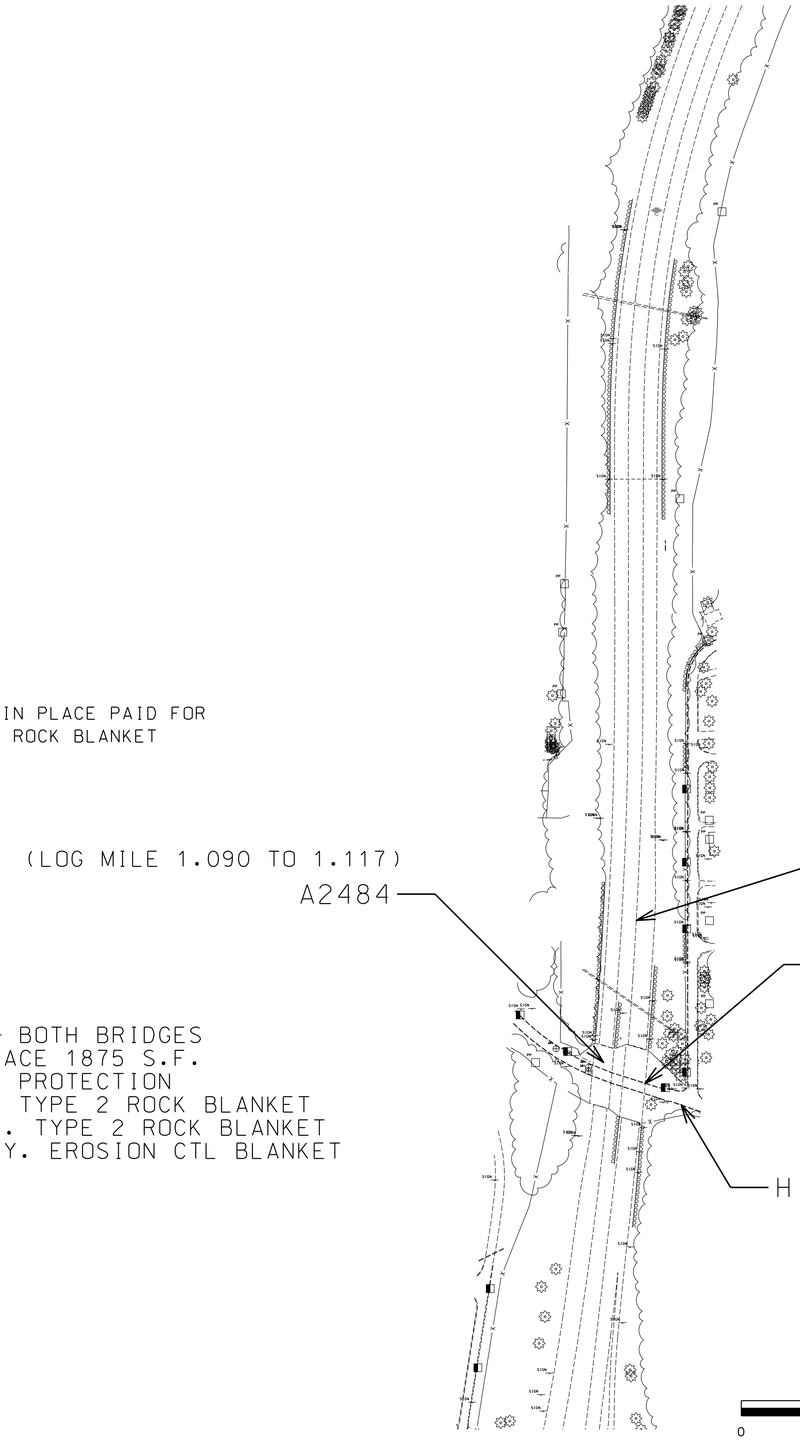
BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

✳ NOTE: RUBBLIZE IN PLACE PAID FOR
AS PLACING TYPE 2 ROCK BLANKET




✳ S ABUTMENT - BOTH BRIDGES
RUBBLIZE IN PLACE 1875 S.F.
CONCRETE SLOPE PROTECTION
FURNISH 4 C.Y. TYPE 2 ROCK BLANKET
PLACE 27.2 C.Y. TYPE 2 ROCK BLANKET
PLACE 208.3 S.Y. EROSION CTL BLANKET

✳ N ABUTMENT - BOTH BRIDGES
RUBBLIZE IN PLACE 2000 S.F.
CONCRETE SLOPE PROTECTION
FURNISH 5 C.Y. TYPE 2 ROCK BLANKET
PLACE 29.7 C.Y. TYPE 2 ROCK BLANKET
PLACE 222.2 S.Y. EROSION CTL BLANKET

PLAN SHEET
8 OF 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 11 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DATE | DESCRIPTION |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

(LOG MILE 1.411 TO 1.434)

A2438

BRIDGE A2436
BUILD 110 S.Y. APPROACH PAVEMENT
AT NORTH & SOUTH APPROACH

A2436
(LOG MILE 1.499 TO 1.522)

A2433

A2432

I-635

✳NORTH ABUTMENT A2437
RUBBLIZE 1152 S.F. SLOPE PROTECTION
FURNISH 3 C.Y. TYPE 2 ROCK BLANKET
PLACE 17.2 C.Y. TYPE 2 ROCK BLANKET
PLACE 128 S.Y. EROSION CTL BLANKET
(OUTSIDE EDGES OF SLOPE PROTECTION)

✳SOUTH ABUTMENT A2437
RUBBLIZE 1152 S.F. SLOPE PROTECTION
A2437 FURNISH 3 C.Y. TYPE 2 ROCK BLANKET
PLACE 17.2 C.Y. TYPE 2 ROCK BLANKET
PLACE 128 S.Y. EROSION CTL BLANKET
(OUTSIDE EDGES OF SLOPE PROTECTION)

A2435

✳NORTH ABUTMENT A2435
RUBBLIZE 11552 S.F. CONCRETE SLOPE PROT.
FURNISH 20 C.Y. TYPE 2 ROCK BLANKET
PLACE 162.6 C.Y. TYPE 2 ROCK BLANKET
PLACE 1283.6 S.Y. EROSION CTL BLANKET

✳SOUTH ABUTMENT A2435
RUBBLIZE 2082 S.F. CONCRETE SLOPE PROT.
FURNISH 8 C.Y. TYPE 2 ROCK BLANKET
PLACE 33.7 C.Y. TYPE 2 ROCK BLANKET
PLACE 231.3 S.Y. EROSION CTL BLANKET

Route 9

BRIDGE A2435
BUILD 110 S.Y. APPROACH PAVEMENT
AT NORTH & SOUTH APPROACH

A2434

(A2437 = LOG MILE 2.286 TO 2.317)

(A2435 = LOG MILE 2.175 TO 2.232)

A2431

✳NOTE: RUBBLIZE CONCRETE SLOPE PTOTECTION
PAID FOR AS PLACING TYPE 2 ROCK BLANKET

SCALE
0 200 400 600 800 1000

PLAN SHEET
9 OF 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013
ROUTE: I-29 | STATE: MO
DISTRICT: KC | SHEET NO.: 12
COUNTY: PLATTE
JOB NO.: J4I2374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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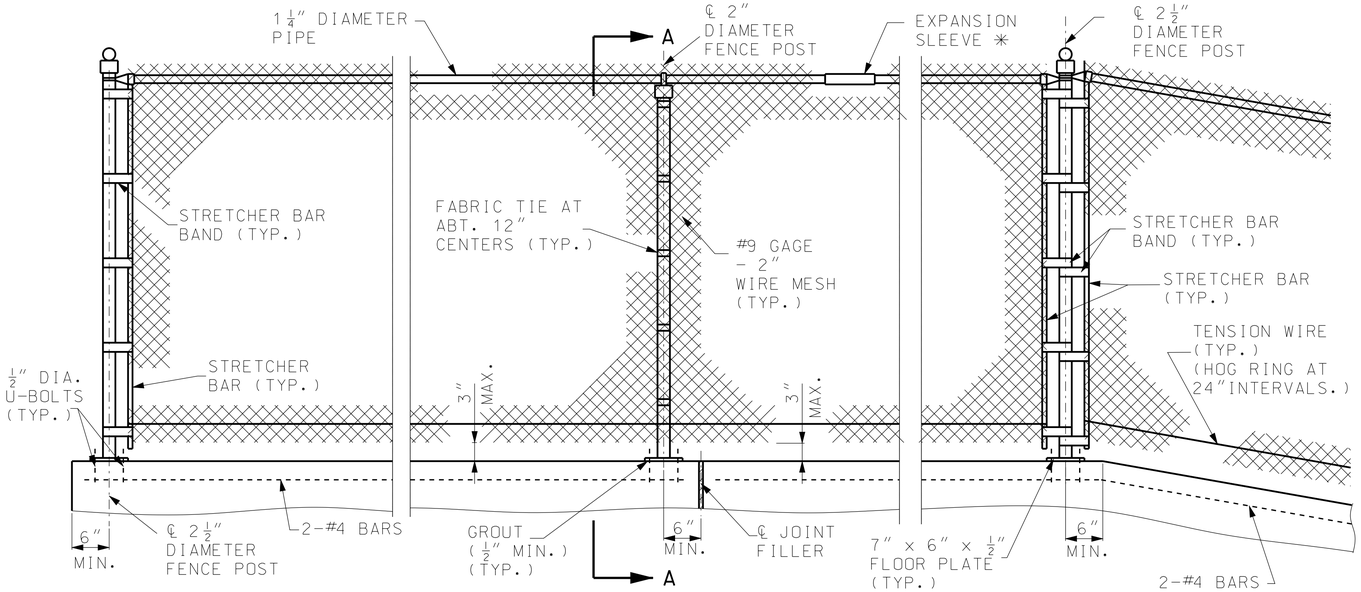
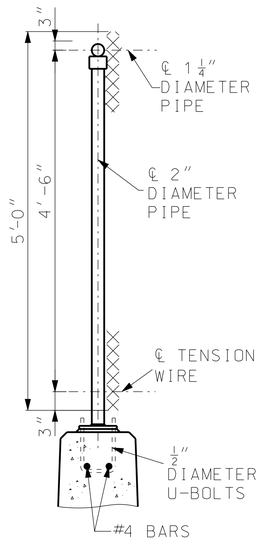
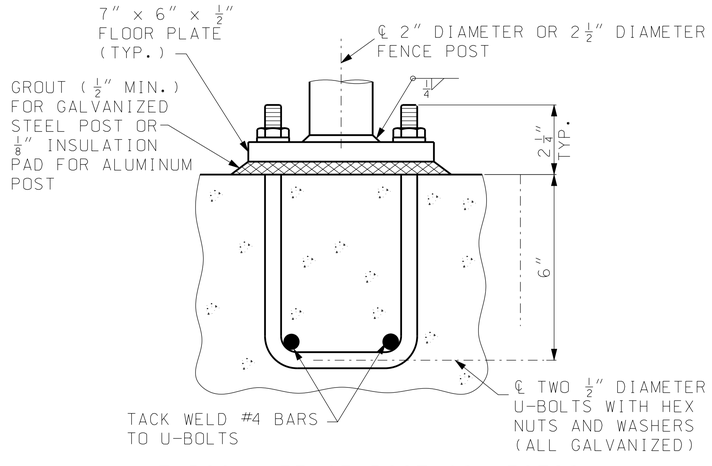


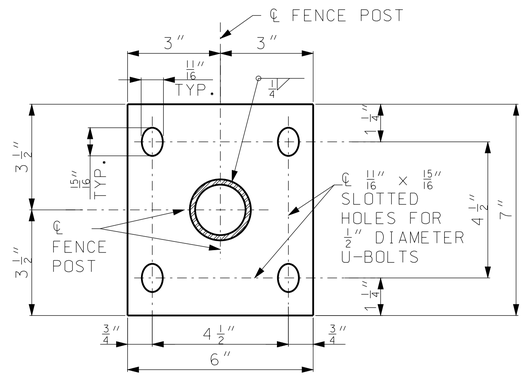

SECTION A-A

* PLACE EXPANSION SLEEVE AT ABOUT 30'-0" CENTERS WITH AT LEAST ONE EXPANSION SLEEVE BETWEEN PULL POSTS.

## PART ELEVATION (TYPICAL)




TYPICAL FENCE POST CONNECTION




PLAN OF FLOOR PLATE

GENERAL NOTES:

PAYMENT FOR U-BOLTS WITH NUTS, WASHERS, AND #4 BARS WILL BE CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR CHAIN-LINK FENCE.

PULL POST SHALL BE USED AT SHARP BREAKS IN VERTICAL GRADE OR AT APPROXIMATE 100'-0" CENTERS ON STRAIGHT RUNS.

THE CHAIN-LINK FENCE SHALL BE IN ACCORDANCE WITH APPLICABLE PARTS OF SEC. 607.

MAXIMUM POST SPACING IN HORIZONTAL DIRECTION SHALL BE 10'-0".

# CHAIN-LINK FENCE FOR BARRIER

## SPECIAL SHEET 1 OF 2

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013

| ROUTE | STATE |
|---|---|
| 29/635 | MO |
| DISTRICT | SHEET NO. |
| KC | 13 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

| DESCRIPTION | DATE |
|---|---|
| | |

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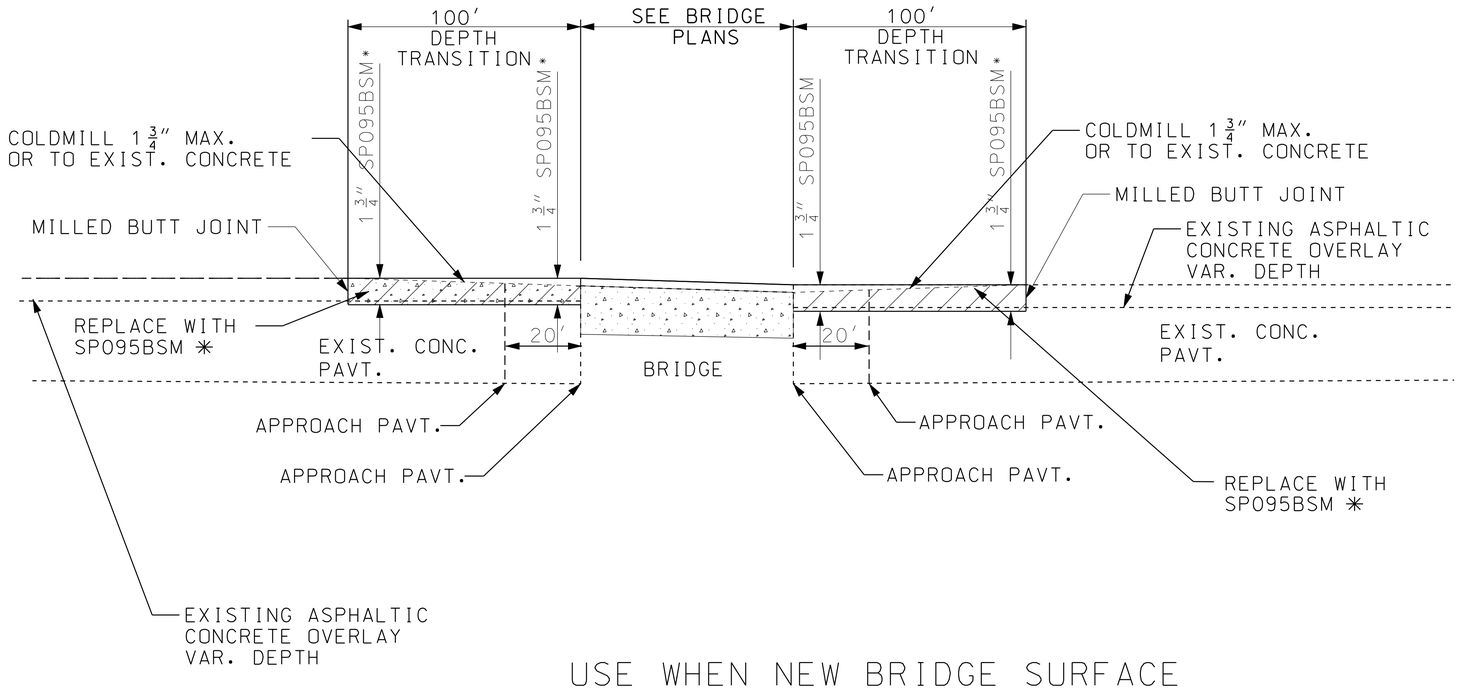
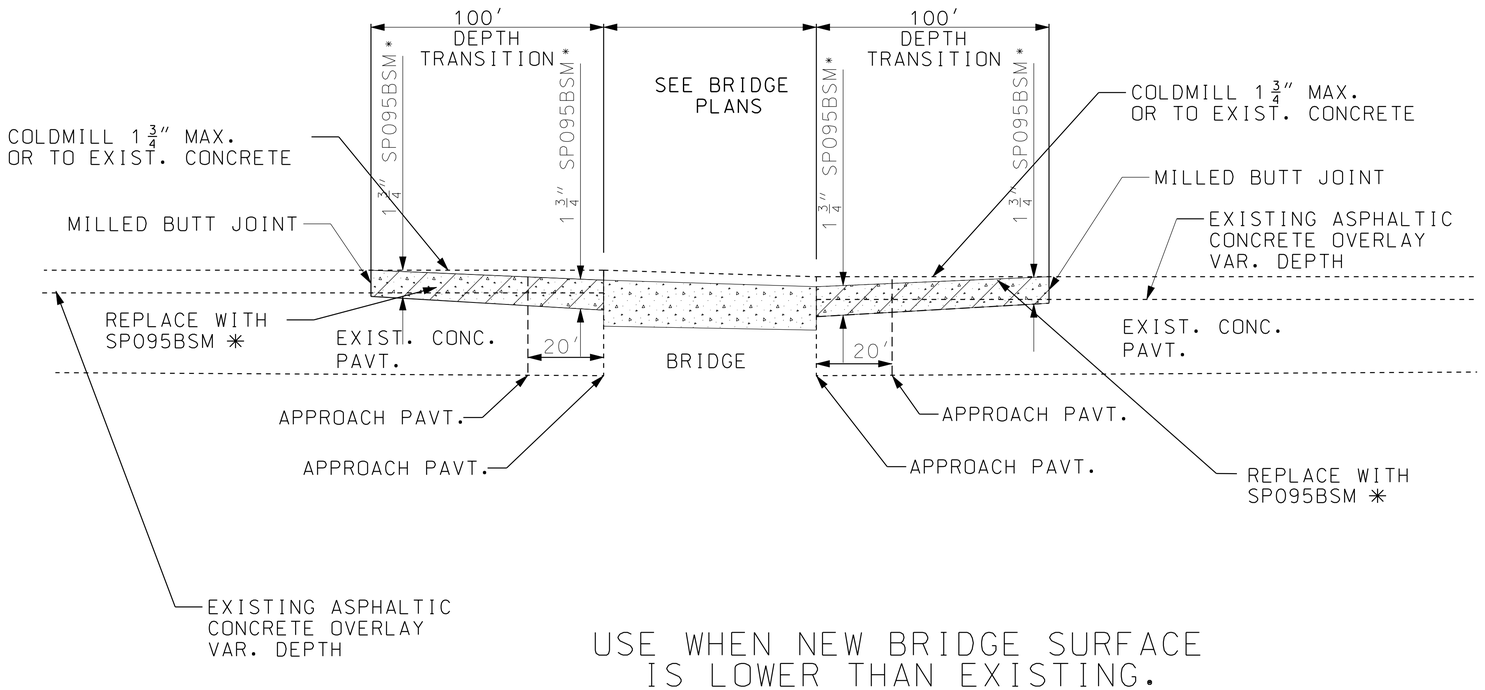
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




USE WHEN NEW BRIDGE SURFACE IS HIGHER THAN EXISTING.




USE WHEN NEW BRIDGE SURFACE IS LOWER THAN EXISTING.

COLDMILL

NEW PAVEMENT

NOTE:

* ON SHOULDERS, USE BITUMINOUS PAVEMENT MIXTURE BP-1

NOT TO SCALE

DEPTH TRANS.

ESTIMATE FACTORS:

SP095BSM 1.907 TON/CY.
BP-1 1.987 TON/CY
TACK 0.08 GAL/SQ. YD.

FOR INFORMATION ONLY

SPECIAL SHEET
SHEET 2 OF 2

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

| ROUTE | STATE |
|---|---|
| 29/635 | MO |
| DISTRICT | SHEET NO. |
| KC | 14 |

COUNTY: PLATTE
JOB NO.: J4I2374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

| DATE | DESCRIPTION |
|---|---|

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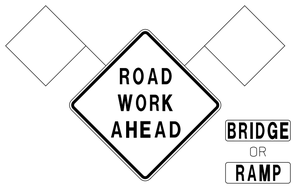
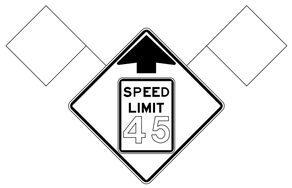
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



W020-1
2



W03-5
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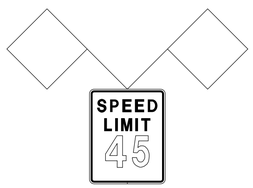
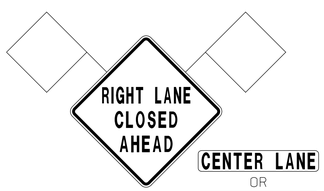


R2-1
4



W020-5
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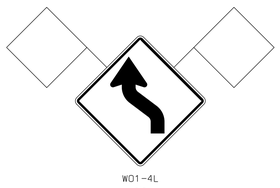
W020-5a

W020-6a
6

R1-2
13


W01-4L
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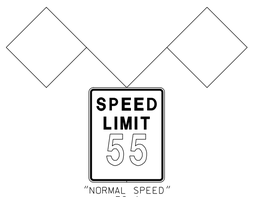
W021-5b
21

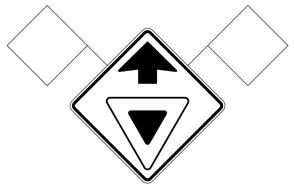


"NORMAL SPEED"
R2-1
25

G020-2
26

R11-2
29

W05-5
34


W03-2a
40

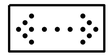
W05-1
43

W07-3a
44A


W012-1
45

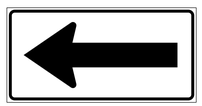
E05-1
49

G023-1
54


FLASHING
ARROW PANEL


CHANNELIZERS


W04-1R


W01-6
16

W013-1
44

| TAPER LENGTHS AND SPACING OF CHANNELIZING DEVICES | | | | | |
|---|---|---|---|---|---|
| SPEED MPH (S) | MINIMUM TAPER LENGTHS (L) FOR LATERAL SHIFTS (W) | | | MAXIMUM CHANNELIZER SPACING | |
| | 10 FT | 11 FT | 12 FT | THROUGH TAPER | THROUGH WORK AREA |
| 0-35 | 205 FT | 225 FT | 245 FT | 35 FT | 50 FT |
| 40-45 | 450 FT | 495 FT | 540 FT | 40 FT | 100 FT |
| 50-55 | 550 FT | 605 FT | 660 FT | 50 FT | 100 FT |
| 60-70 | 700 FT | 770 FT | 840 FT | 60 FT | 100 FT |

## SIGN SPACING FOR ADVANCE SIGN SERIES

SPACING BETWEEN SIGNS AND SPACING BETWEEN LAST SIGN AND FLAGGER, BEGINNING OF TAPER, OR SIGNED CONDITION.

SPACINGS MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS.

| SPEED MPH (S) | NON-DIVIDED HIGHWAYS | DIVIDED HIGHWAYS |
|---|---|---|
| 0-35 | 200 FT | 200 FT |
| 40-45 | 350 FT | 500 FT |
| 50-55 | 500 FT | 1000 FT |
| 60-70 | 1000 FT | 1000 FT |

TAPER LENGTH (L)

L = W x S FOR 45 MPH OR MORE

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

L = TAPER LENGTH IN FEET

W = LATERAL SHIFT IN FEET

S = POSTED SPEED PRIOR TO ROAD WORK IN MPH

| BUFFER SPACE<br>SPACING FOR POSTED SPEED PRIOR TO CONSTRUCTION MPH | |
|---|---|
| SPEED MPH | FEET |
| 0-35 | 120 FT |
| 40-45 | 220 FT |
| 50-55 | 335 FT |
| 60-70 | 550 FT |

# SIGNS/DEVICE LEGEND AND LENGTH/SPACING TABLES

TEMPORARY
TRAFFIC CONTROL
SHEET 1 OF 57

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

ROUTE 29/635 | STATE MO

DISTRICT KC | SHEET NO. 15

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

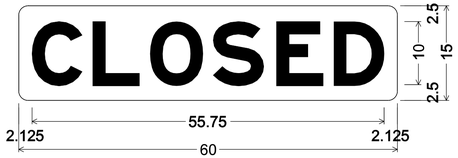
BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

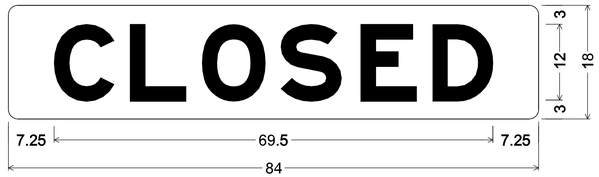
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

REV.




SHR4L3;
1.500" Radius, 0.000" Border, None on Orange;
[CLOSED] Black E Mod 80% spacing;
Table of letter and object lefts.

| C | L | O | S | E | D |
|---|---|---|---|---|---|
| 2.125 | 11.750 | 20.750 | 30.875 | 40.875 | 49.875 |




SHR4L3; 1.500" Radius, 0.000" Border, None on Orange;
[CLOSED] Black E Mod;
Table of letter and object lefts.

| C | L | O | S | E | D |
|---|---|---|---|---|---|
| 7.250 | 19.250 | 30.625 | 43.125 | 55.875 | 67.250 |

TEMPORARY TRAFFIC CONTROL
2 OF 57

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

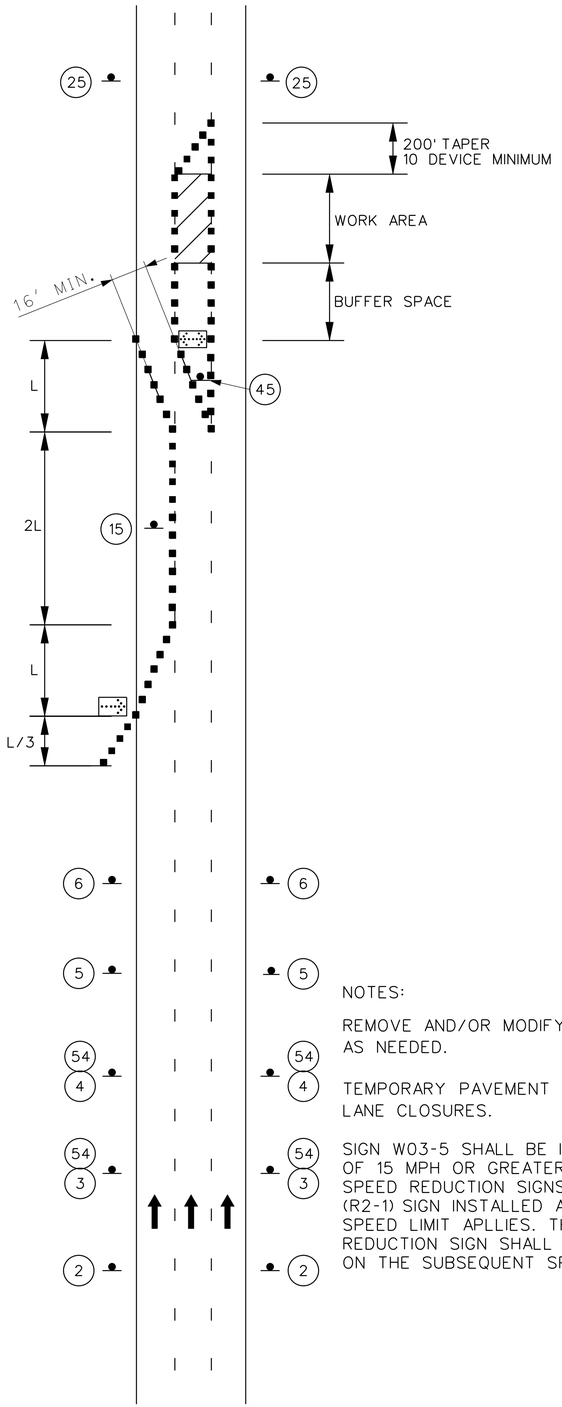
DATE PREPARED
10/21/2013

ROUTE 29/635 | STATE MO
DISTRICT KC | SHEET NO. 16
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



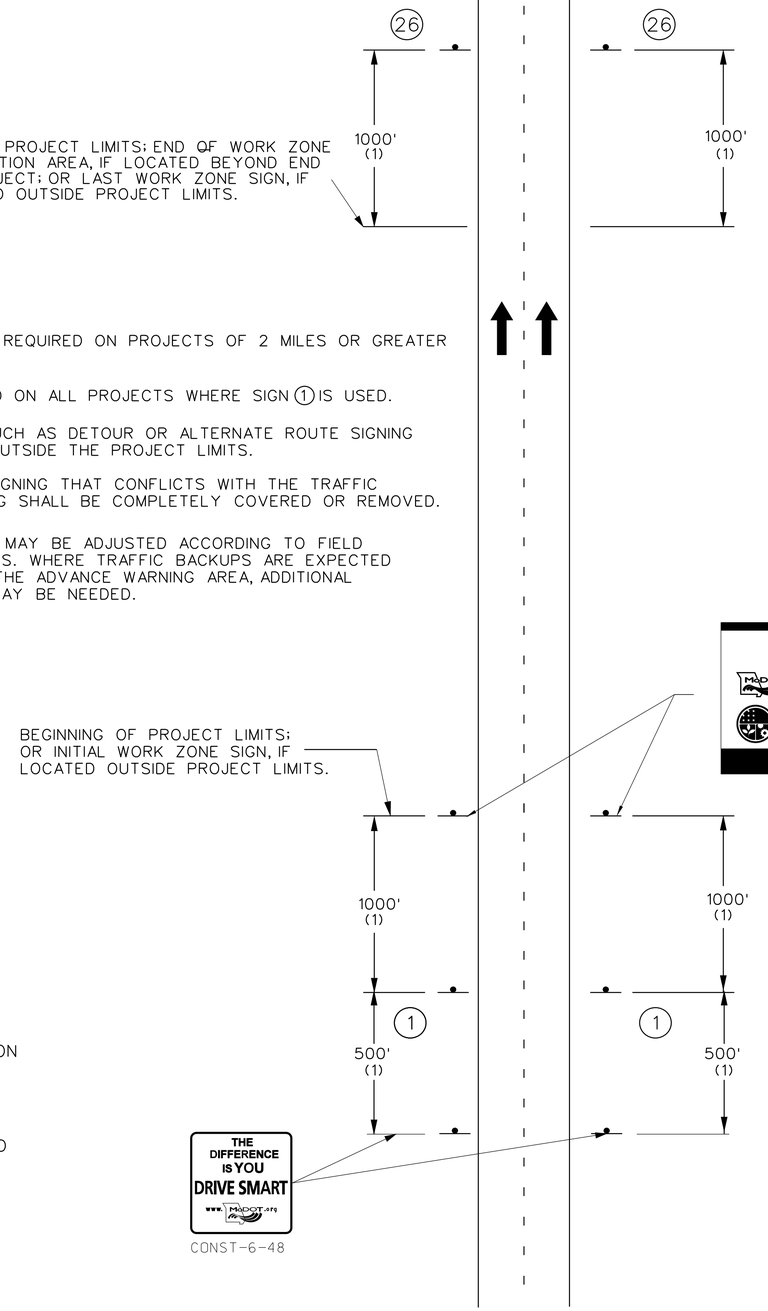

NOTES:

REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.

TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.

SIGN W03-5 SHALL BE INSTALLED IN ADVANCE OF A SPEED REDUCTION OF 15 MPH OR GREATER FROM THE POSTED SPEED LIMIT. IF USED, SPEED REDUCTION SIGNS SHALL BE FOLLOWED BY A SPEED LIMIT (R2-1) SIGN INSTALLED AT THE BEGINNING OF THE ZONE WHERE THE SPEED LIMIT APLLIES. THE SPEED LIMIT DISPLAYED ON THE SPEED REDUCTION SIGN SHALL BE IDENTICAL TO THE SPEED LIMIT DISPLAYED ON THE SUBSEQUENT SPEED LIMIT SIGN.

## LANE CLOSURE
## INTERIOR LANE OF MULTI-LANE DIVIDED HIGHWAY




NOTES:

SIGN (1) IS ONLY REQUIRED ON PROJECTS OF 2 MILES OR GREATER IN LENGTH.

SIGN (26) IS USED ON ALL PROJECTS WHERE SIGN (1) IS USED.

OTHER SIGNS SUCH AS DETOUR OR ALTERNATE ROUTE SIGNING MAY BE USED OUTSIDE THE PROJECT LIMITS.

ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.

(1) DISTANCE MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

THE DIFFERENCE IS YOU
DRIVE SMART
www.MoDOT.org

CONST-6-48

## BEGIN/END OF PROJECT SIGNING
## (FOR USE ON ALL PROJECTS)

**Bridge Improvements**

Economic Recovery Project

TEMPORARY
TRAFFIC CONTROL
SHEET 3 OF 57

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| 29/635 | MO |
| DISTRICT | SHEET NO. |
| KC | 17 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

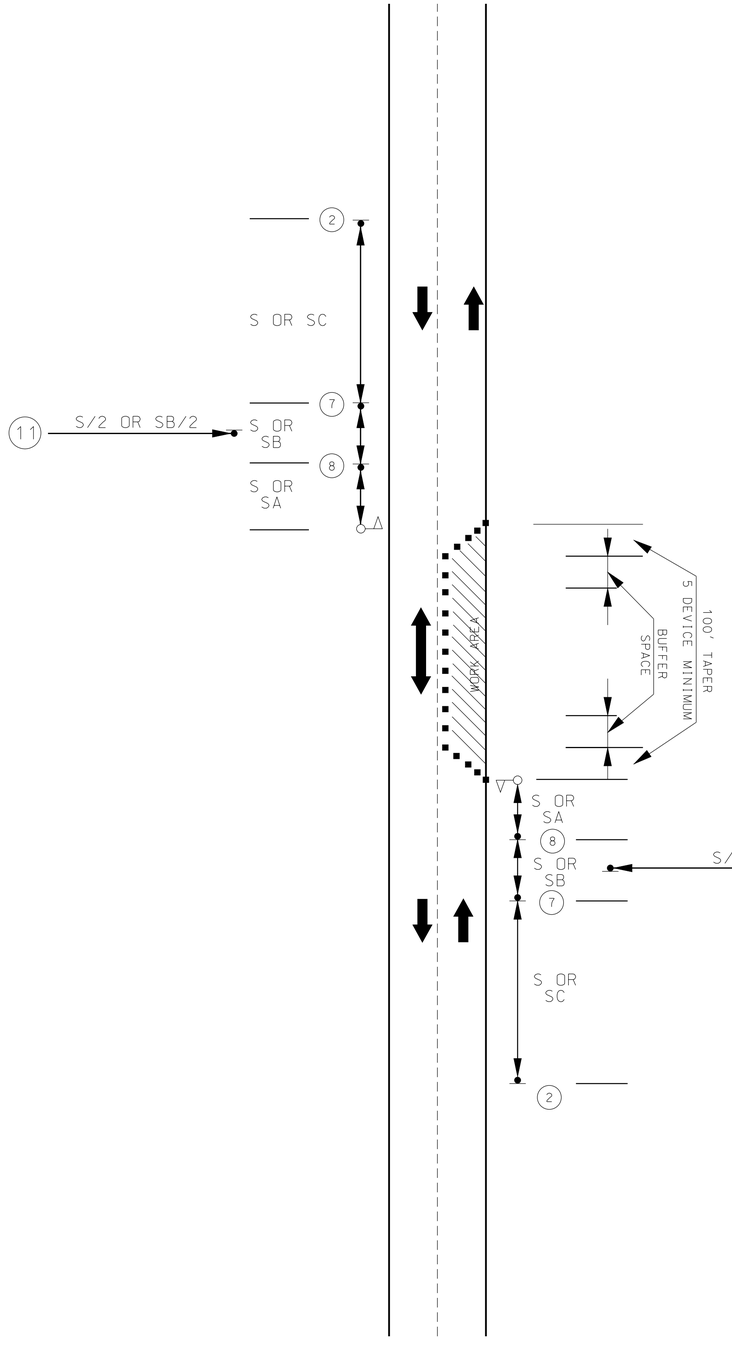
| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.







- FLAGGER

CHANNELIZERS

USED WHEN NO WORK ZONE SPEED LIMIT IS ESTABLISHED

NOTES:

(1). SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.
(2). SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.
(3). SEE SHEET FIGURE 616.0.5, SHEET 2 OF 2, FOR A LANE CLOSURE WITH WIDTH RESTRICTION.
(4). REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.
(5). TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.
(6). FLARE BARRIER TO EXTEND BEYOND CLEAR ZONE OR FLARE BARRIER TO EDGE LINE AND USE APPROVED END TREATMENT.

FLAGGER CONTROL FOR STATIONARY OPERATION ONE LANE TWO WAY

FLAGGER CONTROL
ONE LANE TWO WAY
TEMPORARY
TRAFFIC CONTROL
SHEET 4 OF 57

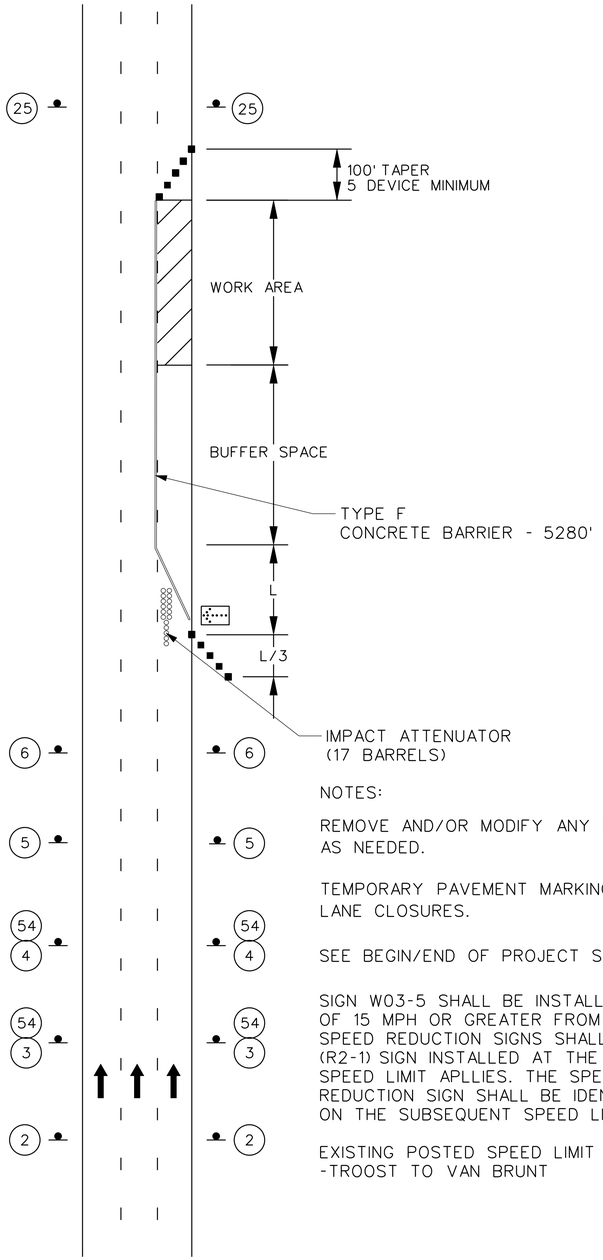
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013
ROUTE 29/635 | STATE MO
DISTRICT KC | SHEET NO. 18
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




NOTES:

REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.

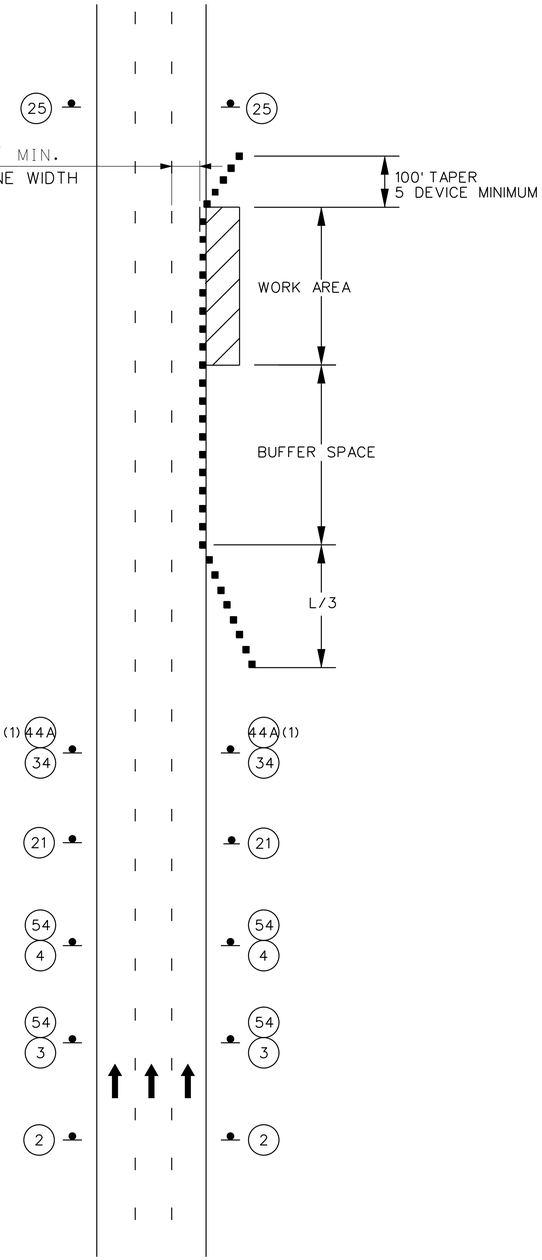
TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.

SEE BEGIN/END OF PROJECT SIGNING SHEET FOR ADDITIONAL SIGNS.

SIGN W03-5 SHALL BE INSTALLED IN ADVANCE OF A SPEED REDUCTION OF 15 MPH OR GREATER FROM THE POSTED SPEED LIMIT. IF USED, SPEED REDUCTION SIGNS SHALL BE FOLLOWED BY A SPEED LIMIT (R2-1) SIGN INSTALLED AT THE BEGINNING OF THE ZONE WHERE THE SPEED LIMIT APLLIES. THE SPEED LIMIT DISPLAYED ON THE SPEED REDUCTION SIGN SHALL BE IDENTICAL TO THE SPEED LIMIT DISPLAYED ON THE SUBSEQUENT SPEED LIMIT SIGN.

EXISTING POSTED SPEED LIMIT IS 45 MPH ALONG I-70 -TROOST TO VAN BRUNT

**TYPICAL LEFT OR RIGHT LANE CLOSURE MULTI-LANE DIVIDED HIGHWAY**




NOTES:

(1) SIGN 44A NOT REQUIRED FOR NARROW LANE SECTIONS LESS THAN ONE MILE.

**SHOULDER WORK**

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| 29/635 | MO |
| DISTRICT | SHEET NO. |
| KC | 19 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

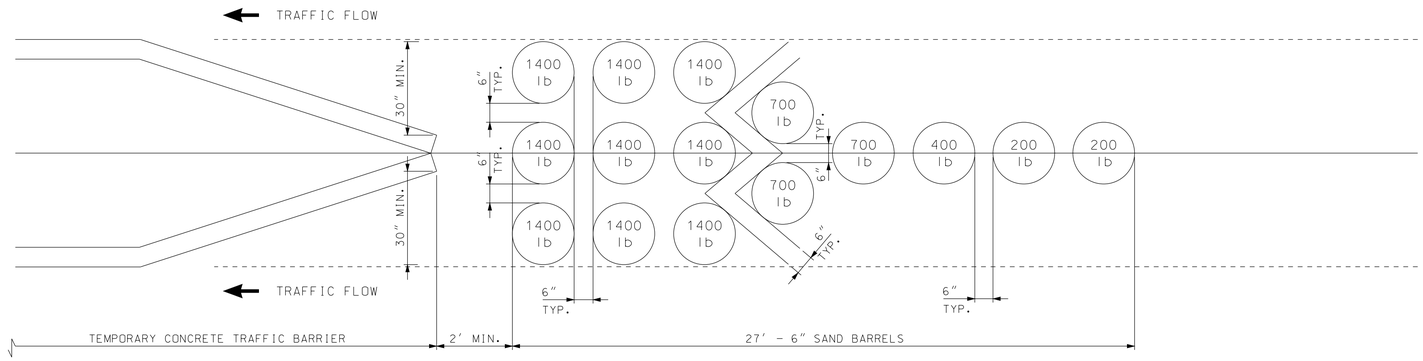
| DESCRIPTION | DATE |
|---|---|


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)


IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

TEMPORARY
TRAFFIC CONTROL
SHEET 5 OF 57




## IMPACT ATTENUATOR TYPICAL FOR CENTER LANE CLOSURE (SAND BARRELS)

TEMPORARY
TRAFFIC CONTROL
SHEET 6 OF 57

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| 29/635 | MO |
| DISTRICT | SHEET NO. |
| KC | 20 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

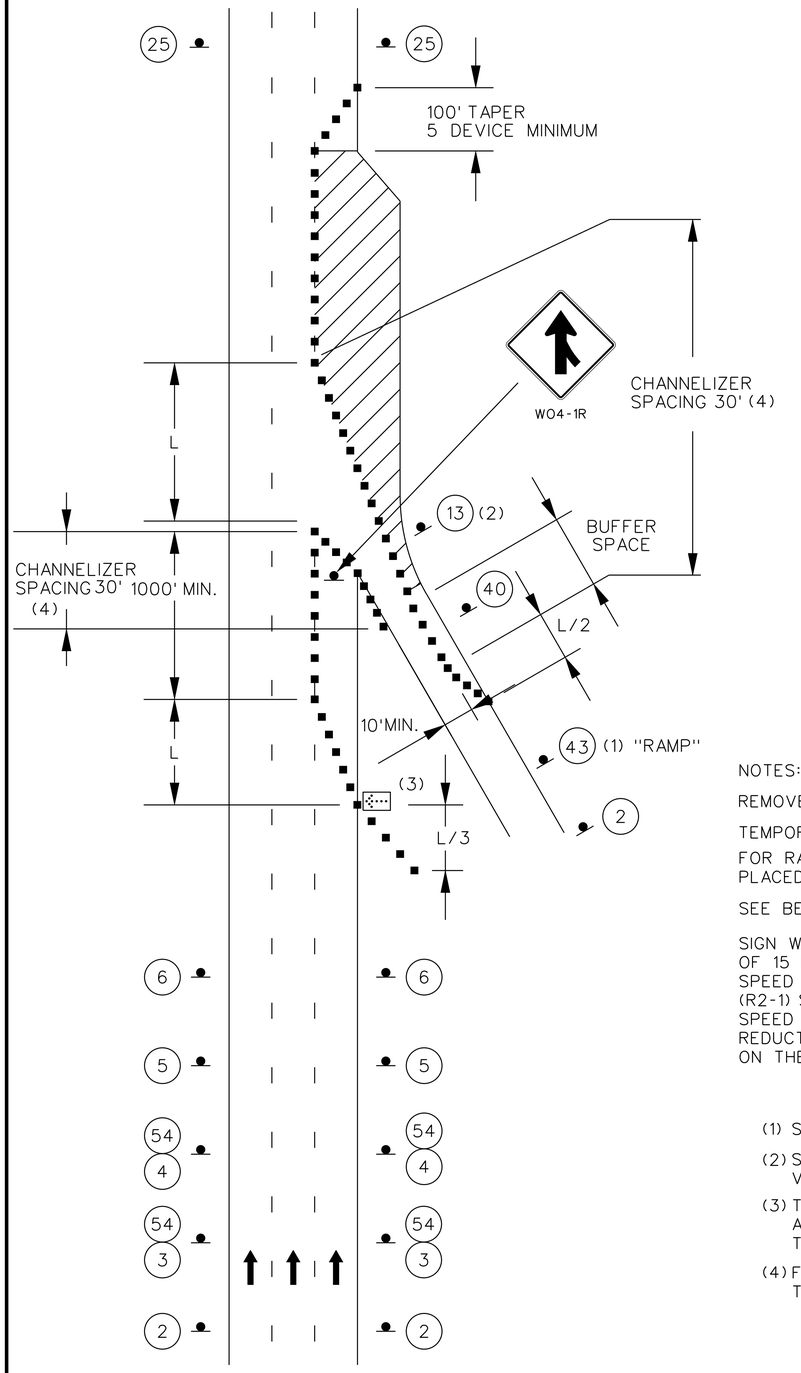
BRIDGE NO.

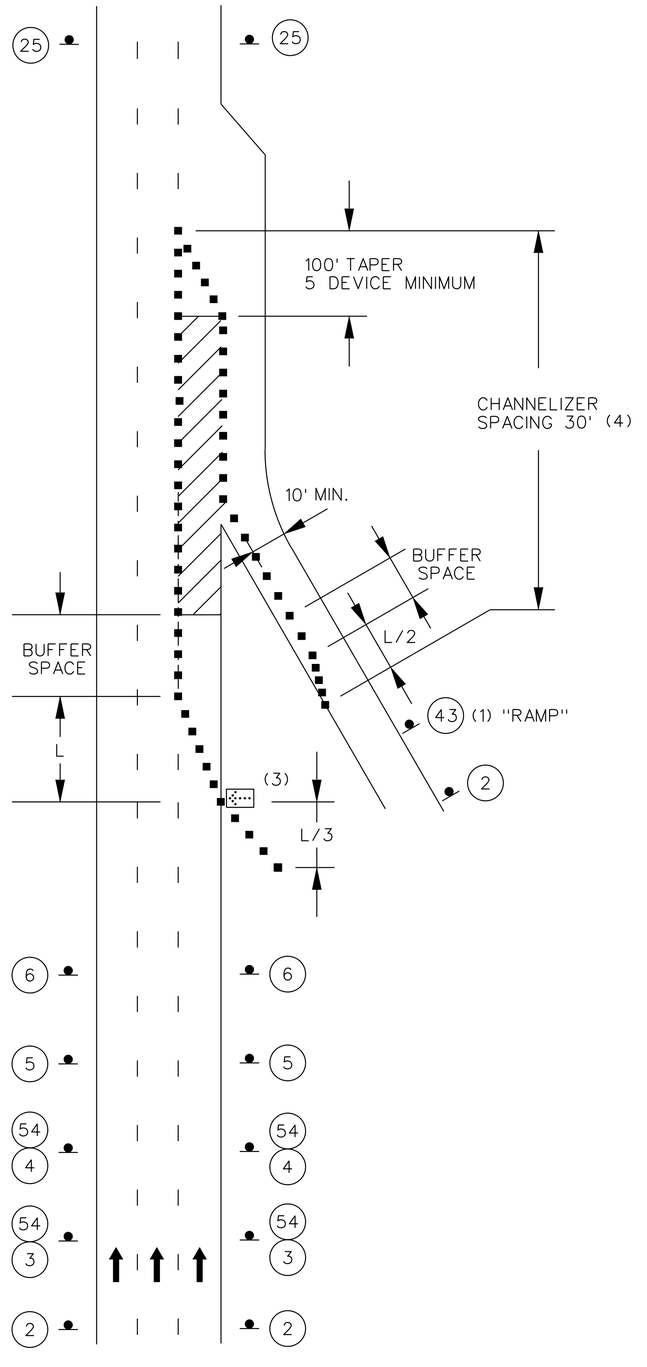
| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.




NOTES:

REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.

TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.

FOR RAMPS WITH SHARP CURVES OR MULTIPLE LANES, RAMP SIGNS MAY BE PLACED ON BOTH SIDES OF THE RAMP.

SEE BEGIN/END OF PROJECT SIGNING SHEET FOR ADDITIONAL SIGNS.

SIGN W03-5 SHALL BE INSTALLED IN ADVANCE OF A SPEED REDUCTION OF 15 MPH OR GREATER FROM THE POSTED SPEED LIMIT. IF USED, SPEED REDUCTION SIGNS SHALL BE FOLLOWED BY A SPEED LIMIT (R2-1) SIGN INSTALLED AT THE BEGINNING OF THE ZONE WHERE THE SPEED LIMIT APLLIES. THE SPEED LIMIT DISPLAYED ON THE SPEED REDUCTION SIGN SHALL BE IDENTICAL TO THE SPEED LIMIT DISPLAYED ON THE SUBSEQUENT SPEED LIMIT SIGN.

(1) SIGN (43) REQUIRED WHEN RAMP WIDTH IS REDUCED.

(2) SIGN (13) SHOULD BE PLACED ON THE RAMP TO PROVIDE ADEQUATE VISIBILITY OF MAINLINE TRAFFIC.

(3) THE LOCATION OF THE SIGN SEQUENCE AND MERGE TAPER SHOULD BE ADJUSTED SO THAT THE ARROW PANEL LOCATION IS NOT CONFUSING TO MOTORISTS ON THE RAMP.

(4) FOR WORK ZONES WHERE DEVICES ARE IN PLACE OVERNIGHT, USE TRIM-LINE CHANNELIZERS.

## ENTRANCE RAMP AREAS
## LANE CLOSURE

TEMPORARY
TRAFFIC CONTROL
SHEET 7 OF 57

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

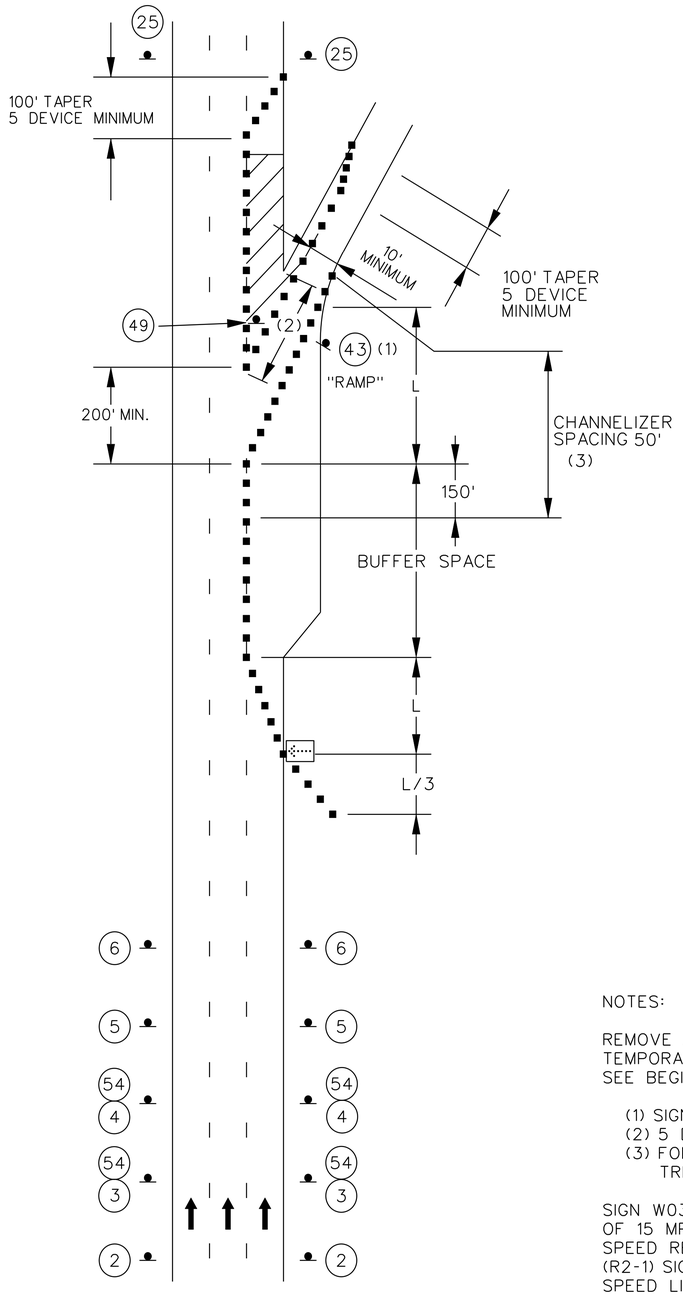
ROUTE 29/635 | STATE MO
DISTRICT KC | SHEET NO. 21
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

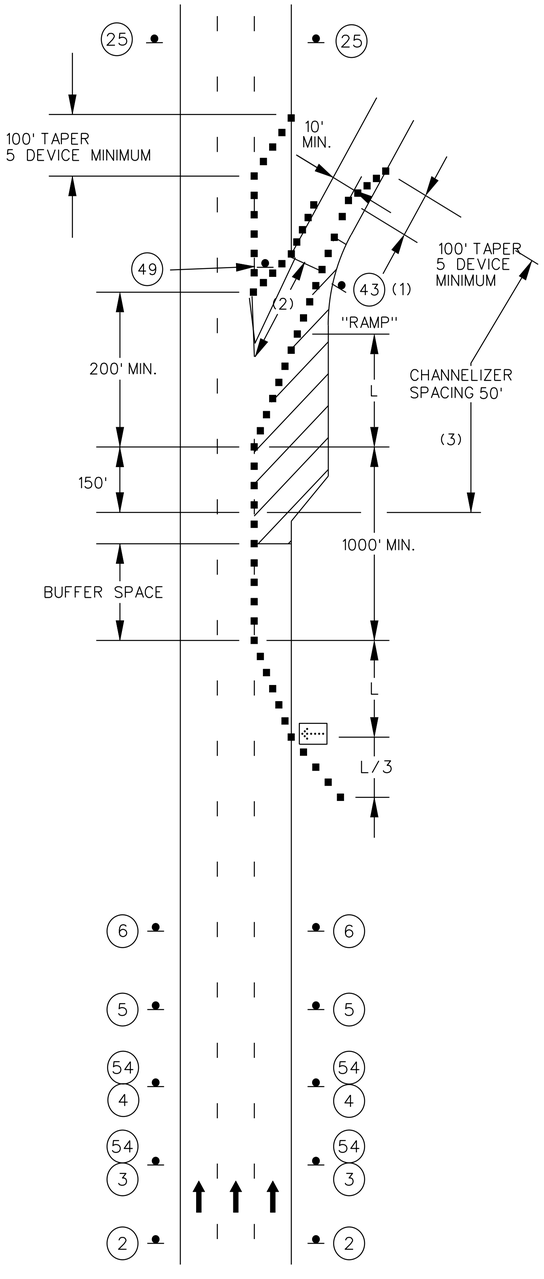
DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.




NOTES:

REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.
TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
SEE BEGIN/END OF PROJECT SIGNING SHEET FOR ADDITIONAL SIGNS.

(1) SIGN 43 REQUIRED WHEN RAMP IS REDUCED.
(2) 5 DEVICE MINIMUM.
(3) FOR WORK ZONED WHERE DEVICES ARE IN PLACE OVERNIGHT, USE TRIM-LINE CHANNELIZERS.

SIGN W03-5 SHALL BE INSTALLED IN ADVANCE OF A SPEED REDUCTION OF 15 MPH OR GREATER FROM THE POSTED SPEED LIMIT. IF USED, SPEED REDUCTION SIGNS SHALL BE FOLLOWED BY A SPEED LIMIT (R2-1) SIGN INSTALLED AT THE BEGINNING OF THE ZONE WHERE THE SPEED LIMIT APLLIES. THE SPEED LIMIT DISPLAYED ON THE SPEED REDUCTION SIGN SHALL BE IDENTICAL TO THE SPEED LIMIT DISPLAYED ON THE SUBSEQUENT SPEED LIMIT SIGN.

## EXIT RAMP AREAS
## LANE CLOSURE

TEMPORARY
TRAFFIC CONTROL
SHEET 8 OF 57

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

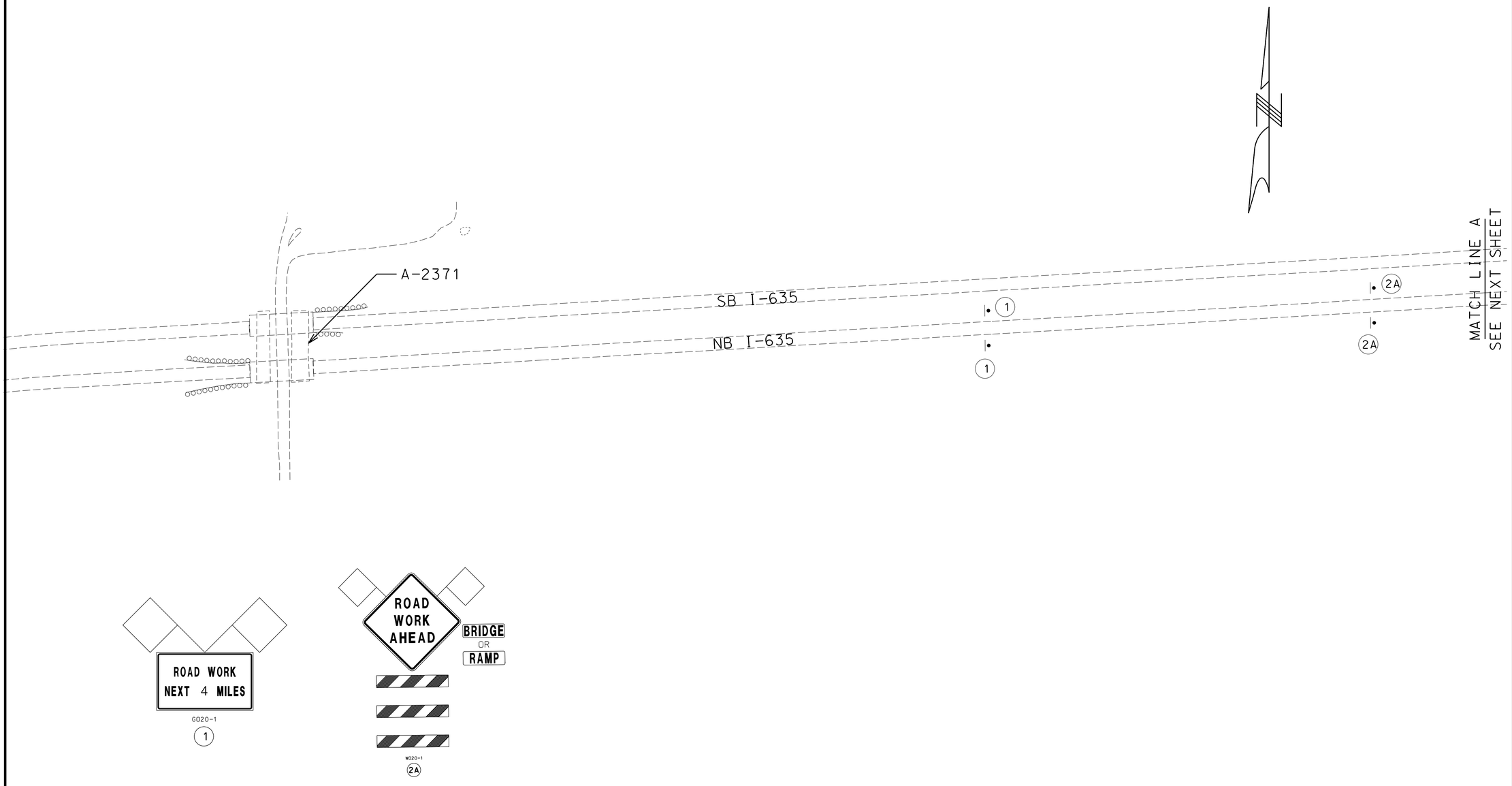
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DATE PREPARED: 10/21/2013
ROUTE: 29/635 | STATE: MO
DISTRICT: KC | SHEET NO.: 22
COUNTY: PLATTE
JOB NO.: J4I2374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

REV.










SCALE

0 100 200 300 400 500

I-635
TRAFFIC CONTROL PHASE 1

SHEET 1 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 23 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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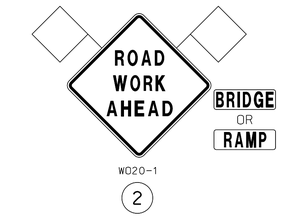
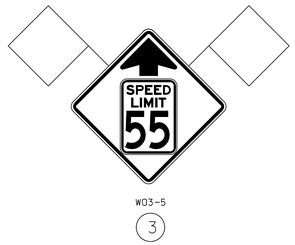
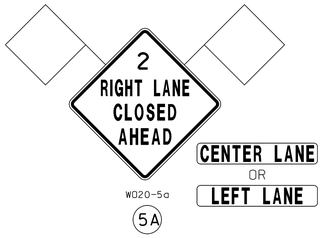
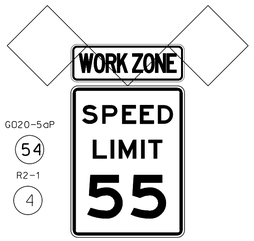










"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 24 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

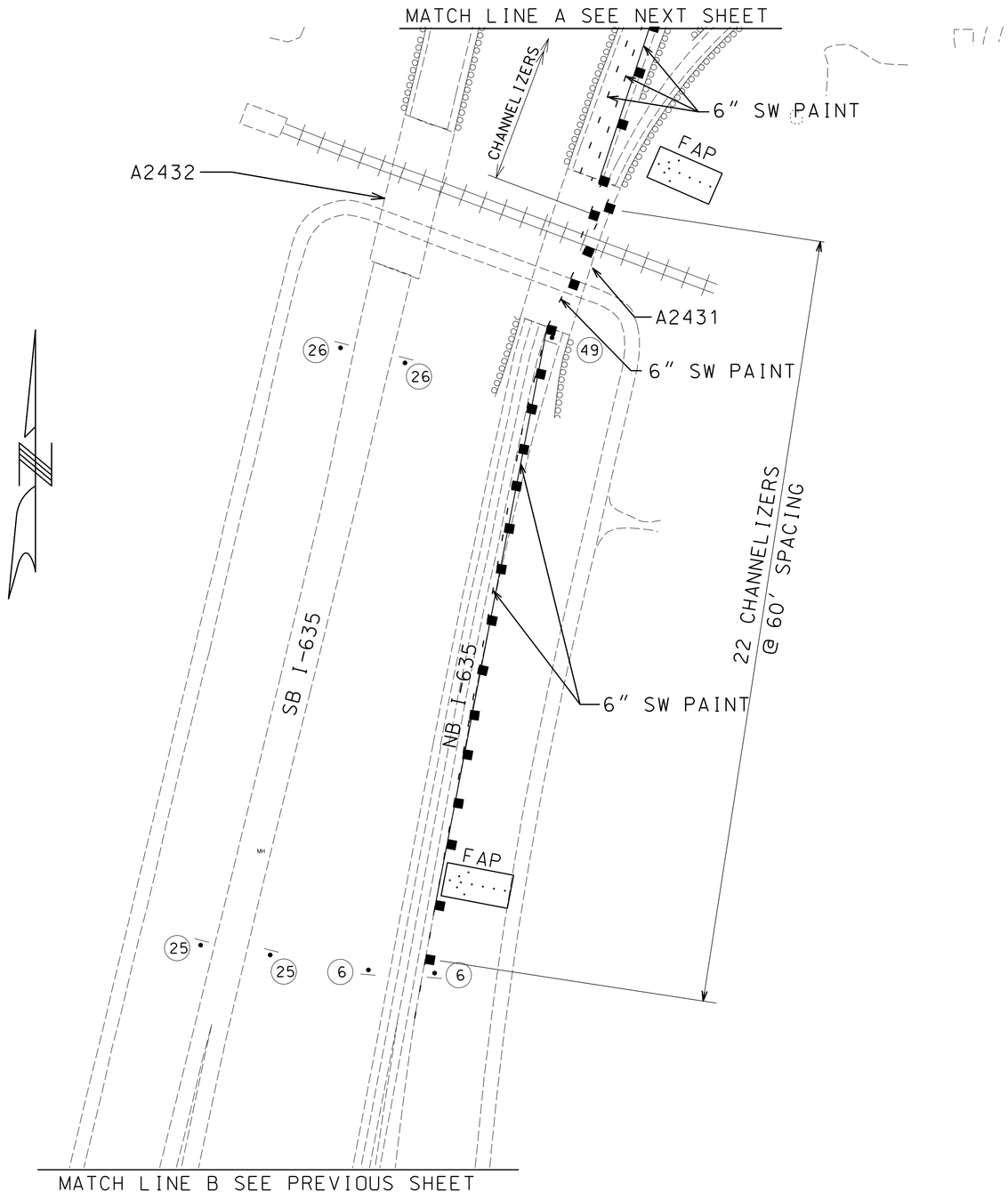
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

I-635
TRAFFIC CONTROL PHASE 1

SHEET 2 OF 7




SCALE

0 100 200 300 400 500

RIGHT LANE CLOSED
CENTER OR LEFT
W020-6a
6

SPEED LIMIT 65
R2-1
25

EXIT
E05-1
49

END ROAD WORK
G020-2
26

= FLASHING ARROW PANEL

I-635
TRAFFIC CONTROL PHASE 1

SHEET 3 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 25 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

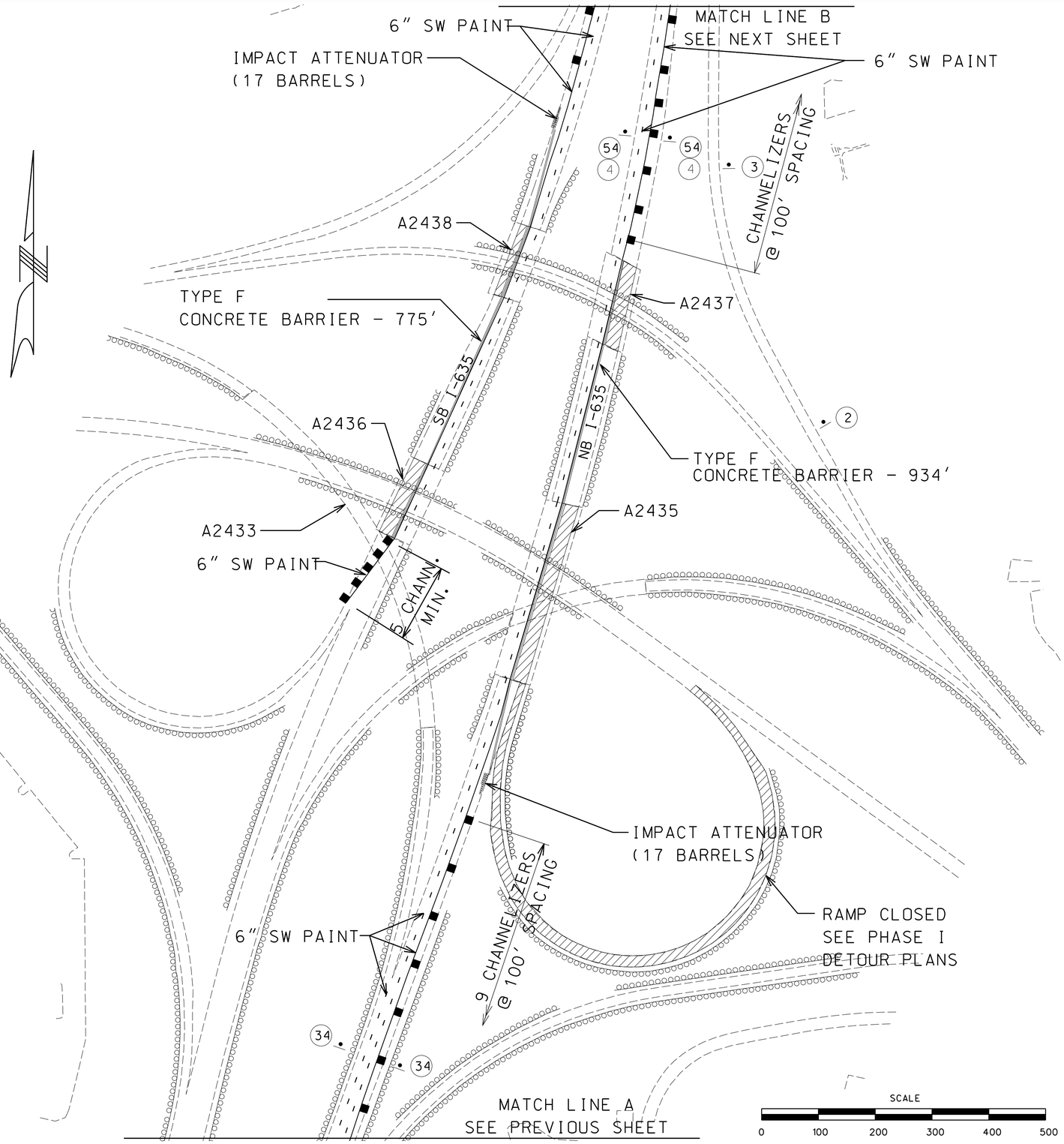
BRIDGE NO.:

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.




ROAD WORK AHEAD
BRIDGE OR RAMP
W020-1
2

SPEED LIMIT 55
W03-5
3

NARROW LANES
M05-5
34

WORK ZONE
SPEED LIMIT 55
G020-5aP
54
R2-1
4

I-635
TRAFFIC CONTROL PHASE 1
SHEET 4 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 26 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

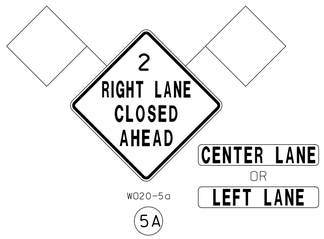
BRIDGE NO.

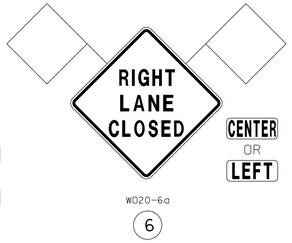
| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT

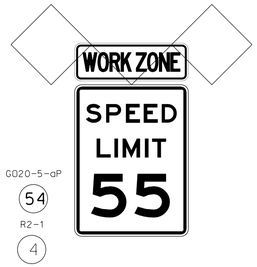

REV.



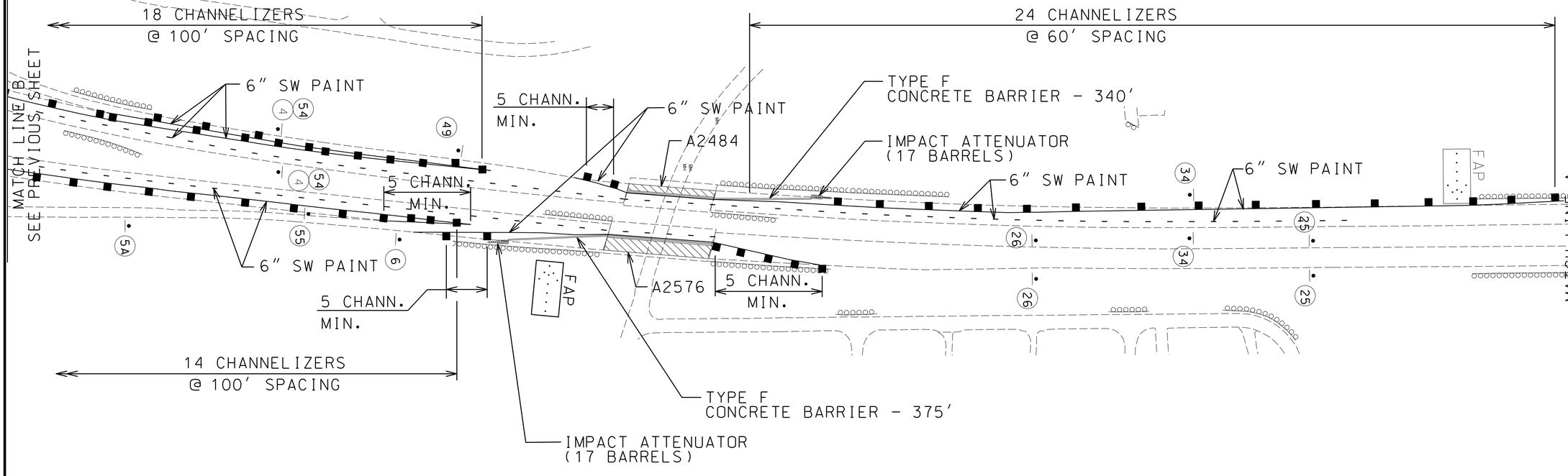












SCALE

0 100 200 300 400 500

I-635
TRAFFIC CONTROL PHASE 1

SHEET 5 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 27 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

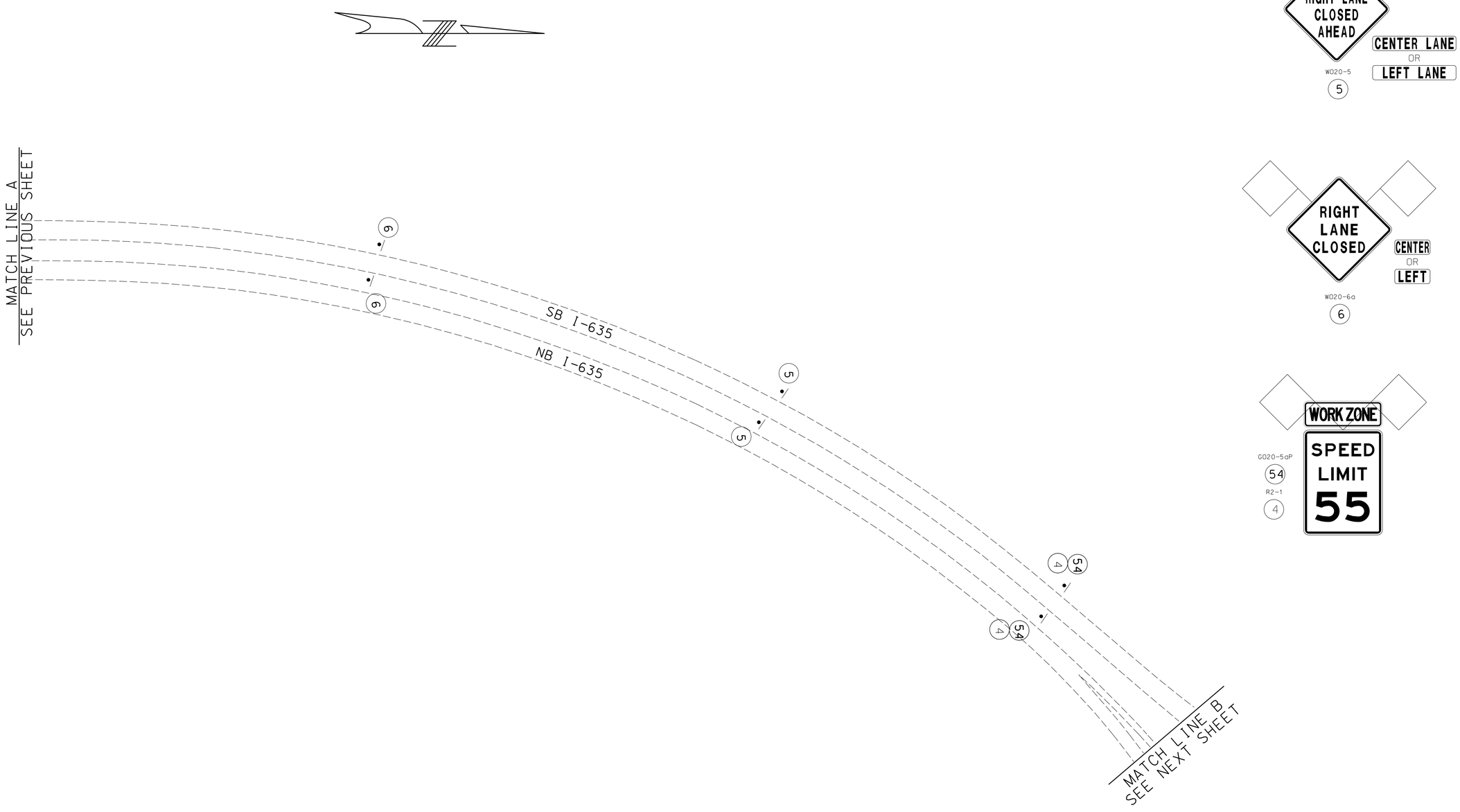
DESCRIPTION

DATE

REV.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)













SCALE

0 100 200 300 400 500

I-635
TRAFFIC CONTROL PHASE 1

SHEET 6 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 28 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

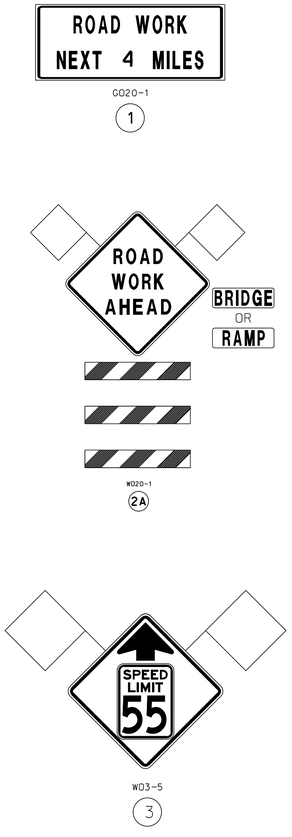
BRIDGE NO.

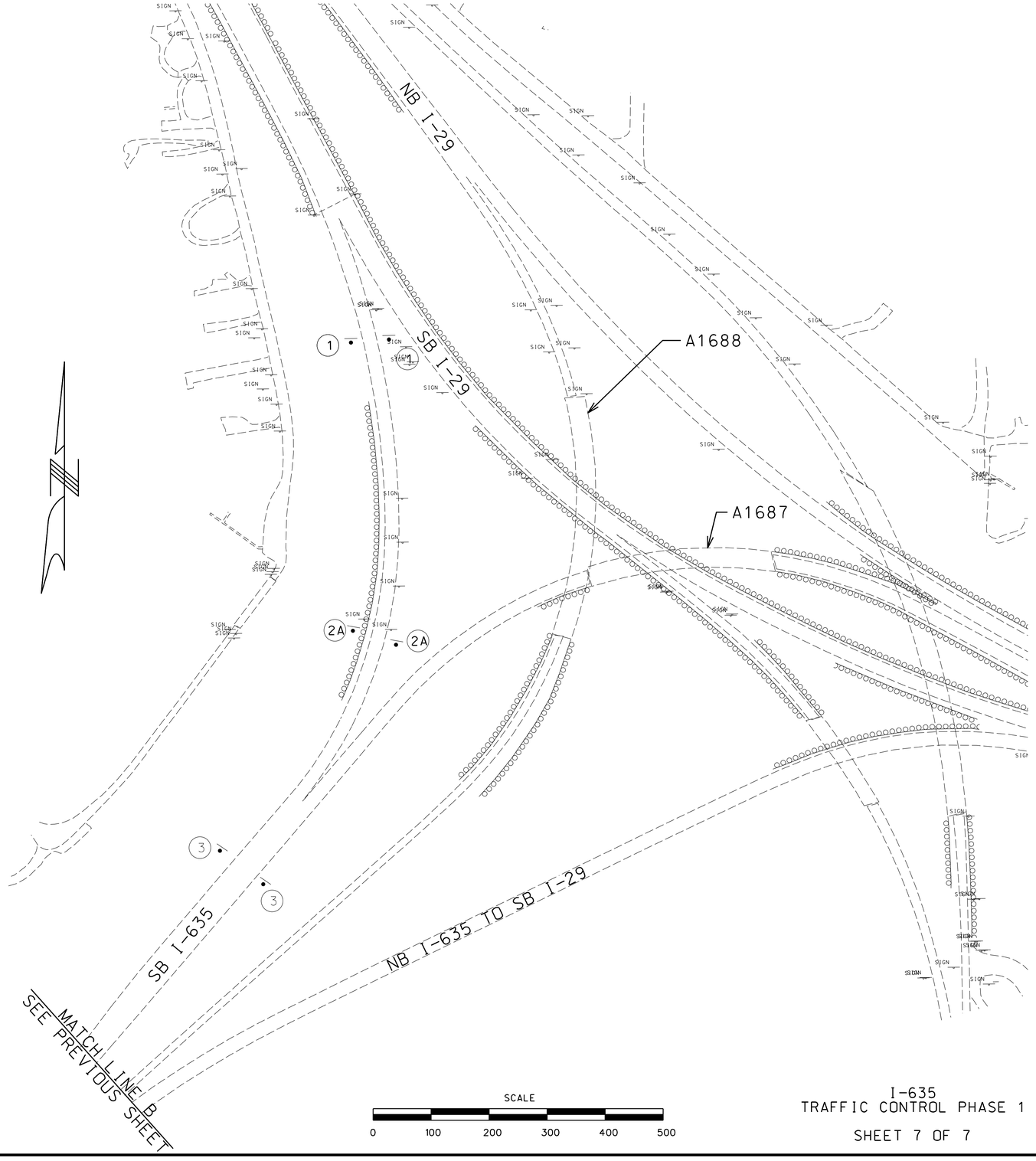
| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.




I-635
TRAFFIC CONTROL PHASE 1

SHEET 7 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

| | |
|---|---|
| DATE PREPARED | 10/21/2013 |
| ROUTE | STATE |
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 29 |
| COUNTY | PLATTE |
| JOB NO. | J4I2374 |
| CONTRACT ID. | |
| PROJECT NO. | |
| BRIDGE NO. | |

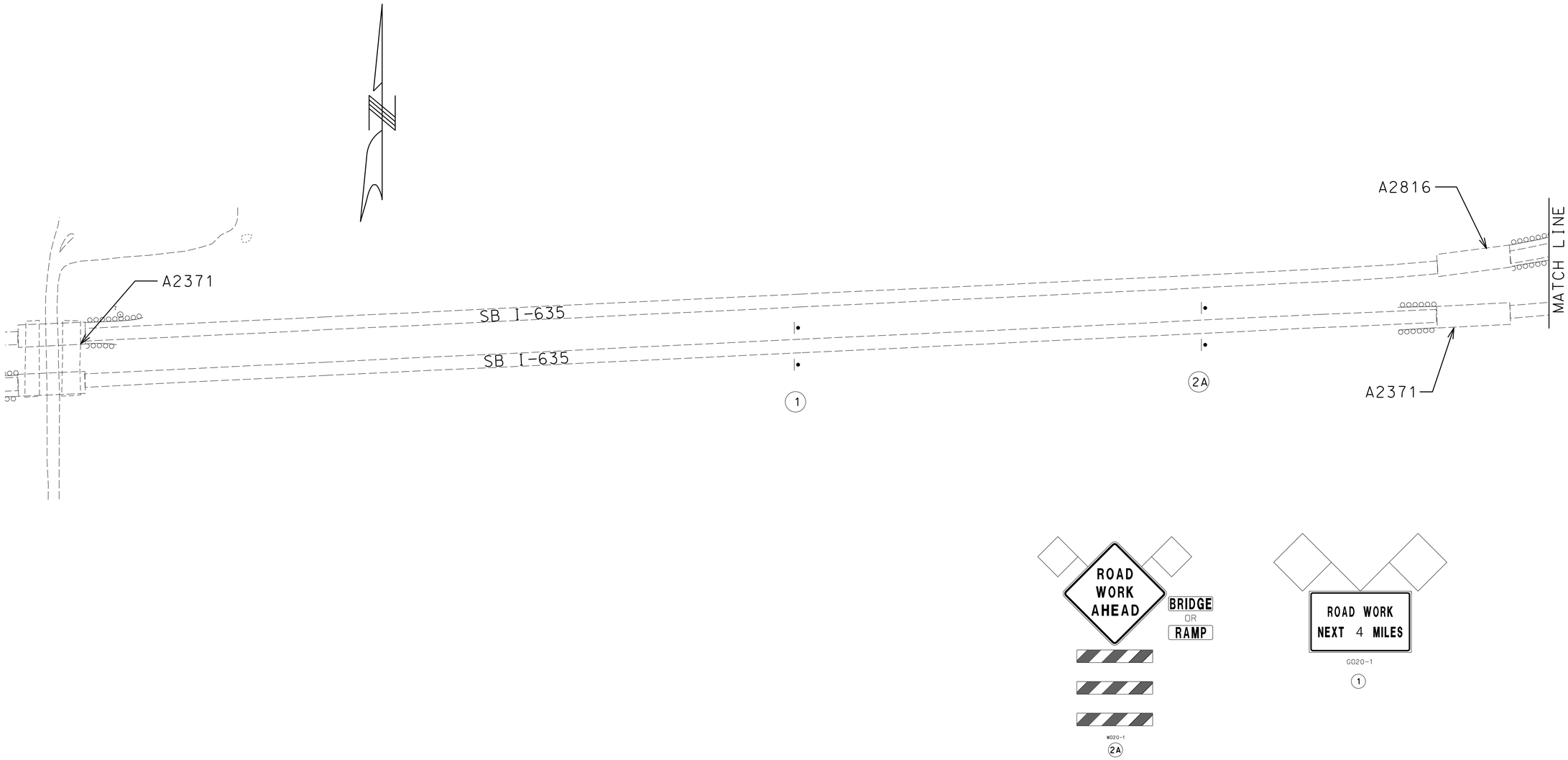
| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.










SCALE

0 100 200 300 400 500

I-635
TRAFFIC CONTROL PHASE 2

SHEET 1 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| 635 | MO |
| DISTRICT | SHEET NO. |
| KC | 30 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

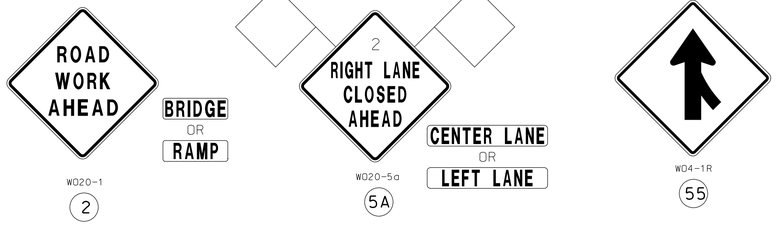
PROJECT NO.

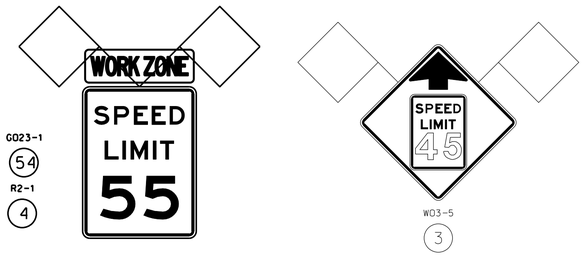
BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)










I-635
TRAFFIC CONTROL PHASE 2

SHEET 2 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 31 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

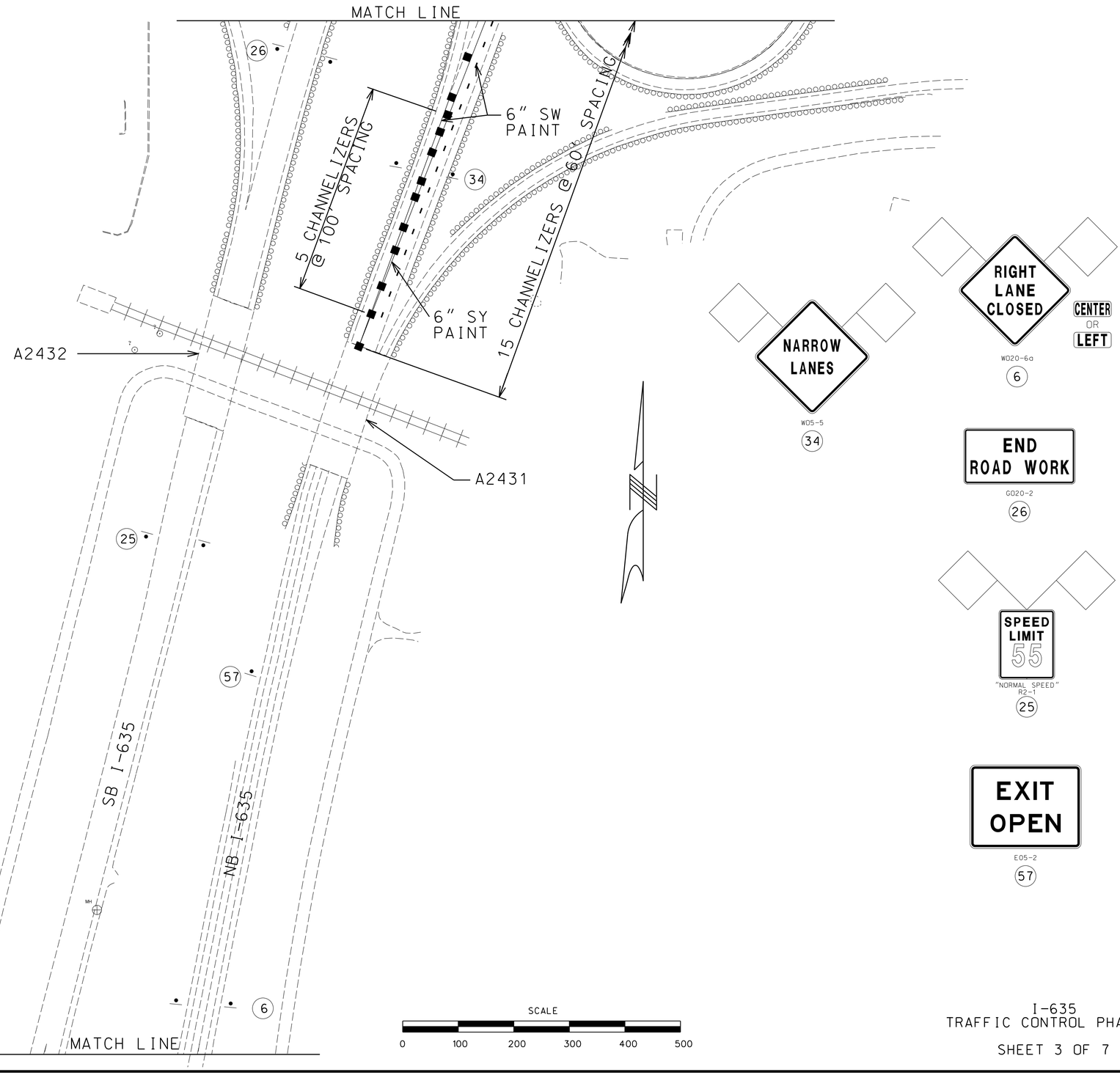
PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 32 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

I-635
TRAFFIC CONTROL PHASE 2

SHEET 3 OF 7

MATCH LINE

CHANNELIZERS @ 60' SPA.

14 CHANNELIZERS @ 100' SPACING

IMPACT ATTENUATOR (17 BARRELS)

6" SY PAINT

A2438

780' TYPE F CONCRETE BARRIER

6" SW PAINT

A2436

A2437

6" SY PAINT

6" SW PAINT

5 CHANN. MIN.

A2435

A2433

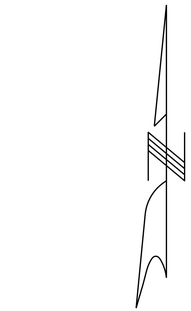
955' TYPE F CONCRETE BARRIER

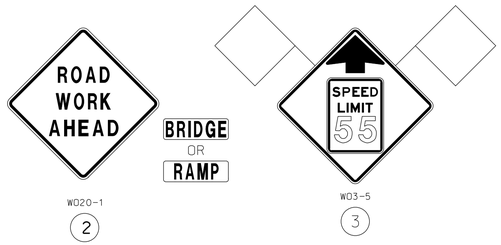
IMPACT ATTENUATOR (17 BARRELS)

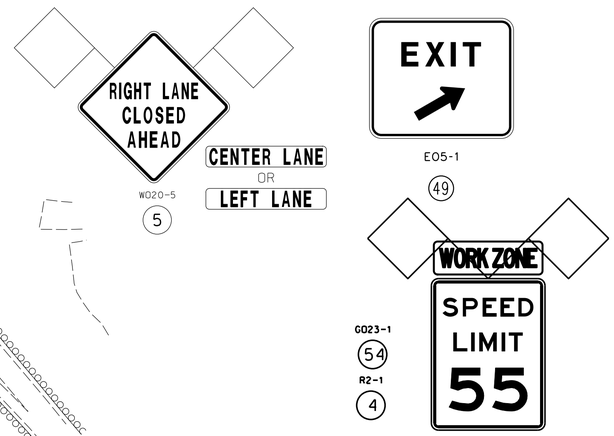
MATCH LINE

SCALE

0 100 200 300 400 500






I-635
TRAFFIC CONTROL PHASE 2

SHEET 4 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 33 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

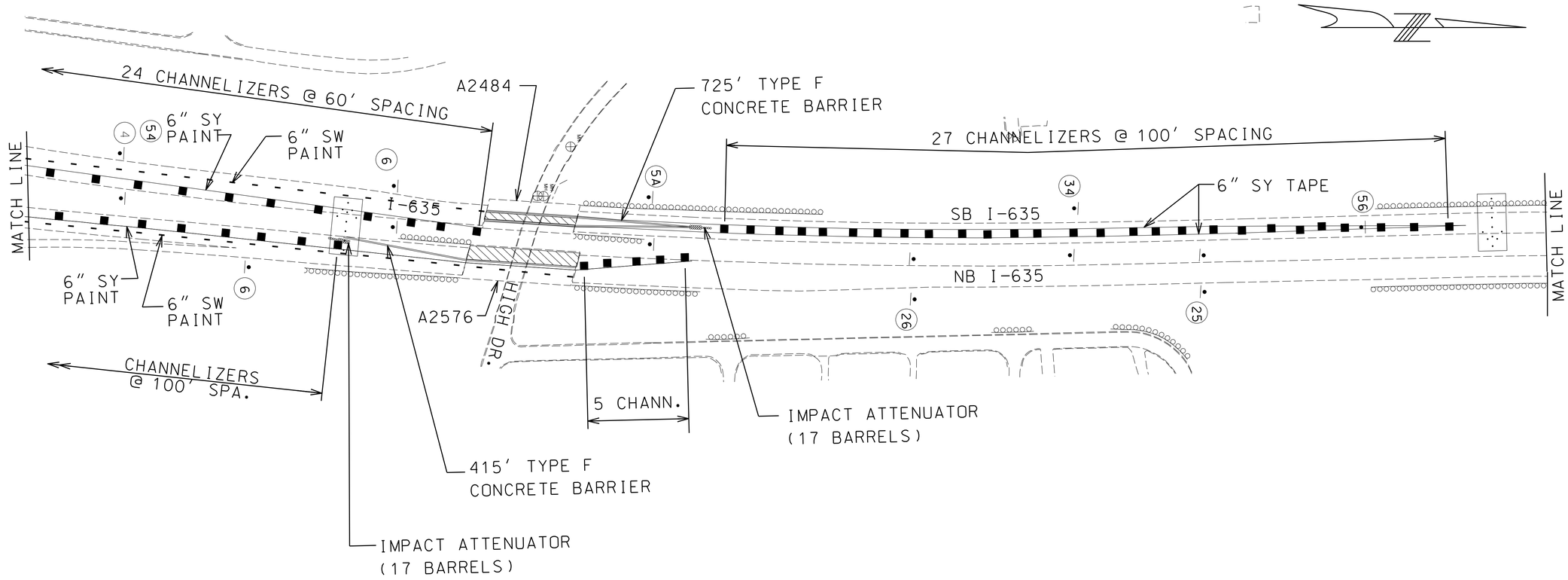
PROJECT NO.:

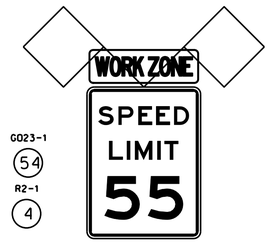
BRIDGE NO.:

| DATE | DESCRIPTION |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

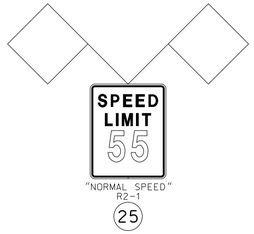



G023-1 (54)
R2-1 (4)

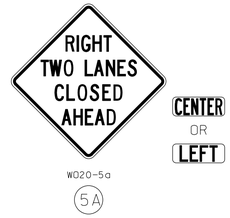

W020-6a (6)


G020-2 (26)

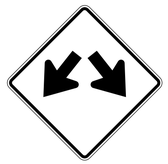



"NORMAL SPEED" R2-1 (25)


W05-5 (34)




W020-5a (5A)



W012-1 (56)

SCALE

0 100 200 300 400 500

I-635
TRAFFIC CONTROL PHASE 2

SHET 5 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 34 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DATE | DESCRIPTION |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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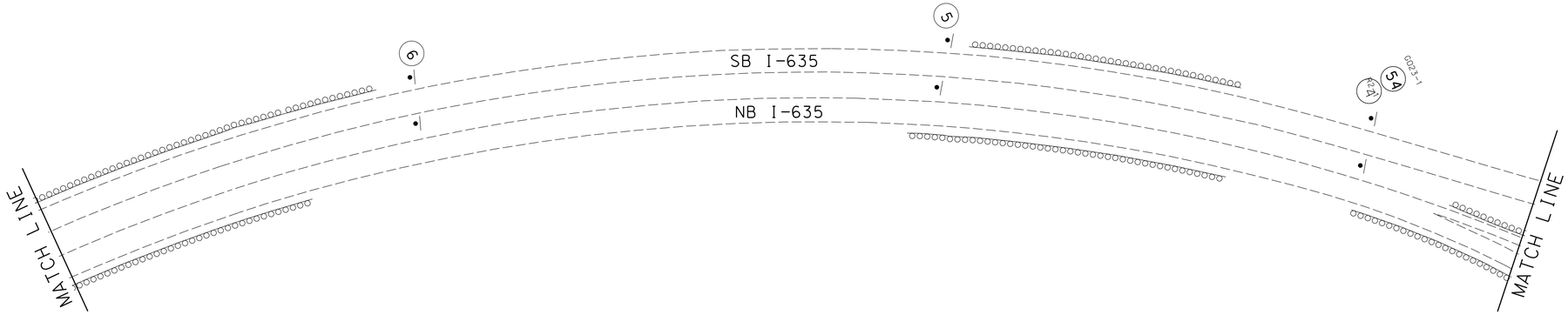
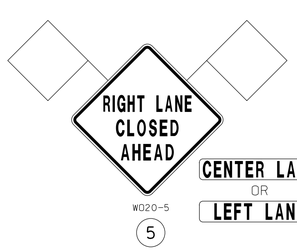
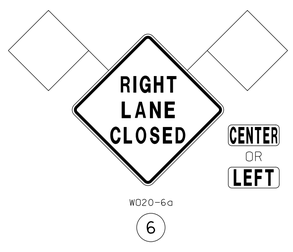
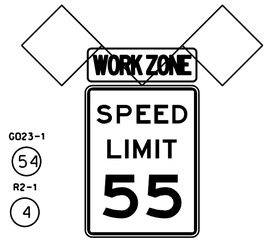



SCALE

0 100 200 300 400 500

I-635
TRAFFIC CONTROL PHASE 2

SHEET 6 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 35 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

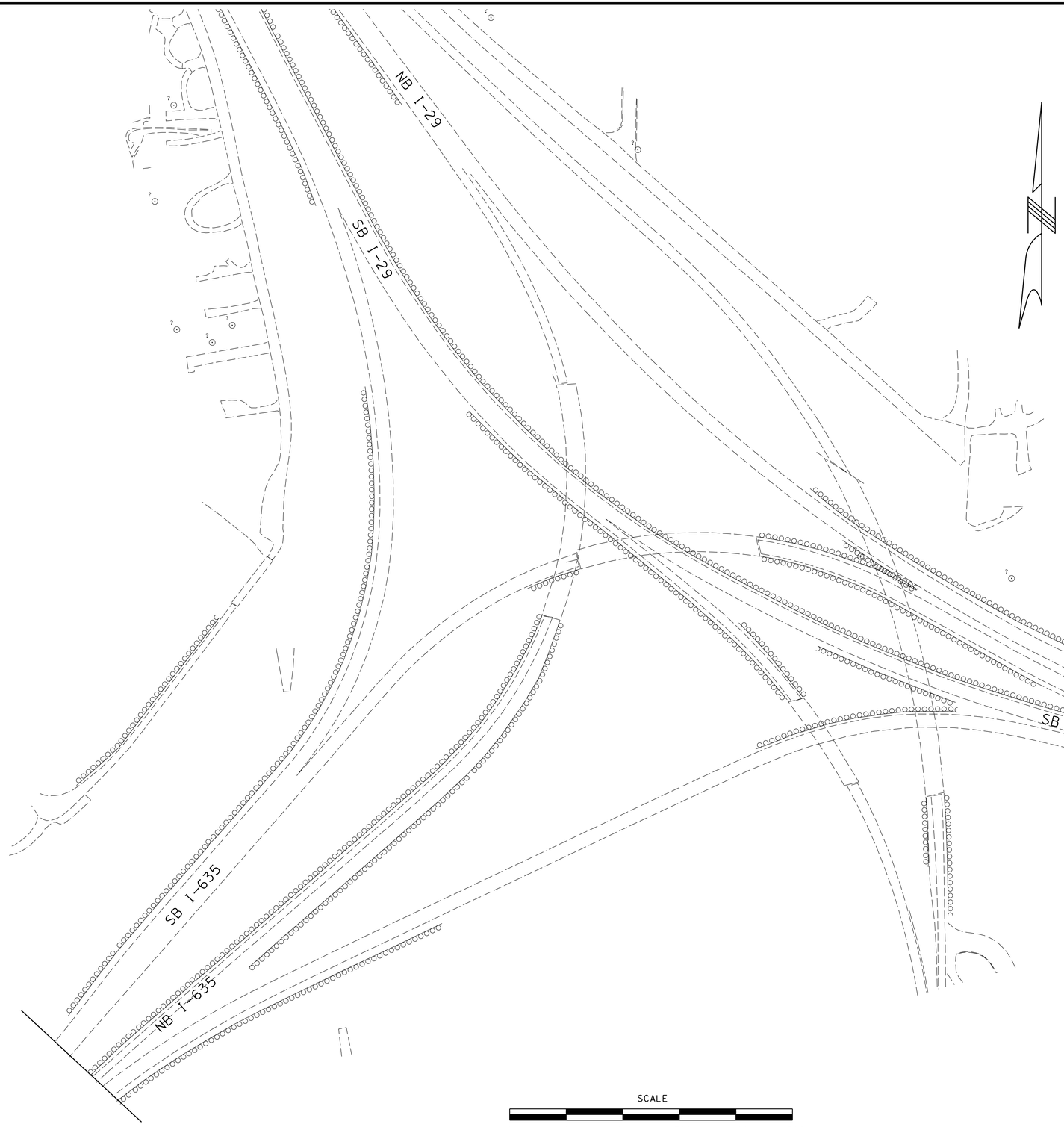
PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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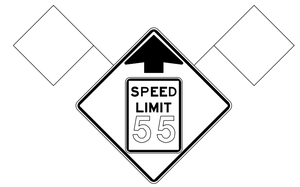
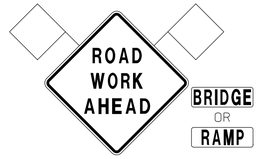



WO3-5

3




WO20-1

2A


GO20-1

1

I-635
TRAFFIC CONTROL PHASE 2

SHEET 7 OF 7

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 36 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

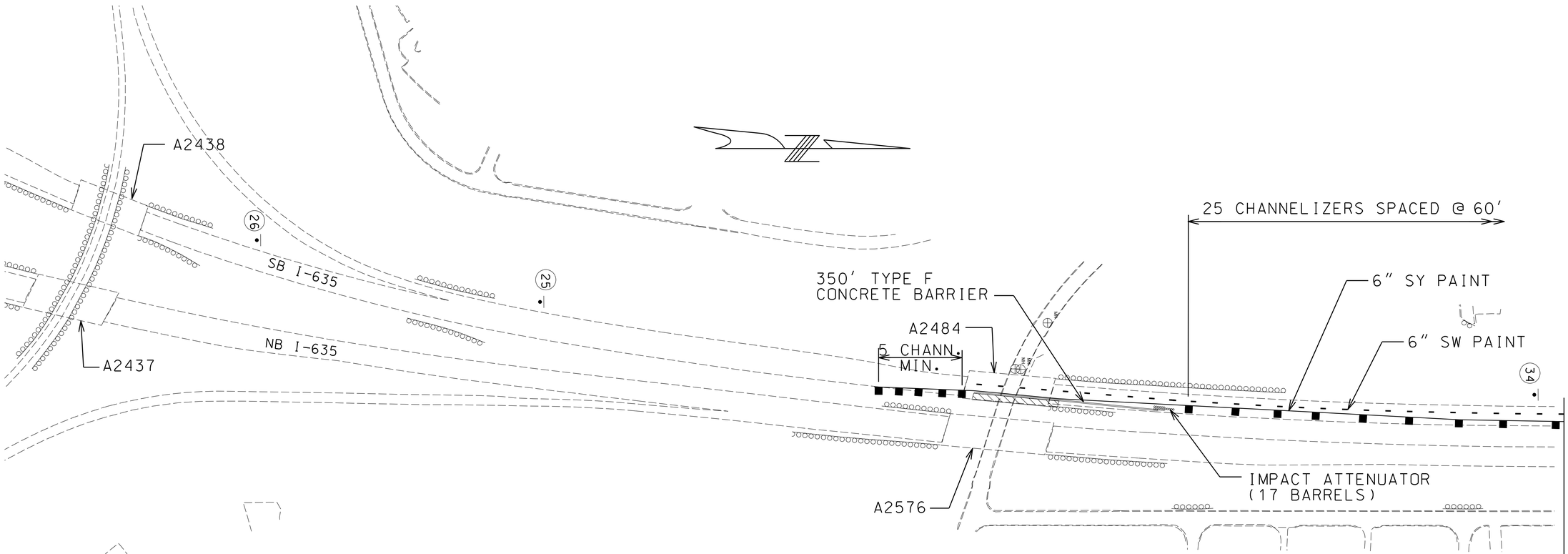
PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.





SCALE

0 100 200 300 400 500

I-635
TRAFFIC CONTROL PHASE 3
SB BRIDGE A2484

SHEET 1 OF 3

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 37 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

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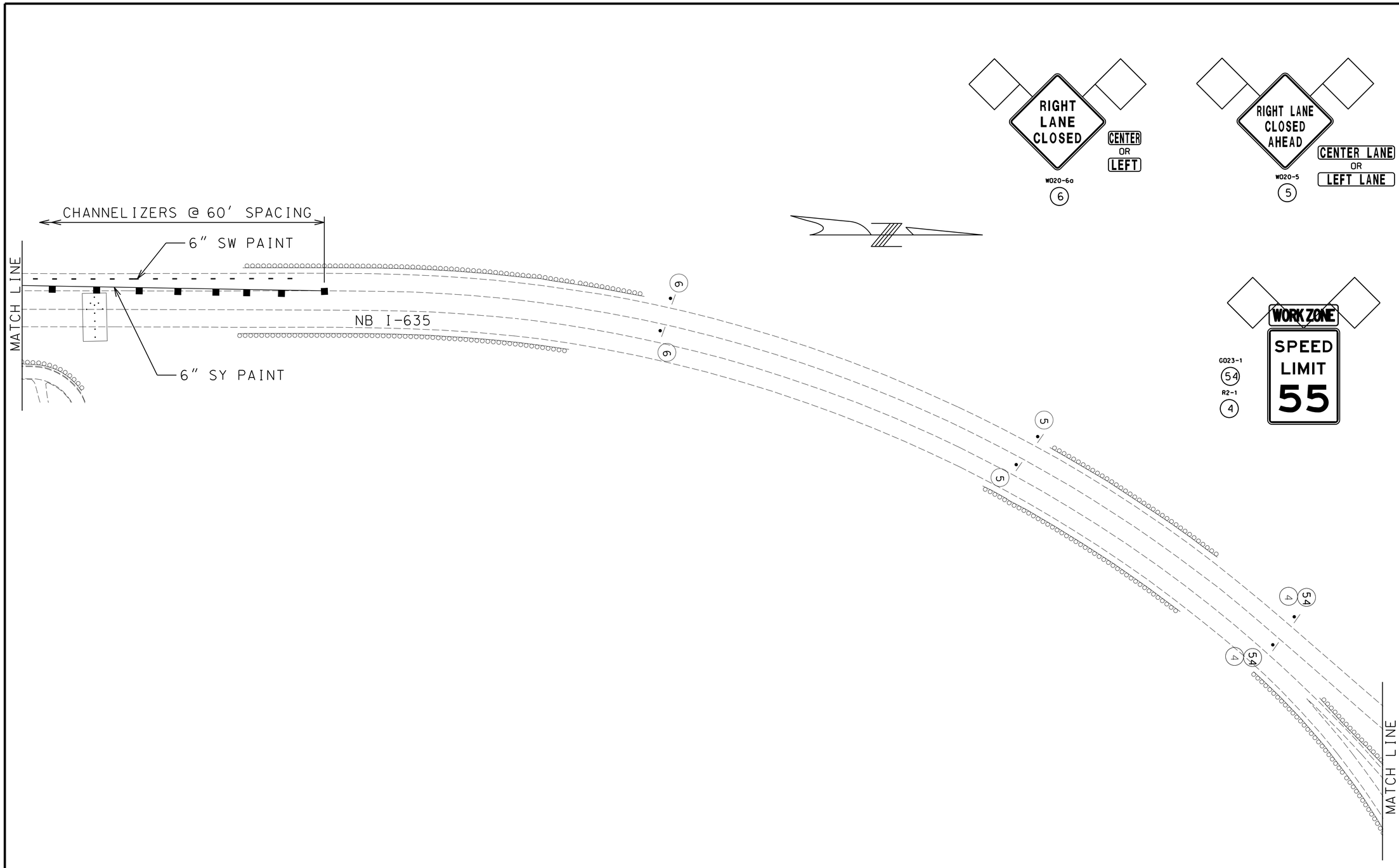
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




SCALE

0 100 200 300 400 500

I-635
TRAFFIC CONTROL PHASE 3
SB BRIDGE A2484
SHEET 2 OF 3

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

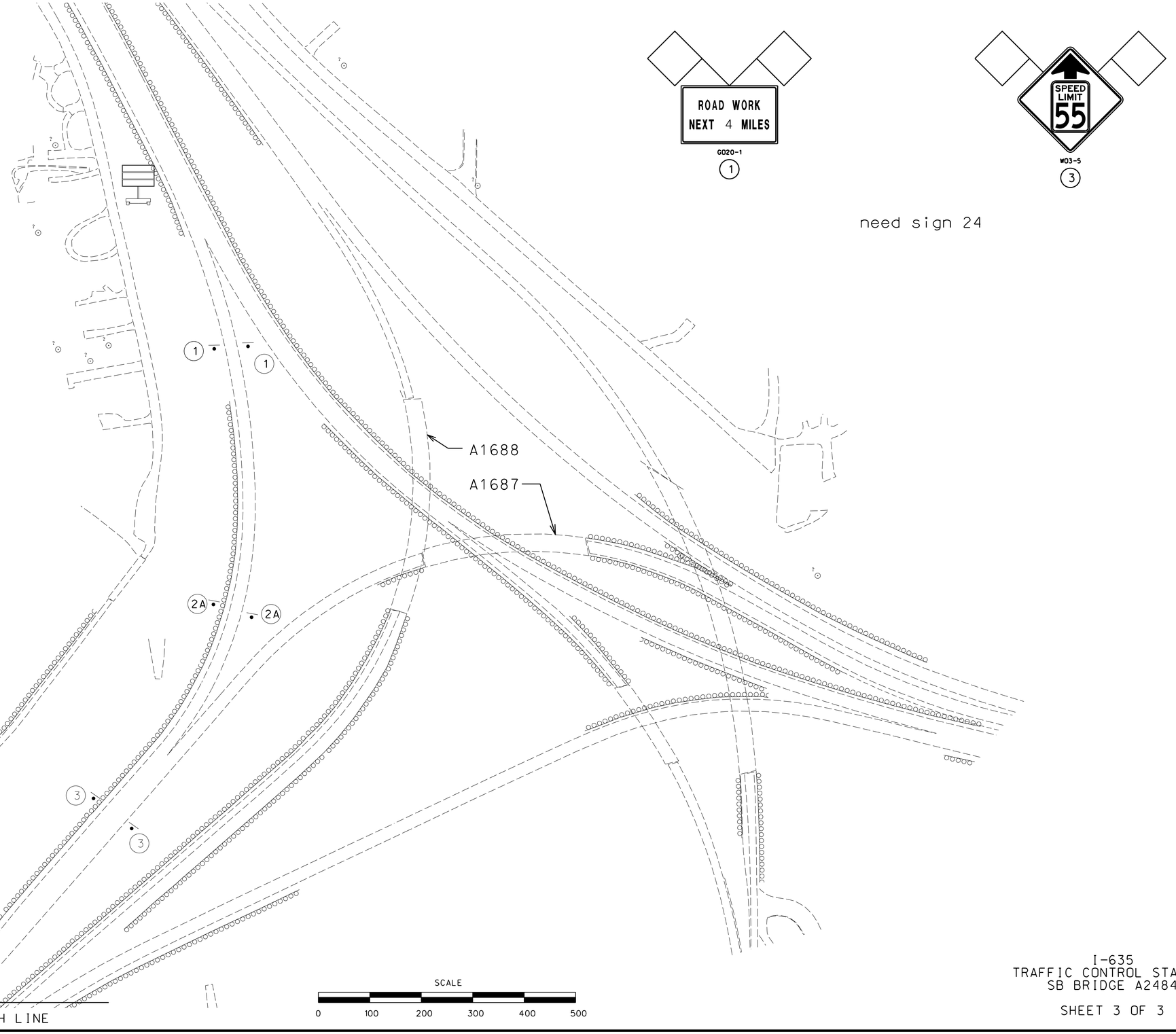
ROUTE I-635 | STATE MO
DISTRICT KC | SHEET NO. 38
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.










need sign 24

I-635
TRAFFIC CONTROL STAGE 3
SB BRIDGE A2484

SHEET 3 OF 3

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| KC | 39 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

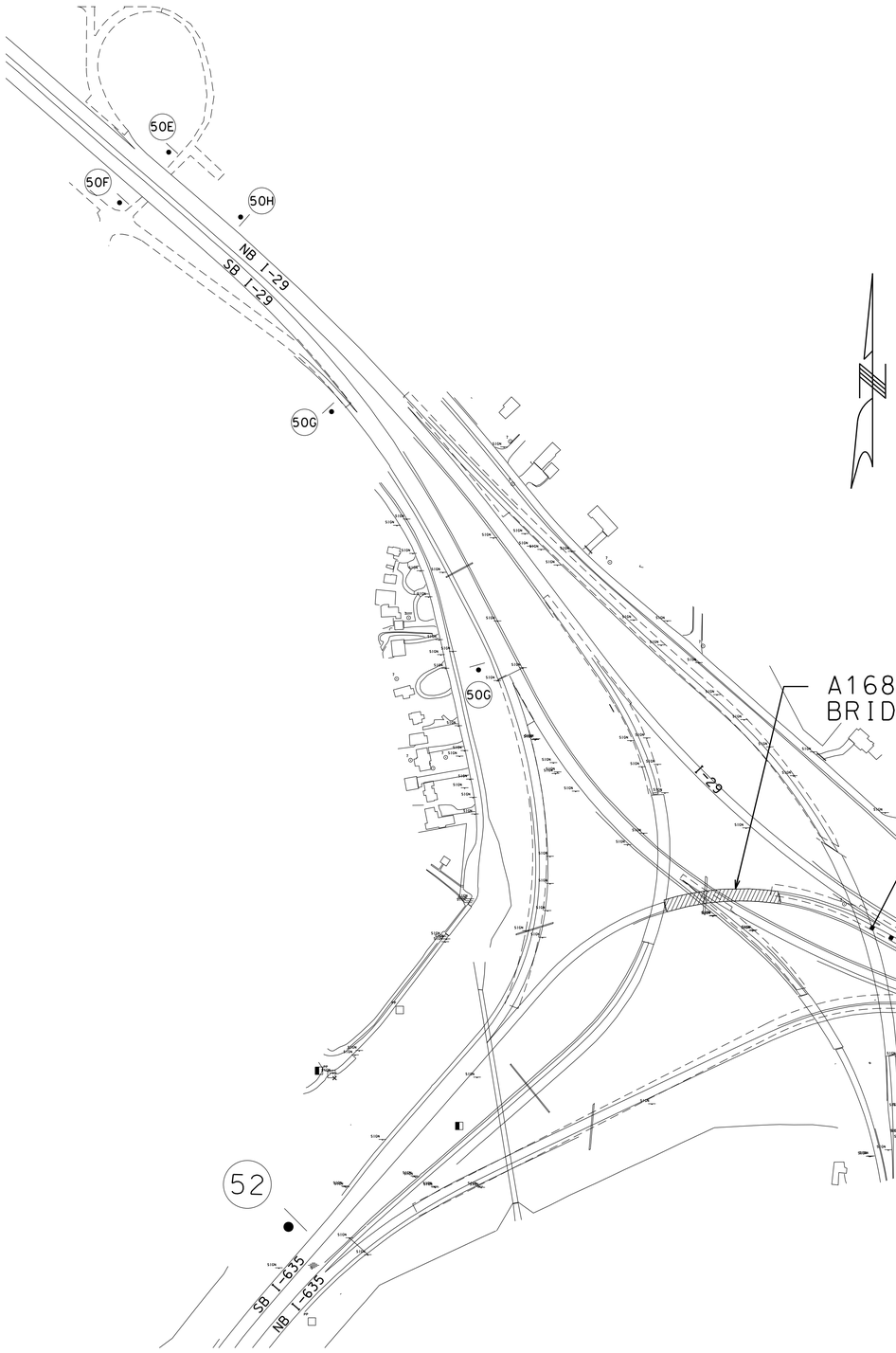
PROJECT NO.

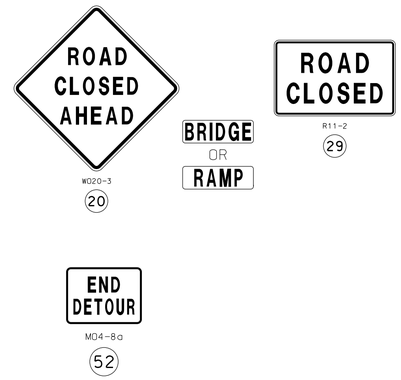
BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




TRAFFIC CONTROL DETOUR PLAN
BRIDGE A1687 CLOSURE
NB I-29 TO SB I-635

SHEET 1 OF 2

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 40 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

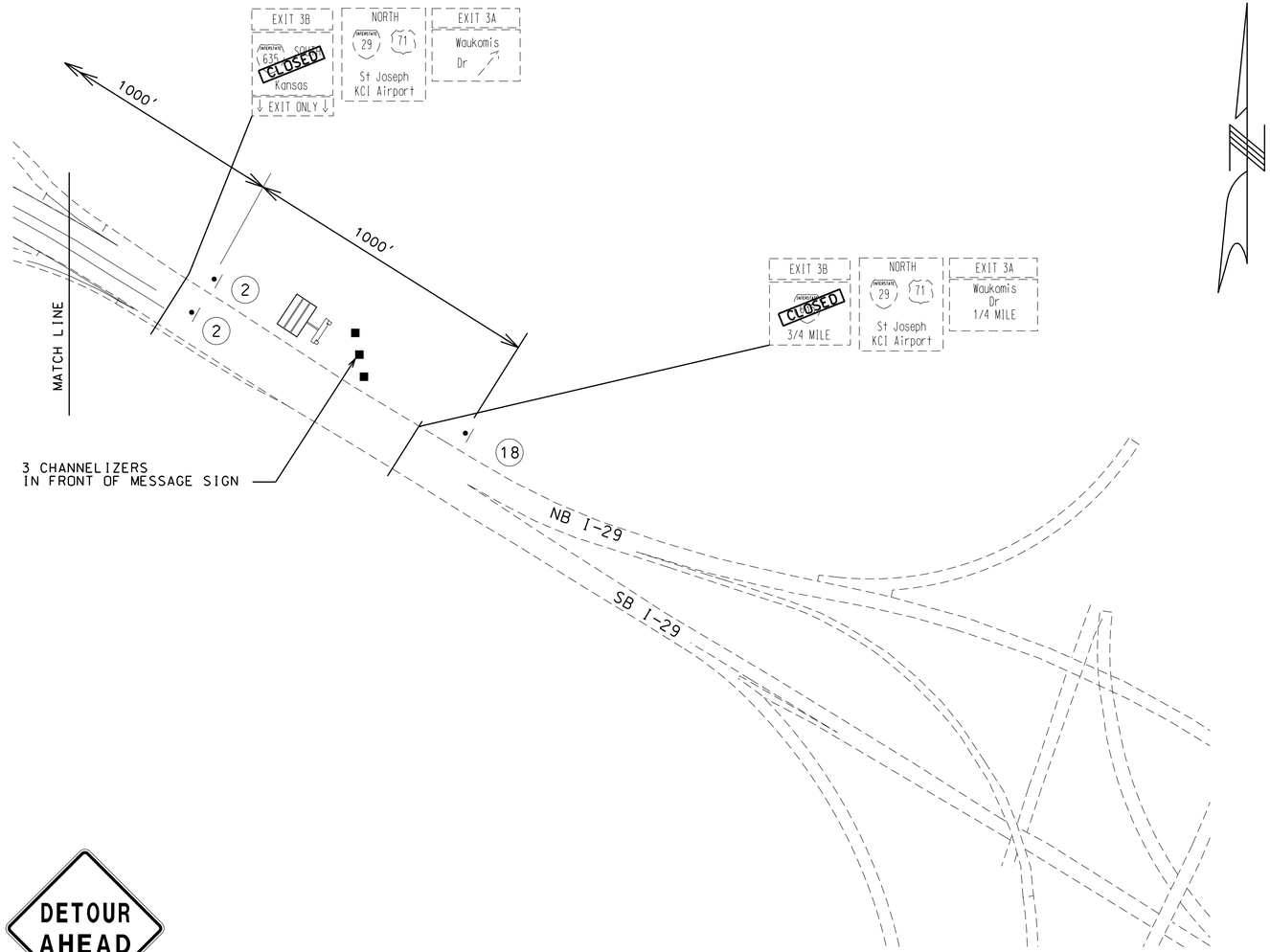
BRIDGE NO.
A1687

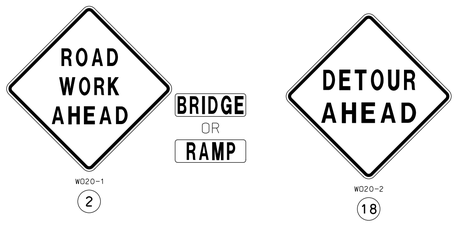
| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




SCALE

0 200 400 600 800 1000

TRAFFIC CONTROL DETOUR PLAN
BRIDGE A1687 CLOSURE
NB I-29 TO SB I-635

SHEET 2 OF 2

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 41 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

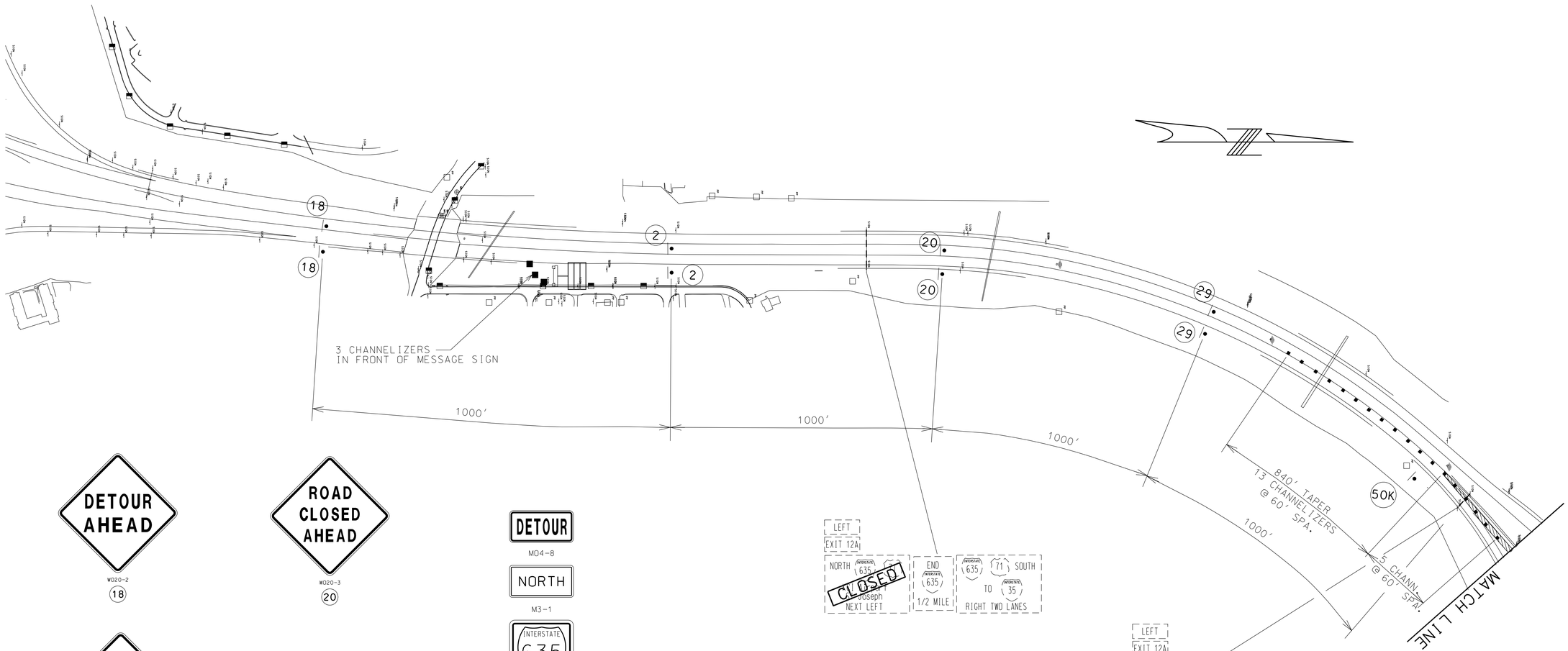
PROJECT NO.

BRIDGE NO.
A1687

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)











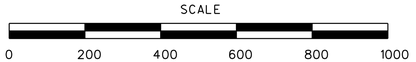











TRAFFIC CONTROL DETOUR PLAN
NB I-29 RAMP
BRIDGE A1688

SHEET 1 OF 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 42 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

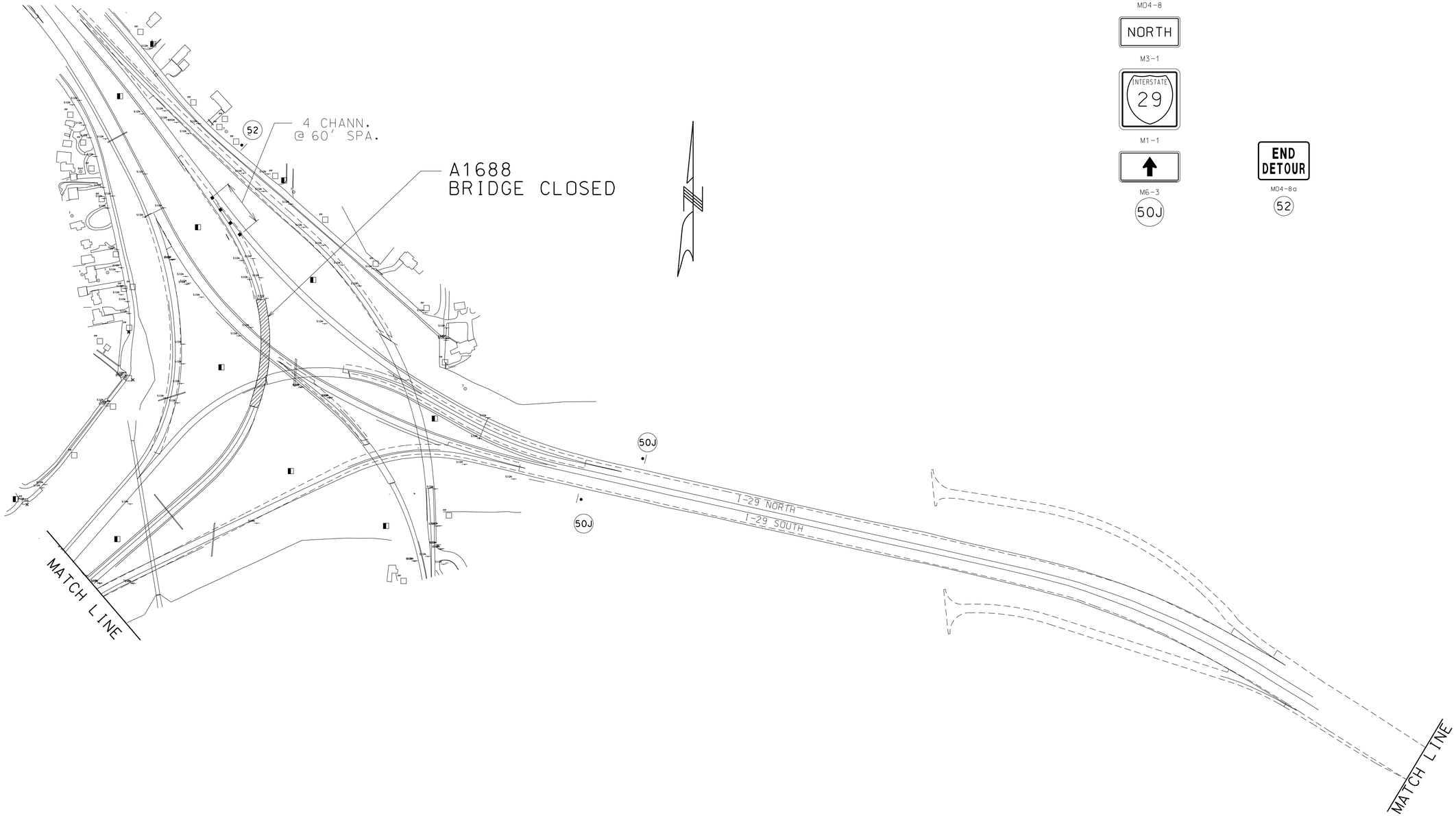
PROJECT NO.

BRIDGE NO.
A1688

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




DETOUR
M04-8

NORTH
M3-1

INTERSTATE
29
M1-1

M6-3
50J

END
DETOUR
M04-8a
52

SCALE
0 200 400 600 800 1000

TRAFFIC CONTROL PLAN
NORTH BOUND I-29 RAMP
BRIDGE A1688 CLOSURE

SHEET 2 OF 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 43 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

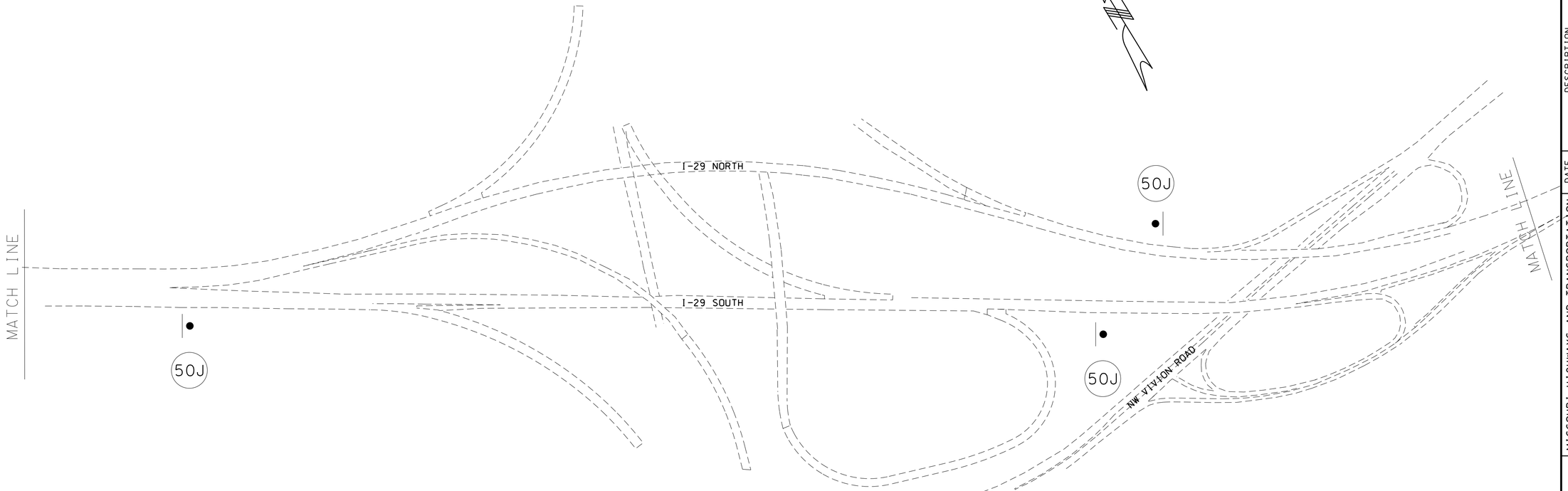
PROJECT NO.

BRIDGE NO.
A1688

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


SCALE

0 200 400 600 800 1000

TRAFFIC CONTROL PLAN
NORTH BOUND I-29 RAMP
BRIDGE A1688 CLOSURE

SHEET 3 OF 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 44 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

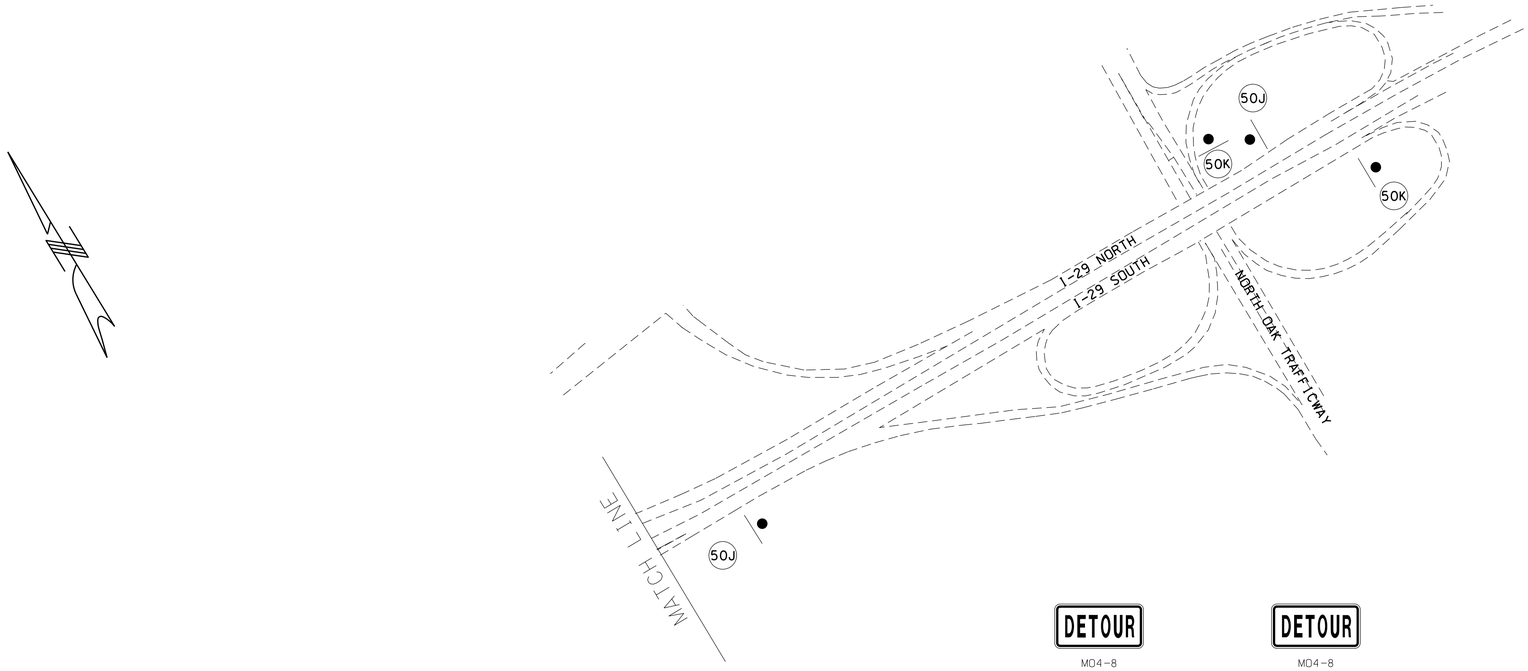
PROJECT NO.

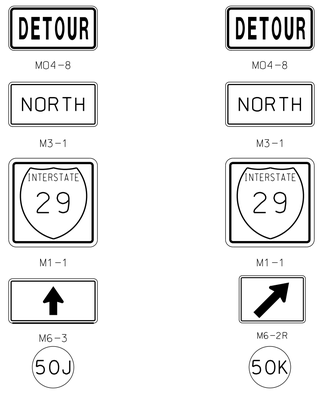
BRIDGE NO.
A1688

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




SCALE

0 200 400 600 800 1000

TRAFFIC CONTROL PLAN
NORTH BOUND I-29 RAMP
BRIDGE A1688 CLOSURE

SHEET 4 OF 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 45 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

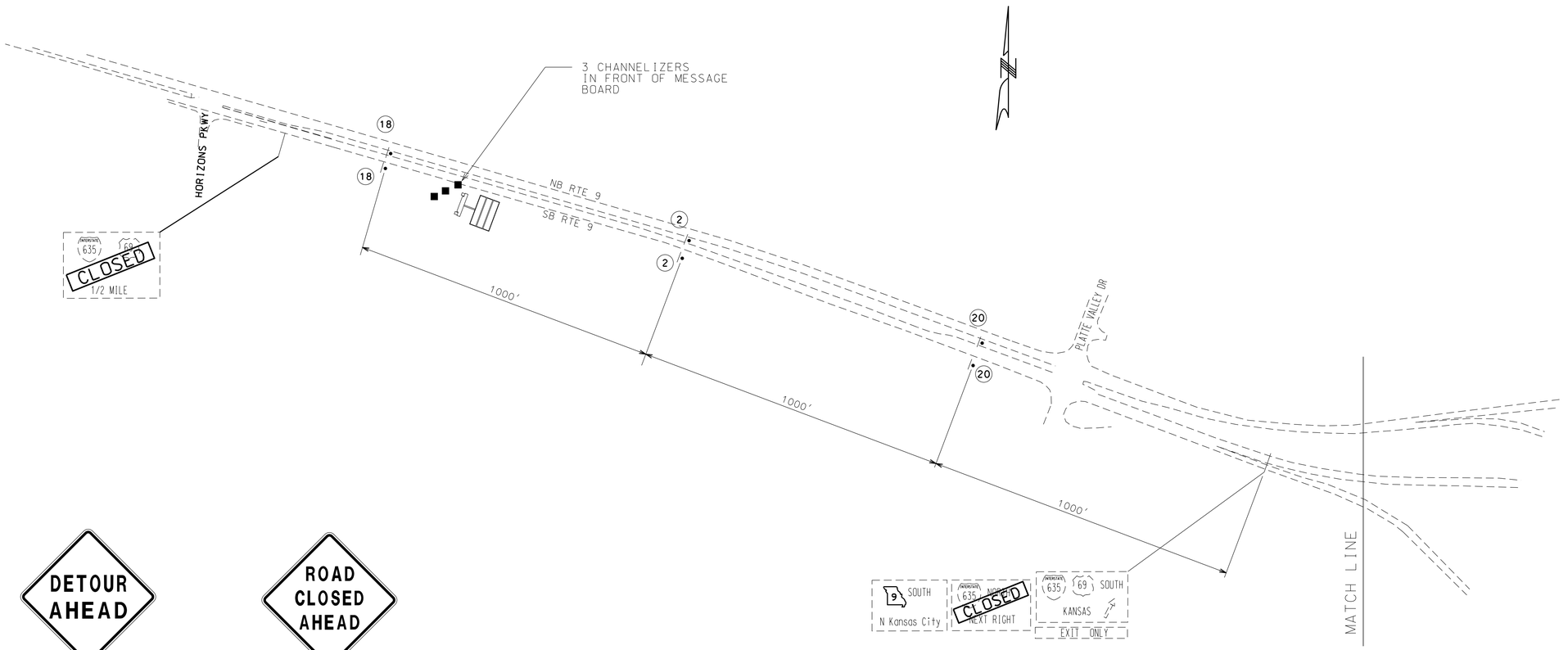
PROJECT NO.

BRIDGE NO.
A1688

| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)











BRIDGE
OR
RAMP

SCALE

0 200 400 600 800 1000

TRAFFIC CONTROL DETOUR PLAN
MO 9 TO I-635 NB
RAMP CLOSURE

SHEET 1 OF 2

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 46 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

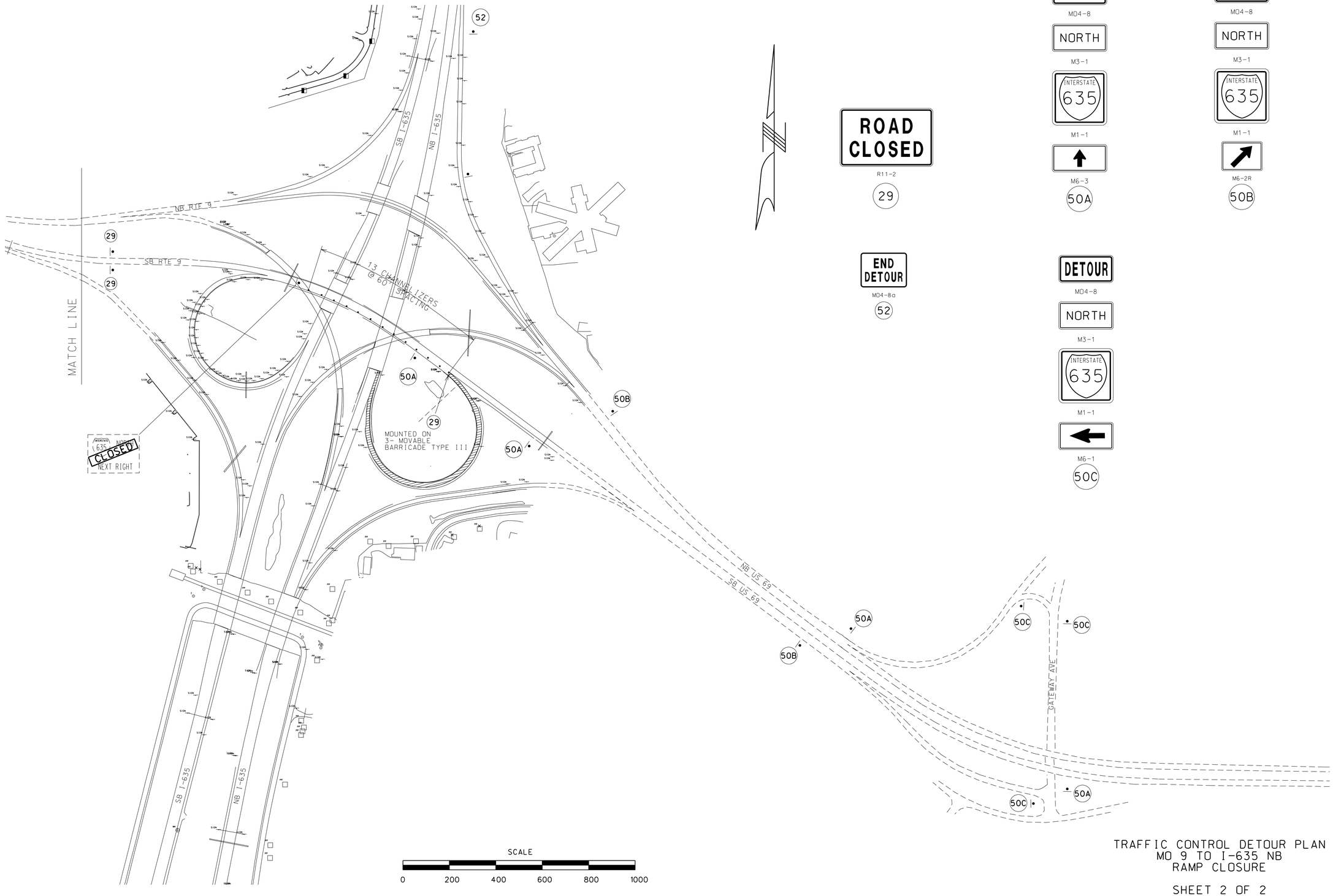
PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)





















TRAFFIC CONTROL DETOUR PLAN
MO 9 TO I-635 NB
RAMP CLOSURE

SHEET 2 OF 2

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

| | |
|---|---|
| DATE PREPARED | 10/21/2013 |
| ROUTE | I-29 |
| STATE | MO |
| DISTRICT | KC |
| SHEET NO. | 47 |
| COUNTY | PLATTE |
| JOB NO. | J4I2374 |
| CONTRACT ID. | |
| PROJECT NO. | |
| BRIDGE NO. | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

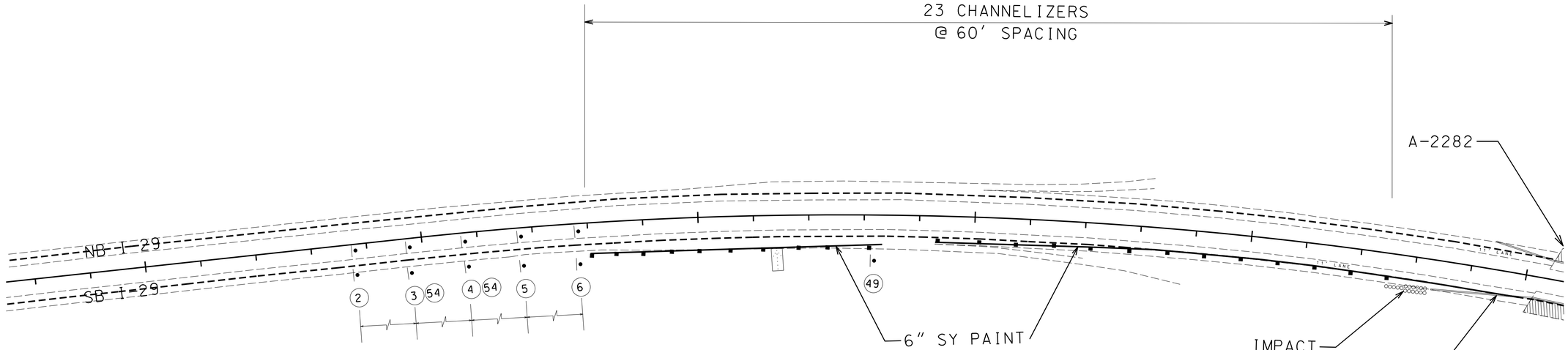
| DATE | DESCRIPTION |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA




TRAFFIC CONTROL STAGE 1

SHEET 1 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |

| DISTRICT | SHEET NO. |
|---|---|
| KC | 48 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

| DESCRIPTION | DATE |
|---|---|
| | |

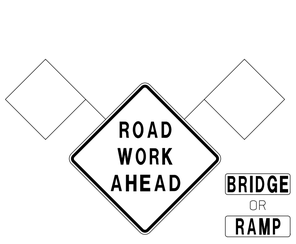
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

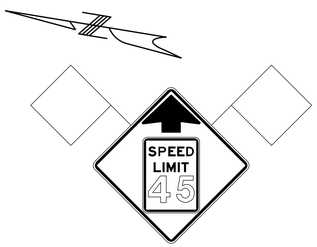
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA



W020-1
2



W03-5
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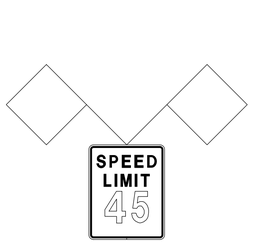
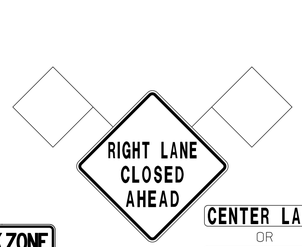


R2-1
4

G023-1
54



W020-5
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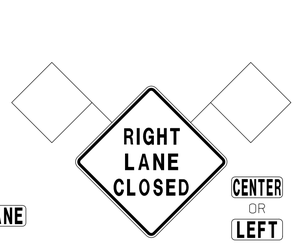

W020-6a
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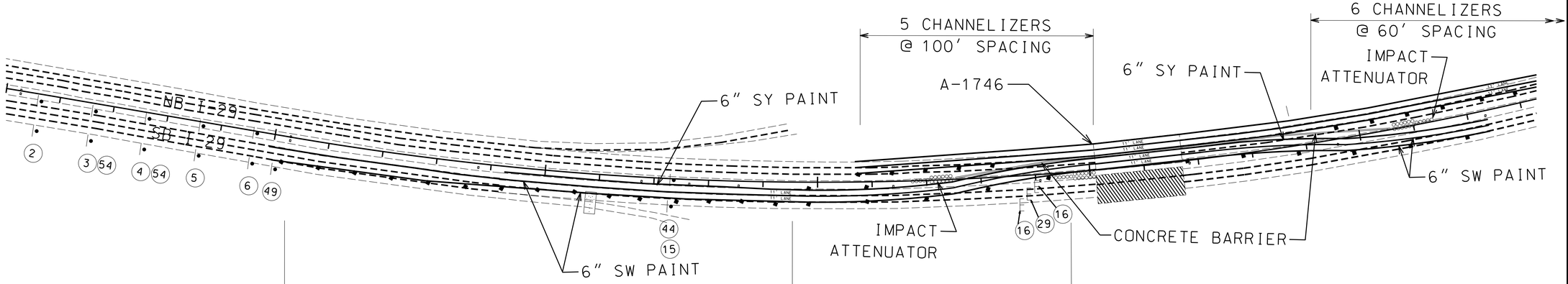
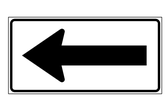









SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 1

SHEET 2 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 49 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

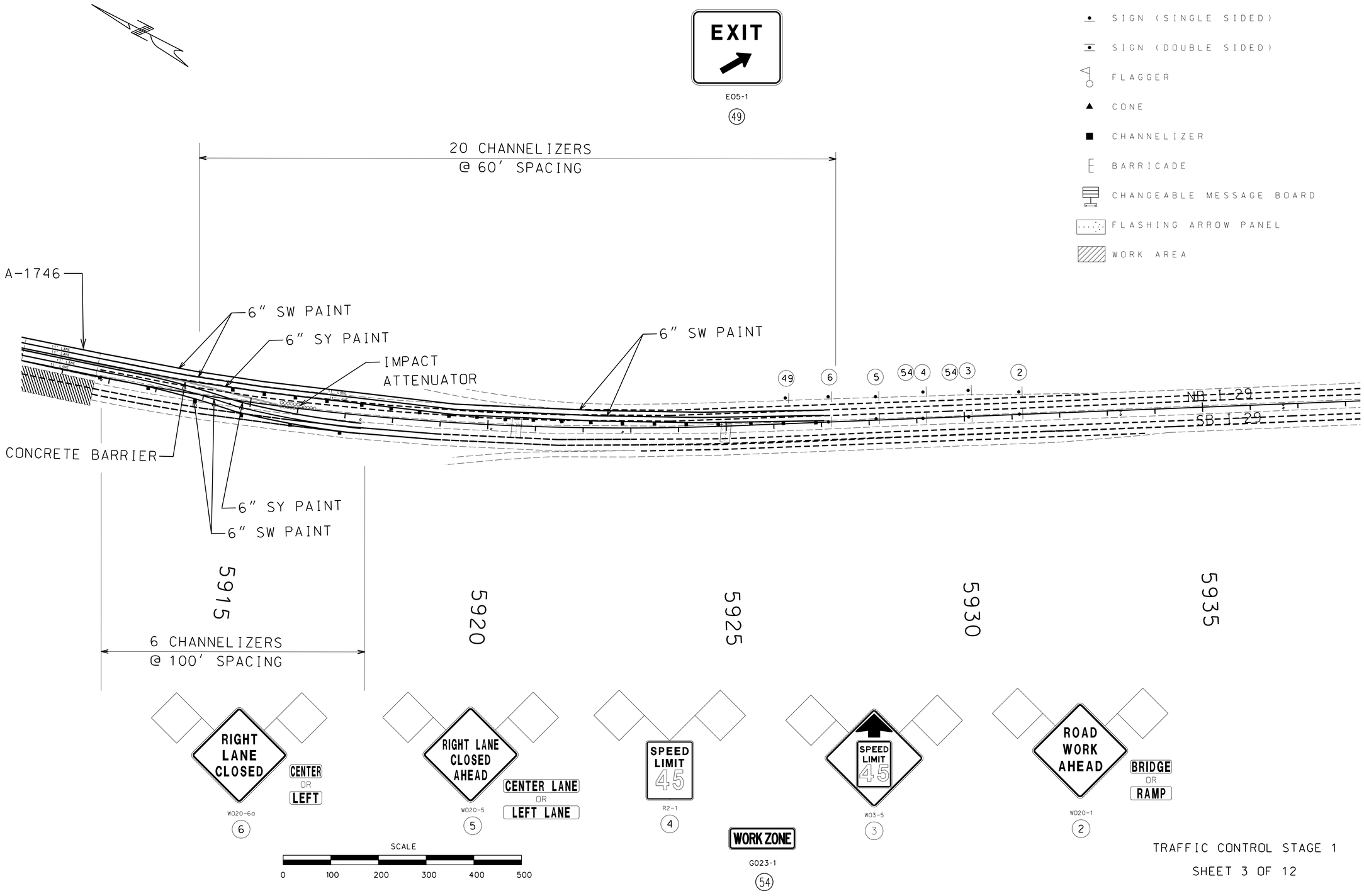
PROJECT NO.:

BRIDGE NO.:

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| DESCRIPTION | DATE |
|---|---|
| | |


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

TRAFFIC CONTROL STAGE 1

SHEET 3 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 50 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

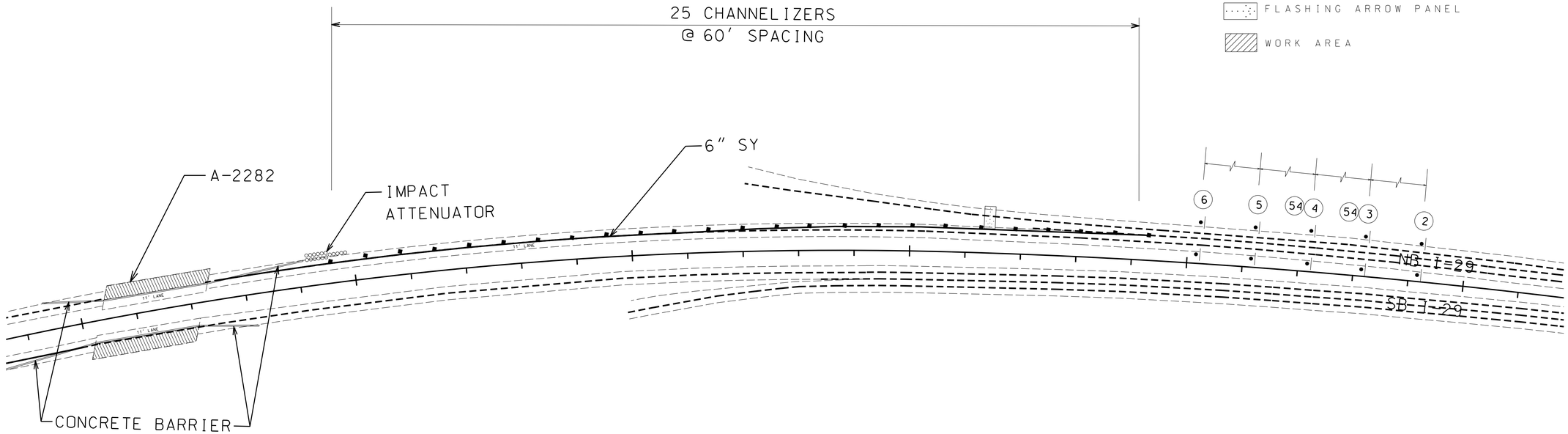
| DESCRIPTION | DATE |
|---|---|
| | |

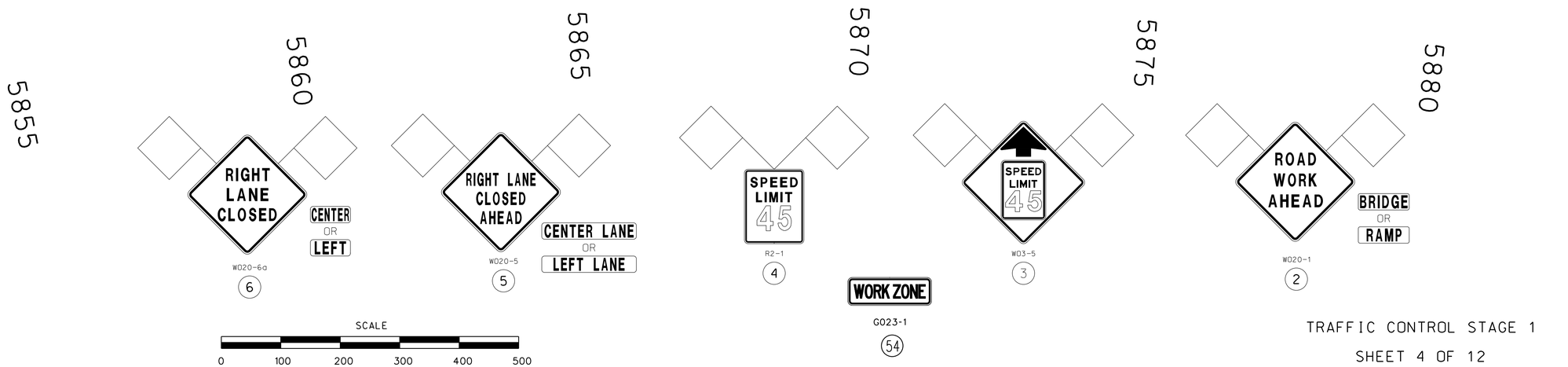
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA




TRAFFIC CONTROL STAGE 1

SHEET 4 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 21 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

| DESCRIPTION | DATE |
|---|---|
| | |


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

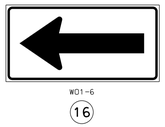
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)


IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

## TRAFFIC CONTROL LEGEND

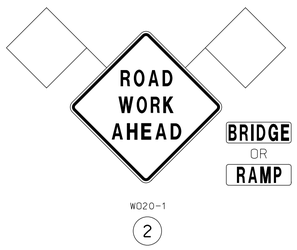
- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

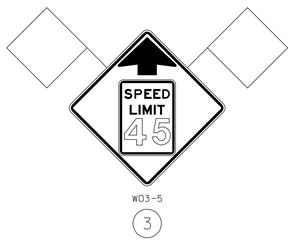


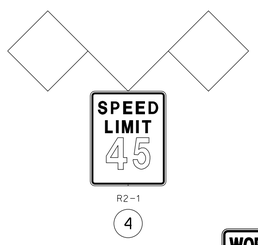


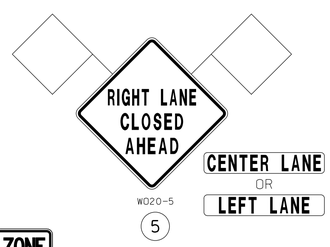


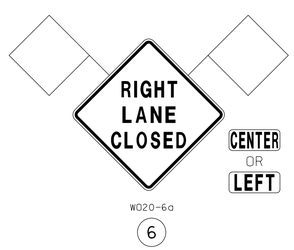




SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 1

SHEET 5 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 52 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

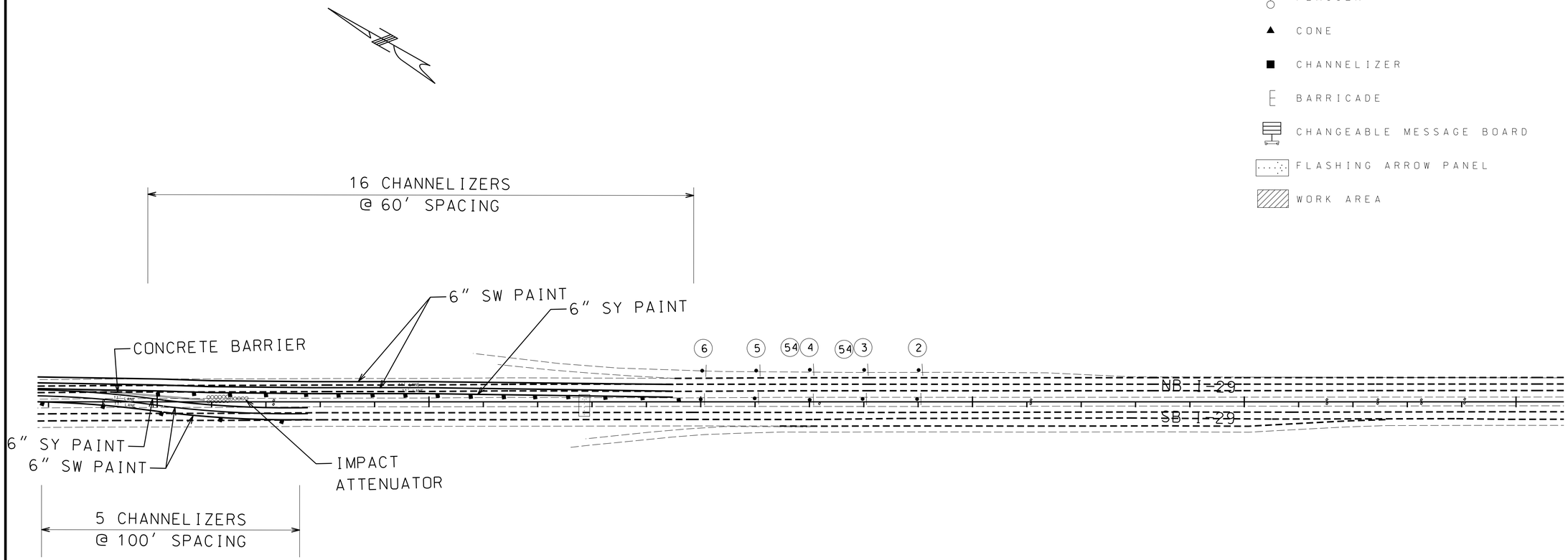
| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

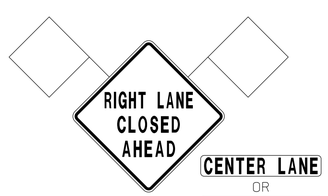

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

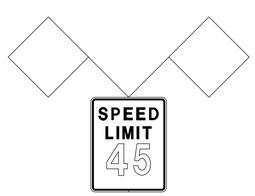
## TRAFFIC CONTROL LEGEND

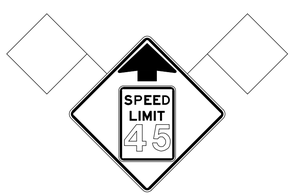
- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

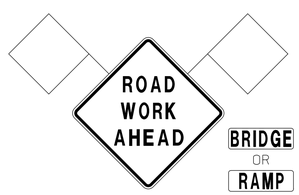



6010 6015 6020 6025 6030 6035



SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 1

SHEET 6 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 53 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

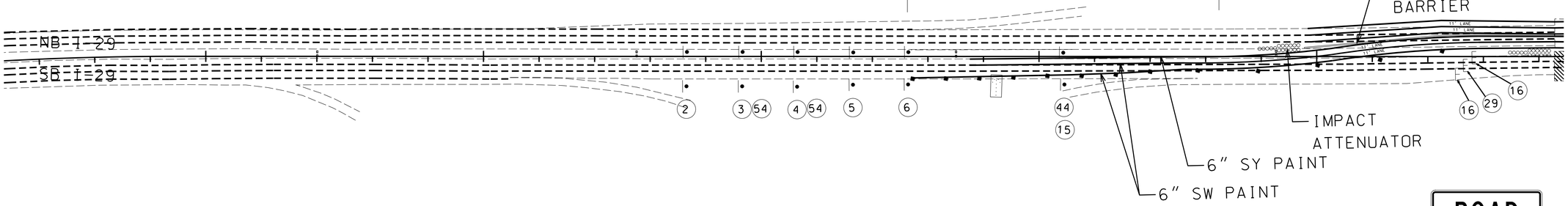
## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

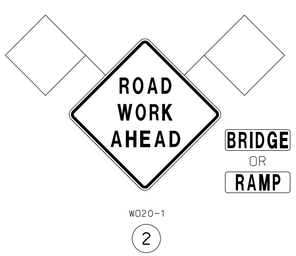


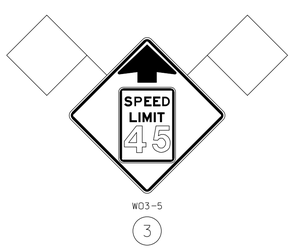
9 CHANNELIZERS @ 60' SPACING

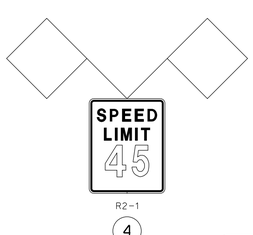
6 CHANNELIZERS @ 100' SPACING

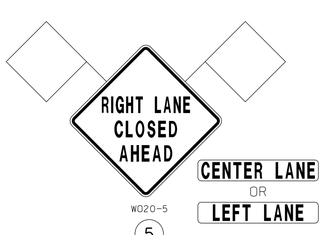


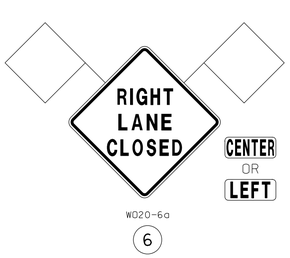

6085 6090 6095 6100 6105

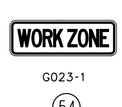


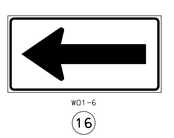








SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 1

SHEET 7 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

ROUTE I-29 | STATE MO

DISTRICT KC | SHEET NO. 54

COUNTY PLATTE

JOB NO. J4I2374

CONTRACT ID.

PROJECT NO.

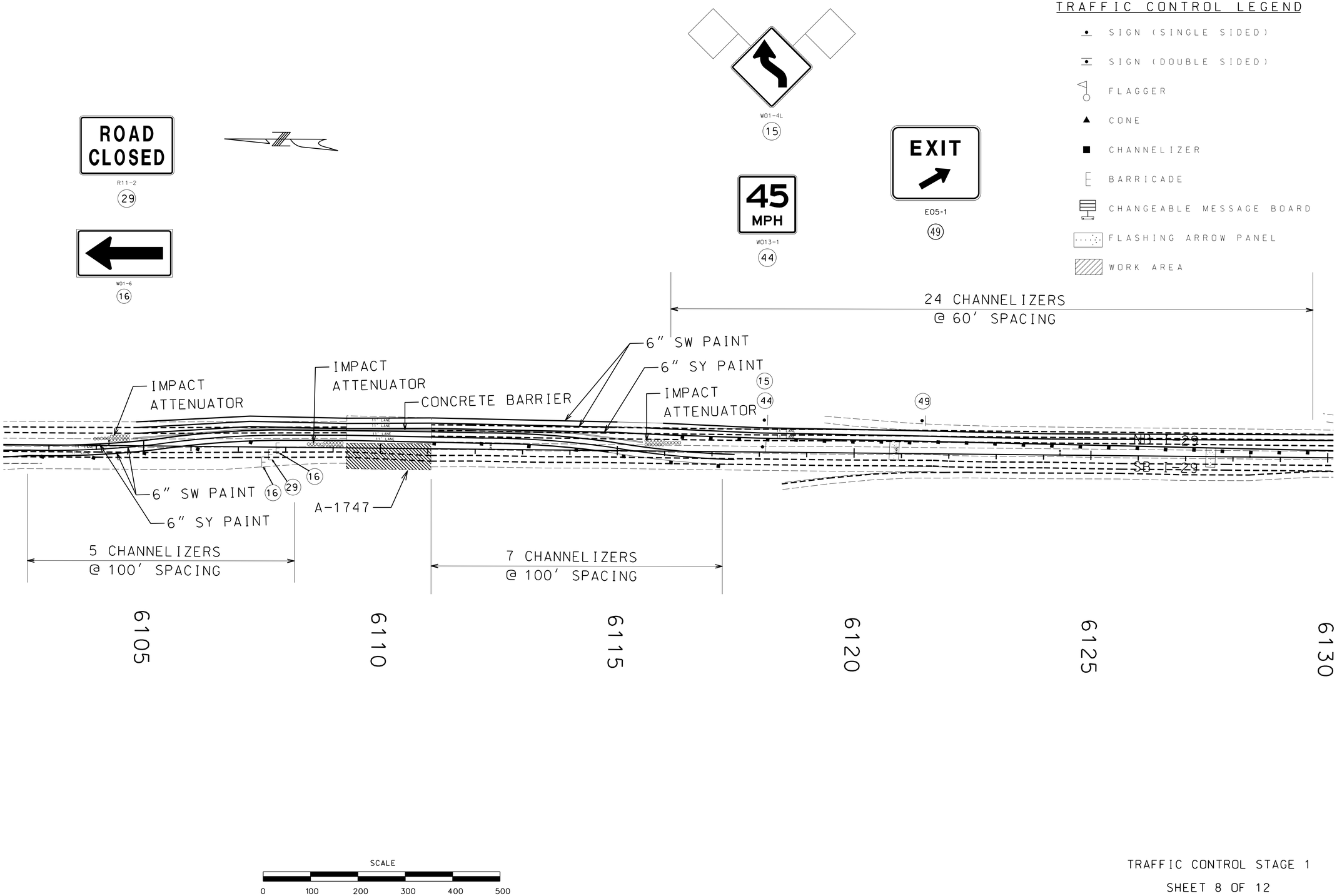
BRIDGE NO.

DESCRIPTION | DATE


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)


IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 1

SHEET 8 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

ROUTE I-29 | STATE MO

DISTRICT KC | SHEET NO. 55

COUNTY PLATTE

JOB NO. J4I2374

CONTRACT ID.

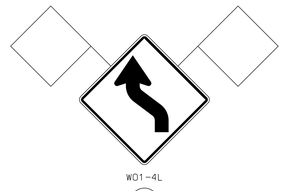
PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

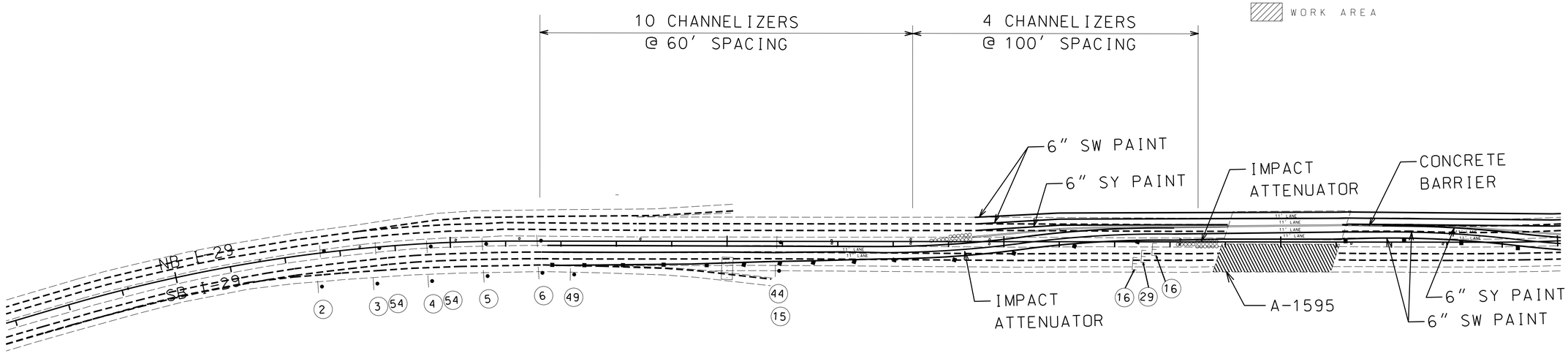
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

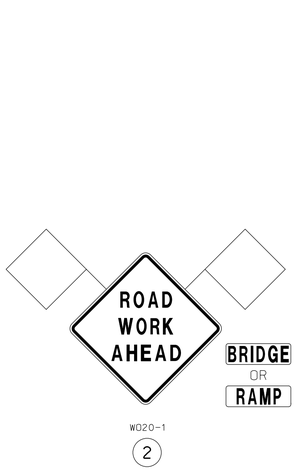


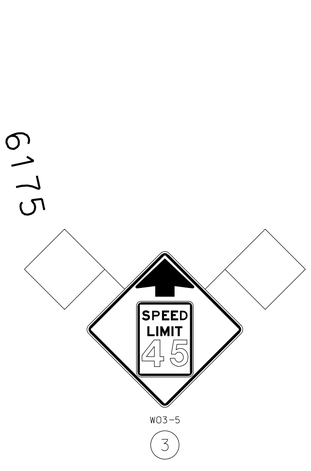


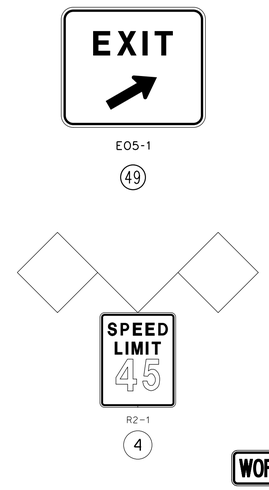
## TRAFFIC CONTROL LEGEND

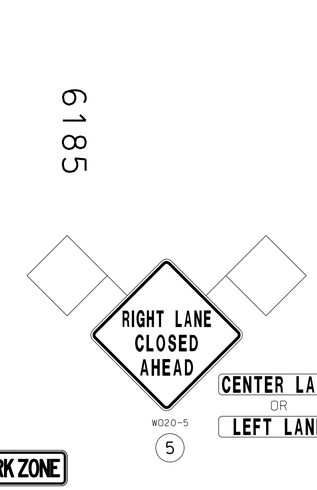
- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

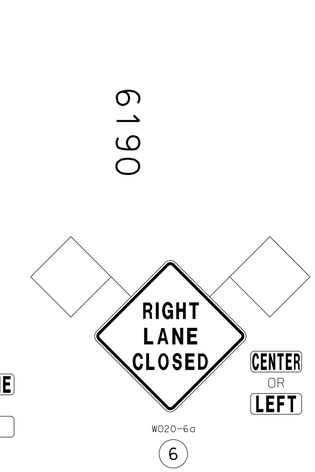


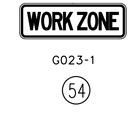



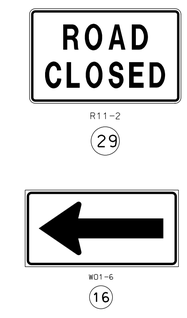




SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 1

SHEET 9 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 56 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

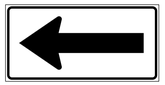
| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

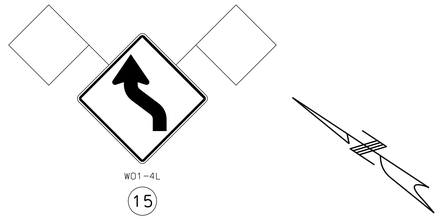

R11-2

29



W01-6

16



W01-4L

15


W013-1

44

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

20 CHANNELIZERS
@ 60' SPACING

CONCRETE BARRIER

6" SW PAINT

6" SY PAINT

15

44

29

16

IMPACT
ATTENUATOR

A-1595

IMPACT
ATTENUATOR

6 CHANNELIZERS
@ 100' SPACING

6195

6200

6205

6210

6215

6220

6

5

54

4

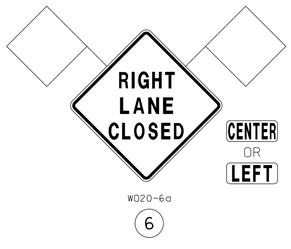
54

3

2

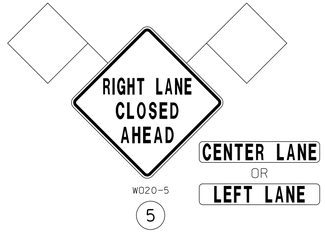
NB I-29

SB I-29



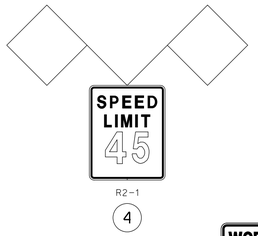

W020-6a

6



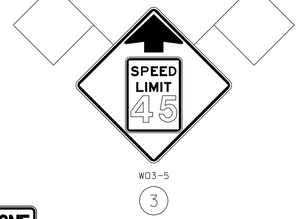

W020-5

5



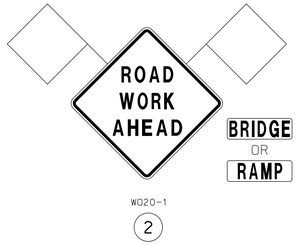

R2-1

4




W03-5

3




W020-1

2


G023-1

54

SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 1

SHEET 10 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 57 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

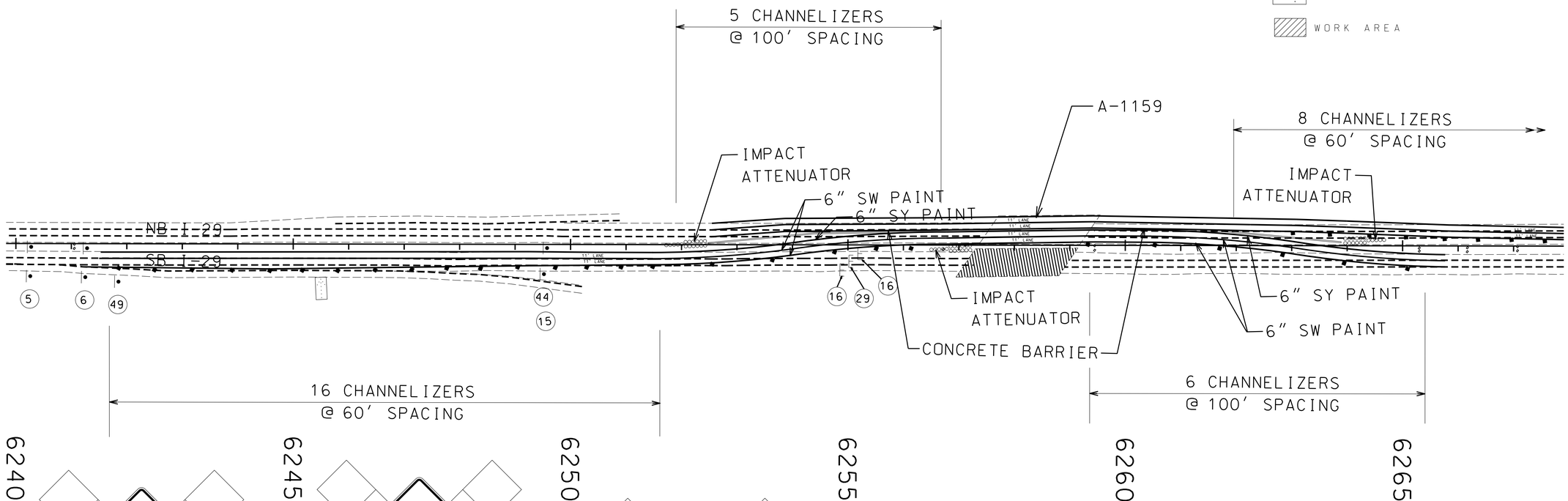
| DESCRIPTION | DATE |
|---|---|
| | |

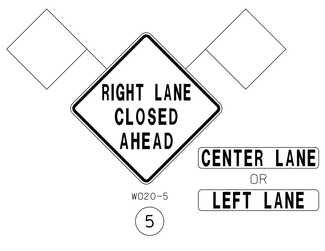
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

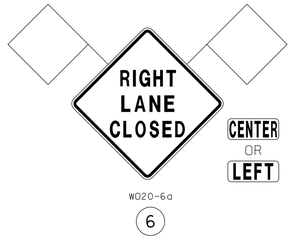
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

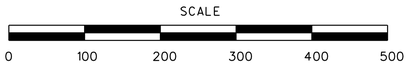


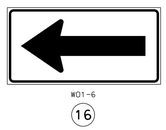














TRAFFIC CONTROL STAGE 1

SHEET 11 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |

| DISTRICT | SHEET NO. |
|---|---|
| KC | 58 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

| DESCRIPTION | DATE |
|---|---|
| | |

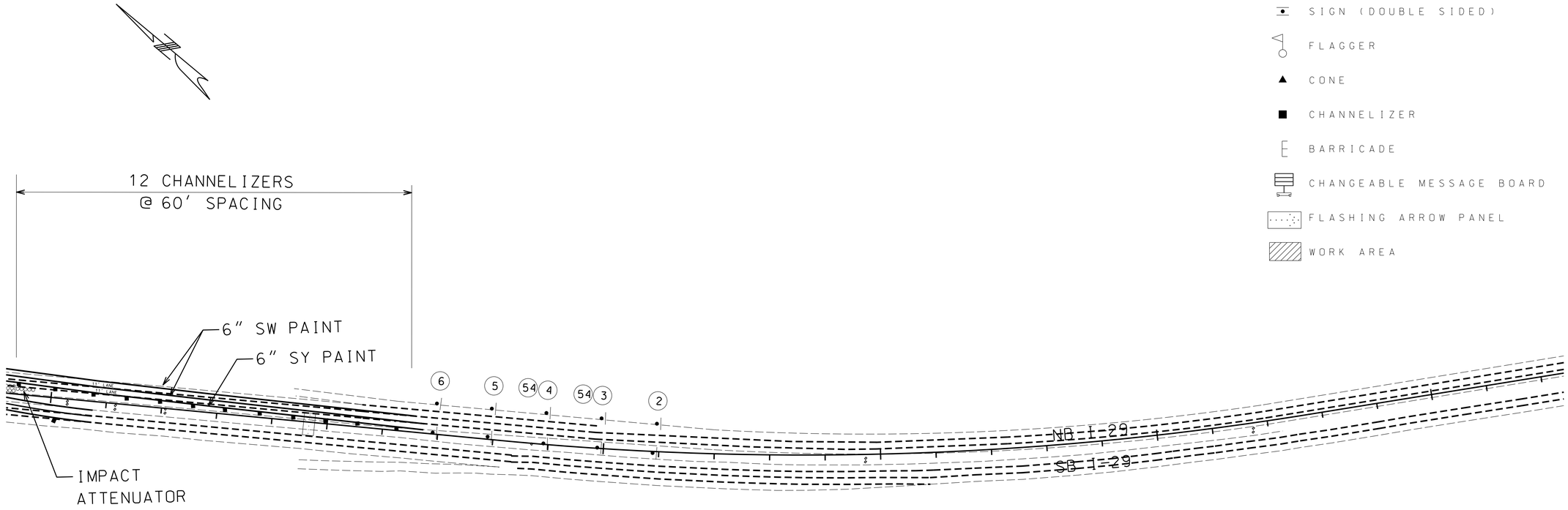
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA




TRAFFIC CONTROL STAGE 1

SHEET 12 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |

| DISTRICT | SHEET NO. |
|---|---|
| KC | 59 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

| DATE | DESCRIPTION |
|---|---|
| | |

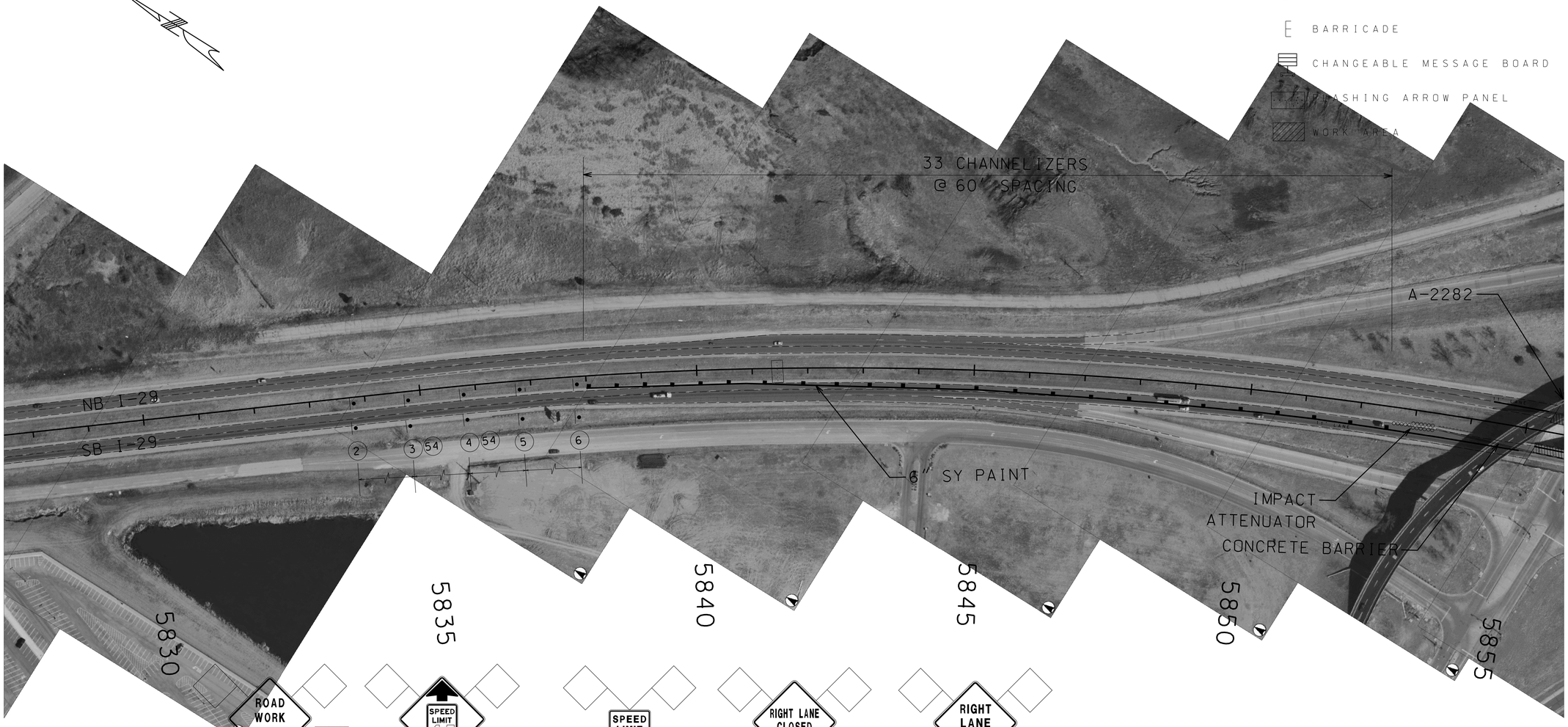
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

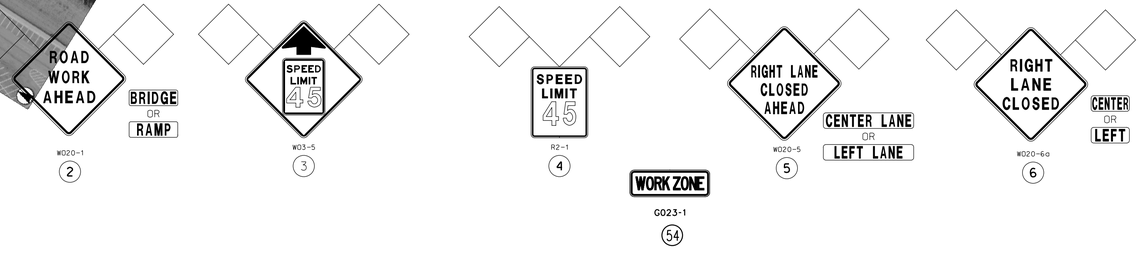

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA




SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 1 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 60 |

COUNTY: PLATTE

JOB NO.: J4I2374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

| DESCRIPTION | DATE |
|---|---|
| | |

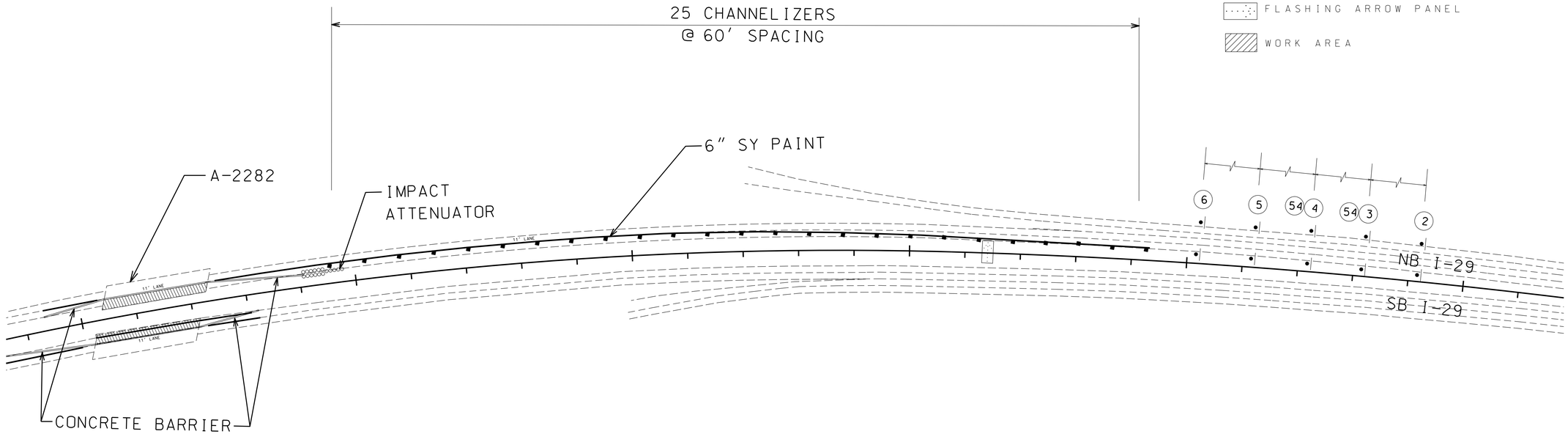

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

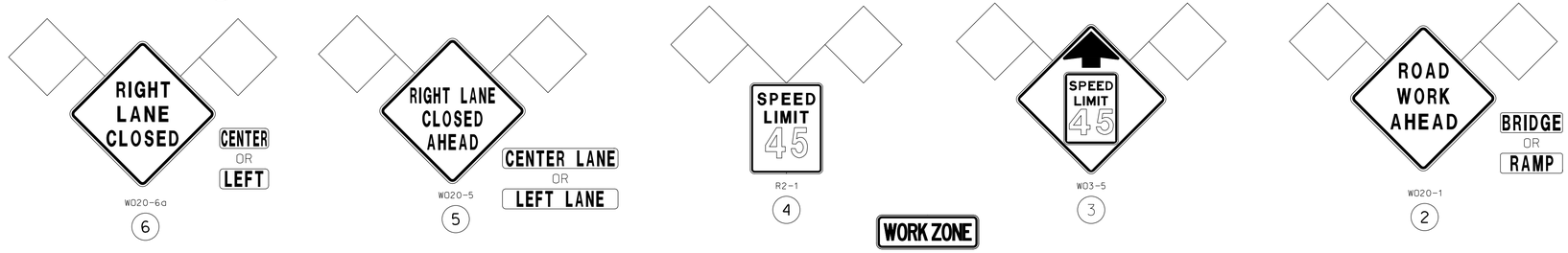

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA




5855 5860 5865 5870 5875 5880




SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 2 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

ROUTE I-29 | STATE MO

DISTRICT KC | SHEET NO. 61

COUNTY PLATTE

JOB NO. J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

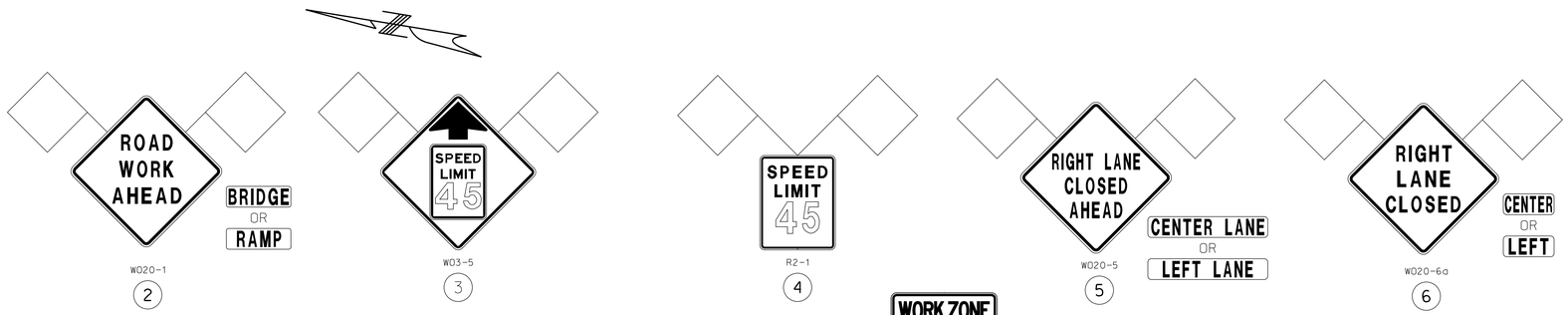
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

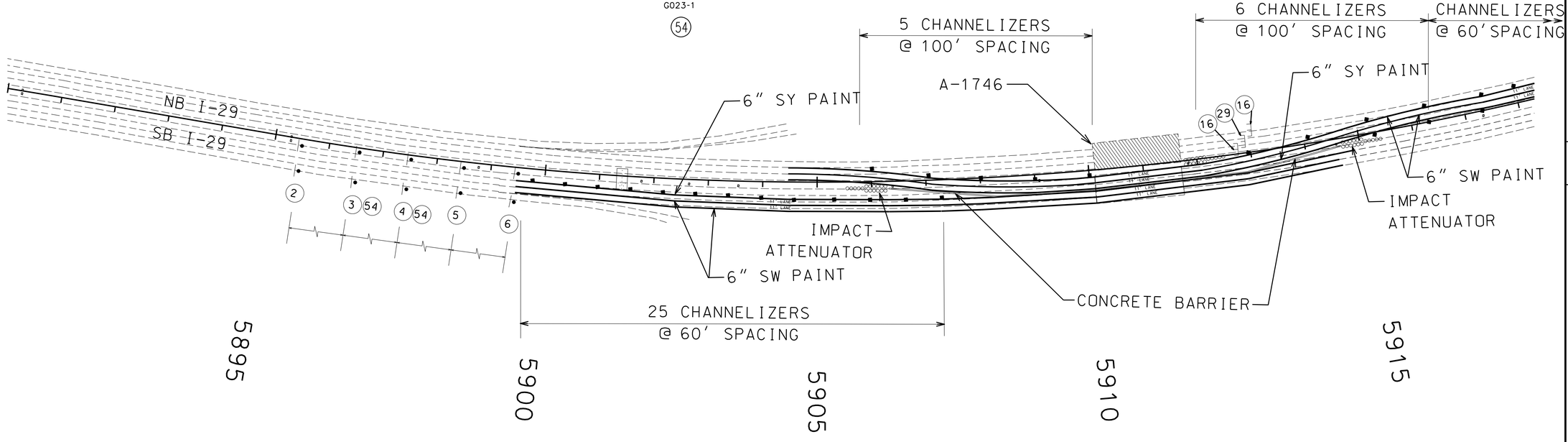

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

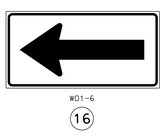
## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA








SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 3 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

| | |
|---|---|
| DATE PREPARED | 10/21/2013 |
| ROUTE | I-29 |
| STATE | MO |
| DISTRICT | KC |
| SHEET NO. | 62 |
| COUNTY | PLATTE |
| JOB NO. | J4I2374 |
| CONTRACT ID. | |
| PROJECT NO. | |
| BRIDGE NO. | |

DESCRIPTION | DATE

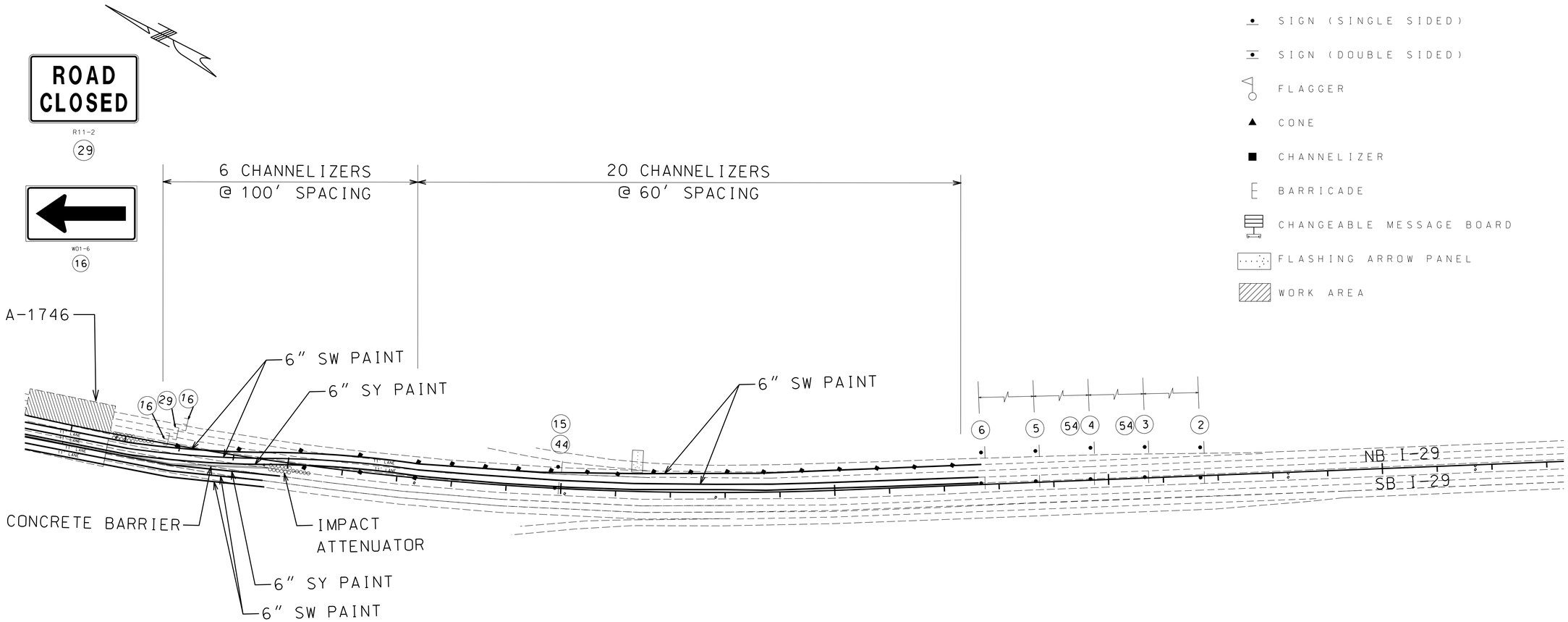
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA




5915

WO1-4L
15

45 MPH
WO13-1
44

5920

RIGHT LANE CLOSED
CENTER OR LEFT
WO20-6a
6

5925

RIGHT LANE CLOSED AHEAD
CENTER LANE OR LEFT LANE
WO20-5
5

5930

SPEED LIMIT 45
R2-1
4

WORK ZONE
G023-1
54

SPEED LIMIT 45
WO3-5
3

5935

ROAD WORK AHEAD
BRIDGE OR RAMP
WO20-1
2

SCALE
0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2
SHEET 4 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/21/2013
ROUTE: I-29 | STATE: MO
DISTRICT: KC | SHEET NO.: 63
COUNTY: PLATTE
JOB NO.: J4I2374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

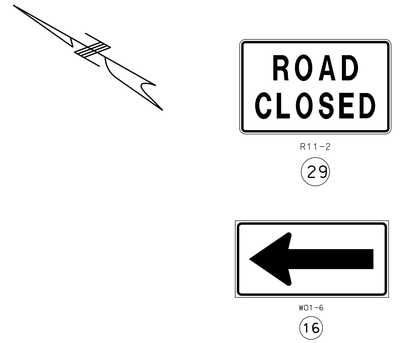
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

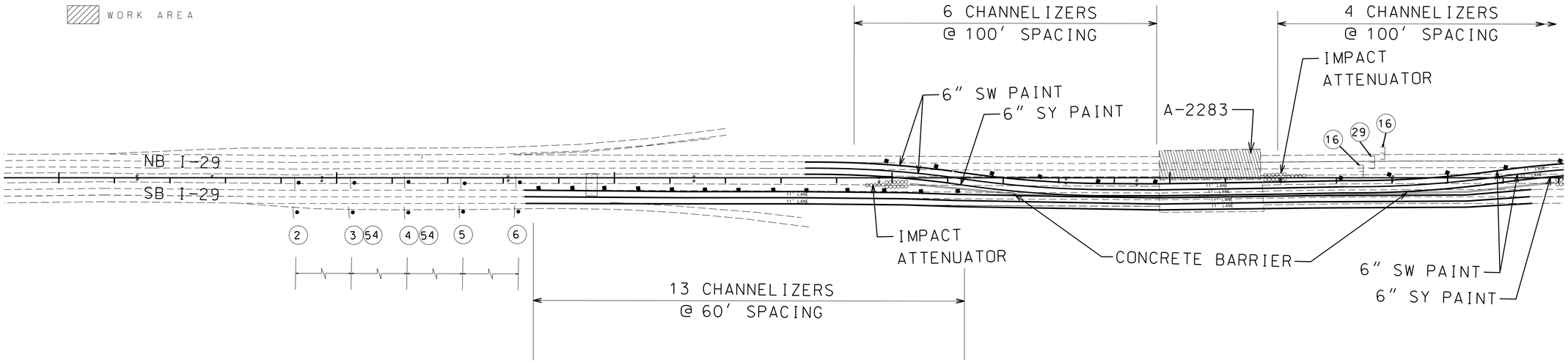
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

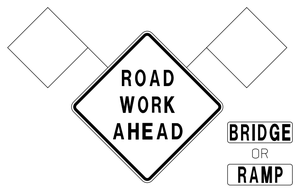
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

## TRAFFIC CONTROL LEGEND

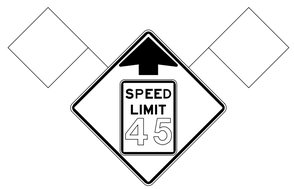
- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

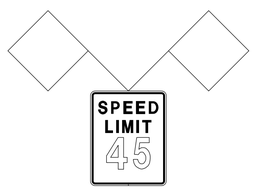



BRIDGE
OR
RAMP





CENTER LANE
OR
LEFT LANE


CENTER
OR
LEFT


SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 5 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 64 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

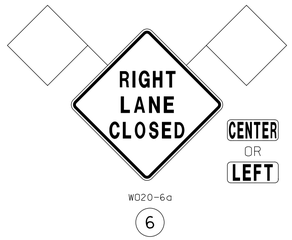
PROJECT NO.

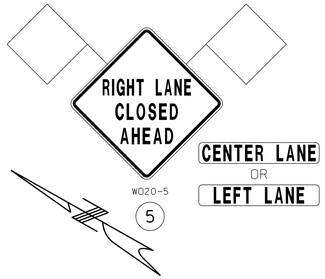
BRIDGE NO.

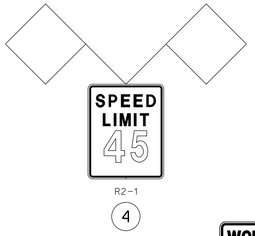
DESCRIPTION | DATE


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

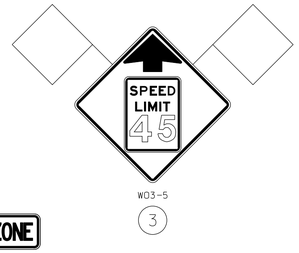

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

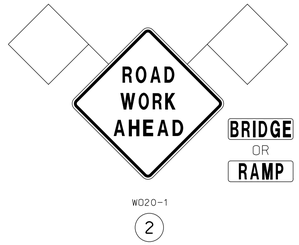


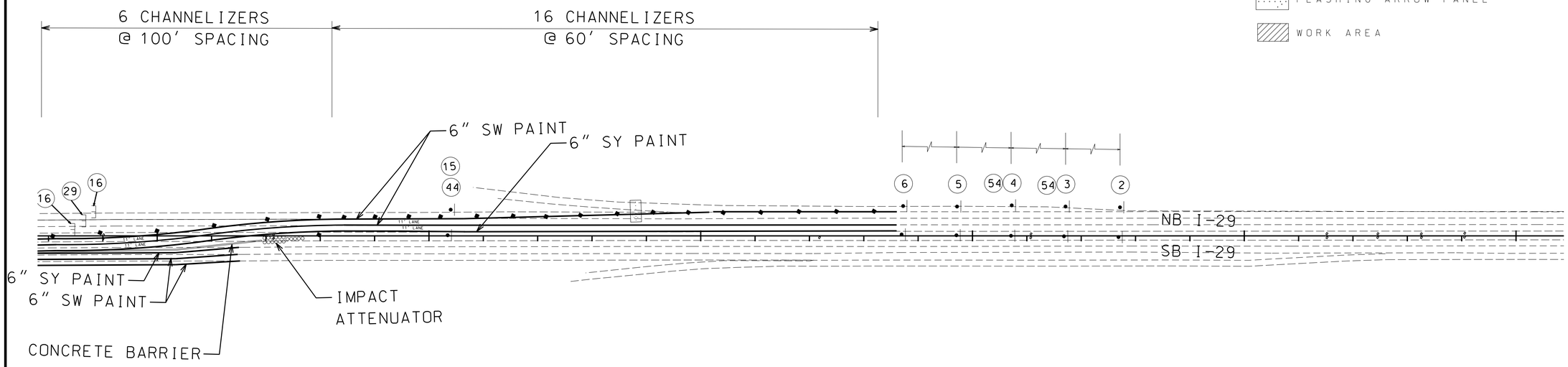




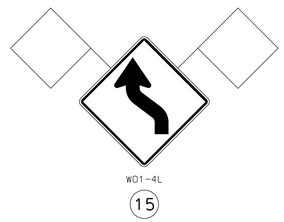



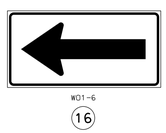

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA









6010 6015 6020 6025 6030 6035

SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 6 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

ROUTE I-29 | STATE MO

DISTRICT KC | SHEET NO. 65

COUNTY PLATTE

JOB NO. J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

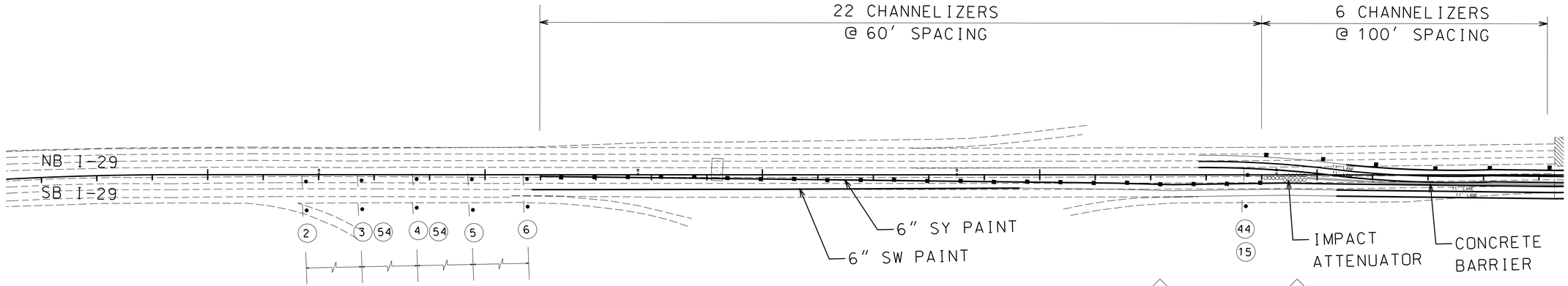
DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

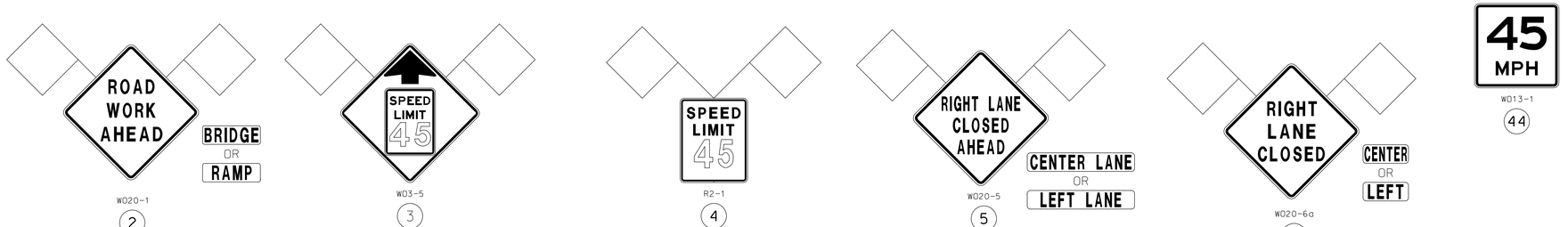
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA




6085 6090 6095 6100 6105




SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 7 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 66 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

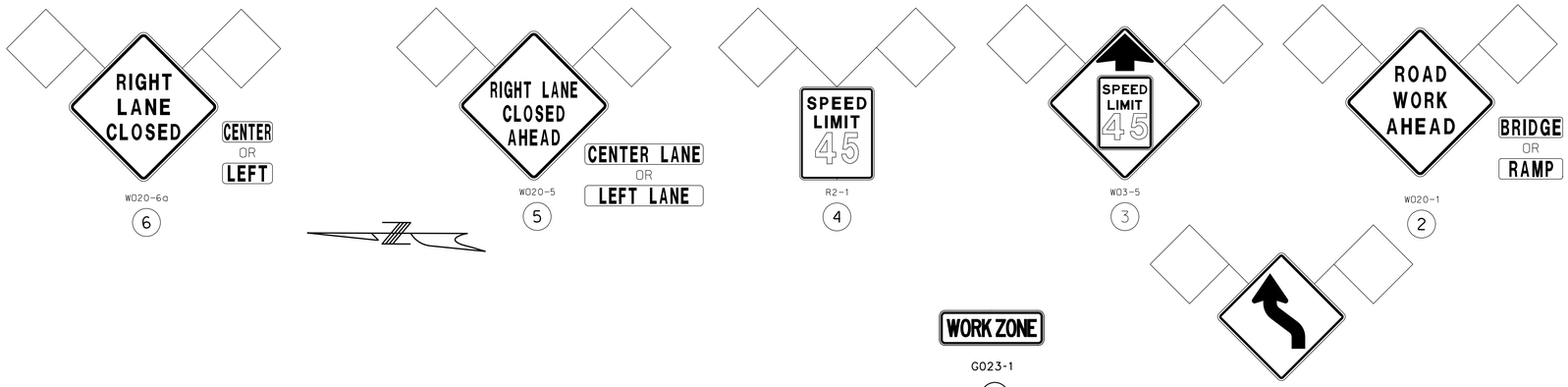
BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

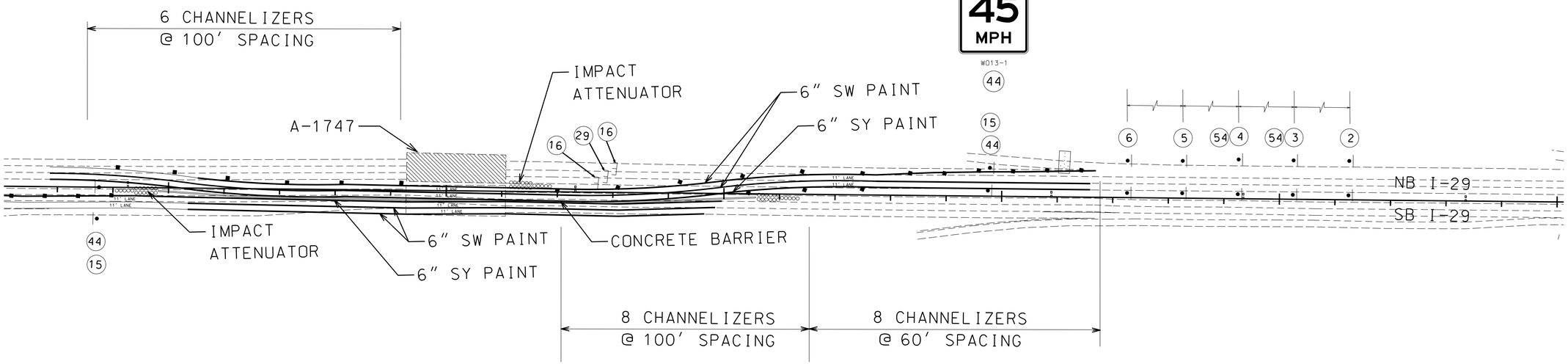
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

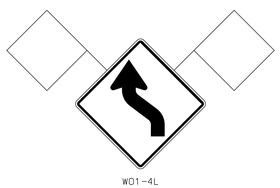
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



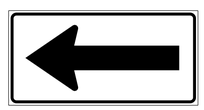

## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA






SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 8 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

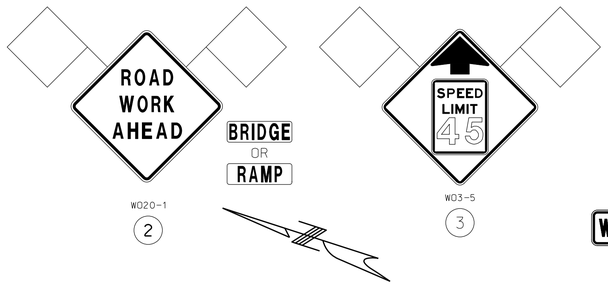
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| | |
|---|---|
| DATE PREPARED | 10/21/2013 |
| ROUTE | STATE |
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 67 |
| COUNTY | PLATTE |
| JOB NO. | J4I2374 |
| CONTRACT ID. | |
| PROJECT NO. | |
| BRIDGE NO. | |

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

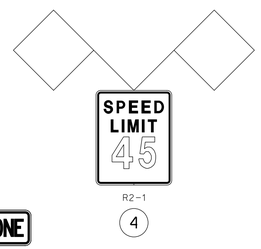
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



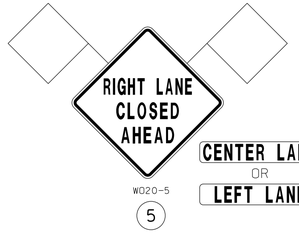

W020-1
2



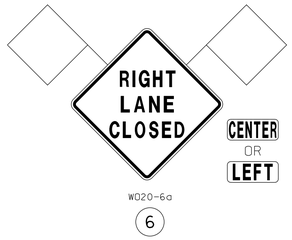

W03-5
3




R2-1
4




W020-5
5

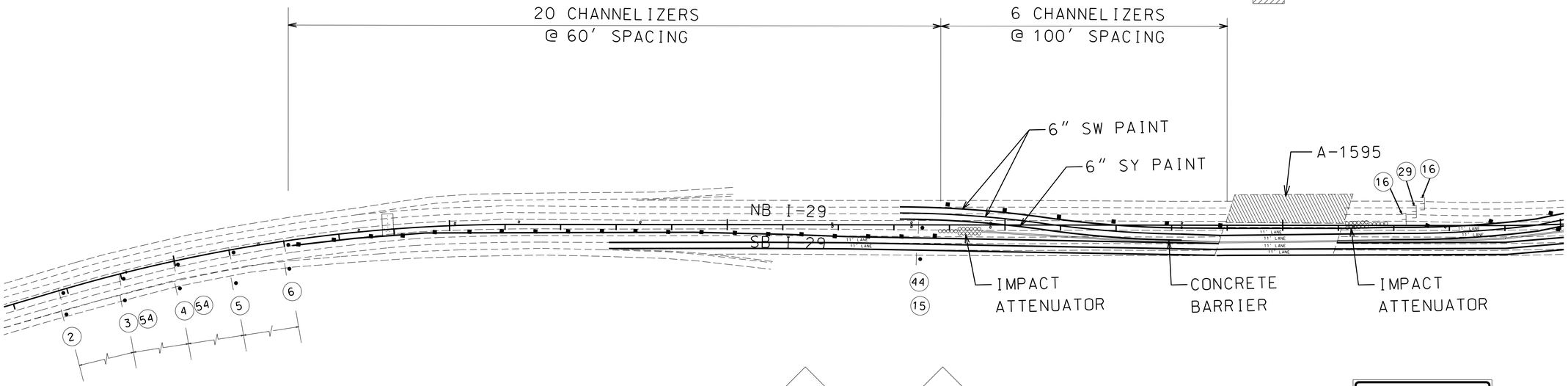



W020-6a
6


G023-1
54

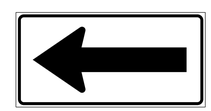
## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA




W01-4L
15


W013-1
44



W01-6
16


R11-2
29

SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 9 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 68 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

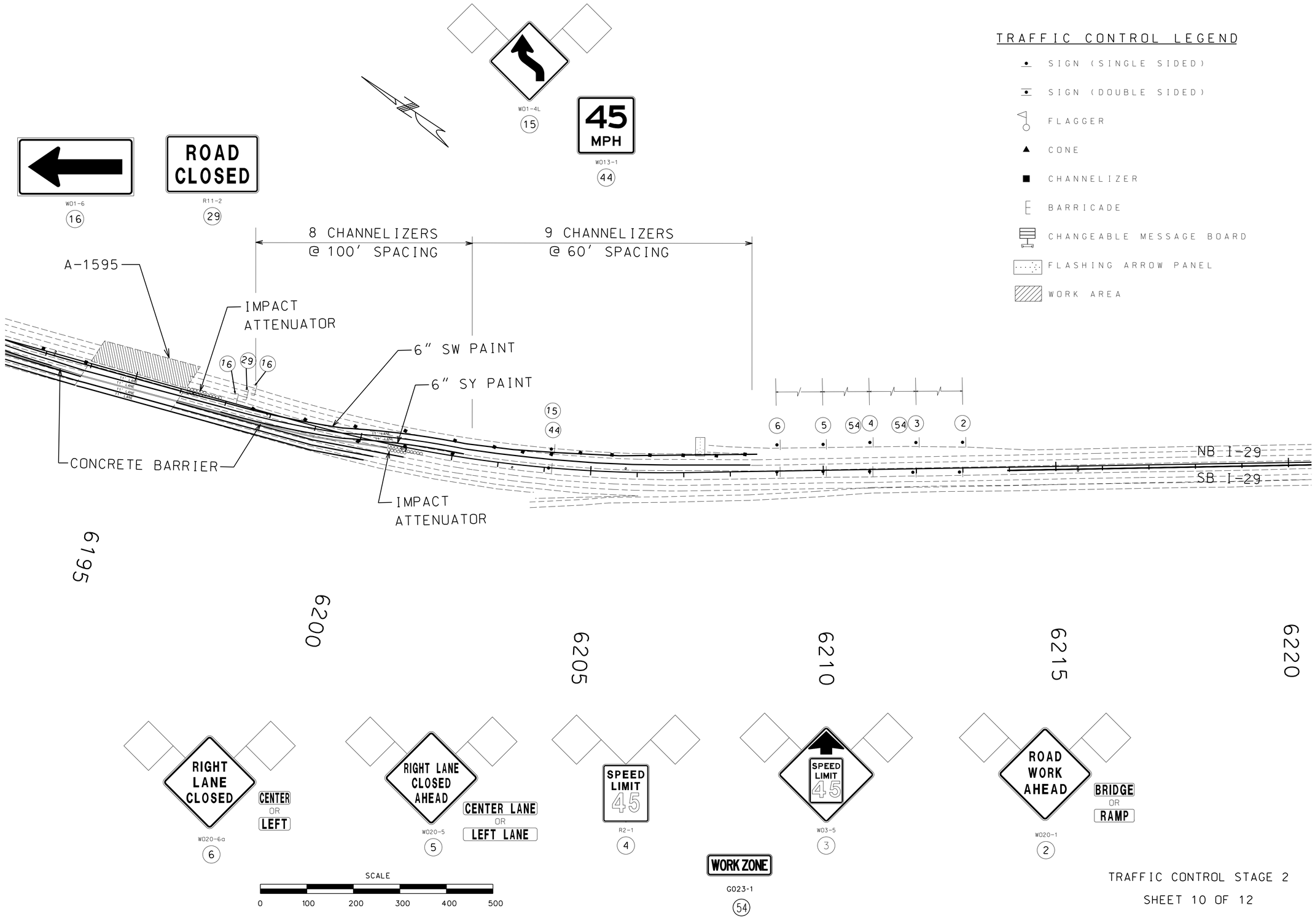
PROJECT NO.

BRIDGE NO.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA

TRAFFIC CONTROL STAGE 2

SHEET 10 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

| | |
|---|---|
| DATE PREPARED | 10/21/2013 |
| ROUTE | I-29 |
| STATE | MO |
| DISTRICT | KC |
| SHEET NO. | 69 |
| COUNTY | PLATTE |
| JOB NO. | J4I2374 |
| CONTRACT ID. | |
| PROJECT NO. | |
| BRIDGE NO. | |

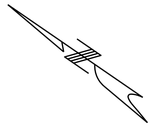
DESCRIPTION | DATE

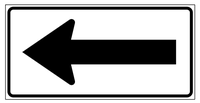
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

## TRAFFIC CONTROL LEGEND

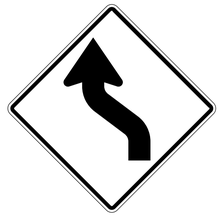
- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA





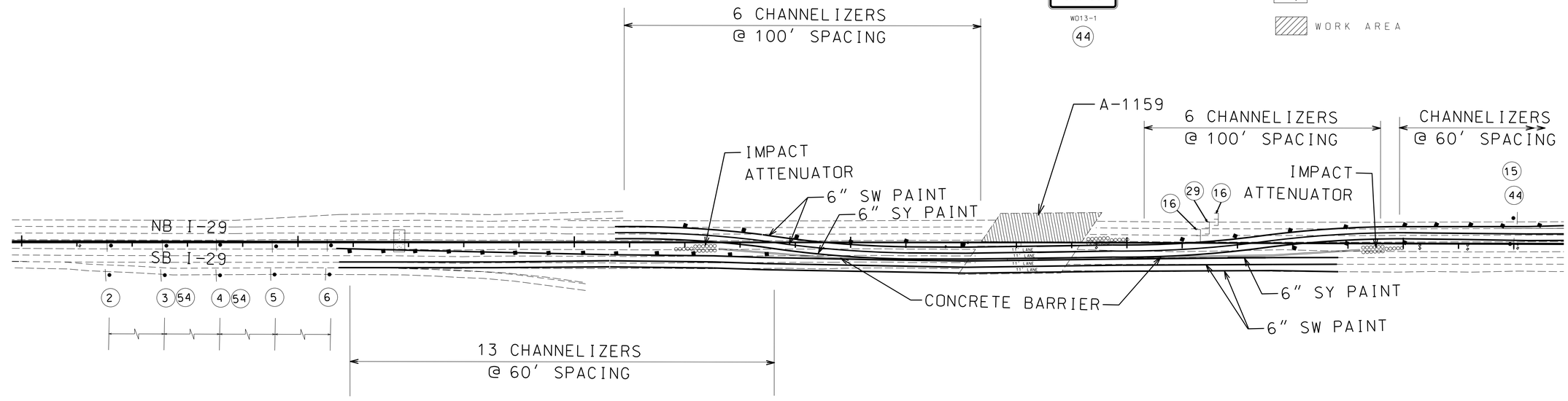
WO1-6
16


R11-2
29

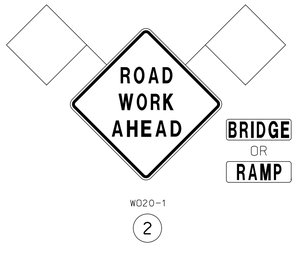


WO1-4L
15

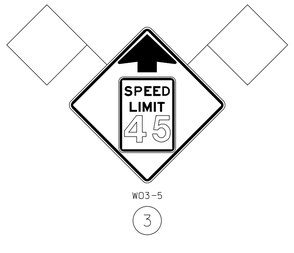

WO13-1
44




6240 6245 6250 6255 6260 6265




WO20-1
2




WO3-5
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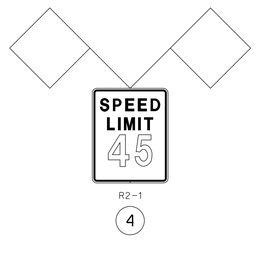
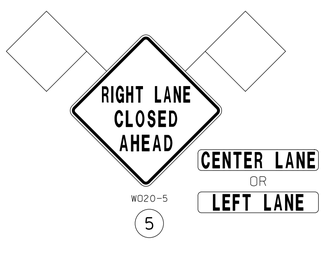
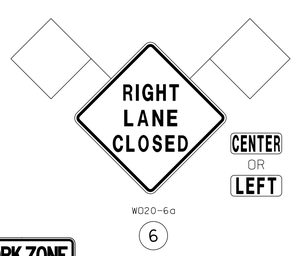



R2-1
4




WO20-5
5




WO20-6a
6


G023-1
54

SCALE

0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2

SHEET 11 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 70 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

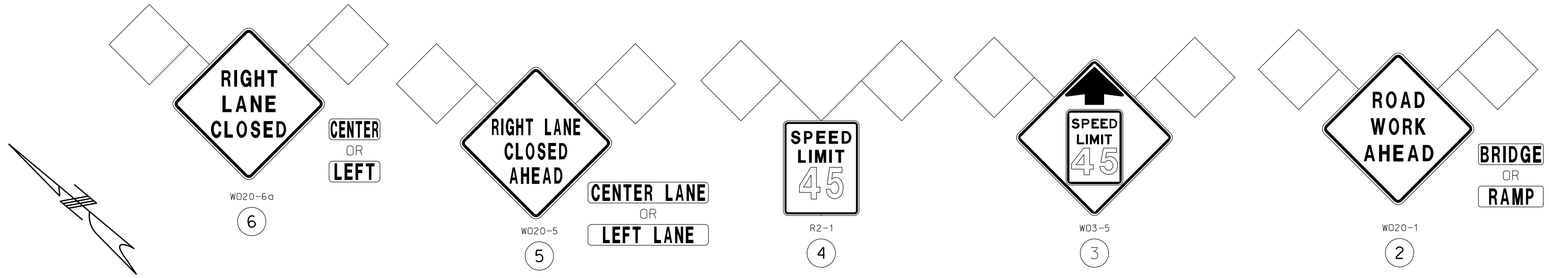
PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|
| | |

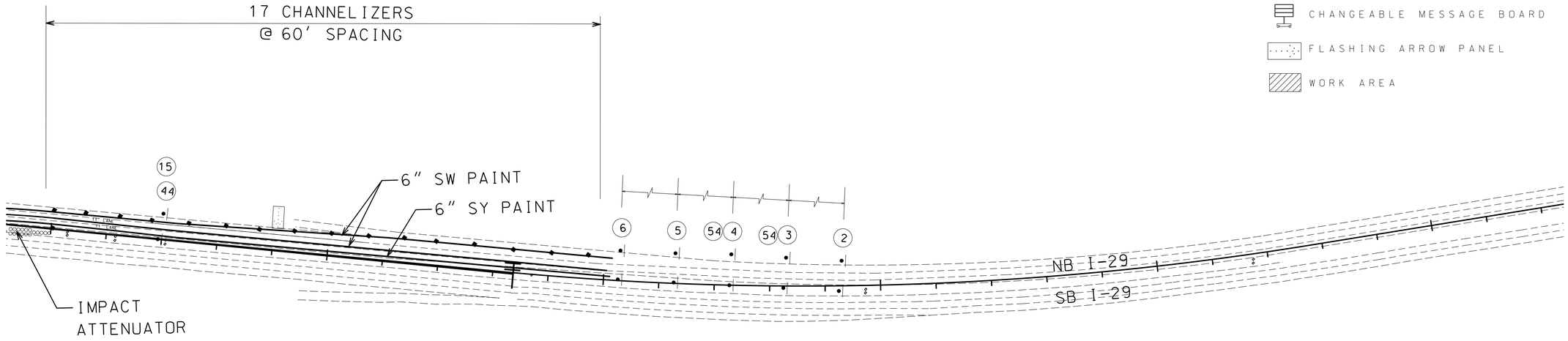
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




## TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK AREA






6265 6270 6275 6280 6285 6290

SCALE
0 100 200 300 400 500

TRAFFIC CONTROL STAGE 2
SHEET 12 OF 12

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

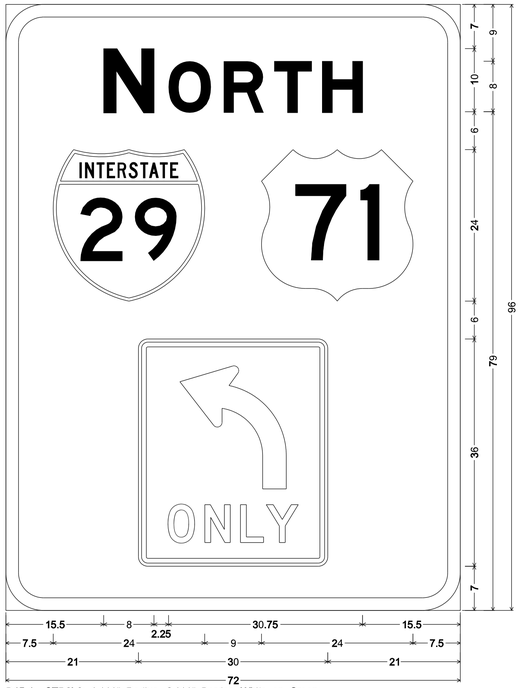
DATE PREPARED 10/21/2013
ROUTE I-29 | STATE MO
DISTRICT KC | SHEET NO. 71
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SIGN NO. | 1 |
|---|---|
| STATION | |
| ROADWAY | 45 |



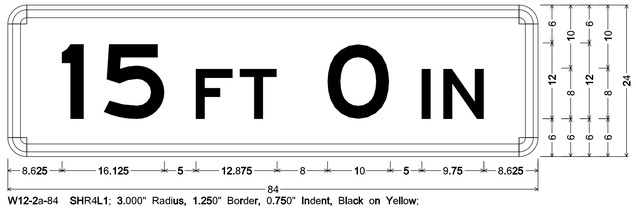

D15-1 STR2L3; 6.000" Radius, 2.000" Border, White on Green;
[NORTH] E Mod; R3-5L_Decal;
Table of letter and object lefts.

| N | O | R | T | H |
|---|---|---|---|---|
| 15.500 | 25.750 | 34.500 | 42.500 | 50.125 |

| 7.500 | 40.500 |
|---|---|

| 21.000 |
|---|

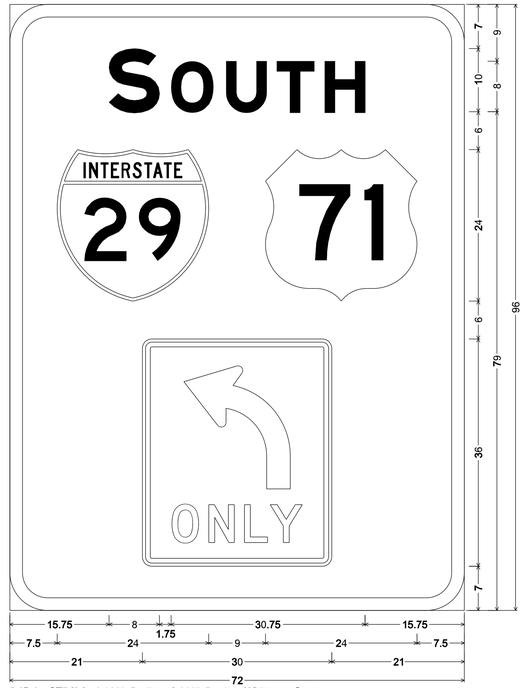
| SIGN NO. | 2 |
|---|---|
| STATION | |
| ROADWAY | 45 |




W12-2a-84 SHR4L1; 3.000" Radius, 1.250" Border, 0.750" Indent, Black on Yellow;
[15 FT 0 IN] E;
Table of letter and object lefts.

| 1 | 5 | F | T | O | I | N |
|---|---|---|---|---|---|---|
| 8.625 | 15.250 | 29.750 | 36.750 | 50.625 | 65.625 | 69.000 |

| SIGN NO. | 3 |
|---|---|
| STATION | |
| ROADWAY | 45 |



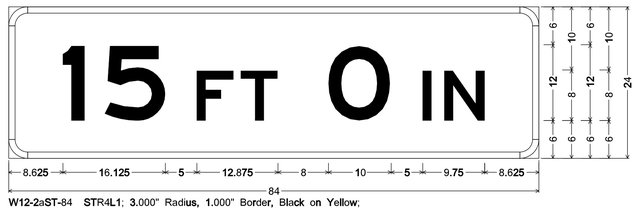

D15-1 STR2L3; 6.000" Radius, 2.000" Border, White on Green;
[SOUTH] E Mod; R3-5L_Decal;
Table of letter and object lefts.

| S | O | U | T | H |
|---|---|---|---|---|
| 15.750 | 25.500 | 34.250 | 42.375 | 49.875 |

| 7.500 | 40.500 |
|---|---|

| 21.000 |
|---|

| SIGN NO. | 4 |
|---|---|
| STATION | |
| ROADWAY | 45 |




W12-2aST-84 STR4L1; 3.000" Radius, 1.000" Border, Black on Yellow;
[15 FT 0 IN] E;
Table of letter and object lefts.

| 1 | 5 | F | T | O | I | N |
|---|---|---|---|---|---|---|
| 8.625 | 15.250 | 29.750 | 36.750 | 50.625 | 65.625 | 69.000 |

NOTE: SEE PLAN SHEET 6 FOR LOCATION

SIGNING
SHEET 1 OF 1

D-31

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| KC | 72 |

COUNTY
PLATTE

JOB NO.
J4I2374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|---|---|


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

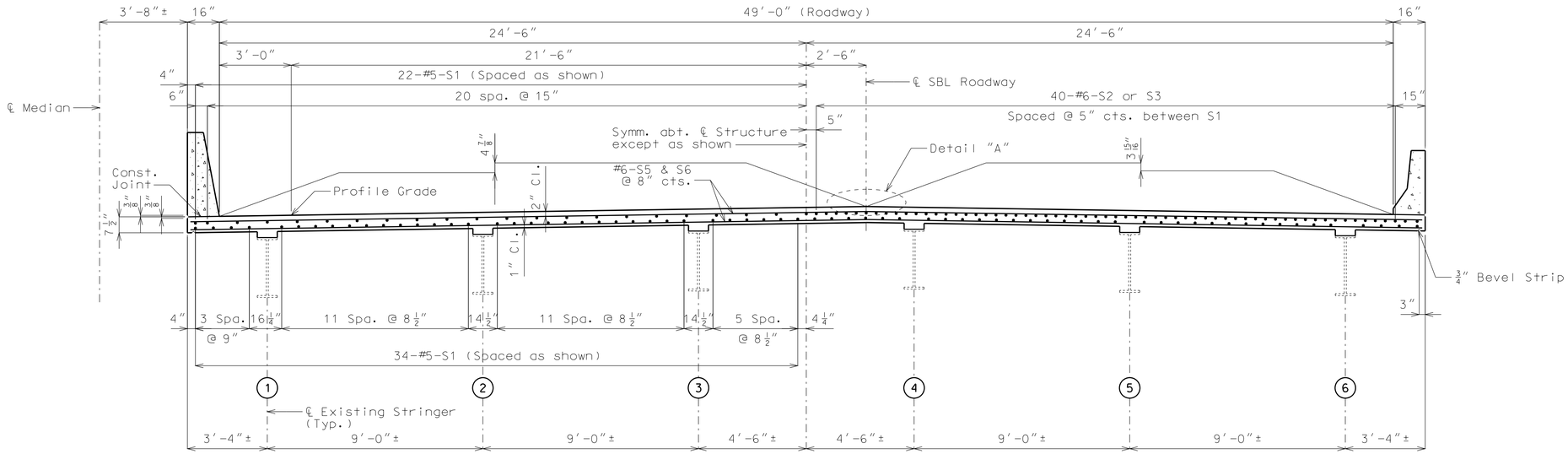

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

SEC/SUR 20 & 29 TWP 51N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REDECK EXISTING (52'-77'-48') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (34°29' L.A.)




HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition Standard Specifications
Load Factor Design
Seismic Performance Category A

Design Loading:
HS20-44 (1961 & New Construction)
12#/sq. ft. Future Wearing Surface
Military 24,000# Tandem Axle
Earth - 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.
Fatigue Stress - Case I

Design Unit Stresses:

| | |
|---|---|
| Class B-1 Concrete (Barrier Curbs) | f'c = 4,000 psi |
| Class B-2 Concrete (Superstructure, except Barrier Curbs) | f'c = 4,000 psi |
| Reinforcing Steel (Grade 60) | fy = 60,000 psi |

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Miscellaneous:
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

Traffic shall be diverted onto structure No. A11595 during construction of A11594, see Roadway plans for traffic control.

### Estimated Quantities

| | Item | | Total |
|---|---|---|---|
| | Removal of Existing Bridge Decks | sq. foot | 9400 |
| | Bridge Approach Slab (Bridge) | sq. yard | 304 |
| | Slab on Steel | sq. yard | 1043 |
| ✳ | Safety Barrier Curb | linear foot | 199 |
| ✳ | Barrier Curb (Type D) | linear foot | 181 |
| | Median Barrier Curb Transition | linear foot | 24 |
| | Fabricated Sign Support Brackets | lump sum | 1 |
| | Shear Connectors | each | 1296 |

✳ Safety Barrier Curb & Barrier Curb (Type D) shall be cast-in-place option or slip-form option.

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

### Estimated Quantities for Slab on Steel

| Item | | Total |
|---|---|---|
| Class B-2 Concrete | cu. yard | 230.6 |
| Reinforcing Steel (Epoxy Coated) | pound | 77,480 |

The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard from end of slab to end of slab and the overall width shown in the Typical Section Thru Slab. Payment for conventional forms or optional stay-in-place forms, all concrete and coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

Slab shall be cast-in-place with conventional forming or stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

For optional Stay-In-Place Form Details, see Sheet No. 2.




DETAIL "A"

### REQUIRED LAP LENGTH FOR BAR SPLICES ✳✳

| Bar Size | Splice Length |
|---|---|
| 4 | 2'-7" |
| 5 | 3'-3" |
| 6 | 3'-10" |
| 7 | 4'-11" |

✳✳ Unless otherwise shown.

### TABLE SHOWING S2 & S3 BAR LENGTHS

| Int. Bent No. 2 | | Int. Bent No. 3 | |
|---|---|---|---|
| Span 1 | Span 2 | Span 2 | Span 3 |
| 23'-3" | 20'-9" | 20'-9" | 23'-0" |

## REPAIRS TO BRIDGE: I-29 SBL OVER RTE 45

STATE ROAD FROM RTE. 152 TO RTE. I-635
ABOUT 2 MILES N.W. OF RTE. I-635
STA. 828+02.28± (Match Existing)

| |
|---|
| STD. 609.00 |
| STD. 617.10 |
| STD. 706.35 |

Designed May 2013
Detailed June 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



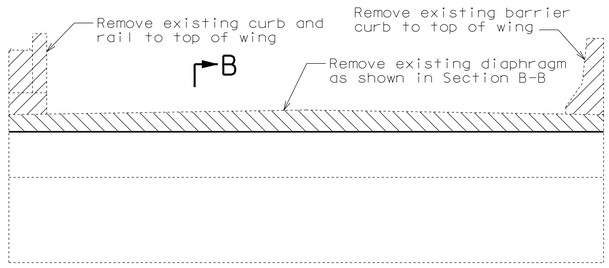
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11594

DESCRIPTION | DATE

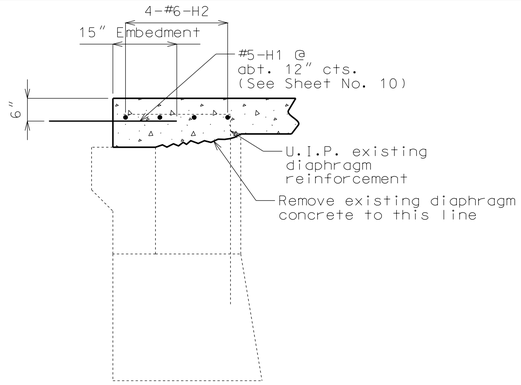
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

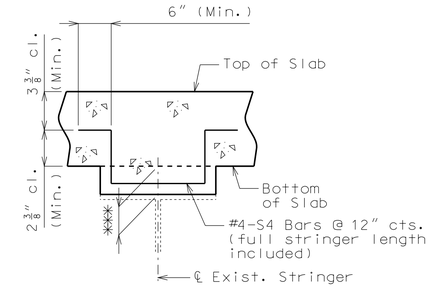



## DETAILS OF CONCRETE REMOVAL @ END BENTS

Note:
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Decks.




## SECTION B-B



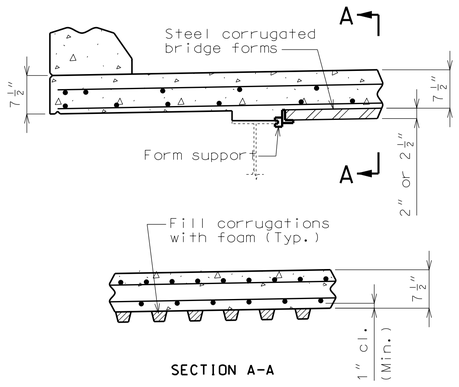

## SECTION THRU EXISTING STRINGER SHOWING HAIRPIN BARS

(Shear connectors not shown for clarity)

Note:

Cost of furnishing and installing epoxy coated hairpin bars will be considered completely covered by the contract unit price for Slab on Steel.

*** For Haunch greater than 3", use hairpin bars.




SECTION A-A

## OPTIONAL STAY-IN-PLACE FORM DETAILS

Notes:
Corrugated steel bridge deck forms, supports closure elements and accessories shall be in accordance with grade requirement and coating designation G165 of ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

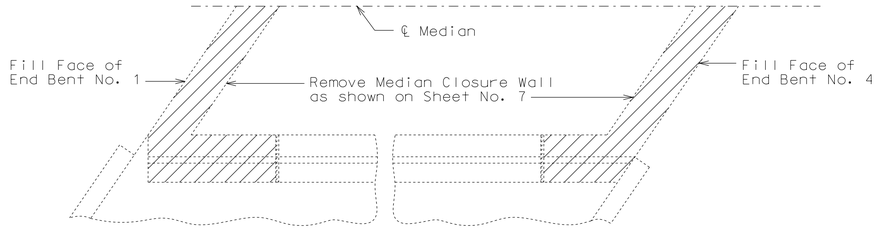
Form sheets shall not rest directly on the top of girders, stringers or floorbeams flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Welding on or drilling holes in the flanges of the girders, stringers or floorbeams will not be permitted. All steel fabrication and construction shall be in accordance with Sec's 1080 and 712. MoDOT certified field welders will not be required for welding of the form supports.

The contractor shall provide temporary bracing as necessary to prevent girders from rotating during slab pour. The cost for temporary bracing shall be considered completely covered by the contract unit price for Slab on Steel.

Slab shall be poured upgrade from end to end at a minimum rate of 28 cu. yd./ hr. (with retarder) or 46 cu. yd./hr. (without retarder).

Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

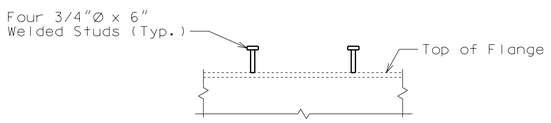
Slab is to be considered at a uniform depth as shown on the plans. Haunching will vary.



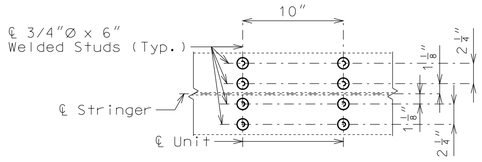

## PART PLAN SHOWING MEDIAN CLOSURE WALL REMOVAL

Note:
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Decks.

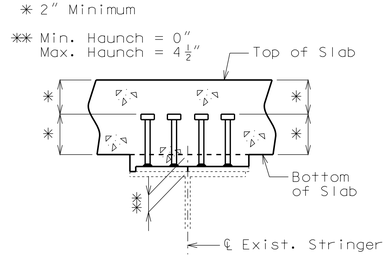
Deflection Note:
The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and may be adjusted based on the difference between the new and existing dead load weights.




ELEVATION

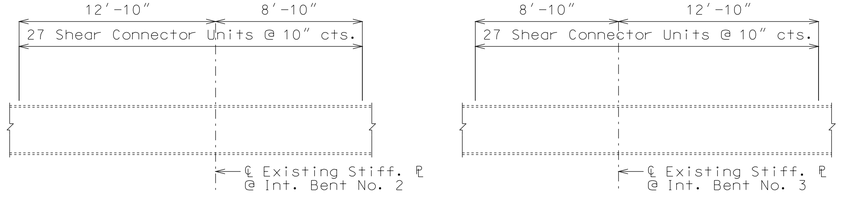



PLAN OF SHEAR CONN. (4 PER UNIT)




HALF SECTION THRU 10" COVER ℄ HALF SECTION THRU 13" COVER ℄

## SECTION THRU EXIST. STRINGER SHOWING SHEAR CONNECTORS




## PART ELEVATION OF STRINGER SHOWING SHEAR CONNECTOR SPACING

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DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11594

DESCRIPTION | DATE

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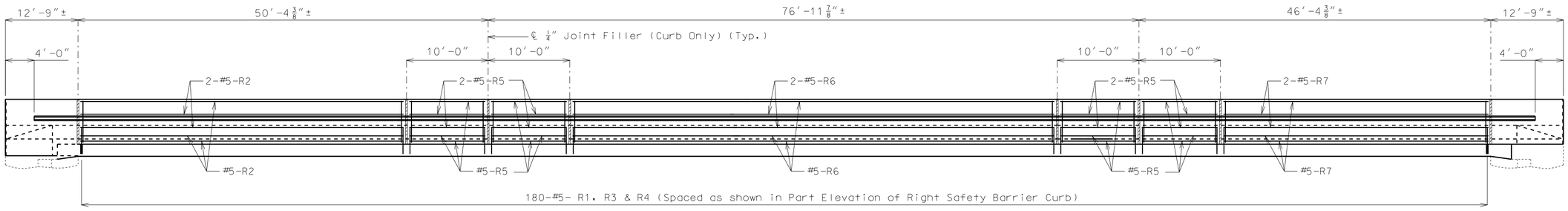
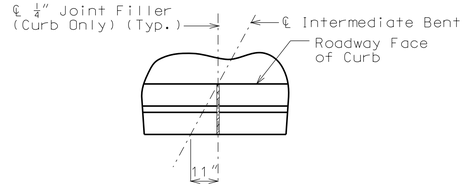
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

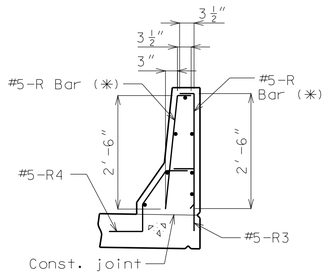



## ELEVATION OF RIGHT SAFETY BARRIER CURB

Note: Longitudinal dimensions are horizontal.

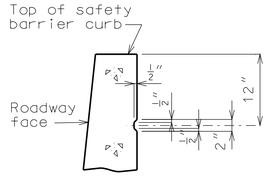



## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

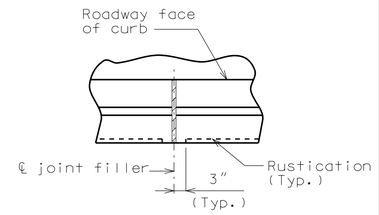



## R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## PART SECTION SHOWING RUSTICATION DETAILS




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

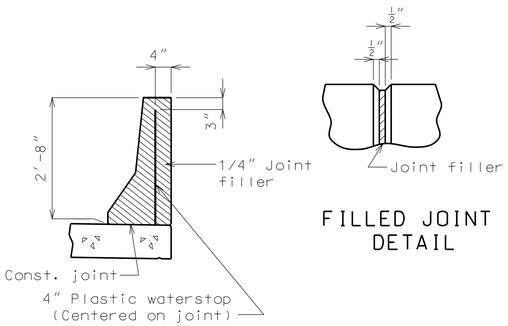
All exposed edges of safety barrier curb shall have either a 1/2″ radius or a 3/8″ bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb."



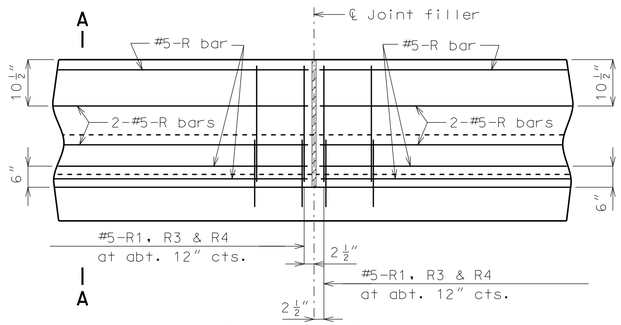

## FILLED JOINT DETAIL

## DETAILS OF PLASTIC WATERSTOP

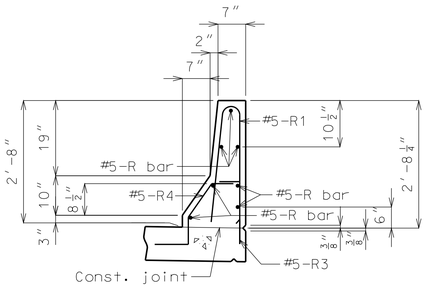
Notes:

Plastic waterstop shall be placed in all safety barrier curb filled joints.

Cost of plastic waterstop, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.




## PART ELEVATION OF RIGHT SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.28 sq. ft.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013

ROUTE I-29 | STATE MO

DISTRICT BR | SHEET NO. 3

COUNTY PLATTE

JOB NO. J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A11594

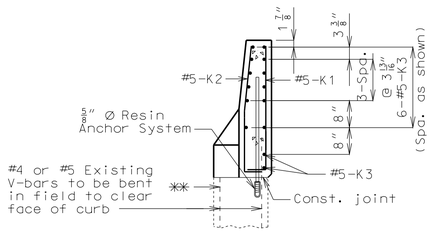
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DATE | DESCRIPTION

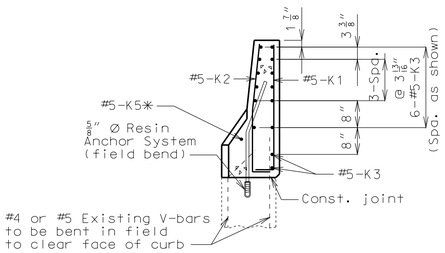
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed June 2013
Checked Aug. 2013

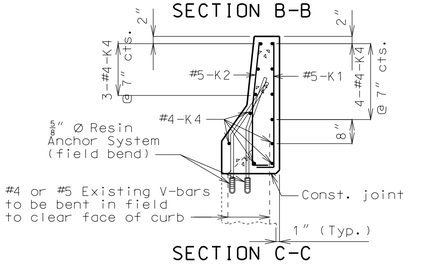
Note: This drawing is not to scale. Follow dimensions.



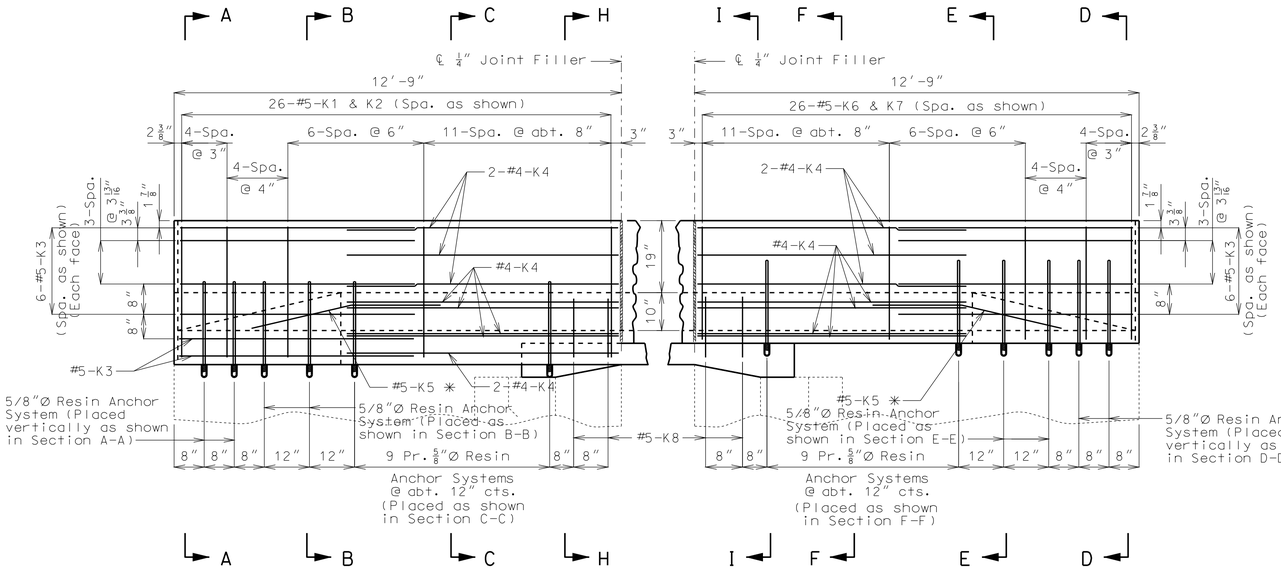

SECTION A-A




SECTION B-B

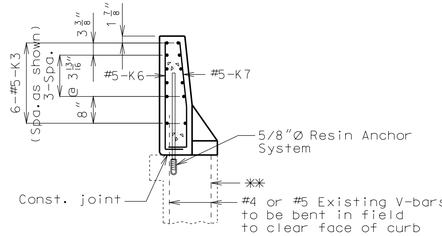



SECTION C-C

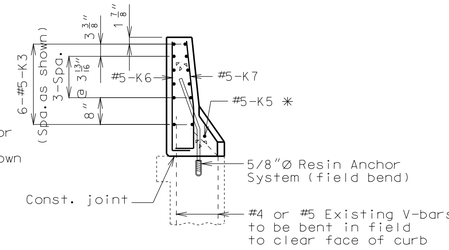



ELEVATION
(End Bent No. 1)

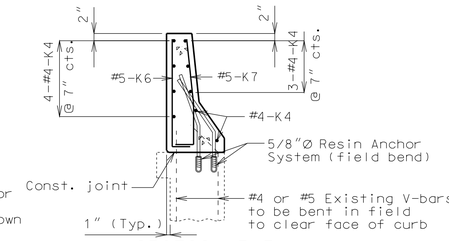
ELEVATION
(End Bent No. 4)



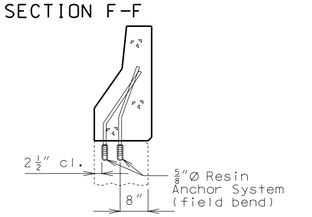

SECTION D-D




SECTION E-E



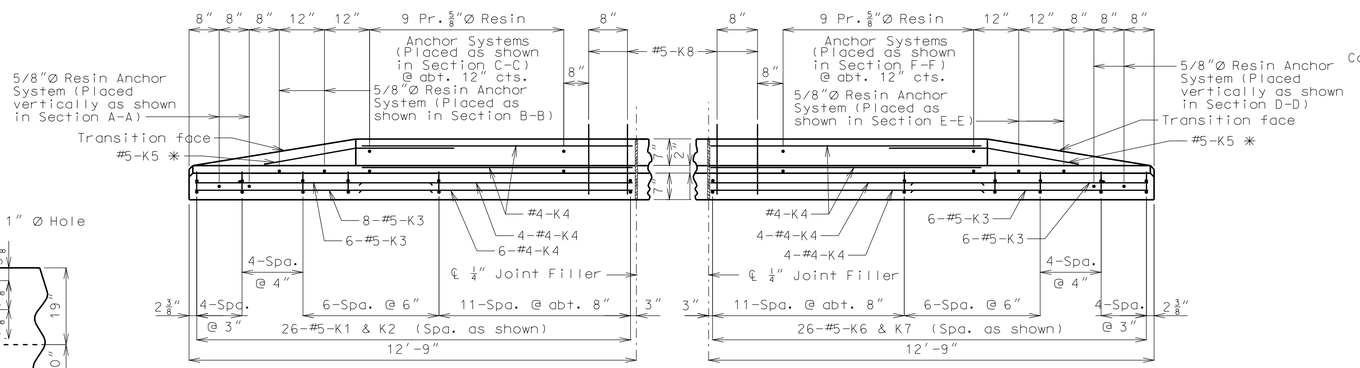

SECTION F-F




ANCHOR SYSTEMS AT SECTIONS C-C & F-F
(Section C-C shown)

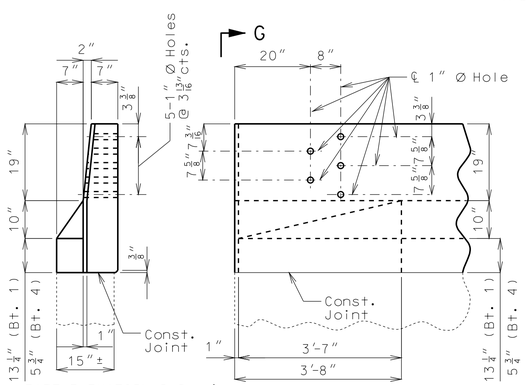
✱ Fit bar to follow transistion face of curb.

✱✱ Existing reinforcement which cannot be bent into the new barrier curb transition shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.

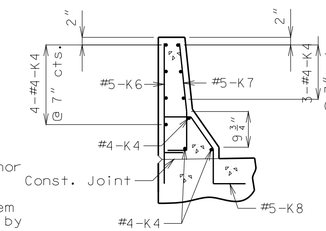



PLAN
(End Bent No. 1)

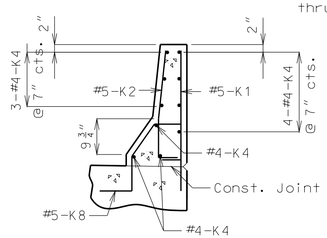
PLAN
(End Bent No. 4)




DETAILS OF GUARD RAIL ATTACHMENT

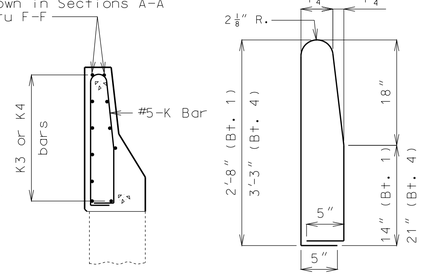



SECTION I-I




SECTION H-H

The top two K3 or K4 bars shall be kept with position close to those shown in Sections A-A thru F-F




K1-K2 AND K6-K7 BAR PERMISSIBLE ALTERNATE SHAPE (✱✱✱)

(✱✱✱) The K1 and K2 bar combination and the K6 and K7 combination may be furnished as one bar as shown, at the contractor's option.

Notes:
Rustication not shown for clarity.

Use a minimum lap of 2'-0" between K3 and K4 bars.

44 - ⅝"Ø Resin Anchors required (length = 2'-3")

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb."

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

# DETAILS OF RIGHT SAFETY BARRIER CURB AT END BENTS

Detailed June 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



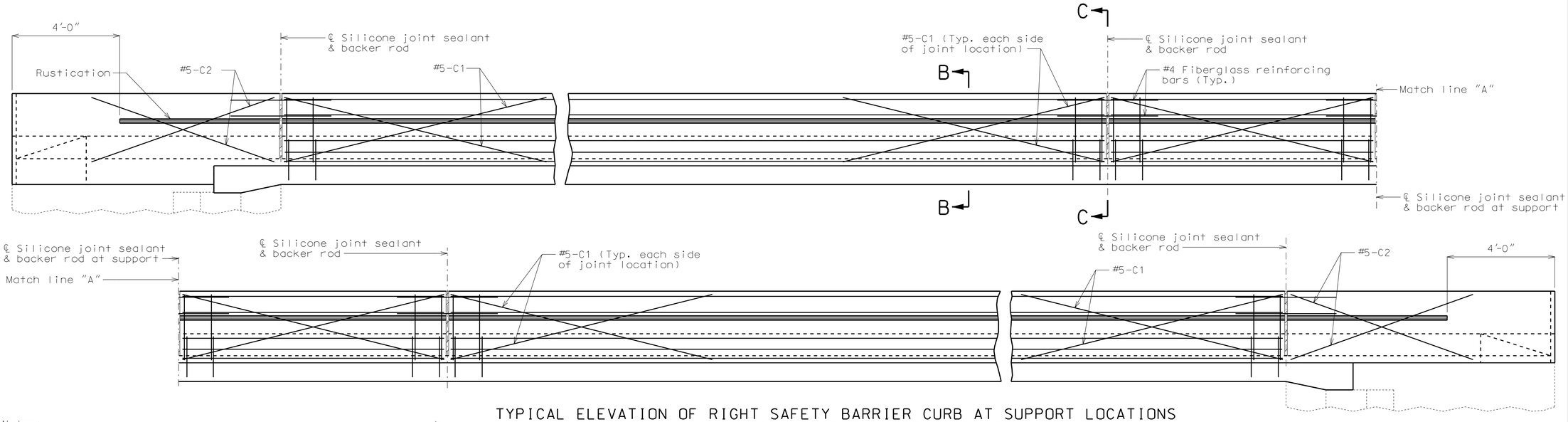


DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11594

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

REV.




## TYPICAL ELEVATION OF RIGHT SAFETY BARRIER CURB AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

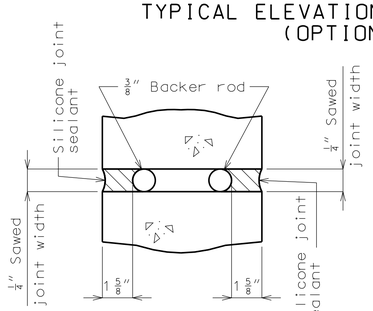
Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.




SECTION A-A

Notes:

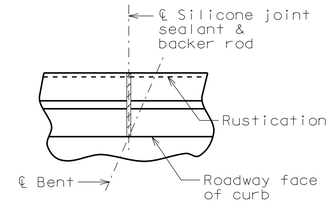
Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Plastic waterstop shall not be used with slip-form option.

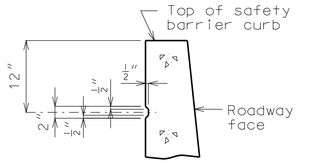
C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".




PART PLAN SHOWING SAFETY BARRIER CURB JOINT

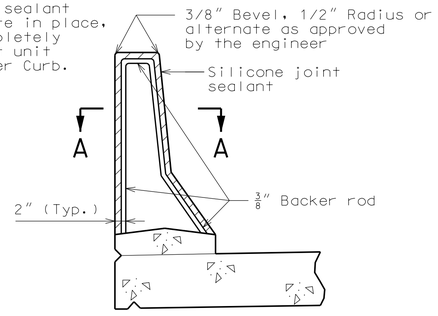



PART SECTION SHOWING RUSTICATION DETAILS

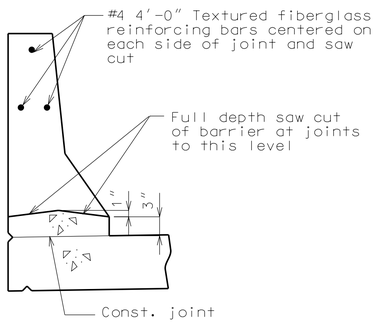
RUSTICATION DETAIL

Note:

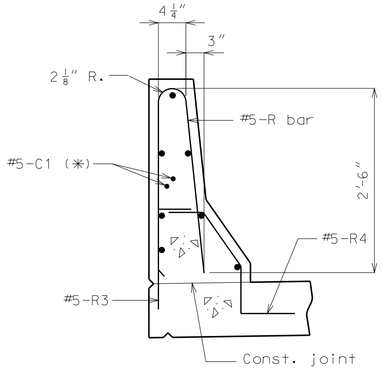
Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.




SECTION THRU JOINT




PART SECTION C-C




PART SECTION B-B

Note:

(✳) Each side of joint location.

# OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

Detailed June 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11594

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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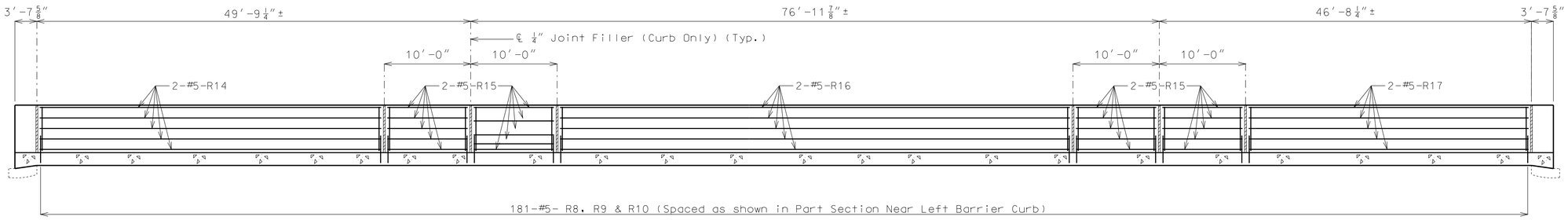
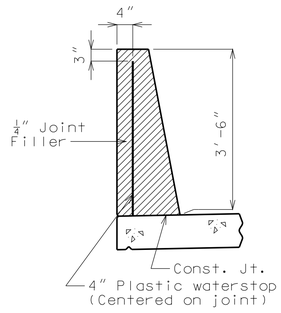



## SECTION NEAR LEFT BARRIER CURB (TYPE D)

Note: Longitudinal dimensions are horizontal.

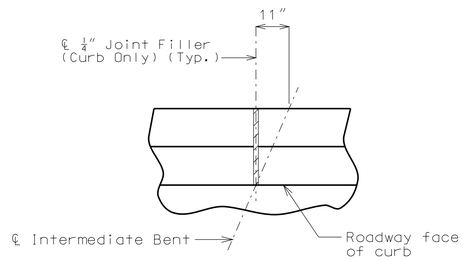



## DETAILS OF PLASTIC WATERSTOP

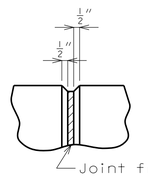
Notes:

Plastic waterstop shall be placed in all Barrier Curb (Type D) filled joints.

Cost of plastic waterstop, complete-in-place, will be considered completely covered by the contract unit price for Barrier Curb (Type D).




## PART PLAN SHOWING BARRIER CURB (TYPE D) JOINT




## FILLED JOINT DETAIL

Notes:

Top of barrier curb (Type D) shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of barrier curb (Type D) shall have either a 1/2″ radius or a 3/4″ bevel, unless otherwise noted.

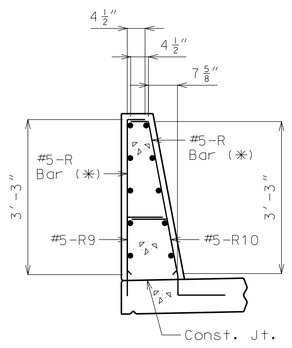
Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for barrier curb (Type D) per linear foot.

Concrete in the barrier curb (Type D) shall be Class B-1.

Measurement of barrier curb (Type D) is to the nearest linear foot for each structure, measured along the outside top of slab from end of curb to end of curb.

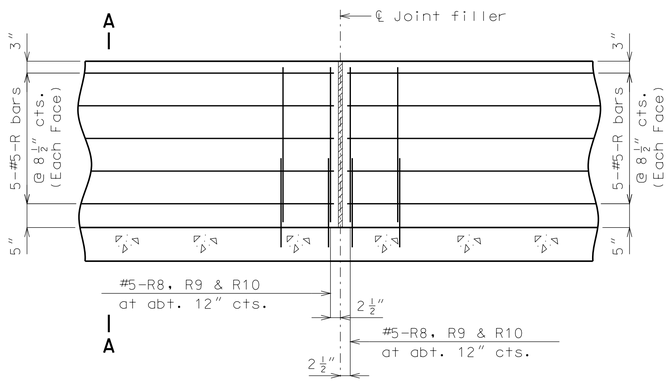
Concrete traffic barrier delineators shall be placed on top of the barrier curb (Type D) as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Barrier Curb (Type D)".

Note: For details of Median Closure Walls at End Bents, see Sheet No. 7.

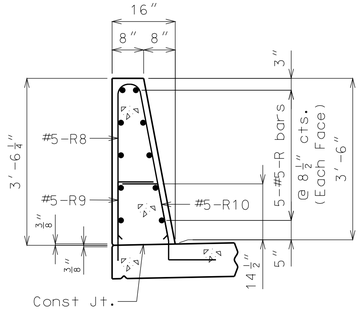



## R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) The R8 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## PART SECTION NEAR LEFT BARRIER CURB (TYPE D) (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal barrier curb (Type D) bars.

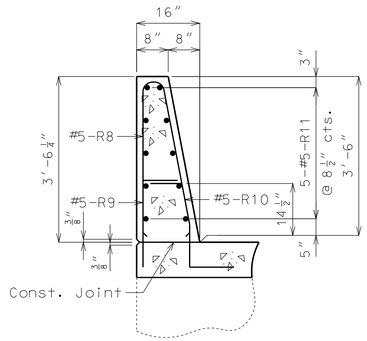
The cross-sectional area above the slab = 3.52 sq. ft.



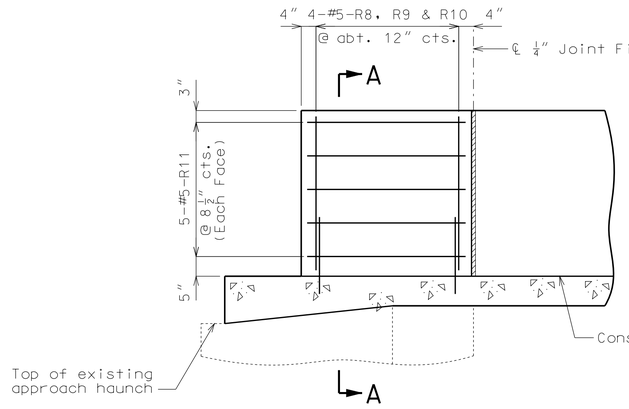
DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11594

DESCRIPTION | DATE

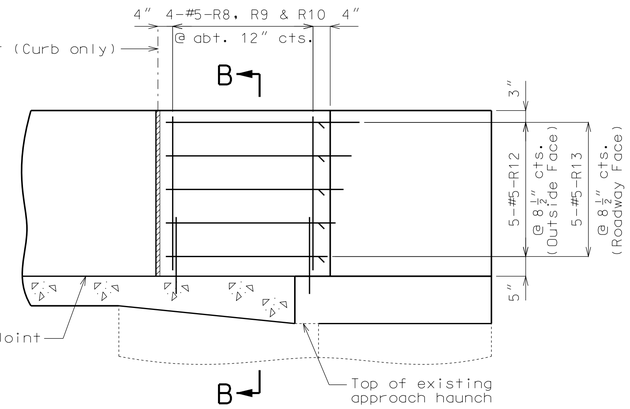
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



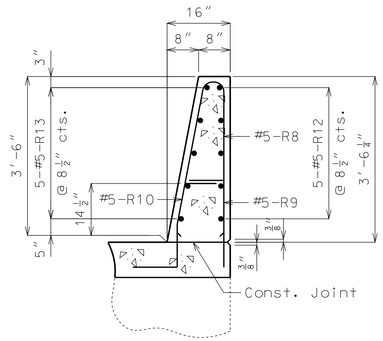

SECTION A-A




ELEVATION

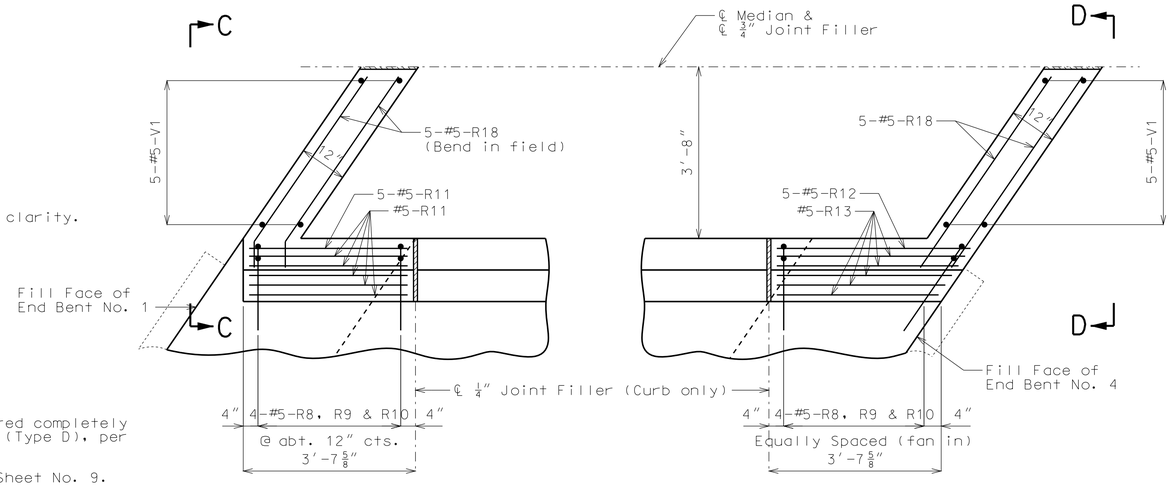



ELEVATION




SECTION B-B

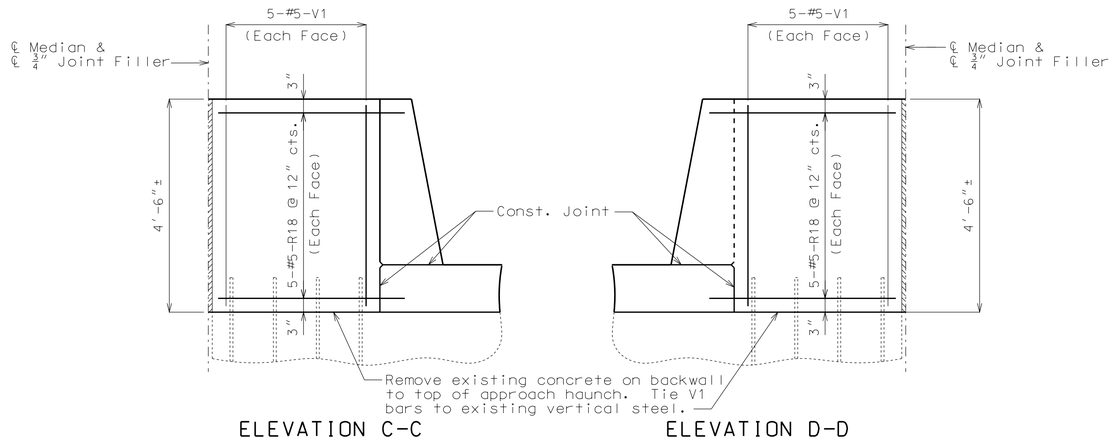
Note:
Median Barrier Curb Transition not shown for clarity.




PLAN PLAN

Notes:
The cost of the Median Closure Wall will be considered completely covered by the contract unit price for Barrier Curb (Type D), per linear foot.

For details of Median Barrier Curb Transition, see Sheet No. 9.




ELEVATION C-C ELEVATION D-D

Note: Curb bars not shown for clarity.

# DETAILS OF MEDIAN CLOSURE WALL AT END BENTS

Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11594

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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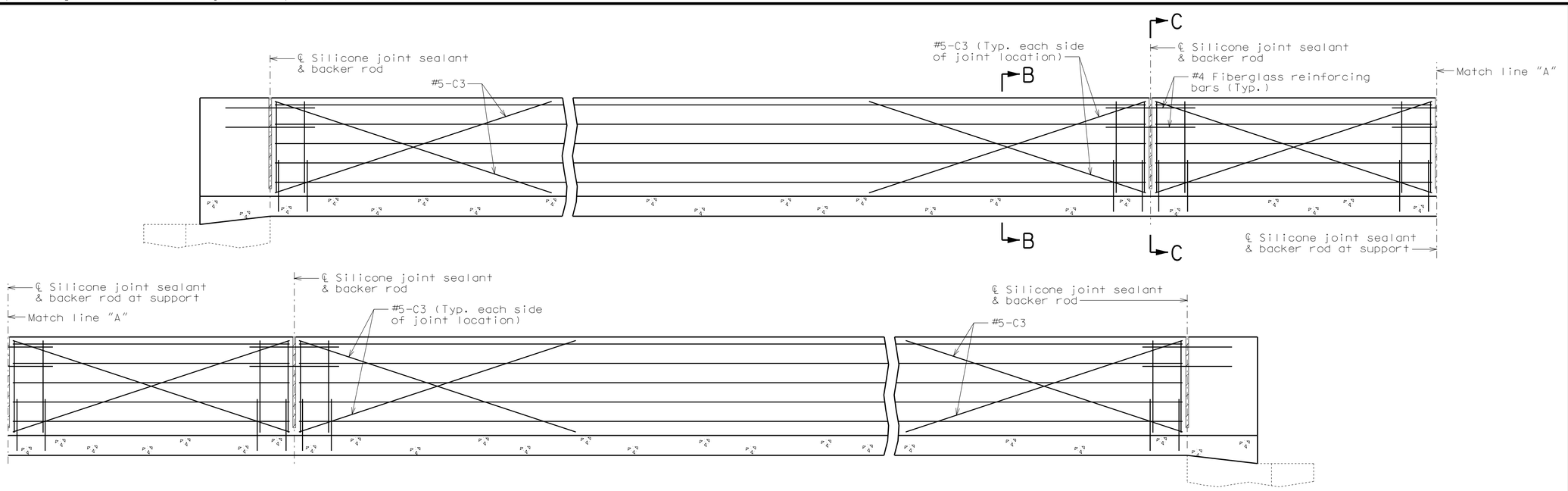



Notes:

Top of barrier curb (Type D) shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for barrier curb (Type D) per linear foot.

Concrete in the barrier curb (Type D) shall be Class B-1.

Measurement of barrier curb (Type D) is to the nearest linear foot for each structure, measured along the outside top of slab from end of curb to end of curb.

## TYPICAL SECTION NEAR LEFT BARRIER CURB (TYPE D) AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE BARRIER CURB (TYPE D))

Notes:

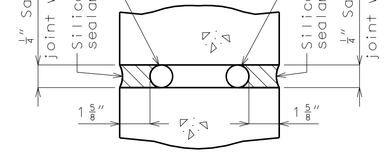
Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Plastic waterstop shall not be used with slip-form option.

C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge barrier curb (Type D).

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

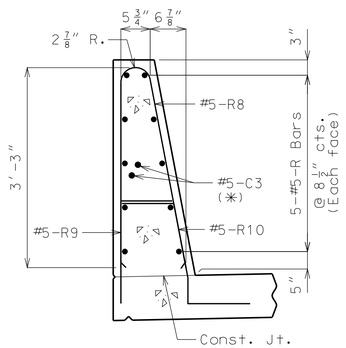
Concrete traffic barrier delineators shall be placed on top of the barrier curb (Type D) as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Barrier Curb (Type D)".




SECTION A-A

Note:

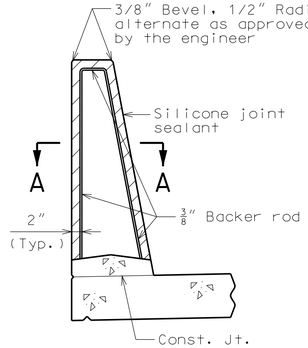
Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Barrier Curb (Type D).



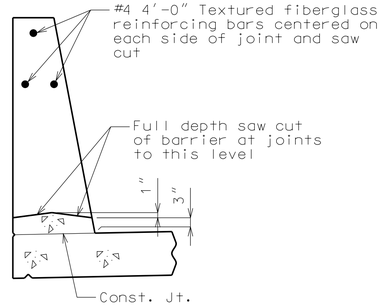

PART SECTION B-B

Notes:

(*) Each side of joint location.




SECTION THRU JOINT




PART SECTION C-C

# OPTIONAL SLIP-FORM BRIDGE BARRIER CURB (TYPE D)

Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 8
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11594

| DESCRIPTION | DATE |
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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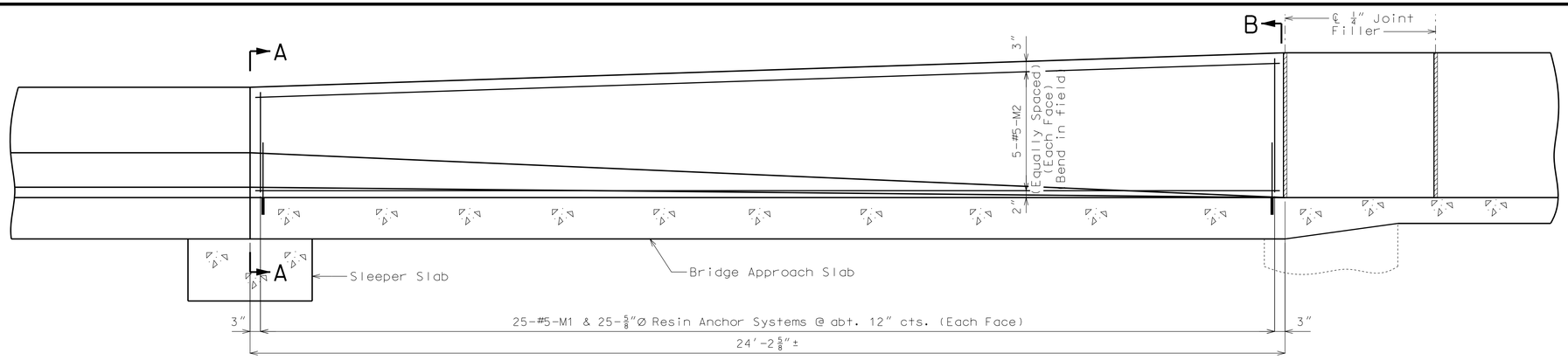
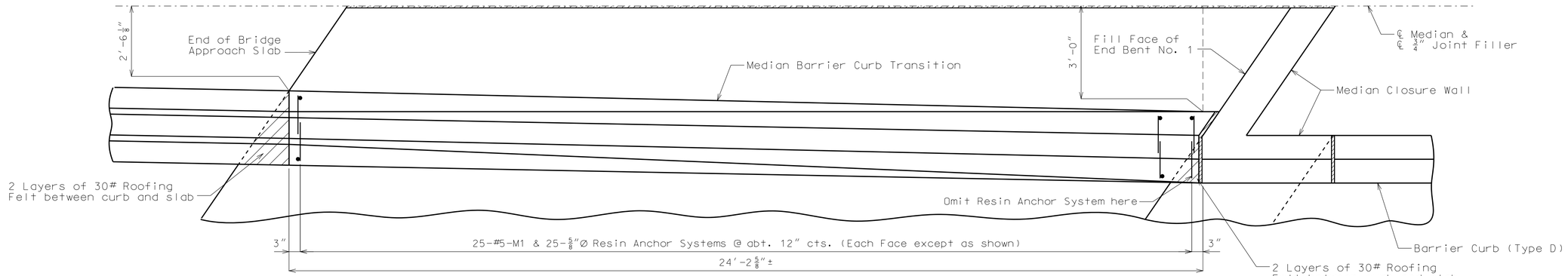
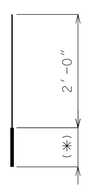



ELEVATION



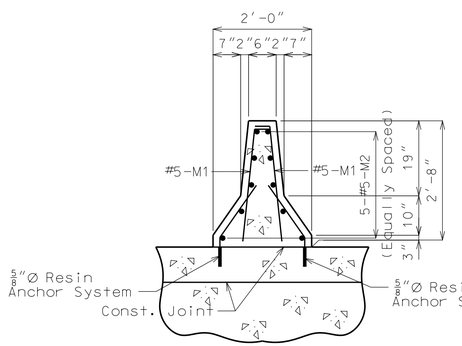

PLAN

#5-M2 bars not shown for clarity.

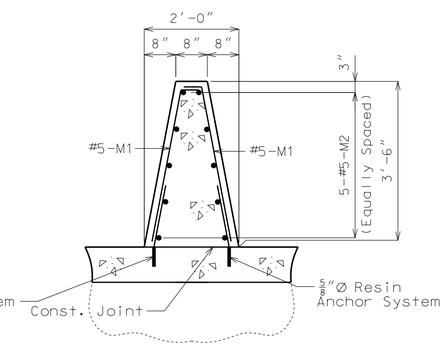



DETAIL OF RESIN ANCHOR SYSTEM

(49 required)
(Bend in field)




SECTION A-A




SECTION B-B

Notes:

Concrete in the Median Barrier Curb Transition shall be Class B-1.

Slip-forming is not allowed on transition. Transition shall be cast-in-place.

The contractor shall use one of the qualified resin anchor systems in accordance with 1039.

Cost of furnishing and installing the resin anchor system, complete in place, will be considered completely covered by the contract unit price for Median Barrier Curb Transition.

(*) The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the ⅝" Ø threaded rod.

All exposed edges of barrier curb (Type D) and median shall shall have either a ½" radius or a ⅜" bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be completely covered by the contract unit price for Median Barrier Curb Transition per linear foot.

Measurement of Median Barrier Curb Transition is to the nearest linear foot for each structure, measured along the outside top of slab from end of approach slab to end of slab.

Concrete traffic barrier delineators shall be placed on top of the Median Barrier Curb Transition as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Median Barrier Curb Transition".

For details of Median Closure Wall, see Sheet No. 7.

For details of Barrier Curb (Type D), see Sheet No. 6.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 9 |

COUNTY: PLATTE

JOB NO.: J412374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A11594

| DATE | DESCRIPTION |
|---|---|
| | |

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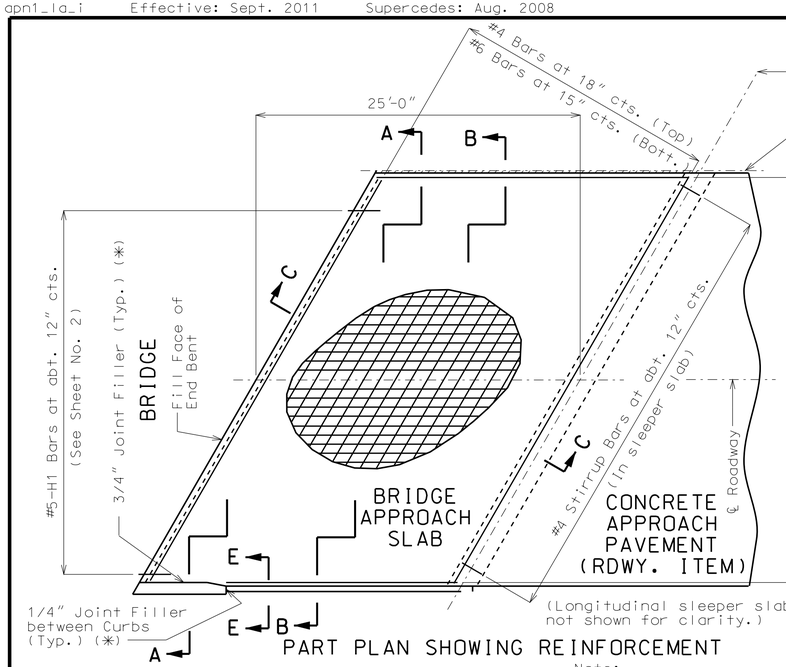
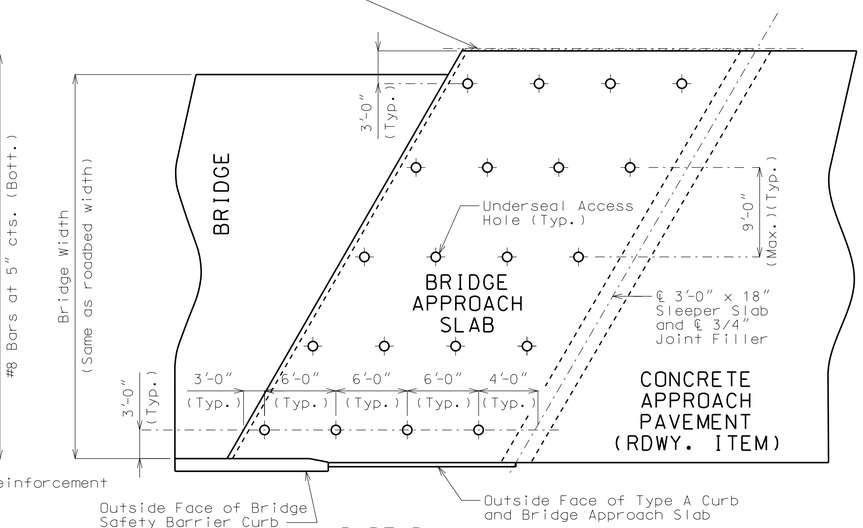
# DETAILS OF MEDIAN BARRIER CURB TRANSITION ON APPROACH SLAB (BENT NO. 1 ON A11594)

Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



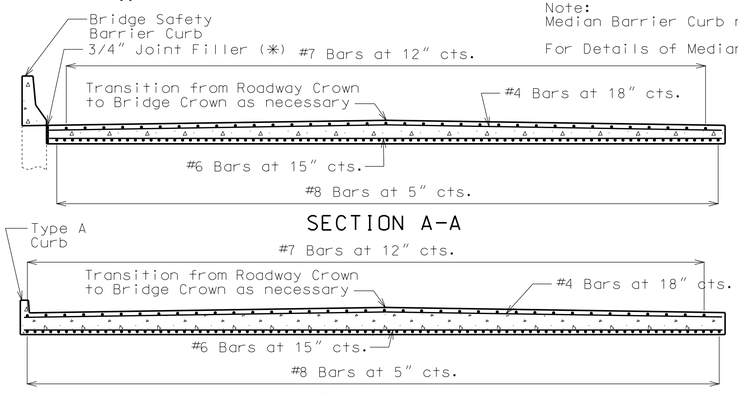

PART PLAN SHOWING REINFORCEMENT



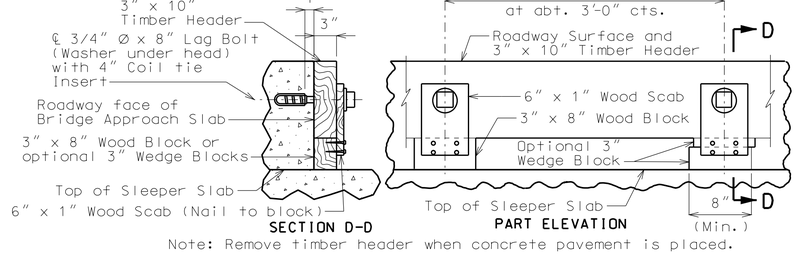

PART PLAN
(SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)

Note:
Median Barrier Curb not thown for clarity.

For Details of Median Barrier Curb Transition, see Sheet No. 9.

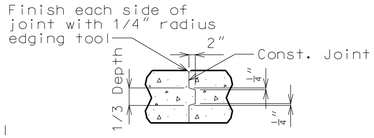



Note: With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.

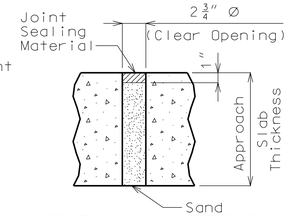



Note: Remove timber header when concrete pavement is placed.

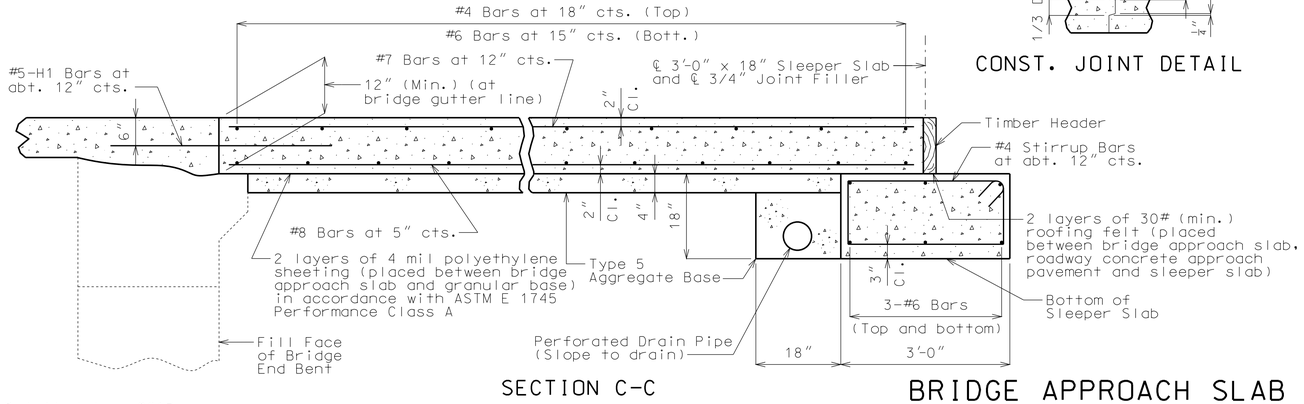
DETAILS OF TIMBER HEADER




CONST. JOINT DETAIL

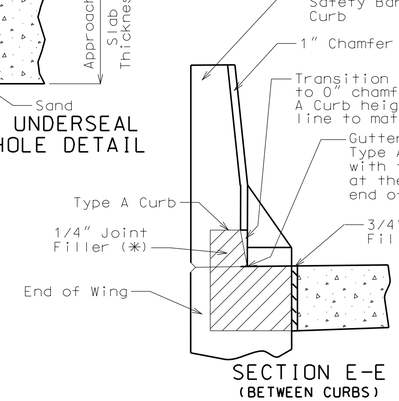



TYPICAL UNDERSEAL ACCESS HOLE DETAIL

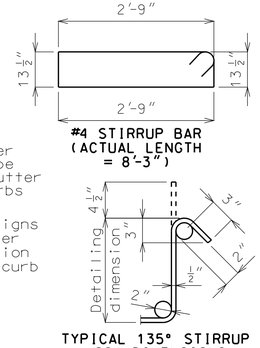



SECTION C-C

BRIDGE APPROACH SLAB




SECTION E-E
(BETWEEN CURBS)




TYPICAL 135° STIRRUP HOOK DIMENSIONS BENDING DIAGRAM

Note:
Nominal lengths are based on out to out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).

## GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with Fy = 60,000 psi.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 2'-2", respectively.

Mechanical bar splices shall be in accordance with Sec 706.

(*) Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

The contractor shall pour and satisfactorily finish the bridge or semi-deep slab before pouring the bridge approach slabs.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge or semi-deep slab.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Bridge) per square yard.

For Concrete Approach Pavement details, see roadway plans.

See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired in accordance with Sec 710.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/9/2013
ROUTE: I-29 | STATE: MO
DISTRICT: BR | SHEET NO.: 10
COUNTY: PLATTE
JOB NO.: J412374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A11594

| REV. | DESCRIPTION | DATE |
|---|---|---|
| | | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed June 2013
Checked Aug. 2013

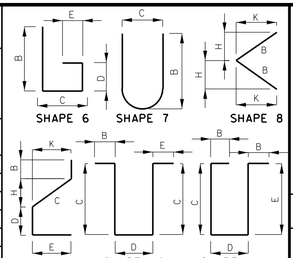
Note: This drawing is not to scale. Follow dimensions.

# BILL OF REINFORCING STEEL

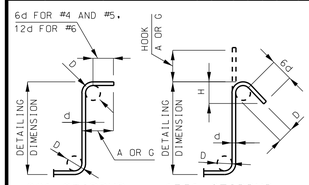
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. IN. | C FT. IN. | D FT. IN. | E FT. IN. | F FT. IN. | H FT. IN. | K FT. IN. | NOMINAL LENGTH FT. IN. | ACTUAL LENGTH FT. IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SUPERSTR | | | | | | | | | | | | | | | | |
| | | | SLAB | | | | | | | | | | | | | | | | |
| 98 | 5 | H1 | DIAPHRAGM | E | 20 | | | | | 2 6.000 | | | | | | | 2 6 | 2 6 | 256 |
| 18 | 6 | H2 | DIAPHRAGM | E | 20 | | | | | 33 2.000 | | | | | | | 33 2 | 33 2 | 897 |
| 444 | 5 | S1 | SLAB | E | 20 | | | | | 47 10.000 | | | | | | | 47 10 | 47 10 | 22151 |
| 80 | 6 | S2 | SLAB | E | 20 | | | | | 44 0.000 | | | | | | | 44 0 | 44 0 | 5287 |
| 80 | 6 | S3 | SLAB | E | 20 | | | | | 43 9.000 | | | | | | | 43 9 | 43 9 | 5257 |
| 1062 | 4 | S4 | SLAB HAUNCH | E | 10 | S | | | | 6.000 | 5.500 | 8.500 | 6.000 | | | | 2 8 | 2 4 | 1655 |
| 440 | 6 | S5 | SLAB | E | 20 | | | | | 51 5.000 | | | | | | | 51 5 | 51 5 | 33980 |
| 200 | 6 | S6 | SLAB | E | 20 | | | V | 4 | 2 10.000 | | | | | | | 2 10 | 2 10 | |
| | | | INCREMENT = | | | | | | | 50 5.000 | | | | | | | 50 5 | 50 5 | 7998 |
| | | | 11.625 INCH | | | | | | | | | | | | | | | | |
| | | | EXT. SAFETY | | | | | | | | | | | | | | | | |
| | | | BARRIER CURB | | | | | | | | | | | | | | | | |
| 26 | 5 | K1 | EXT. CURB | E | 19 | S | | | | 3 2.000 | 5.125 | | | | | | 3 7 | 3 6 | 95 |
| 26 | 5 | K2 | EXT. CURB | E | 14 | S | | | | 5.125 | 20.125 | 18.000 | | | 2.000 | 17.875 | 3 7 | 3 6 | 95 |
| 26 | 5 | K3 | EXT. CURB | E | 20 | | | | | 5 7.000 | | | | | | | 5 7 | 5 7 | 151 |
| 24 | 4 | K4 | EXT. CURB | E | 20 | | | | | 8 11.000 | | | | | | | 8 11 | 8 11 | 143 |
| 2 | 5 | K5 | EXT. CURB | E | 8 | | | | | 2 2.125 | | | | | 2 2.000 | 2.375 | 4 4 | 4 4 | 9 |
| 26 | 5 | K6 | EXT. CURB | E | 19 | S | | | | 2 7.750 | 5.125 | | | | | | 3 1 | 3 0 | 81 |
| 26 | 5 | K7 | EXT. CURB | E | 14 | S | | | | 5.125 | 13.875 | 18.000 | | | 2.000 | 17.875 | 3 1 | 3 0 | 81 |
| 4 | 5 | K8 | EXT. CURB | E | 27 | S | | | | 17.000 | 5.125 | 12.000 | 7.125 | 12.000 | 9.875 | 6.875 | 4 5 | 4 2 | 17 |
| | | | OPT.SLIPFORM | | | | | | | | | | | | | | | | |
| | | | EXT. CURB | | | | | | | | | | | | | | | | |
| 180 | 5 | R1 | EXT. CURB | E | 26 | | | | | 2 6.000 | 4.250 | 2 6.125 | | | 2 6.000 | 3.000 | 5 2 | 5 2 | 970 |
| 7 | 5 | R2 | EXT. CURB | E | 20 | | | | | 40 1.000 | | | | | | | 40 1 | 40 1 | 293 |
| 180 | 5 | R3 | EXT. CURB | E | 19 | S | | | | 17.000 | 6.000 | | | | | | 0 23 | 0 22 | 344 |
| 180 | 5 | R4 | EXT. CURB | E | 27 | S | | | | | 6.000 | 11.250 | 7.000 | 12.000 | 9.250 | 6.375 | 3 0 | 2 10 | 532 |
| 28 | 5 | R5 | EXT. CURB | E | 20 | | | | | 9 9.000 | | | | | | | 9 9 | 9 9 | 285 |
| 7 | 5 | R6 | EXT. CURB | E | 20 | | | | | 56 9.000 | | | | | | | 56 9 | 56 9 | 414 |
| 7 | 5 | R7 | EXT. CURB | E | 20 | | | | | 36 1.000 | | | | | | | 36 1 | 36 1 | 263 |
| | | | EXT. CURB | | | | | | | | | | | | | | | | |
| 20 | 5 | C1 | S/F EXT.CURB | E | 20 | | | | | 10 0.000 | | | | | | | 10 0 | 10 0 | 209 |
| 4 | 5 | C2 | S/F EXT.CURB | E | 20 | | | | | 9 2.000 | | | | | | | 9 2 | 9 2 | 38 |
| | | | INT. D CURB | | | | | | | | | | | | | | | | |
| 189 | 5 | R8 | INT. D CURB | E | 26 | | | | | 3 3.000 | 5.750 | 3 3.625 | | | 3 3.000 | 6.875 | 6 9 | 6 9 | 1331 |
| 189 | 5 | R9 | INT. D CURB | E | 19 | S | | | | 20.000 | 10.000 | | | | | | 2 6 | 2 5 | 476 |
| 189 | 5 | R10 | INT. D CURB | E | 27 | S | | | | | 10.000 | 15.250 | 6.000 | 12.000 | 15.000 | 3.000 | 3 7 | 3 5 | 674 |
| 10 | 5 | R11 | INT. D CURB | E | 20 | | | | | 3 4.000 | | | | | | | 3 4 | 3 4 | 35 |
| 5 | 5 | R12 | INT. D CURB | E | 20 | | | | | 4 2.000 | | | | | | | 4 2 | 4 2 | 22 |
| 5 | 5 | R13 | INT. D CURB | E | 20 | | | V | 1 | 3 6.000 | | | | | | | 3 6 | 3 6 | |
| | | | INCREMENT = | | | | | | | 4 0.000 | | | | | | | 4 0 | 4 0 | 20 |
| | | | 1.500 INCH | | | | | | | | | | | | | | | | |
| 10 | 5 | R14 | INT. D CURB | E | 20 | | | | | 39 6.000 | | | | | | | 39 6 | 39 6 | 412 |
| 40 | 5 | R15 | INT. D CURB | E | 20 | | | | | 9 9.000 | | | | | | | 9 9 | 9 9 | 407 |
| 10 | 5 | R16 | INT. D CURB | E | 20 | | | | | 56 9.000 | | | | | | | 56 9 | 56 9 | 592 |
| 10 | 5 | R17 | INT. D CURB | E | 20 | | | | | 36 5.000 | | | | | | | 36 5 | 36 5 | 380 |
| 20 | 5 | R18 | INT. D CURB | E | 20 | | | | | 4 10.000 | | | | | | | 4 10 | 4 10 | 101 |
| 20 | 5 | V1 | INT. D CURB | E | 20 | | | | | 4 3.000 | | | | | | | 4 3 | 4 3 | 89 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. IN. | C FT. IN. | D FT. IN. | E FT. IN. | F FT. IN. | H FT. IN. | K FT. IN. | NOMINAL LENGTH FT. IN. | ACTUAL LENGTH FT. IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |
| 20 | 5 | C3 | S/F D CURB | E | 20 | | | | | 10 3.000 | | | | | | | 10 3 | 10 3 | 214 |
| | | | MEDIAN BARR. | | | | | | | | | | | | | | | | |
| | | | CURB TRANS. | | | | | | | | | | | | | | | | |
| 50 | 5 | M1 | TRANSITION | E | 15 | S | | V | 2 | 2 5.125 | 3.000 | | | | 2 5.000 | 3.000 | 2 8 | 2 7 | |
| | | | INCREMENT = | | | | | | | 3 3.750 | 4.500 | | | | 3 3.000 | 7.500 | 3 8 | 3 7 | 161 |
| | | | 0.500 INCH | | | | | | | | | | | | | | | | |
| 12 | 5 | M2 | TRANSITION | E | 20 | | | | | 23 11.000 | | | | | | | 23 11 | 23 11 | 299 |
| | | | TOTALS | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | 1798 |
| | 5 | | | E | | | | | | | | | | | | | | | 31497 |
| | 6 | | | E | | | | | | | | | | | | | | | 53419 |
| | | | TOTAL | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | 86714 |
| | | | Slab on | | | | | | | | | | | | | | | | |
| | | | Girder | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | 1798 |
| | 5 | | | E | | | | | | | | | | | | | | | 31497 |
| | 6 | | | E | | | | | | | | | | | | | | | 53419 |
| | | | TOTAL | | | | | | | | | | | | | | | | 86714 |

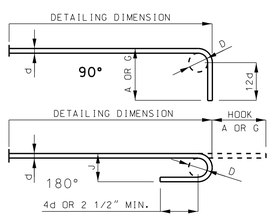



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK A OR G | 135° HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS | | 90° HOOKS |
| | | A OR G | J | A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #4-K4, #5-M2 & #6-H2 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11594

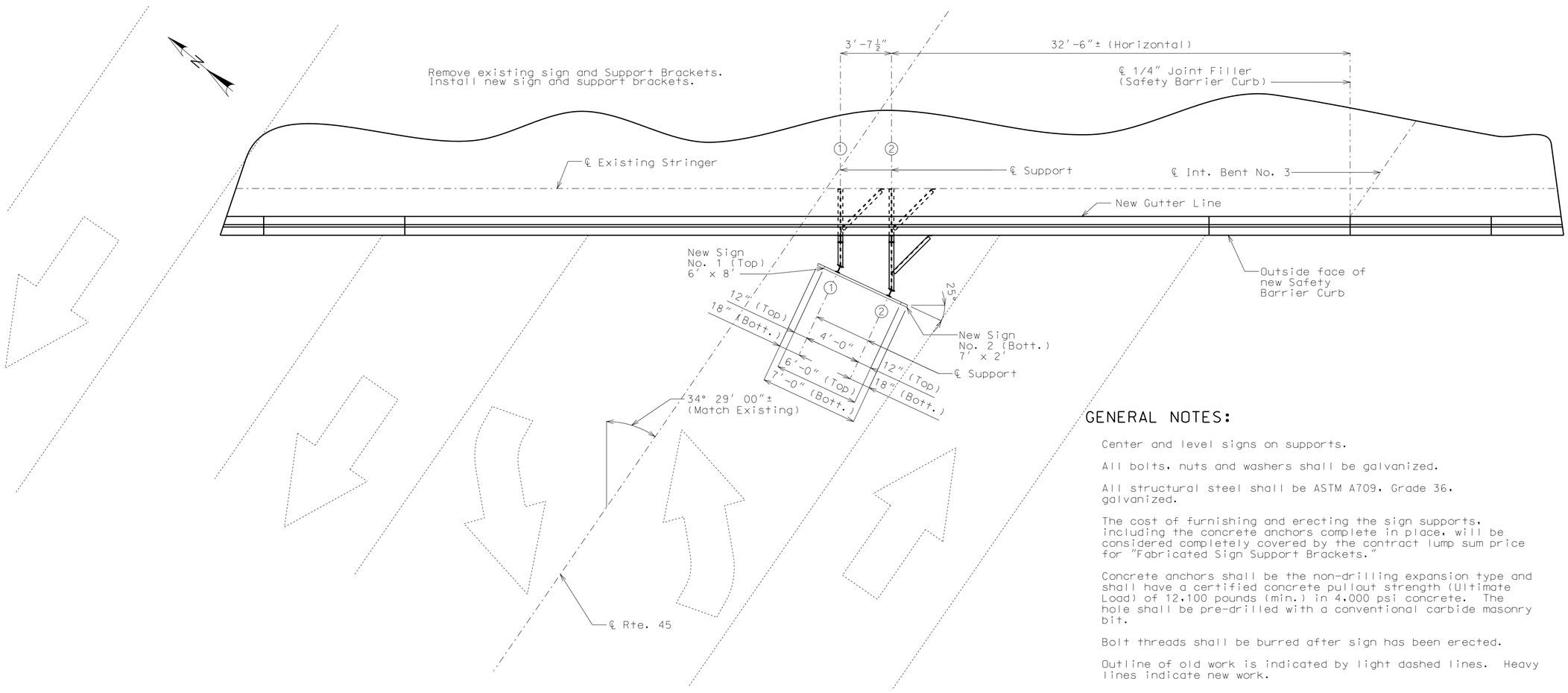
DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Detailed Sept. 2103
Checked Sept. 2013

Note: This drawing is not to scale. Follow dimensions.




PART PLAN SHOWING LOCATION OF SIGNS

Note:
For details of sign, see Sheet No. 13.

## GENERAL NOTES:

Center and level signs on supports.

All bolts, nuts and washers shall be galvanized.

All structural steel shall be ASTM A709, Grade 36, galvanized.

The cost of furnishing and erecting the sign supports, including the concrete anchors complete in place, will be considered completely covered by the contract lump sum price for "Fabricated Sign Support Brackets."

Concrete anchors shall be the non-drilling expansion type and shall have a certified concrete pullout strength (Ultimate Load) of 12,100 pounds (min.) in 4,000 psi concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.

Bolt threads shall be burred after sign has been erected.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering materials.

Shift sign support brackets to minimum extent necessary to allow for installation of anchors and bolts into structure and to clear construction joints and structural members.

Shift sign support brackets to minimum extent necessary to allow for installation of bolts through existing stringer web and to clear existing stiffeners.

Sign substrate shall be 12" extruded panels.

All steel surfaces exposed by relocating & field drilling operations shall be touched up with Gray Epoxy-Mastic Primer (non-aluminum) in accordance with Sec 1081. The surfaces of existing steel that will become faying surfaces for new connections shall be cleaned to a minimum of SSPC-SP-3 surface preparation and coated with one prime coat of Gray Epoxy-Mastic Primer (non-aluminum) in accordance with Sec 1081.

The cost of removing existing sign board and existing sign brackets will be considered completely covered by the contract unit price for "Removal of Existing Bridge Decks."

After sign relocation, resulting holes in remaining steel of bridge shall be filled with high strength galvanized bolts with washer under head and nut.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 12 |

COUNTY
PLATTE

JOB NO.
J412374

CONTRACT ID.

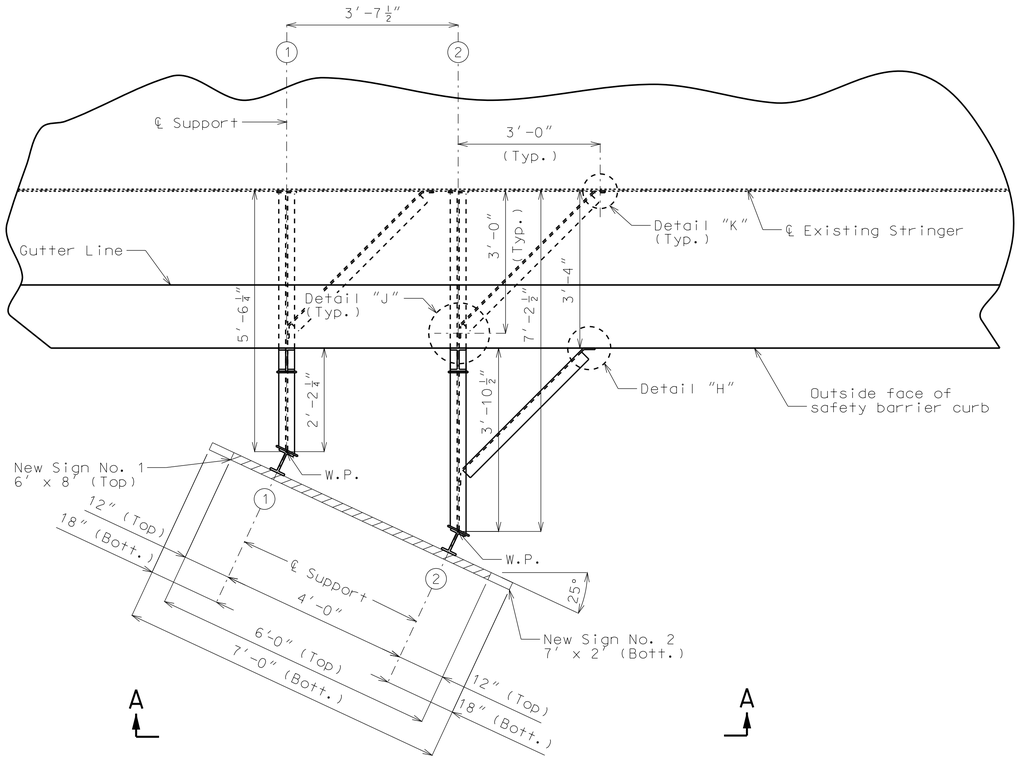
PROJECT NO.

BRIDGE NO.
A11594

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PART PLAN SHOWING DIMENSIONS

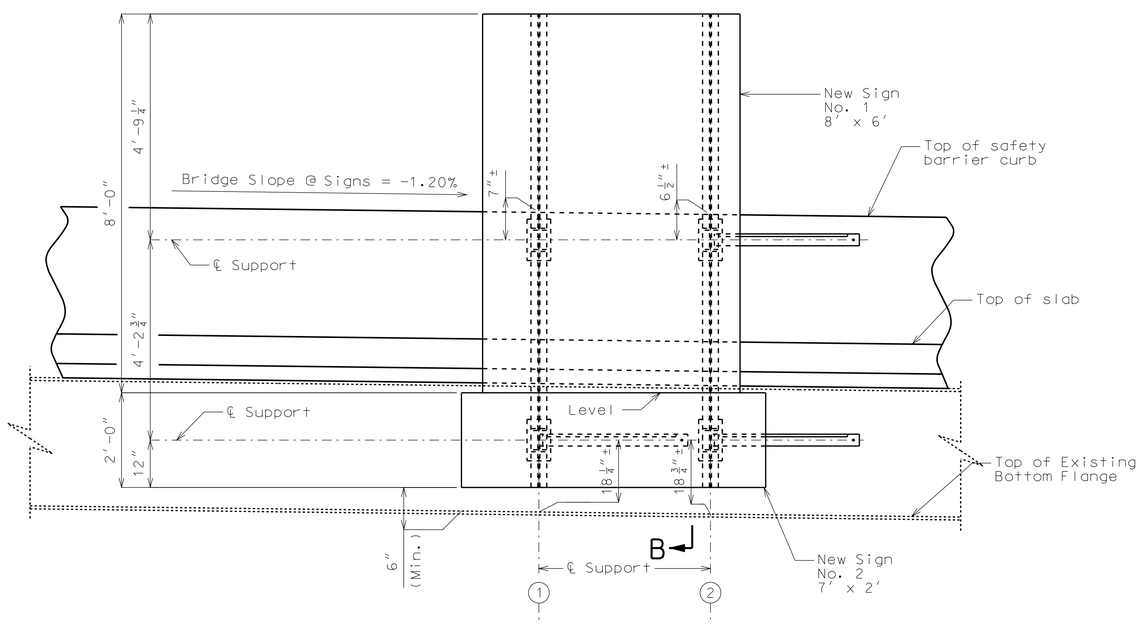
| Support | "A" | "B" | "C" | "D" |
|---|---|---|---|---|
| 1 | 18¼″ ± | 2′-2¼″ ± | 7″ ± | 5′-6¼″ ± |
| 2 | 18¾″ ± | 3′-10½″ ± | 6½″ ± | 7′-2½″ ± |

Notes:

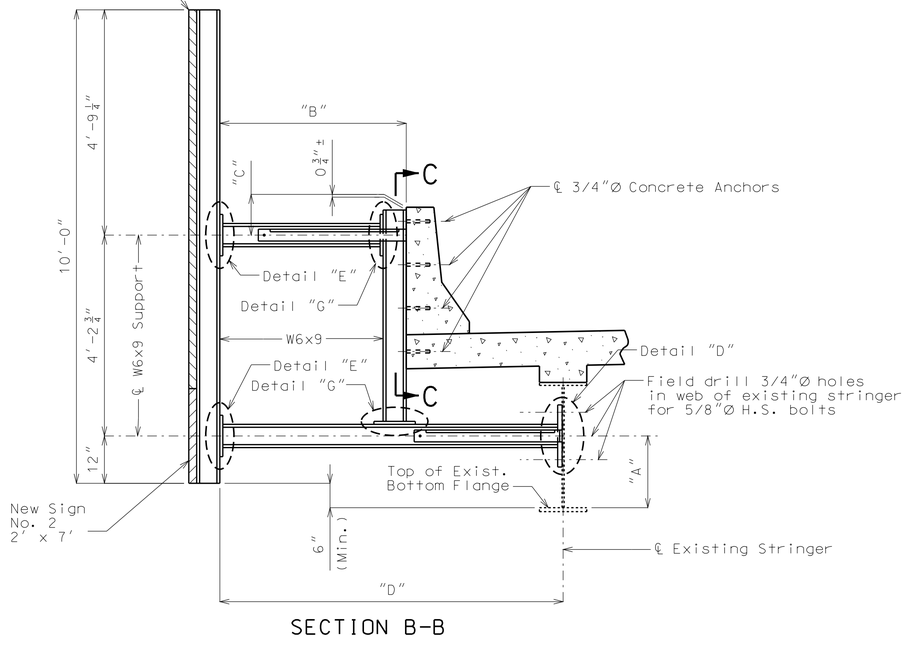
For Section C-C, see Sheet No. 14.

For Detail "D", Detail "E" & Detail "G", see Sheet No. 14.

For Detail "H", Detail "J" & Detail "K", see Sheet No. 14.




PART ELEVATION A-A




SECTION B-B

# SIGN SUPPORT BRACKETS, SIGNS NO. 1 & 2

Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 13 |

COUNTY
PLATTE

JOB NO.
J4I2374

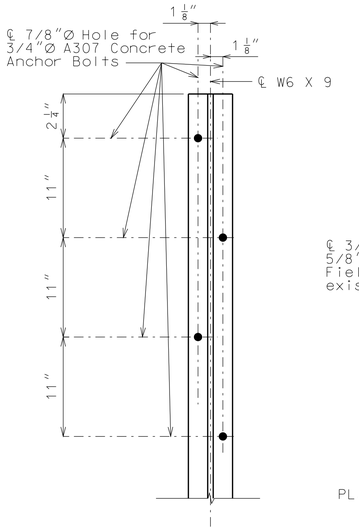
CONTRACT ID.

PROJECT NO.

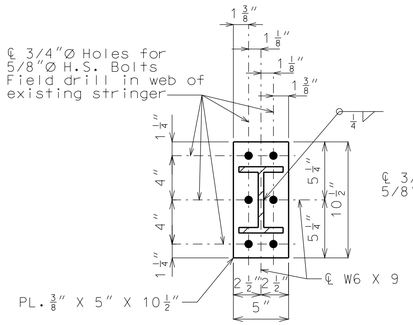
BRIDGE NO.
A11594

| DESCRIPTION | DATE |
|---|---|
| | |

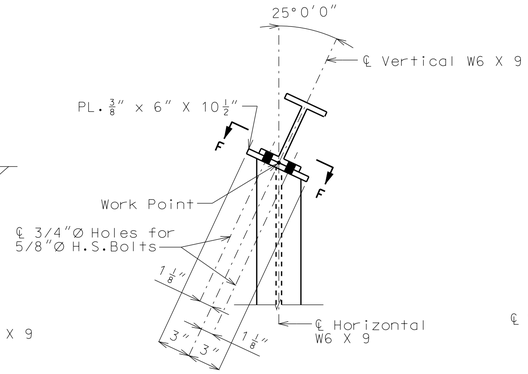
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




SECTION C-C




DETAIL "D"

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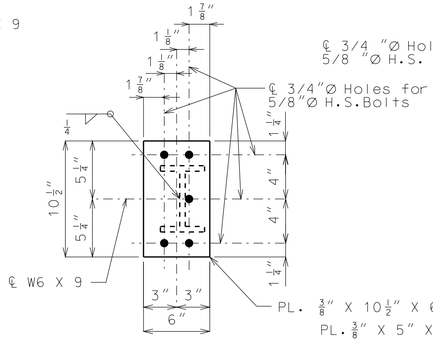
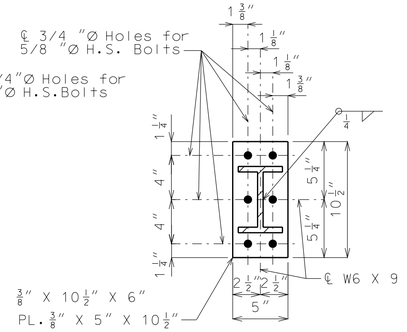



SECTION F-F

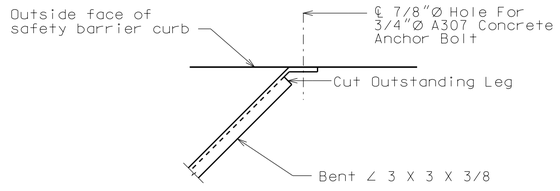



DETAIL "G"

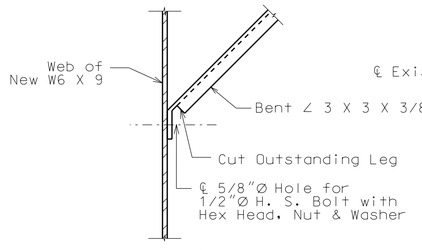
Notes:

For location of Details "D", "E" & "G", see Sheet No. 13.

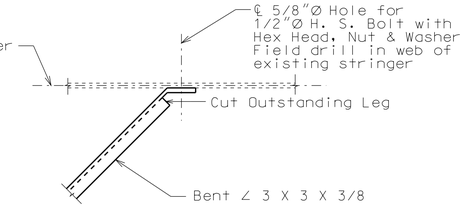
For location of Section C-C, see Sheet No. 13.




DETAIL "H"




DETAIL "J"




DETAIL "K"

Note: For location of Details "H", "J" & "K", see Sheet No. 13.

# SIGN SUPPORT BRACKETS, SIGNS NO. 1 & 2

Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/17/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 14 |

COUNTY: PLATTE

JOB NO.: J412374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A11594

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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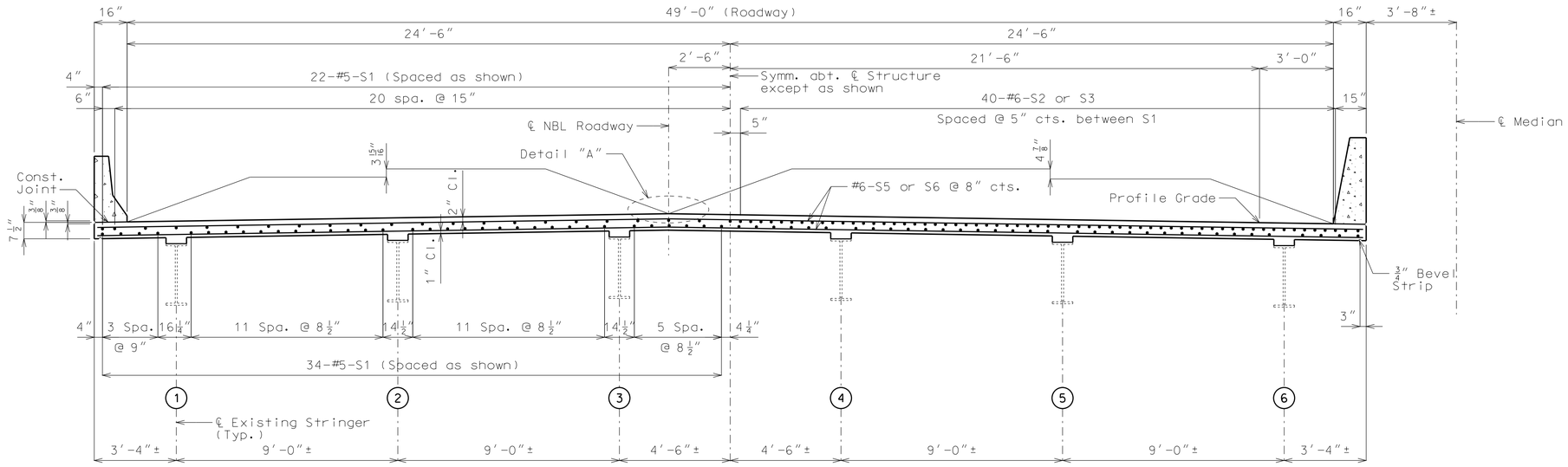
SEC/SUR 20 & 29 TWP 51N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REDECK EXISTING (52'-77'-48') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (34°29' L.A.)




HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB

### General Notes:

Design Specifications:
2002 - AASHTO 17th Edition Standard Specifications
Load Factor Design
Seismic Performance Category A

Design Loading:
HS20-44 (1961 & New Construction)
12#/sq. ft. Future Wearing Surface
Military 24,000# Tandem Axle
Earth - 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.
Fatigue Stress - Case I

Design Unit Stresses:
Class B-1 Concrete (Barrier Curbs) f'c = 4,000 psi
Class B-2 Concrete (Superstructure, except Barrier Curbs) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Miscellaneous:
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

Traffic shall be diverted onto structure No. A11594 during construction of A11595, see Roadway plans for traffic control.

### Estimated Quantities

| | Item | | Total |
|---|---|---|---|
| | Removal of Existing Bridge Decks | sq. foot | 9400 |
| | Bridge Approach Slab (Bridge) | sq. yard | 304 |
| | Slab on Steel | sq. yard | 1043 |
| ✳ | Safety Barrier Curb | linear foot | 199 |
| ✳ | Barrier Curb (Type D) | linear foot | 181 |
| | Median Barrier Curb Transition | linear foot | 24 |
| | Fabricated Sign Support Brackets | lump sum | 1 |
| | Shear Connectors | each | 1296 |

✳ Safety Barrier Curb & Barrier Curb (Type D) shall be cast-in-place option or slip-form option.

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

### Estimated Quantities for Slab on Steel

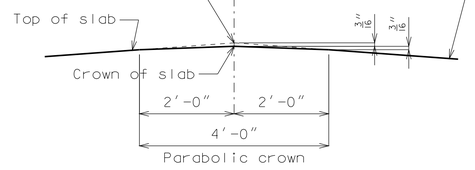
| Item | | Total |
|---|---|---|
| Class B-2 Concrete | cu. yard | 230.6 |
| Reinforcing Steel (Epoxy Coated) | pound | 77,480 |

The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard from end of slab to end of slab and the overall width shown in the Typical Section Thru Slab. Payment for conventional forms or optional stay-in-place forms, all concrete and coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

Slab shall be cast-in-place with conventional forming or stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

For optional Stay-In-Place Form Details, see Sheet No. 2.




DETAIL "A"

### REQUIRED LAP LENGTH FOR BAR SPLICES ✳✳

| Bar Size | Splice Length |
|---|---|
| 4 | 2'-7" |
| 5 | 3'-3" |
| 6 | 3'-10" |
| 7 | 4'-11" |

✳✳ Unless otherwise shown.

### TABLE SHOWING S2 & S3 BAR LENGTHS

| Int. Bent No. 2 | | Int. Bent No. 3 | |
|---|---|---|---|
| Span 1 | Span 2 | Span 2 | Span 3 |
| 23'-3" | 20'-9" | 20'-9" | 23'-0" |

## REPAIRS TO BRIDGE: I-29 NBL OVER RTE 45

STATE ROAD FROM RTE. 152 TO RTE. I-635
ABOUT 2 MILES N.W. OF RTE. I-635
STA. 828+46.24± (Match Existing)

| |
|---|
| STD. 609.00 |
| STD. 617.10 |
| STD. 706.35 |

Designed May 2013
Detailed June 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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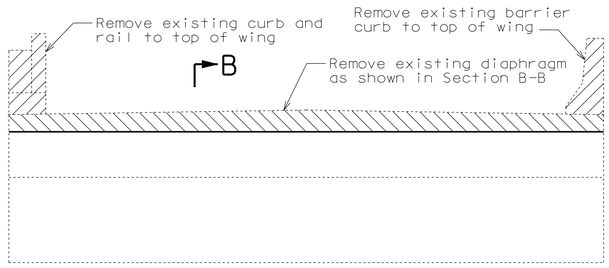
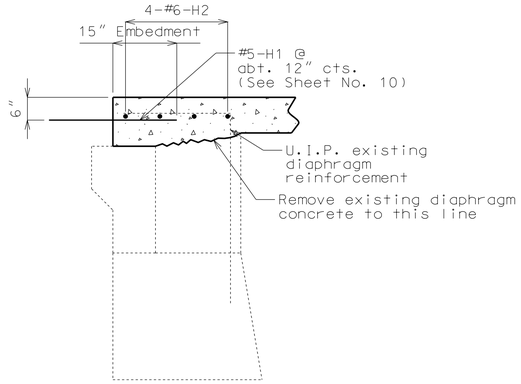
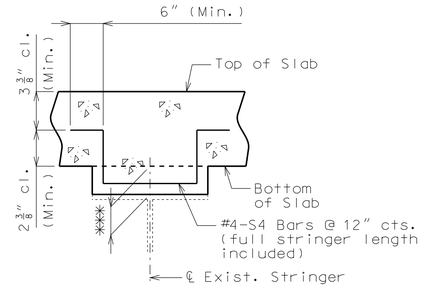



## DETAILS OF CONCRETE REMOVAL @ END BENTS

Note:
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Decks.




## SECTION B-B



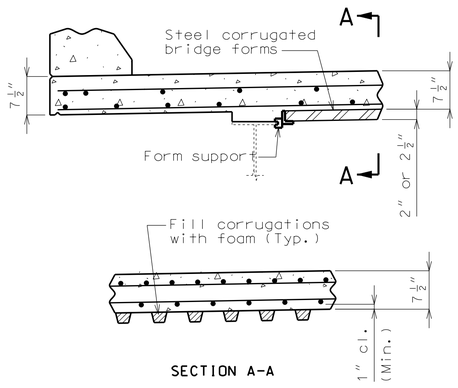

## SECTION THRU EXISTING STRINGER SHOWING HAIRPIN BARS

(Shear connectors not shown for clarity)

Note:

Cost of furnishing and installing epoxy coated hairpin bars will be considered completely covered by the contract unit price for Slab on Steel.

*** For Haunch greater than 3", use hairpin bars.




SECTION A-A

## OPTIONAL STAY-IN-PLACE FORM DETAILS

Notes:
Corrugated steel bridge deck forms, supports closure elements and accessories shall be in accordance with grade requirement and coating designation G165 of ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

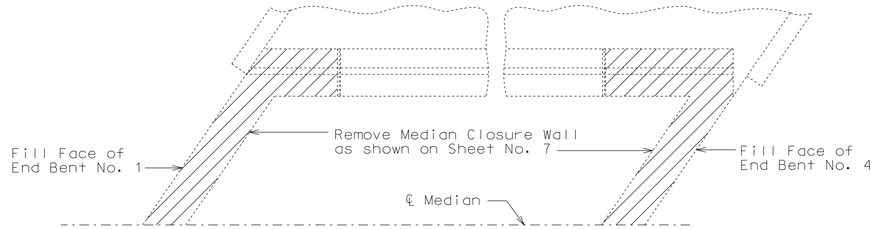
Form sheets shall not rest directly on the top of girders, stringers or floorbeams flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Welding on or drilling holes in the flanges of the girders, stringers or floorbeams will not be permitted. All steel fabrication and construction shall be in accordance with Sec's 1080 and 712. MoDOT certified field welders will not be required for welding of the form supports.

The contractor shall provide temporary bracing as necessary to prevent girders from rotating during slab pour. The cost for temporary bracing shall be considered completely covered by the contract unit price for Slab on Steel.

Slab shall be poured upgrade from end to end at a minimum rate of 28 cu. yd./ hr. (with retarder) or 46 cu. yd./hr. (without retarder).

Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

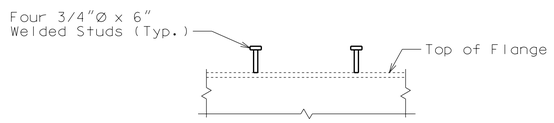
Slab is to be considered at a uniform depth as shown on the plans. Haunching will vary.



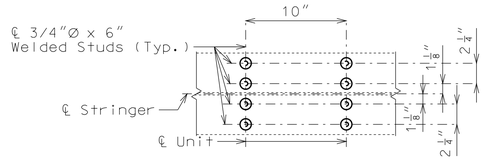

## PART PLAN SHOWING MEDIAN CLOSURE WALL REMOVAL

Note:
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Decks.

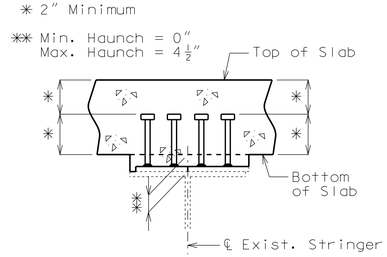
Deflection Note:
The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and may be adjusted based on the difference between the new and existing dead load weights.




ELEVATION

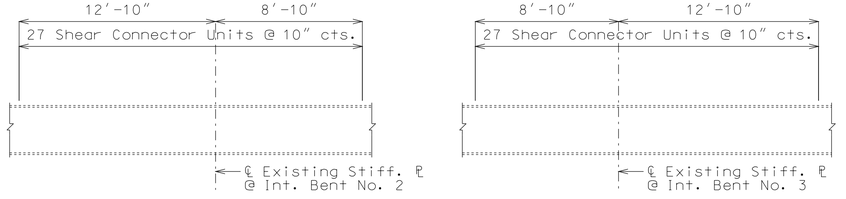



PLAN OF SHEAR CONN. (4 PER UNIT)




HALF SECTION THRU 10" COVER ℄ HALF SECTION THRU 13" COVER ℄

## SECTION THRU EXIST. STRINGER SHOWING SHEAR CONNECTORS




## PART ELEVATION OF STRINGER SHOWING SHEAR CONNECTOR SPACING

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DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

DESCRIPTION | DATE

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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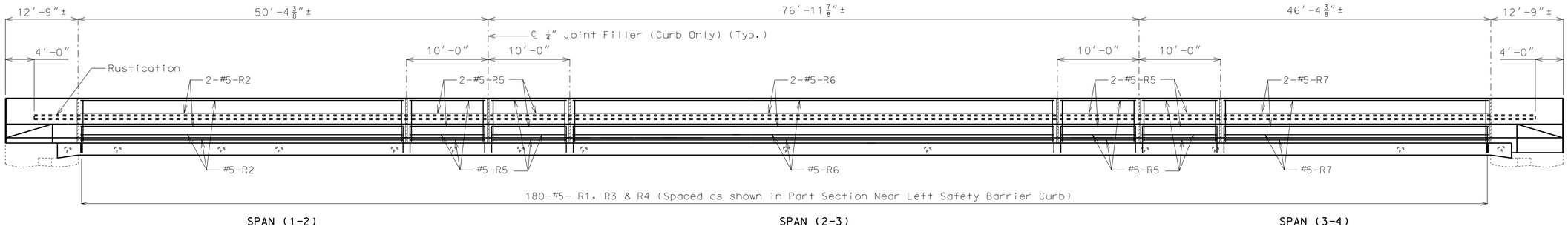
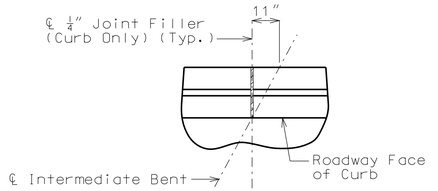



## SECTION NEAR LEFT SAFETY BARRIER CURB

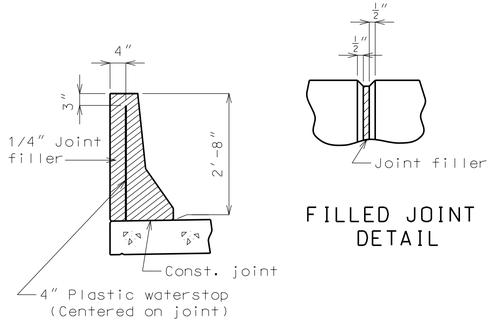
Note: Longitudinal dimensions are horizontal.




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

Note:

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

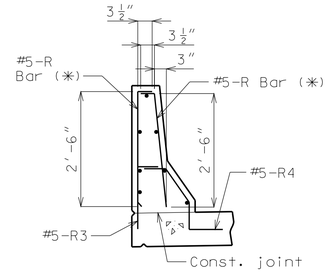



## DETAILS OF PLASTIC WATERSTOP

Notes:

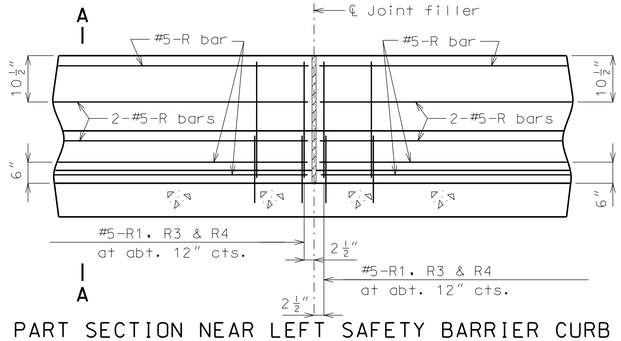
Plastic waterstop shall be placed in all safety barrier curb filled joints, except structures with superelevation, use on all lower safety barrier curb joints only.

Cost of plastic waterstop, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.

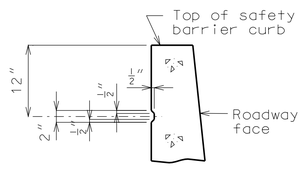



## R-BAR PERMISSIBLE ALTERNATE SHAPE

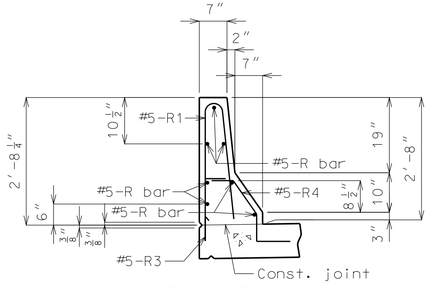
(*) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## PART SECTION NEAR LEFT SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## PART SECTION SHOWING RUSTICATION DETAILS

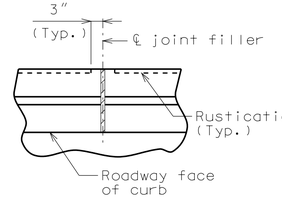



## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.28 sq. ft.




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a 1/2″ radius or a 3/4″ bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

Detailed June 2013
Checked Aug. 2013



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DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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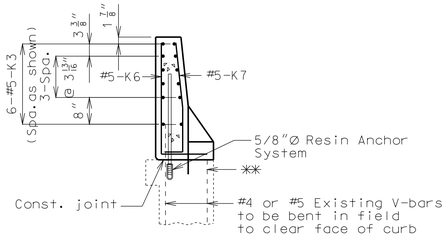
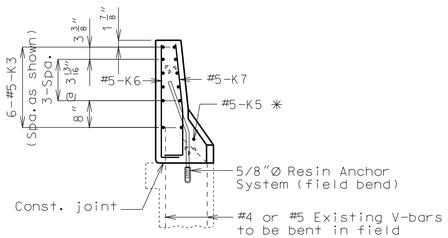
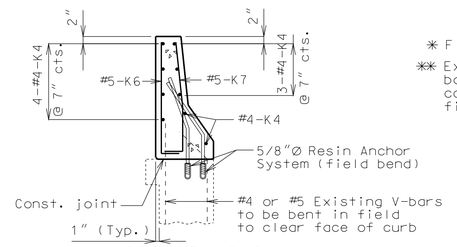


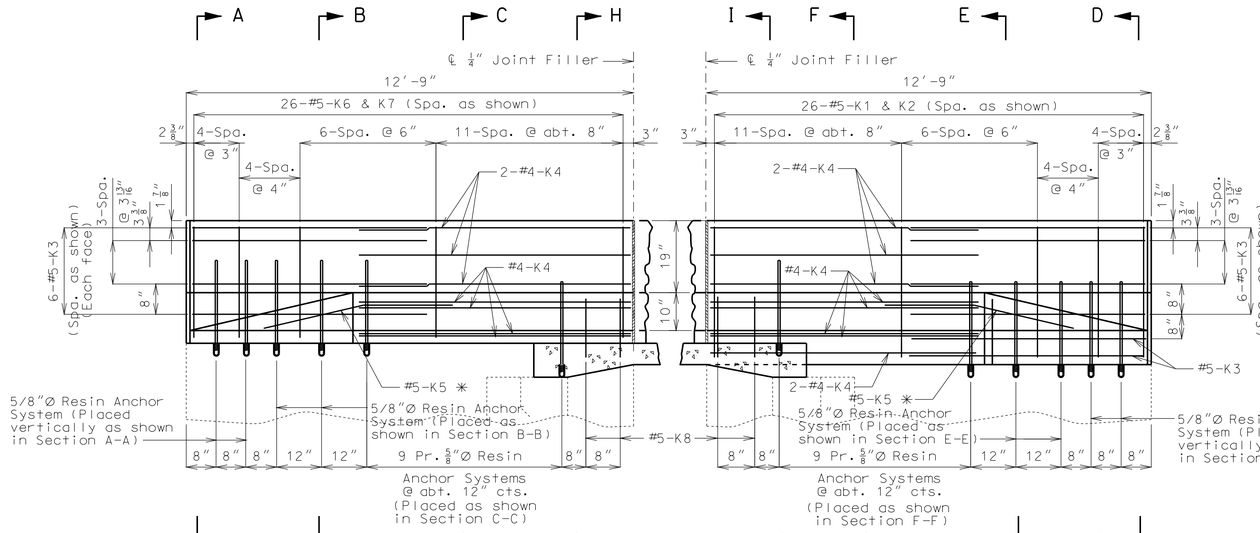

SECTION A-A




SECTION B-B

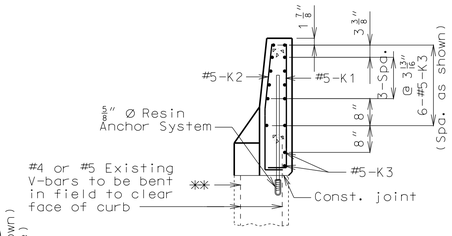



SECTION C-C

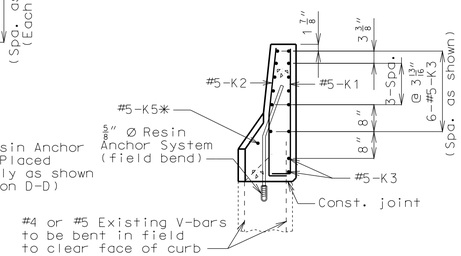



ELEVATION
(End Bent No. 1)

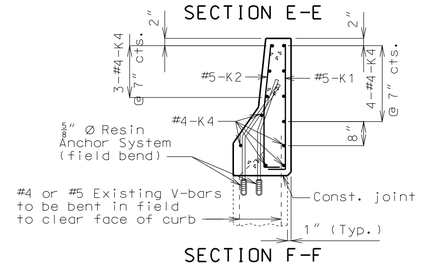
ELEVATION
(End Bent No. 4)



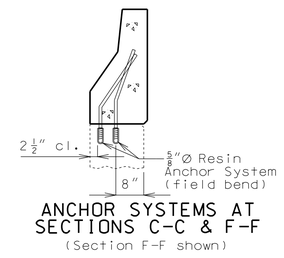

SECTION D-D




SECTION E-E



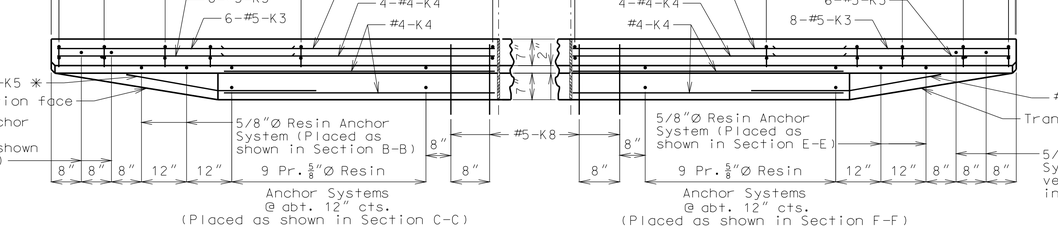

SECTION F-F




ANCHOR SYSTEMS AT SECTIONS C-C & F-F
(Section F-F shown)

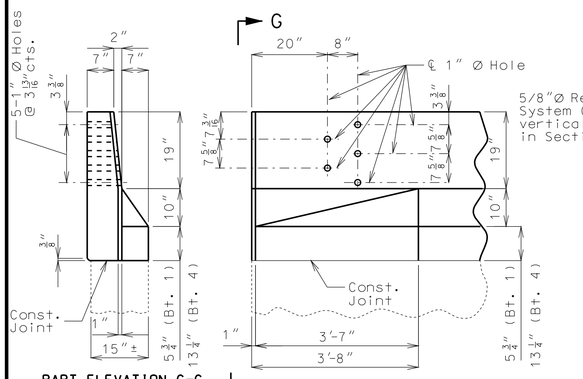
✳ Fit bar to follow transistion face of curb.

✳✳ Existing reinforcement which cannot be bent into the new barrier curb transition shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.




PLAN
(End Bent No. 1)

PLAN
(End Bent No. 4)




DETAILS OF GUARD RAIL ATTACHMENT

Notes:
Rustication not shown for clarity.

Use a minimum lap of 2'-0" between K3 and K4 bars.

44 - 5/8"Ø Resin Anchors required (length = 2'-3")

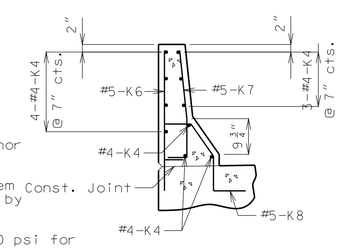
Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb."

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

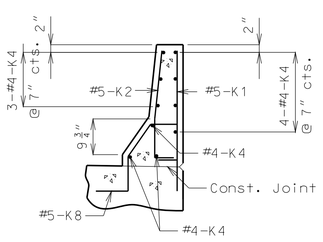
Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

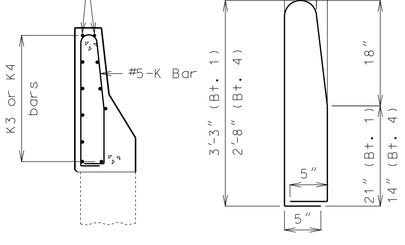



SECTION H-H




SECTION I-I

The top two K3 or K4 bars shall be kept with position close to those shown in Sections A-A thru F-F




K1-K2 AND K6-K7 BAR PERMISSIBLE ALTERNATE SHAPE (✳✳✳)

(✳✳✳) The K1 and K2 bar combination and the K6 and K7 combination may be furnished as one bar as shown, at the contractor's option.

# DETAILS OF LEFT SAFETY BARRIER CURB AT END BENTS

Detailed June 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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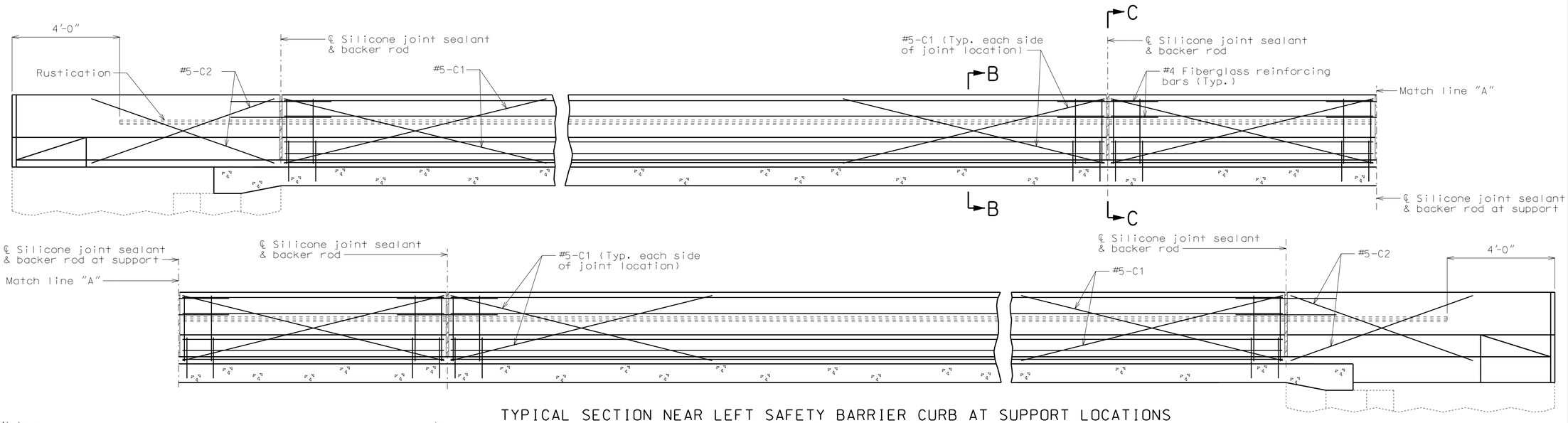
REV.




## TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

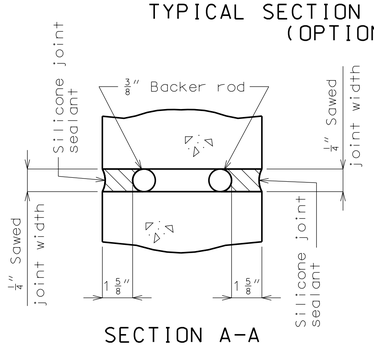
Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.




SECTION A-A

Notes:

Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Plastic waterstop shall not be used with slip-form option.

C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".




PART PLAN SHOWING SAFETY BARRIER CURB JOINT

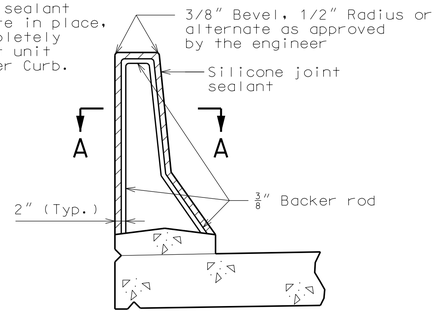



PART SECTION SHOWING RUSTICATION DETAILS

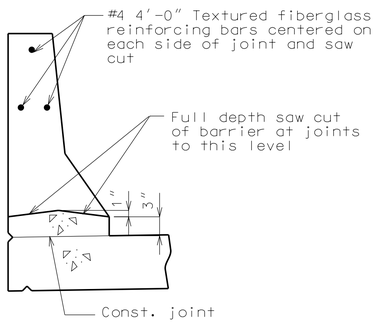
RUSTICATION DETAIL

Note:

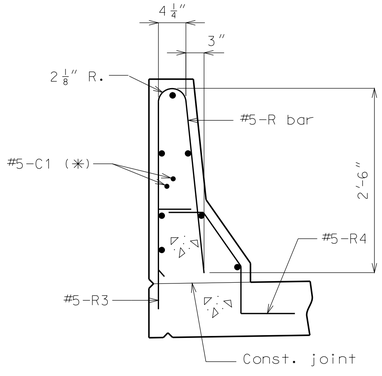
Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.




SECTION THRU JOINT




PART SECTION C-C




PART SECTION B-B

Note:

(*) Each side of joint location.

# OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

Detailed June 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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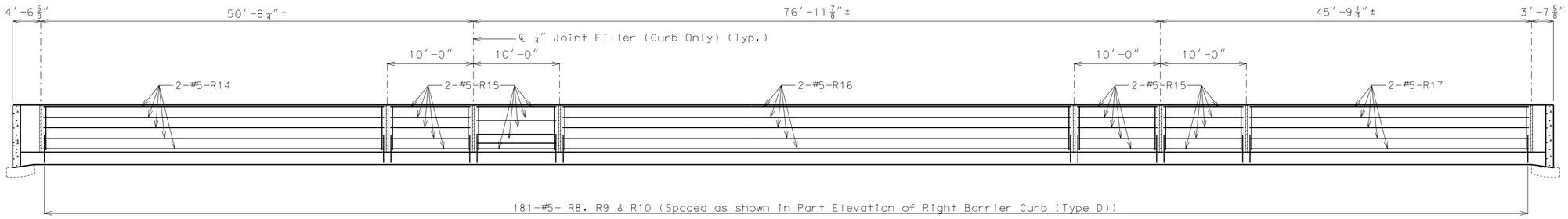
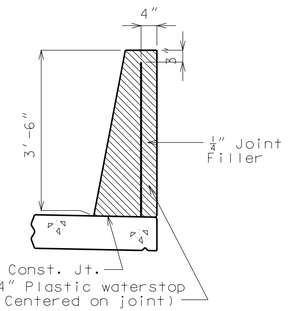



## ELEVATION OF RIGHT BARRIER CURB (TYPE D)

Note: Longitudinal dimensions are horizontal.

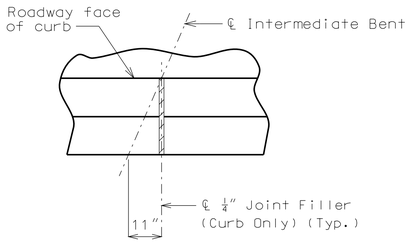



## DETAILS OF PLASTIC WATERSTOP

Notes:

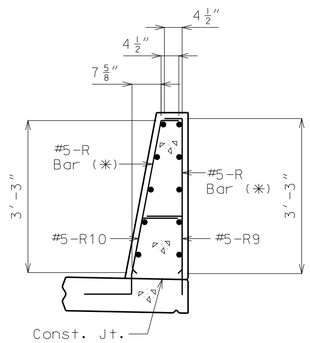
Plastic waterstop shall be placed in all barrier curb (Type D) filled joints.

Cost of plastic waterstop, complete-in-place, will be considered completely covered by the contract unit price for Barrier Curb (Type D).



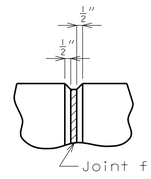

## PART PLAN SHOWING BARRIER CURB (TYPE D) JOINT

Note: For details of Median Closure Walls at End Bents, see Sheet No. 7.




## R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) The R8 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## FILLED JOINT DETAIL

Notes:

Top of barrier curb (Type D) shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

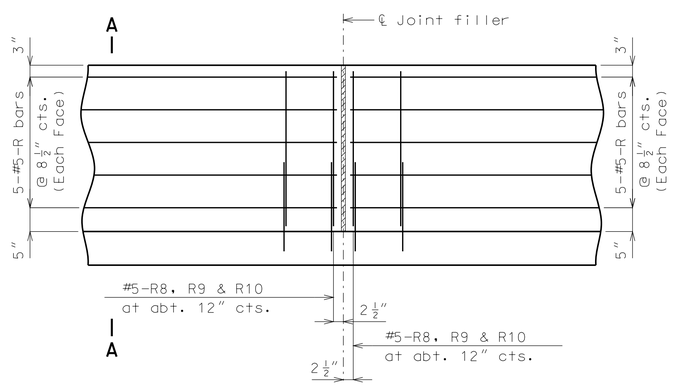
All exposed edges of barrier curb (Type D) shall have either a 1/2″ radius or a 3/4″ bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for barrier curb (Type D) per linear foot.

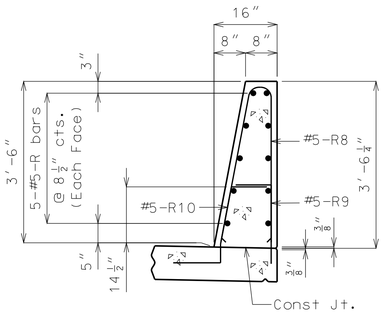
Concrete in the barrier curb (Type D) shall be Class B-1.

Measurement of barrier curb (Type D) is to the nearest linear foot for each structure, measured along the outside top of slab from end of curb to end of curb.

Concrete traffic barrier delineators shall be placed on top of the barrier curb (Type D) as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Barrier Curb (Type D)".




## PART ELEVATION OF RIGHT BARRIER CURB (TYPE D) (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal barrier curb (Type D) bars.

The cross-sectional area above the slab = 3.52 sq. ft.



DATE PREPARED: 10/9/2013
ROUTE: I-29 | STATE: MO
DISTRICT: BR | SHEET NO.: 6
COUNTY: PLATTE
JOB NO.: J4I2374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A11595

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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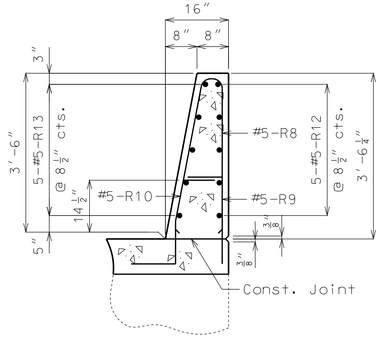
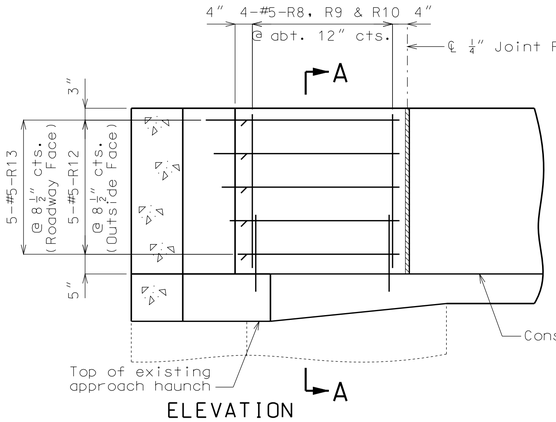
Detailed July 2013
Checked Aug. 2013

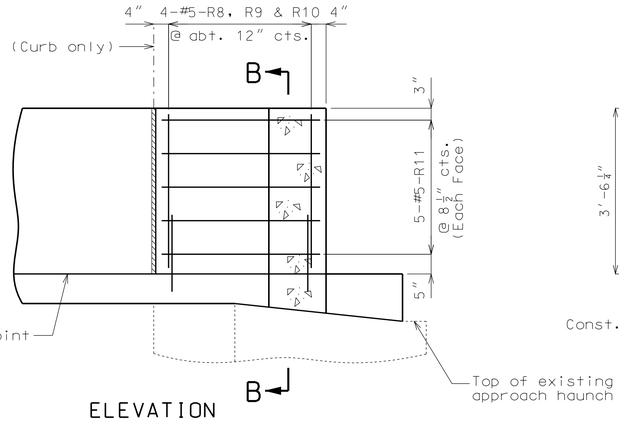
Note: This drawing is not to scale. Follow dimensions.



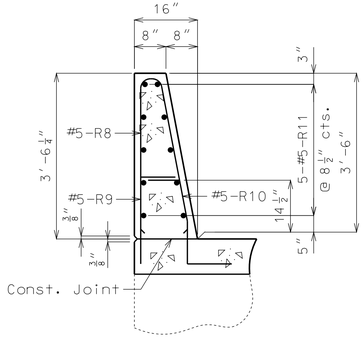

SECTION A-A




ELEVATION

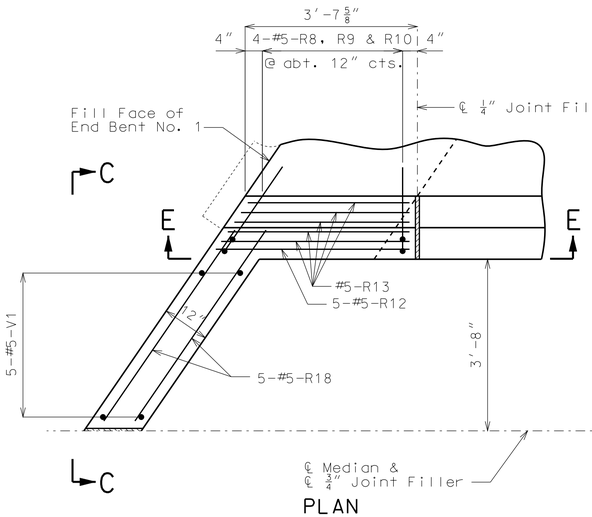



ELEVATION

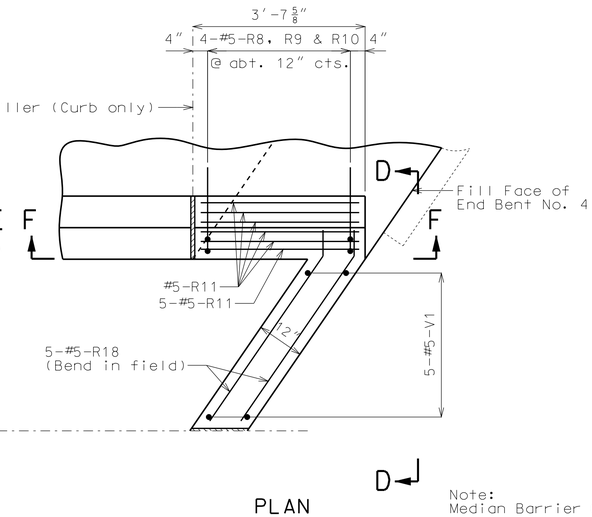



SECTION B-B

Wall not shown for clarity.




PLAN

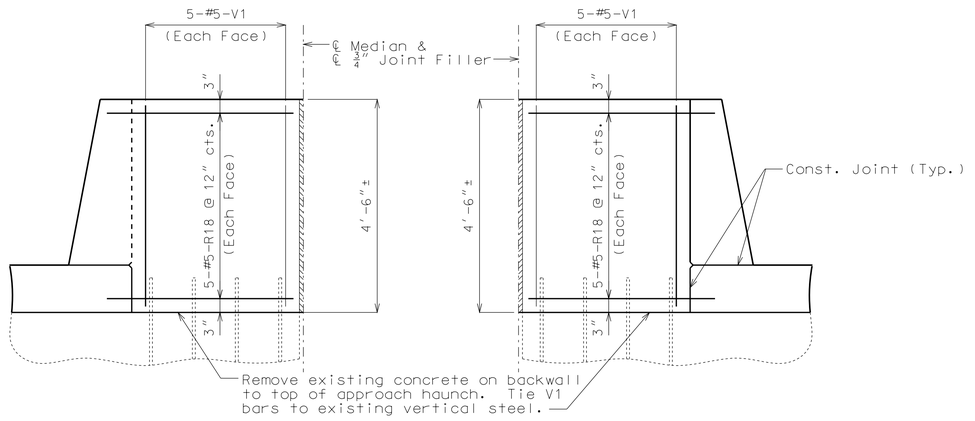



PLAN

Note:
Median Barrier Curb Transition not shown for clarity.

Notes:
The cost of the Median Closure Wall will be considered completely covered by the contract unit price for Barrier Curb (Type D), per linear foot.

For details of Median Barrier Curb Transition, see Sheet No. 9.




ELEVATION C-C ELEVATION D-D

Note: Curb bars not shown for clarity.

# DETAILS OF MEDIAN CLOSURE WALL AT END BENTS

Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

| DESCRIPTION | DATE |
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JEFFERSON CITY, MO 65102
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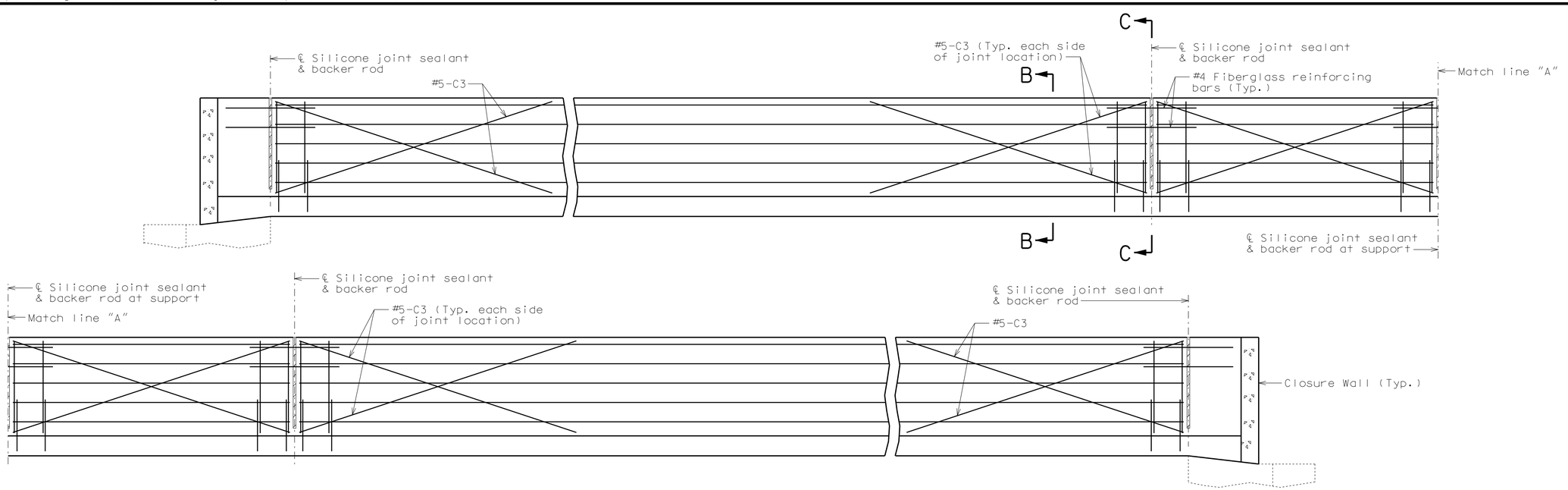



Notes:

Top of barrier curb (Type D) shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for barrier curb (Type D) per linear foot.

Concrete in the barrier curb (Type D) shall be Class B-1.

Measurement of barrier curb (Type D) is to the nearest linear foot for each structure, measured along the outside top of slab from end of curb to end of curb.

## TYPICAL ELEVATION OF RIGHT BARRIER CURB (TYPE D) AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE BARRIER CURB (TYPE D))

Notes:

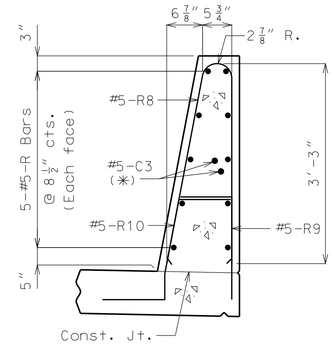
Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Plastic waterstop shall not be used with slip-form option.

C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge barrier curb (Type D).

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

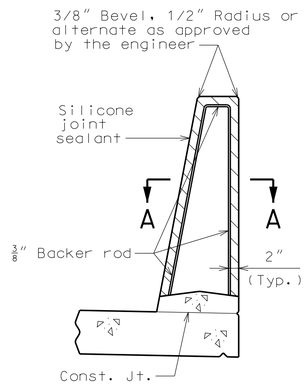
Concrete traffic barrier delineators shall be placed on top of the barrier curb (Type D) as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Barrier Curb (Type D)".



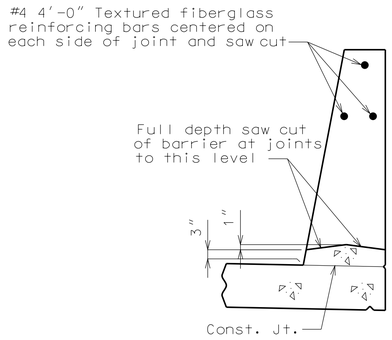

PART SECTION B-B

Notes:

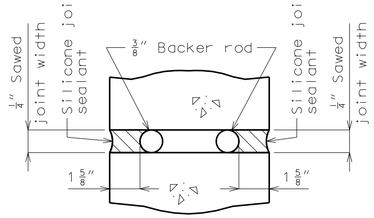
(*) Each side of joint location.




SECTION THRU JOINT




PART SECTION C-C




SECTION A-A

Note:

Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Barrier Curb (Type D).

# OPTIONAL SLIP-FORM BRIDGE BARRIER CURB (TYPE D)

Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 8
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

DESCRIPTION | DATE

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JEFFERSON CITY, MO 65102
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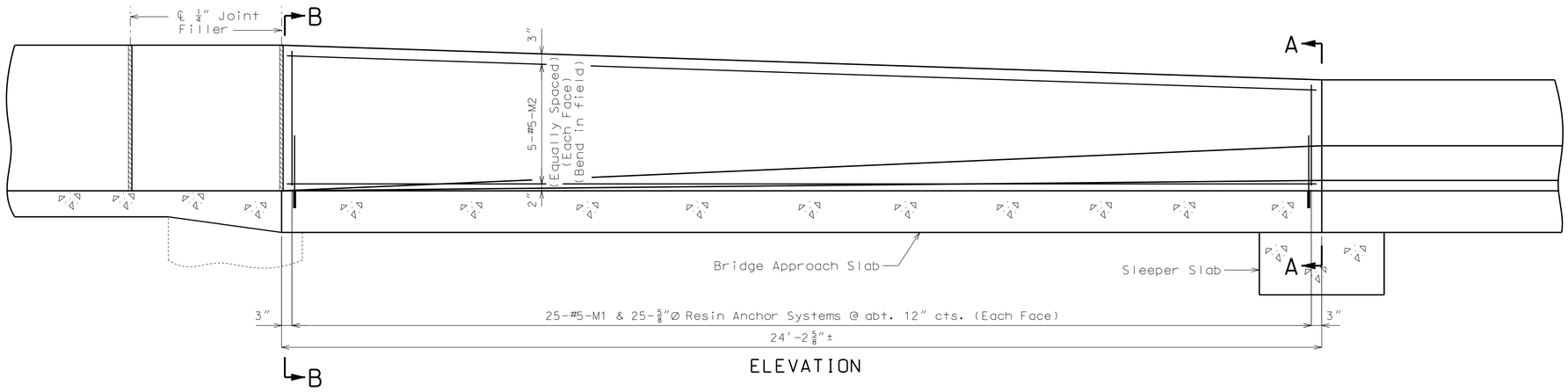
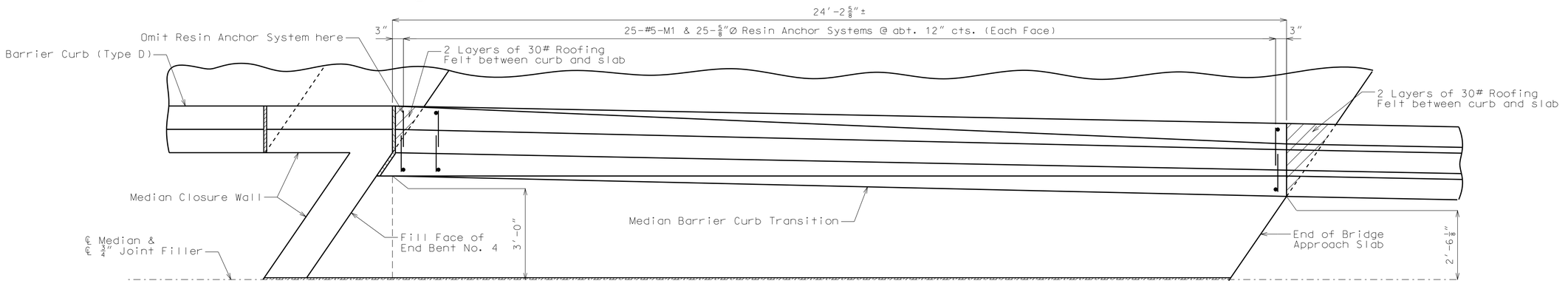
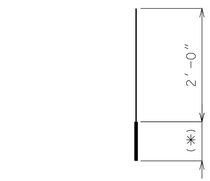



ELEVATION

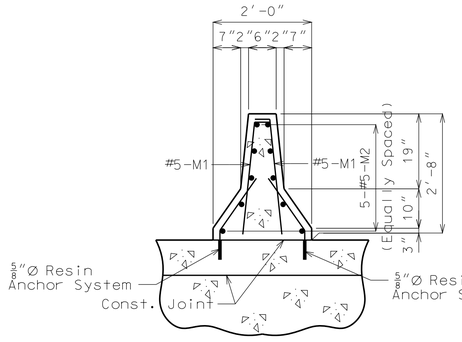



PLAN

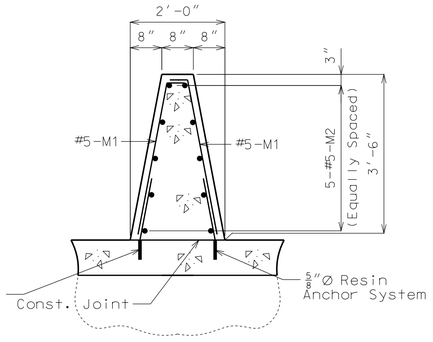
#5-M2 bars not shown for clarity.




DETAIL OF RESIN ANCHOR SYSTEM
(49 required)
(Bend in field)




SECTION A-A




SECTION B-B

Notes:

Concrete in the Median Barrier Curb Transition shall be Class B-1.

Slip-forming is not allowed on transition. Transition shall be cast-in-place.

The contractor shall use one of the qualified resin anchor systems in accordance with 1039.

Cost of furnishing and installing the resin anchor system, complete in place, will be considered completely covered by the contract unit price for Median Barrier Curb Transition.

(*) The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the ⅝" Ø threaded rod.

All exposed edges of barrier curb (Type D) and median shall shall have either a ½" radius or a ⅜" bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be completely covered by the contract unit price for Median Barrier Curb Transition per linear foot.

Measurement of Median Barrier Curb Transition is to the nearest linear foot for each structure, measured along the outside top of slab from end of approach slab to end of slab.

Concrete traffic barrier delineators shall be placed on top of the Median Barrier Curb Transition as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Median Barrier Curb Transition".

For details of Median Closure Wall, see Sheet No. 7.

For details of Barrier Curb (Type D), see Sheet No. 6.

# DETAILS OF MEDIAN BARRIER CURB TRANSITION ON APPROACH SLAB (BENT NO. 4 ON A11595)

Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013

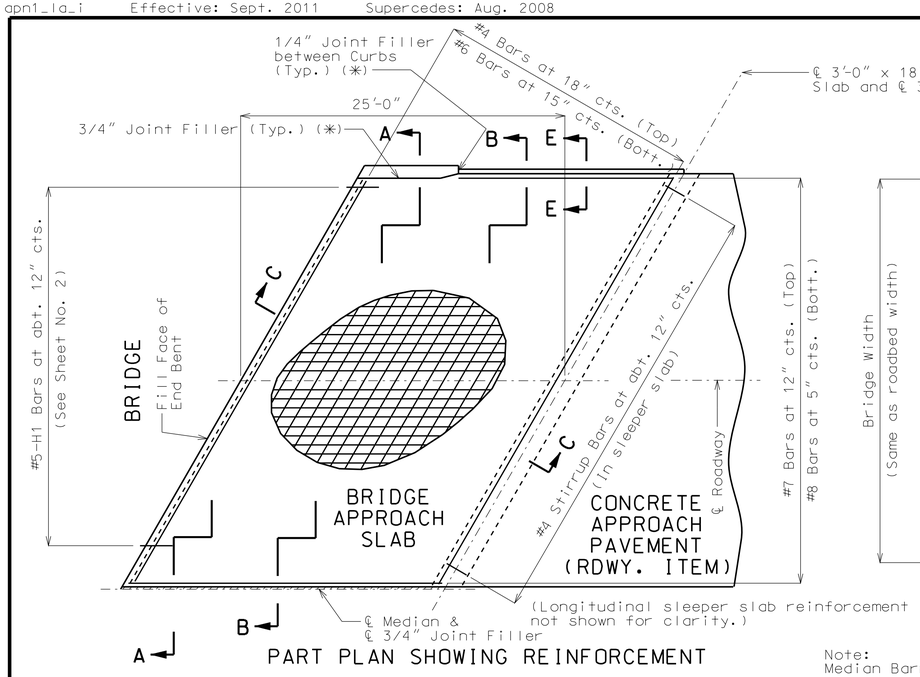
| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 9 |

COUNTY: PLATTE
JOB NO.: J4I2374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A11595

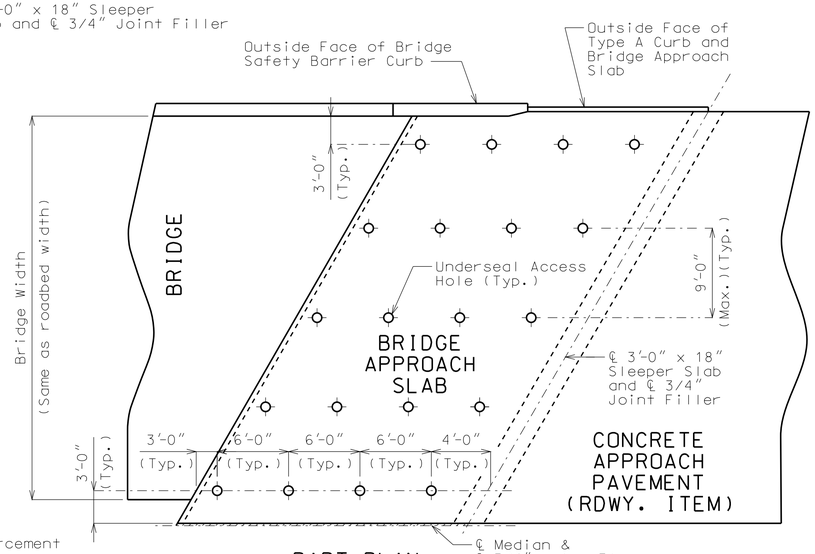
| DATE | DESCRIPTION |
|---|---|

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



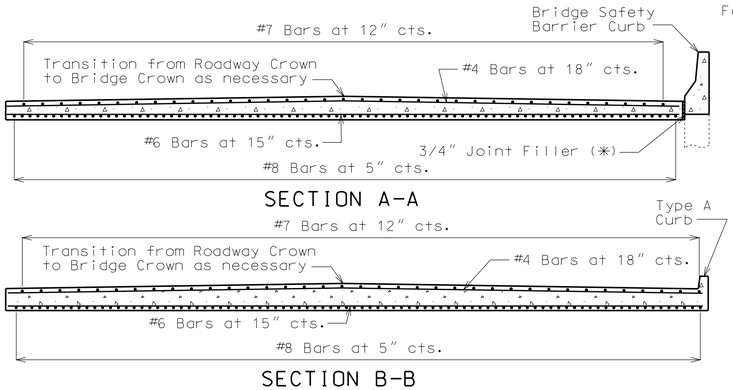

PART PLAN SHOWING REINFORCEMENT




PART PLAN
(SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)

Note:
Median Barrier Curb not thown for clarity.

For Details of Median Barrier Curb Transition, see Sheet No. 9.

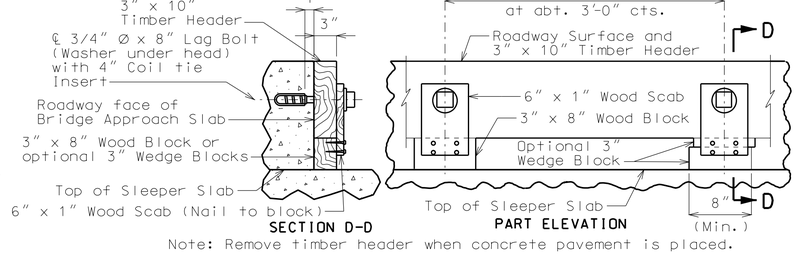



SECTION A-A




SECTION B-B

Note: With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.

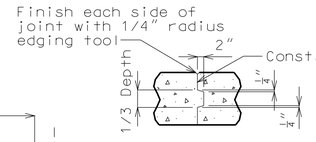



SECTION D-D

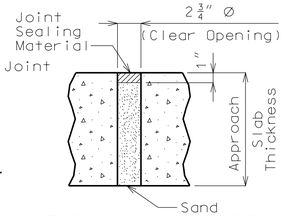
PART ELEVATION

Note: Remove timber header when concrete pavement is placed.

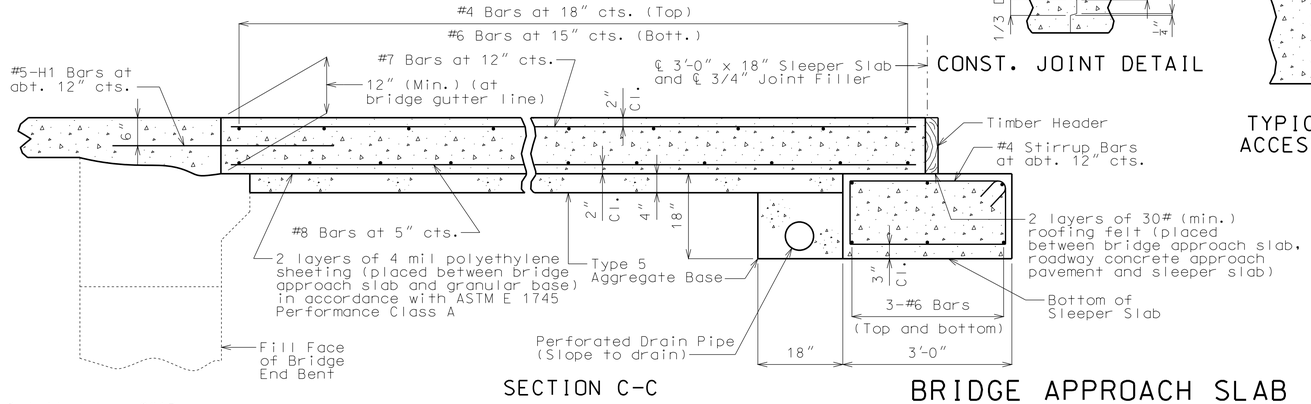
DETAILS OF TIMBER HEADER




CONST. JOINT DETAIL

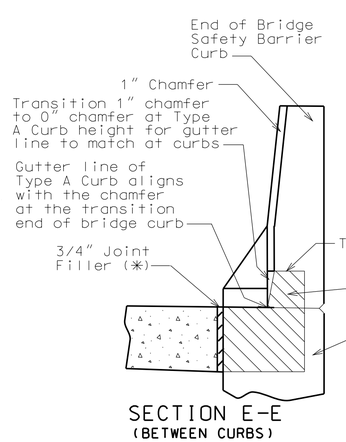



TYPICAL UNDERSEAL ACCESS HOLE DETAIL

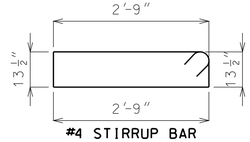



SECTION C-C

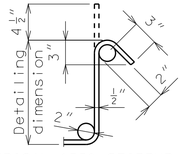
BRIDGE APPROACH SLAB




SECTION E-E
(BETWEEN CURBS)




#4 STIRRUP BAR
(ACTUAL LENGTH = 8'-3")




TYPICAL 135° STIRRUP HOOK DIMENSIONS BENDING DIAGRAM

Note:
Nominal lengths are based on out to out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).

## GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with Fy = 60,000 psi.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 2'-2", respectively.

Mechanical bar splices shall be in accordance with Sec 706.

(*) Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

The contractor shall pour and satisfactorily finish the bridge or semi-deep slab before pouring the bridge approach slabs.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge or semi-deep slab.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Bridge) per square yard.

For Concrete Approach Pavement details, see roadway plans.

See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired in accordance with Sec 710.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 10/9/2013
ROUTE: I-29 | STATE: MO
DISTRICT: BR | SHEET NO.: 10
COUNTY: PLATTE
JOB NO.: J412374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A11595

| REV. | DATE | DESCRIPTION |
|---|---|---|

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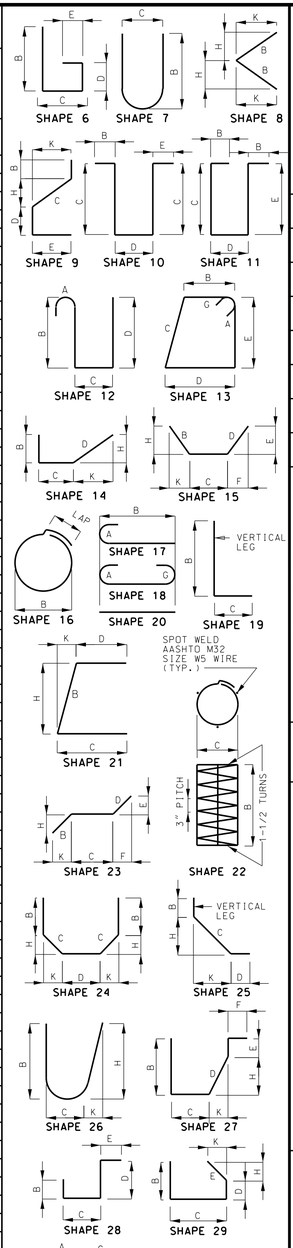
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# BILL OF REINFORCING STEEL

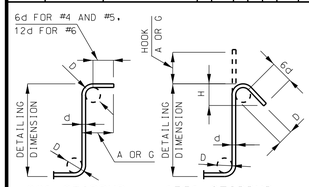
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. IN. | C FT. IN. | D FT. IN. | E FT. IN. | F FT. IN. | H FT. IN. | K FT. IN. | NOMINAL LENGTH FT. IN. | ACTUAL LENGTH FT. IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SUPERSTR | | | | | | | | | | | | | | | | |
| | | | SLAB | | | | | | | | | | | | | | | | |
| 98 | 5 | H1 | DIAPHRAGM | E | 20 | | | | | 2 6.000 | | | | | | | 2 6 | 2 6 | 256 |
| 18 | 6 | H2 | DIAPHRAGM | E | 20 | | | | | 33 2.000 | | | | | | | 33 2 | 33 2 | 897 |
| 444 | 5 | S1 | SLAB | E | 20 | | | | | 47 10.000 | | | | | | | 47 10 | 47 10 | 22151 |
| 80 | 6 | S2 | SLAB | E | 20 | | | | | 44 0.000 | | | | | | | 44 0 | 44 0 | 5287 |
| 80 | 6 | S3 | SLAB | E | 20 | | | | | 43 9.000 | | | | | | | 43 9 | 43 9 | 5257 |
| 1062 | 4 | S4 | SLAB HAUNCH | E | 10 | S | | | | 6.000 | 5.500 | 8.500 | 6.000 | | | | 2 8 | 2 4 | 1655 |
| 440 | 6 | S5 | SLAB | E | 20 | | | | | 51 5.000 | | | | | | | 51 5 | 51 5 | 33980 |
| 200 | 6 | S6 | SLAB | E | 20 | | | V | 4 | 2 10.000 | | | | | | | 2 10 | 2 10 | |
| | | | INCREMENT = | | | | | | | 50 5.000 | | | | | | | 50 5 | 50 5 | 7998 |
| | | | 11.625 INCH | | | | | | | | | | | | | | | | |
| | | | EXT. SAFETY | | | | | | | | | | | | | | | | |
| | | | BARRIER CURB | | | | | | | | | | | | | | | | |
| 26 | 5 | K1 | EXT. CURB | E | 19 | S | | | | 3 2.000 | 5.125 | | | | | | 3 7 | 3 6 | 95 |
| 26 | 5 | K2 | EXT. CURB | E | 14 | S | | | | 5.125 | 20.125 | 18.000 | | | 2.000 | 17.875 | 3 7 | 3 6 | 95 |
| 26 | 5 | K3 | EXT. CURB | E | 20 | | | | | 5 7.000 | | | | | | | 5 7 | 5 7 | 151 |
| 24 | 4 | K4 | EXT. CURB | E | 20 | | | | | 8 11.000 | | | | | | | 8 11 | 8 11 | 143 |
| 2 | 5 | K5 | EXT. CURB | E | 8 | | | | | 2 2.125 | | | | | 2 2.000 | 2.375 | 4 4 | 4 4 | 9 |
| 26 | 5 | K6 | EXT. CURB | E | 19 | S | | | | 2 7.750 | 5.125 | | | | | | 3 1 | 3 0 | 81 |
| 26 | 5 | K7 | EXT. CURB | E | 14 | S | | | | 5.125 | 13.875 | 18.000 | | | 2.000 | 17.875 | 3 1 | 3 0 | 81 |
| 4 | 5 | K8 | EXT. CURB | E | 27 | S | | | | 17.000 | 5.125 | 12.000 | 7.125 | 12.000 | 9.875 | 6.875 | 4 5 | 4 2 | 17 |
| 180 | 5 | R1 | EXT. CURB | E | 26 | | | | | 2 6.000 | 4.250 | 2 6.125 | | | 2 6.000 | 3.000 | 5 2 | 5 2 | 970 |
| 7 | 5 | R2 | EXT. CURB | E | 20 | | | | | 40 1.000 | | | | | | | 40 1 | 40 1 | 293 |
| 180 | 5 | R3 | EXT. CURB | E | 19 | S | | | | 17.000 | 6.000 | | | | | | 0 23 | 0 22 | 344 |
| 180 | 5 | R4 | EXT. CURB | E | 27 | S | | | | | 6.000 | 11.250 | 7.000 | 12.000 | 9.250 | 6.375 | 3 0 | 2 10 | 532 |
| 28 | 5 | R5 | EXT. CURB | E | 20 | | | | | 9 9.000 | | | | | | | 9 9 | 9 9 | 285 |
| 7 | 5 | R6 | EXT. CURB | E | 20 | | | | | 56 9.000 | | | | | | | 56 9 | 56 9 | 414 |
| 7 | 5 | R7 | EXT. CURB | E | 20 | | | | | 36 1.000 | | | | | | | 36 1 | 36 1 | 263 |
| | | | OPT.SLIPFORM EXT. CURB | | | | | | | | | | | | | | | | |
| 20 | 5 | C1 | S/F EXT.CURB | E | 20 | | | | | 10 0.000 | | | | | | | 10 0 | 10 0 | 209 |
| 4 | 5 | C2 | S/F EXT.CURB | E | 20 | | | | | 9 2.000 | | | | | | | 9 2 | 9 2 | 38 |
| | | | INT. D CURB | | | | | | | | | | | | | | | | |
| 189 | 5 | R8 | INT. D CURB | E | 26 | | | | | 3 3.000 | 5.750 | 3 3.625 | | | 3 3.000 | 6.875 | 6 9 | 6 9 | 1331 |
| 189 | 5 | R9 | INT. D CURB | E | 19 | S | | | | 20.000 | 10.000 | | | | | | 2 6 | 2 5 | 476 |
| 189 | 5 | R10 | INT. D CURB | E | 27 | S | | | | | 10.000 | 15.250 | 6.000 | 12.000 | 15.000 | 3.000 | 3 7 | 3 5 | 674 |
| 10 | 5 | R11 | INT. D CURB | E | 20 | | | | | 3 4.000 | | | | | | | 3 4 | 3 4 | 35 |
| 5 | 5 | R12 | INT. D CURB | E | 20 | | | | | 4 2.000 | | | | | | | 4 2 | 4 2 | 22 |
| 5 | 5 | R13 | INT. D CURB | E | 20 | | | V | 1 | 3 6.000 | | | | | | | 3 6 | 3 6 | |
| | | | INCREMENT = 1.500 INCH | | | | | | | 4 0.000 | | | | | | | 4 0 | 4 0 | 20 |
| 10 | 5 | R14 | INT. D CURB | E | 20 | | | | | 40 5.000 | | | | | | | 40 5 | 40 5 | 422 |
| 40 | 5 | R15 | INT. D CURB | E | 20 | | | | | 9 9.000 | | | | | | | 9 9 | 9 9 | 407 |
| 10 | 5 | R16 | INT. D CURB | E | 20 | | | | | 56 9.000 | | | | | | | 56 9 | 56 9 | 592 |
| 10 | 5 | R17 | INT. D CURB | E | 20 | | | | | 35 6.000 | | | | | | | 35 6 | 35 6 | 370 |
| 20 | 5 | R18 | INT. D CURB | E | 20 | | | | | 4 10.000 | | | | | | | 4 10 | 4 10 | 101 |
| 20 | 5 | V1 | INT. D CURB | E | 20 | | | | | 4 3.000 | | | | | | | 4 3 | 4 3 | 89 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. IN. | C FT. IN. | D FT. IN. | E FT. IN. | F FT. IN. | H FT. IN. | K FT. IN. | NOMINAL LENGTH FT. IN. | ACTUAL LENGTH FT. IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 5 | C3 | S/F D CURB | E | 20 | | | | | 10 3.000 | | | | | | | 10 3 | 10 3 | 214 |
| | | | MEDIAN BARR. CURB TRANS. | | | | | | | | | | | | | | | | |
| 50 | 5 | M1 | TRANSITION | E | 15 | S | | V | 2 | 2 5.125 | 3.000 | | | | 2 5.000 | 3.000 | 2 8 | 2 7 | |
| | | | INCREMENT = 0.500 INCH | | | | | | | 3 3.750 | 4.500 | | | | 3 3.000 | 7.500 | 3 8 | 3 7 | 161 |
| 12 | 5 | M2 | TRANSITION | E | 20 | | | | | 23 11.000 | | | | | | | 23 11 | 23 11 | 299 |
| | | | TOTALS | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | 1798 |
| | 5 | | | E | | | | | | | | | | | | | | | 31497 |
| | 6 | | | E | | | | | | | | | | | | | | | 53419 |
| | | | TOTAL | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | 86714 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | 1798 |
| | 5 | | | E | | | | | | | | | | | | | | | 31497 |
| | 6 | | | E | | | | | | | | | | | | | | | 53419 |
| | | | TOTAL | | | | | | | | | | | | | | | | 86714 |

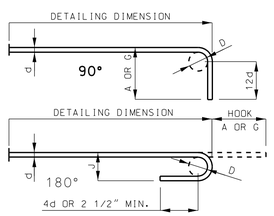



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK A OR G | 135° HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS | | 90° HOOKS |
| | | A OR G | J | A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #4-K4, #5-M2 & #6-H2 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60.000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/9/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Detailed Sept. 2013
Checked Sept. 2013

Note: This drawing is not to scale. Follow dimensions.

## GENERAL NOTES:

Center and level signs on supports.

All bolts, nuts and washers shall be galvanized.

All structural steel shall be ASTM A709, Grade 36, galvanized.

The cost of furnishing and erecting the sign supports, including the concrete anchors complete in place, will be considered completely covered by the contract lump sum price for "Fabricated Sign Support Brackets."

Concrete anchors shall be the non-drilling expansion type and shall have a certified concrete pullout strength (Ultimate Load) of 12,100 pounds (min.) in 4,000 psi concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.

Bolt threads shall be burred after sign has been erected.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering materials.

Shift sign support brackets to minimum extent necessary to allow for installation of anchors and bolts into structure and to clear construction joints and structural members.

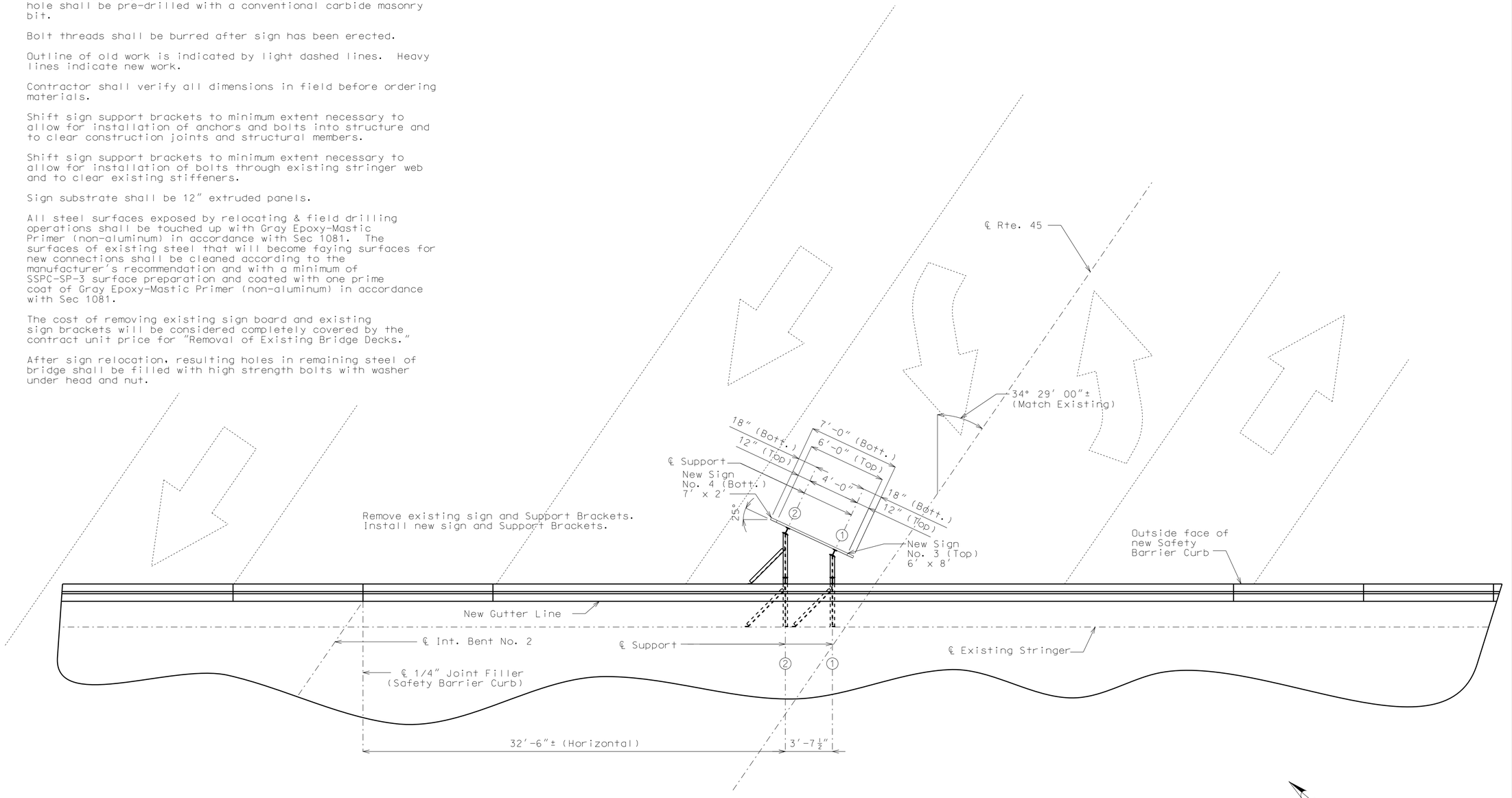
Shift sign support brackets to minimum extent necessary to allow for installation of bolts through existing stringer web and to clear existing stiffeners.

Sign substrate shall be 12" extruded panels.

All steel surfaces exposed by relocating & field drilling operations shall be touched up with Gray Epoxy-Mastic Primer (non-aluminum) in accordance with Sec 1081. The surfaces of existing steel that will become faying surfaces for new connections shall be cleaned according to the manufacturer's recommendation and with a minimum of SSPC-SP-3 surface preparation and coated with one prime coat of Gray Epoxy-Mastic Primer (non-aluminum) in accordance with Sec 1081.

The cost of removing existing sign board and existing sign brackets will be considered completely covered by the contract unit price for "Removal of Existing Bridge Decks."

After sign relocation, resulting holes in remaining steel of bridge shall be filled with high strength bolts with washer under head and nut.




PART PLAN SHOWING LOCATION OF SIGNS

Note:
For details of signs, see Sheet No. 13.

Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/21/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 12 |

COUNTY
PLATTE

JOB NO.
J412374

CONTRACT ID.

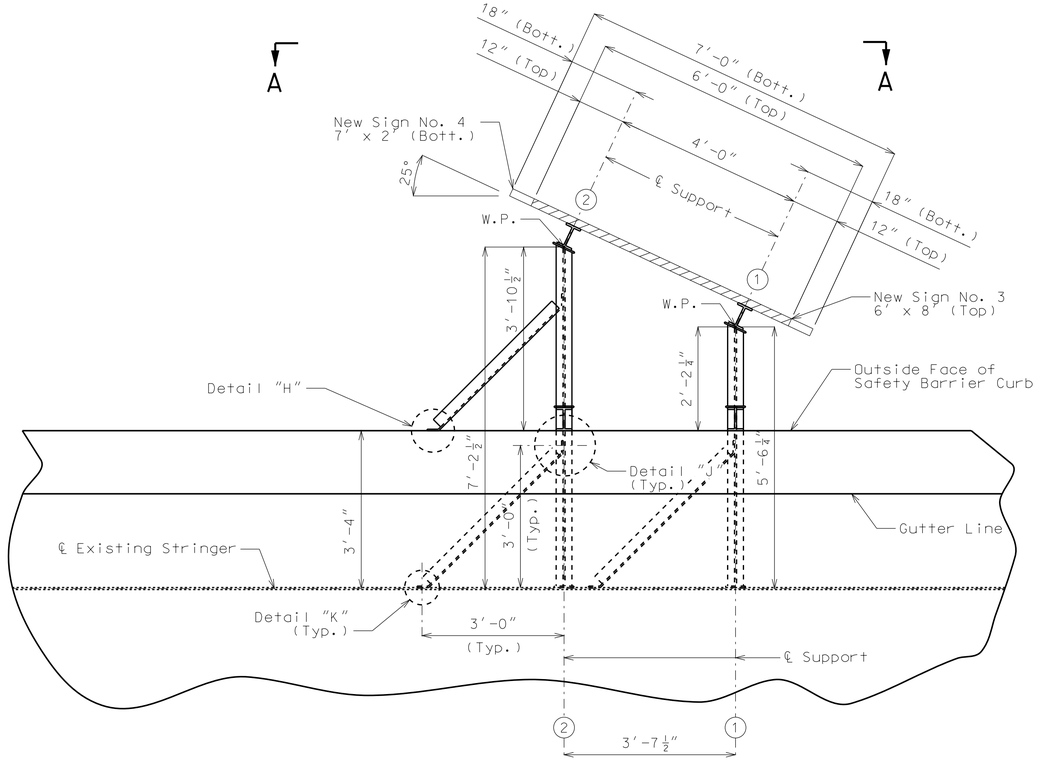
PROJECT NO.

BRIDGE NO.
A11595

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




PART PLAN SHOWING DIMENSIONS

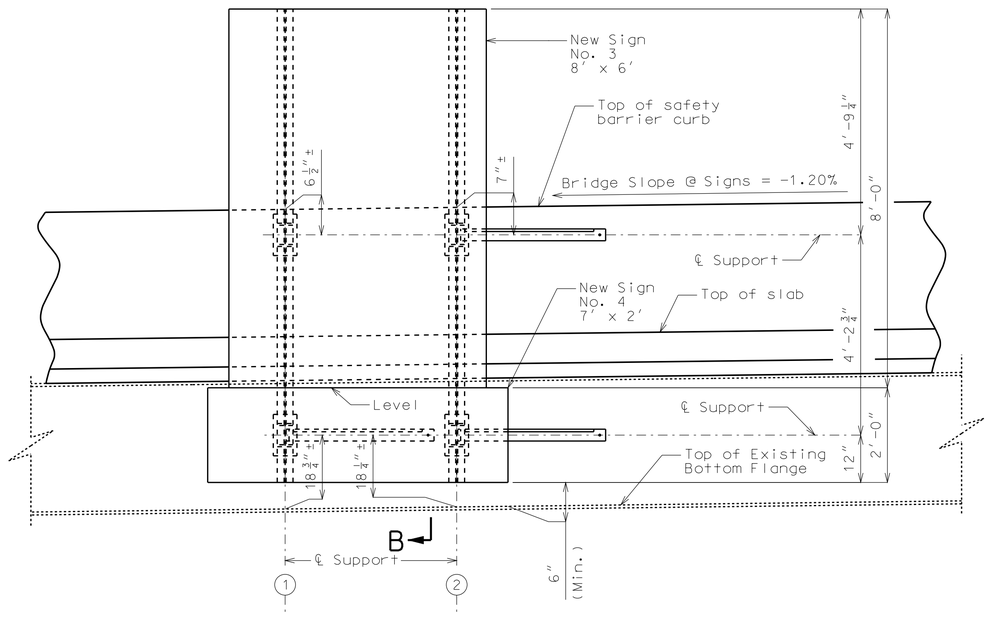
| Support | "A" | "B" | "C" | "D" |
|---|---|---|---|---|
| 1 | 18¾" ± | 2'-2¼" ± | 6½" ± | 5'-6¼" ± |
| 2 | 18¼" ± | 3'-10½" ± | 7" ± | 7'-2½" ± |

Notes:

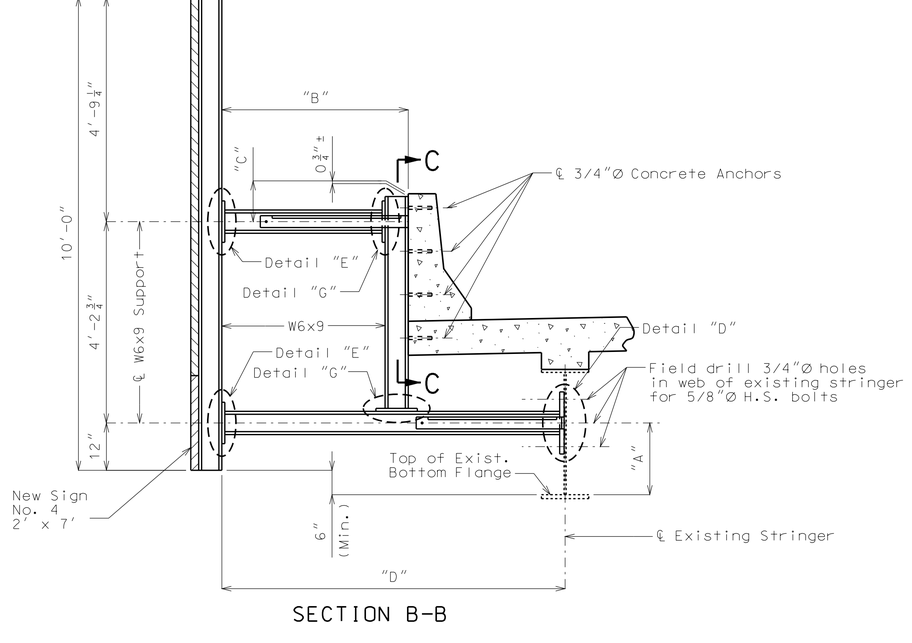
For Section C-C, see Sheet No. 14.

For Detail "D", Detail "E" & Detail "G", see Sheet No. 14.

For Detail "H", Detail "J" & Detail "K", see Sheet No. 14.




PART ELEVATION A-A




SECTION B-B

# SIGN SUPPORT BRACKETS, SIGNS NO. 3 & 4

Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/21/2013

ROUTE I-29 | STATE MO

DISTRICT BR | SHEET NO. 13

COUNTY PLATTE

JOB NO. J4I2374

CONTRACT ID.

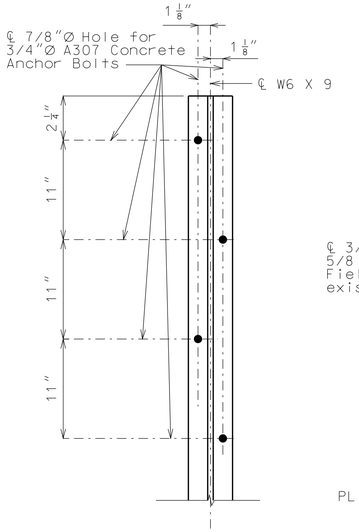
PROJECT NO.

BRIDGE NO. A11595

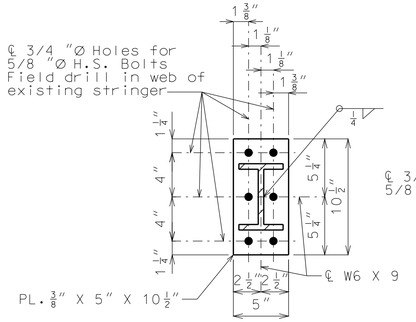
DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

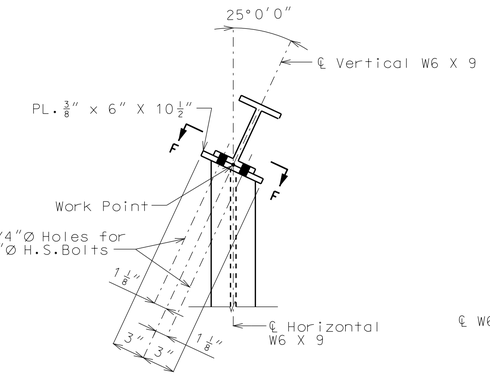
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



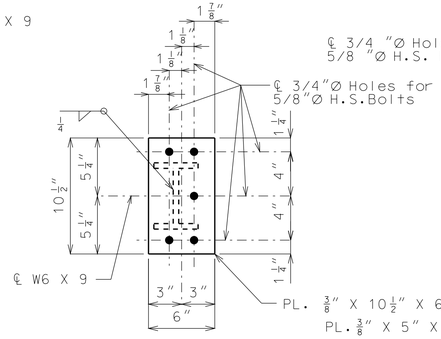

SECTION C-C



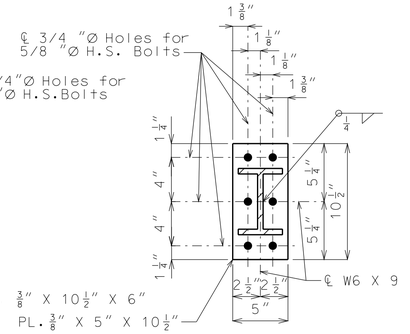

DETAIL "D"




DETAIL "E"

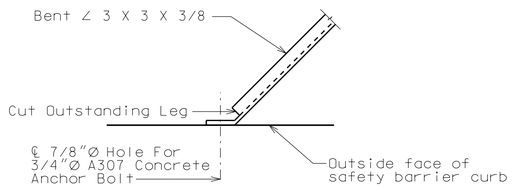



SECTION F-F

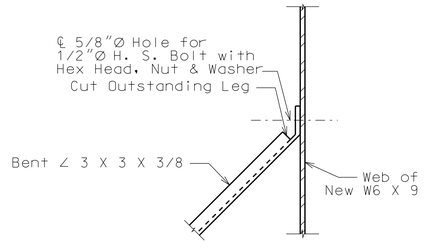



DETAIL "G"

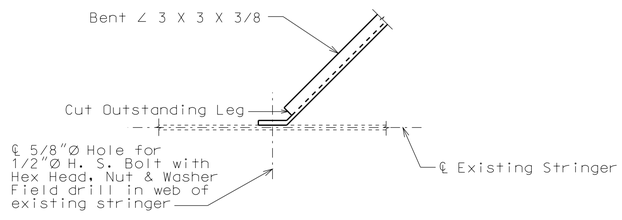
Notes: For location of Details "D", "E" & "G", see Sheet No. 13.
For location of Section C-C, see Sheet No. 13.




DETAIL "H"




DETAIL "J"




DETAIL "K"

Note: For location of Details "H", "J" & "K", see Sheet No. 13.

# SIGN SUPPORT BRACKETS, SIGNS NO. 3 & 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/17/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 14
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A11595

DESCRIPTION | DATE

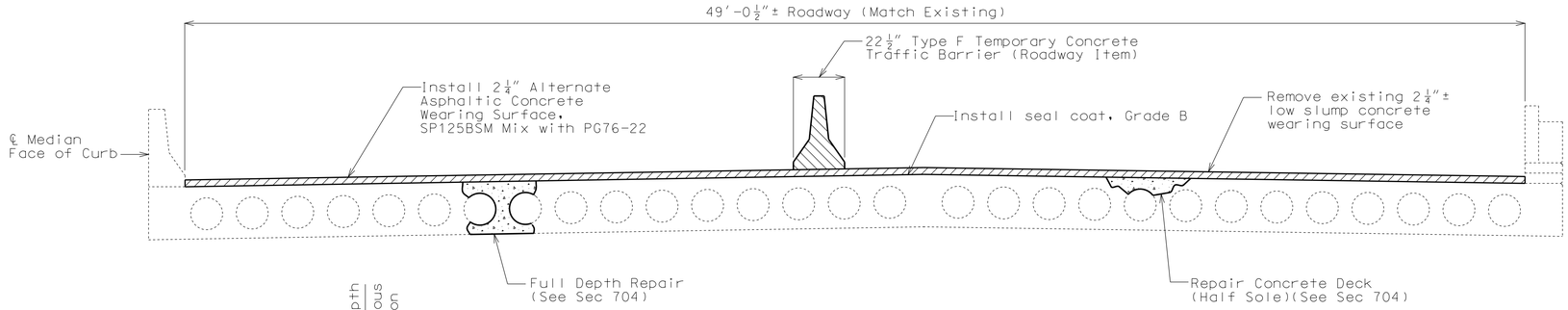
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

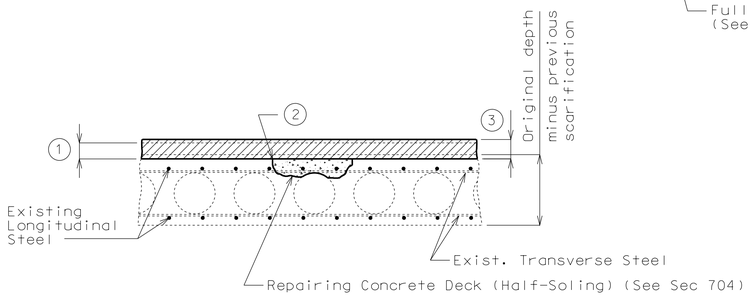
SEC/SUR 18 TWP 51N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

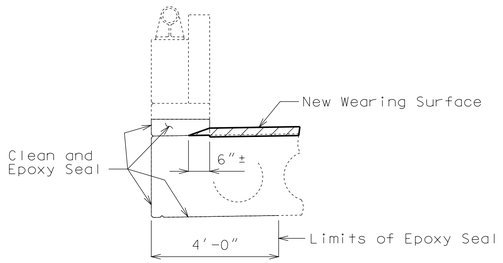
## U.I.P. & REHAB. EXISTING (47'-58'-58'-43') CONTINUOUS CONCRETE VOIDED SLAB SPANS



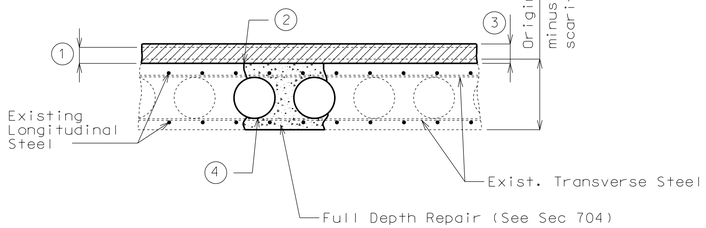

SECTION THRU SLAB



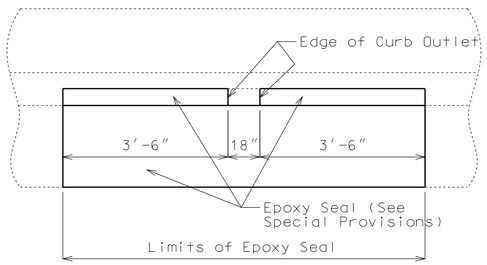

HALF-SOLED REPAIR




TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL



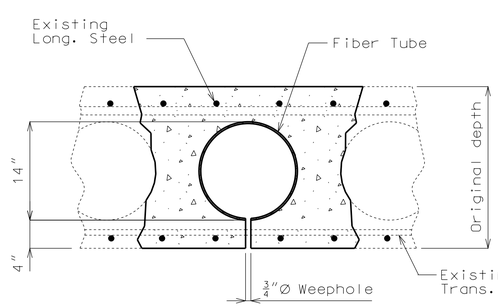

FULL DEPTH REPAIR




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET

1. Remove existing wearing surface.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2¼" (min.) Alternate Asphaltic Concrete Wearing Surface
4. Reform existing weephole, if encountered.

DECK REPAIR DETAILS




SECTION SHOWING VOID TUBE REPLACEMENT

Notes:

Fiber tubes for producing voids shall have an outside diameter of 14" and a wall thickness of 0.25" and shall be anchored to joists carrying the floor form at not more than 4'-0" centers.

One ¾"Ø Weephole shall be provided at 2" from each end of each new void.

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

| Estimated Quantities | | |
|---|---|---|
| Item | | Total |
| Removal of Concrete Wearing Surface | sq. foot | 10,232 |
| Alternate Asphaltic Concrete Wearing Surface (Bridge) | sq. yard | 1137 |
| Seal Coat, Grade B | sq. yard | 1137 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 650 |
| Full Depth Repair | sq. foot | 100 |
| Clean and Epoxy Seal | sq. foot | 560 |
| | | |
| | | |
| | | |

The mixture for Asphaltic Concrete shall be in accordance with Sec 403 and produced in accordance with Sec 404.

The area of the asphaltic concrete wearing surface will be measured and computed to the nearest square yard. This area will be measured transversely from out to out of overlay and longitudinally from end of slab to end of slab.

Payment for alternate Asphaltic Concrete Wearing Surface will be considered completely covered by the contract unit price per square yard.

## REPAIRS TO BRIDGE: RTE. I-29 SB OVER N.W. 72nd STREET

STATE ROAD FROM RTE. 152 TO RTE. 45

ABOUT 1 MILE NORTH OF RTE. 45

STA. 763+77.45± (MATCH EXISTING)

STD. 617.20

Detailed Feb. 2013
Checked Feb. 2013

Note: This drawing is not to scale. Follow dimensions.



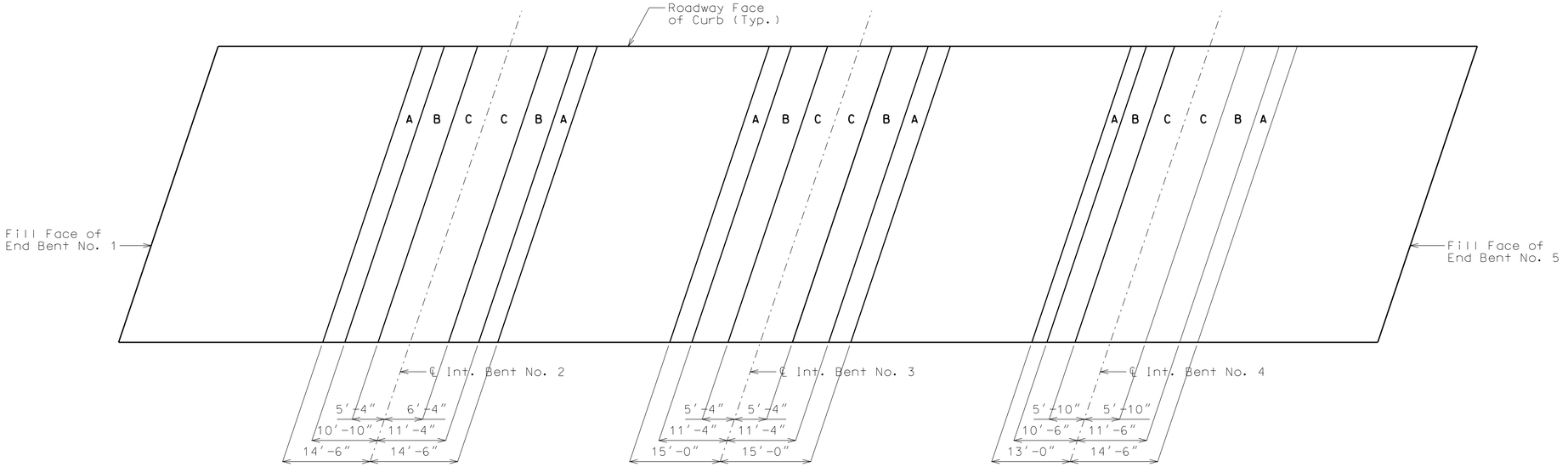
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A15954

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Full Depth Repair.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY: PLATTE

JOB NO.: J4I12374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A15954

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

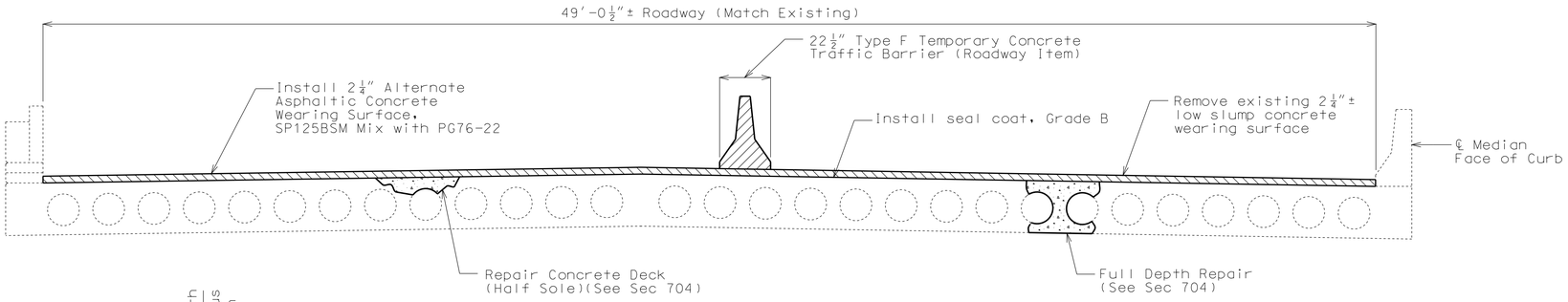
Detailed Feb. 2013
Checked Feb. 2013

Note: This drawing is not to scale. Follow dimensions.

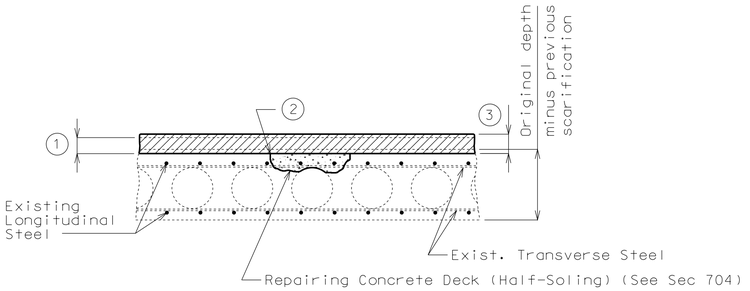
SEC/SUR 18 TWP 51N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

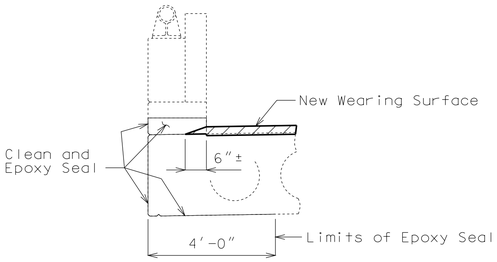
## U.I.P. & REHAB. EXISTING (47'-58'-58'-43') CONTINUOUS CONCRETE VOIDED SLAB SPANS



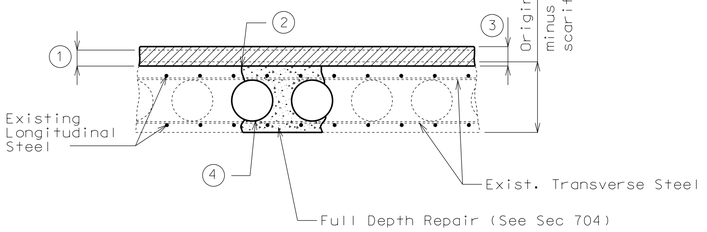

SECTION THRU SLAB




HALF-SOLED REPAIR



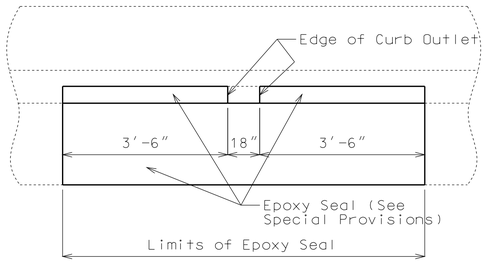

TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL



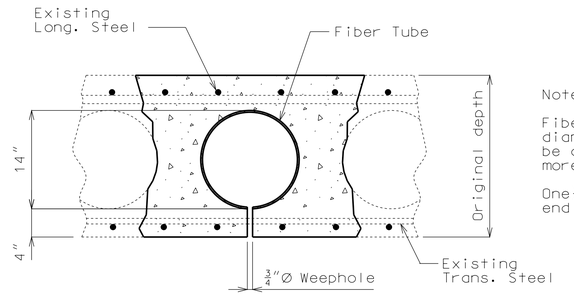

FULL DEPTH REPAIR

1. Remove existing wearing surface.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2¼" (min.) Alternate Asphaltic Concrete Wearing Surface
4. Reform existing weephole, if encountered.

DECK REPAIR DETAILS




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET




SECTION SHOWING VOID TUBE REPLACEMENT

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

| Estimated Quantities | | |
|---|---|---|
| Item | | Total |
| Removal of Concrete Wearing Surface | sq. foot | 10,232 |
| Alternate Asphaltic Concrete Wearing Surface (Bridge) | sq. yard | 1137 |
| Seal Coat, Grade B | sq. yard | 1137 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 1050 |
| Full Depth Repair | sq. foot | 100 |
| Clean and Epoxy Seal | sq. foot | 560 |
| | | |
| | | |
| | | |

The mixture for Asphaltic Concrete shall be in accordance with Sec 403 and produced in accordance with Sec 404.

The area of the asphaltic concrete wearing surface will be measured and computed to the nearest square yard. This area will be measured transversely from out to out of overlay and longitudinally from end of slab to end of slab.

Payment for alternate Asphaltic Concrete Wearing Surface will be considered completely covered by the contract unit price per square yard.

Notes:

Fiber tubes for producing voids shall have an outside diameter of 14" and a wall thickness of 0.25" and shall be anchored to joists carrying the floor form at not more than 4'-0" centers.

One ¾"Ø Weephole shall be provided at 2" from each end of each new void.

## REPAIRS TO BRIDGE: RTE. I-29 NB OVER N.W. 72nd STREET

STATE ROAD FROM RTE. 152 TO RTE. 45

ABOUT 1 MILE NORTH OF RTE. 45

STA. 763+98.99± (MATCH EXISTING)

STD. 617.20

Detailed Feb. 2013
Checked Feb. 2013

Note: This drawing is not to scale. Follow dimensions.



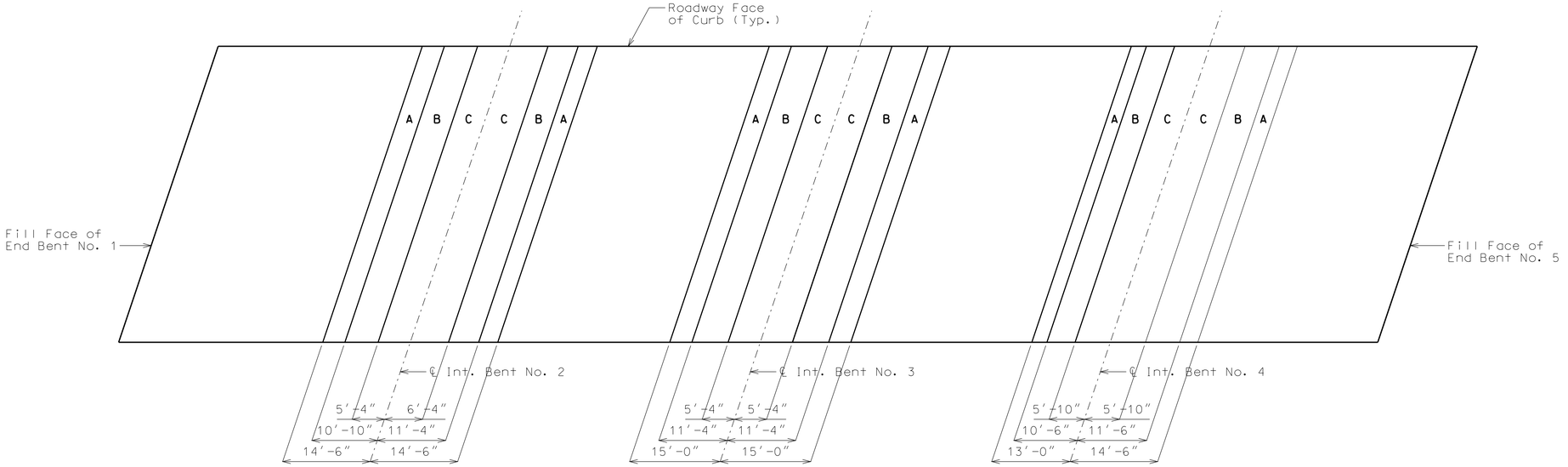
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A15955

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

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An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Full Depth Repair.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY: PLATTE

JOB NO.: J4I12374

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A15955

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

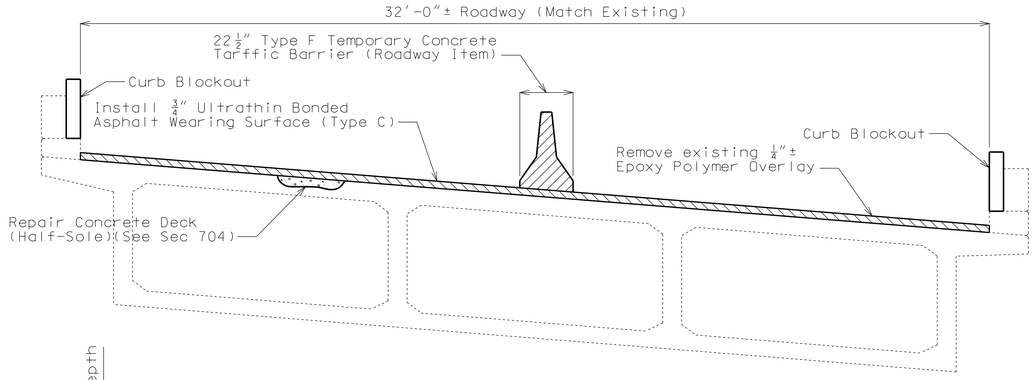
Detailed Feb. 2013
Checked Feb. 2013

Note: This drawing is not to scale. Follow dimensions.

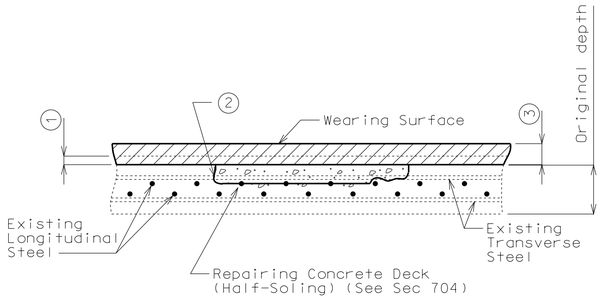
SEC/SUR 33 TWP 51N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB. EXISTING (70'-91'-76'-58') CONTINUOUS CONCRETE BOX GIRDER SPANS



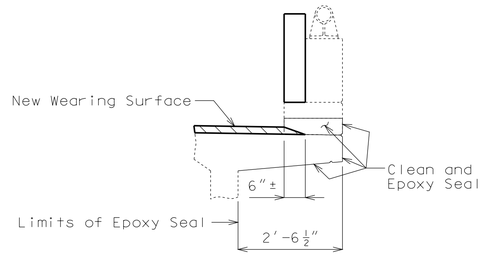

SECTION THRU SLAB



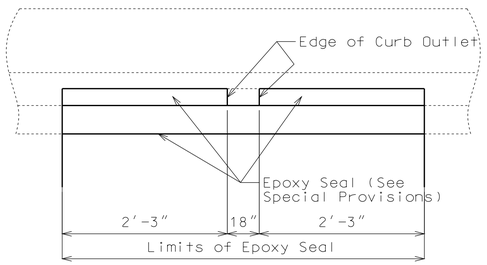

HALF-SOLED REPAIR

1. Remove existing wearing surface.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. ¾" (min.) for Ultrathin Bonded Asphalt Wearing Surface, Type C

DECK REPAIR DETAILS




TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET

| Estimated Quantities | | |
|---|---|---|
| Item | | Total |
| Removal of Epoxy Polymer Overlay | sq. foot | 9536 |
| Ultrathin Bonded Asphalt Wearing Surface, Type C | sq. yard | 1060 |
| Curb Blockout | linear foot | 649 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 850 |
| Clean and Epoxy Seal | sq. foot | 560 |
| | | |
| | | |
| | | |
| | | |

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 5

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## REPAIRS TO BRIDGE: RAMP 1 (I-29 NBL TO I-635 SBL) OVER I-29 SBL

STATE ROAD AT I-29/I-635 INTERCHANGE
ABOUT 4 MILES NORTH OF MISSOURI RIVER
STA. 9+99.88± (RAMP 1) (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Detailed Apr. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.



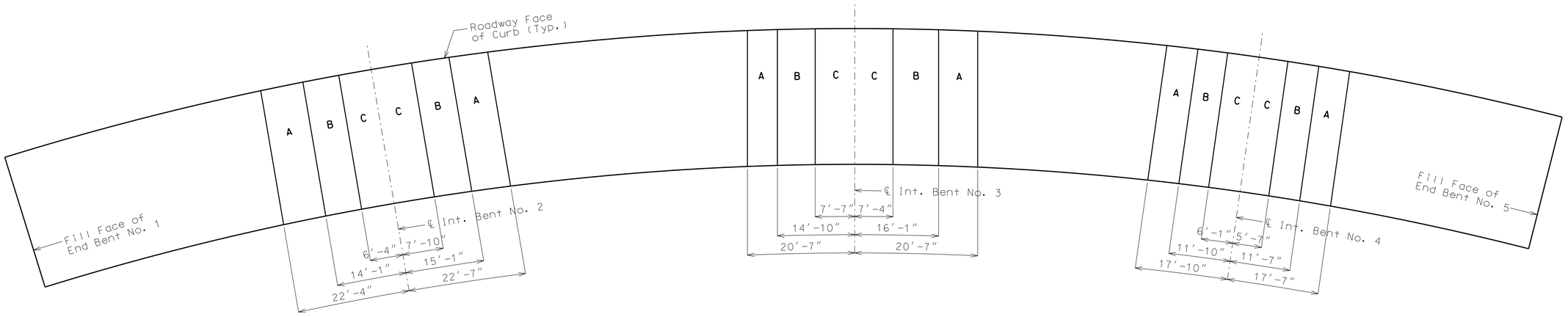
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16873

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time except for the zones directly adjacent to the centerline of bent. If either of the zones adjacent to centerline of bent has a single repair area of over 10 square feet or a total repair area of over 20 square feet, that zone shall be repaired before removing concrete in the other zone of the same designation at that bent.

Total width of full depth repair shall not exceed 1/3 of the deck width at one time. For any area of deck repair that extends over a concrete girder and is more than 18 inches in length along the girder, the concrete removal shall stop at the centerline of girder and repair completed in this area. Prior to continuing work in this area, the concrete shall have attained a compressive strength of 3200 psi. No traffic shall be permitted over the girder that is undergoing repair.

When the full depth repair extends over a diaphragm or girder and the deteriorated concrete extends into the diaphragm or girder, all deteriorated concrete shall be removed and replaced as full depth repair. Concrete in girders shall not be removed below the deck haunch of the girder without prior review and approval from the engineer.

Interior falsework installed by the contractor resting on the bottom slab shall be removed where entry access is available.

If any single repair area does not exceed 9 square feet in size and the total repair within a special repair zone does not exceed 27 square feet, the special repair zone requirement does not apply for that zone. Half-soling repair in the special repair zone, on either side of the intermediate bents, shall be to a depth that will not expose half the diameter of the longitudinal reinforcing bar. Full depth repair shall be made when removal of deteriorated concrete exposes half or more of the diameter of the top longitudinal reinforcing bar.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013

ROUTE I-29 | STATE MO

DISTRICT BR | SHEET NO. 2

COUNTY PLATTE

JOB NO. J4I12374

CONTRACT ID.

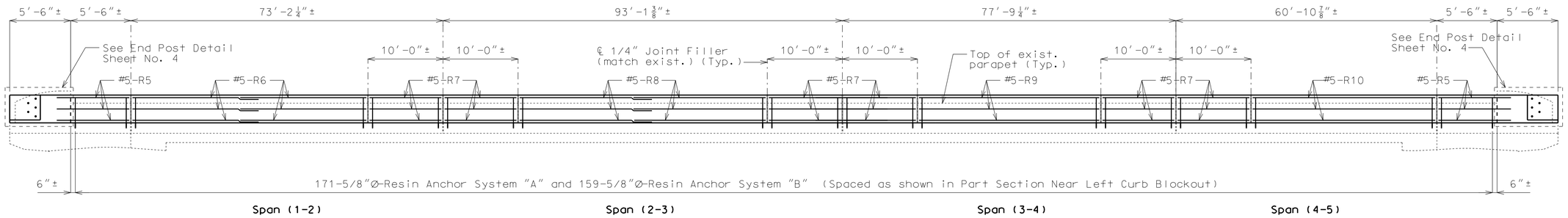
PROJECT NO.

BRIDGE NO. A16873

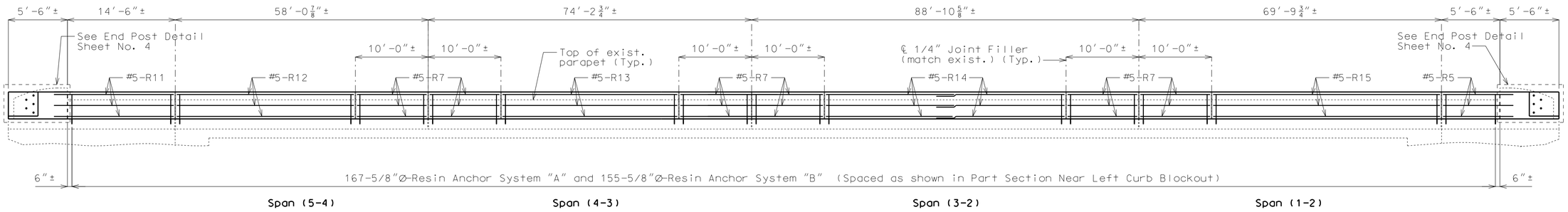
DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



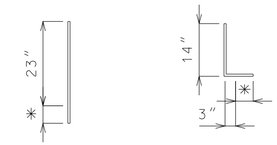

## SECTION NEAR LEFT CURB BLOCKOUT




## SECTION NEAR RIGHT CURB BLOCKOUT

Note: Longitudinal dimensions shown are arc dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

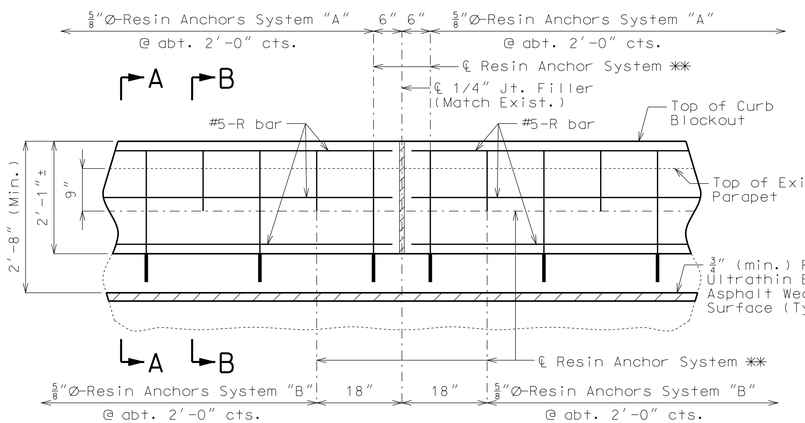



RESIN ANCHOR SYSTEM "A" (370 req'd) (Install in curb)

RESIN ANCHOR SYSTEM "B" (314 req'd) (Install in parapet)

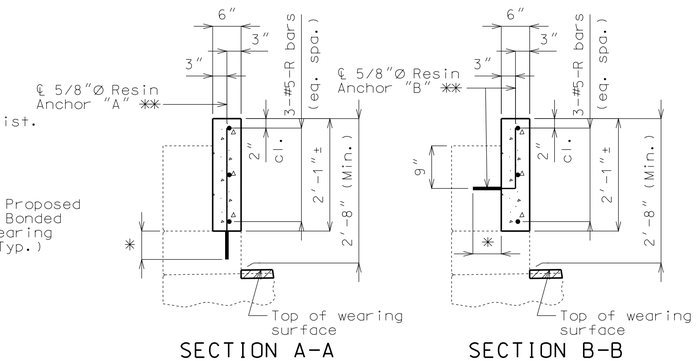
✳ Use manufacturer's embedment length. (5″ minimum embedment)

## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR LEFT CURB BLOCKOUT


## FILLED JOINT DETAIL




SECTION A-A

SECTION B-B

## DETAILS OF LEFT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2″ radius or 3/8″ bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

✳✳ Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

Detailed Apr. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.



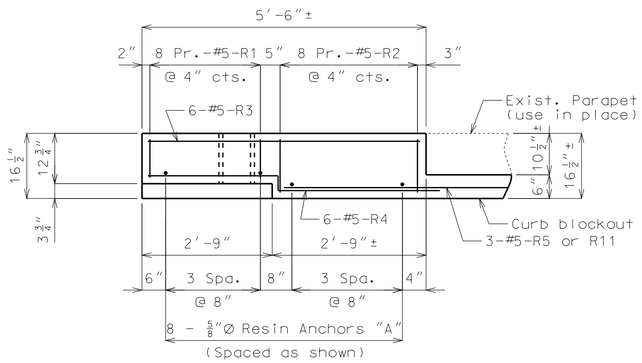
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16873

DESCRIPTION | DATE

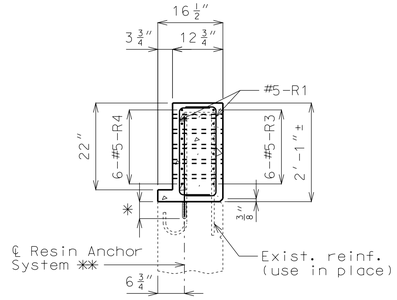
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

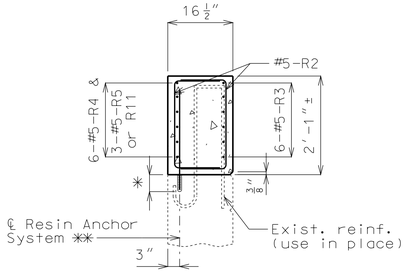



PLAN SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.

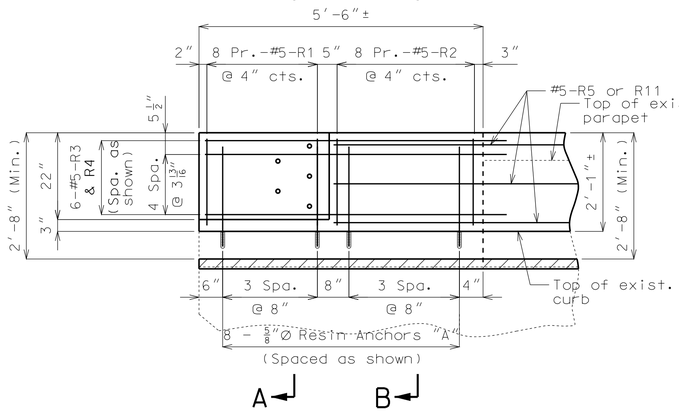



SECTION A-A



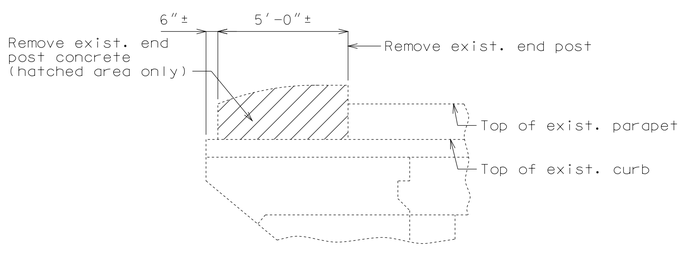

SECTION B-B

A B




ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




PART ELEVATION SHOWING END POST CONCRETE REMOVAL

Notes:
For Details of Resin Anchors, see Sheet No. 3.

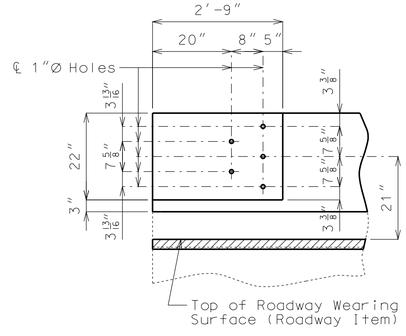
* Manufacturer's recommended embedment length. (5″ minimum embedment)

** Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.




DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Apr. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16873

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

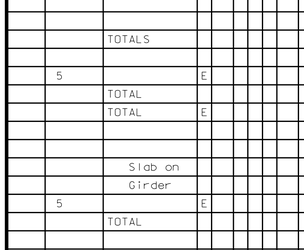
# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | 5 | R1 | END POST | E | 10 | S | | | | | | 9.750 | | 22.000 | | | | | | | | | | 3 | 6 | 3 | 3 | 217 |
| 64 | 5 | R2 | END POST | E | 10 | S | | | | | | 13.500 | | 22.000 | | | | | | | | | | 4 | 1 | 3 | 11 | 261 |
| 24 | 5 | R3 | END POST | E | 20 | | | | | 5 | 3.000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 131 |
| 24 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9.000 | 3.750 | | 3 | 0.000 | | | | | | | 6 | 1 | 5 | 10 | 146 |
| 9 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 8 | 0.000 | | | | | | | | | | | | | 8 | 0 | 8 | 0 | 75 |
| 6 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 32 | 11.000 | | | | | | | | | | | | | 32 | 11 | 32 | 11 | 206 |
| 38 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 386 |
| 6 | 5 | R8 | BLOCKOUT | E | 20 | | | | | 37 | 11.000 | | | | | | | | | | | | | 37 | 11 | 37 | 11 | 237 |
| 3 | 5 | R9 | BLOCKOUT | E | 20 | | | | | 57 | 6.000 | | | | | | | | | | | | | 57 | 6 | 57 | 6 | 180 |
| 3 | 5 | R10 | BLOCKOUT | E | 20 | | | | | 50 | 8.000 | | | | | | | | | | | | | 50 | 8 | 50 | 8 | 159 |
| 3 | 5 | R11 | BLOCKOUT | E | 20 | | | | | 17 | 0.000 | | | | | | | | | | | | | 17 | 0 | 17 | 0 | 53 |
| 3 | 5 | R12 | BLOCKOUT | E | 20 | | | | | 47 | 10.000 | | | | | | | | | | | | | 47 | 10 | 47 | 10 | 150 |
| 3 | 5 | R13 | BLOCKOUT | E | 20 | | | | | 54 | 0.000 | | | | | | | | | | | | | 54 | 0 | 54 | 0 | 169 |
| 6 | 5 | R14 | BLOCKOUT | E | 20 | | | | | 35 | 10.000 | | | | | | | | | | | | | 35 | 10 | 35 | 10 | 224 |
| 3 | 5 | R15 | BLOCKOUT | E | 20 | | | | | 59 | 7.000 | | | | | | | | | | | | | 59 | 7 | 59 | 7 | 187 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 2780 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 2780 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 2780 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 2780 |

# BILL OF REINFORCING STEEL

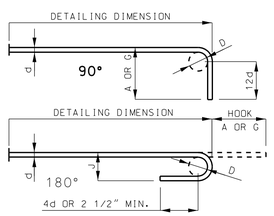
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

TWO ADDITIONAL #5-R7 ARE INCLUDED IN THE BAR BILL FOR TESTING.




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

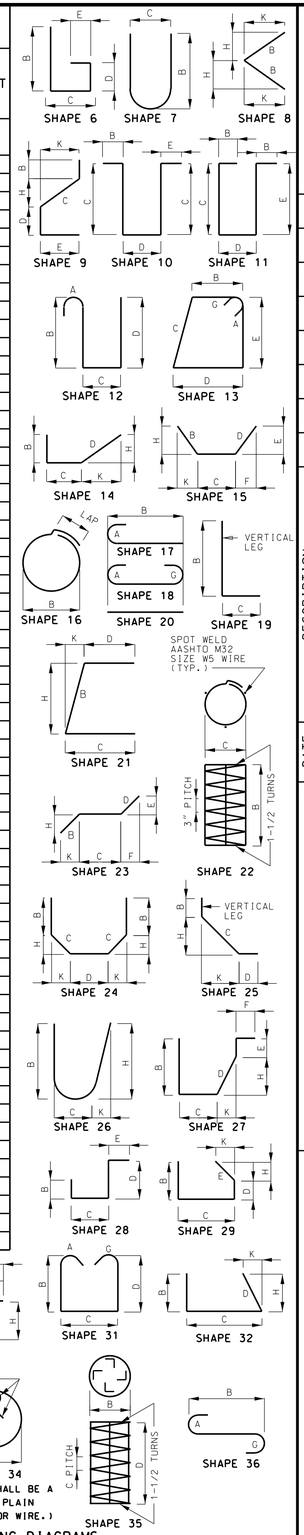
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

## BENDING DIAGRAMS




"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16873

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

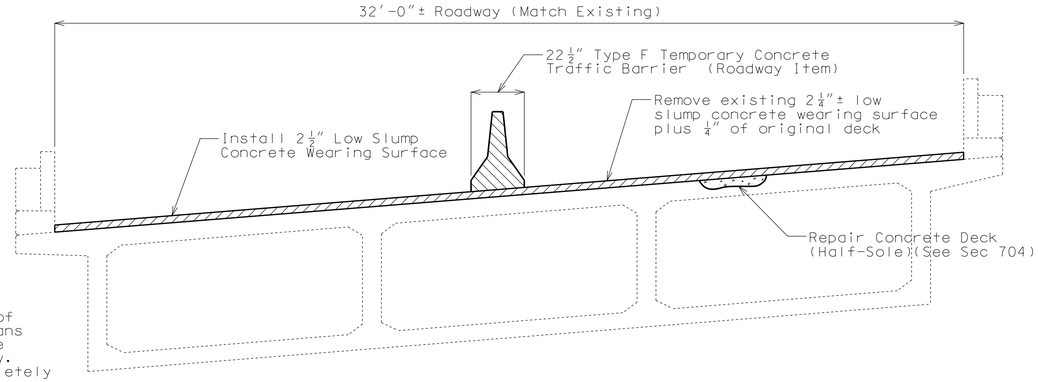
Detailed May 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.

SEC/SUR 33 TWP 51N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

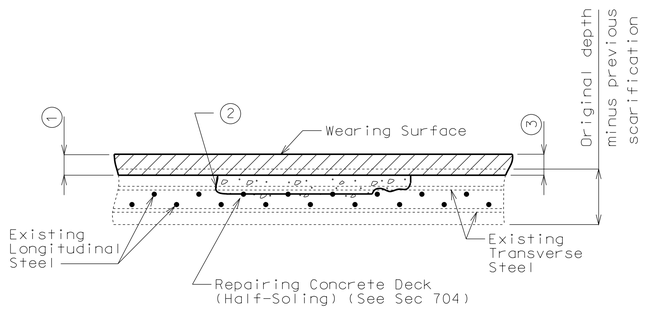
## U.I.P. & REHAB. EXISTING (64'-91'-91'-83'-62') CONTINUOUS CONCRETE BOX GIRDER SPANS




SECTION THRU SLAB

Note:

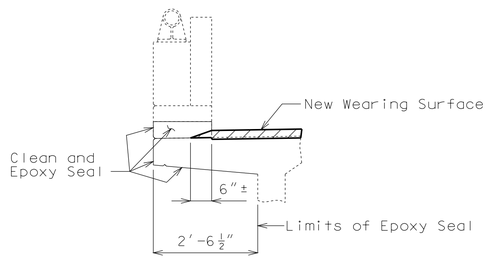
Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for other items.



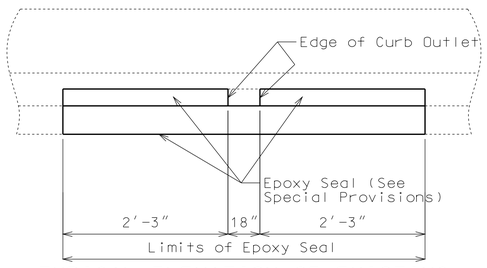

HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2½" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS




TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

### Estimated Quantities

| Item | | Total |
|---|---|---|
| Flowable Backfill | cu. yard | 25 |
| Removal of Concrete Wearing Surface | sq. foot | 12,608 |
| Low Slump Concrete Wearing Surface | sq. yard | 1401 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 900 |
| Clean and Epoxy Seal | sq. foot | 434 |
| | | |
| | | |
| | | |
| | | |

REPAIRS TO BRIDGE: RAMP 4 (I-635 NBL TO I-29 NBL) OVER I-29 SBL & RAMP 1 (I-29 NBL TO I-635 SBL)

STATE ROAD AT I-29/I-635 INTERCHANGE

ABOUT 4 MILES NORTH OF MISSOURI RIVER

STA. 43+89.45± (RAMP 4) (MATCH EXISTING)

STD. 617.10
STD. 617.20

Detailed Apr. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.



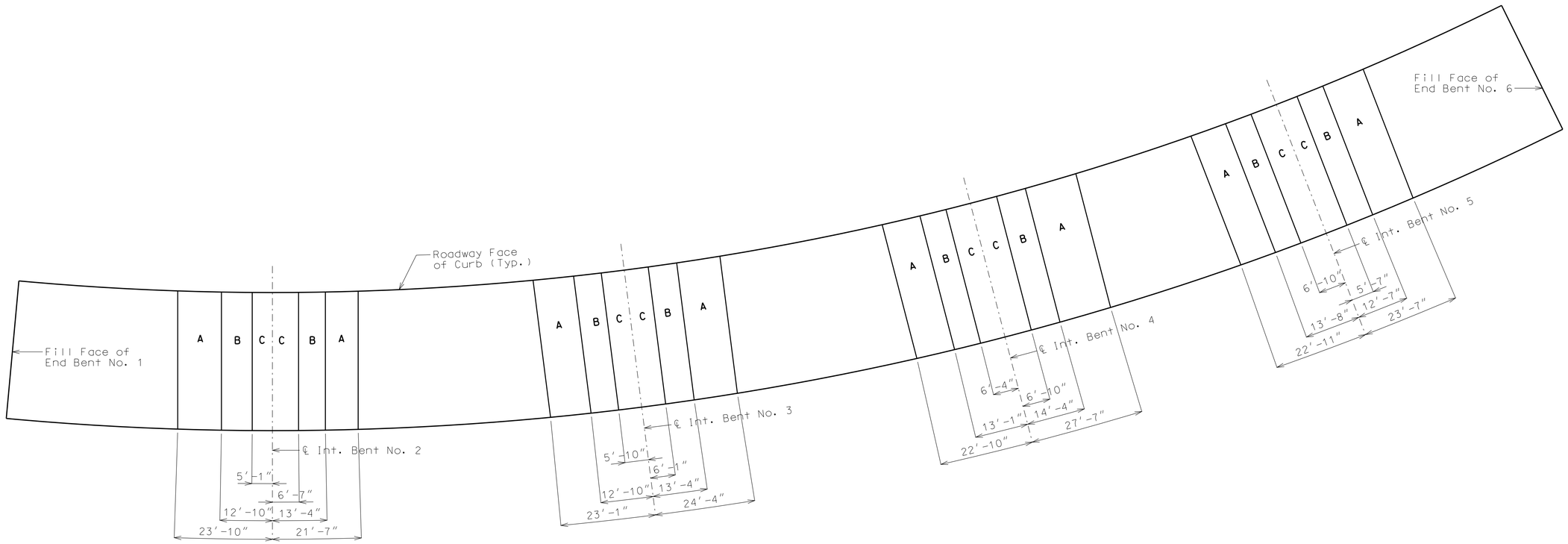
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16884

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




## PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

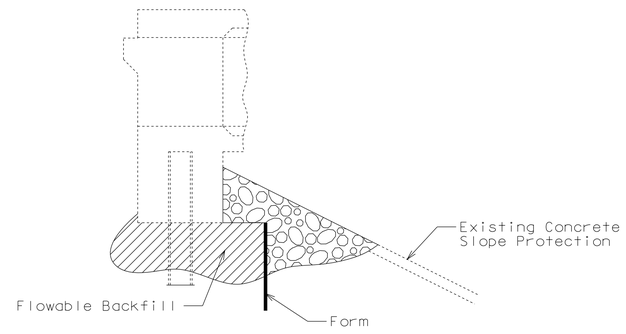
Zones with the same letter designation may be repaired at the same time except for the zones directly adjacent to the centerline of bent. If either of the zones adjacent to centerline of bent has a single repair area of over 10 square feet or a total repair area of over 20 square feet, that zone shall be repaired before removing concrete in the other zone of the same designation at that bent.

Total width of full depth repair shall not exceed 1/3 of the deck width at one time. For any area of deck repair that extends over a concrete girder and is more than 18 inches in length along the girder, the concrete removal shall stop at the centerline of girder and repair completed in this area. Prior to continuing work in this area, the concrete shall have attained a compressive strength of 3200 psi. No traffic shall be permitted over the girder that is undergoing repair.

When the full depth repair extends over a diaphragm or girder and the deteriorated concrete extends into the diaphragm or girder, all deteriorated concrete shall be removed and replaced as full depth repair. Concrete in girders shall not be removed below the deck haunch of the girder without prior review and approval from the engineer.

Interior falsework installed by the contractor resting on the bottom slab shall be removed where entry access is available.

If any single repair area does not exceed 9 square feet in size and the total repair within a special repair zone does not exceed 27 square feet, the special repair zone requirement does not apply for that zone. Half-soling repair in the special repair zone, on either side of the intermediate bents, shall be to a depth that will not expose half the diameter of the longitudinal reinforcing bar. Full depth repair shall be made when removal of deteriorated concrete exposes half or more of the diameter of the top longitudinal reinforcing bar.




## SECTION THRU END BENT NO. 1 SHOWING VOID

Payment for Flowable Backfill and any other work incidental to filling the void at Bent No. 1 will be considered completely covered by the contract unit price for Flowable Backfill.

Detailed Apr. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY PLATTE
JOB NO. J4I12374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16884

DATE | DESCRIPTION

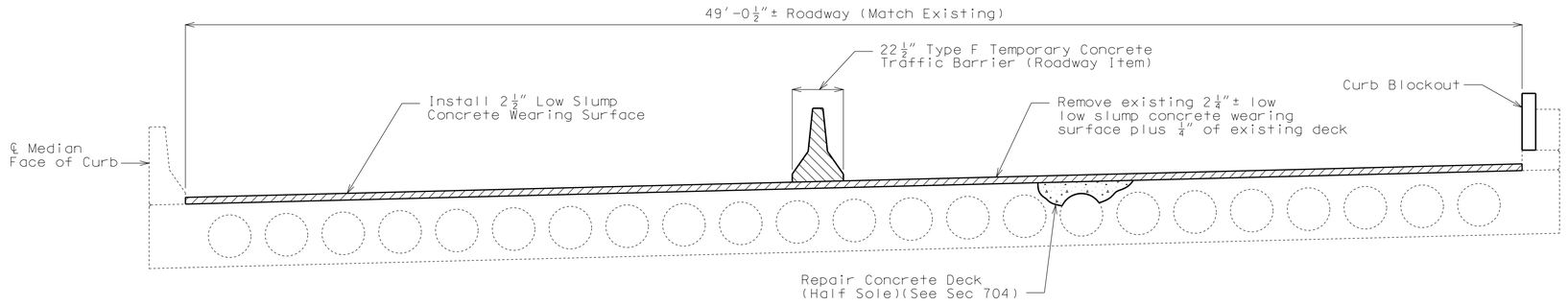
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

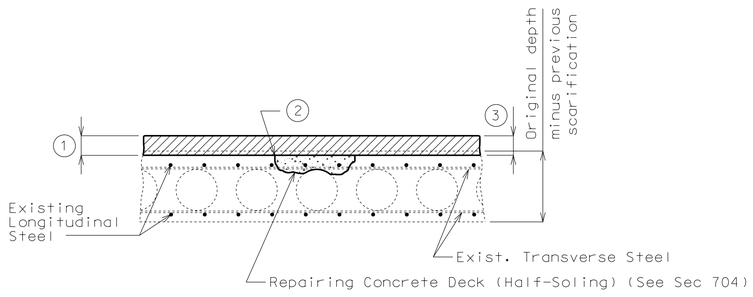
SEC/SUR 26 TWP 52N RGE 34W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB.EXISTING (43'-71'-43') CONTINUOUS CONCRETE VOIDED SLAB SPANS




SECTION THRU SLAB




HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2½" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 7

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

### Estimated Quantities

| Item | | Total |
|---|---|---|
| Removal of Concrete Wearing Surface | sq. foot | 7864 |
| Low Slump Concrete Wearing Surface | sq. yard | 874 |
| Curb Blockout | linear foot | 172 |
| Remove and Replace Barrier Curb | linear foot | 5 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 800 |
| | | |
| | | |
| | | |
| | | |

REPAIRS TO BRIDGE: I-29 SBL OVER 112th STREET

STATE ROAD FROM RTE. D TO RTE. 152
ABOUT 1 MILE SOUTH OF RTE. D
STA. 479+03.25± (MATCH EXISTING)

STD. 617.10
STD. 617.20
STD. 706.35

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



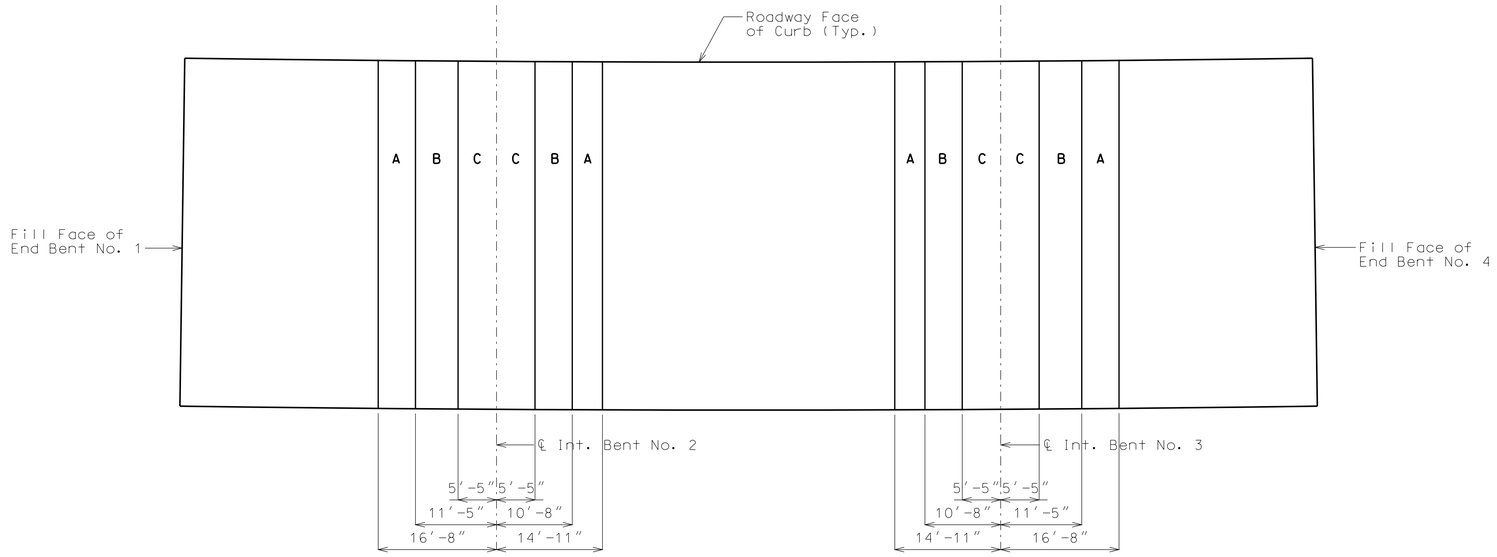
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17462

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013

ROUTE I-29 | STATE MO

DISTRICT BR | SHEET NO. 2

COUNTY PLATTE

JOB NO. J4I12374

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17462

| DESCRIPTION | DATE |
|---|---|
| | |

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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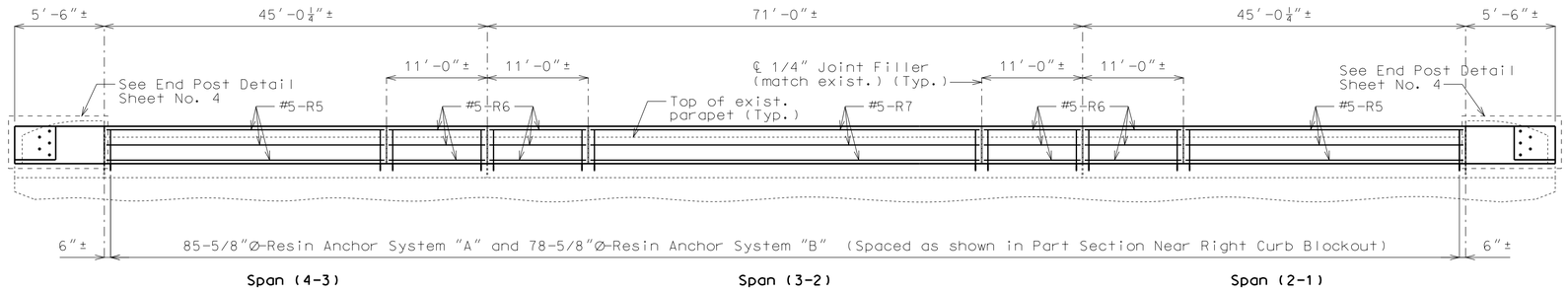
Detailed Mar. 2013
Checked Mar. 2013

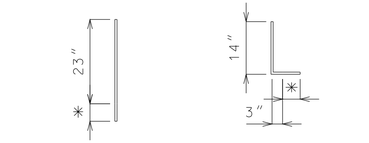
Note: This drawing is not to scale. Follow dimensions.




## SECTION NEAR RIGHT CURB BLOCKOUT

Note: Longitudinal dimensions shown are arc dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

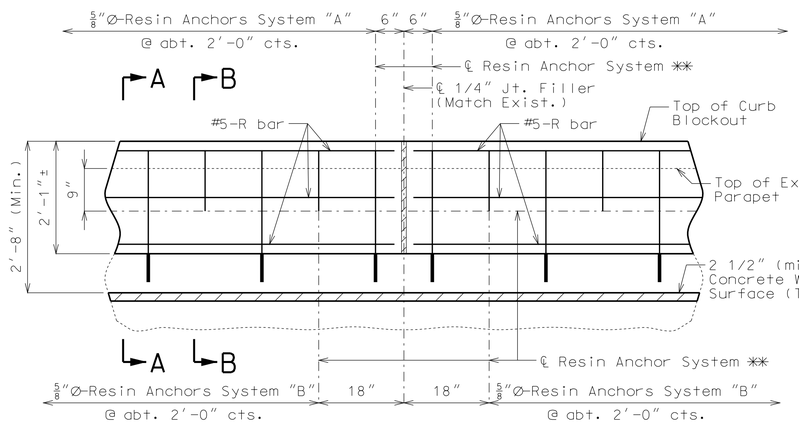



RESIN ANCHOR SYSTEM "A" (101 req'd) (Install in curb)

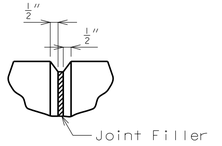
RESIN ANCHOR SYSTEM "B" (78 req'd) (Install in parapet)

* Use manufacturer's embedment length. (5" minimum embedment)

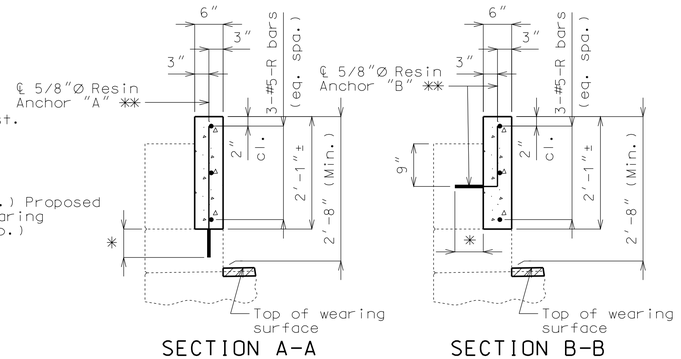
## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR RIGHT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A

SECTION B-B

## DETAILS OF RIGHT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

** Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11" for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17462

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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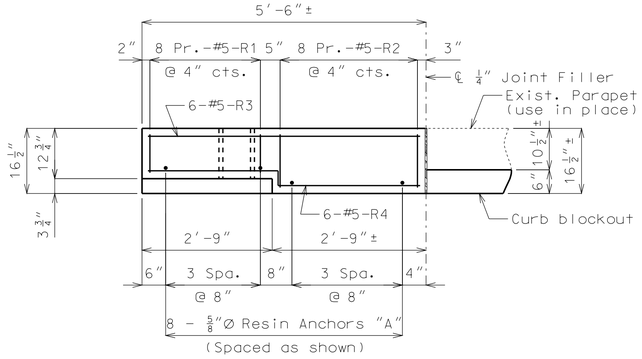
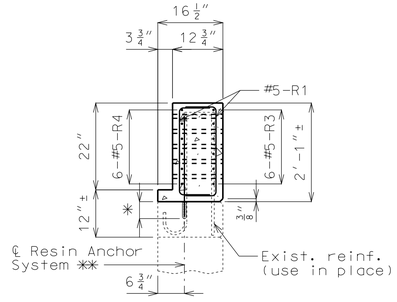
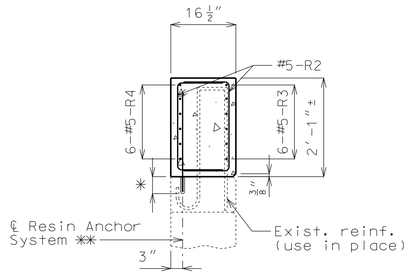



PLAN SHOWING END POST REINFORCEMENT

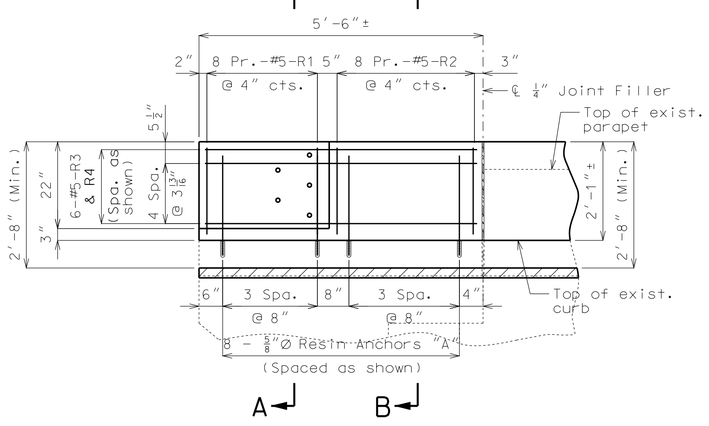
Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




SECTION A-A

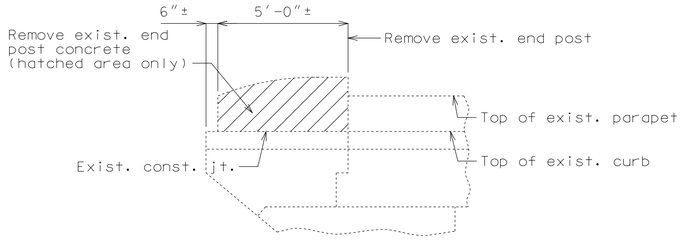



SECTION B-B




ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




PART ELEVATION SHOWING END POST CONCRETE REMOVAL

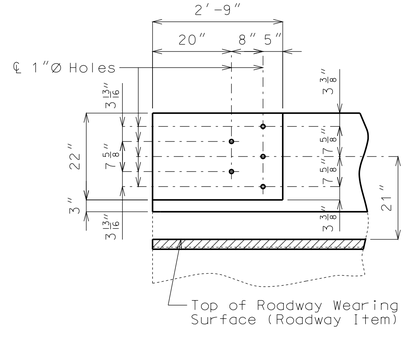
Notes:
For Details of Resin Anchors, see Sheet No. 3.

* Manufacturer's recommended embedment length. (5″ minimum embedment)

** Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17462

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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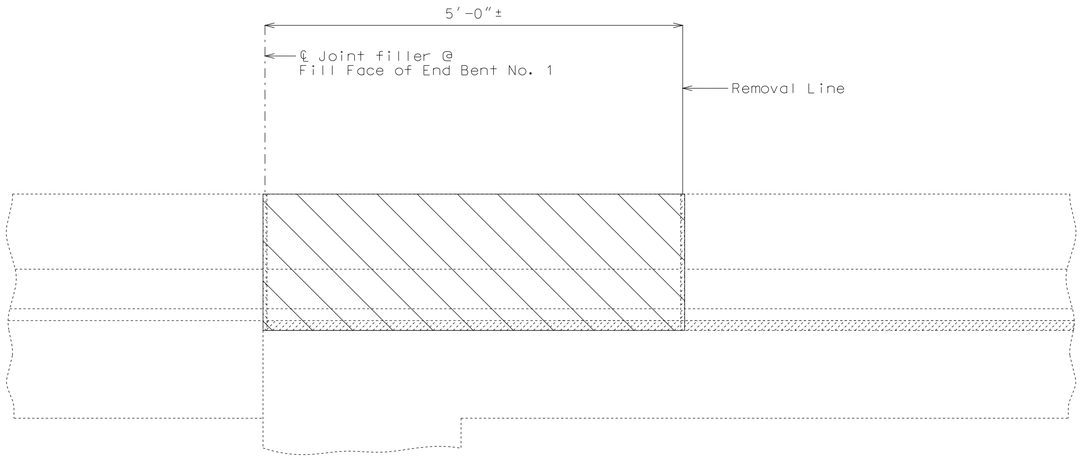



PART SECTION NEAR LEFT SAFETY BARRIER CURB
SHOWING REMOVAL

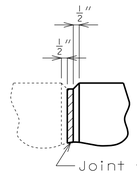
Notes:
Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Payment for all removal, concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for "Remove and Replace Barrier Curb" per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Remove and Replace Barrier Curb".




1/4" FILLED JOINT
DETAIL

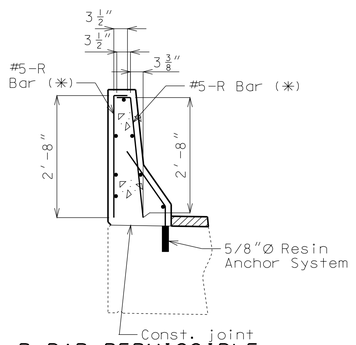
Notes:
6 - 5/8"Ø Resin Anchor required (length = 2'-3")

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb.

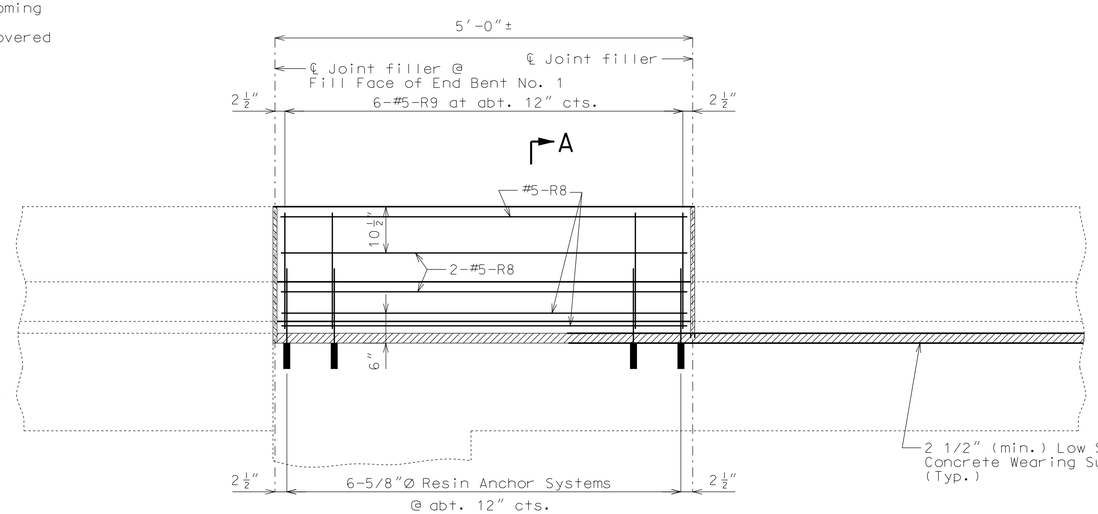
The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

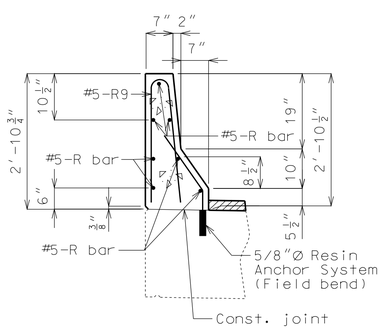



R-BAR PERMISSIBLE
ALTERNATE SHAPE

(*) The R9 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




PART SECTION NEAR LEFT SAFETY BARRIER CURB




PART SECTION A-A

Note:

The cross-sectional area above the slab = 3.45 sq. ft.



DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17462

| DESCRIPTION | DATE |
|---|---|

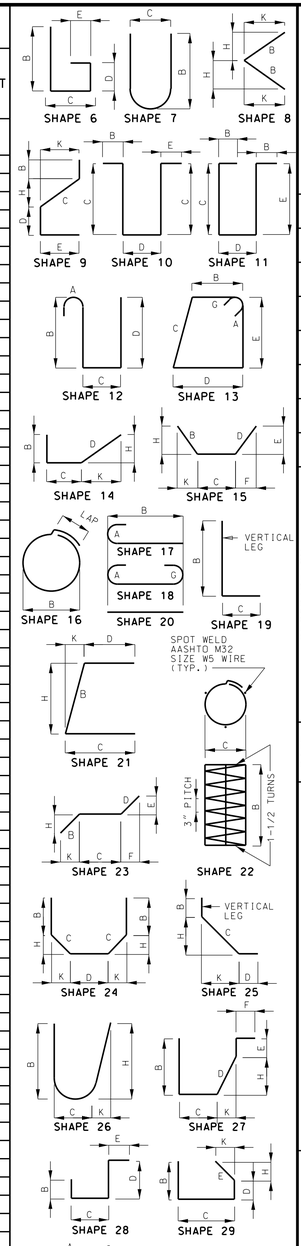
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. IN. | C FT. IN. | D FT. IN. | E FT. IN. | F FT. IN. | H FT. IN. | K FT. IN. | NOMINAL LENGTH FT. IN. | ACTUAL LENGTH FT. IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | |
| 32 | 5 | R1 | END POST | E | 10 | S | | | | | 9.750 | 22.000 | | | | | 3 6 | 3 3 | 108 |
| 32 | 5 | R2 | END POST | E | 10 | S | | | | | 13.500 | 22.000 | | | | | 4 1 | 3 11 | 131 |
| 12 | 5 | R3 | END POST | E | 20 | | | | | 5 3.000 | | | | | | | 5 3 | 5 3 | 66 |
| 12 | 5 | R4 | END POST | E | 28 | S | | | | | 2 9.000 | 3.750 | 2 6.000 | | | | 5 7 | 5 4 | 67 |
| 6 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 33 9.000 | | | | | | | 33 9 | 33 9 | 211 |
| 14 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 10 9.000 | | | | | | | 10 9 | 10 9 | 157 |
| 3 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 48 9.000 | | | | | | | 48 9 | 48 9 | 153 |
| | | | BARRIER CURB | | | | | | | | | | | | | | | | |
| 7 | 5 | R8 | BARRIER CURB | E | 20 | | | | | 4 9.000 | | | | | | | 4 9 | 4 9 | 35 |
| 6 | 5 | R9 | BARRIER CURB | E | 26 | | | | | 2 8.000 | 4.250 | 2 8.125 | | | 2 8.000 | 3.000 | 5 6 | 5 6 | 34 |
| | | | TOTALS | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | 962 |
| | | | TOTAL | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | 962 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | 893 |
| | | | TOTAL | | | | | | | | | | | | | | | | 893 |
| | | | Safety Barrier Curb | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | 69 |
| | | | TOTAL | | | | | | | | | | | | | | | | 69 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. IN. | C FT. IN. | D FT. IN. | E FT. IN. | F FT. IN. | H FT. IN. | K FT. IN. | NOMINAL LENGTH FT. IN. | ACTUAL LENGTH FT. IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|




BENDING DIAGRAMS

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013

ROUTE I-29 | STATE MO

DISTRICT BR | SHEET NO. 6

COUNTY PLATTE

JOB NO. J412374

CONTRACT ID.

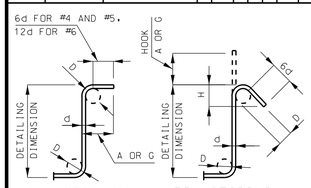
PROJECT NO.

BRIDGE NO. A17462

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

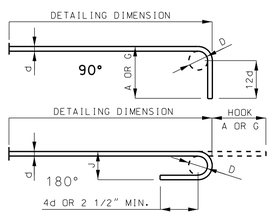
DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

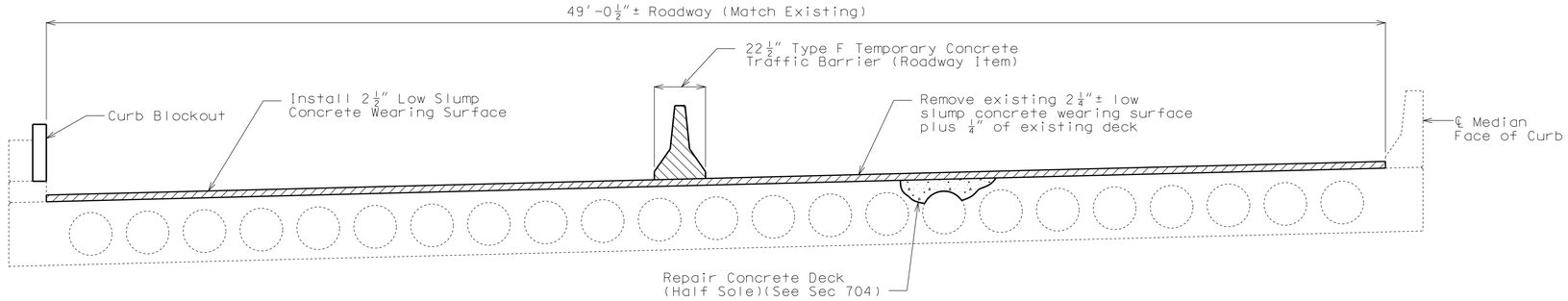
Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.

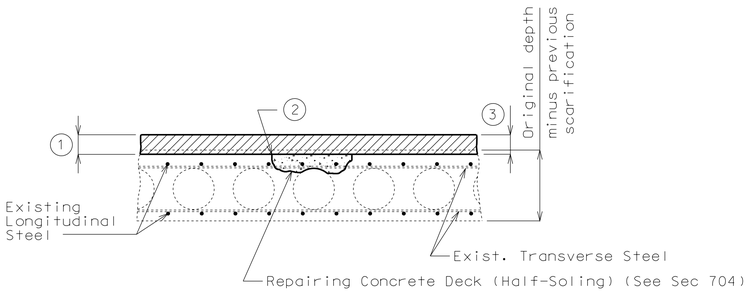
SEC/SUR 36 TWP 52N RGE 34W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB.EXISTING (43'-71'-43') CONTINUOUS CONCRETE VOIDED SLAB SPANS




SECTION THRU SLAB




HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2½" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 7

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

### Estimated Quantities

| Item | | Total |
|---|---|---|
| Removal of Concrete Wearing Surface | sq. foot | 7784 |
| Low Slump Concrete Wearing Surface | sq. yard | 865 |
| Curb Blockout | linear foot | 169 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 700 |
| | | |
| | | |
| | | |
| | | |
| | | |

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17463

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

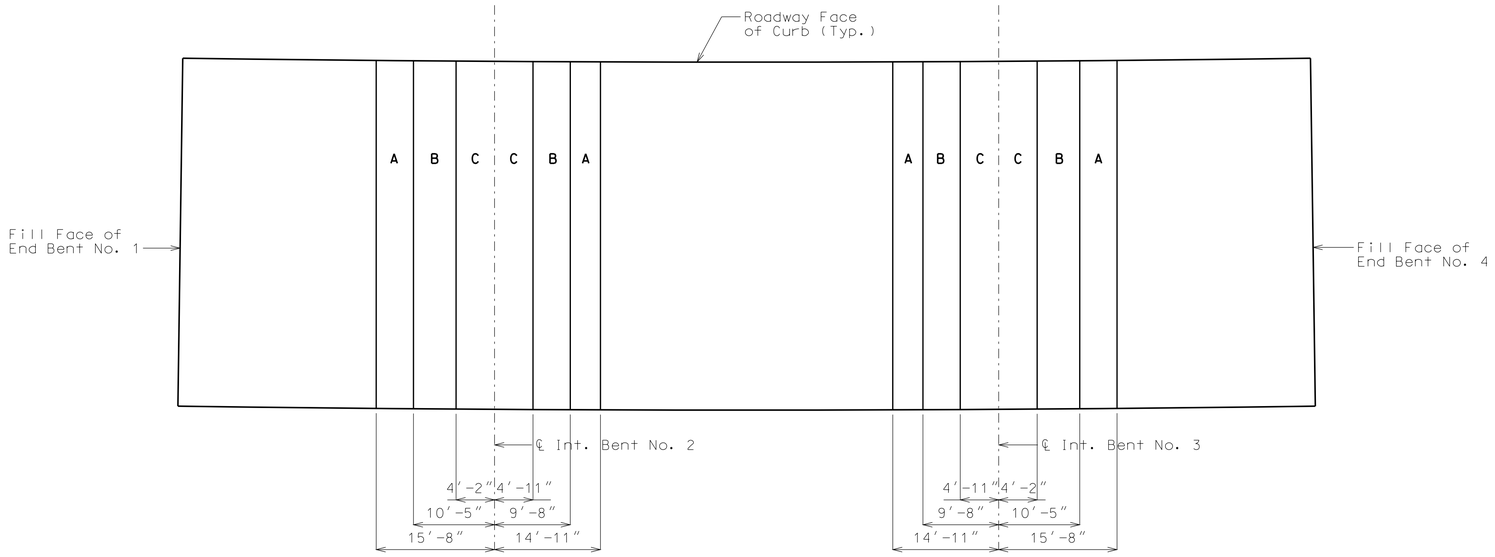
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REPAIRS TO BRIDGE: I-29 NBL OVER 112th STREET
STATE ROAD FROM RTE. D TO RTE 152
ABOUT 1 MILE SOUTH OF RTE. D
STA. 479+03.25± (MATCH EXISTING)

STD. 617.10
STD. 617.20
STD. 706.35

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/7/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J4I12374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A17463

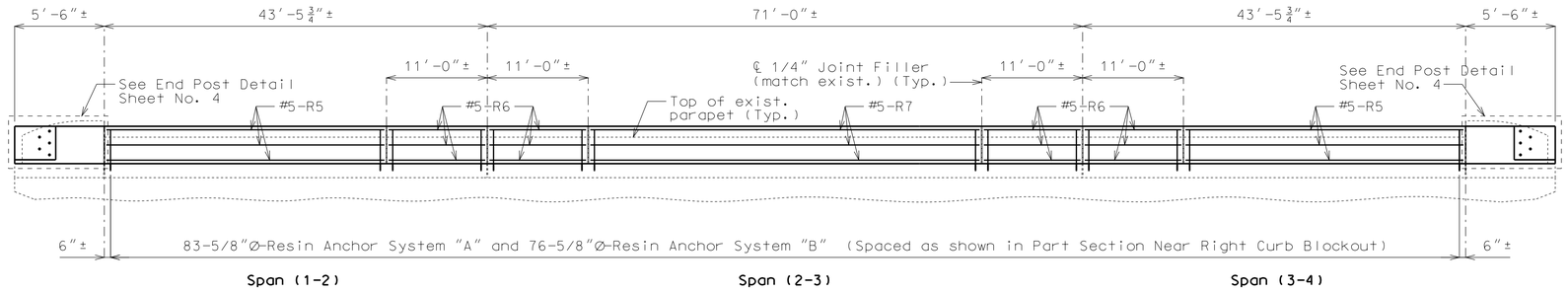
| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Mar. 2013
Checked Mar. 2013

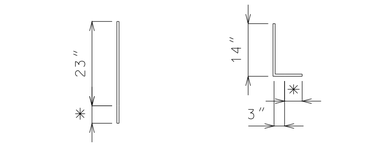
Note: This drawing is not to scale. Follow dimensions.




## SECTION NEAR LEFT CURB BLOCKOUT

Note: Longitudinal dimensions shown are arc dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

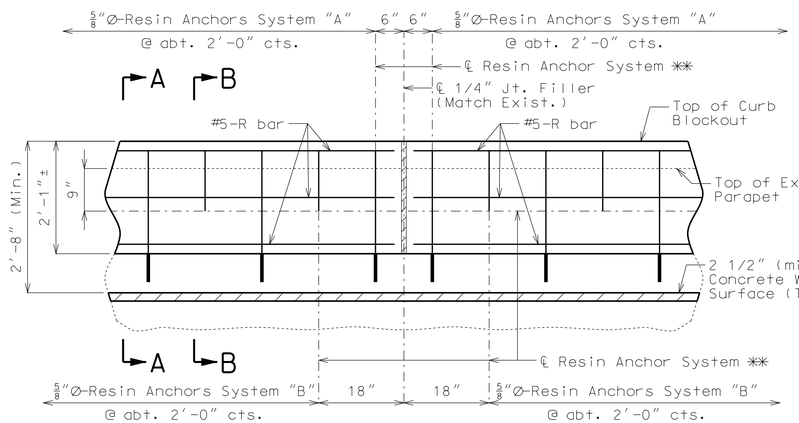



RESIN ANCHOR SYSTEM "A" (99 req'd) (Install in curb)

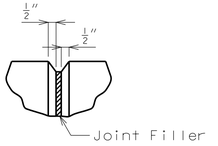
RESIN ANCHOR SYSTEM "B" (76 req'd) (Install in parapet)

* Use manufacturer's embedment length. (5" minimum embedment)

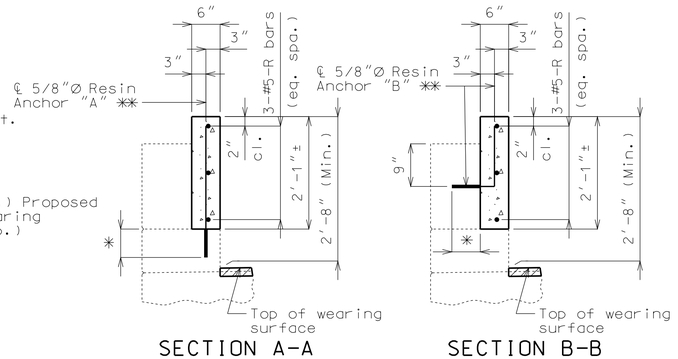
## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR RIGHT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A SECTION B-B

## DETAILS OF LEFT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

** Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11" for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

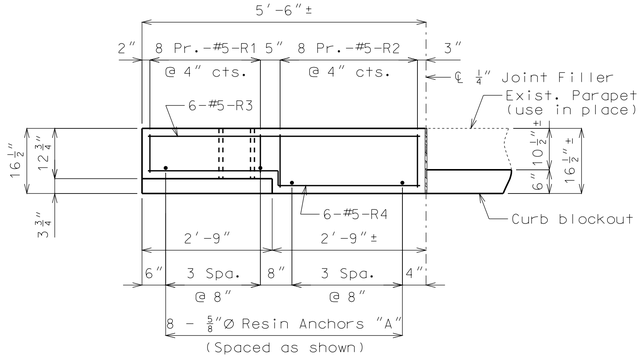
An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.



DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17463

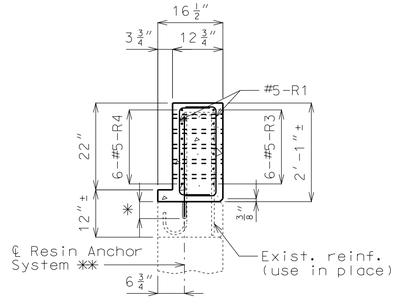
| DESCRIPTION | DATE |
|---|---|

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

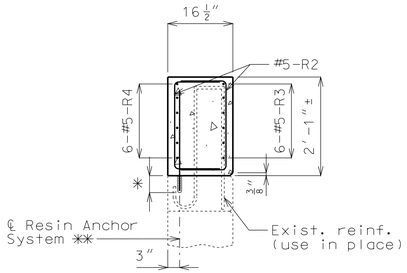



PLAN SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.

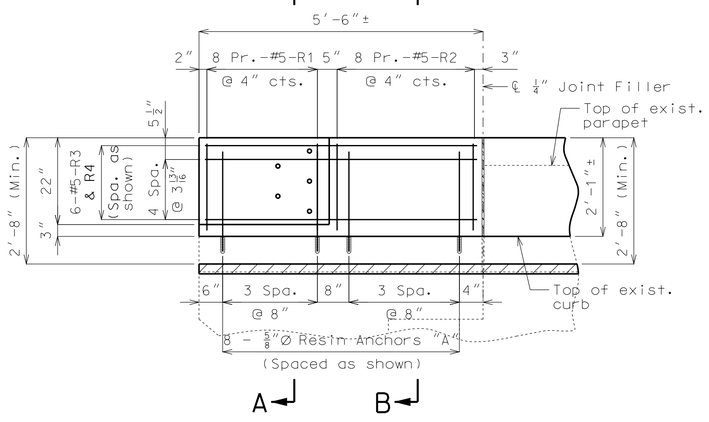



SECTION A-A



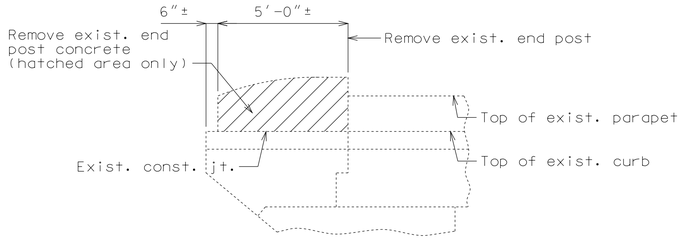

SECTION B-B

A B




ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




PART ELEVATION SHOWING
END POST CONCRETE REMOVAL

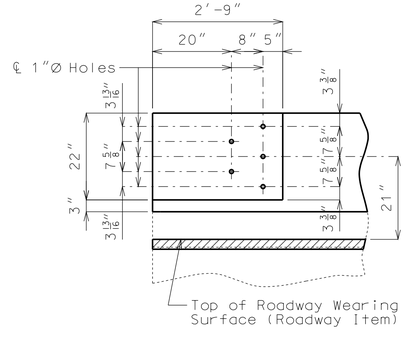
Notes:
For Details of Resin Anchors, see Sheet No. 3.

✳ Manufacturer's recommended embedment length. (5″ minimum embedment)

✳✳ Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




DETAILS OF GUARD RAIL
ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17463

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

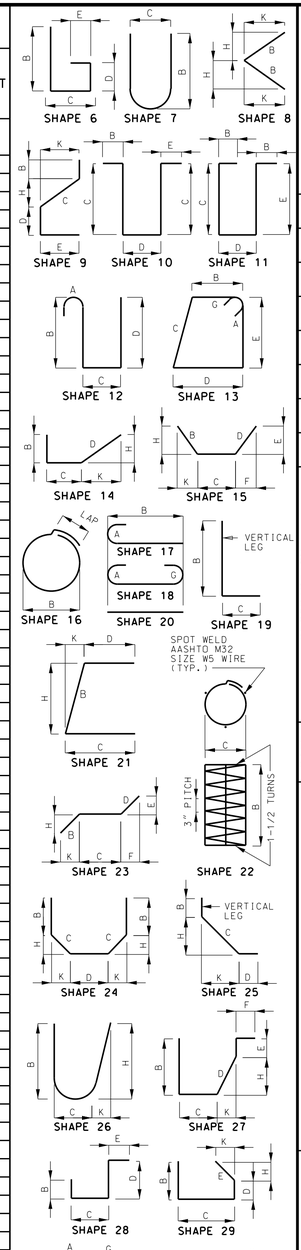
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 5 | R1 | END POST | E | 10 | S | | | | | | 9 | 750 | 22 | 000 | | | | | | | | | 3 | 6 | 3 | 3 | 108 |
| 32 | 5 | R2 | END POST | E | 10 | S | | | | | | 13 | 500 | 22 | 000 | | | | | | | | | 4 | 1 | 3 | 11 | 131 |
| 12 | 5 | R3 | END POST | E | 20 | | | | | 5 | 3 000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 66 |
| 12 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9 000 | 3 | 750 | 2 | 6 000 | | | | | | | 5 | 7 | 5 | 4 | 67 |
| 6 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 32 | 3 000 | | | | | | | | | | | | | 32 | 3 | 32 | 3 | 202 |
| 14 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 10 | 9 000 | | | | | | | | | | | | | 10 | 9 | 10 | 9 | 157 |
| 3 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 48 | 9 000 | | | | | | | | | | | | | 48 | 9 | 48 | 9 | 153 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 884 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 884 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 884 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 884 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|




BENDING DIAGRAMS

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013

ROUTE I-29 | STATE MO

DISTRICT BR | SHEET NO. 5

COUNTY PLATTE

JOB NO. J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17463

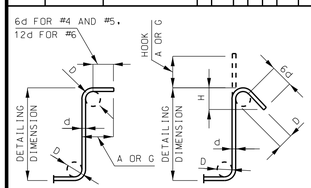
DESCRIPTION

DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

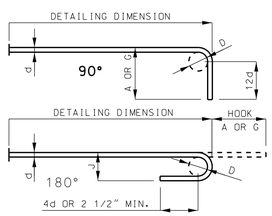
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




| STIRRUP HOOK DIMENSIONS | | | |
|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

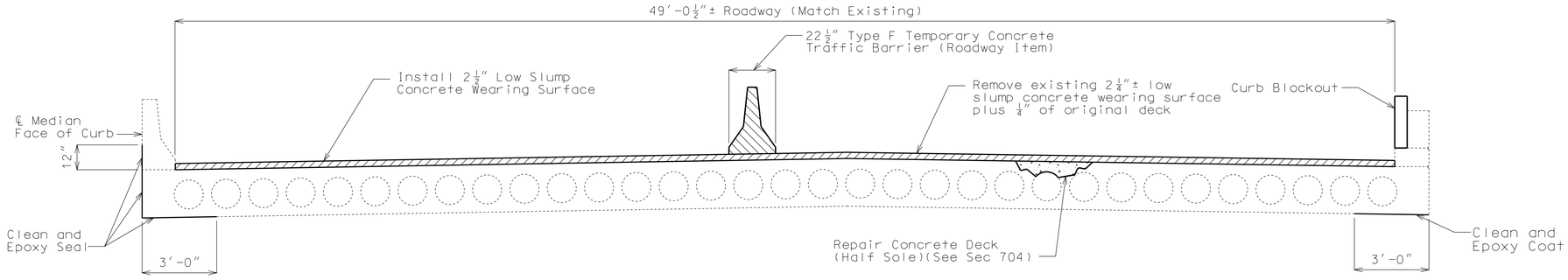
Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.

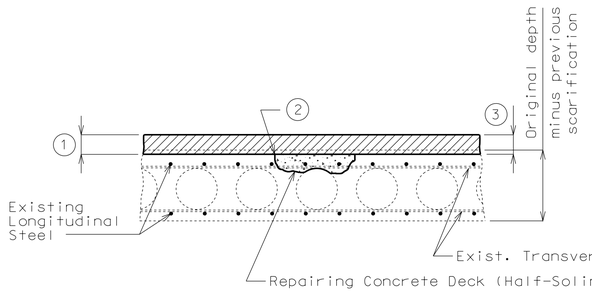
SEC/SUR 7 TWP 51N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB.EXISTING (34'-54'-54'-34') CONTINUOUS CONCRETE VOIDED SLAB SPANS




SECTION THRU SLAB




HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2½" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## Estimated Quantities

| Item | | Total |
|---|---|---|
| Removal of Concrete Wearing Surface | sq. foot | 8754 |
| Low Slump Concrete Wearing Surface | sq. yard | 973 |
| Curb Blockout | linear foot | 190 |
| Remove and Replace Barrier Curb | linear foot | 14 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 950 |
| Clean and Epoxy Seal | sq. foot | 1518 |
| | | |
| | | |
| | | |

## REPAIRS TO BRIDGE: I-29 SBL OVER BARRY ROAD

STATE ROAD FROM RTE. 152 TO RTE. 45
ABOUT 0.5 MILE SOUTH OF RTE. 152
STA. 678+96.80± (MATCH EXISTING)

STD. 617.10
STD. 617.20
STD. 706.35

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



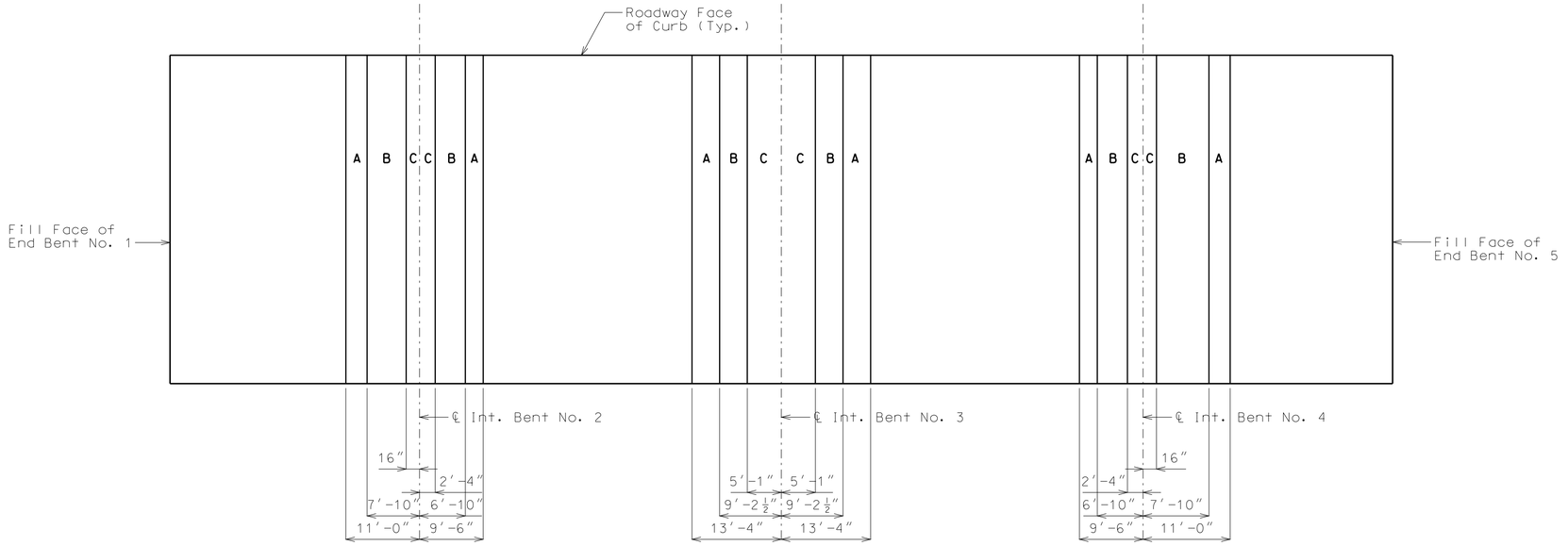
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17473

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

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DATE PREPARED
9/24/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J4I12374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A17473

| DESCRIPTION | DATE |
|---|---|
| | |

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Mar. 2013
Checked Mar. 2013

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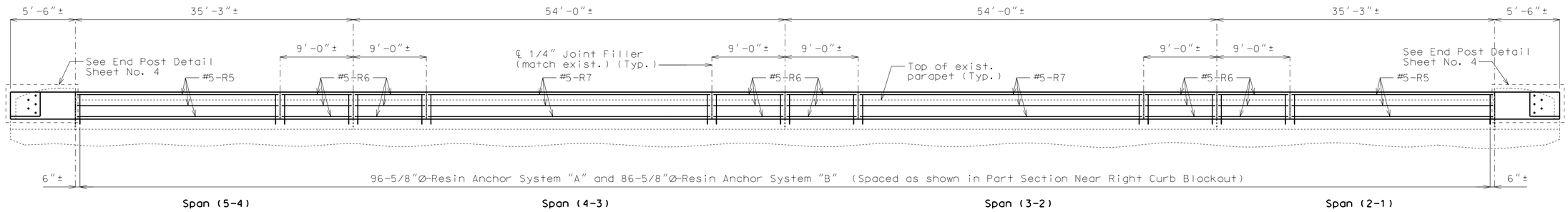
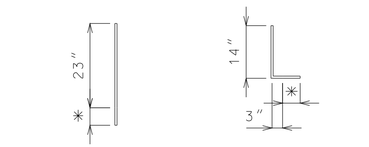



## SECTION NEAR RIGHT CURB BLOCKOUT

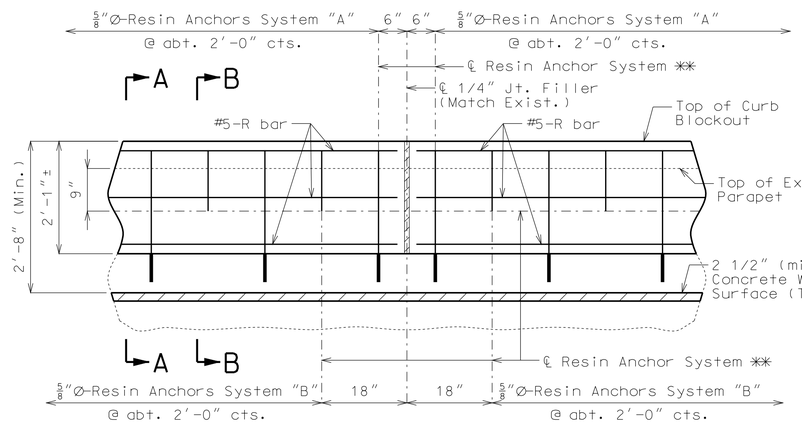
Note: Longitudinal dimensions shown are dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

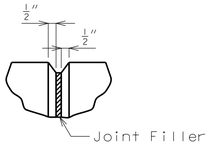



✳ Use manufacturer's embedment length. (5″ minimum embedment)

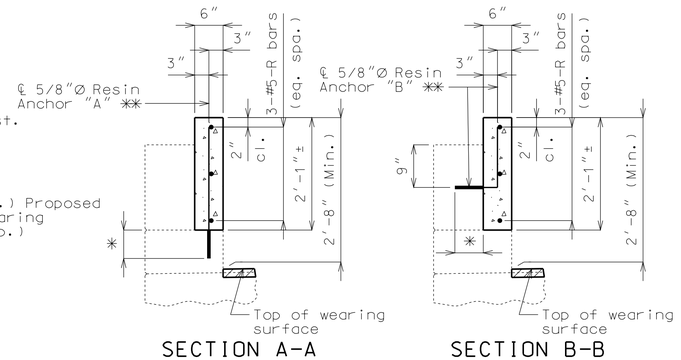
## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR RIGHT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A SECTION B-B

## DETAILS OF RIGHT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2″ radius or 3/8″ bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

✳✳ Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



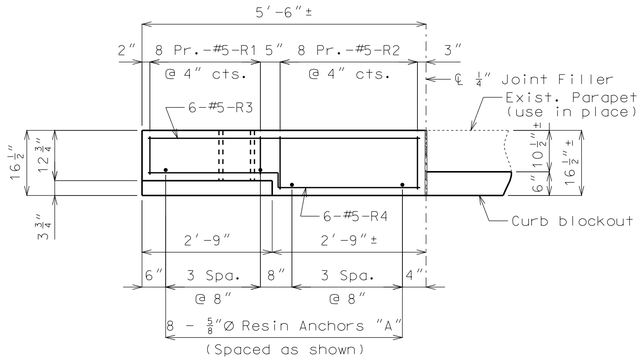
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17473

DESCRIPTION | DATE

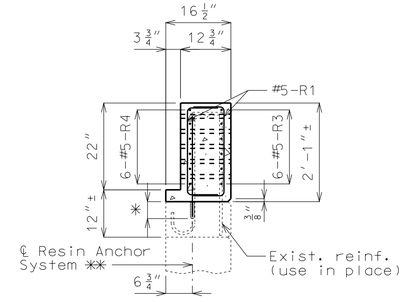
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

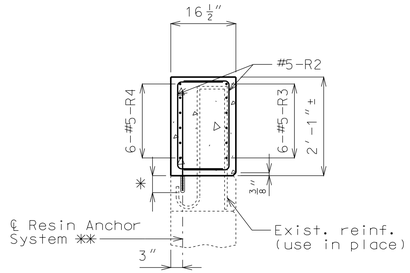



## PLAN SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.

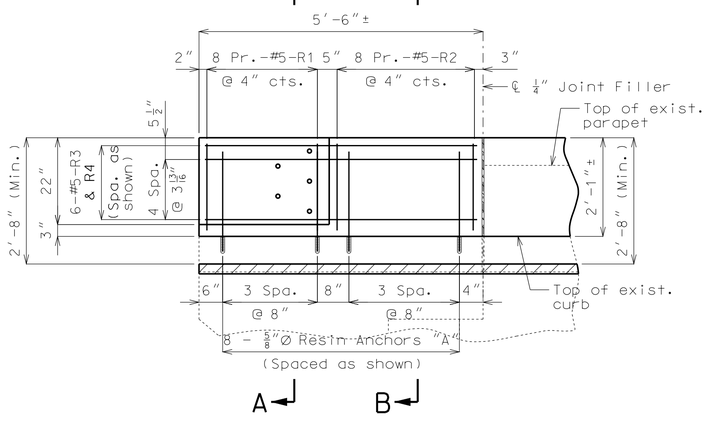



## SECTION A-A



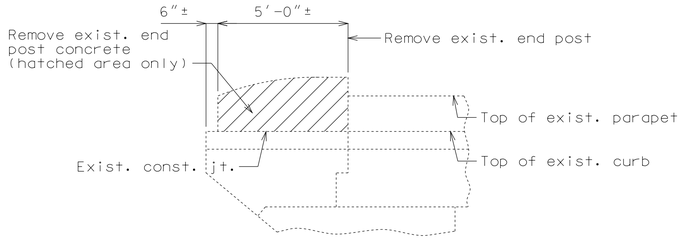

## SECTION B-B

A B




## ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




## PART ELEVATION SHOWING END POST CONCRETE REMOVAL

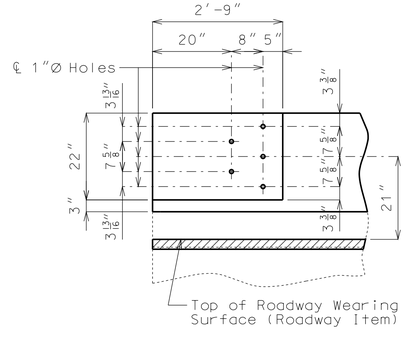
Notes:
For Details of Resin Anchors, see Sheet No. 3.

* Manufacturer's recommended embedment length. (5″ minimum embedment)

** Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




## DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17473

DESCRIPTION | DATE

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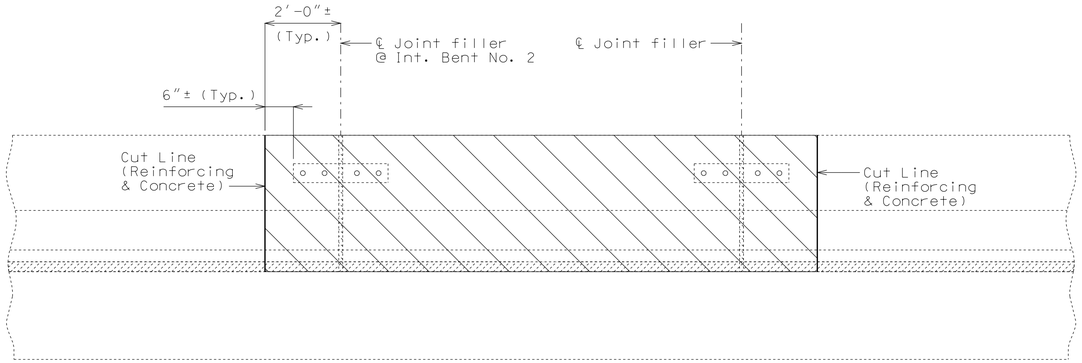
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




## PART SECTION NEAR LEFT SAFETY BARRIER CURB SHOWING REMOVAL

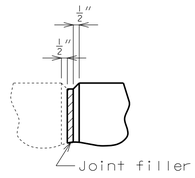
Notes:
Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a 1/2″ radius or a 3/8″ bevel, unless otherwise noted.

Payment for removal, all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for "Remove and Replace Barrier Curb" per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Remove and Replace Barrier Curb".




## 1/4″ FILLED JOINT DETAIL

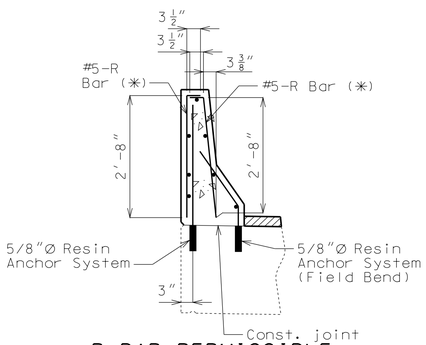
Notes:
30 - 5/8 "Ø Resin Anchor required (length = 2′-3″)

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb.

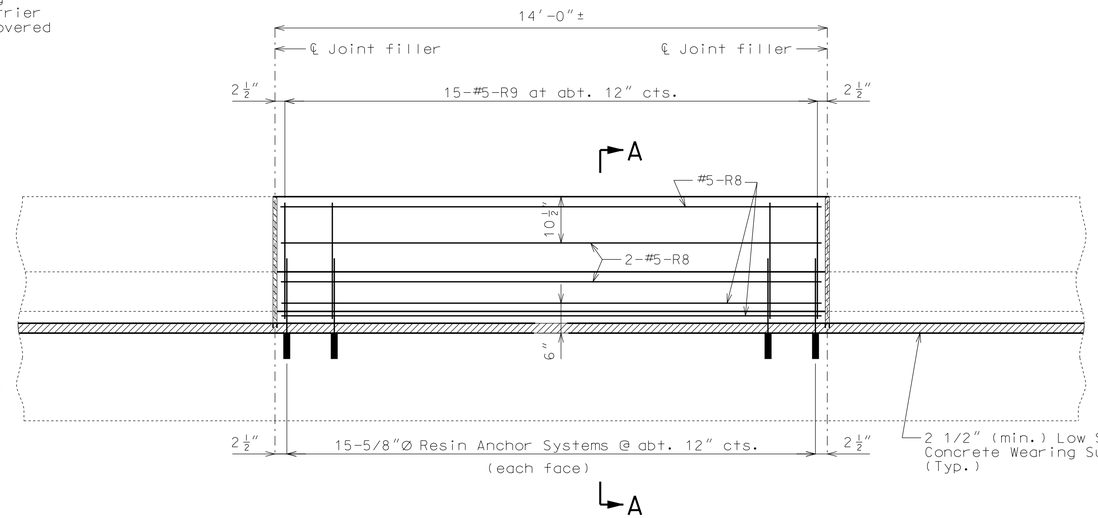
The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8 "Ø threaded rod.



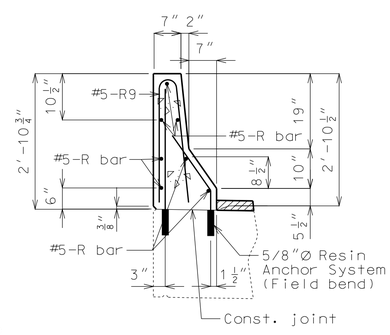

## R-BAR PERMISSIBLE ALTERNATE SHAPE

(✳) The R9 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## PART SECTION NEAR LEFT SAFETY BARRIER CURB

Shape and height of safety barrier curb shall match existing.




## PART SECTION A-A

Note:

The cross-sectional area above the slab = 3.45 sq. ft.

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17473

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

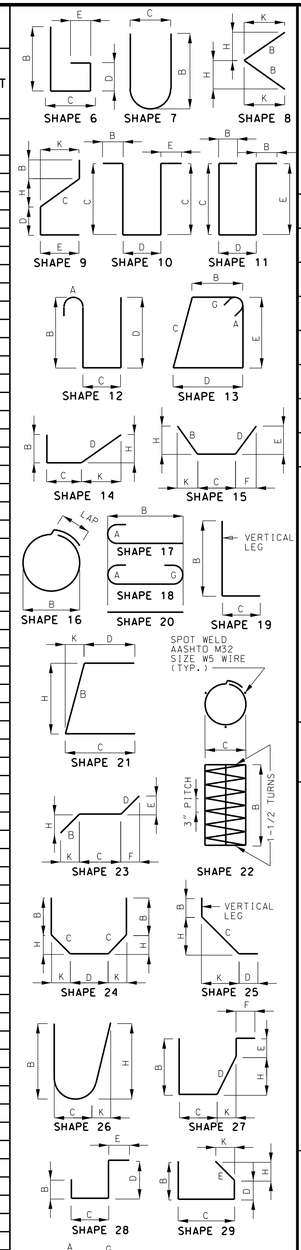
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# BILL OF REINFORCING STEEL

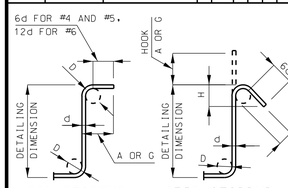
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. IN. | C FT. IN. | D FT. IN. | E FT. IN. | F FT. IN. | H FT. IN. | K FT. IN. | NOMINAL LENGTH FT. IN. | ACTUAL LENGTH FT. IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | |
| 32 | 5 | R1 | END POST | E | 10 | S | | | | | 9.750 | 22.000 | | | | | 3 6 | 3 3 | 108 |
| 32 | 5 | R2 | END POST | E | 10 | S | | | | | 13.500 | 22.000 | | | | | 4 1 | 3 11 | 131 |
| 12 | 5 | R3 | END POST | E | 20 | | | | | 5 3.000 | | | | | | | 5 3 | 5 3 | 66 |
| 12 | 5 | R4 | END POST | E | 28 | S | | | | | 2 9.000 | 3.750 | 2 6.000 | | | | 5 7 | 5 4 | 67 |
| 6 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 26 0.000 | | | | | | | 26 0 | 26 0 | 163 |
| 20 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 8 9.000 | | | | | | | 8 9 | 8 9 | 183 |
| 6 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 35 9.000 | | | | | | | 35 9 | 35 9 | 224 |
| | | | BARRIER CURB | | | | | | | | | | | | | | | | |
| 7 | 5 | R8 | BARRIER CURB | E | 20 | | | | | 13 9.000 | | | | | | | 13 9 | 13 9 | 100 |
| 15 | 5 | R9 | BARRIER CURB | E | 26 | | | | | 2 8.000 | 4.250 | 2 8.125 | | | 2 8.000 | 3.000 | 5 6 | 5 6 | 86 |
| | | | TOTALS | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | 1128 |
| | | | TOTAL | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | 1128 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | 942 |
| | | | TOTAL | | | | | | | | | | | | | | | | 942 |
| | | | Safety Barrier Curb | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | 186 |
| | | | TOTAL | | | | | | | | | | | | | | | | 186 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. IN. | C FT. IN. | D FT. IN. | E FT. IN. | F FT. IN. | H FT. IN. | K FT. IN. | NOMINAL LENGTH FT. IN. | ACTUAL LENGTH FT. IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

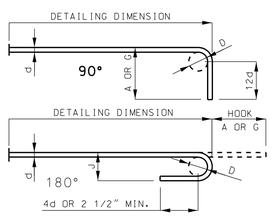



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK | 135° HOOK | |
| | | HOOK A OR G | HOOK A OR G | APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES | | |
| | | 180° HOOKS | | 90° HOOKS |
| | | A OR G | J | A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 6
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17473

DESCRIPTION
DATE

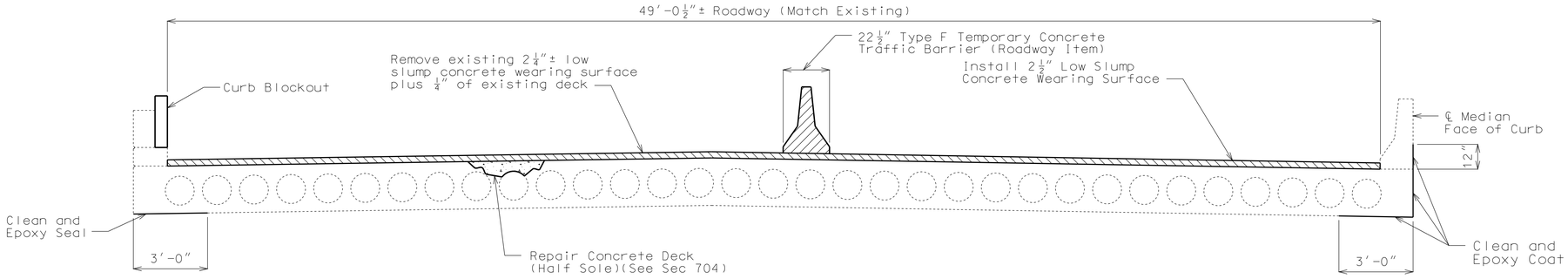
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

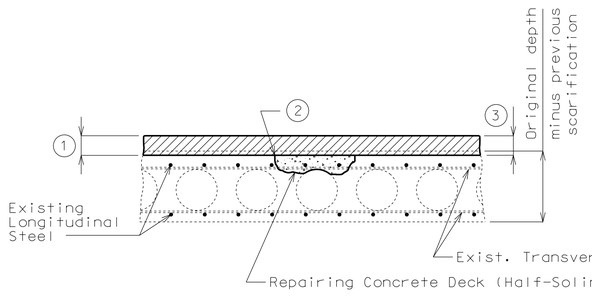
SEC/SUR 7 TWP 51N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB. EXISTING (34'-54'-54'-34') CONTINUOUS CONCRETE VOIDED SLAB SPANS




SECTION THRU SLAB




HALF-SOLED REPAIR

(1) Remove existing wearing surface plus 1/4" of existing deck.

(2) One inch vertical side shall be established outside the deteriorated area. See Sec 704.

(3) 2½" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## Estimated Quantities

| Item | | Total |
|---|---|---|
| Removal of Concrete Wearing Surface | sq. foot | 8754 |
| Low Slump Concrete Wearing Surface | sq. yard | 973 |
| Curb Blockout | linear foot | 190 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 1000 |
| Clean and Epoxy Seal | sq. foot | 1518 |
| | | |
| | | |
| | | |
| | | |

## REPAIRS TO BRIDGE: I-29 NBL OVER BARRY ROAD

STATE ROAD FROM RTE. 152 TO RTE. 45
ABOUT 0.5 MILE SOUTH OF RTE. 152
STA. 678+96.80± (MATCH EXISTING)

STD. 617.10
STD. 617.20
STD. 706.35

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



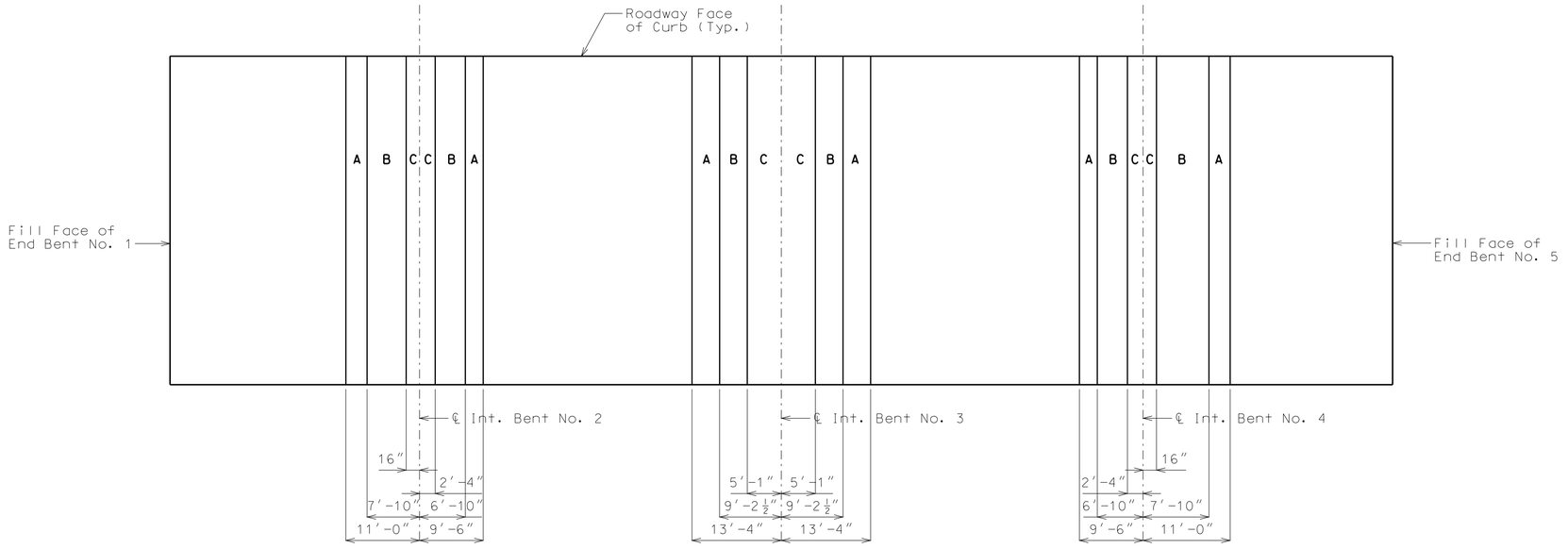
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17474

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
9/24/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J4I12374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A17474

| DESCRIPTION | DATE |
|---|---|
| | |

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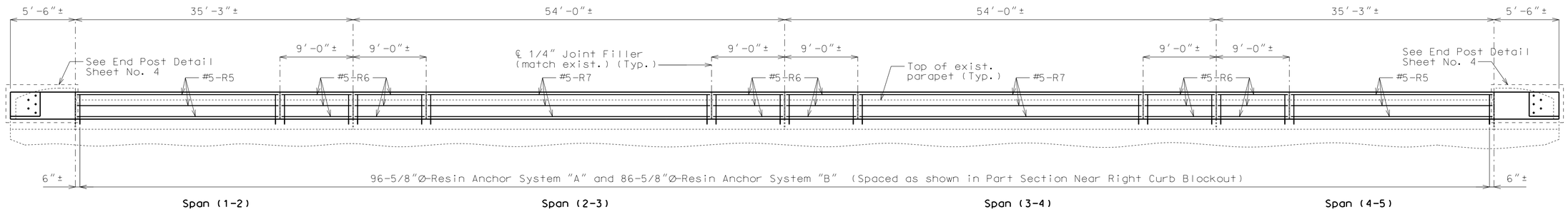
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Mar. 2013
Checked Mar. 2013

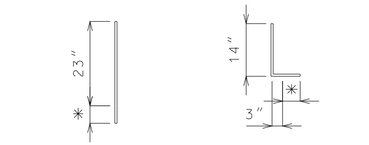
Note: This drawing is not to scale. Follow dimensions.




## SECTION NEAR LEFT CURB BLOCKOUT

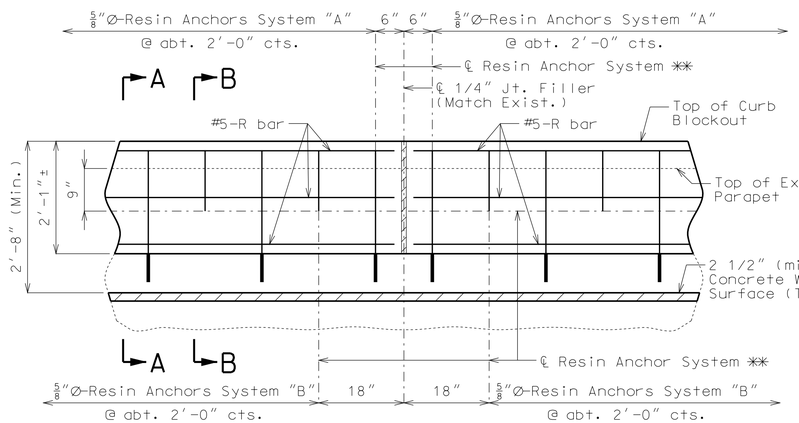
Note: Longitudinal dimensions shown are dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

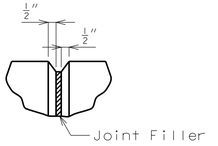



* Use manufacturer's embedment length. (5″ minimum embedment)

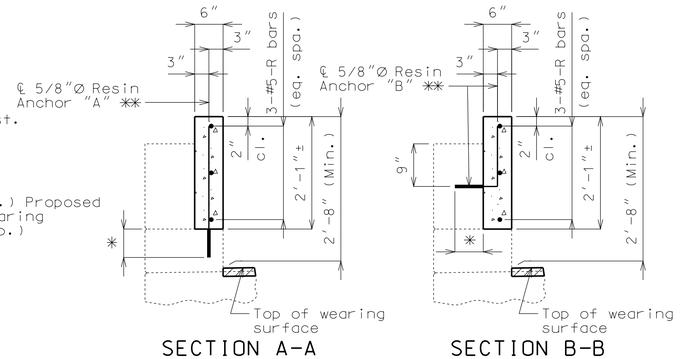
## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR LEFT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A SECTION B-B

## DETAILS OF LEFT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2″ radius or 3/8″ bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

** Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



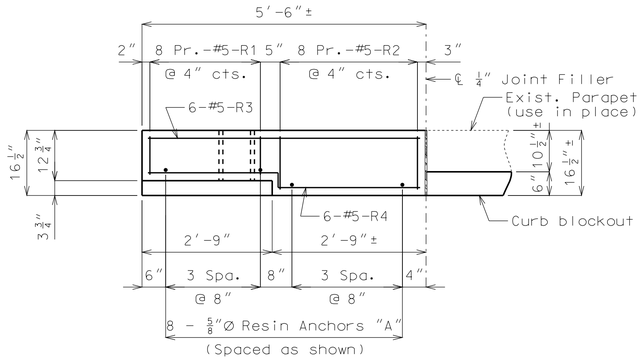
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17473

DESCRIPTION | DATE

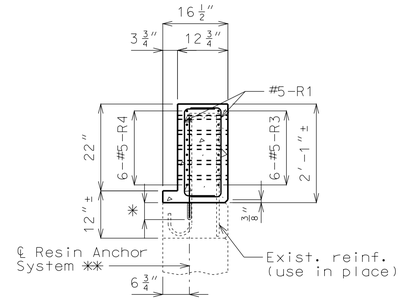
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

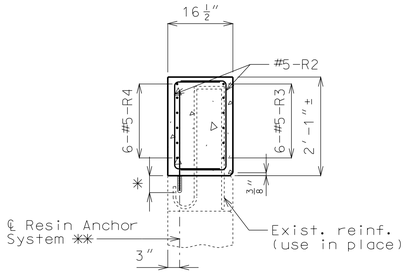



PLAN SHOWING END POST REINFORCEMENT

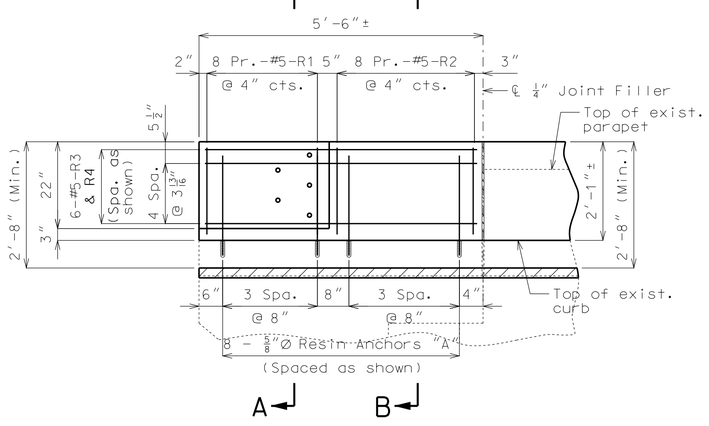
Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




SECTION A-A

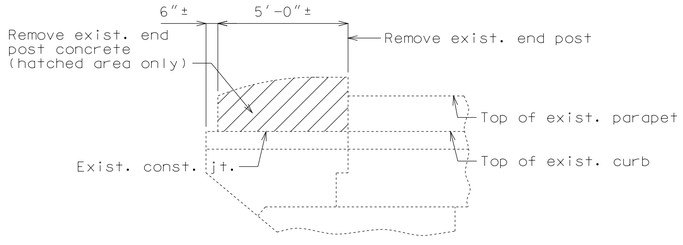



SECTION B-B




ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




PART ELEVATION SHOWING END POST CONCRETE REMOVAL

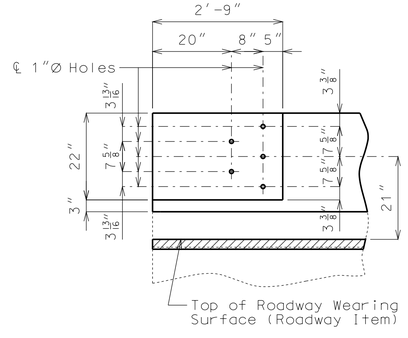
Notes:
For Details of Resin Anchors, see Sheet No. 3.

* Manufacturer's recommended embedment length. (5″ minimum embedment)

** Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17474

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

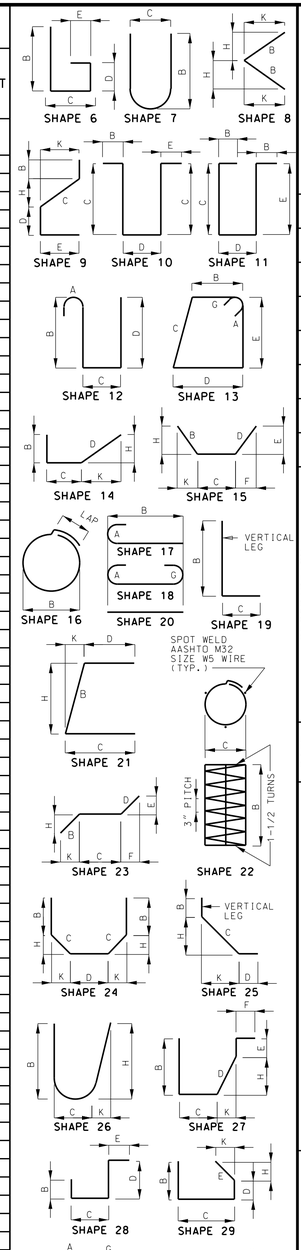
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 5 | R1 | END POST | E | 10 | S | | | | | | 9.750 | | 22.000 | | | | | | | | | | 3 | 6 | 3 | 3 | 108 |
| 32 | 5 | R2 | END POST | E | 10 | S | | | | | | 13.500 | | 22.000 | | | | | | | | | | 4 | 1 | 3 | 11 | 131 |
| 12 | 5 | R3 | END POST | E | 20 | | | | | 5 | 3.000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 66 |
| 12 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9.000 | 3.750 | | 2 | 6.000 | | | | | | | 5 | 7 | 5 | 4 | 67 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 26 | 0.000 | | | | | | | | | | | | | 26 | 0 | 26 | 0 | 163 |
| 20 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 8 | 9.000 | | | | | | | | | | | | | 8 | 9 | 8 | 9 | 183 |
| 6 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 35 | 9.000 | | | | | | | | | | | | | 35 | 9 | 35 | 9 | 224 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 942 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 942 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 942 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 942 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|




BENDING DIAGRAMS

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013

ROUTE I-29 | STATE MO

DISTRICT BR | SHEET NO. 5

COUNTY PLATTE

JOB NO. J412374

CONTRACT ID.

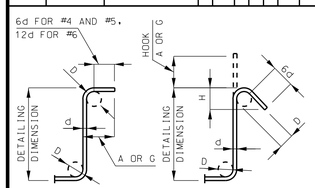
PROJECT NO.

BRIDGE NO. A17474

DESCRIPTION | DATE

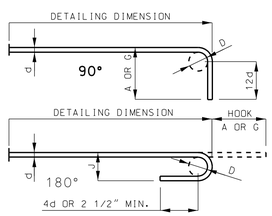
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




| STIRRUP HOOK DIMENSIONS | | | |
|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
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TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
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NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

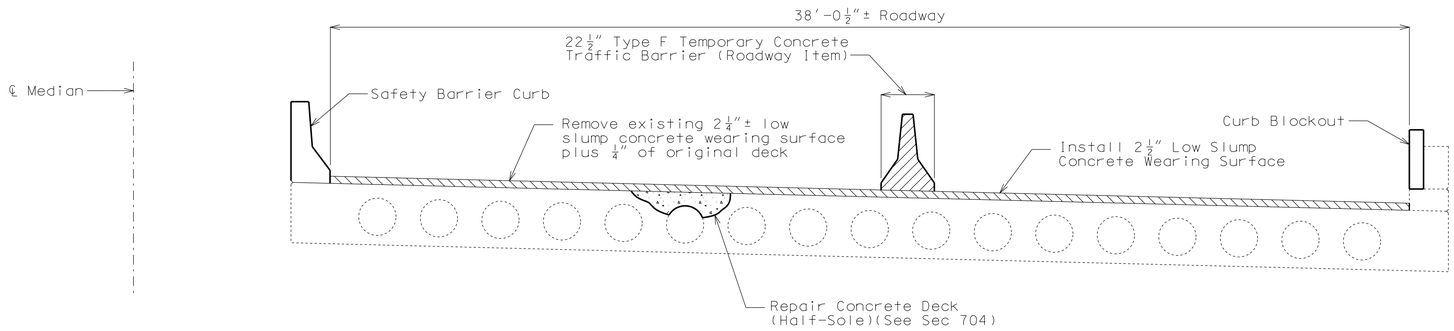
Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.

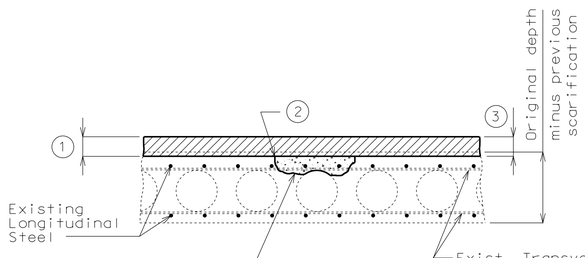
SEC/SUR 14 TWP 52N RGE 34W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB. EXISTING (35'-58'-58'-35') CONTINUOUS CONCRETE VOIDED SLAB SPANS



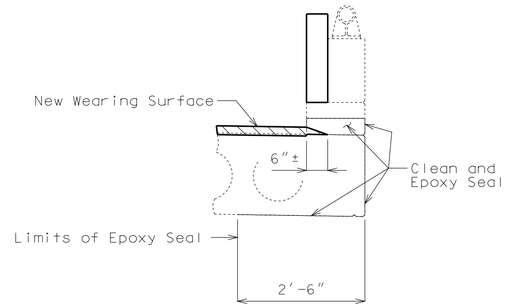

SECTION THRU SLAB



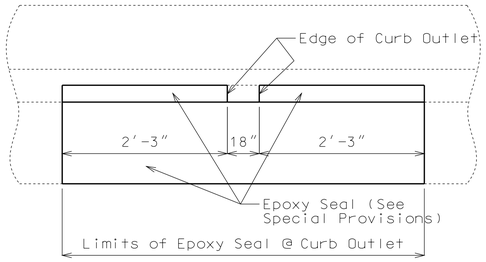

HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2½" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS




TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET

### Estimated Quantities

| | Item | | Total |
|---|---|---|---|
| | Removal of Concrete Wearing Surface | sq. foot | 7176 |
| | Curb Removal | linear foot | 203 |
| | Low Slump Concrete Wearing Surface | sq. yard | 797 |
| * | Safety Barrier Curb | linear foot | 203 |
| | Curb Blockout | linear foot | 203 |
| | Repairing Concrete Deck (Half-Soling) | sq. foot | 650 |
| | Clean and Epoxy Seal | sq. foot | 314 |
| | | | |
| | | | |

* Safety Barrier Curb shall be cast-in-place or slip form option.

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## REPAIRS TO BRIDGE: I-29 SBL OVER NW MID CONTINENT TRAFFICWAY

STATE ROAD FROM RTE. I-435 TO RTE. 152
ABOUT 0.5 MILE SOUTH OF RTE. I-435
STA. 423+89.81± (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



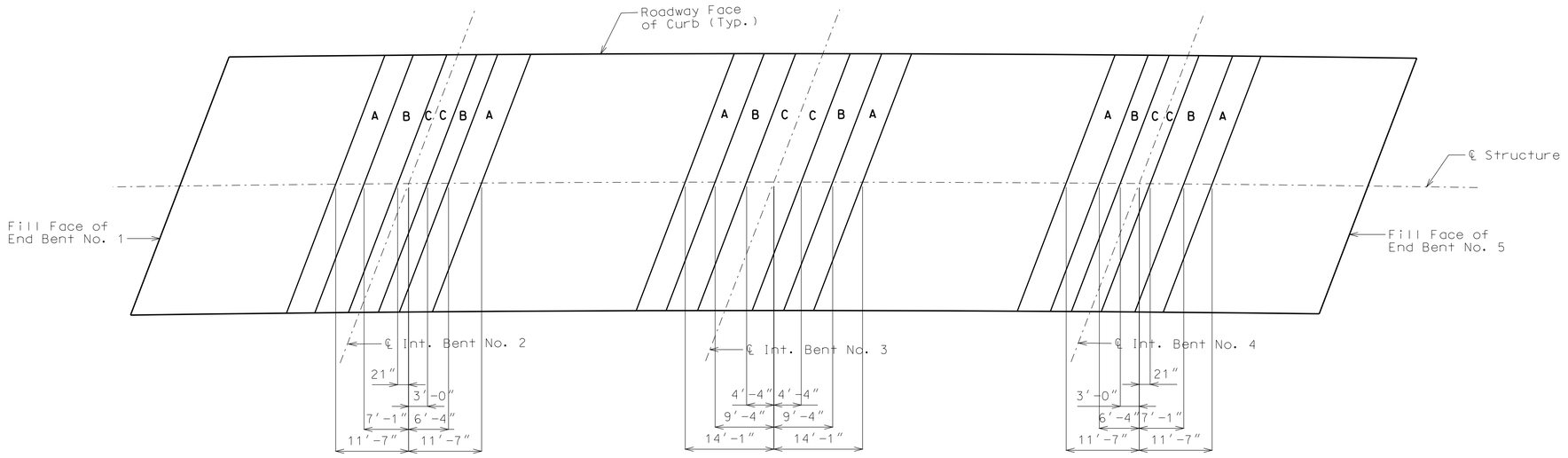
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22823

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
9/24/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J412374

CONTRACT ID.

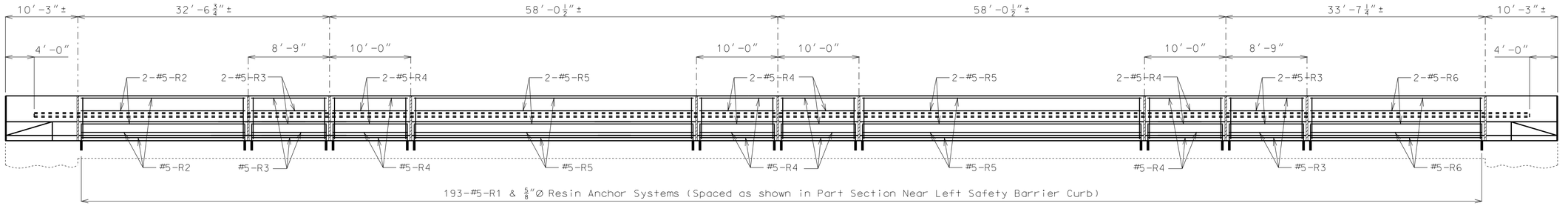
PROJECT NO.

BRIDGE NO.
A22823

| DESCRIPTION | DATE |
|---|---|
| | |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




## SECTION NEAR LEFT SAFETY BARRIER CURB

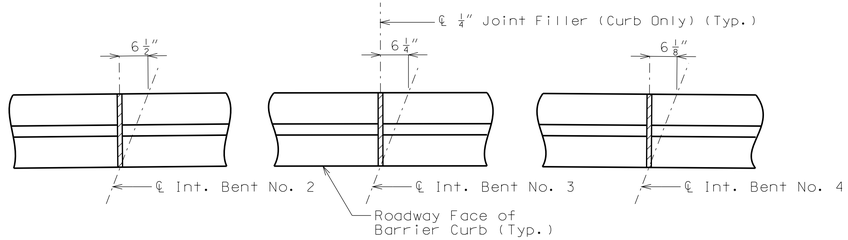
Notes:

Longitudinal dimensions shown are arc dimensions.

Low Slump Concrete Wearing Surface not shown for clarity.

Note:

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".




## PART PLAN OF BARRIER CURB SHOWING JOINT FILLER LOCATION

Notes:

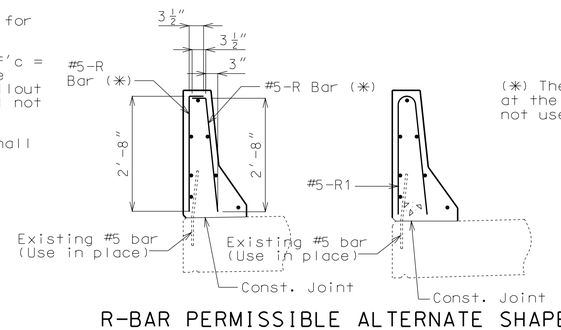
233 -⅝″Ø Resin Anchor required (length = 2′-3″)

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

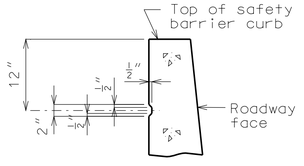
The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the ⅝″Ø threaded rod.

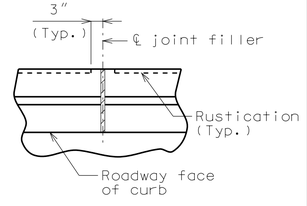



## R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## PART SECTION SHOWING RUSTICATION DETAILS




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

Notes:

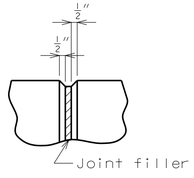
Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a ½″ radius or a ⅝″ bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

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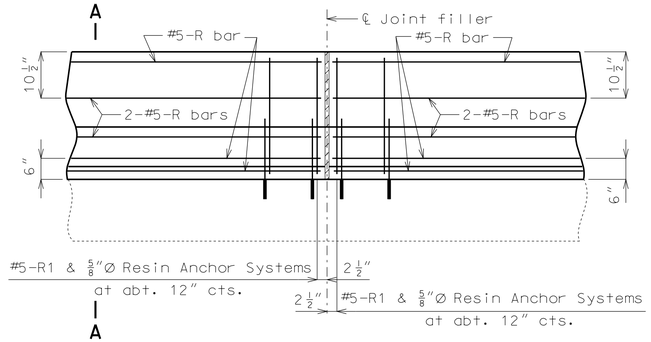
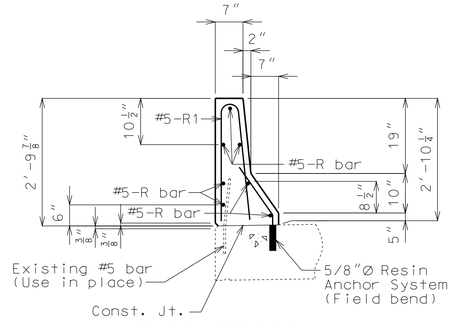



## PART SECTION NEAR LEFT SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.47 sq. ft.



DATE PREPARED 9/24/2013

ROUTE I-29 | STATE MO

DISTRICT BR | SHEET NO. 3

COUNTY PLATTE

JOB NO. J412374

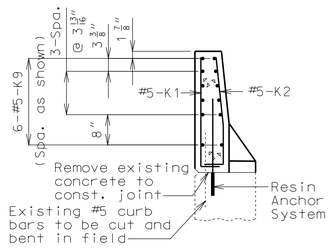
CONTRACT ID.

PROJECT NO.

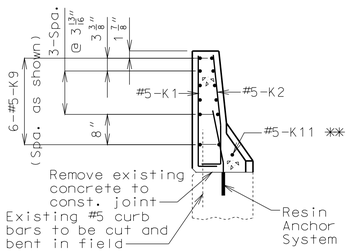
BRIDGE NO. A22823

DESCRIPTION | DATE

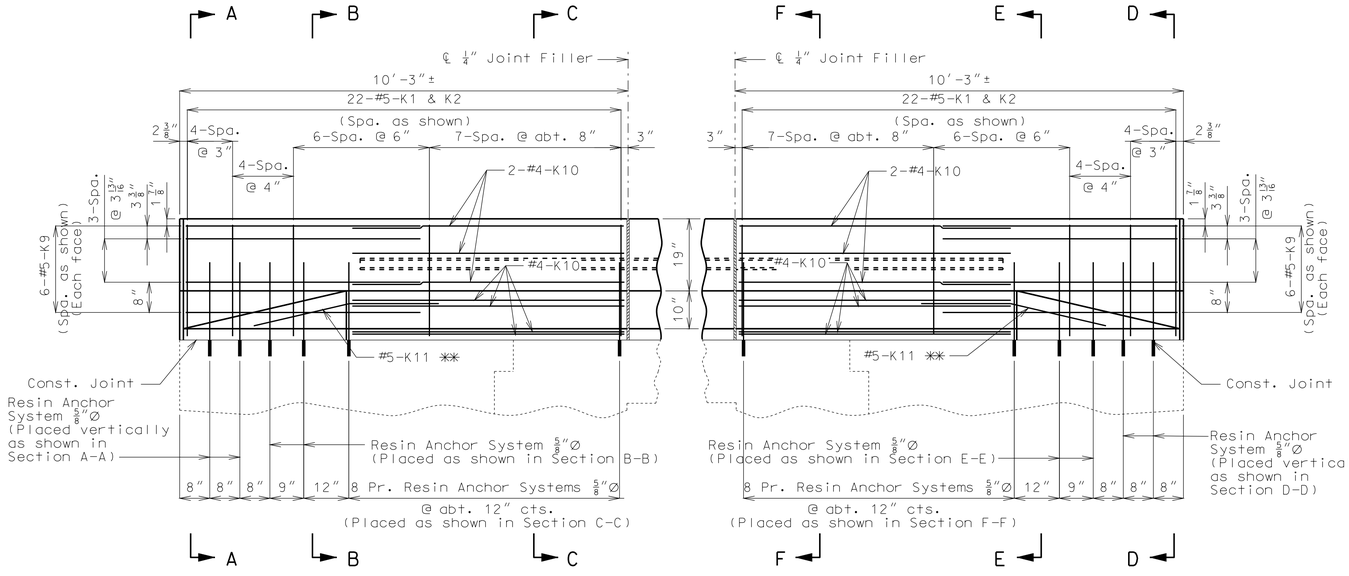
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




SECTION A-A

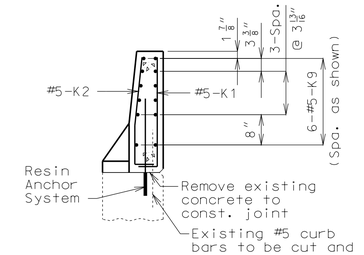



SECTION B-B

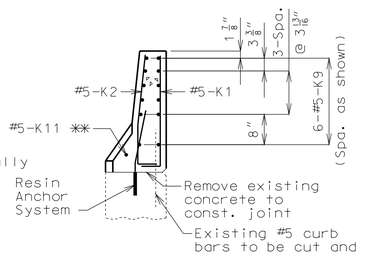



ELEVATION  ELEVATION

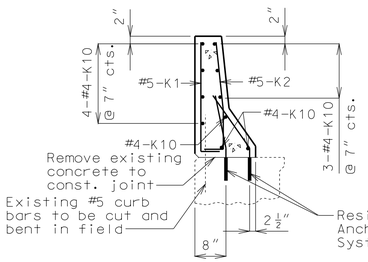
** Fit bar to follow transition face of curb.



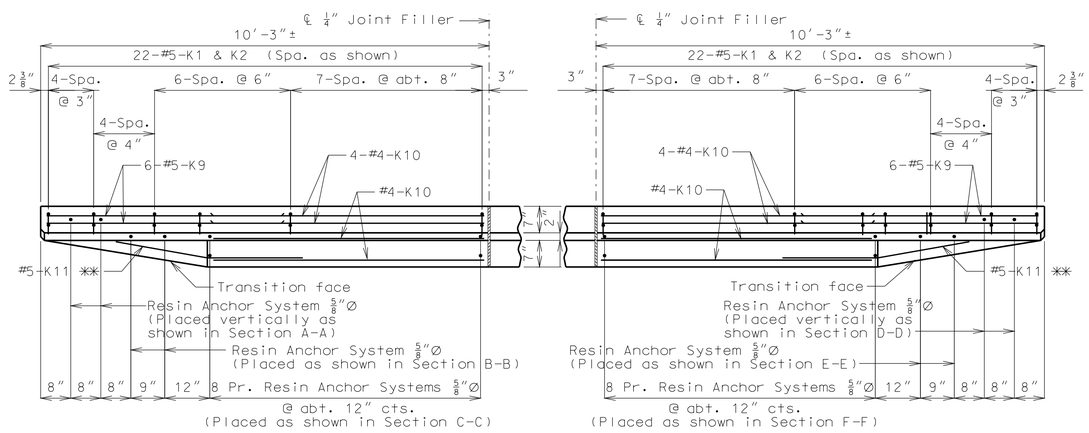

SECTION D-D



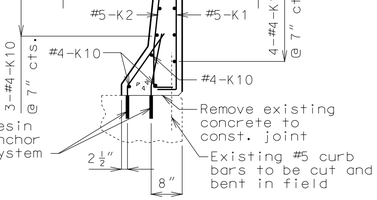

SECTION E-E



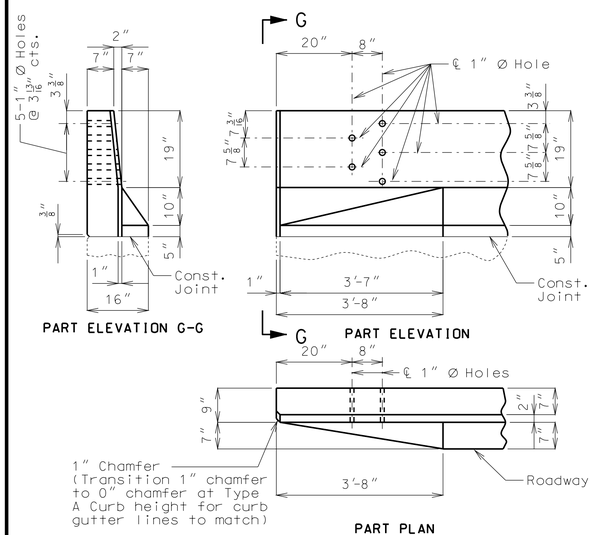

SECTION C-C




PLAN  PLAN




SECTION F-F




DETAILS OF GUARD RAIL ATTACHMENT

For Resin Anchor Notes, see Sheet No. 3.

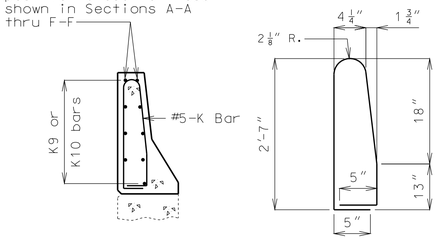
Notes:

Use a minimum lap of 2'-0" between K9 and K10 bars.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

DETAILS OF LEFT SAFETY BARRIER CURB AT END BENTS

The top two K9 or K10 bars shall be kept with position close to those shown in Sections A-A thru F-F




(K3 or K4 thru K8 bars not shown for clarity)

K1-K2 BAR PERMISSIBLE ALTERNATE SHAPE (***)

(***) The K1 and K2 bar combination may be furnished as one bar as shown, at the contractor's option.

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



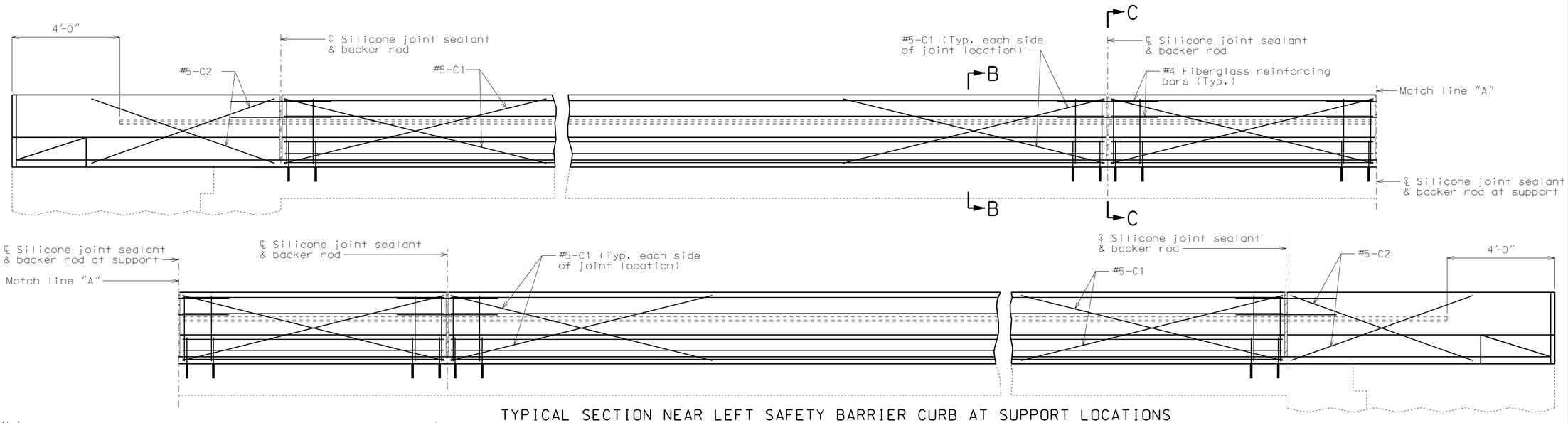
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22823

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




## TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

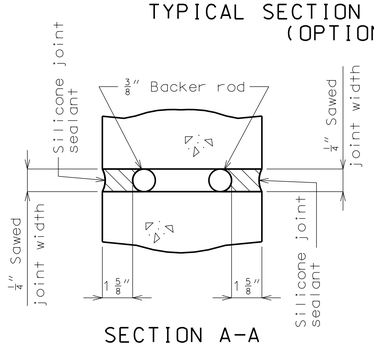
Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.




SECTION A-A

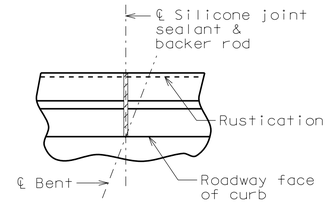
Notes:

Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

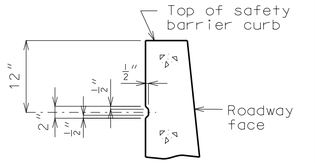
C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

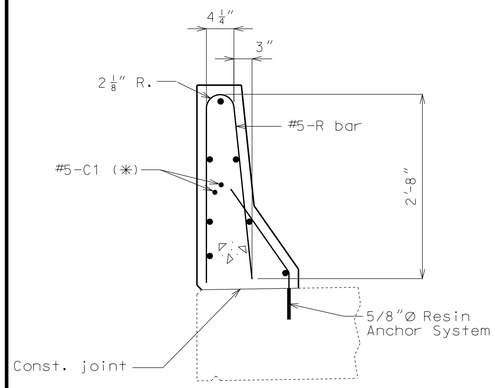



PART PLAN SHOWING SAFETY BARRIER CURB JOINT




PART SECTION SHOWING RUSTICATION DETAILS

RUSTICATION DETAIL



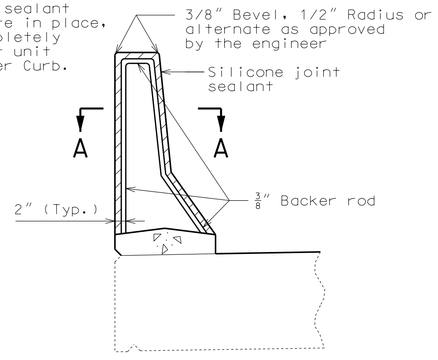

PART SECTION B-B

Notes:

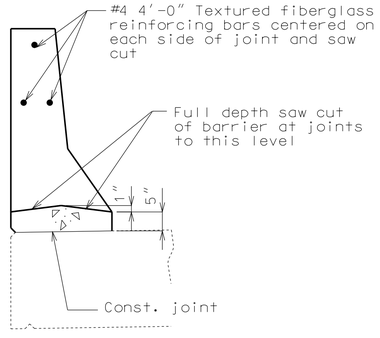
(*) Each side of joint location.

Note:

Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.




SECTION THRU JOINT




PART SECTION C-C

## OPTIONAL SLIP-FORM BRIDGE LEFT SAFETY BARRIER CURB

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22823

DESCRIPTION | DATE

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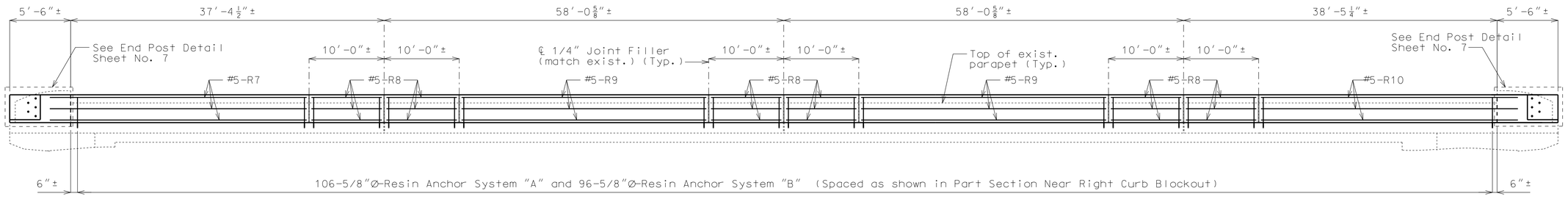
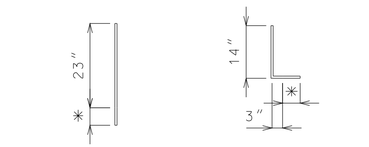
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




## SECTION NEAR RIGHT CURB BLOCKOUT

Note: Longitudinal dimensions shown are arc dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

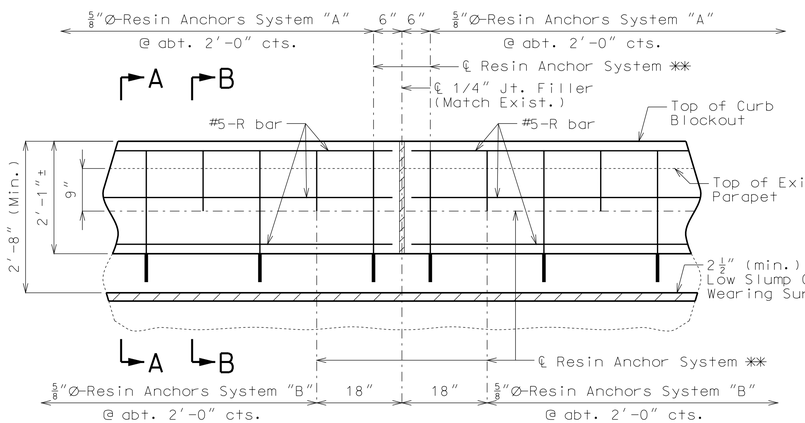



RESIN ANCHOR SYSTEM "A" (122 req'd) (Install in curb)

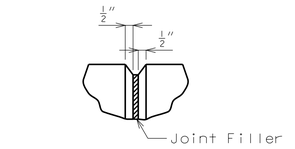
RESIN ANCHOR SYSTEM "B" (96 req'd) (Install in parapet)

✳ Use manufacturer's embedment length. (5″ minimum embedment)

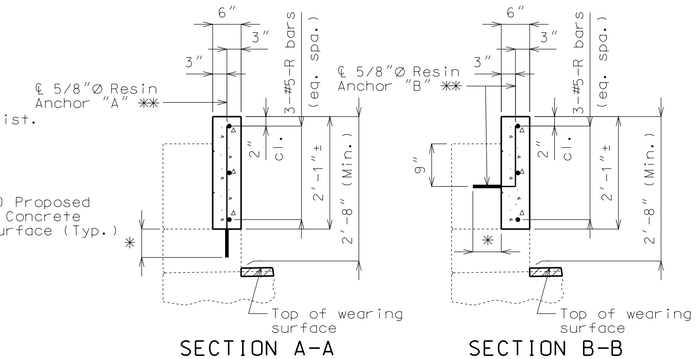
## DETAILS OF RESIN ANCHORS




## PART SECTION RIGHT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A

SECTION B-B

## DETAILS OF RIGHT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2″ radius or 3/8″ bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

✳✳ Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



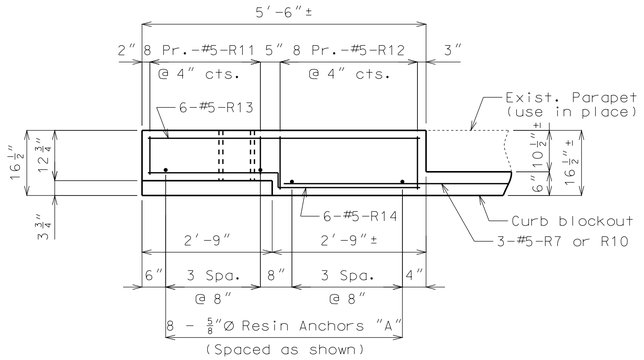
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22823

DESCRIPTION | DATE

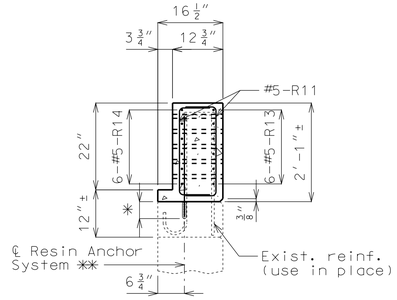
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

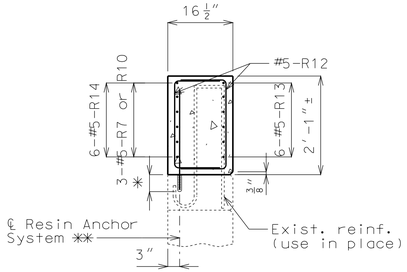



PLAN SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.

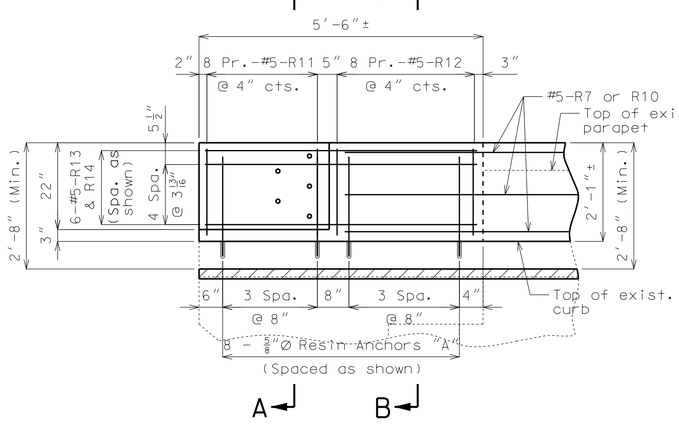



SECTION A-A




SECTION B-B

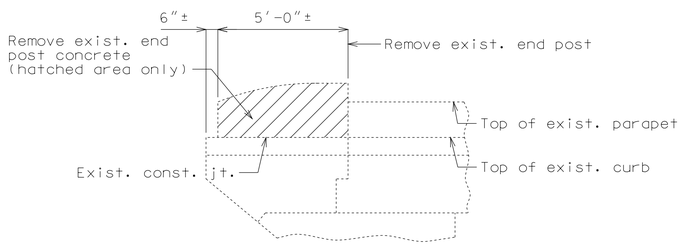
A B




A B

ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




PART ELEVATION SHOWING
END POST CONCRETE REMOVAL

Notes:
For Details of Resin Anchors, see Sheet No. 6.

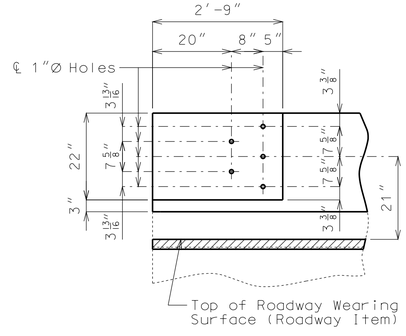
✳ Manufacturer's recommended embedment length. (5″ minimum embedment)

✳✳ Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.




DETAILS OF GUARD RAIL
ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22823

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

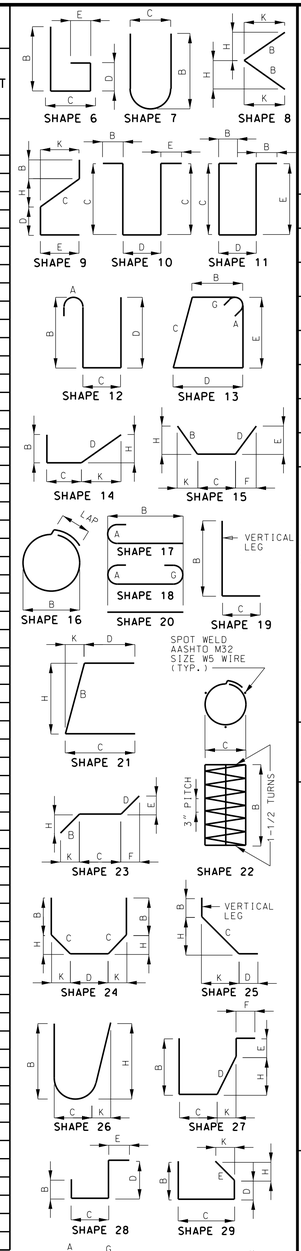
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# BILL OF REINFORCING STEEL

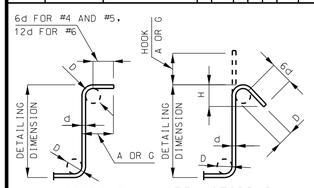
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BARRIER CURB | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | 5 | K1 | BARRIER CURB | E | 19 | S | | | | 2 | 7.000 | 5.125 | | | | | | | | | | | | 3 | 0 | 2 | 11 | 134 |
| 44 | 5 | K2 | BARRIER CURB | E | 14 | S | | | | | 5.125 | 13.125 | | 18.000 | | | | | | 2.000 | | 17.875 | | 3 | 0 | 2 | 11 | 134 |
| 24 | 5 | K9 | BARRIER CURB | E | 20 | | | | | 5 | 7.000 | | | | | | | | | | | | | 5 | 7 | 5 | 7 | 140 |
| 22 | 4 | K10 | BARRIER CURB | E | 20 | | | | | 6 | 5.000 | | | | | | | | | | | | | 6 | 5 | 6 | 5 | 94 |
| 2 | 4 | K11 | BARRIER CURB | E | 8 | | | | | 2 | 2.125 | | | | | | | | | 2 | 2.000 | 2.375 | | 4 | 4 | 4 | 4 | 6 |
| 193 | 5 | R1 | BARRIER CURB | E | 26 | | | | | 2 | 7.500 | 4.250 | | 2 | 7.625 | | | | | 2 | 7.500 | 3.000 | | 5 | 5 | 5 | 5 | 1090 |
| 7 | 5 | R2 | BARRIER CURB | E | 20 | | | | | 23 | 6.000 | | | | | | | | | | | | | 23 | 6 | 23 | 6 | 172 |
| 14 | 5 | R3 | BARRIER CURB | E | 20 | | | | | 8 | 6.000 | | | | | | | | | | | | | 8 | 6 | 8 | 6 | 124 |
| 30 | 5 | R4 | BARRIER CURB | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 305 |
| 14 | 5 | R5 | BARRIER CURB | E | 20 | | | | | 37 | 9.000 | | | | | | | | | | | | | 37 | 9 | 37 | 9 | 551 |
| 7 | 5 | R6 | BARRIER CURB | E | 20 | | | | | 24 | 7.000 | | | | | | | | | | | | | 24 | 7 | 24 | 7 | 179 |
| 28 | 5 | C1 | SLIP FORM | E | 20 | | | | | 8 | 11.000 | | | | | | | | | | | | | 8 | 11 | 8 | 11 | 260 |
| 4 | 5 | C2 | SLIP FORM | E | 20 | | | | | 6 | 10.000 | | | | | | | | | | | | | 6 | 10 | 6 | 10 | 29 |
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 29 | 11.000 | | | | | | | | | | | | | 29 | 11 | 29 | 11 | 94 |
| 18 | 5 | R8 | BLOCKOUT | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 183 |
| 6 | 5 | R9 | BLOCKOUT | E | 20 | | | | | 37 | 9.000 | | | | | | | | | | | | | 37 | 9 | 37 | 9 | 236 |
| 3 | 5 | R10 | BLOCKOUT | E | 20 | | | | | 30 | 11.000 | | | | | | | | | | | | | 30 | 11 | 30 | 11 | 97 |
| 32 | 5 | R11 | END POST | E | 10 | S | | | | | | 9.750 | | 22.000 | | | | | | | | | | 3 | 6 | 3 | 3 | 108 |
| 32 | 5 | R12 | END POST | E | 10 | S | | | | | | 13.500 | | 22.000 | | | | | | | | | | 4 | 1 | 3 | 11 | 131 |
| 12 | 5 | R13 | END POST | E | 20 | | | | | 5 | 3.000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 66 |
| 12 | 5 | R14 | END POST | E | 28 | S | | | | | | 2 | 9.000 | 3.750 | | 3 | 0.000 | | | | | | | 6 | 1 | 5 | 10 | 73 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 100 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 4106 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 4206 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 988 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 988 |
| | | | Safety Barrier Curb | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 100 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 2829 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 2929 |
| | | | Slip Form Option | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 289 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 289 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

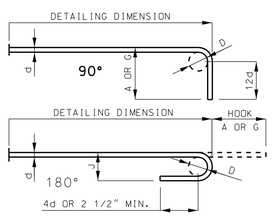



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK | 135° HOOK | |
| | | HOOK A OR G | HOOK A OR G | APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES 180° HOOKS A OR G | ALL GRADES 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #4-K10 & #5-R4 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 8
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22823

DESCRIPTION | DATE

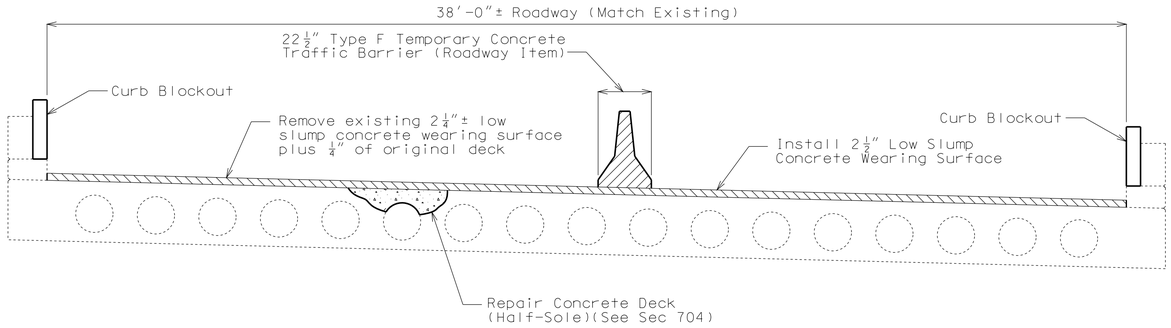
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

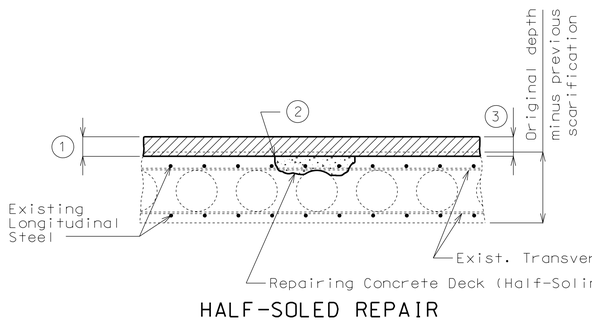
SEC/SUR 14 TWP 52N RGE 34W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB. EXISTING (35'-58'-58'-35') CONTINUOUS CONCRETE VOIDED SLAB SPANS



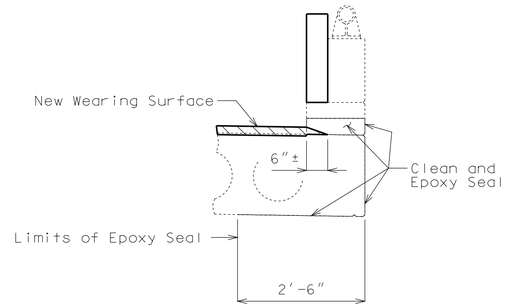

SECTION THRU SLAB



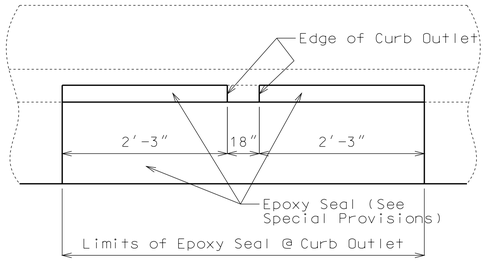

HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2½" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS




TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET

### Estimated Quantities

| Item | | Total |
|---|---|---|
| Removal of Concrete Wearing Surface | sq. foot | 7164 |
| Low Slump Concrete Wearing Surface | sq. yard | 796 |
| Curb Blockout | linear foot | 405 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 600 |
| Clean and Epoxy Seal | sq. foot | 314 |
| | | |
| | | |
| | | |
| | | |

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## REPAIRS TO BRIDGE: I-29 NBL OVER NW MID CONTINENT TRAFFICWAY

STATE ROAD FROM RTE. I-435 TO RTE. 152
ABOUT 0.5 MILE SOUTH OF RTE. I-435
STA. 424+22.71± (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



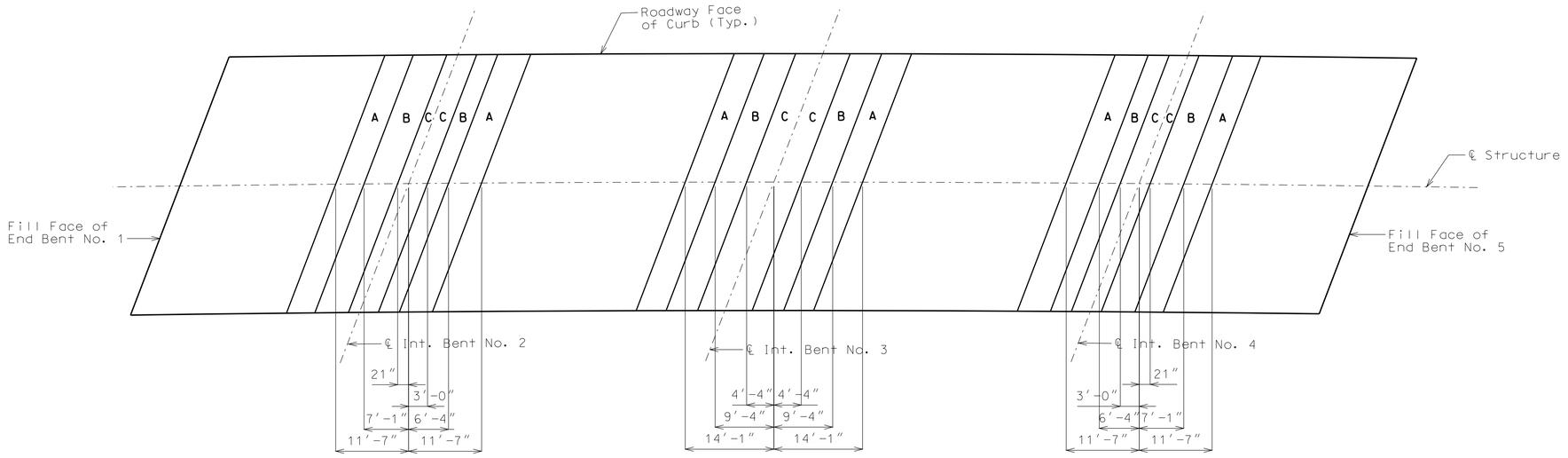
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22824

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
9/24/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A22824

| DESCRIPTION | DATE |
|---|---|
| | |

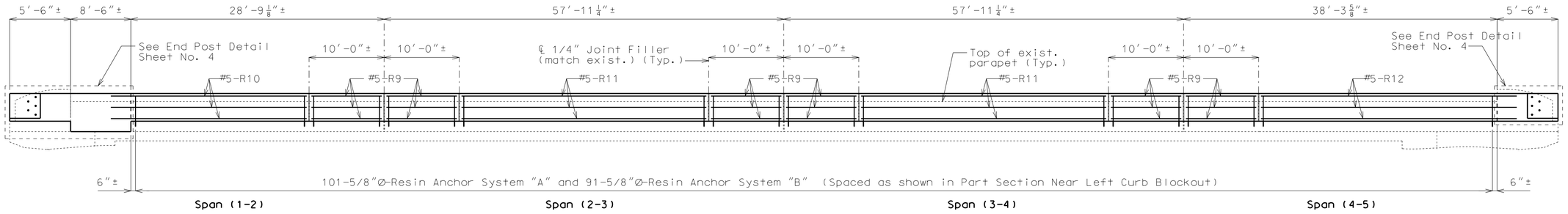
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

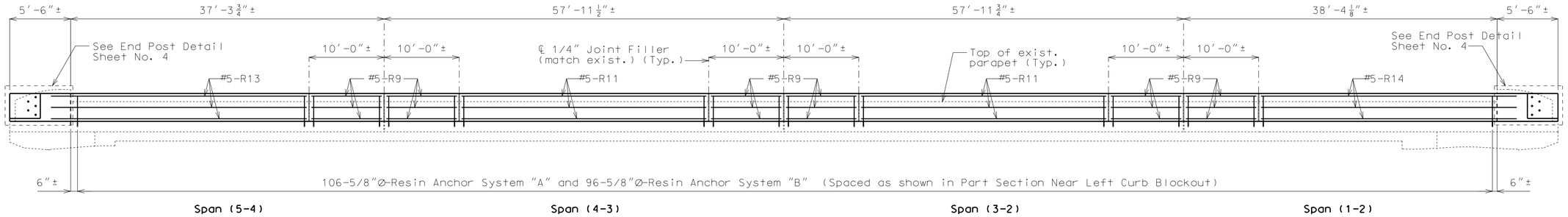
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



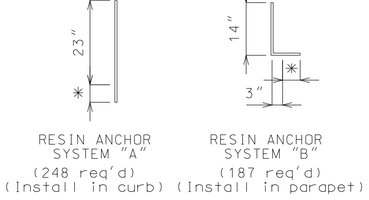

## SECTION NEAR LEFT CURB BLOCKOUT




## SECTION NEAR RIGHT CURB BLOCKOUT

Note: Longitudinal dimensions shown are arc dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.



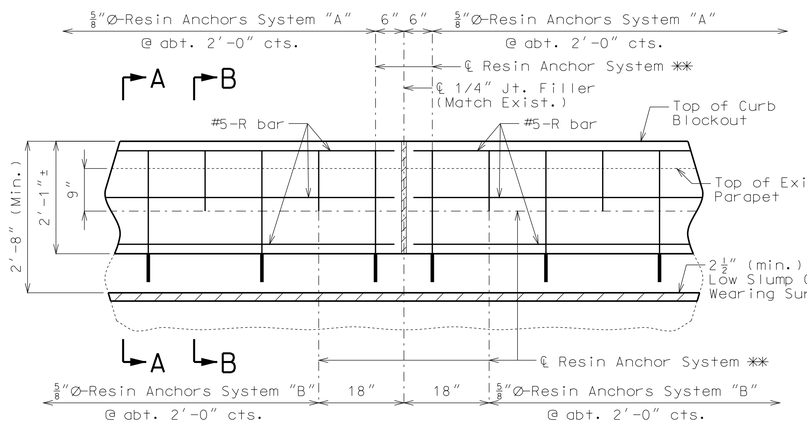

RESIN ANCHOR SYSTEM "A" (248 req'd) (Install in curb)

RESIN ANCHOR SYSTEM "B" (187 req'd) (Install in parapet)

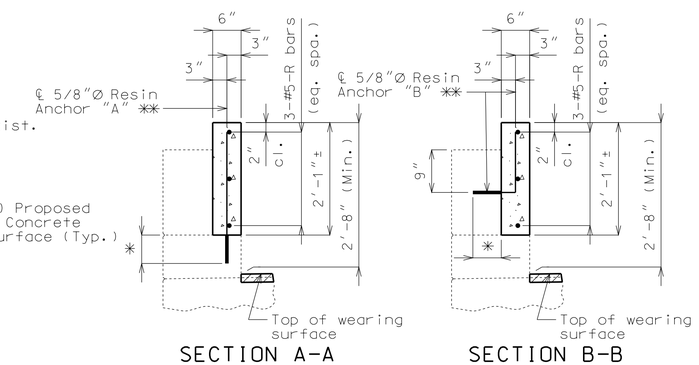
✳ Use manufacturer's embedment length. (5″ minimum embedment)

## DETAILS OF RESIN ANCHORS


## FILLED JOINT DETAIL




## PART SECTION NEAR LEFT CURB BLOCKOUT




## DETAILS OF LEFT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2″ radius or 3/8″ bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

✳✳ Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



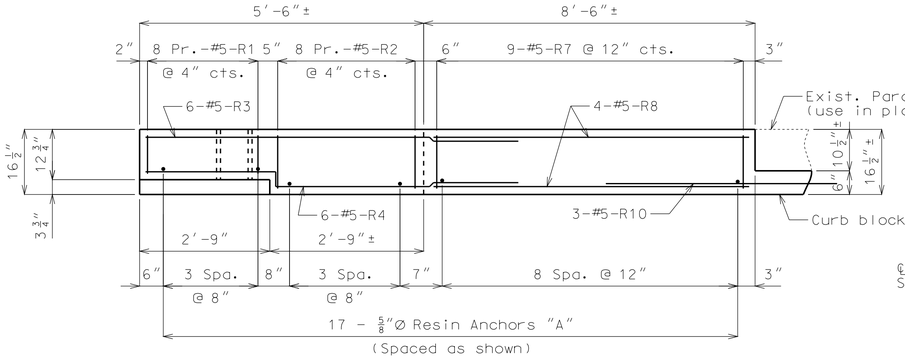
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22824

DESCRIPTION | DATE

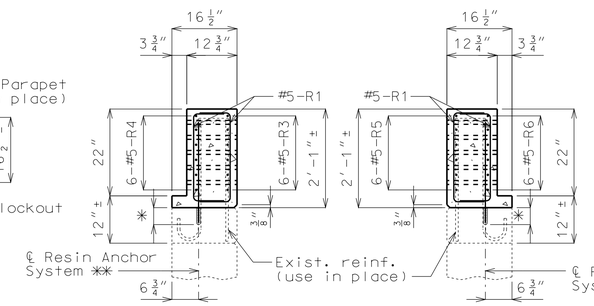
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



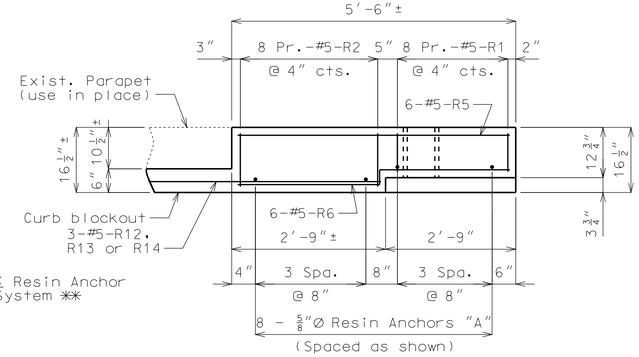

PLAN SHOWING END POST REINFORCEMENT
FOR LEFT END POST AT END BENT NO. 1

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.



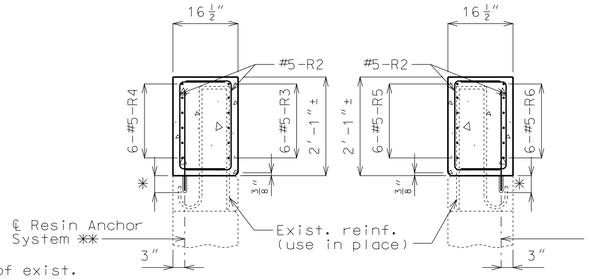

SECTION A-A

SECTION D-D



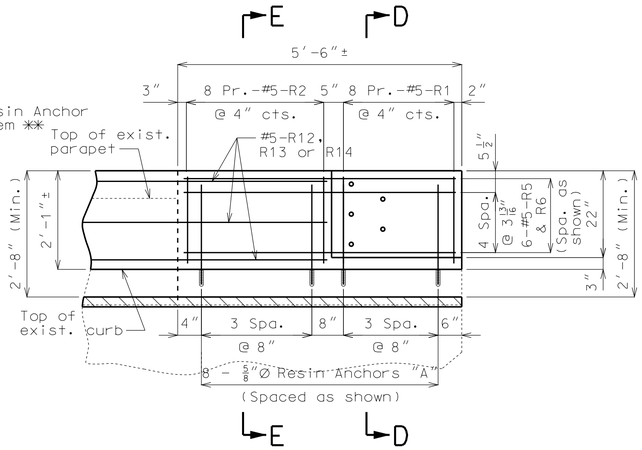

PLAN SHOWING END POST REINFORCEMENT
FOR ALL OTHER END POSTS

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.



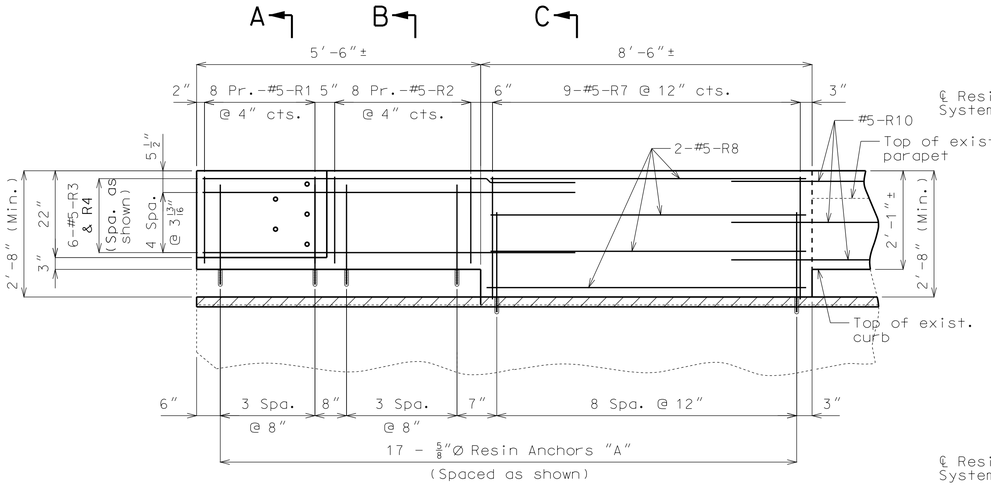

SECTION B-B

SECTION E-E



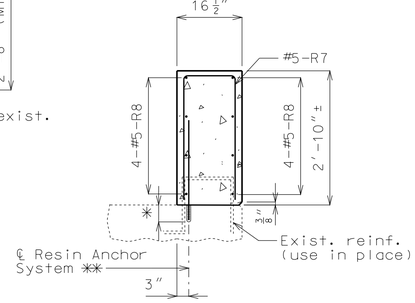

ELEVATION SHOWING END POST REINFORCEMENT
FOR ALL OTHER END POSTS

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.

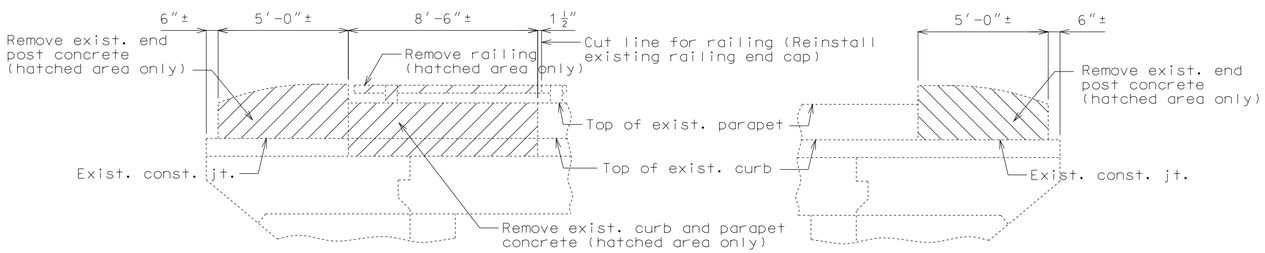



ELEVATION SHOWING END POST REINFORCEMENT
FOR LEFT END POST AT END BENT NO. 1

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




SECTION C-C




PART ELEVATION SHOWING
END POST CONCRETE REMOVAL
FOR LEFT END POST AT END BENT NO. 1

PART ELEVATION SHOWING
END POST CONCRETE REMOVAL
FOR ALL OTHER END POSTS

Notes:
For Details of Resin Anchors, see Sheet No. 3.

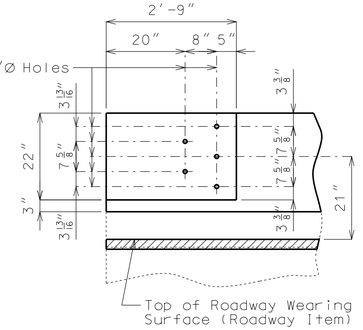
* Manufacturer's recommended embedment length. (5″ minimum embedment)

** Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.




DETAILS OF GUARD RAIL
ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Apr. 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 9/24/2013
ROUTE: I-29 | STATE: MO
DISTRICT: BR | SHEET NO.: 4
COUNTY: PLATTE
JOB NO.: J412374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A22824

DATE | DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

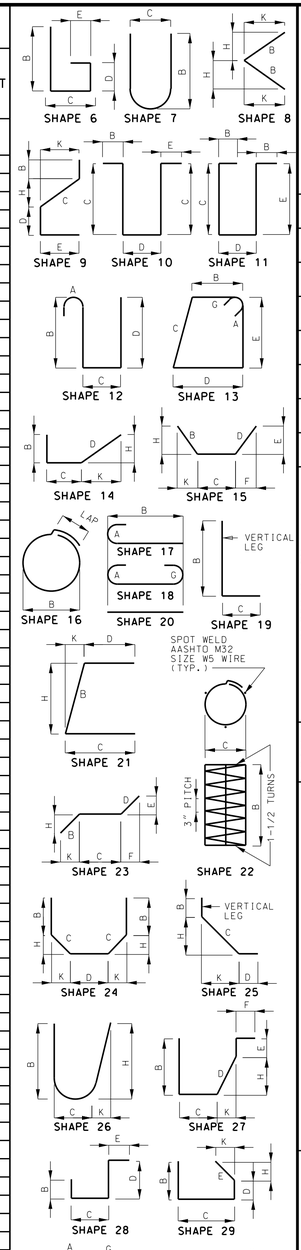
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# BILL OF REINFORCING STEEL

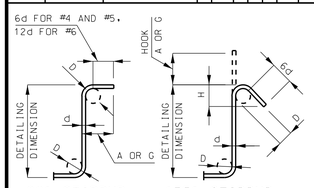
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | 5 | R1 | END POST | E | 10 | S | | | | | | 9.750 | | 22.000 | | | | | | | | | | 3 | 6 | 3 | 3 | 217 |
| 64 | 5 | R2 | END POST | E | 10 | S | | | | | | 13.500 | | 22.000 | | | | | | | | | | 4 | 1 | 3 | 11 | 261 |
| 6 | 5 | R3 | END POST | E | 20 | | | | | 8 | 5.000 | | | | | | | | | | | | | 8 | 5 | 8 | 5 | 53 |
| 6 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9.000 | 3.750 | | 5 | 8.000 | | | | | | | 8 | 9 | 8 | 6 | 53 |
| 18 | 5 | R5 | END POST | E | 20 | | | | | 5 | 3.000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 99 |
| 18 | 5 | R6 | END POST | E | 28 | S | | | | | | 2 | 9.000 | 3.750 | | 2 | 6.000 | | | | | | | 5 | 7 | 5 | 4 | 100 |
| 9 | 5 | R7 | BLOCKOUT | E | 10 | S | | | | | | 2 | 7.000 | 13.500 | | | | | | | | | | 6 | 4 | 6 | 1 | 57 |
| 8 | 5 | R8 | BLOCKOUT | E | 20 | | | | | 8 | 3.000 | | | | | | | | | | | | | 8 | 3 | 8 | 3 | 69 |
| 38 | 5 | R9 | BLOCKOUT | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 386 |
| 3 | 5 | R10 | BLOCKOUT | E | 20 | | | | | 21 | 8.000 | | | | | | | | | | | | | 21 | 8 | 21 | 8 | 68 |
| 12 | 5 | R11 | BLOCKOUT | E | 20 | | | | | 37 | 8.000 | | | | | | | | | | | | | 37 | 8 | 37 | 8 | 471 |
| 3 | 5 | R12 | BLOCKOUT | E | 20 | | | | | 31 | 1.000 | | | | | | | | | | | | | 31 | 1 | 31 | 1 | 97 |
| 3 | 5 | R13 | BLOCKOUT | E | 20 | | | | | 30 | 1.000 | | | | | | | | | | | | | 30 | 1 | 30 | 1 | 94 |
| 3 | 5 | R14 | BLOCKOUT | E | 20 | | | | | 31 | 2.000 | | | | | | | | | | | | | 31 | 2 | 31 | 2 | 98 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 2123 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 2123 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 2123 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 2123 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

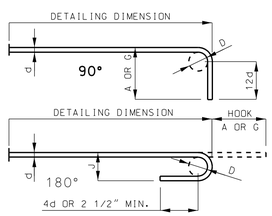



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | |
|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R9 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22824

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

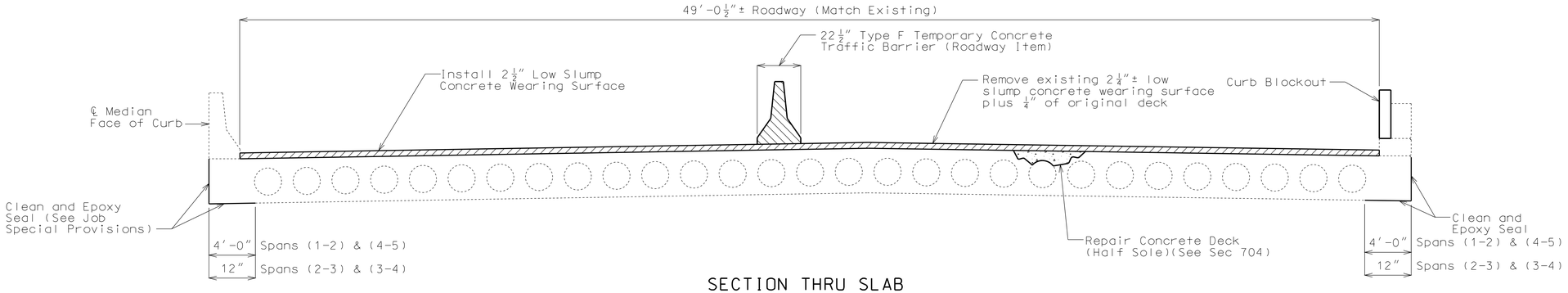
Detailed May 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.

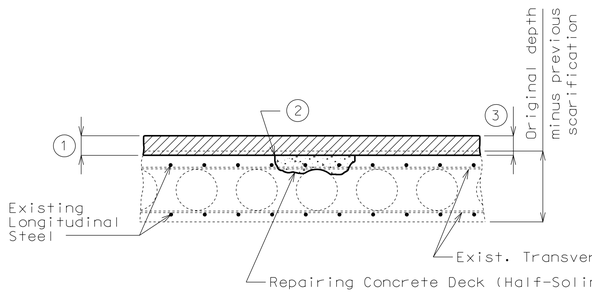
SEC/SUR 36 TWP 52N RGE 34W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB. EXISTING (36'-54'-54'-36') CONTINUOUS CONCRETE VOIDED SLAB SPANS




SECTION THRU SLAB




HALF-SOLED REPAIR

(1) Remove existing wearing surface plus 1/4" of existing deck.

(2) One inch vertical side shall be established outside the deteriorated area. See Sec 704.

(3) 2½" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS

| Estimated Quantities | | |
|---|---|---|
| Item | | Total |
| Removal of Concrete Wearing Surface | sq. foot | 8950 |
| Low Slump Concrete Wearing Surface | sq. yard | 994 |
| Curb Blockout | linear foot | 197 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 950 |
| Clean and Epoxy Seal | sq. foot | 1452 |
| | | |
| | | |
| | | |
| | | |

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## REPAIRS TO BRIDGE: I-29 SBL OVER TIFFANY SPRINGS PARKWAY

STATE ROAD FROM I-435 TO RTE. 152
ABOUT 1.5 MILES NORTH OF RTE. 152
STA. 574+68.75± (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Detailed Feb. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



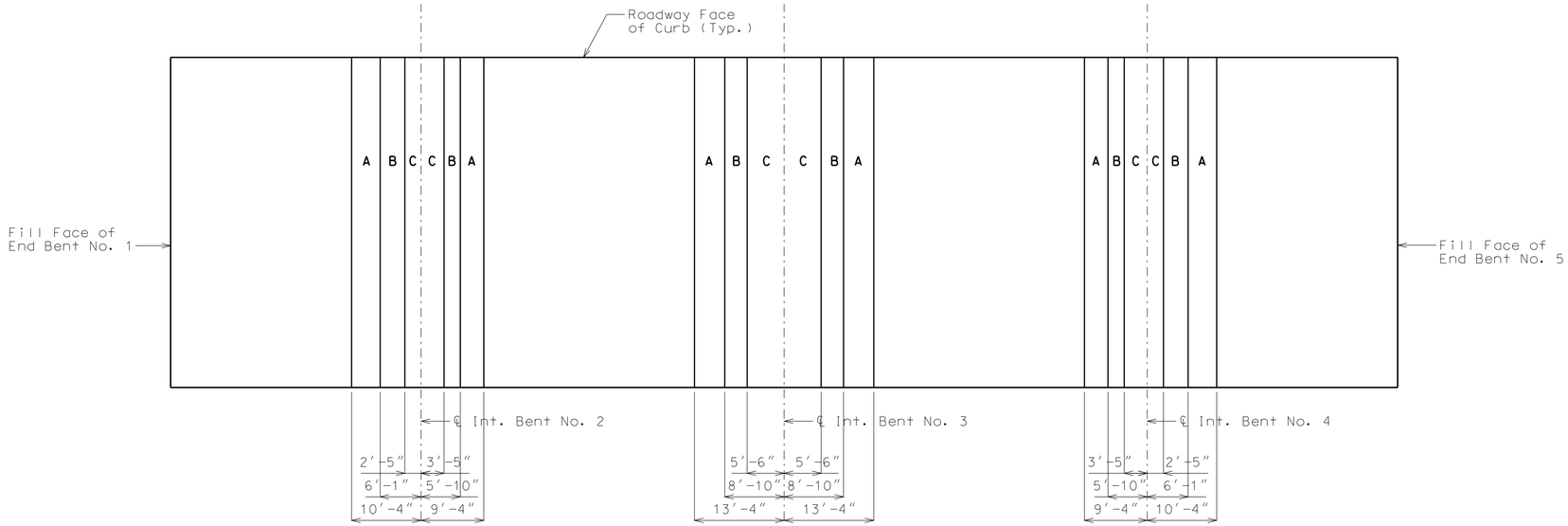
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22832

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/7/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J4I12374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A22832

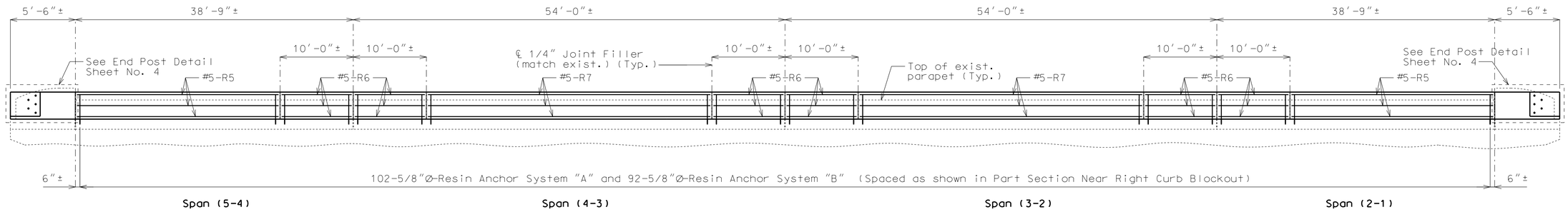
| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Feb. 2013
Checked Mar. 2013

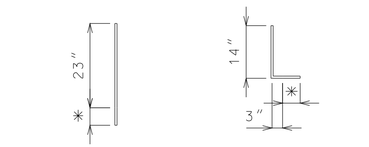
Note: This drawing is not to scale. Follow dimensions.




## SECTION NEAR RIGHT CURB BLOCKOUT

Note: Longitudinal dimensions shown are dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

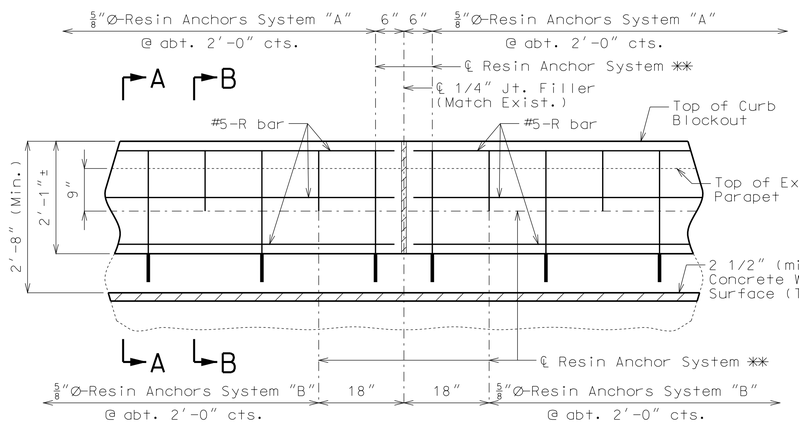



RESIN ANCHOR SYSTEM "A" (118 req'd) (Install in curb)

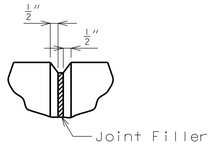
RESIN ANCHOR SYSTEM "B" (92 req'd) (Install in parapet)

* Use manufacturer's embedment length. (5" minimum embedment)

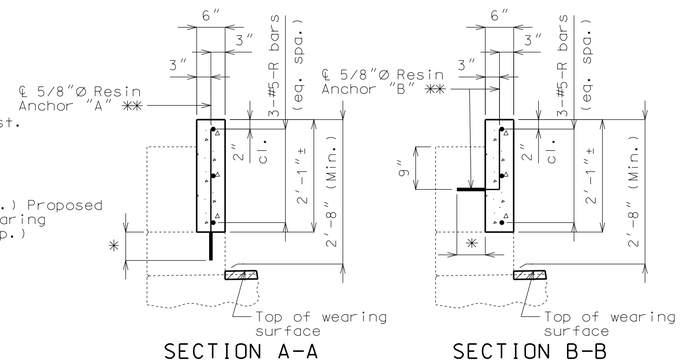
## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR RIGHT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A

SECTION B-B

## DETAILS OF RIGHT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

** Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11" for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

Detailed Feb. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



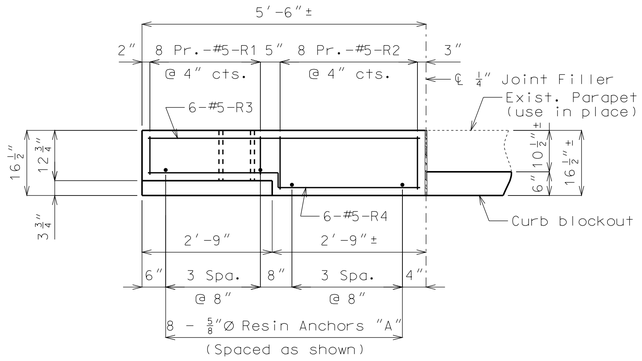
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22832

DESCRIPTION | DATE

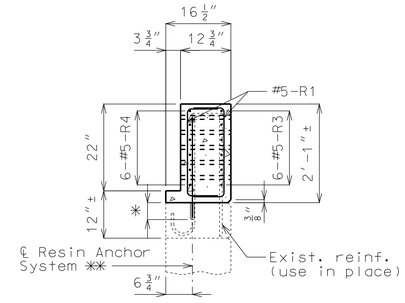
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

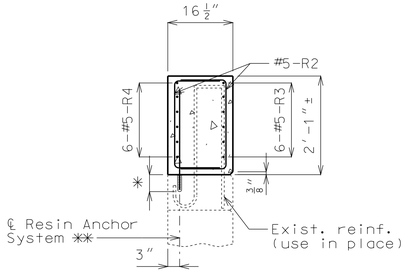



PLAN SHOWING END POST REINFORCEMENT

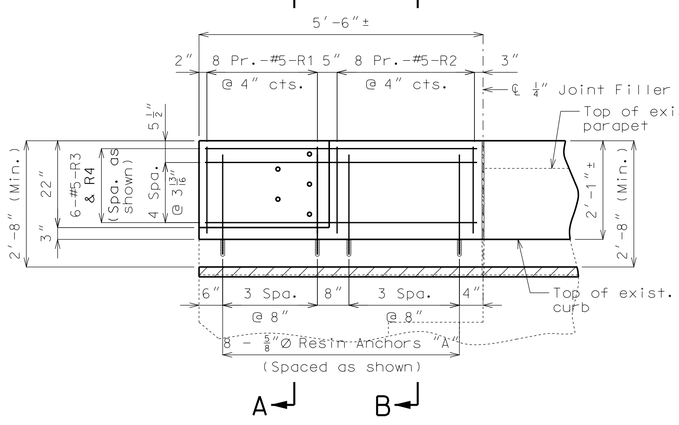
Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




SECTION A-A

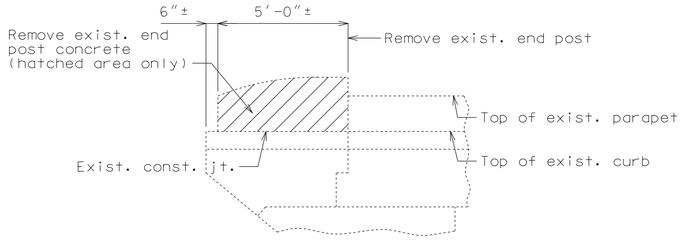



SECTION B-B




ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




PART ELEVATION SHOWING END POST CONCRETE REMOVAL

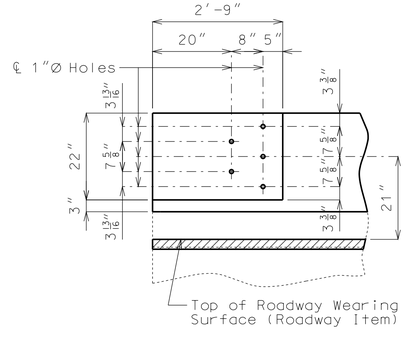
Notes:
For Details of Resin Anchors, see Sheet No. 3.

✳ Manufacturer's recommended embedment length. (5″ minimum embedment)

✳✳ Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Feb. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22832

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

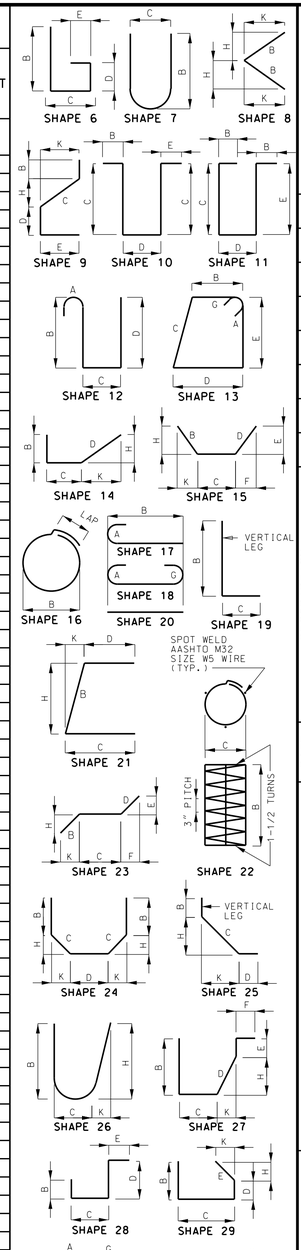
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 5 | R1 | END POST | E | 10 | S | | | | | | 9 | 750 | 22 | 000 | | | | | | | | | 3 | 6 | 3 | 3 | 108 |
| 32 | 5 | R2 | END POST | E | 10 | S | | | | | | 13 | 500 | 22 | 000 | | | | | | | | | 4 | 1 | 3 | 11 | 131 |
| 12 | 5 | R3 | END POST | E | 20 | | | | | 5 | 3 000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 66 |
| 12 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9 000 | 3 | 750 | 2 | 6 000 | | | | | | | 5 | 7 | 5 | 4 | 67 |
| 6 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 28 | 6 000 | | | | | | | | | | | | | 28 | 6 | 28 | 6 | 178 |
| 20 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 9 | 9 000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 203 |
| 6 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 33 | 9 000 | | | | | | | | | | | | | 33 | 9 | 33 | 9 | 211 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 964 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 964 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 964 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 964 |

# BILL OF REINFORCING STEEL

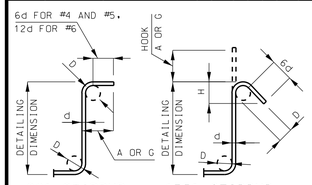
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|




SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

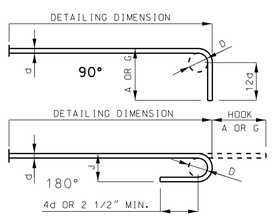
(SHAPE 35 SHALL BE A DEFORMED OR PLAIN SPIRAL BAR OR WIRE.)

BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK | 135° HOOK | |
| | | HOOK A OR G | HOOK A OR G | APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES | | |
| | | 180° HOOKS | | 90° HOOKS |
| | | A OR G | J | A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

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DATE PREPARED 10/7/2013
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22832

DESCRIPTION
DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

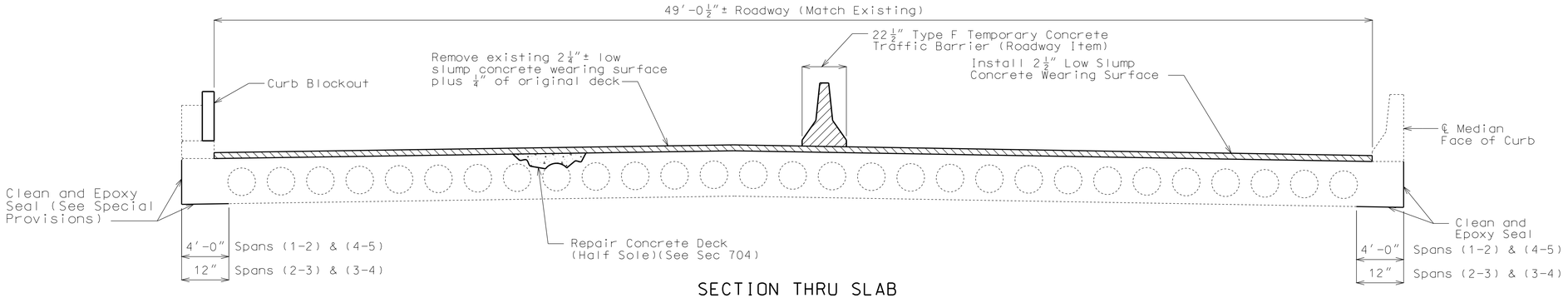
Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.

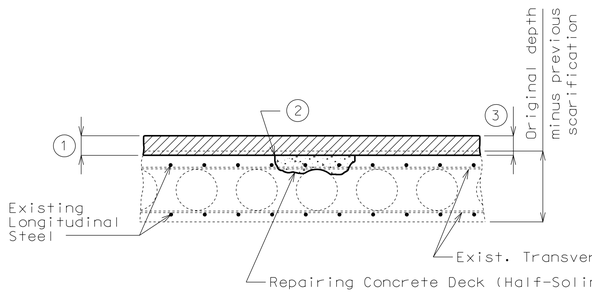
SEC/SUR 36 TWP 52N RGE 34W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB. EXISTING (36'-54'-54'-36') CONTINUOUS CONCRETE VOIDED SLAB SPANS




SECTION THRU SLAB




HALF-SOLED REPAIR

(1) Remove existing wearing surface plus 1/4" of existing deck.

(2) One inch vertical side shall be established outside the deteriorated area. See Sec 704.

(3) 2½" (min.) for Low Slump Concrete Wearing Surface

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## Estimated Quantities

| Item | | Total |
|---|---|---|
| Removal of Concrete Wearing Surface | sq. foot | 8950 |
| Low Slump Concrete Wearing Surface | sq. yard | 994 |
| Curb Blockout | linear foot | 197 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 1100 |
| Clean and Epoxy Seal | sq. foot | 1452 |
| | | |
| | | |
| | | |
| | | |

## REPAIRS TO BRIDGE: I-29 NBL OVER TIFFANY SPRINGS PARKWAY

STATE ROAD FROM I-435 TO RTE. 152
ABOUT 1.5 MILES NORTH OF RTE. 152
STA. 574+68.75± (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Detailed Feb. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22833

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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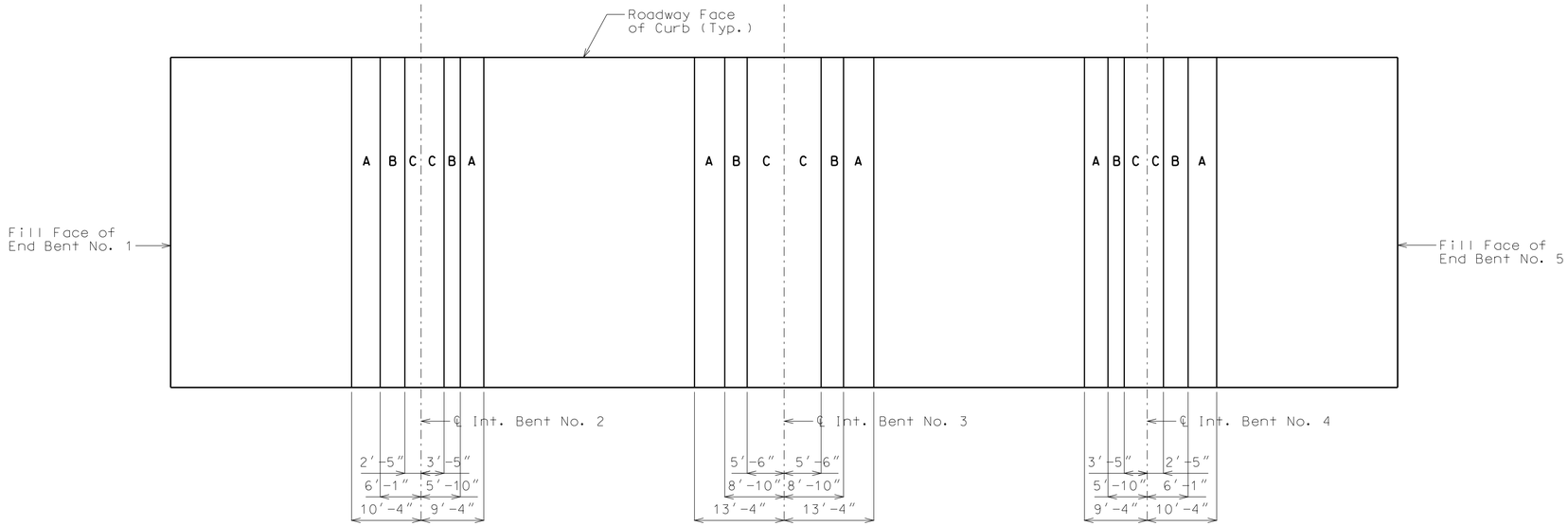


PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/7/2013

| ROUTE | STATE |
|---|---|
| I-29 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J4I12374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A22833

| DESCRIPTION | DATE |
|---|---|
| | |

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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Detailed Feb. 2013
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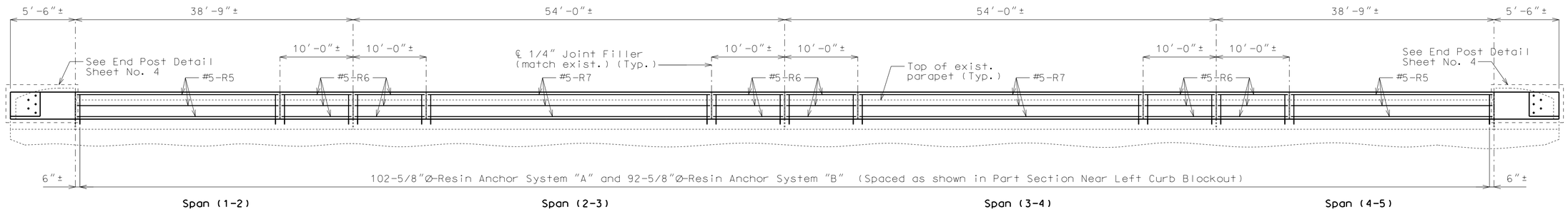
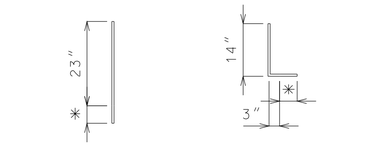



## SECTION NEAR LEFT CURB BLOCKOUT

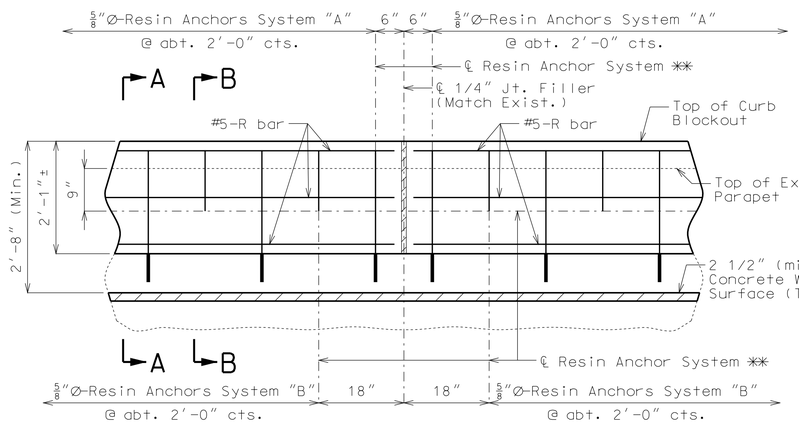
Note: Longitudinal dimensions shown are dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

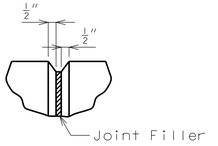



* Use manufacturer's embedment length. (5″ minimum embedment)

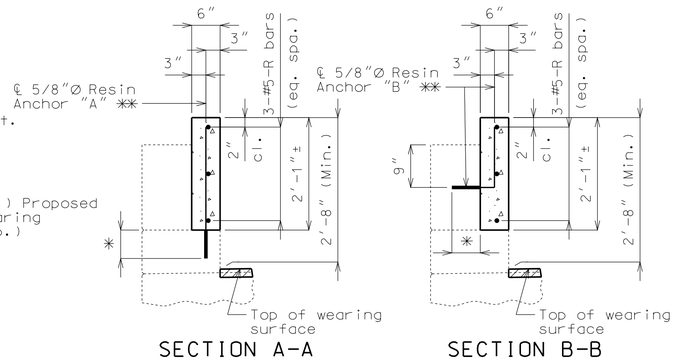
## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR LEFT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A SECTION B-B

## DETAILS OF LEFT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2″ radius or 3/8″ bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

** Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.



DATE PREPARED 10/7/2013
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DESCRIPTION | DATE

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



Detailed Feb. 2013
Checked Mar. 2013

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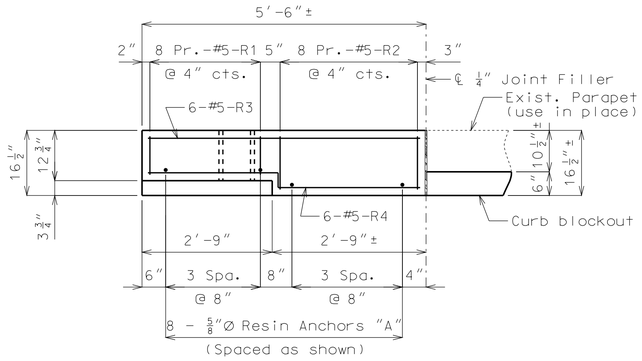
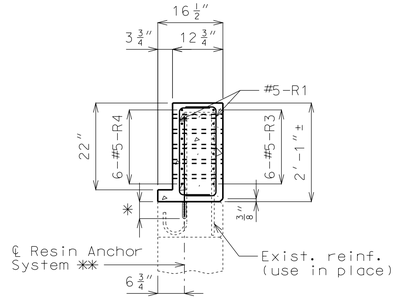
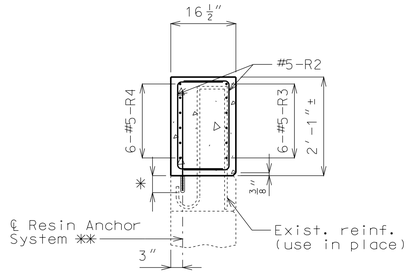



## PLAN SHOWING END POST REINFORCEMENT

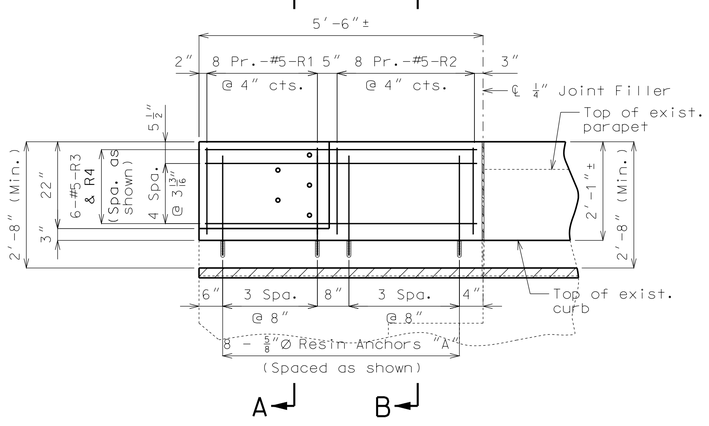
Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




## SECTION A-A

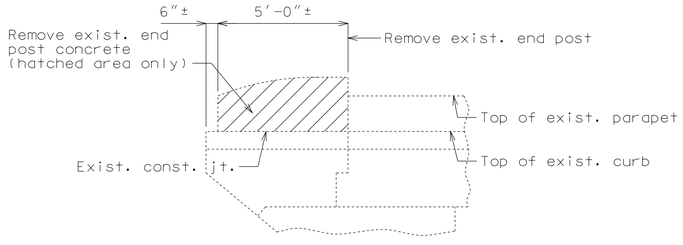



## SECTION B-B




## ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




## PART ELEVATION SHOWING END POST CONCRETE REMOVAL

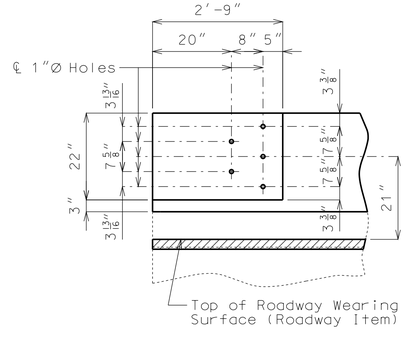
Notes:
For Details of Resin Anchors, see Sheet No. 3.

✳ Manufacturer's recommended embedment length. (5″ minimum embedment)

✳✳ Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




## DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Feb. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22833

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

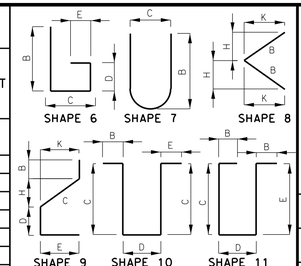
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# BILL OF REINFORCING STEEL

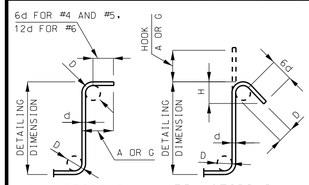
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 5 | R1 | END POST | E | 10 | S | | | | | | 9 | 750 | 22 | 000 | | | | | | | | | 3 | 6 | 3 | 3 | 108 |
| 32 | 5 | R2 | END POST | E | 10 | S | | | | | | 13 | 500 | 22 | 000 | | | | | | | | | 4 | 1 | 3 | 11 | 131 |
| 12 | 5 | R3 | END POST | E | 20 | | | | | 5 | 3 000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 66 |
| 12 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9 000 | 3 | 750 | 2 | 6 000 | | | | | | | 5 | 7 | 5 | 4 | 67 |
| 6 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 28 | 6 000 | | | | | | | | | | | | | 28 | 6 | 28 | 6 | 178 |
| 20 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 9 | 9 000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 203 |
| 6 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 33 | 9 000 | | | | | | | | | | | | | 33 | 9 | 33 | 9 | 211 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 964 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 964 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 964 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 964 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

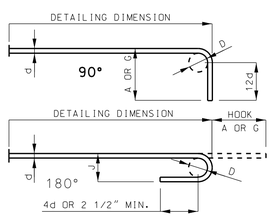



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK | 135° HOOK | |
| | | HOOK A OR G | HOOK A OR G | APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES | | |
| | | 180° HOOKS | | 90° HOOKS |
| | | A OR G | J | A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A22833

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

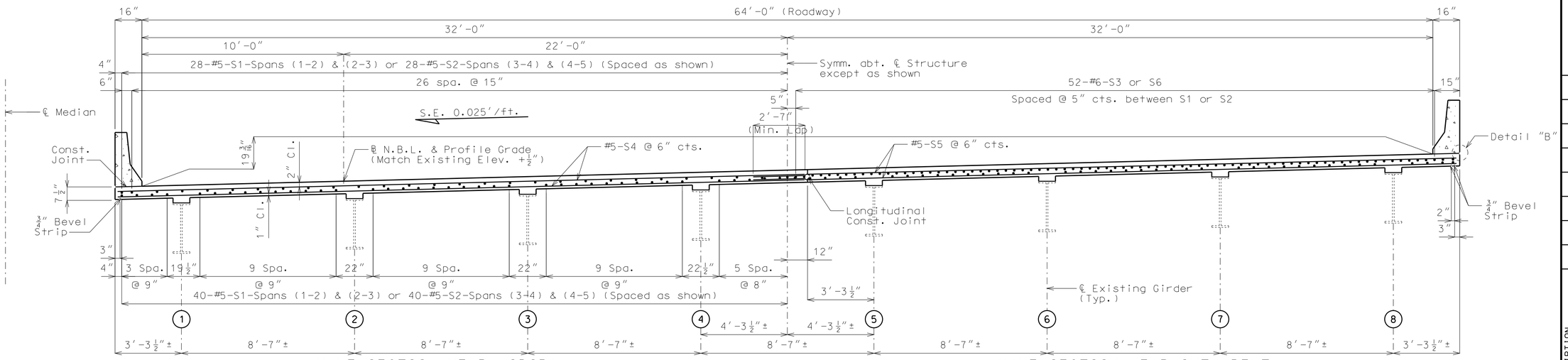
Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.

SEC/SUR 5 TWP 50N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REDECK EXISTING (65'-80')(85'-69') CONTINUOUS COMPOSITE CURVED PLATE GIRDER SPANS




HALF SECTION NEAR MIDSPAN

TYPICAL SECTION THRU SLAB

HALF SECTION NEAR INT. BENT

## General Notes:

Design Specifications:
2002 - AASHTO LFD (17th Edition) Standard Specifications
Load Factor Design
Seismic Performance Category A

Design Loading:
HS20-44 (New Construction)
12#/sq. ft. Future Wearing Surface
Military 24,000# Tandem Axle
Earth - 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.
Fatigue Stress - Case I

Design Unit Stresses:

| | |
|---|---|
| Class B-1 Concrete (Safety Barrier Curb) | f'c = 4,000 psi |
| Class B-2 Concrete (Superstructure, except Safety Barrier Curb) | f'c = 4,000 psi |
| Reinforcing Steel (Grade 60) | fy = 60,000 psi |

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Miscellaneous:
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.

Traffic Handling:
Traffic over structure to be maintained during construction. See Sheet No. 2 for Stage Construction.

### Estimated Quantities

| Item | | Total |
|---|---|---|
| Removal of Existing Bridge Decks | sq. foot | 20,251 |
| Bridge Approach Slab (Bridge) | sq. yard | 362 |
| Slab on Steel | sq. yard | 2247 |
| ✳ Safety Barrier Curb | linear foot | 655 |
| Substructure Repair (Unformed) | sq. foot | 25 |
| Protective Coating-Concrete Bents and Piers (Epoxy) | lump sum | 1 |
| Shear Connectors | each | 1752 |
| Slab Drain | each | 12 |
| Strip Seal Expansion Joint System | linear foot | 256 |

✳ Safety barrier curb shall be cast-in-place option or slip-form option.

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

### Estimated Quantities for Slab on Steel

| Item | | Total |
|---|---|---|
| Class B-2 Concrete | cu. yard | 493.8 |
| Reinforcing Steel (Epoxy Coated) | pound | 149,130 |

The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard from end of slab to end of slab and the overall width shown in the Typical Section Thru Slab. Payment for conventional forms or optional stay-in-place forms, all concrete and coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

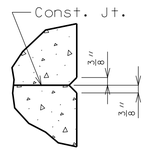
Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

Slab shall be cast-in-place with conventional forming or stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

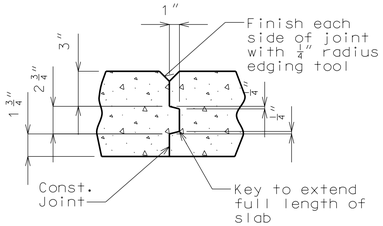
For optional Stay-In-Place Form Details, see Sheet No. 3.

All concrete above the upper construction joint in the end bents is included in the Estimated Quantities for Slab on Steel.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Steel.




DETAIL "B"




DETAIL OF LONGITUDINAL CONST. JOINT

| REQUIRED LAP LENGTH FOR BAR SPLICES ✳✳ | |
|---|---|
| Bar Size | Splice Length |
| 4 | 2'-7" |
| 5 | 3'-3" |
| 6 | 3'-10" |
| 7 | 4'-11" |

✳✳ Unless otherwise shown.

| TABLE SHOWING S3 OR S6 BAR LENGTHS | | | |
|---|---|---|---|
| Int. Bent No. 2 | | Int. Bent No. 4 | |
| Span 1 | Span 2 | Span 3 | Span 4 |
| 23'-3" | 18'-9" | 17'-6" | 25'-3" |

REPAIRS TO BRIDGE: NBL I-635 OVER RTE. 9 EBL & RAMP 6 (RTE. 9 WBL TO I-635 SBL)

STATE ROAD FROM STATE LINE TO RTE. I-29
IN RIVERSIDE
STA. 41+53.43± (Match Existing)

| |
|---|
| STD. 609.00 |
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Designed Apr. 2012
Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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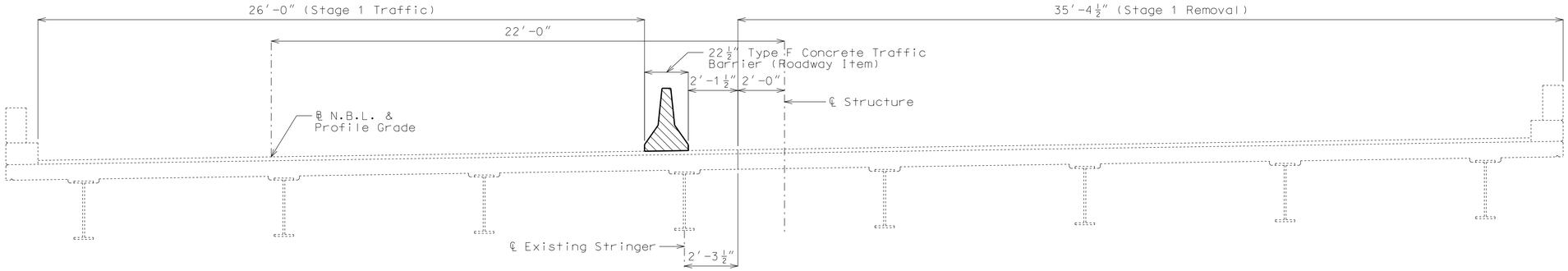


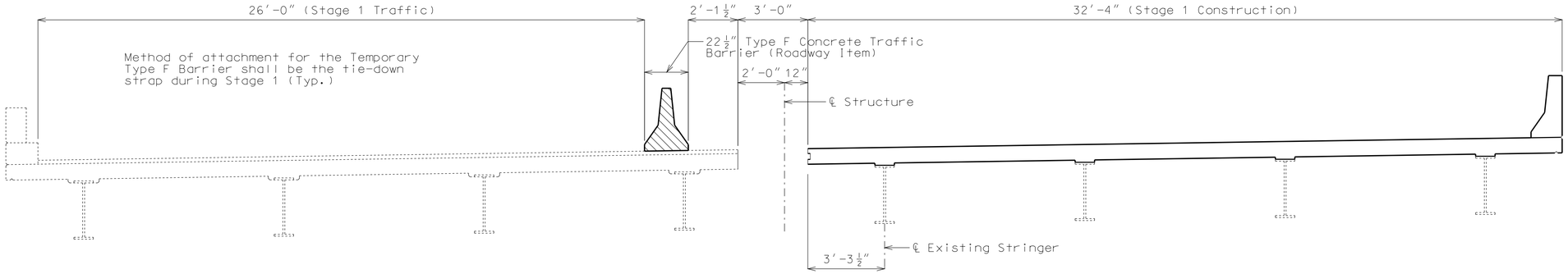


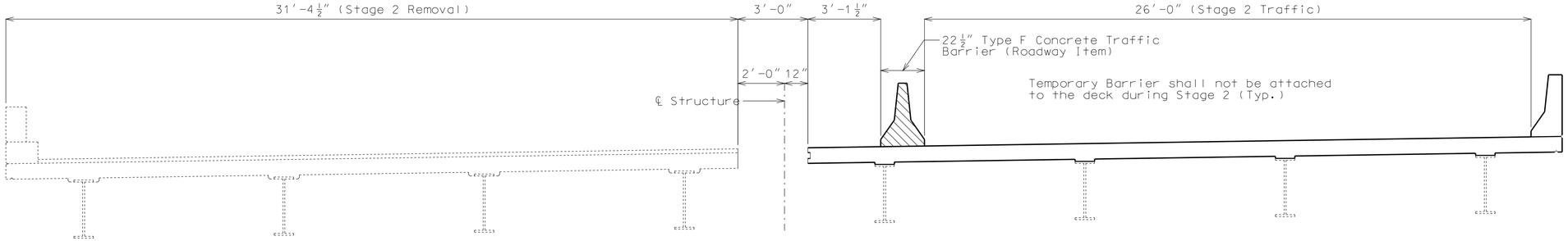


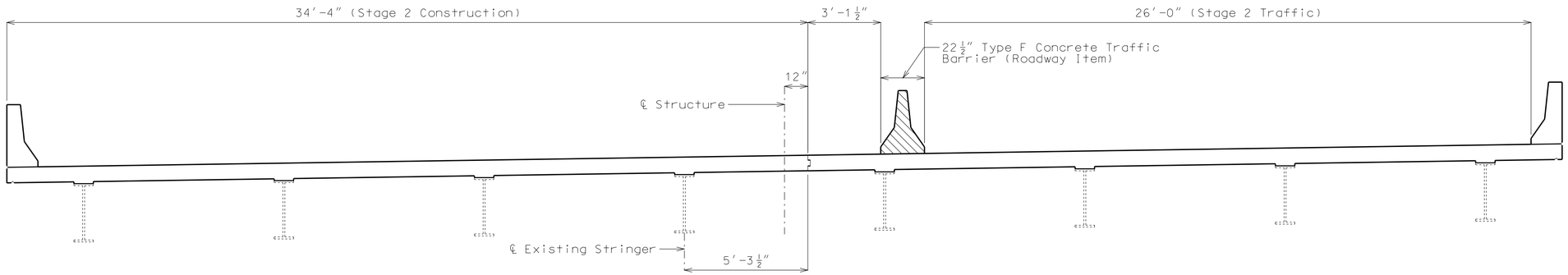


# DETAILS OF STAGE CONSTRUCTION

Detailed May 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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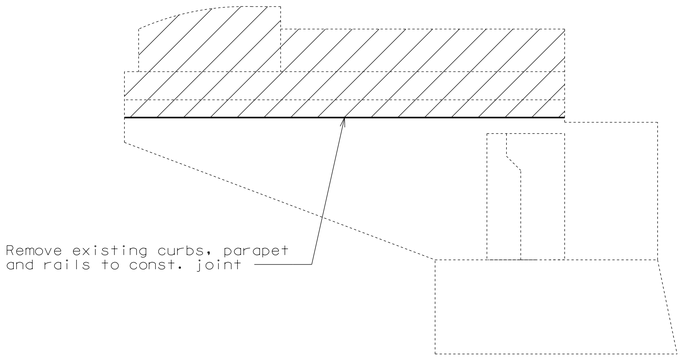
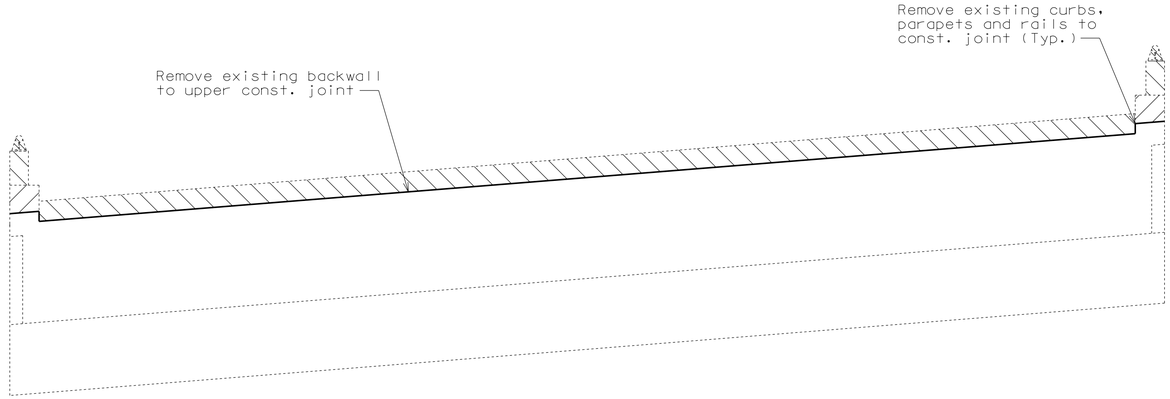


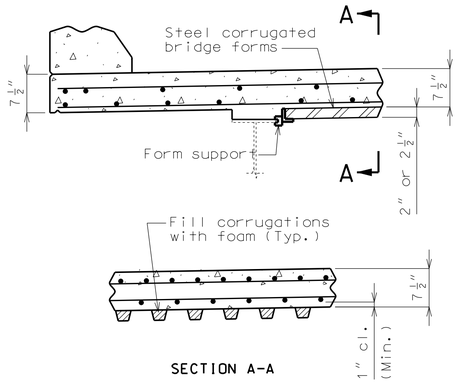

ELEVATION OF WING SHOWING CONCRETE REMOVAL LIMITS




DETAILS OF CONCRETE REMOVAL @ END BENTS

(Looking parallel to ℄ of Roadway)

Note:
Cost of removing curbs, parapets, rails and end posts, as shown will be considered completely covered by the contract unit price for "Removal of Existing Bridge Decks".




SECTION A-A

OPTIONAL STAY-IN-PLACE FORM DETAILS

Notes:
Corrugated steel bridge deck forms, supports closure elements and accessories shall be in accordance with grade requirement and coating designation G165 of ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form sheets shall not rest directly on the top of girders, stringers or floorbeams flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Welding on or drilling holes in the flanges of the girders, stringers or floorbeams will not be permitted. All steel fabrication and construction shall be in accordance with Sec's 1080 and 712. MoDOT certified field welders will not be required for welding of the form supports.

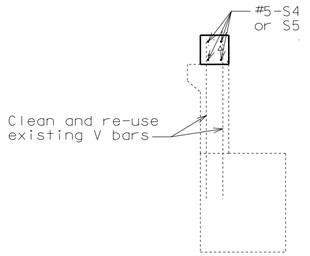
The contractor shall provide temporary bracing as necessary to prevent girders from rotating during slab pour. The cost for temporary bracing shall be considered completely covered by the contract unit price for Slab on Steel.

Slab shall be poured upgrade from end to end at a minimum rate of 27 cu. yd./ hr. with retarder or 44 cu. yd./hr. without retarder.

Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Slab is to be considered at a uniform depth as shown on the plans. Haunching will vary.

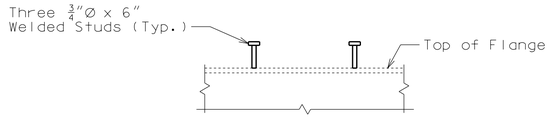
The contractor shall pour and satisfactorily finish the slab pours at the rate given. Retarder, if used, shall be an approved type and retard the set of concrete to 2.5 hours.



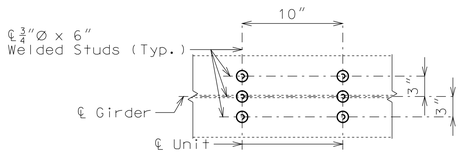

TYPICAL SECTION THRU END BENTS NO. 1 & 5

Note:
The cost of supplying and installing shear connectors will be considered completely covered by the contract unit price for Shear Connectors.

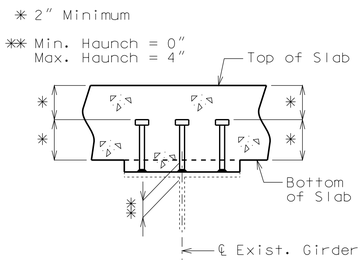
Shear connectors shall be in accordance with Sec 712, 1037 and 1080.



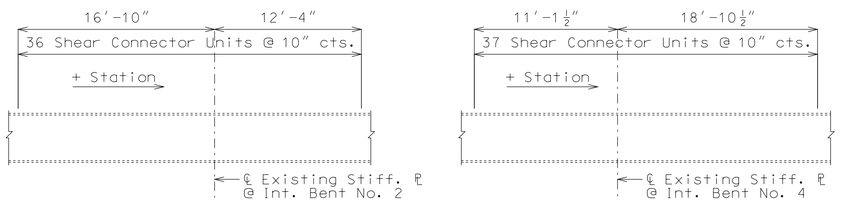

ELEVATION




PLAN OF SHEAR CONN. (3 PER UNIT)

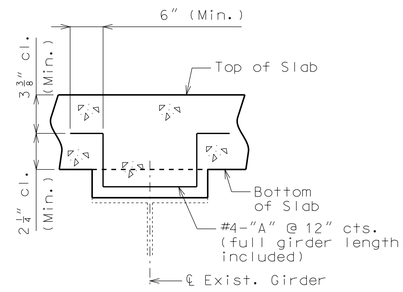



SECTION THRU EXIST. GIRDER SHOWING SHEAR CONNECTORS




PART ELEVATION OF GIRDER SHOWING SHEAR CONNECTOR SPACING

| "A" | | | |
|---|---|---|---|
| 8" Top Flange | 10" Top Flange | 14" Top Flange | 17" Top Flange |
| S7 | S14 | S15 | S16 |




SECTION THRU EXISTING GIRDER SHOWING HAIRPIN BARS

(Shear connectors not shown for clarity)

Note:

Cost of furnishing and installing epoxy coated hairpin bars will be considered completely covered by the contract unit price for Slab on Steel.

Deflection Note:
The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and may be adjusted based on the difference between the new and existing dead load weights.

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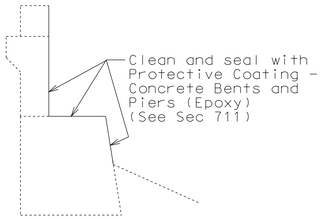
DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

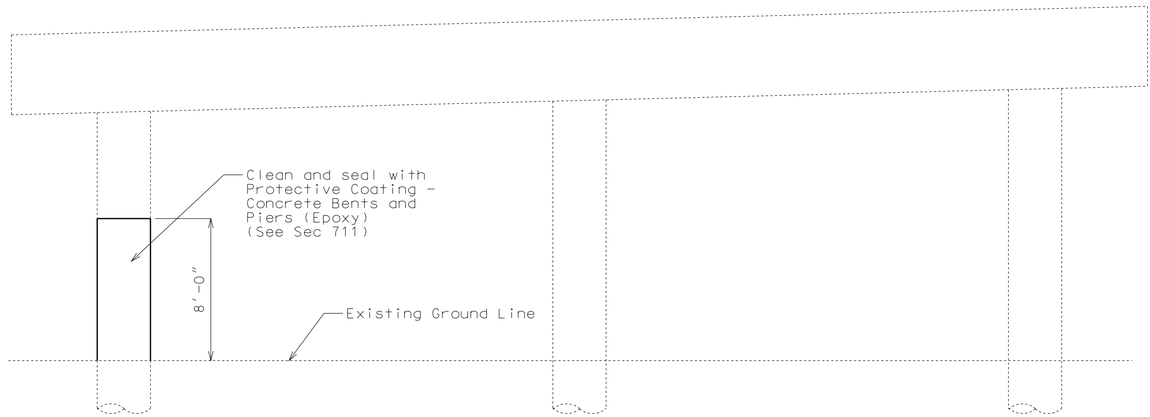
DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

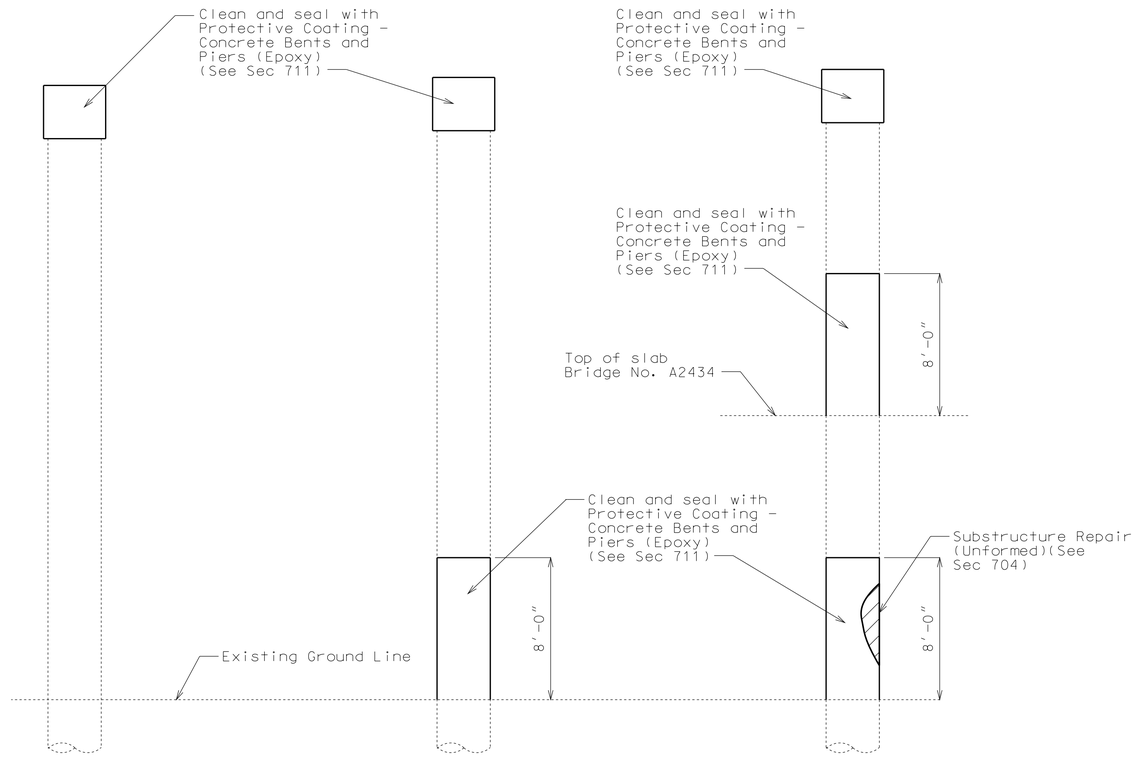
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




TYPICAL SECTION THRU
END BENTS 1 & 5 SHOWING
PROTECTIVE COATING




PART ELEVATION OF INT. BENT NO. 2
SHOWING PROTECTIVE COATING




PART ELEVATION OF INT. BENT NO. 3
SHOWING PROTECTIVE COATING
AND SUBSTRUCTURE REPAIR

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DATE PREPARED
10/7/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| BR | 4 |

COUNTY
PLATTE

JOB NO.
J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A24353

| DESCRIPTION | DATE |
|---|---|
| | |

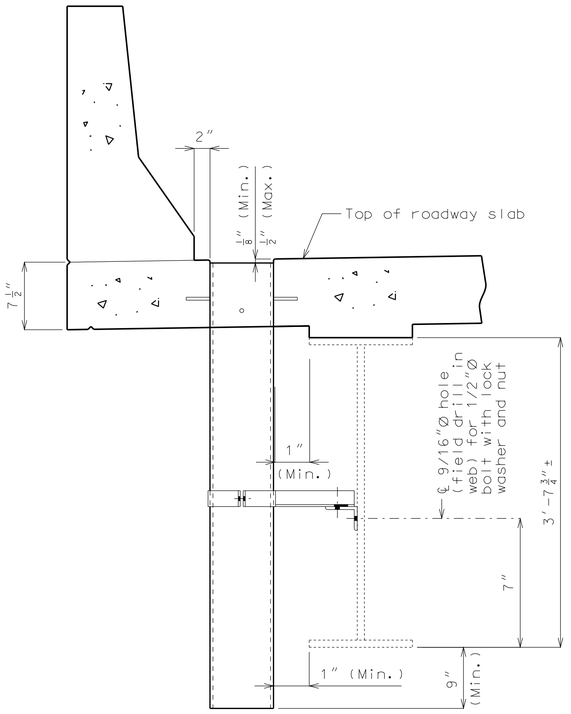
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

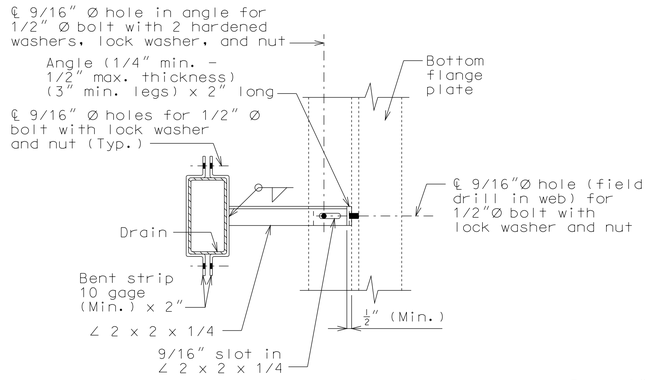
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Detailed Aug. 2013
Checked Aug. 2013

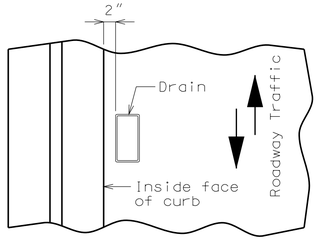
Note: This drawing is not to scale. Follow dimensions.



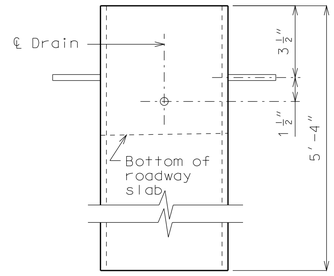

PART SECTION NEAR DRAIN



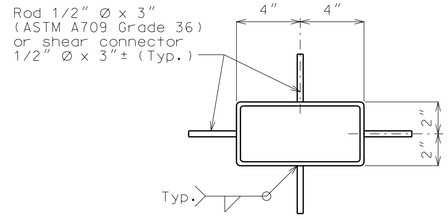

PART SECTION SHOWING BRACKET ASSEMBLY




PART PLAN OF SLAB AT DRAIN




ELEVATION OF DRAIN




PLAN OF DRAIN

Notes:

Slab drains may be fabricated of either 1/4" welded sheets of ASTM A709 Grade 36 steel or from 1/4" structural steel tubing ASTM A500 or A501.

Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

Outside dimensions of drains are 8" x 4".

Locate drains in slab by dimensions shown in Part Section Near Drain.

Reinforcing steel shall be shifted to clear drains.

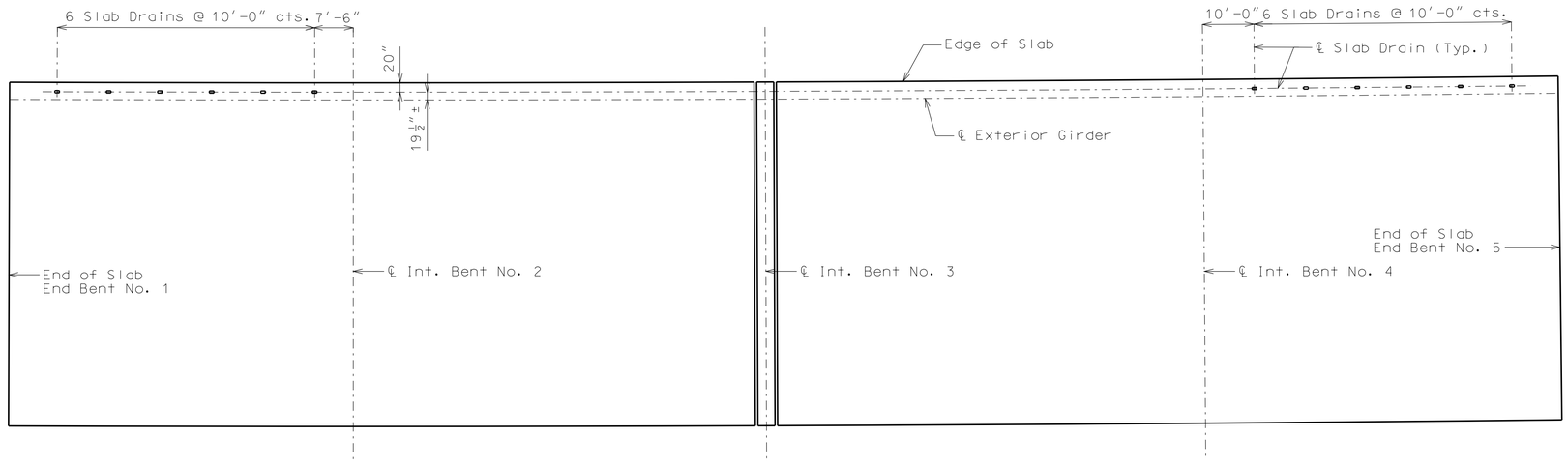
The drains and bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with ASTM A153.

Shop drawings will not be required for the slab drains and the bracket assembly.

The bolt hole for the bracket assembly attachment should be shifted to the minimum extent necessary to field drill in the existing web.

## SLAB DRAIN DETAILS




PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013

ROUTE I-635 | STATE MO

DISTRICT BR | SHEET NO. 5

COUNTY PLATTE

JOB NO. J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A24353

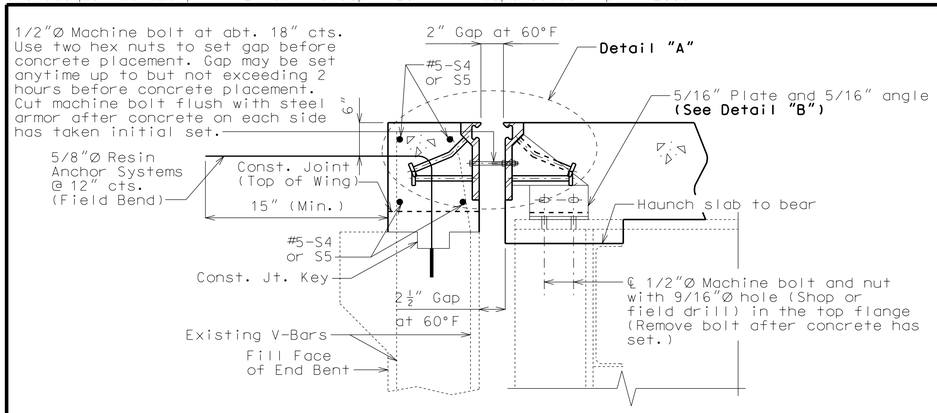
| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

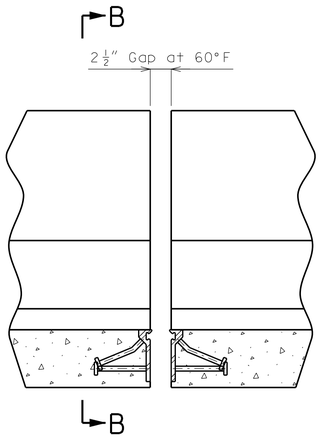
Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.




SECTION A-A

Note: Strip seal gland not shown for clarity.




Note: Strip seal gland not shown for clarity.

PART ELEVATION OF BARRIER CURB

## GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for stage construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/16" or each 10° fall or rise in temperature at installation.

Longitudinal reinforcing steel shall be placed so that ends shall not be more than ±1" from vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

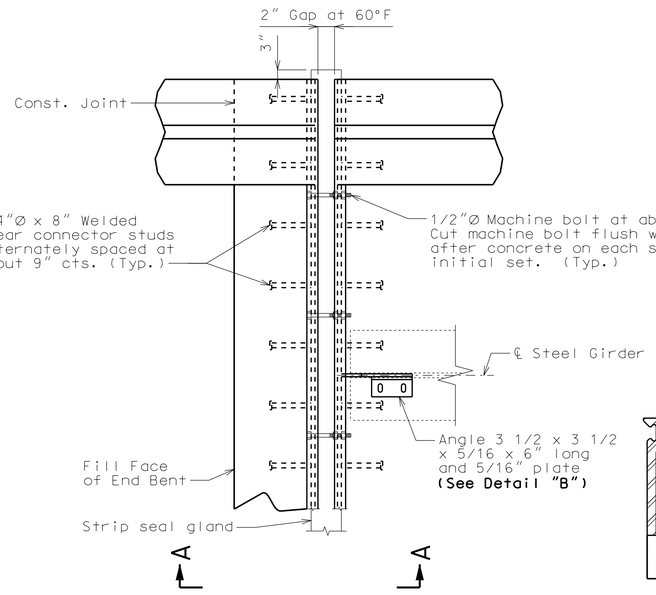
128 - $\frac{5}{8}$"Ø Resin Anchors required (length = 2'-6")

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

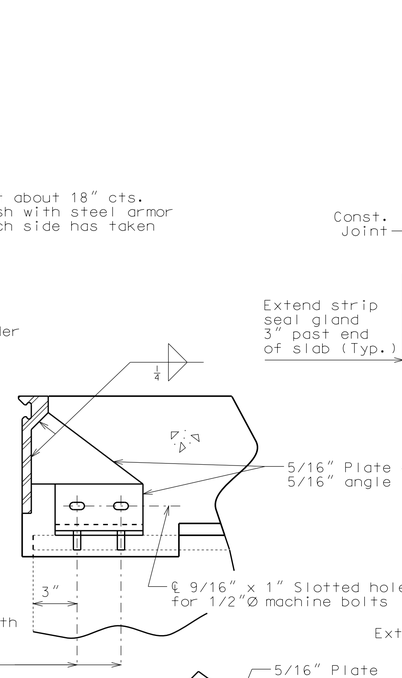
Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Slab on Steel.

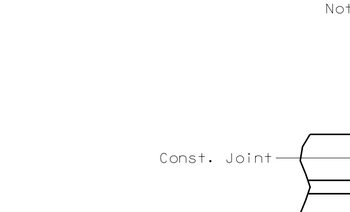
The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar 2'-6" long shall be substituted for the $\frac{5}{8}$"Ø threaded rod.

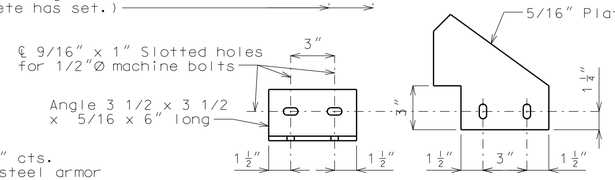



PART PLAN

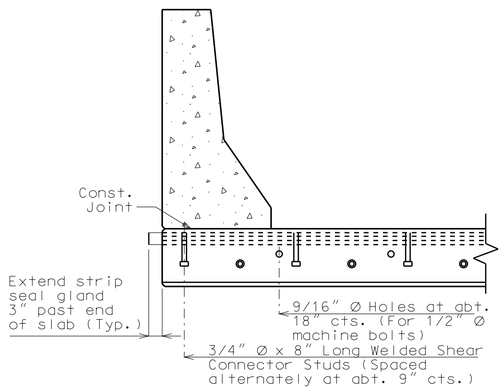


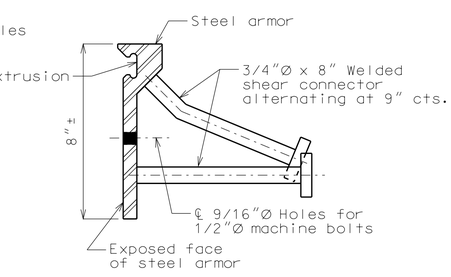

DETAIL "A"




DETAIL "B"




PART SECTION B-B




DETAIL OF JOINT ARMOR


Strip seal gland size = 3"

DETAIL OF GLAND

# DETAILS OF STRIP SEAL AT END BENTS NO. 1 & 5

Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



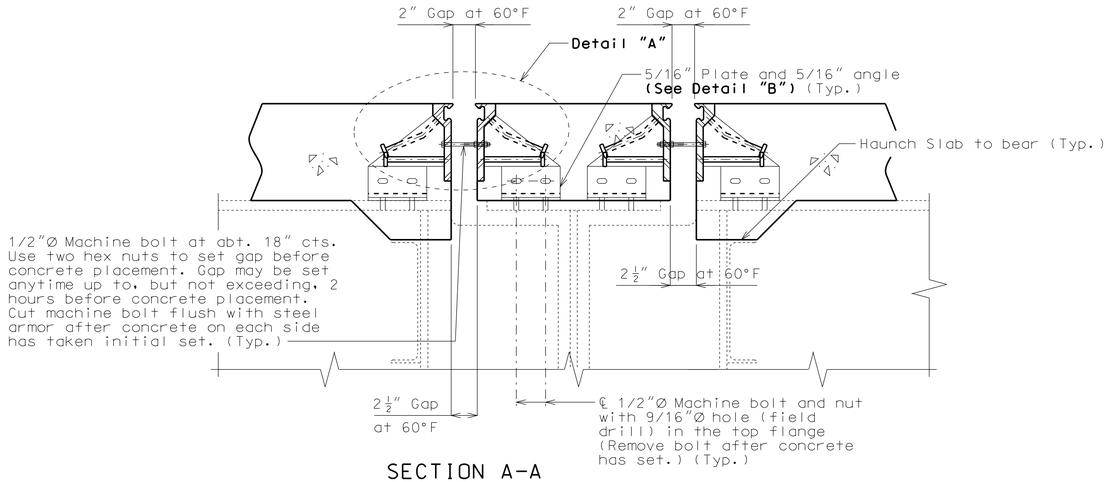
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

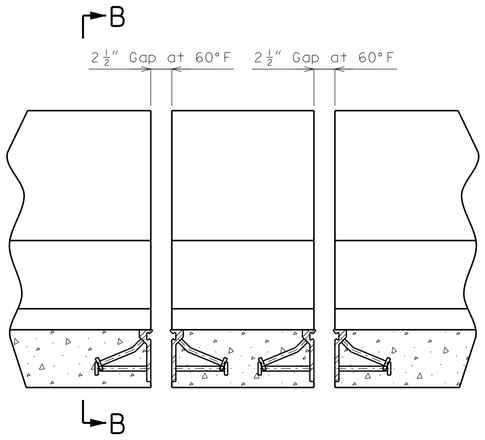
DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




SECTION A-A

Note: Strip seal gland not shown for clarity.




Note: Strip seal gland not shown for clarity.

PART ELEVATION OF BARRIER CURB

## GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for stage construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

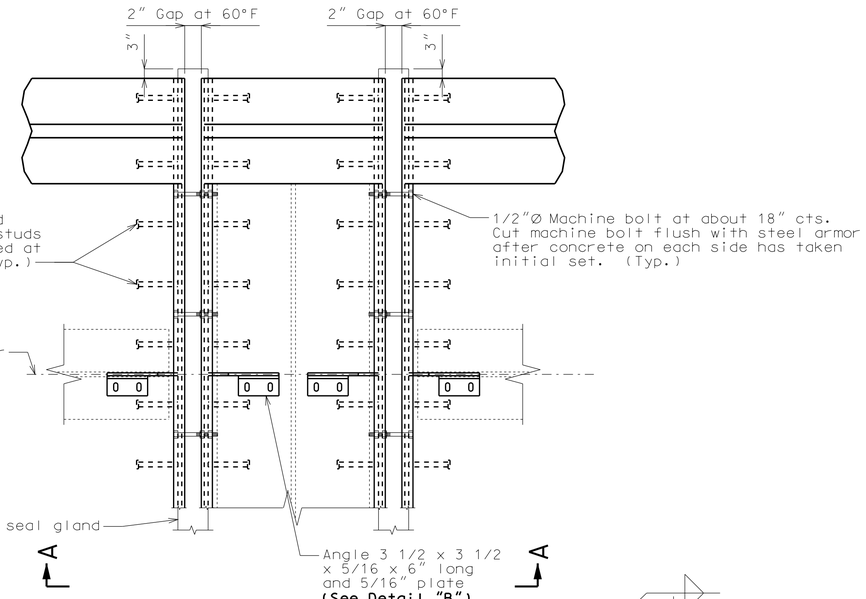
Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

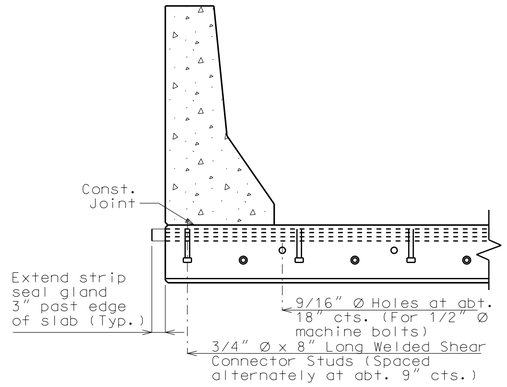
Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/16" for each 10° fall or rise in temperature at installation.

Longitudinal reinforcing steel shall be placed so that ends shall not be more than ±1" from vertical leg of the steel armor at the expansion joint system.

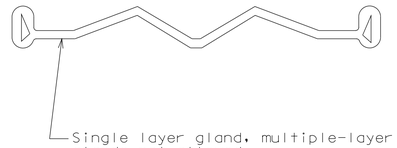
Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.



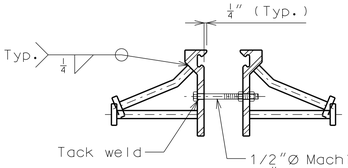

PART PLAN



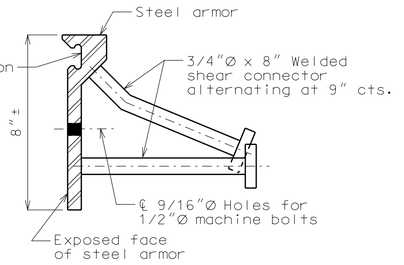

PART SECTION B-B



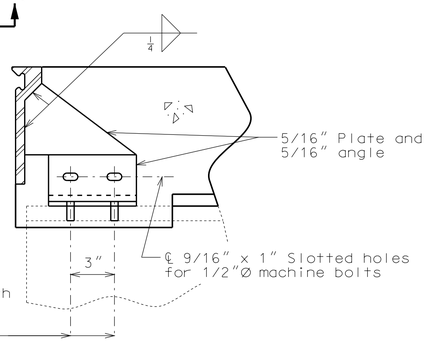

DETAIL OF GLAND

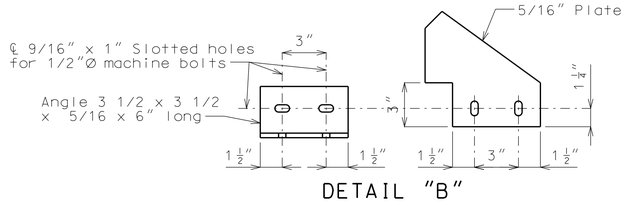



DETAIL "A"




DETAIL OF JOINT ARMOR




DETAIL "B"

# DETAILS OF STRIP SEAL AT INTERMEDIATE BENT NO. 3

Detailed July 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY PLATTE
JOB NO. J4I2374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

DESCRIPTION | DATE

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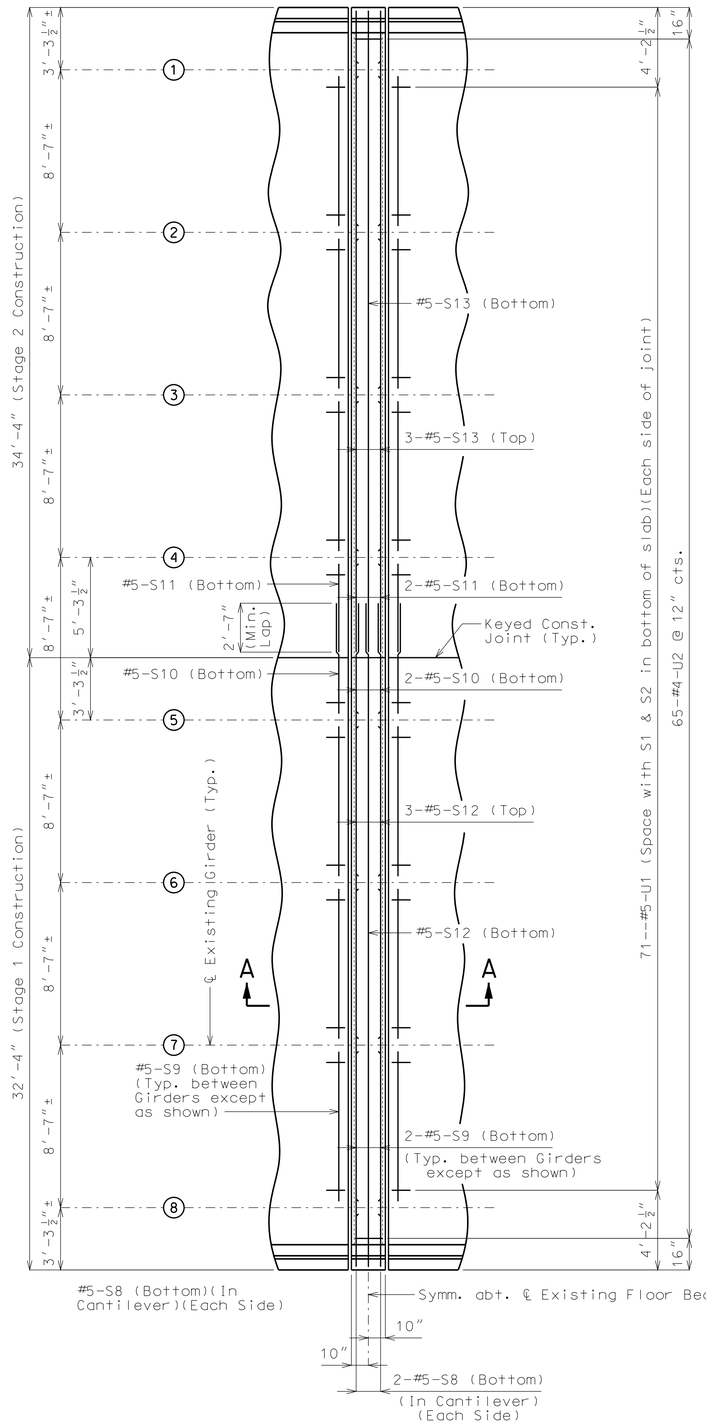
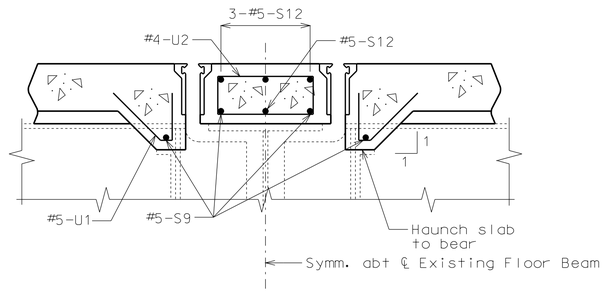
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

REV.




PART PLAN AT INT. BENT NO. 3 SHOWING SLAB REINFORCEMENT




SECTION A-A

Notes:
For Details of Strip Seal at Intermediate Bent No. 3, see Sheet No. 7.

Shift #4-U2 bars in field to clear keyed const. joint and $\frac{5}{16}$″ plate for strip seal.

Detailed July 2013
Checked Aug. 2013

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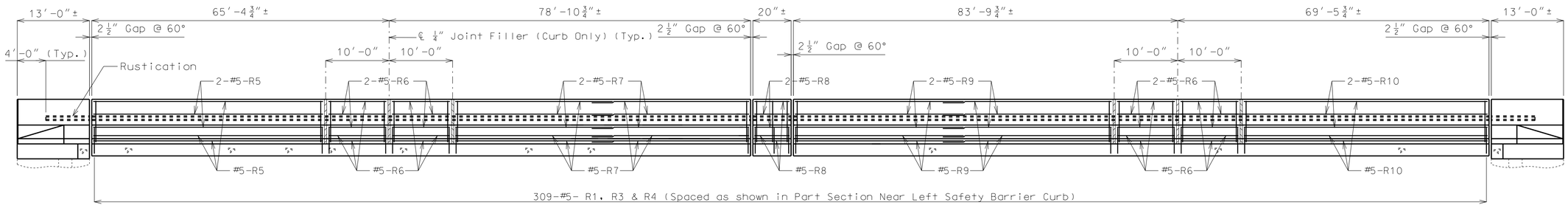
DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 8
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

DESCRIPTION | DATE

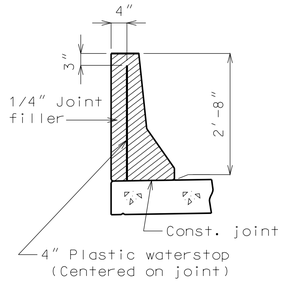
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




## SECTION NEAR LEFT SAFETY BARRIER CURB

Note: Longitudinal dimensions are arc dimensions taken along grade.

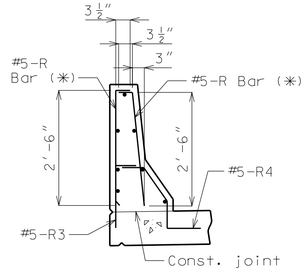



## DETAILS OF PLASTIC WATERSTOP

Notes:

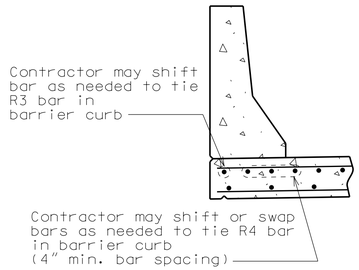
Plastic waterstop shall be placed in all safety barrier curb filled joints, except structures with superelevation, use on all lower safety barrier curb joints only.

Cost of plastic waterstop, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.

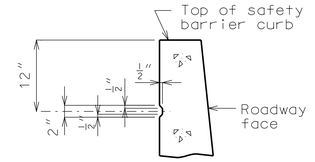



## R-BAR PERMISSIBLE ALTERNATE SHAPE

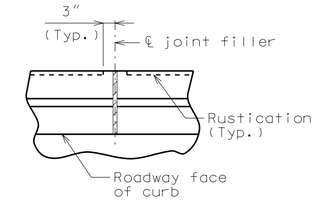
(*) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## PART SECTION THRU EDGE OF SLAB




## PART SECTION SHOWING RUSTICATION DETAILS




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

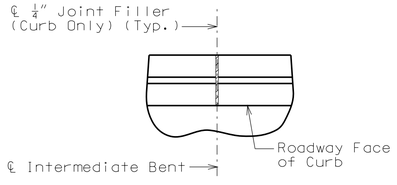
All exposed edges of safety barrier curb shall have either a ½″ radius or a ⅜″ bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

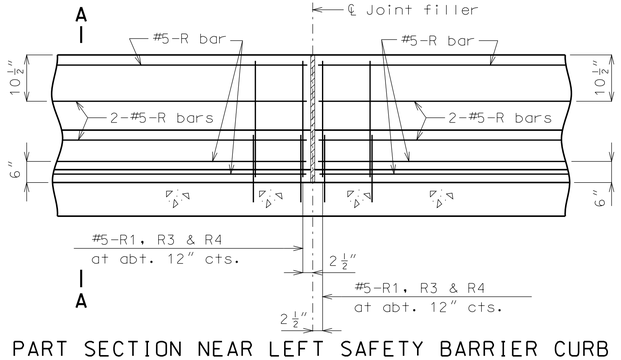
Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

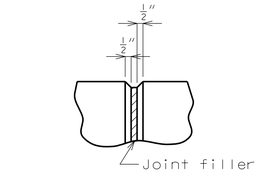
Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".



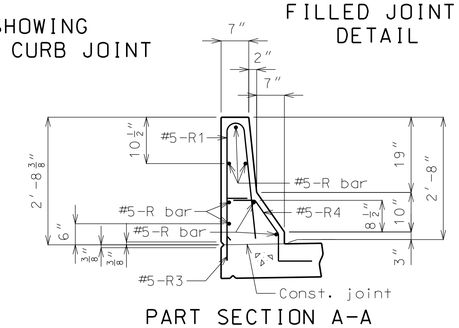

## PART PLAN SHOWING SAFETY BARRIER CURB JOINT




## PART SECTION NEAR LEFT SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## FILLED JOINT DETAIL




## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.28 sq. ft.

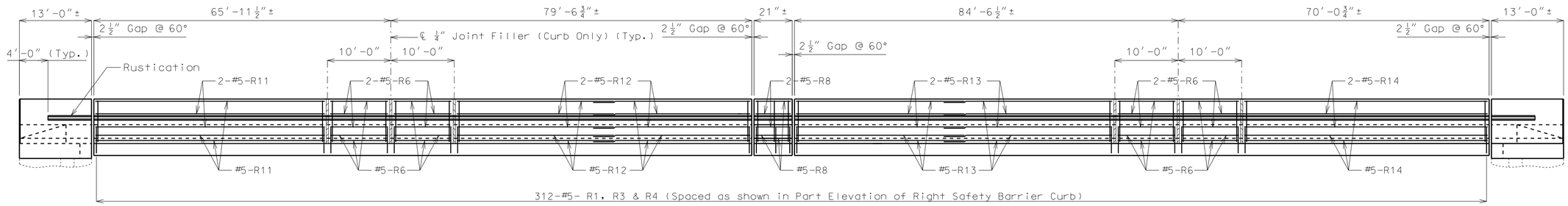
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 9
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

DESCRIPTION | DATE

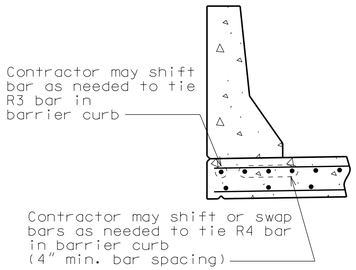
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

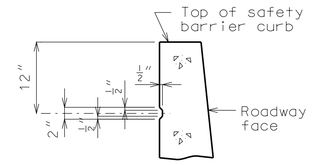



## ELEVATION OF RIGHT SAFETY BARRIER CURB

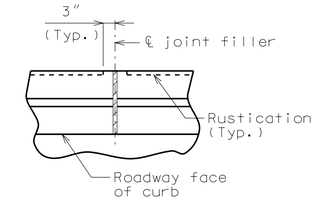
Note: Longitudinal dimensions are arc dimensions taken along grade.



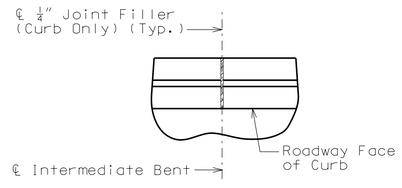

## PART SECTION THRU EDGE OF SLAB



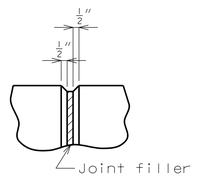

## PART SECTION SHOWING RUSTICATION DETAILS



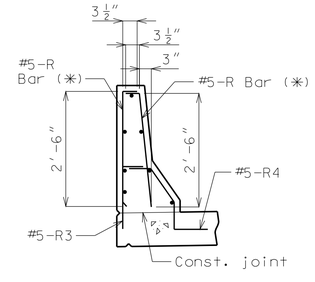

## PART PLAN SHOWING SAFETY BARRIER CURB JOINT




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

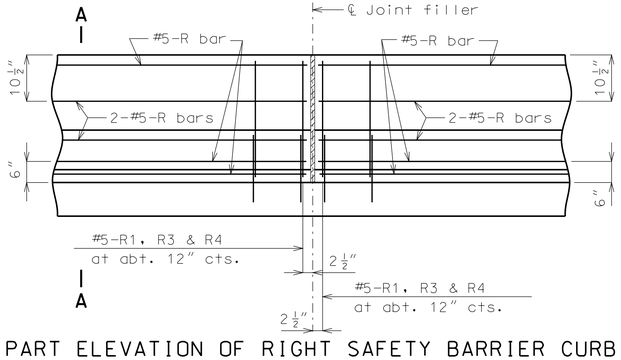



## FILLED JOINT DETAIL

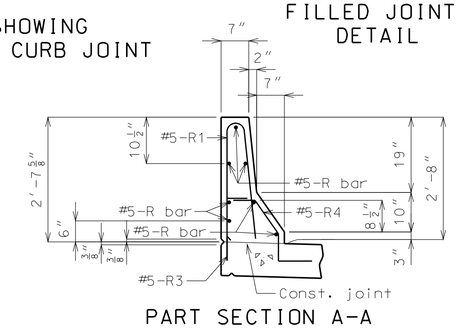



## R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## PART ELEVATION OF RIGHT SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.23 sq. ft.

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a ½″ radius or a ⅜″ bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

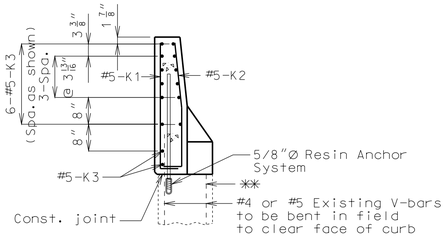
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 10
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

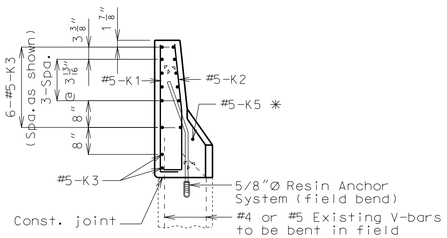
DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

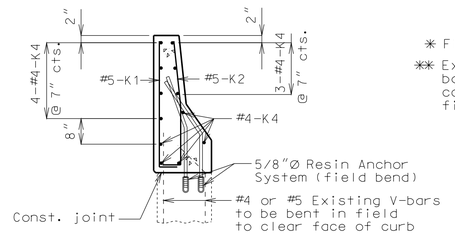
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



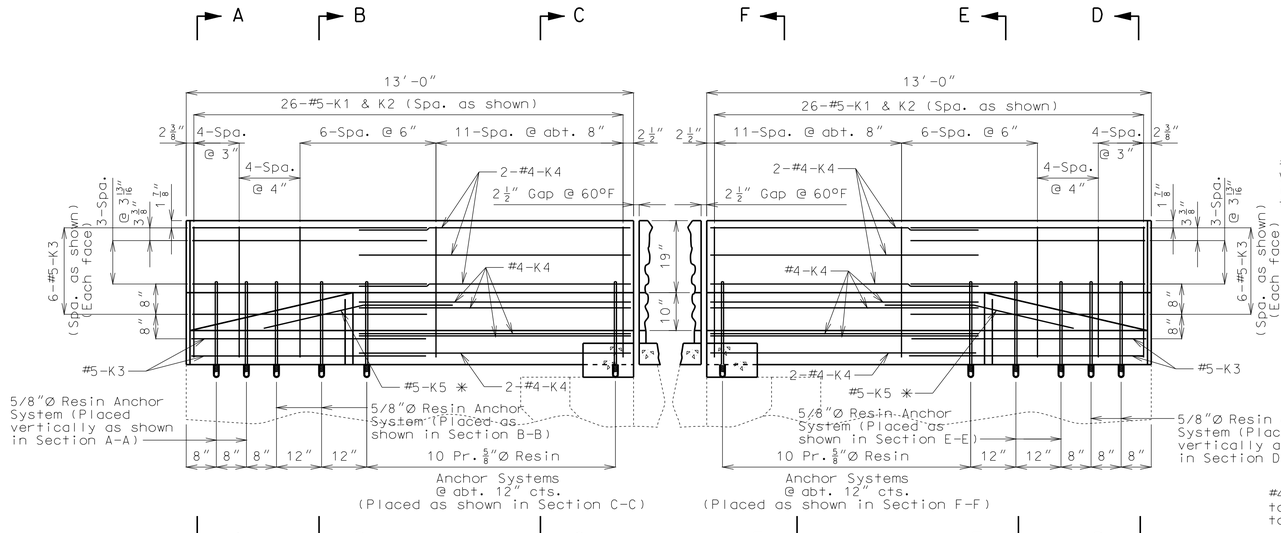

SECTION A-A




SECTION B-B

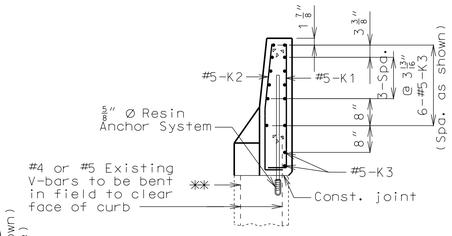



SECTION C-C

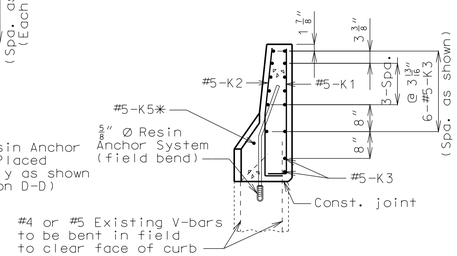



ELEVATION
(End Bent No. 1)

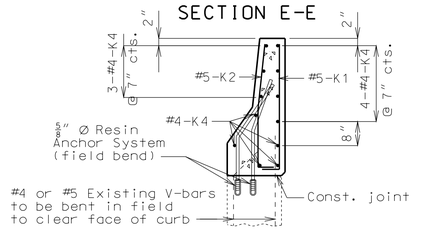
ELEVATION
(End Bent No. 5)



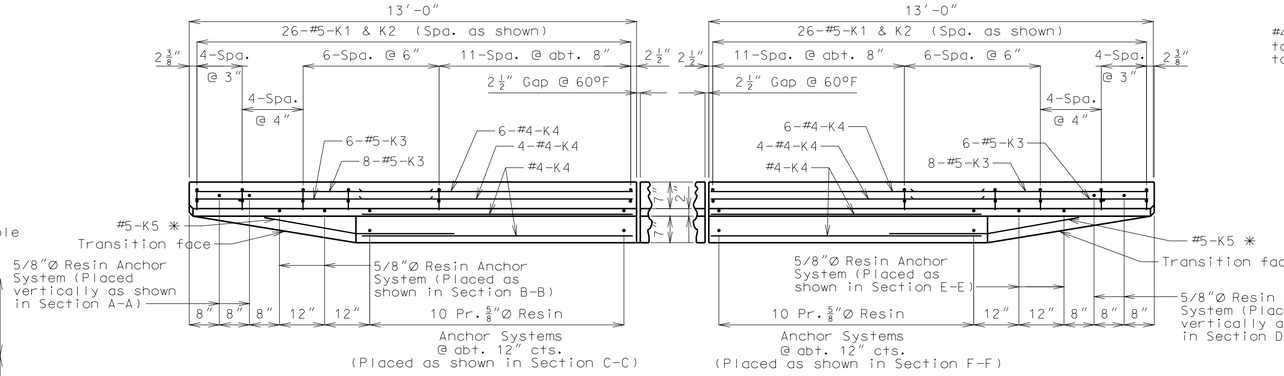

SECTION D-D




SECTION E-E

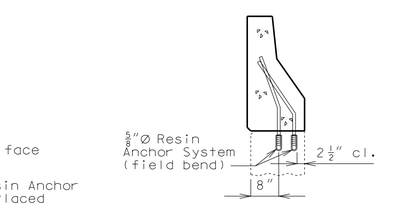



SECTION F-F

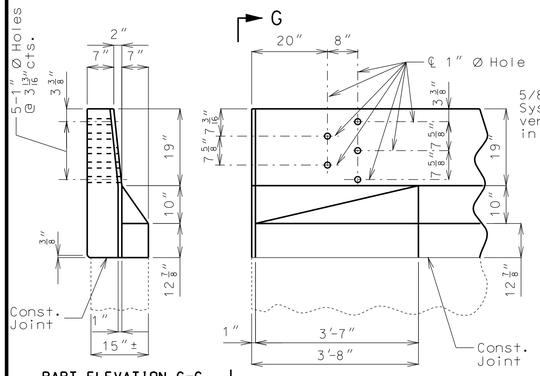



PLAN
(End Bent No. 1)

PLAN
(End Bent No. 5)




ANCHOR SYSTEMS AT SECTIONS C-C & F-F




DETAILS OF GUARD RAIL ATTACHMENT

✳ Fit bar to follow transistion face of curb.

✳✳ Existing reinforcement which cannot be bent into the new barrier curb transition shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.

Notes:
Use a minimum lap of 2'-0" between K3 and K4 bars.

48 - 5/8"Ø Resin Anchors required (length = 2'-6")(Left Curbs)

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

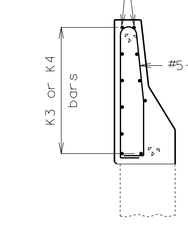
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

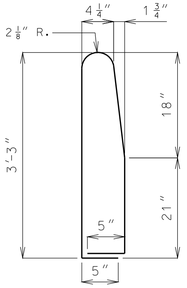
Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar 2'-6" long shall be substituted for the 5/8"Ø threaded rod.

The top two K3 or K4 bars shall be kept with position close to those shown in Sections A-A thru F-F




K1-K2 BAR PERMISSIBLE ALTERNATE SHAPE (✳✳✳)

(✳✳✳) The K1 and K2 bar combination may be furnished as one bar as shown, at the contractor's option.

# DETAILS OF LEFT SAFETY BARRIER CURB AT END BENTS

Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

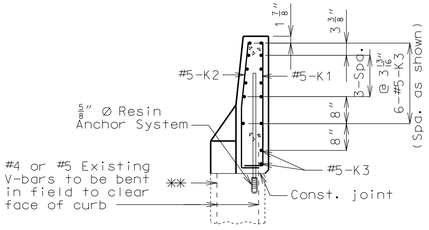
DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

DESCRIPTION | DATE

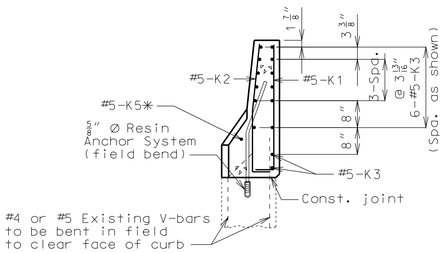
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

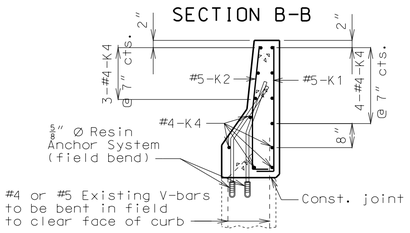
REV.



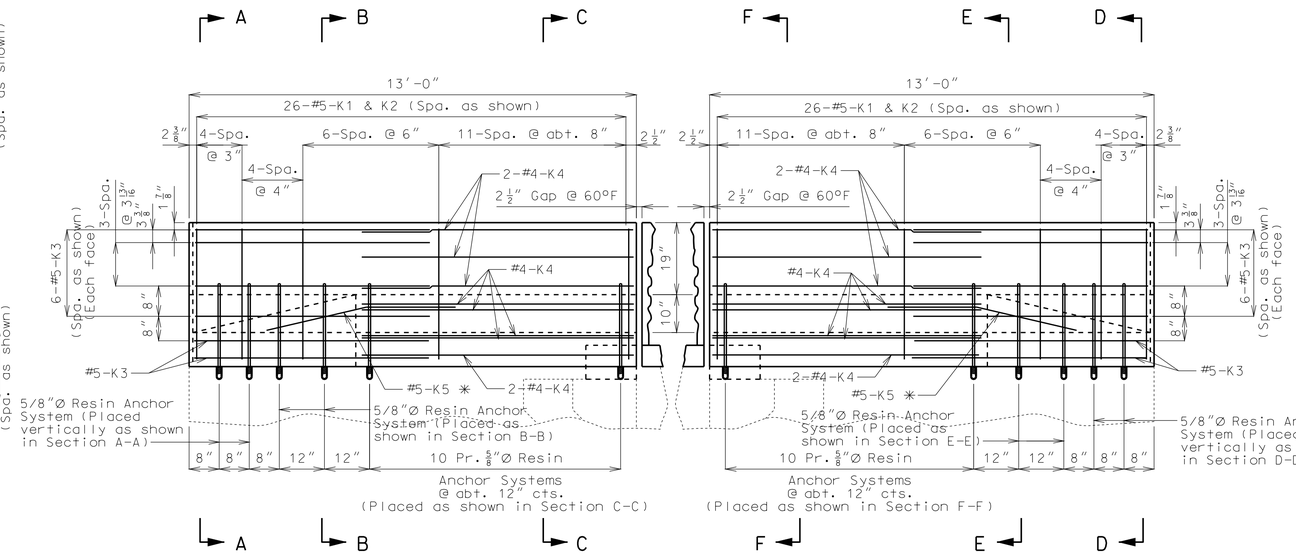

SECTION A-A




SECTION B-B

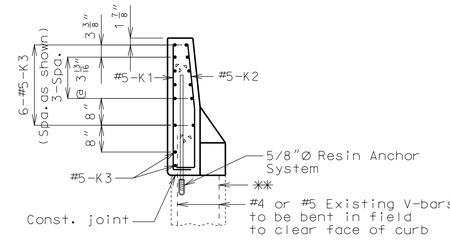



SECTION C-C

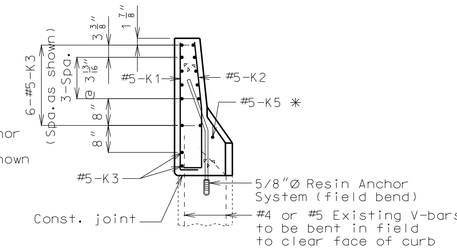



ELEVATION
(End Bent No. 1)

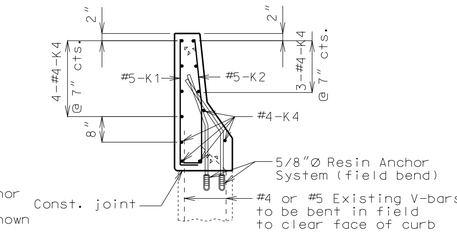
ELEVATION
(End Bent No. 5)




SECTION D-D



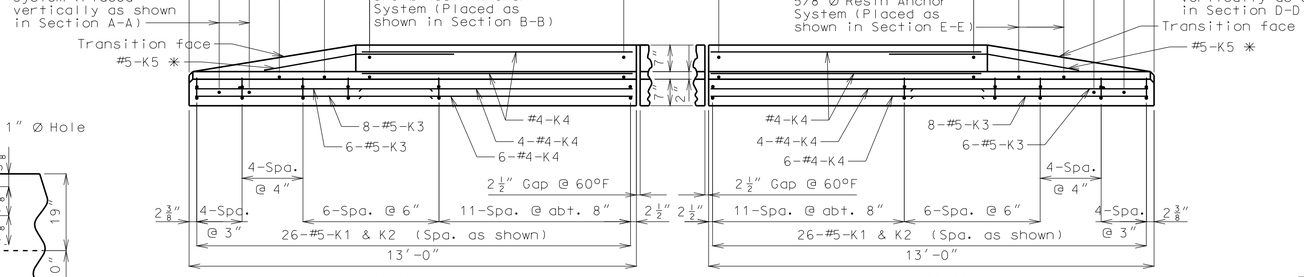

SECTION E-E




SECTION F-F

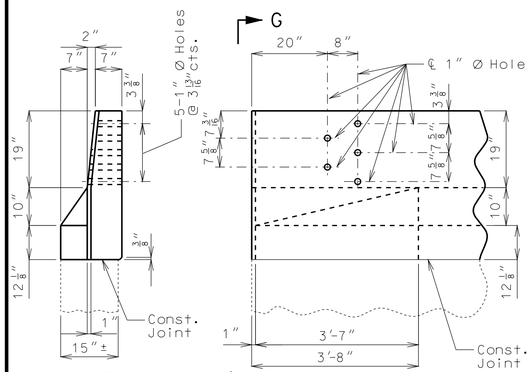
* Fit bar to follow transistion face of curb.

** Existing reinforcement which cannot be bent into the new barrier curb transition shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.




PLAN
(End Bent No. 1)

PLAN
(End Bent No. 5)




DETAILS OF GUARD RAIL ATTACHMENT

Notes:
Use a minimum lap of 2'-0" between K3 and K4 bars.

48 - 5/8"Ø Resin Anchors required (length = 2'-6")(Left Curbs)

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

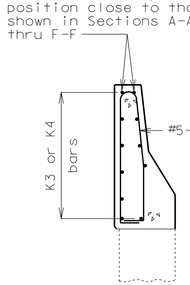
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

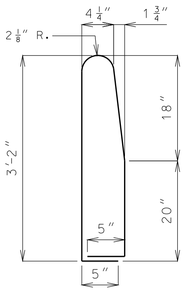
Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar 2'-6" long shall be substituted for the 5/8"Ø threaded rod.

The top two K3 or K4 bars shall be kept with position close to those shown in Sections A-A thru F-F




K1-K2 BAR PERMISSIBLE ALTERNATE SHAPE (***)

(***) The K1 and K2 bar combination may be furnished as one bar as shown, at the contractor's option.

# DETAILS OF RIGHT SAFETY BARRIER CURB AT END BENTS

Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

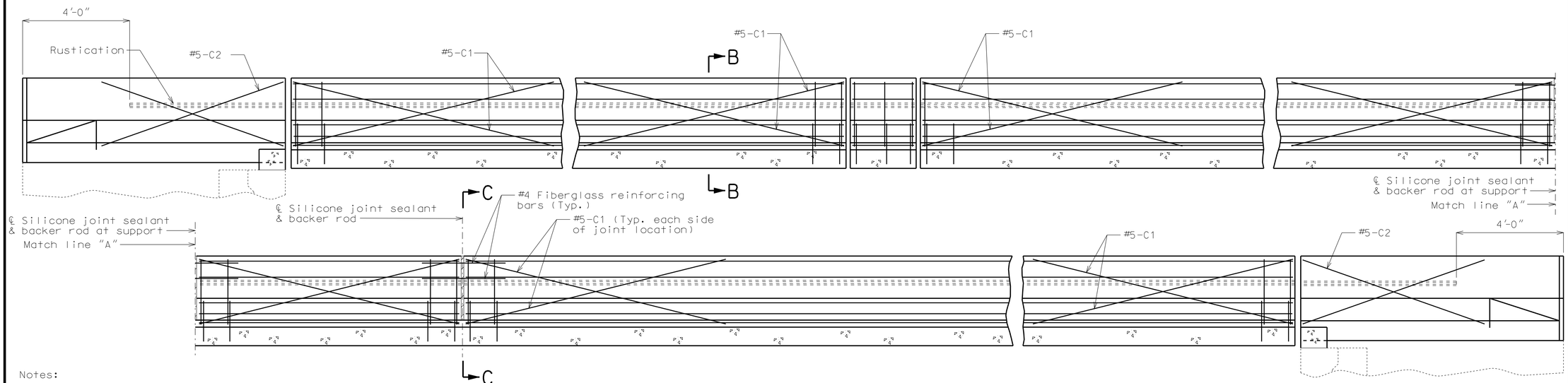
DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 12
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

DESCRIPTION | DATE

REV.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS
(OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

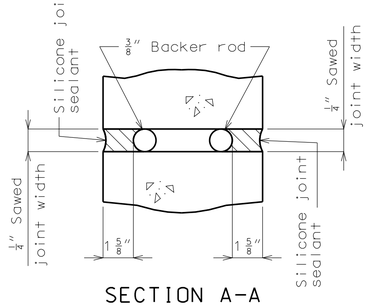
Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.




SECTION A-A

Notes:

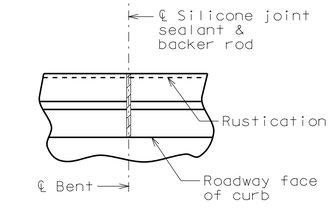
Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Plastic waterstop shall not be used with slip-form option.

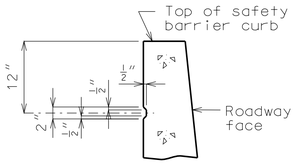
C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

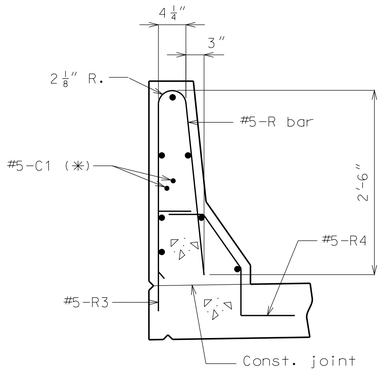



PART PLAN SHOWING SAFETY BARRIER CURB JOINT




PART SECTION SHOWING RUSTICATION DETAILS

RUSTICATION DETAIL



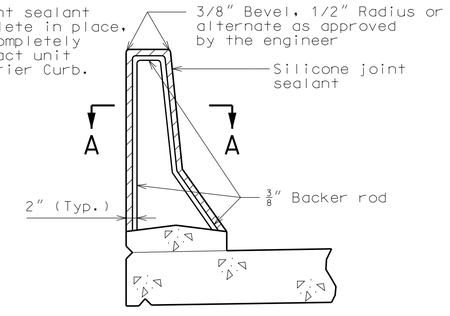

PART SECTION B-B

Notes:

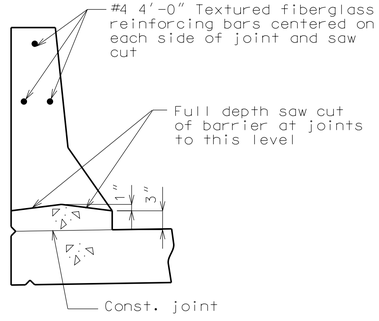
(*) Each side of joint location.

Note:

Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.




SECTION THRU JOINT




PART SECTION C-C

# OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

(Left barrier curb shown, right barrier curb similar.)

Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.



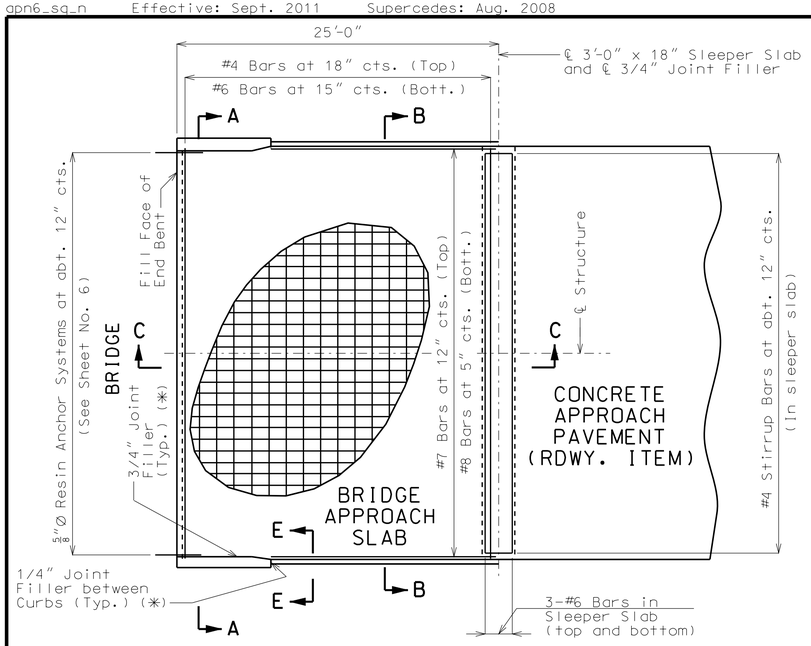
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 13
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

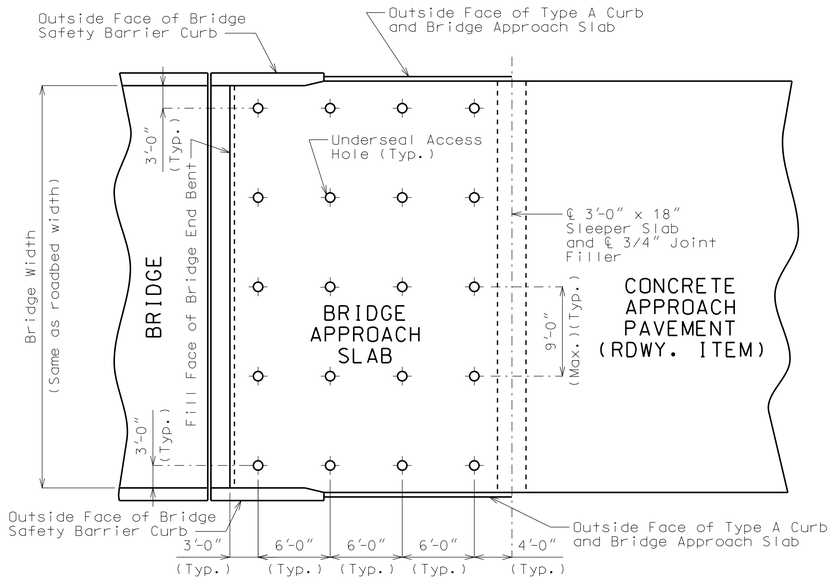
DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

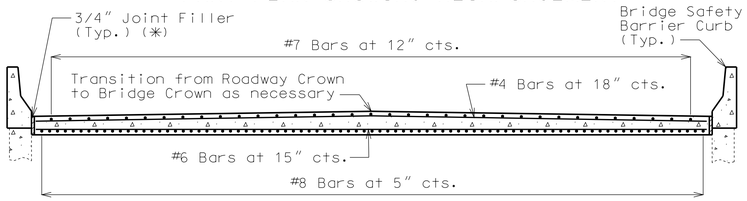
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



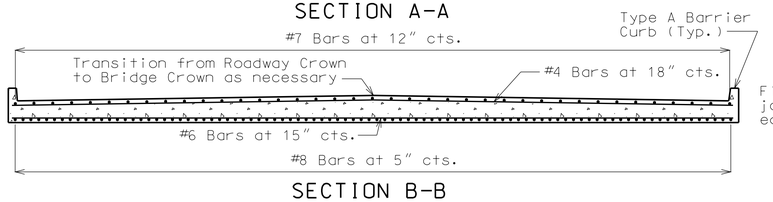

PART PLAN SHOWING REINFORCEMENT




PART PLAN
(SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)

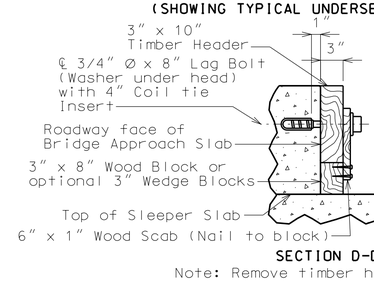



SECTION A-A




SECTION B-B

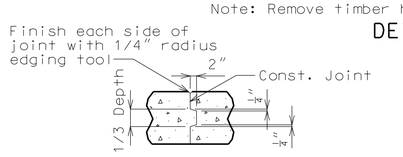
Note: With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



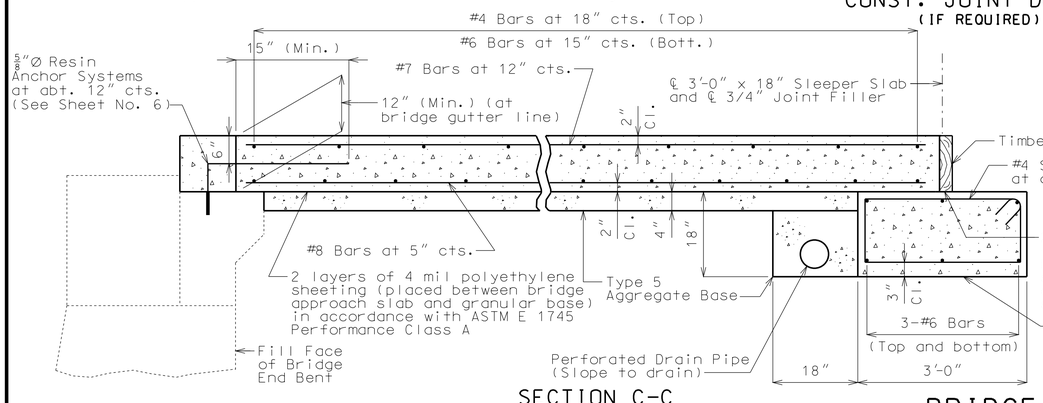

SECTION D-D PART ELEVATION

Note: Remove timber header when concrete pavement is placed.

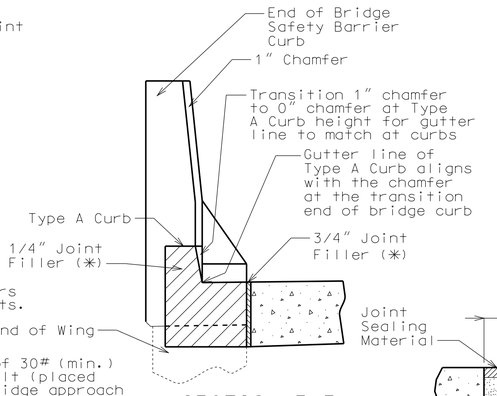
DETAILS OF TIMBER HEADER



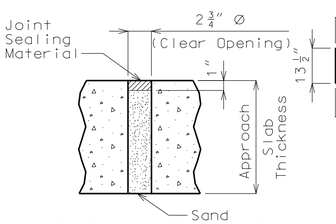

CONST. JOINT DETAIL
(IF REQUIRED)



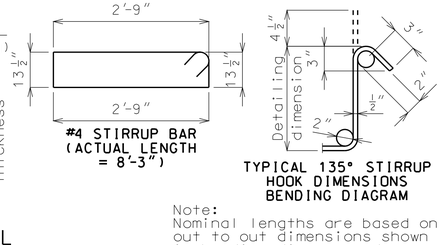

SECTION C-C




SECTION E-E
(BETWEEN CURBS)




TYPICAL UNDERSEAL ACCESS HOLE DETAIL




Note: Nominal lengths are based on out to out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).

## GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with Fy = 60,000 psi.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 2'-2", respectively.

Mechanical bar splices shall be in accordance with Sec 706.

(*) Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures. Stirrup and Tie Dimensions.

The contractor shall pour and satisfactorily finish the bridge or semi-deep slab before pouring the bridge approach slabs.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge or semi-deep slab.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Bridge) per square yard.

For Concrete Approach Pavement details, see roadway plans.

See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired in accordance with Sec 710.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 14
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

| DESCRIPTION | DATE |
|---|---|

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SUPERSTR | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | SLAB | | | | | | | | | | | | | | | | | | | | | | | | | |
| 402 | 5 | S1 | SLAB | E | 20 | | | | | 50 | 8.000 | | | | | | | | | | | | | 50 | 8 | 50 | 8 | 21244 |
| 402 | 5 | S2 | SLAB | E | 20 | | | | | 53 | 8.000 | | | | | | | | | | | | | 53 | 8 | 53 | 8 | 22502 |
| 106 | 6 | S3 | SLAB | E | 20 | | | | | 42 | 0.000 | | | | | | | | | | | | | 42 | 0 | 42 | 0 | 6687 |
| 1216 | 5 | S4 | SLAB | E | 20 | | | | | 34 | 1.000 | | | | | | | | | | | | | 34 | 1 | 34 | 1 | 43227 |
| 1216 | 5 | S5 | SLAB | E | 20 | | | | | 34 | 11.000 | | | | | | | | | | | | | 34 | 11 | 34 | 11 | 44284 |
| 104 | 6 | S6 | SLAB | E | 20 | | | | | 42 | 9.000 | | | | | | | | | | | | | 42 | 9 | 42 | 9 | 6678 |
| 512 | 4 | S7 | SLAB | E | 10 | S | | | | | 6.000 | 5 | 250 | 5 | 000 | 6 | 000 | | | | | | | 2 | 4 | 2 | 0 | 684 |
| 4 | 5 | S8 | SLAB | E | 20 | | | | | 3 | 0.000 | | | | | | | | | | | | | 3 | 0 | 3 | 0 | 13 |
| 24 | 5 | S9 | SLAB | E | 20 | | | | | 8 | 4.000 | | | | | | | | | | | | | 8 | 4 | 8 | 4 | 209 |
| 4 | 5 | S10 | SLAB | E | 20 | | | | | 5 | 11.000 | | | | | | | | | | | | | 5 | 11 | 5 | 11 | 25 |
| 4 | 5 | S11 | SLAB | E | 20 | | | | | 5 | 0.000 | | | | | | | | | | | | | 5 | 0 | 5 | 0 | 21 |
| 4 | 5 | S12 | SLAB | E | 20 | | | | | 34 | 11.000 | | | | | | | | | | | | | 34 | 11 | 34 | 11 | 146 |
| 4 | 5 | S13 | SLAB | E | 20 | | | | | 34 | 1.000 | | | | | | | | | | | | | 34 | 1 | 34 | 1 | 142 |
| 1304 | 4 | S14 | SLAB | E | 10 | S | | | | | 6.000 | 5 | 250 | 7 | 000 | 6 | 000 | | | | | | | 2 | 6 | 2 | 2 | 1887 |
| 288 | 4 | S15 | SLAB | E | 10 | S | | | | | 6.000 | 5 | 250 | 11 | 000 | 6 | 000 | | | | | | | 2 | 10 | 2 | 6 | 481 |
| 296 | 4 | S16 | SLAB | E | 10 | S | | | | | 6.000 | 5 | 250 | 14 | 000 | 6 | 000 | | | | | | | 3 | 1 | 2 | 9 | 544 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 142 | 5 | U1 | SLAB | E | 14 | S | | | | | 6.000 | 1 | 500 | 8 | 500 | | | | | 6 | 000 | 6 | 000 | 0 | 16 | 0 | 14 | 173 |
| 65 | 4 | U2 | SLAB | E | 13 | S | | | | | 14.750 | 7 | 000 | 14 | 750 | 7 | 000 | | | | | | | 4 | 5 | 4 | 2 | 181 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | BARRIER CURB | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 104 | 5 | K1 | BARRIER CURB | E | 19 | S | | | | 3 | 2.000 | 5 | 125 | | | | | | | | | | | 3 | 7 | 3 | 6 | 380 |
| 104 | 5 | K2 | BARRIER CURB | E | 14 | S | | | | | 5.125 | 20 | 125 | 18 | 000 | | | | | 2 | 000 | 17 | 875 | 3 | 7 | 3 | 6 | 380 |
| 56 | 5 | K3 | BARRIER CURB | E | 20 | | | | | 5 | 7.000 | | | | | | | | | | | | | 5 | 7 | 5 | 7 | 326 |
| 50 | 4 | K4 | BARRIER CURB | E | 20 | | | | | 9 | 2.000 | | | | | | | | | | | | | 9 | 2 | 9 | 2 | 306 |
| 4 | 5 | K5 | BARRIER CURB | E | 8 | | | | | 2 | 2.125 | | | | | | | | | 2 | 2.000 | 2 | 375 | 4 | 4 | 4 | 4 | 18 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 621 | 5 | R1 | BARRIER CURB | E | 26 | | | | | 2 | 6.000 | 4 | 250 | 2 | 6.125 | | | | | 2 | 6.000 | 3 | 000 | 5 | 2 | 5 | 2 | 3346 |
| 621 | 5 | R2 | BARRIER CURB | E | 19 | S | | | | | 17.000 | 6 | 000 | | | | | | | | | | | 0 | 23 | 0 | 22 | 1187 |
| 621 | 5 | R4 | BARRIER CURB | E | 27 | S | | | | | | 6 | 000 | 11 | 250 | 7 | 000 | 12 | 000 | 9 | 250 | 6 | 375 | 3 | 0 | 2 | 10 | 1835 |
| 7 | 5 | R5 | BARRIER CURB | E | 20 | | | | | 55 | 1.000 | | | | | | | | | | | | | 55 | 1 | 55 | 1 | 402 |
| 58 | 5 | R6 | BARRIER CURB | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 590 |
| 14 | 5 | R7 | BARRIER CURB | E | 20 | | | | | 35 | 10.000 | | | | | | | | | | | | | 35 | 10 | 35 | 10 | 523 |
| 14 | 5 | R8 | BARRIER CURB | E | 20 | | | | | | 17.000 | | | | | | | | | | | | | 0 | 17 | 0 | 17 | 21 |
| 14 | 5 | R9 | BARRIER CURB | E | 20 | | | | | 38 | 3.000 | | | | | | | | | | | | | 38 | 3 | 38 | 3 | 559 |
| 7 | 5 | R10 | BARRIER CURB | E | 20 | | | | | 59 | 2.000 | | | | | | | | | | | | | 59 | 2 | 59 | 2 | 432 |
| 7 | 5 | R11 | BARRIER CURB | E | 20 | | | | | 55 | 8.000 | | | | | | | | | | | | | 55 | 8 | 55 | 8 | 406 |
| 14 | 5 | R12 | BARRIER CURB | E | 20 | | | | | 36 | 2.000 | | | | | | | | | | | | | 36 | 2 | 36 | 2 | 528 |
| 14 | 5 | R13 | BARRIER CURB | E | 20 | | | | | 38 | 8.000 | | | | | | | | | | | | | 38 | 8 | 38 | 8 | 565 |
| 7 | 5 | R14 | BARRIER CURB | E | 20 | | | | | 59 | 9.000 | | | | | | | | | | | | | 59 | 9 | 59 | 9 | 436 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | OPTIONAL | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | SLIP FORM | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | 5 | C1 | SLIP FORM | E | 20 | | | | | 10 | 0.000 | | | | | | | | | | | | | 10 | 0 | 10 | 0 | 501 |
| 8 | 5 | C2 | SLIP FORM | E | 20 | | | | | 9 | 4.000 | | | | | | | | | | | | | 9 | 4 | 9 | 4 | 78 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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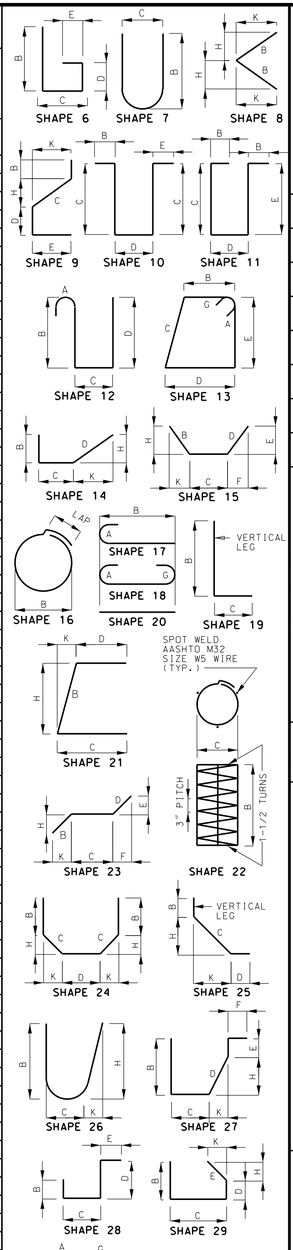
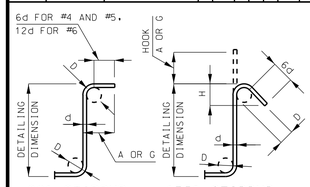
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 4083 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 144511 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 13365 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 161959 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Slab on | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 3777 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 131998 |
| | 6 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 13365 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 149128 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Safety | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Barrier | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Curb | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 306 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 11934 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 12240 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Slip Form | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Option | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 579 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 579 |

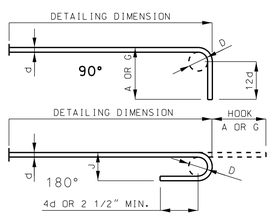



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK A OR G | 135° HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS | | 90° HOOKS |
| | | A OR G | J | A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #4-K4, #5-R6 & #6-S3 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60.000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 15
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24353

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

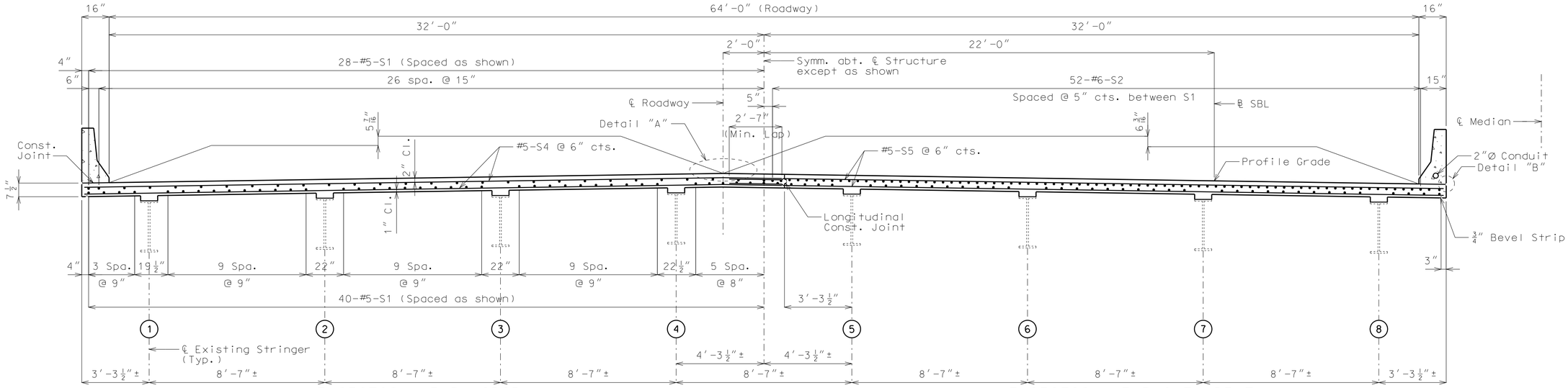
Detailed Aug. 2013
Checked Aug. 2013

Note: This drawing is not to scale. Follow dimensions.

SEC/SUR 5 TWP 50N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REDECK EXISTING (33'-59'-38") CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (Square)




HALF SECTION NEAR MIDSPAN — HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB

## General Notes:

Design Specifications:
2002 - AASHTO LFD (17th Edition) Standard Specifications
Load Factor Design
Seismic Performance Category A

Design Loading:
HS20-44 (New Construction)
35#/sq. ft. Future Wearing Surface
Military 24,000# Tandem Axle
Earth - 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.
Fatigue Stress - Case I

Design Unit Stresses:
Class B-1 Concrete (Safety Barrier Curb) f'c = 4,000 psi
Class B-2 Concrete (End Bents & Superstructure, except Safety Barrier Curb) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Miscellaneous:
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

Traffic Handling:
Traffic over structure to be maintained during construction. See Sheet No. 2 for Stage Construction.

### Estimated Quantities

| Item | | Total |
|---|---|---|
| Removal of Existing Bridge Decks | sq. foot | 8811 |
| Bridge Approach Slab (Bridge) | sq. yard | 364 |
| Slab on Steel | sq. yard | 974 |
| ✳ Safety Barrier Curb | linear foot | 296 |
| Substructure Repair (Unformed) | sq. foot | 75 |
| Conduit System on Structure | lump sum | 1 |
| Slab Drain | each | 4 |
| Vertical Drain at End Bents | each | 2 |

✳ Safety barrier curb shall be cast-in-place option or slip-form option.

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

### Estimated Quantities for Slab on Steel

| Item | | Total |
|---|---|---|
| Class B-2 Concrete | cu. yard | 267.7 |
| Reinforcing Steel | pound | 5520 |
| Reinforcing Steel (Epoxy Coated) | pound | 71,910 |

The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard from end of slab to end of slab and the overall width shown in the Typical Section Thru Slab. Payment for conventional forms or optional stay-in-place forms, all concrete and coated and uncoated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

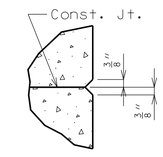
Slab shall be cast-in-place with conventional forming or stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

For optional Stay-In-Place Form Details, see Sheet No. 3.

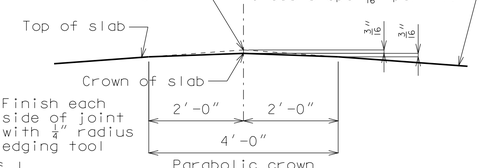
All concrete between the upper and lower construction joints in the end bents is included in the Estimated Quantities for Slab on Steel.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Steel.

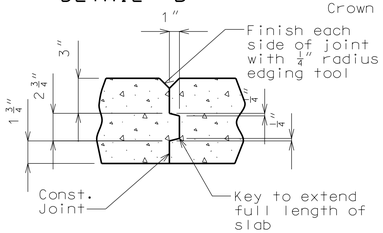
The exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-2 surface preparation before concrete is poured. Payment for cleaning steel to be encased in concrete will be considered completely covered by the contract unit price for Slab on Steel.




DETAIL "B"




DETAIL "A"




DETAIL OF LONGITUDINAL CONST. JOINT

### REQUIRED LAP LENGTH FOR BAR SPLICES ✳✳

| Bar Size | Splice Length |
|---|---|
| 4 | 2'-7" |
| 5 | 3'-3" |
| 6 | 3'-10" |
| 7 | 4'-11" |

✳✳ Unless otherwise shown.

### TABLE SHOWING S2 BAR LENGTHS

| Int. Bent No. 2 | | Int. Bent No. 3 | |
|---|---|---|---|
| Span 1 | Span 2 | Span 2 | Span 3 |
| 18'-9" | 14'-3" | 14'-3" | 18'-9" |

## REPAIRS TO BRIDGE: SBL I-635 OVER RTE. 9 EBL

STATE ROAD FROM STATE LINE TO RTE. I-29

IN RIVERSIDE

STA. 43+33.65± (Match Existing -3")

| |
|---|
| STD. 609.00 |
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Designed Apr. 2012
Detailed May 2013
Checked June 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

NO. 02 (6)

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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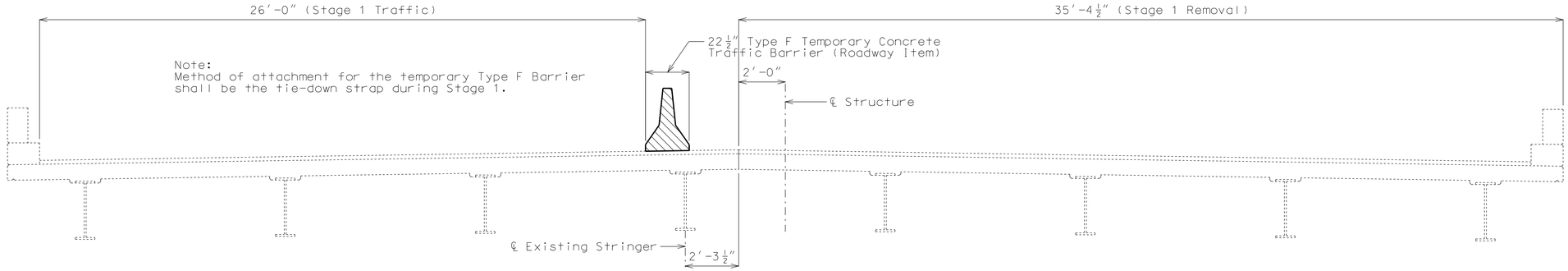


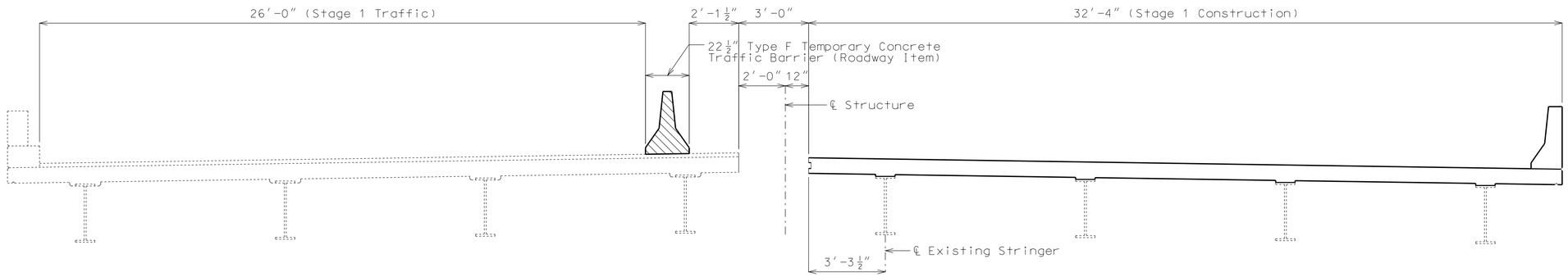


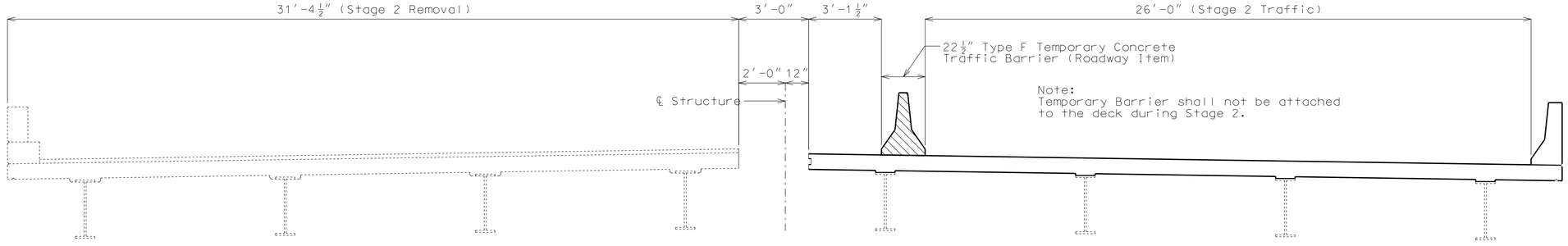


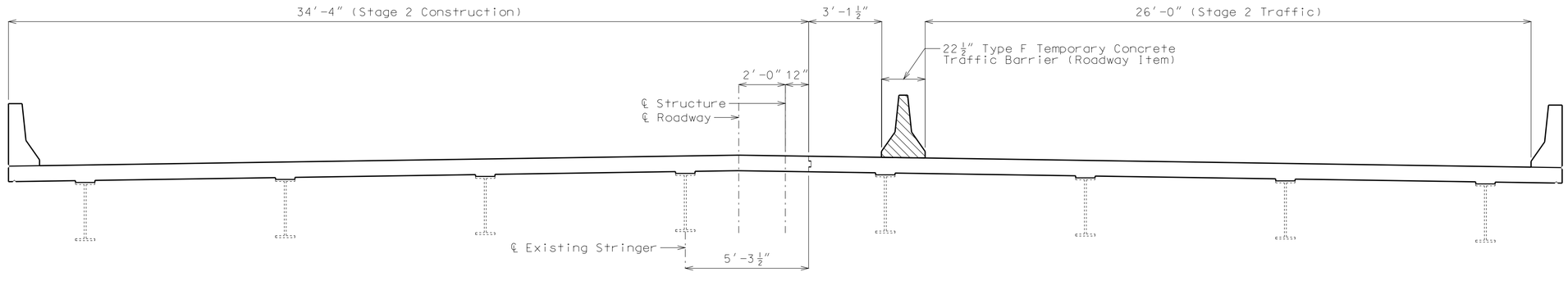


# DETAILS OF STAGE CONSTRUCTION

Detailed May 2013
Checked June 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

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JEFFERSON CITY, MO 65102
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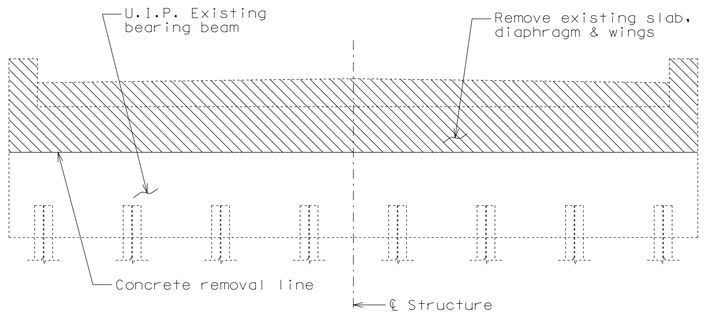
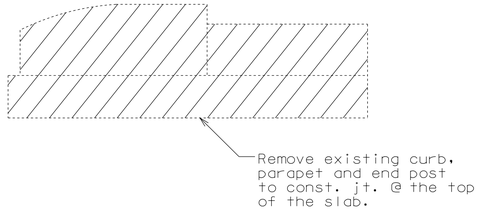
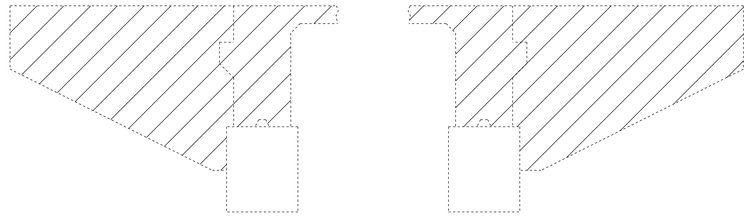



## DETAILS OF CONCRETE REMOVAL @ END BENTS

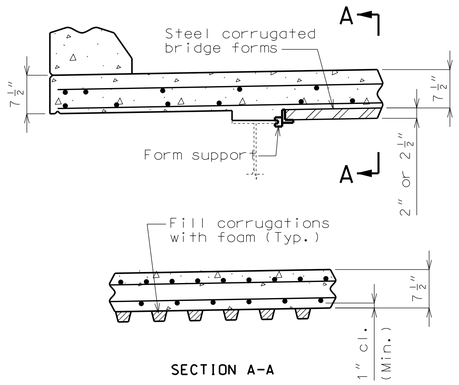



## ELEVATION OF END POST SHOWING CONCRETE REMOVAL LIMITS

Note:
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Decks.



## DETAILS OF CONCRETE REMOVAL OF WINGS @ BENTS NO. 1 & 4




SECTION A-A

## OPTIONAL STAY-IN-PLACE FORM DETAILS

Notes:
Corrugated steel bridge deck forms, supports closure elements and accessories shall be in accordance with grade requirement and coating designation G165 of ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form sheets shall not rest directly on the top of girders, stringers or floorbeams flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Welding on or drilling holes in the flanges of the girders, stringers or floorbeams will not be permitted. All steel fabrication and construction shall be in accordance with Sec's 1080 and 712. MoDOT certified field welders will not be required for welding of the form supports.

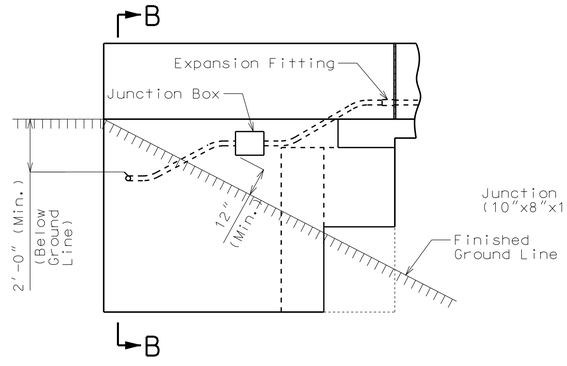
The contractor shall provide temporary bracing as necessary to prevent girders from rotating during slab pour. The cost for temporary bracing shall be considered completely covered by the contract unit price for Slab on Steel.

Slab shall be poured upgrade from end to end at a minimum rate of 25 cu. yd./ hr. with retarder or 25 cu. yd./hr. without retarder.

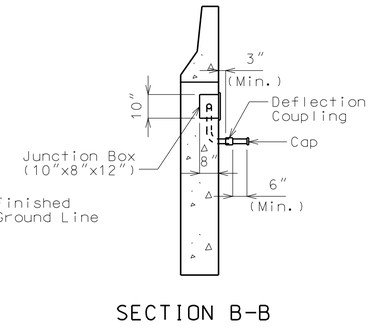
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Slab is to be considered at a uniform depth as shown on the plans. Haunching will vary.

The contractor shall pour and satisfactorily finish the slab pours at the rate given. Retarder, if used, shall be an approved type and retard the set of concrete to 2.5 hours.




## DETAILS OF CONDUIT SYSTEM




SECTION B-B

Notes:
All conduits shall be rigid nonmetallic schedule 40 heavy wall polyvinyl chloride (PVC) with 3" minimum cover in concrete. Each section of conduit shall bear the Underwriters Laboratories (UL) label.

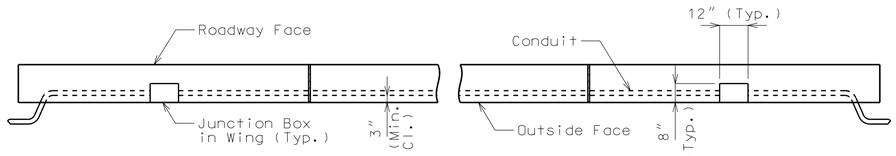
Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

Expansion fittings shall be placed as shown and set in accordance with the manufacturer's requirements and based on the air temperature at the time of setting given an estimated total expansion movement of 1" at filled joints using a maximum temperature range of 150°F and a maximum temperature of 120°F.

All end bent junction boxes shall be PVC molded in accordance with Sec 1062 and designed for flush mounting. The conduit terminations shall be permanent or separable. The terminations and covers shall be of watertight construction and shall meet requirements for NEMA 4 enclosure.

Drainage shall be provided at low points or other critical locations of all conduits and all junction boxes in accordance with Sec 707. All conduits shall be sloped to drain where possible.

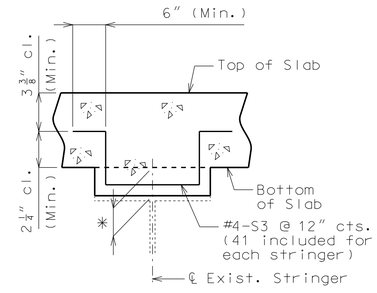
Payment for furnishing and installing Conduit System, complete in place, will be considered completely covered by the contract lump sum price for Conduit System on Structure.




## PART PLAN OF SAFETY BARRIER CURB SHOWING DELINEATED CONDUIT SYSTEM PLACEMENT ONLY

Note:
Bolts on intermediate diaphragms and cross frames that connect stringers under different construction stage slab pours shall be replaced and new H.S. Bolts shall be installed snug tight, then tightened after both adjacent slab pours are completed.

Deflection Note:
The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and may be adjusted based on the difference between the new and existing dead load weights.




## SECTION THRU EXISTING STRINGER SHOWING HAIRPIN BARS SPAN (2-3) ONLY

(Shear connectors not shown for clarity)

Note:

Cost of furnishing and installing epoxy coated hairpin bars will be considered completely covered by the contract unit price for Slab on Steel.

* For Haunch greater than 3", use hairpin bars.

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DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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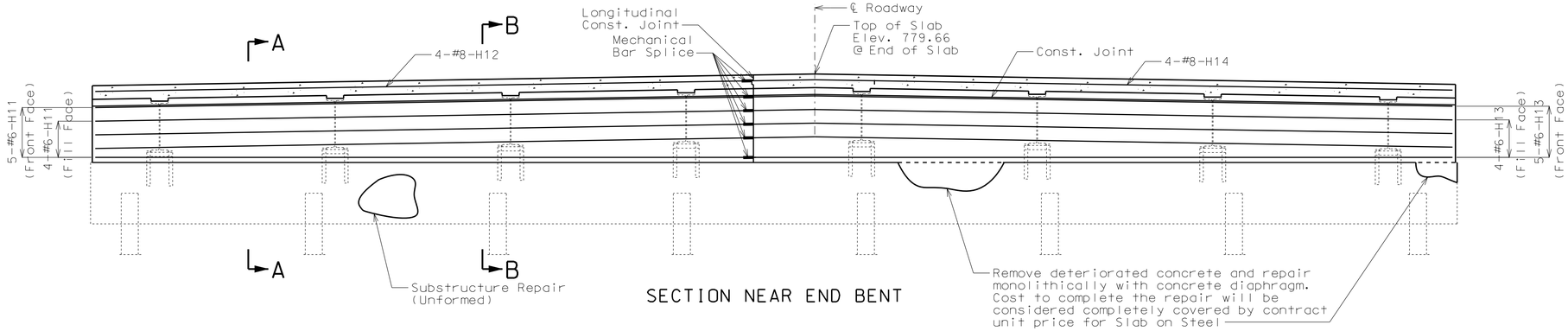
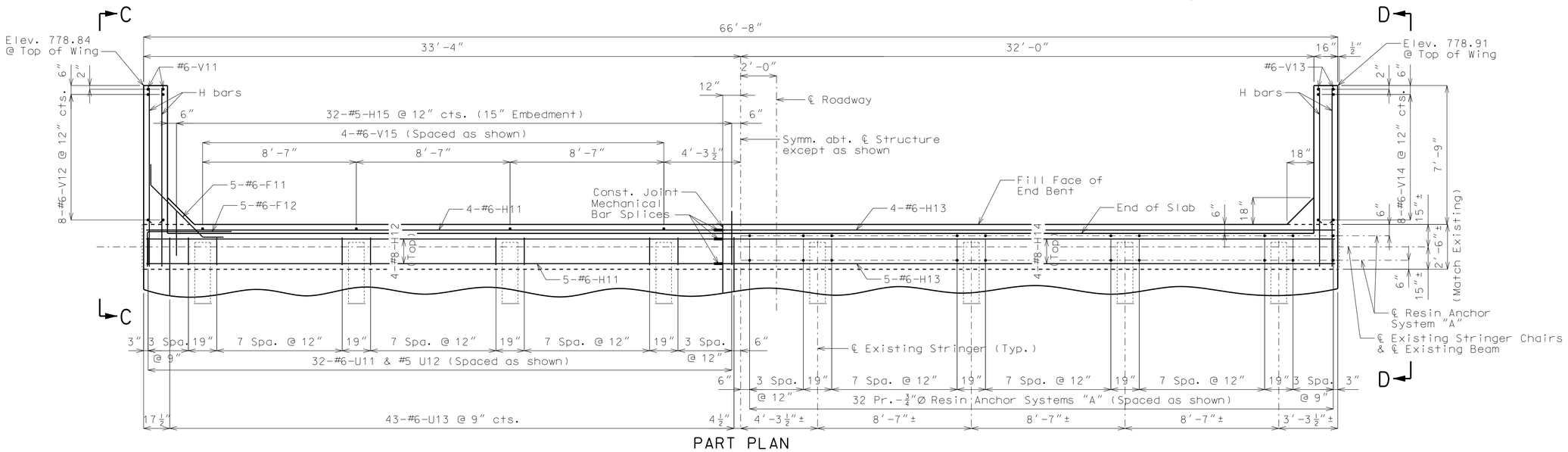



SECTION NEAR END BENT

Notes:
For Sections A-A & B-B, Elevations C-C & D-D and Details of Web Holes & Resin Anchor Systems, see Sheet No. 5.

The contractor shall use a mechanical bar splice for #8-H12 & H14 and #6-H11 & H13 bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for Slab on Steel.




PART PLAN

# DETAILS OF END BENT NO. 1

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DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

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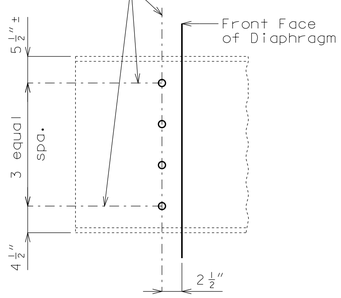
℄ $1\frac{1}{16}$" Ø holes in each stringer. Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel.




## DETAIL OF WEB HOLES

Notes:

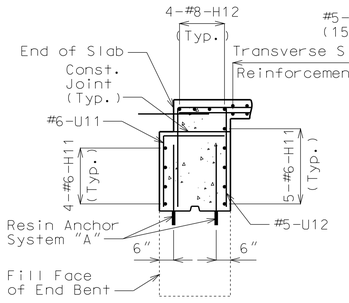
For location of Sections A-A & B-B and Elevations C-C & D-D, see Sheet No. 4.

For reinforcement of the safety barrier curb, see Sheets No. 10, 11 & 12.

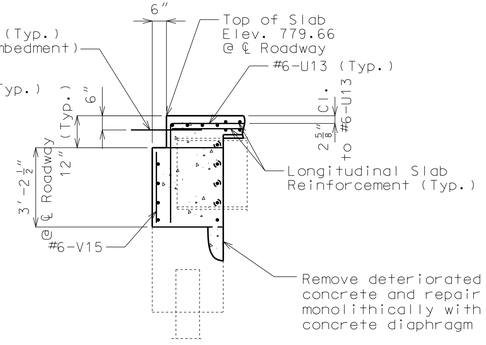
The #6-F11 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be Class B-2.

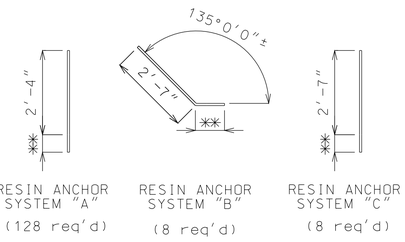
Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.




SECTION A-A

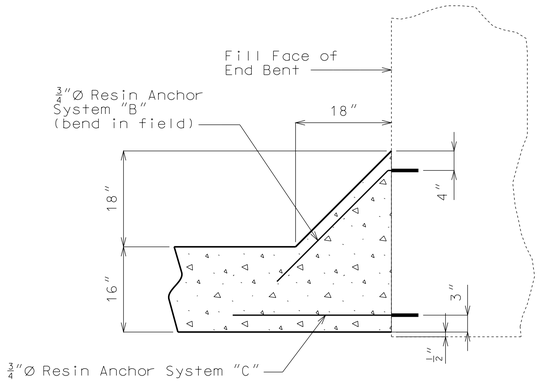



SECTION B-B




✻✻ Use manufacturer's embedment length. (5" minimum embedment)

DETAILS OF RESIN ANCHORS




SECTION E-E

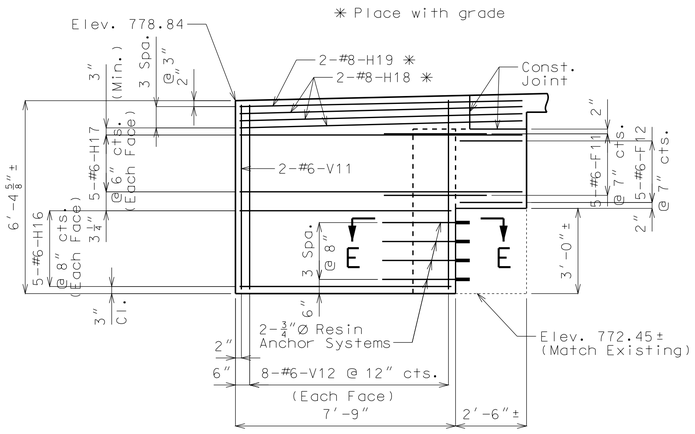
Notes:

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

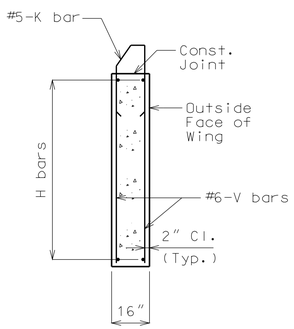
Cost of furnishing and installing the resin anchor systems shown on this sheet complete-in-place will be considered completely covered by the contract unit price for Slab on Steel.

The minimum embedment depth in concrete with f'c = 4.000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

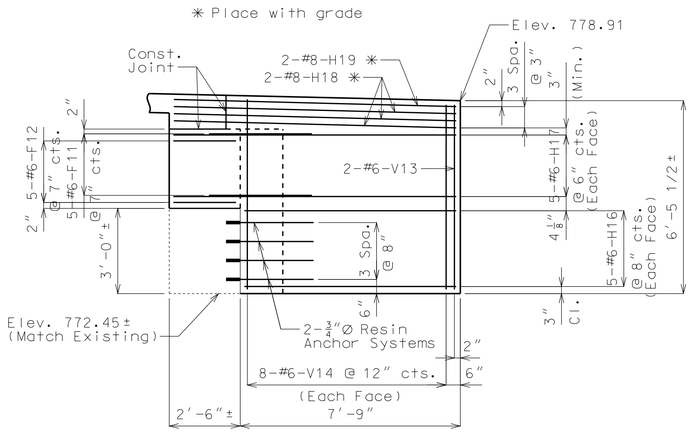
An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the ¾" Ø threaded rod.




ELEVATION C-C




SECTION THRU WING




ELEVATION D-D

# DETAILS OF END BENT NO. 1

Detailed May 2013
Checked June 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 9/24/2013
ROUTE: I-635 | STATE: MO
DISTRICT: BR | SHEET NO.: 5
COUNTY: PLATTE
JOB NO.: J4I2374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A24362

DATE | DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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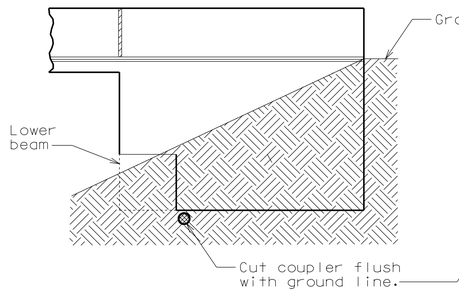
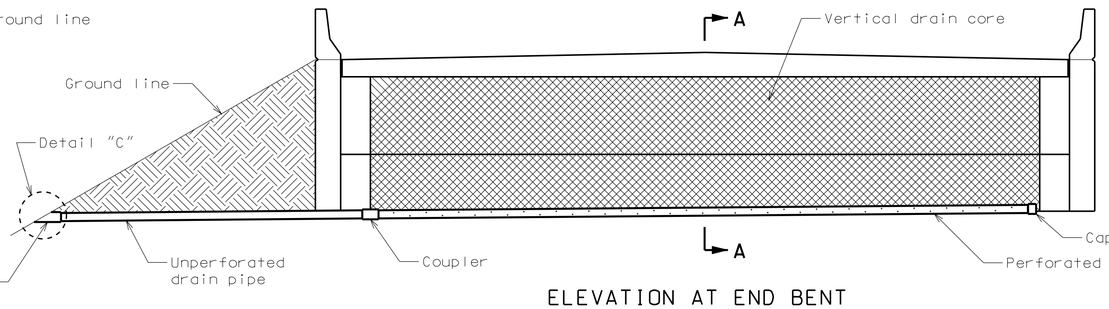
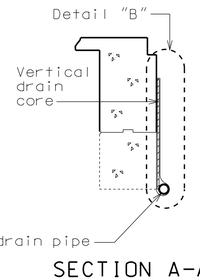


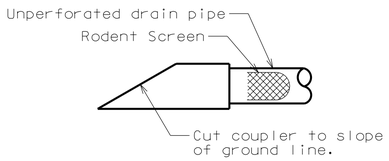

ELEVATION OF WING



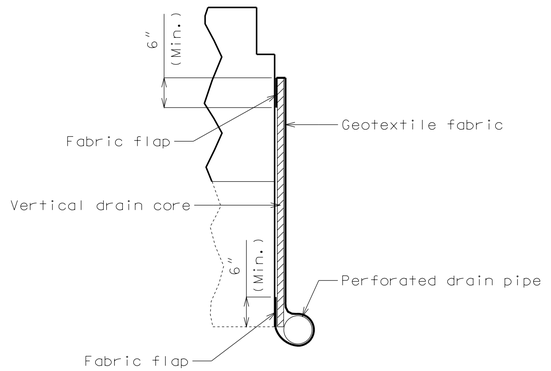

ELEVATION AT END BENT




SECTION A-A




DETAIL "C"




DETAIL "B"

Note:
Drain pipe may be either 6" diameter corrugated metallic-coated steel pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the lower beam of end bent by 1 1/2". (See elevation at end bent.)

Perforated pipe shall be placed at fill face side at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

# VERTICAL DRAIN AT END BENTS





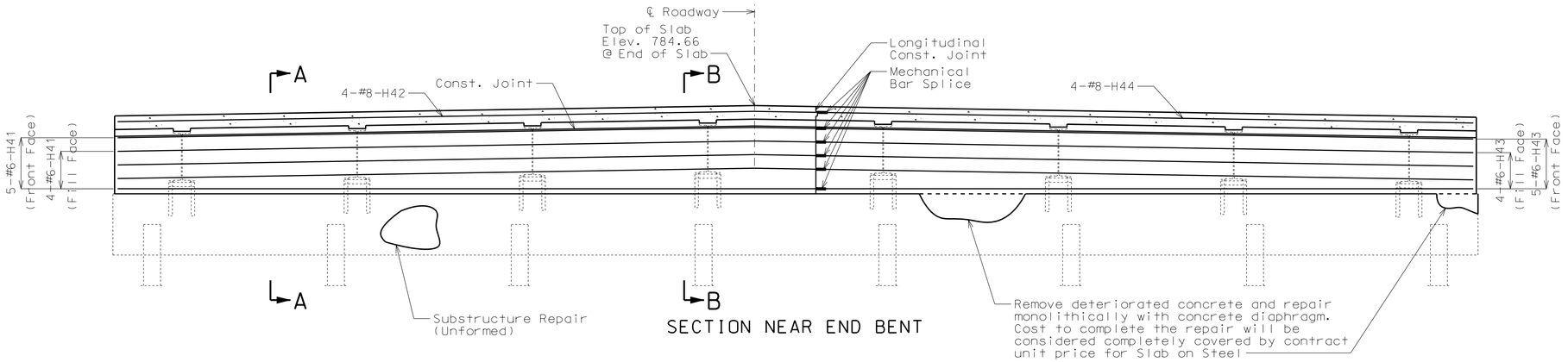
DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed May 2013
Checked June 2013

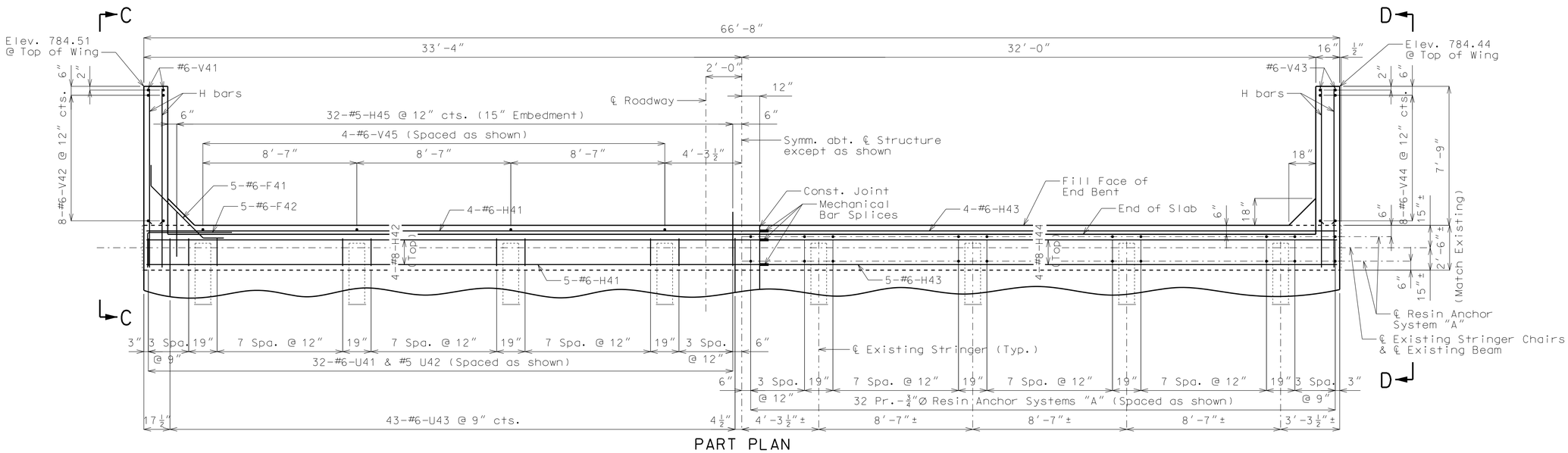
Note: This drawing is not to scale. Follow dimensions.




SECTION NEAR END BENT

Notes:
For Sections A-A & B-B, Elevations C-C & D-D and Details of Web Holes & Resin Anchor Systems, see Sheet No. 8.

The contractor shall use a mechanical bar splice for #8-H42 & H44 and #6-H41 & H43 bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for Slab on Steel.




PART PLAN

# DETAILS OF END BENT NO. 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

| DESCRIPTION | DATE |
|---|---|

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105 WEST CAPITOL
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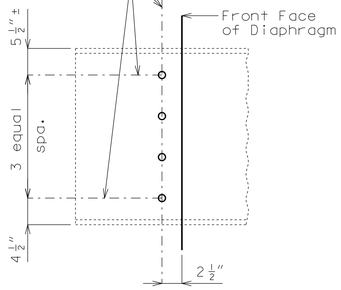
1-888-ASK-MODOT (1-888-275-6636)

Detailed May 2013
Checked June 2013

Note: This drawing is not to scale. Follow dimensions.

℄ $1\frac{1}{16}$" Ø holes in each stringer. Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel.




## DETAIL OF WEB HOLES

Notes:

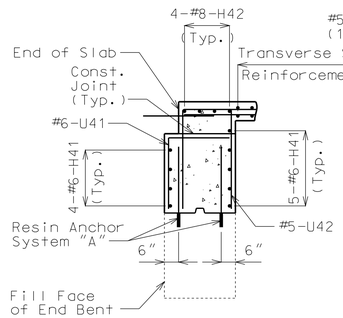
For location of Sections A-A & B-B and Elevations C-C & D-D, see Sheet No. 7.

For reinforcement of the safety barrier curb, see Sheets No. 10, 11 & 12.

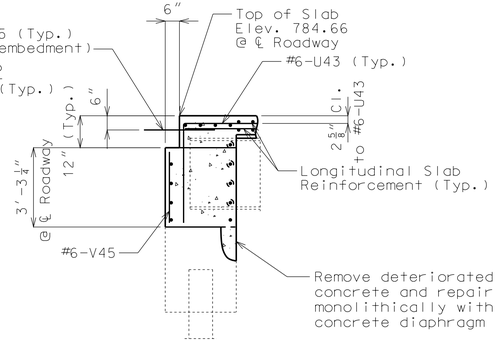
The #6-F41 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be Class B-2.

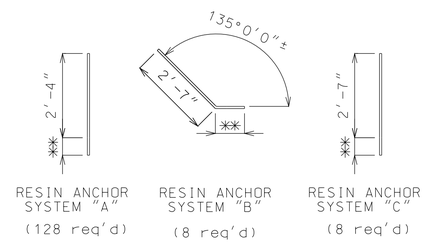
Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.




SECTION A-A

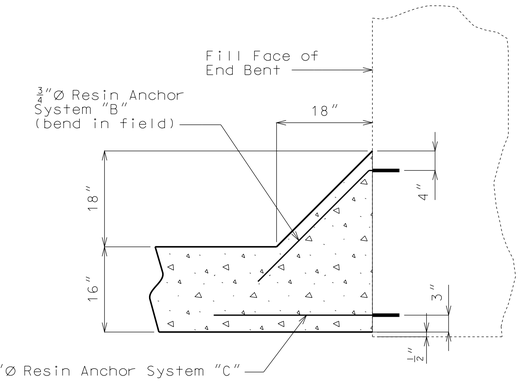



SECTION B-B




** Use manufacturer's embedment length. (5" minimum embedment)

DETAILS OF RESIN ANCHORS




SECTION E-E

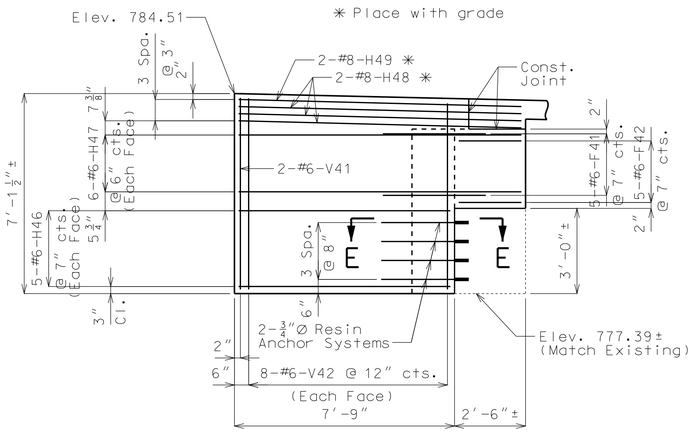
Notes:

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

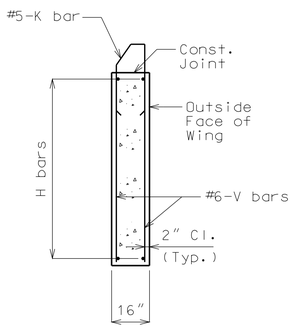
Cost of furnishing and installing the resin anchor systems shown on this sheet complete-in-place will be considered completely covered by the contract unit price for Slab on Steel.

The minimum embedment depth in concrete with f'c = 4.000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

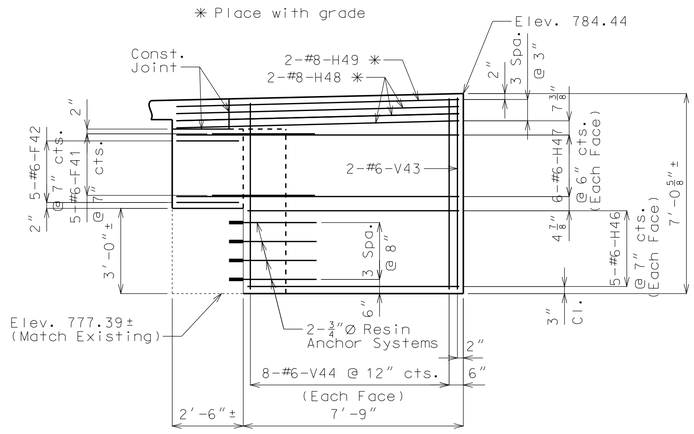
An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the ¾" Ø threaded rod.




ELEVATION C-C




SECTION THRU WING




ELEVATION D-D

# DETAILS OF END BENT NO. 4

Detailed May 2013
Checked June 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 9/24/2013
ROUTE: I-635 | STATE: MO
DISTRICT: BR | SHEET NO.: 8
COUNTY: PLATTE
JOB NO.: J412374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A24362

DATE | DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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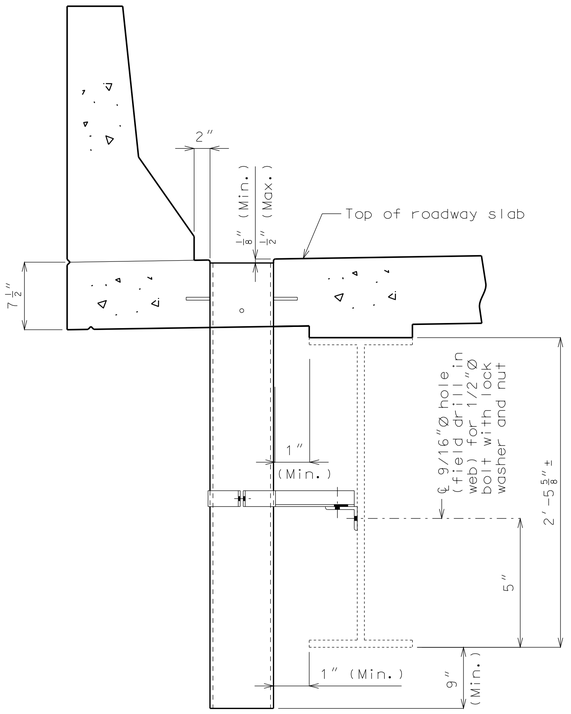
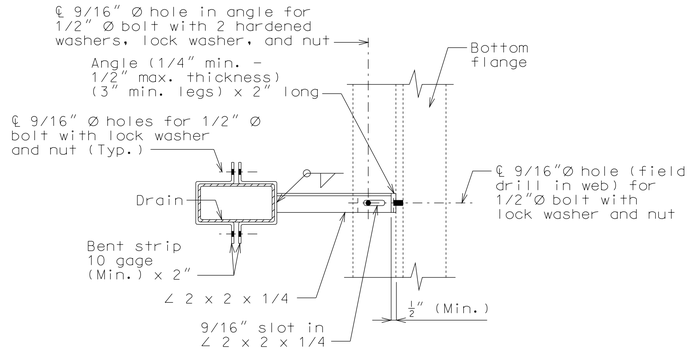
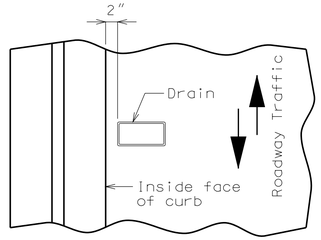


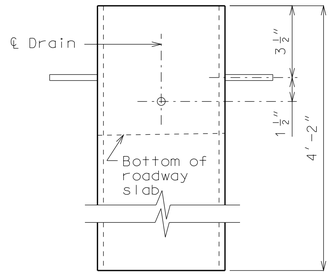

PART SECTION NEAR DRAIN



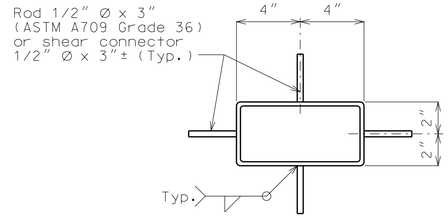

PART SECTION SHOWING BRACKET ASSEMBLY




PART PLAN OF SLAB AT DRAIN




ELEVATION OF DRAIN




PLAN OF DRAIN

DETAILS OF DRAINS TRANSVERSE TO ROADWAY

Notes:

Slab drains may be fabricated of either 1/4" welded sheets of ASTM A709 Grade 36 steel or from 1/4" structural steel tubing ASTM A500 or A501.

Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

Outside dimensions of drains are 8" x 4".

Locate drains in slab by dimensions shown in Part Section Near Drain.

Reinforcing steel shall be shifted to clear drains.

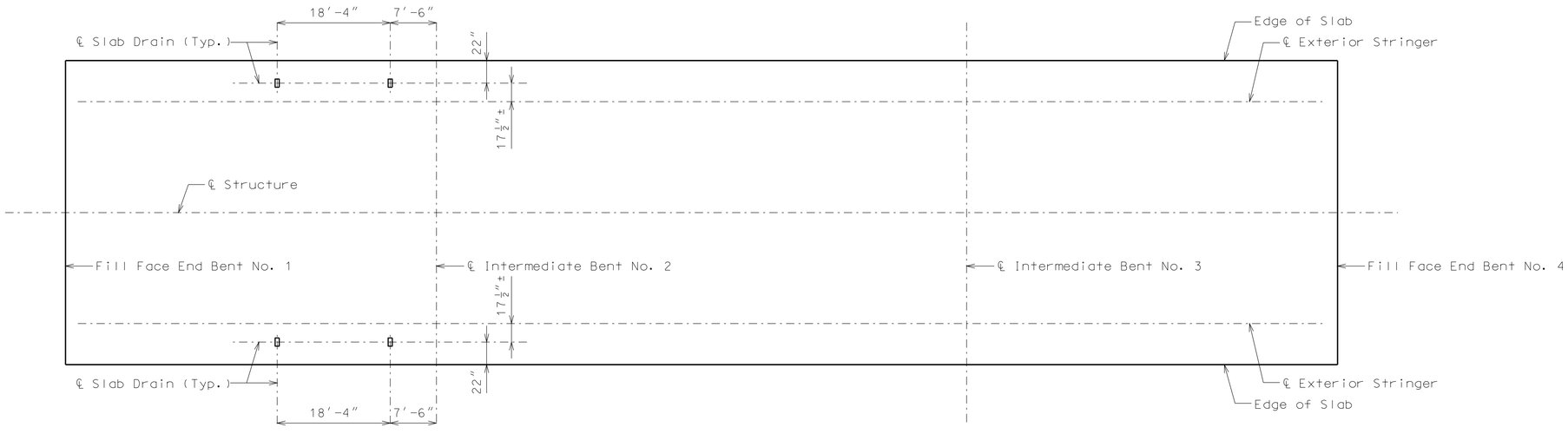
The drains and bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with ASTM A153.

Shop drawings will not be required for the slab drains and the bracket assembly.

The bolt hole for the bracket assembly attachment should be shifted to the minimum extent necessary to field drill in the existing web.

## SLAB DRAIN DETAILS




PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 9
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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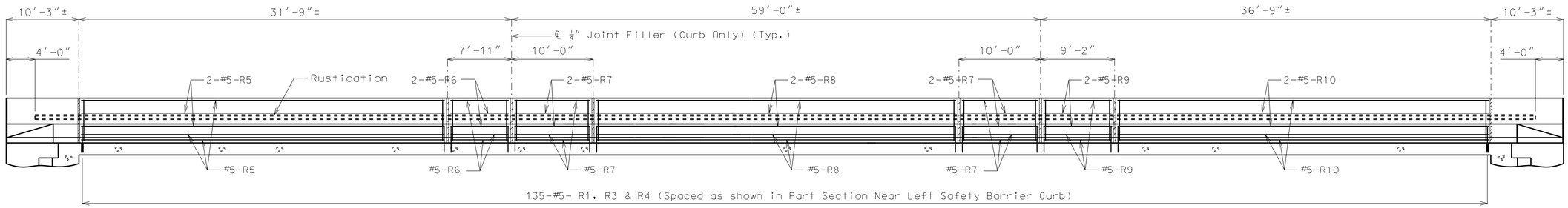
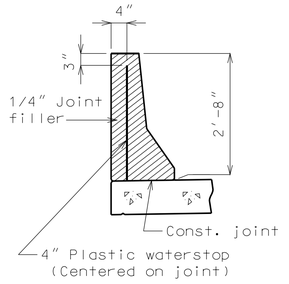



## SECTION NEAR LEFT SAFETY BARRIER CURB

(Right Safety Barrier Curb similar)

Note: Longitudinal dimensions are horizontal.

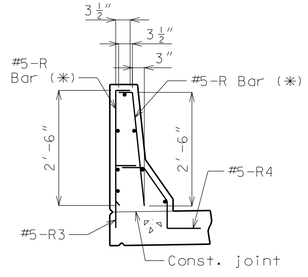



## DETAILS OF PLASTIC WATERSTOP

Notes:

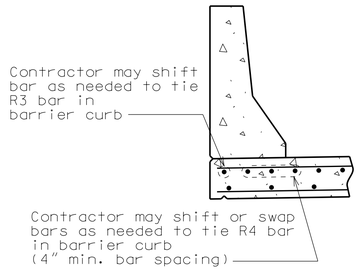
Plastic waterstop shall be placed in all safety barrier curb filled joints, except structures with superelevation, use on all lower safety barrier curb joints only.

Cost of plastic waterstop, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.

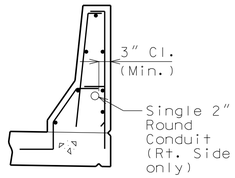



## R-BAR PERMISSIBLE ALTERNATE SHAPE

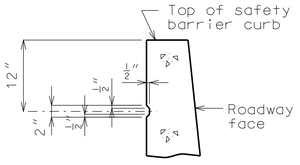
(*) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)



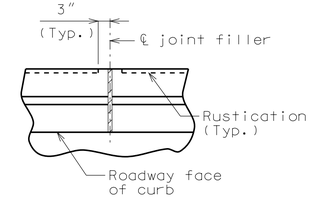

## PART SECTION THRU EDGE OF SLAB




## SECTION THRU SAFETY BARRIER CURB SHOWING CONDUIT




## PART SECTION SHOWING RUSTICATION DETAILS




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

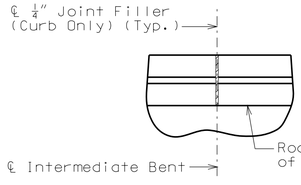
All exposed edges of safety barrier curb shall have either a ½″ radius or a ⅜″ bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

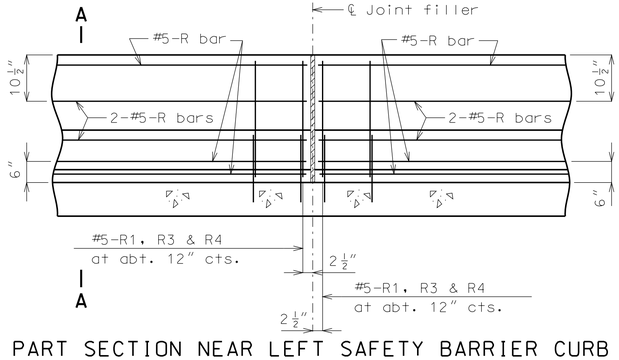
Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

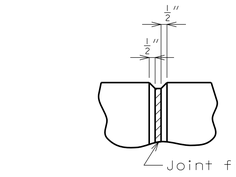
Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".



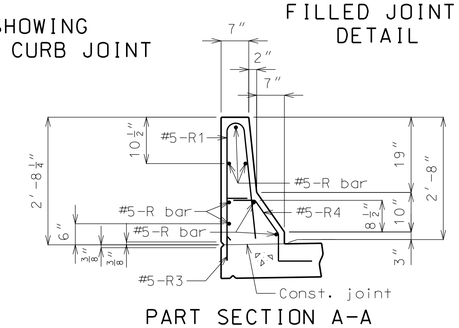

## PART PLAN SHOWING SAFETY BARRIER CURB JOINT




## PART SECTION NEAR LEFT SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## FILLED JOINT DETAIL




## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.27 sq. ft.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DATE PREPARED 9/24/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| BR | 10 |

COUNTY: PLATTE

JOB NO.: J412374

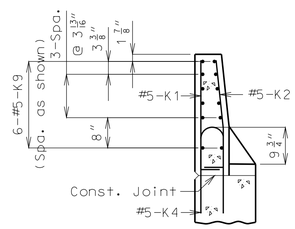
CONTRACT ID.:

PROJECT NO.:

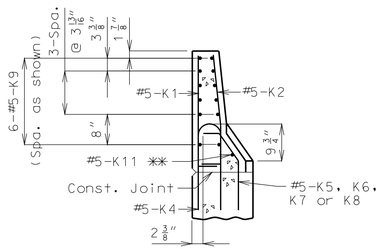
BRIDGE NO.: A24362

| DESCRIPTION | DATE |
|---|---|
| | |

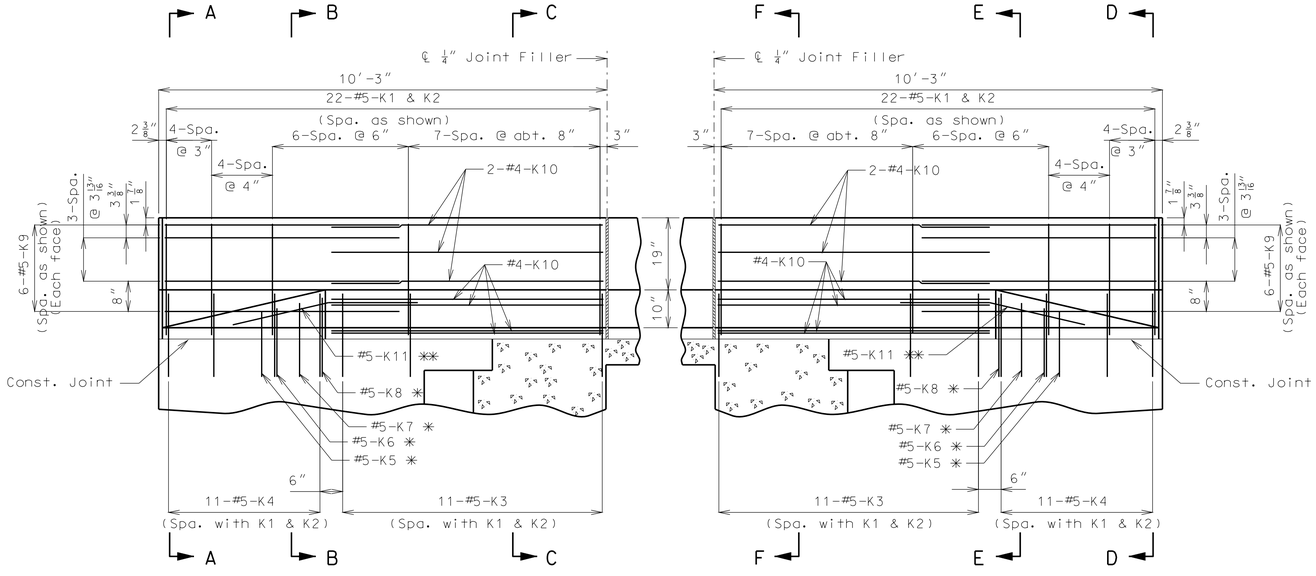
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



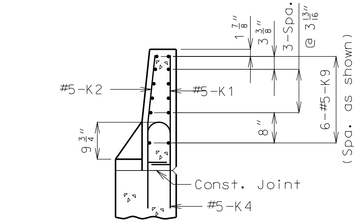

SECTION A-A



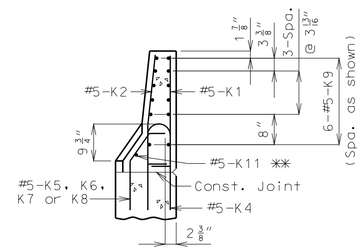

SECTION B-B




ELEVATION ELEVATION



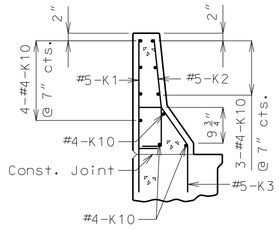

SECTION D-D



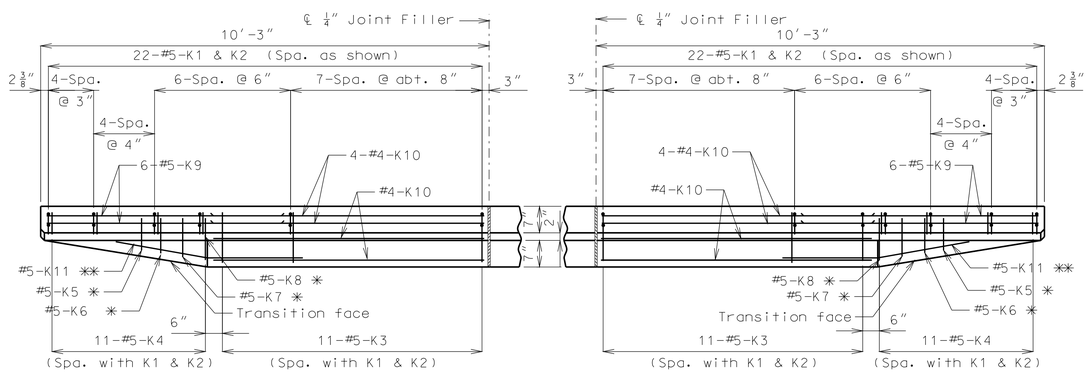

SECTION E-E

* Spaced with #5-K4 bars.

** Fit bar to follow transition face of curb.



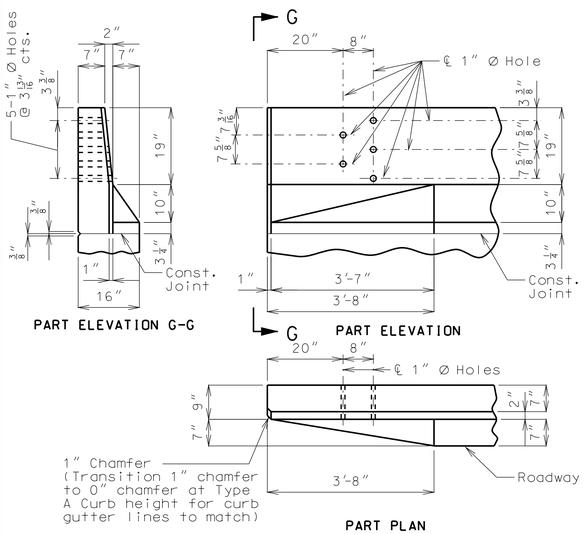

SECTION C-C



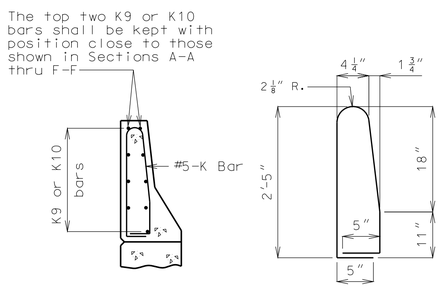

PLAN PLAN




SECTION F-F




DETAILS OF GUARD RAIL ATTACHMENT




(K3 or K4 thru K8 bars not shown for clarity)

K1-K2 BAR PERMISSIBLE ALTERNATE SHAPE (***)

(***) The K1 and K2 bar combination may be furnished as one bar as shown, at the contractor's option.

Notes:

Use a minimum lap of 2'-0" between K9 and K10 bars.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

DETAILS OF SAFETY BARRIER CURB AT END BENTS

(Left barrier curb shown; right barrier curb similar)

Detailed May 2013
Checked June 2013

Note: This drawing is not to scale. Follow dimensions.



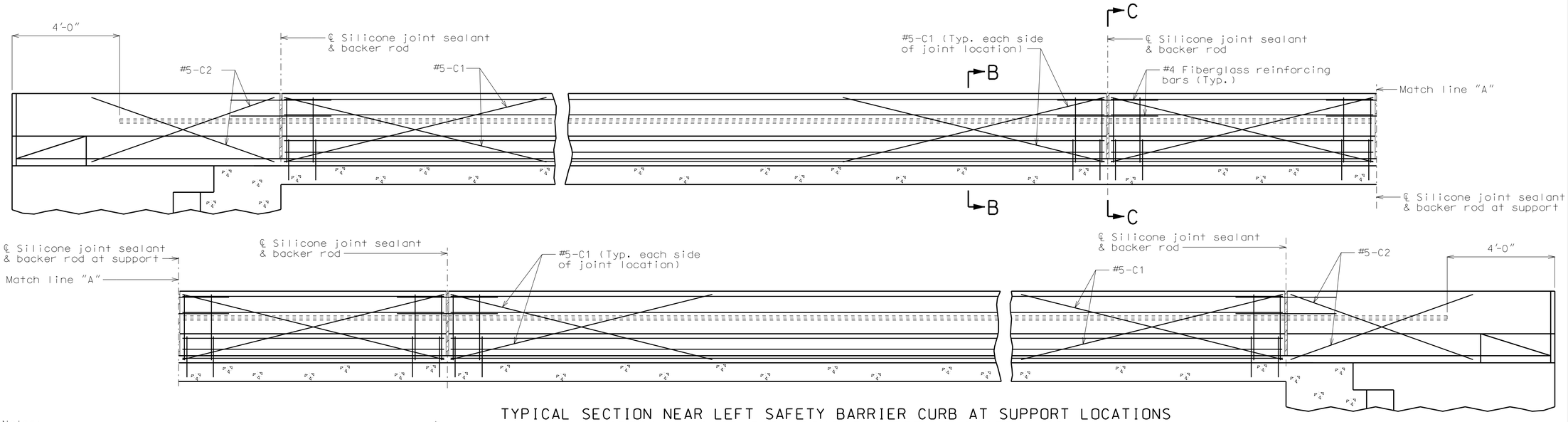
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




## TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

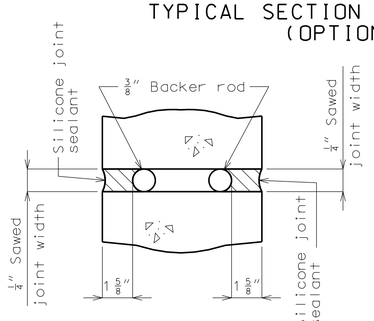
Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.




SECTION A-A

Notes:

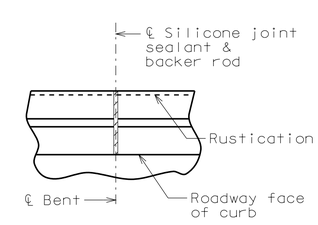
Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Plastic waterstop shall not be used with slip-form option.

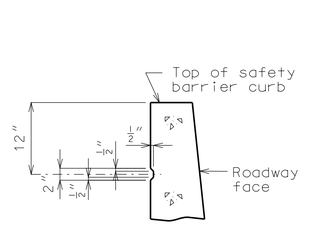
C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

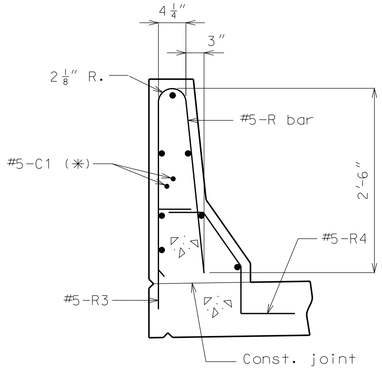



PART PLAN SHOWING SAFETY BARRIER CURB JOINT




PART SECTION SHOWING RUSTICATION DETAILS

RUSTICATION DETAIL



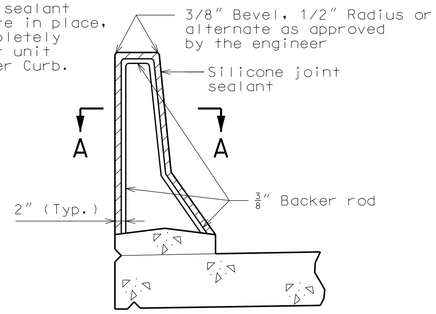

PART SECTION B-B

Note:

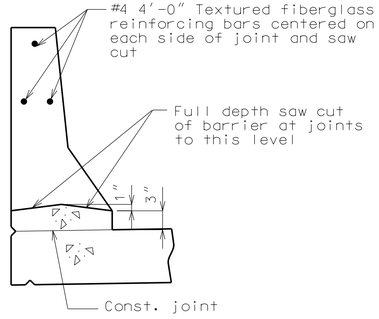
(✳) Each side of joint location.

Note:

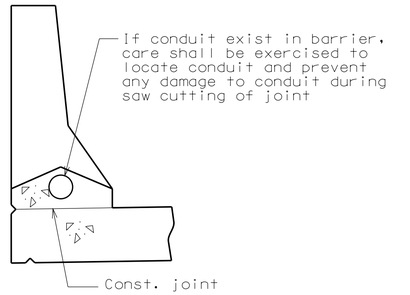
Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.




SECTION THRU JOINT




PART SECTION C-C




PART SECTION C-C

# OPTIMAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

(Left barrier curb shown, right barrier curb similar.)

Detailed May 2013
Checked June 2013

Note: This drawing is not to scale. Follow dimensions.



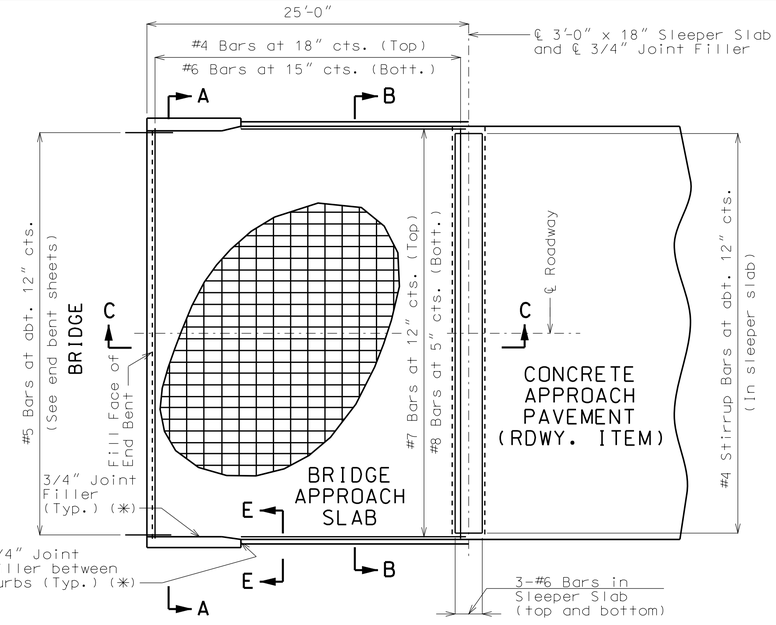
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 12
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

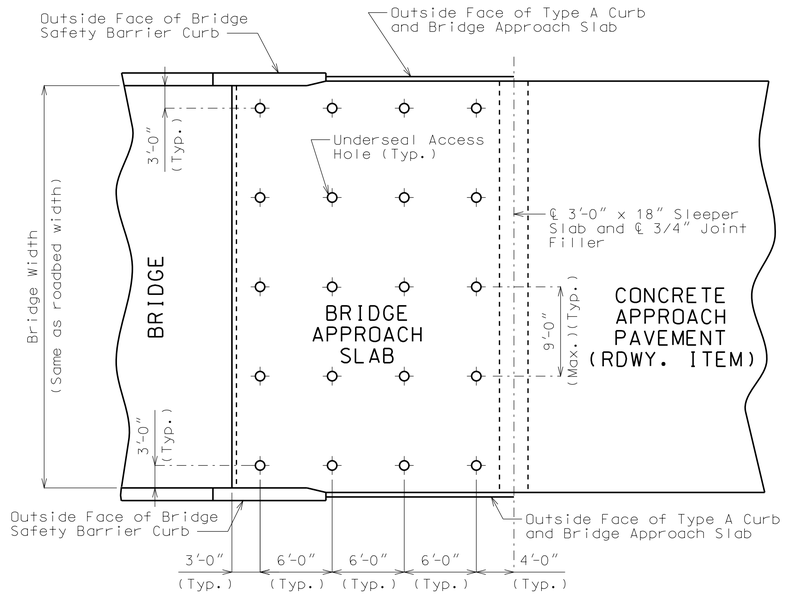
DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

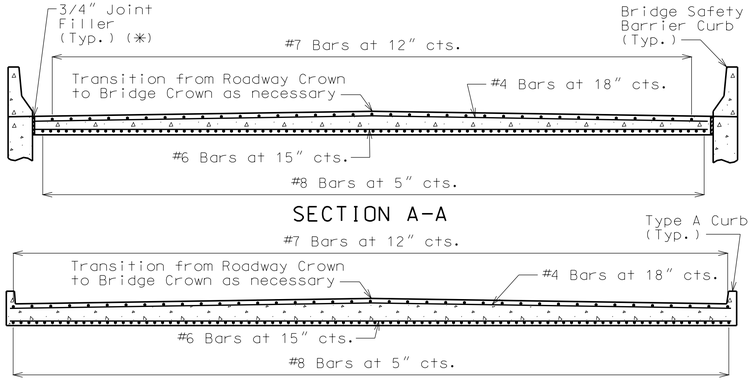
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



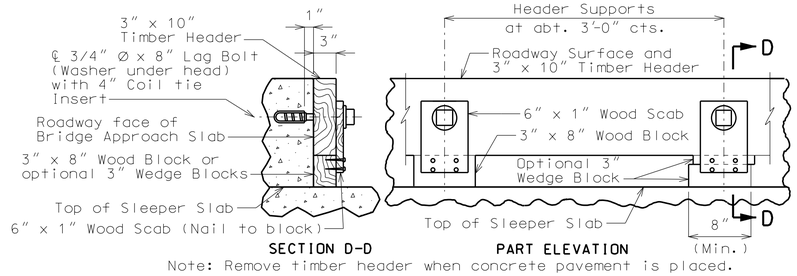

PART PLAN SHOWING REINFORCEMENT




PART PLAN
(SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)

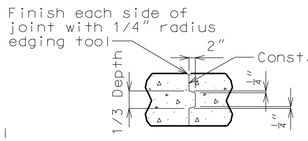



Note: With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.

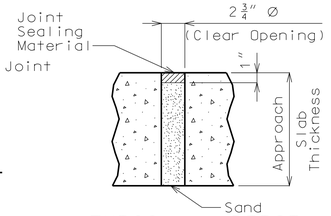



Note: Remove timber header when concrete pavement is placed.

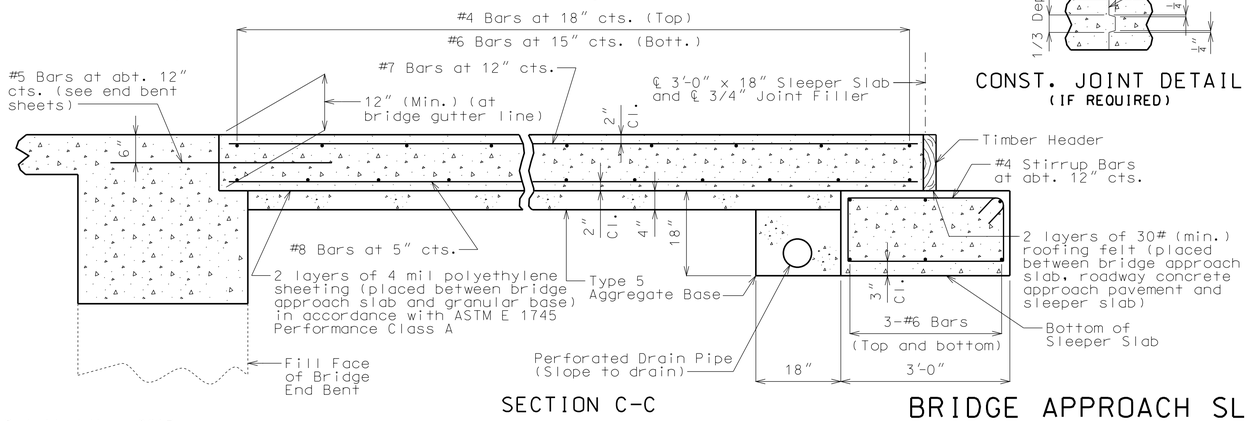
DETAILS OF TIMBER HEADER




CONST. JOINT DETAIL
(IF REQUIRED)

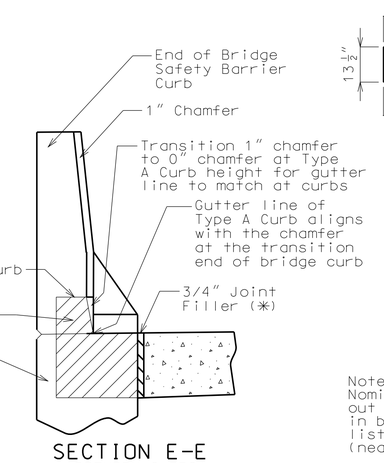



TYPICAL UNDERSEAL ACCESS HOLE DETAIL

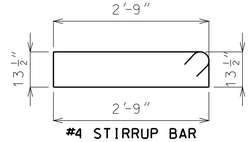



SECTION C-C

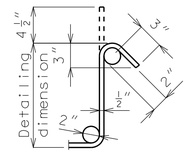
BRIDGE APPROACH SLAB




SECTION E-E
(BETWEEN CURBS)




#4 STIRRUP BAR
(ACTUAL LENGTH = 8'-3")




TYPICAL 135° STIRRUP HOOK DIMENSIONS BENDING DIAGRAM

Note:
Nominal lengths are based on out to out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).

## GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with Fy = 60,000 psi.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 2'-2", respectively.

Mechanical bar splices shall be in accordance with Sec 706.

(*) Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures. Stirrup and Tie Dimensions.

The contractor shall pour and satisfactorily finish the bridge or semi-deep slab before pouring the bridge approach slabs.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge or semi-deep slab.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Bridge) per square yard.

For Concrete Approach Pavement details, see roadway plans.

See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired in accordance with Sec 710.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 9/24/2013
ROUTE: I-635 | STATE: MO
DISTRICT: BR | SHEET NO.: 13
COUNTY: PLATTE
JOB NO.: J412374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A24362

DATE | DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed May 2013
Checked June 2013

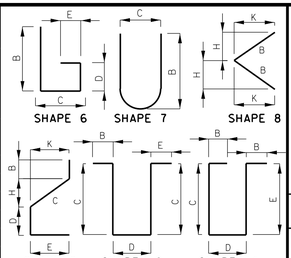
Note: This drawing is not to scale. Follow dimensions.

# BILL OF REINFORCING STEEL

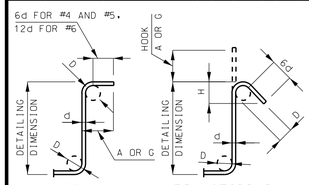
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SUPERSTR | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | END BT NO 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 6 | F11 | WING BRACE | | 15 | S | | | | 14 | 000 | 4 | 4.375 | 14 | 000 | 9 | 875 | 9 | 875 | 9 | 875 | 9 | 875 | 6 | 8 | 6 | 8 | 100 |
| 10 | 6 | F12 | DIAPHRAGM | | 19 | S | | | | 4 | 8.000 | 2 | 1.500 | | | | | | | | | | | 6 | 10 | 6 | 8 | 100 |
| 9 | 6 | H11 | DIAPHRAGM | | 20 | | | | | 32 | 2.000 | | | | | | | | | | | | | 32 | 2 | 32 | 2 | 435 |
| 4 | 8 | H12 | DIAPHRAGM | E | 20 | | | | | 32 | 2.000 | | | | | | | | | | | | | 32 | 2 | 32 | 2 | 344 |
| 9 | 6 | H13 | DIAPHRAGM | | 20 | | | | | 34 | 2.000 | | | | | | | | | | | | | 34 | 2 | 34 | 2 | 462 |
| 4 | 8 | H14 | DIAPHRAGM | E | 20 | | | | | 34 | 2.000 | | | | | | | | | | | | | 34 | 2 | 34 | 2 | 365 |
| 64 | 5 | H15 | DIAPHRAGM | E | 20 | | | | | 2 | 6.000 | | | | | | | | | | | | | 2 | 6 | 2 | 6 | 167 |
| 20 | 6 | H16 | WING | | 20 | | | | | 7 | 6.000 | | | | | | | | | | | | | 7 | 6 | 7 | 6 | 225 |
| 20 | 6 | H17 | WING | | 20 | | | | | 9 | 3.000 | | | | | | | | | | | | | 9 | 3 | 9 | 3 | 278 |
| 12 | 8 | H18 | WING | | 20 | | | | | 10 | 0.000 | | | | | | | | | | | | | 10 | 0 | 10 | 0 | 320 |
| 6 | 8 | H19 | WING | E | 20 | | | | | 10 | 0.000 | | | | | | | | | | | | | 10 | 0 | 10 | 0 | 160 |
| 64 | 6 | U11 | DIAPHRAGM | | 19 | S | | | | 2 | 5.000 | 2 | 3.000 | | | | | | | | | | | 4 | 8 | 4 | 6 | 433 |
| 64 | 5 | U12 | DIAPHRAGM | E | 10 | S | | | | | | 3 | 4.000 | 21 | 000 | | | | | | | | | 8 | 5 | 8 | 3 | 551 |
| 86 | 6 | U13 | DIAPHRAGM | E | 19 | S | | | | 3 | 4.000 | 4 | 0.000 | | | | | | | | | | | 7 | 4 | 7 | 2 | 926 |
| 2 | 6 | V11 | WING | | 20 | | | | | 6 | 1.000 | | | | | | | | | | | | | 6 | 1 | 6 | 1 | 18 |
| 16 | 6 | V12 | WING | | 20 | | | V | 2 | 6 | 4.000 | | | | | | | | | | | | | 6 | 4 | 6 | 4 | |
| | | | INCREMENT = | | | | | | | 6 | 1.000 | | | | | | | | | | | | | 6 | 1 | 6 | 1 | 149 |
| | | | 0.375 INCH | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 6 | V13 | WING | | 20 | | | | | 6 | 2.000 | | | | | | | | | | | | | 6 | 2 | 6 | 2 | 19 |
| 16 | 6 | V14 | WING | | 20 | | | V | 2 | 6 | 5.000 | | | | | | | | | | | | | 6 | 5 | 6 | 5 | |
| | | | INCREMENT = | | | | | | | 6 | 2.000 | | | | | | | | | | | | | 6 | 2 | 6 | 2 | 151 |
| | | | 0.375 INCH | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 6 | V15 | DIAPHRAGM | | 20 | | | | | 2 | 5.000 | | | | | | | | | | | | | 2 | 5 | 2 | 5 | 29 |
| | | | END BT NO 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 6 | F41 | WING BRACE | | 15 | S | | | | 14 | 000 | 4 | 4.375 | 14 | 000 | 9 | 875 | 9 | 875 | 9 | 875 | 9 | 875 | 6 | 8 | 6 | 8 | 100 |
| 10 | 6 | F42 | DIAPHRAGM | | 19 | S | | | | 4 | 8.000 | 2 | 1.500 | | | | | | | | | | | 6 | 10 | 6 | 8 | 100 |
| 9 | 6 | H41 | DIAPHRAGM | | 20 | | | | | 34 | 2.000 | | | | | | | | | | | | | 34 | 2 | 34 | 2 | 462 |
| 4 | 8 | H42 | DIAPHRAGM | E | 20 | | | | | 34 | 2.000 | | | | | | | | | | | | | 34 | 2 | 34 | 2 | 365 |
| 9 | 6 | H43 | DIAPHRAGM | | 20 | | | | | 32 | 2.000 | | | | | | | | | | | | | 32 | 2 | 32 | 2 | 435 |
| 4 | 8 | H44 | DIAPHRAGM | E | 20 | | | | | 32 | 2.000 | | | | | | | | | | | | | 32 | 2 | 32 | 2 | 344 |
| 64 | 5 | H45 | DIAPHRAGM | E | 20 | | | | | 2 | 6.000 | | | | | | | | | | | | | 2 | 6 | 2 | 6 | 167 |
| 20 | 6 | H46 | WING | | 20 | | | | | 7 | 6.000 | | | | | | | | | | | | | 7 | 6 | 7 | 6 | 225 |
| 24 | 6 | H47 | WING | | 20 | | | | | 9 | 3.000 | | | | | | | | | | | | | 9 | 3 | 9 | 3 | 333 |
| 12 | 8 | H48 | WING | | 20 | | | | | 10 | 0.000 | | | | | | | | | | | | | 10 | 0 | 10 | 0 | 320 |
| 4 | 8 | H49 | WING | E | 20 | | | | | 10 | 0.000 | | | | | | | | | | | | | 10 | 0 | 10 | 0 | 107 |
| 64 | 6 | U41 | DIAPHRAGM | | 19 | S | | | | 2 | 5.000 | 2 | 3.000 | | | | | | | | | | | 4 | 8 | 4 | 6 | 433 |
| 64 | 5 | U42 | DIAPHRAGM | E | 10 | S | | | | | | 3 | 4.000 | 21 | 000 | | | | | | | | | 8 | 5 | 8 | 3 | 551 |
| 86 | 6 | U43 | DIAPHRAGM | E | 19 | S | | | | 3 | 4.000 | 4 | 0.000 | | | | | | | | | | | 7 | 4 | 7 | 2 | 926 |
| 2 | 6 | V41 | WING | | 20 | | | | | 6 | 10.000 | | | | | | | | | | | | | 6 | 10 | 6 | 10 | 21 |
| 16 | 6 | V42 | WING | | 20 | | | V | 2 | 6 | 10.000 | | | | | | | | | | | | | 6 | 10 | 6 | 10 | |
| | | | INCREMENT = | | | | | | | 6 | 7.000 | | | | | | | | | | | | | 6 | 7 | 6 | 7 | 161 |
| | | | 0.375 INCH | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 6 | V43 | WING | | 20 | | | | | 6 | 9.000 | | | | | | | | | | | | | 6 | 9 | 6 | 9 | 20 |
| 16 | 6 | V44 | WING | | 20 | | | V | 2 | 6 | 9.000 | | | | | | | | | | | | | 6 | 9 | 6 | 9 | |
| | | | INCREMENT = | | | | | | | 6 | 6.000 | | | | | | | | | | | | | 6 | 6 | 6 | 6 | 159 |
| | | | 0.375 INCH | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 6 | V45 | DIAPHRAGM | | 20 | | | | | 2 | 5.000 | | | | | | | | | | | | | 2 | 5 | 2 | 5 | 29 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SLAB | | | | | | | | | | | | | | | | | | | | | | | | | |
| 402 | 5 | S1 | SLAB | E | 20 | | | | | 46 | 1.000 | | | | | | | | | | | | | 46 | 1 | 46 | 1 | 19322 |
| 210 | 6 | S2 | SLAB | E | 20 | | | | | 33 | 0.000 | | | | | | | | | | | | | 33 | 0 | 33 | 0 | 10409 |
| 328 | 4 | S3 | SLAB | E | 10 | S | | | | | 6.000 | 4 | 750 | 7 | 500 | 6 | 000 | | | | | | | 2 | 5 | 2 | 1 | 456 |
| 510 | 5 | S4 | SLAB | E | 20 | | | | | 34 | 1.000 | | | | | | | | | | | | | 34 | 1 | 34 | 1 | 18130 |
| 510 | 5 | S5 | SLAB | E | 20 | | | | | 35 | 0.000 | | | | | | | | | | | | | 35 | 0 | 35 | 0 | 18618 |
| | | | BARRIER CURB | | | | | | | | | | | | | | | | | | | | | | | | | |
| 88 | 5 | K1 | BARRIER CURB | E | 19 | S | | | | 2 | 5.000 | 5 | 125 | | | | | | | | | | | 2 | 10 | 2 | 9 | 252 |
| 88 | 5 | K2 | BARRIER CURB | E | 14 | S | | | | | 5.125 | 11 | 125 | 18 | 000 | | | | | 2 | 000 | 17 | 875 | 2 | 10 | 2 | 9 | 252 |
| 44 | 5 | K3 | BARRIER CURB | E | 27 | S | | | | 3 | 0.000 | 5 | 125 | 12 | 000 | 2 | 2.125 | | | 9 | 875 | 6 | 875 | 6 | 7 | 6 | 5 | 294 |
| 44 | 5 | K4 | BARRIER CURB | E | 7 | | | | | 3 | 0.000 | 6 | 000 | | | | | | | | | | | 6 | 2 | 6 | 2 | 283 |
| 4 | 5 | K5 | BARRIER CURB | E | 25 | S | | | | 2 | 6.500 | 6 | 750 | 4 | 375 | | | | | 5 | 500 | 4 | 000 | 3 | 6 | 3 | 5 | 14 |
| 4 | 5 | K6 | BARRIER CURB | E | 25 | S | | | | 2 | 5.500 | 7 | 875 | 4 | 375 | | | | | 6 | 500 | 4 | 500 | 3 | 6 | 3 | 5 | 14 |
| 4 | 5 | K7 | BARRIER CURB | E | 25 | S | | | | 2 | 4.125 | 9 | 625 | 4 | 375 | | | | | 7 | 875 | 5 | 500 | 3 | 6 | 3 | 5 | 14 |
| 4 | 5 | K8 | BARRIER CURB | E | 25 | S | | | | 2 | 2.750 | 11 | 250 | 4 | 375 | | | | | 9 | 250 | 6 | 500 | 3 | 6 | 3 | 6 | 15 |
| 48 | 5 | K9 | BARRIER CURB | E | 20 | | | | | 5 | 7.000 | | | | | | | | | | | | | 5 | 7 | 5 | 7 | 280 |
| 42 | 4 | K10 | BARRIER CURB | E | 20 | | | | | 6 | 5.000 | | | | | | | | | | | | | 6 | 5 | 6 | 5 | 180 |
| 4 | 5 | K11 | BARRIER CURB | E | 8 | | | | | 2 | 2.125 | | | | | | | | | 2 | 2.000 | 2 | 375 | 4 | 4 | 4 | 4 | 18 |
| 270 | 5 | R1 | BARRIER CURB | E | 26 | | | | | 2 | 6.000 | 4 | 250 | 2 | 6.125 | | | | | 2 | 6.000 | 3 | 000 | 5 | 2 | 5 | 2 | 1455 |
| 270 | 5 | R3 | BARRIER CURB | E | 19 | S | | | | | 17.000 | 6 | 000 | | | | | | | | | | | 0 | 23 | 0 | 22 | 516 |
| 270 | 5 | R4 | BARRIER CURB | E | 27 | S | | | | | | 6 | 000 | 11 | 250 | 7 | 000 | 12 | 000 | 9 | 250 | 6 | 375 | 3 | 0 | 2 | 10 | 798 |
| 14 | 5 | R5 | BARRIER CURB | E | 20 | | | | | 23 | 7.000 | | | | | | | | | | | | | 23 | 7 | 23 | 7 | 344 |
| 14 | 5 | R6 | BARRIER CURB | E | 20 | | | | | 7 | 8.000 | | | | | | | | | | | | | 7 | 8 | 7 | 8 | 112 |
| 30 | 5 | R7 | BARRIER CURB | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 305 |
| 14 | 5 | R8 | BARRIER CURB | E | 20 | | | | | 38 | 9.000 | | | | | | | | | | | | | 38 | 9 | 38 | 9 | 566 |
| 14 | 5 | R9 | BARRIER CURB | E | 20 | | | | | 8 | 11.000 | | | | | | | | | | | | | 8 | 11 | 8 | 11 | 130 |
| 14 | 5 | R10 | BARRIER CURB | E | 20 | | | | | 27 | 4.000 | | | | | | | | | | | | | 27 | 4 | 27 | 4 | 399 |
| 40 | 5 | C1 | SLIP FORM | E | 20 | | | | | 8 | 1.000 | | | | | | | | | | | | | 8 | 1 | 8 | 1 | 337 |
| 8 | 5 | C2 | SLIP FORM | E | 20 | | | | | 6 | 4.000 | | | | | | | | | | | | | 6 | 4 | 6 | 4 | 53 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 636 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 63957 |
| | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | 4877 |
| | 6 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 12261 |
| | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | 640 |
| | 8 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 1685 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 5517 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 78539 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 456 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 57506 |
| | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | 4877 |
| | 6 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 12261 |
| | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | 640 |
| | 8 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 1685 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 77425 |

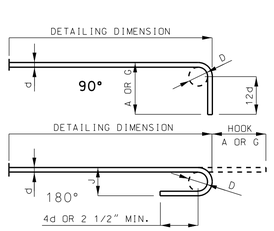



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK A OR G | 135° HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS | | 90° HOOKS |
| | | A OR G | J | A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #4-K10, #5-R7, #6-S2 & #8-H19 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60.000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 14
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Detailed July 2013
Checked July 2013

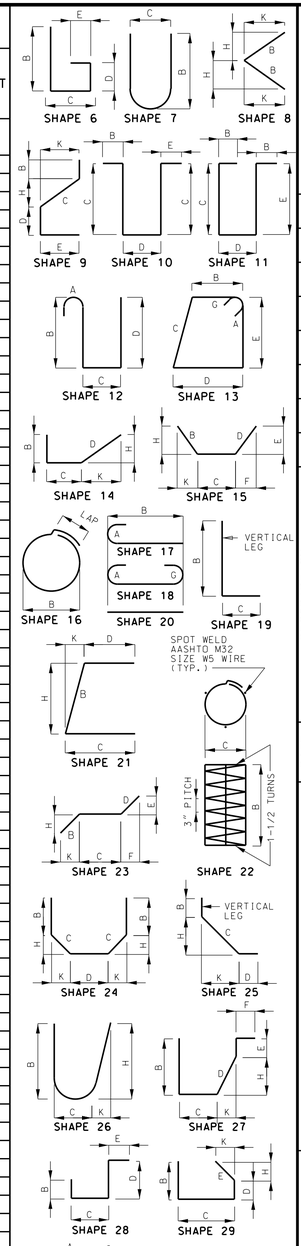
Note: This drawing is not to scale. Follow dimensions.

# BILL OF REINFORCING STEEL

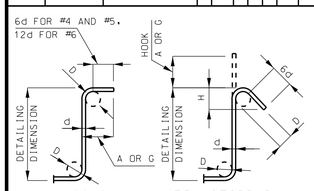
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Safety | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Barrier | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Curb | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 180 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 6061 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 6241 |
| | | | Slip Form | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Option | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 390 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 390 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

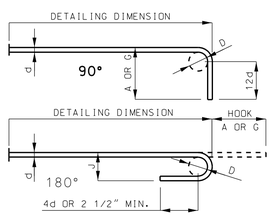



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

**NOTE:**
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REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 15
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24362

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

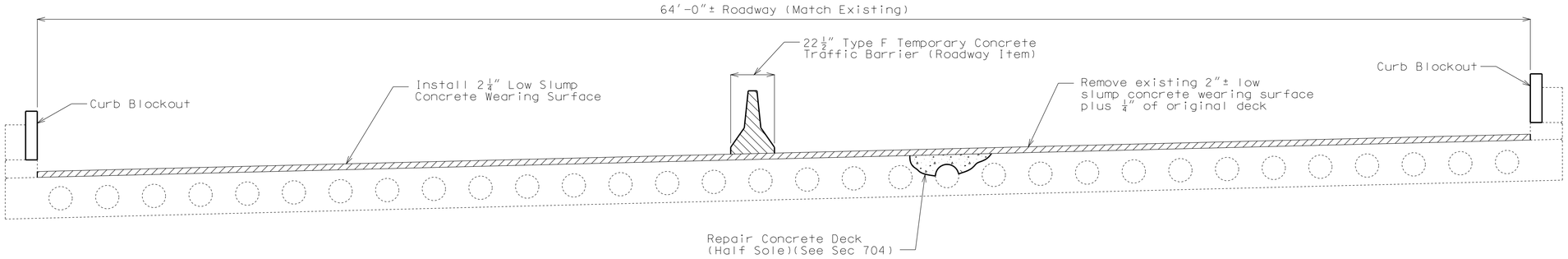
Detailed July 2013
Checked July 2013

Note: This drawing is not to scale. Follow dimensions.

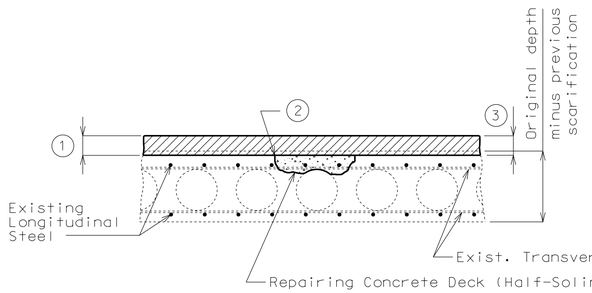
SEC/SUR 5 TWP 50N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB.EXISTING (45'-54'-39') CONTINUOUS CONCRETE VOIDED SLAB SPANS



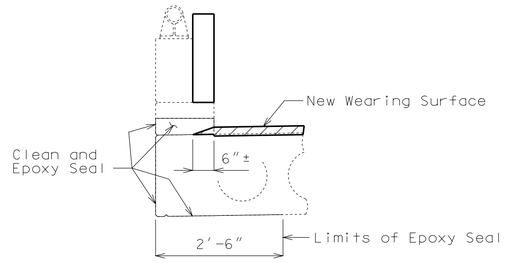

SECTION THRU SLAB



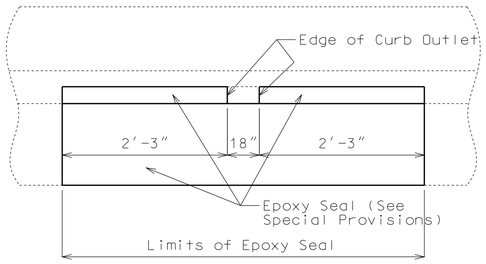

HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2¼" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS




TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET

| Estimated Quantities | | |
|---|---|---|
| Item | | Total |
| Removal of Concrete Wearing Surface | sq. foot | 8998 |
| Low Slump Concrete Wearing Surface | sq. yard | 1000 |
| Curb Blockout | linear foot | 309 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 900 |
| Clean and Epoxy Seal | sq. foot | 405 |
| | | |
| | | |
| | | |
| | | |

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

# REPAIRS TO BRIDGE: I-635 NBL OVER RTE. 9 WBL

STATE ROAD AT I-635/RTE. 9 INTERCHANGE
IN RIVERSIDE
STA. 47+62.79± (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



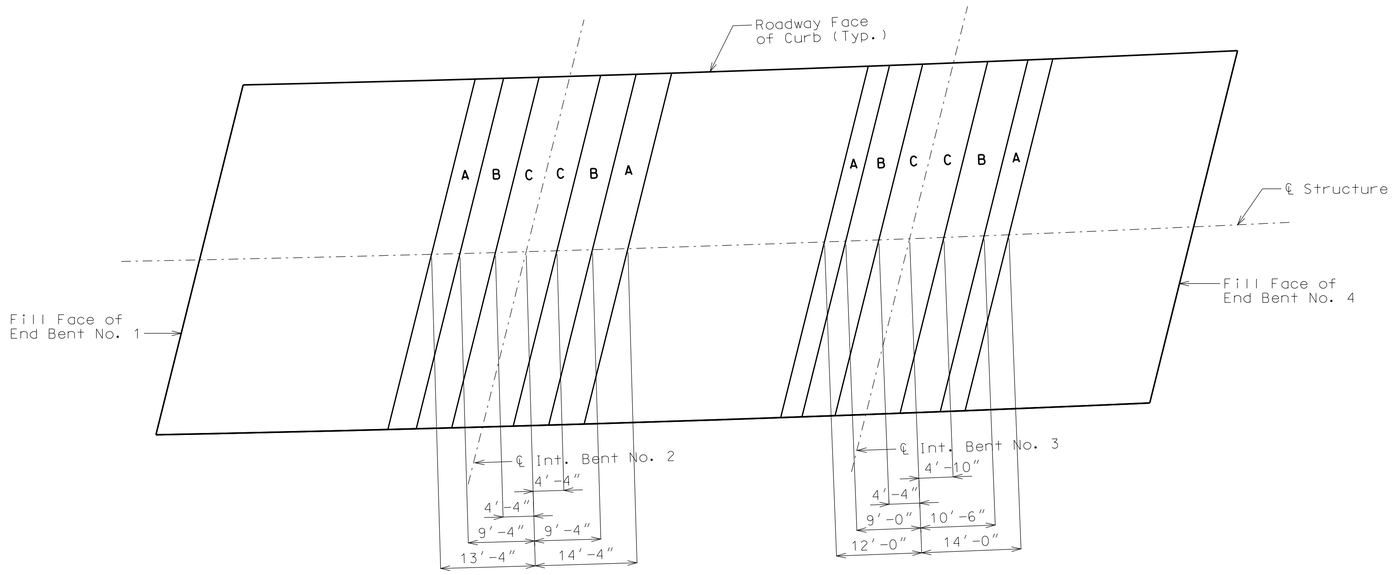
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24372

| DESCRIPTION | DATE |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/7/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J4I12374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A24372

| DESCRIPTION | DATE |
|---|---|
| | |

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Mar. 2013
Checked Mar. 2013

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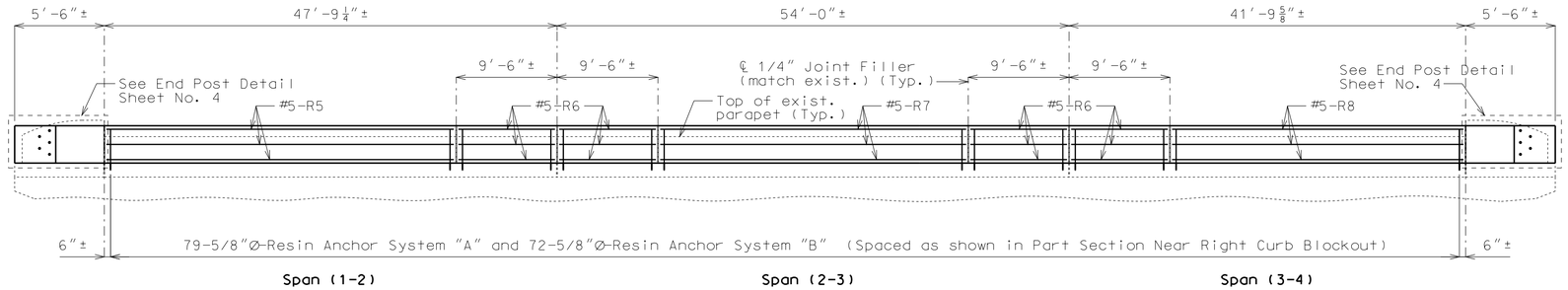
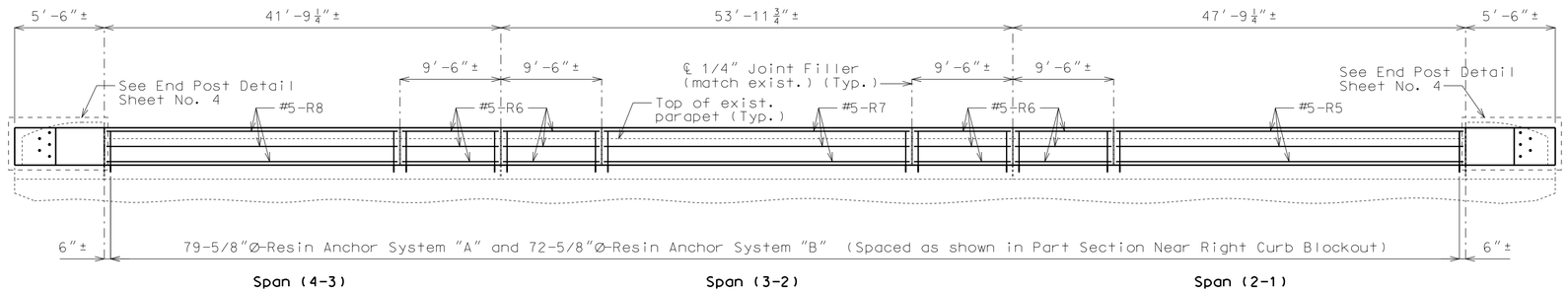


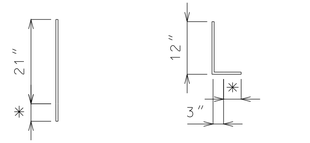

## SECTION NEAR LEFT CURB BLOCKOUT




## SECTION NEAR RIGHT CURB BLOCKOUT

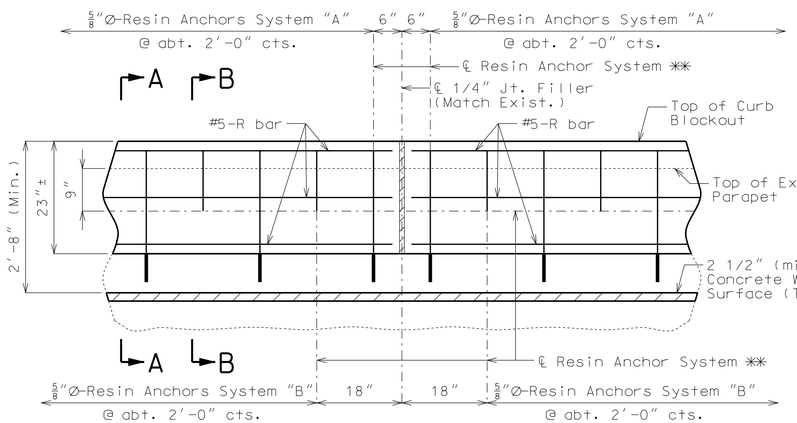
Note: Longitudinal dimensions shown are arc dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

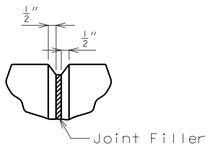



✳ Use manufacturer's embedment length. (5″ minimum embedment)

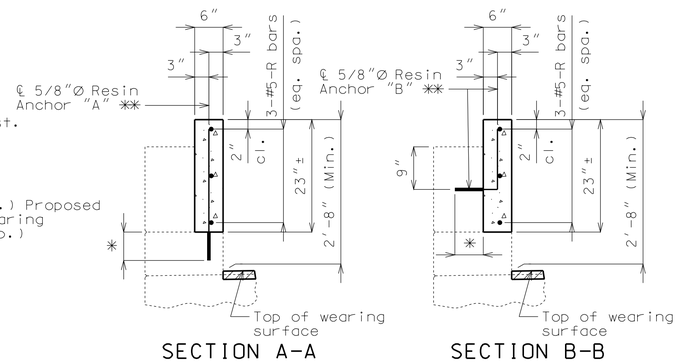
## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR RIGHT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A SECTION B-B

## DETAILS OF RIGHT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2″ radius or 3/8″ bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

✳✳ Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



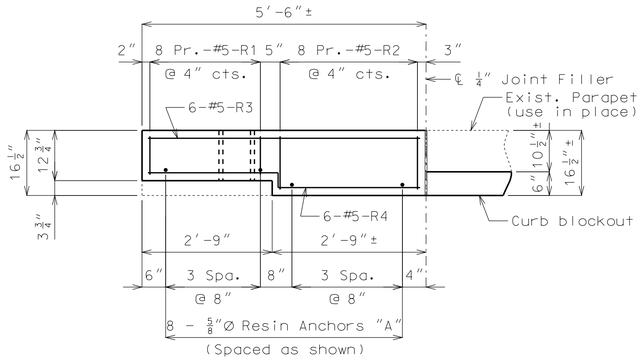
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24372

DESCRIPTION | DATE

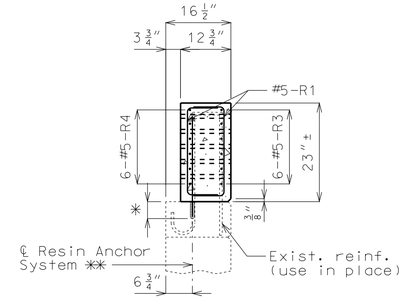
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

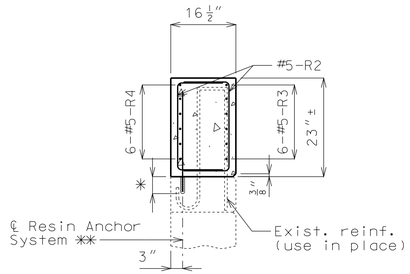



## PLAN SHOWING END POST REINFORCEMENT

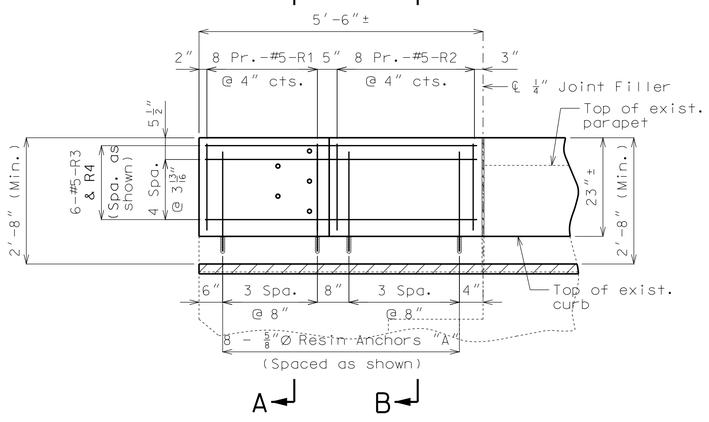
Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




## SECTION A-A

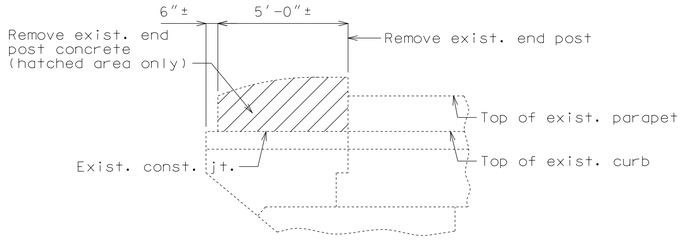



## SECTION B-B




## ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




## PART ELEVATION SHOWING END POST CONCRETE REMOVAL

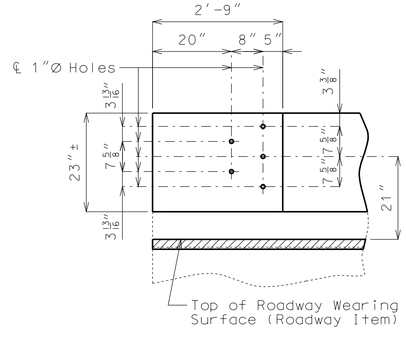
Notes:
For Details of Resin Anchors, see Sheet No. 3.

✳ Manufacturer's recommended embedment length. (5″ minimum embedment)

✳✳ Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




## DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.





DATE PREPARED: 10/7/2013
ROUTE: I-635 | STATE: MO
DISTRICT: BR | SHEET NO.: 4
COUNTY: PLATTE
JOB NO.: J412374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A24372

DESCRIPTION | DATE

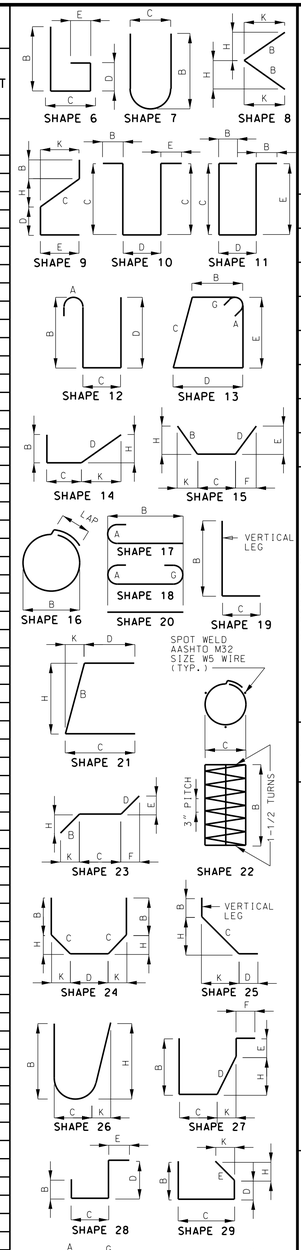
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | 5 | R1 | END POST | E | 10 | S | | | | | | 9.750 | | 20.000 | | | | | | | | | | 3 | 4 | 3 | 1 | 206 |
| 64 | 5 | R2 | END POST | E | 10 | S | | | | | | 13.500 | | 20.000 | | | | | | | | | | 3 | 11 | 3 | 9 | 250 |
| 24 | 5 | R3 | END POST | E | 20 | | | | | 5 | 3.000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 131 |
| 24 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9.000 | 3.750 | | 2 | 6.000 | | | | | | | 5 | 7 | 5 | 4 | 134 |
| 6 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 38 | 0.000 | | | | | | | | | | | | | 38 | 0 | 38 | 0 | 238 |
| 26 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 9 | 3.000 | | | | | | | | | | | | | 9 | 3 | 9 | 3 | 251 |
| 6 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 34 | 9.000 | | | | | | | | | | | | | 34 | 9 | 34 | 9 | 217 |
| 6 | 5 | R8 | BLOCKOUT | E | 20 | | | | | 32 | 0.000 | | | | | | | | | | | | | 32 | 0 | 32 | 0 | 200 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 1627 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 1627 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 1627 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 1627 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|




BENDING DIAGRAMS

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

| | |
|---|---|
| DATE PREPARED | 10/7/2013 |
| ROUTE | I-635 |
| STATE | MO |
| DISTRICT | BR |
| SHEET NO. | 5 |
| COUNTY | PLATTE |
| JOB NO. | J412374 |
| CONTRACT ID. | |
| PROJECT NO. | |
| BRIDGE NO. | A24372 |

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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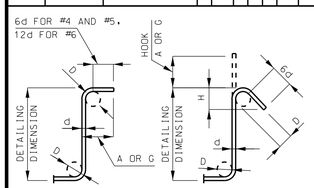
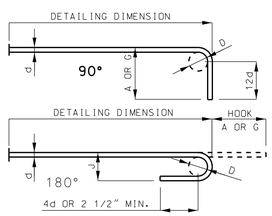



| STIRRUP HOOK DIMENSIONS | | | |
|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

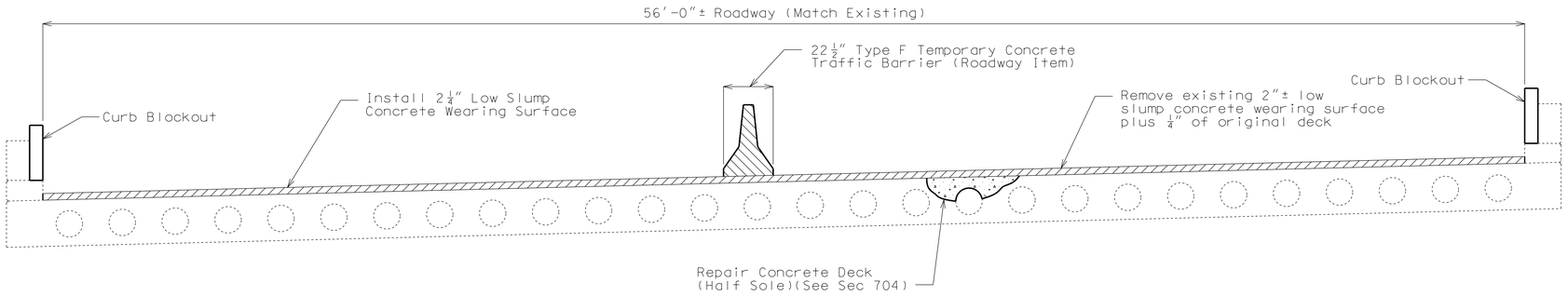
Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.

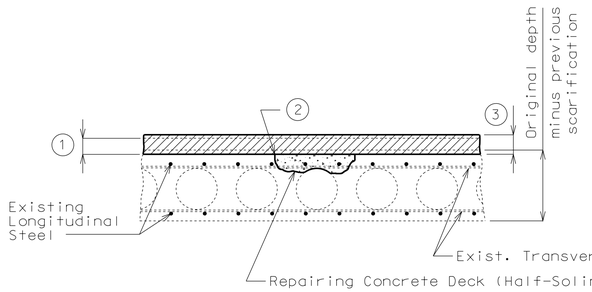
SEC/SUR 5 TWP 50N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB.EXISTING (33'-53'-33') CONTINUOUS CONCRETE VOIDED SLAB SPANS



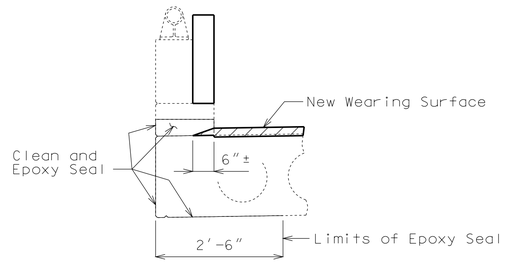

SECTION THRU SLAB



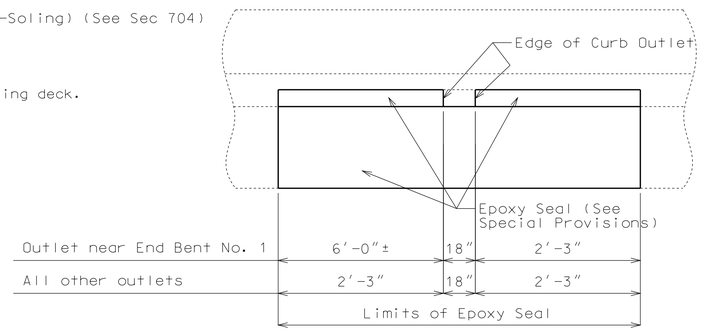

HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2¼" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS




TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET

| Estimated Quantities | | |
|---|---|---|
| Item | | Total |
| Removal of Concrete Wearing Surface | sq. foot | 6804 |
| Low Slump Concrete Wearing Surface | sq. yard | 756 |
| Curb Blockout | linear foot | 271 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 750 |
| Clean and Epoxy Seal | sq. foot | 269 |
| | | |
| | | |
| | | |
| | | |

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 7

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## REPAIRS TO BRIDGE: I-635 SBL OVER RTE. 9 WBL

STATE ROAD AT I-635/RTE. 9 INTERCHANGE
IN RIVERSIDE
STA. 48+04.25± (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Detailed Mar. 2013
Checked Mar. 2013

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DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24382

DESCRIPTION | DATE

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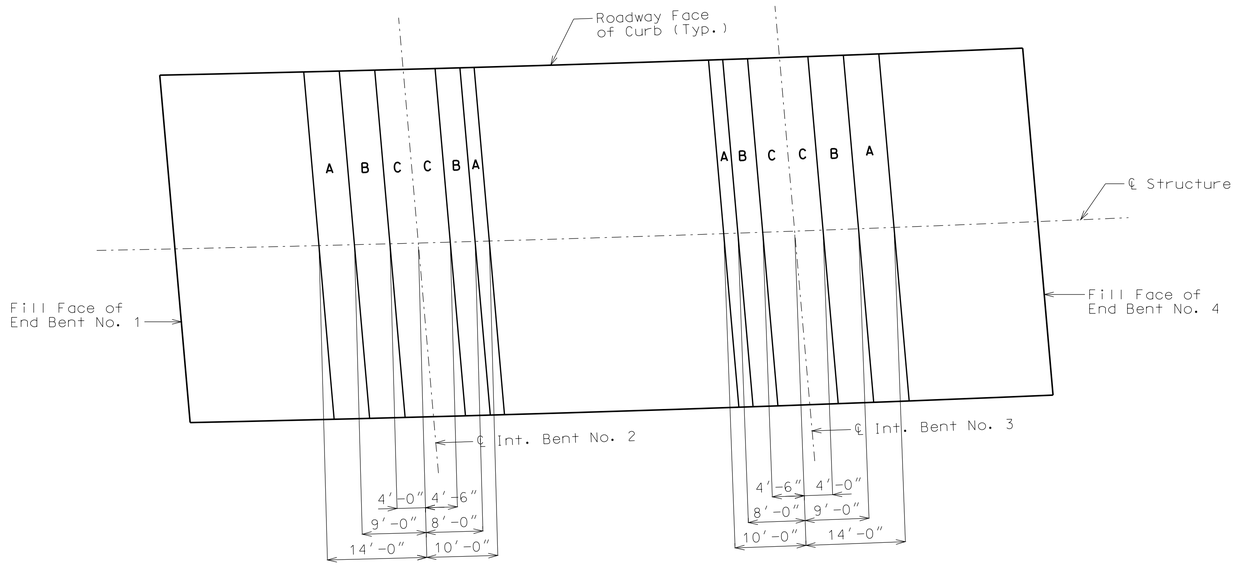
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
10/7/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A24382

| DESCRIPTION | DATE |
|---|---|
| | |

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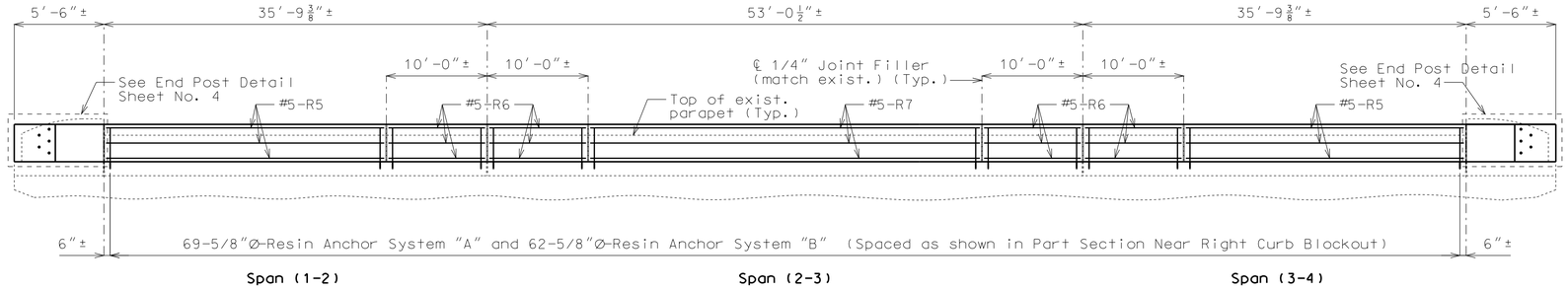
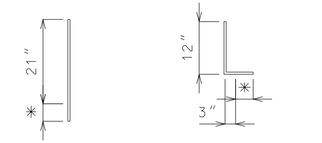
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




## SECTION NEAR LEFT CURB BLOCKOUT

Note: Longitudinal dimensions shown are arc dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

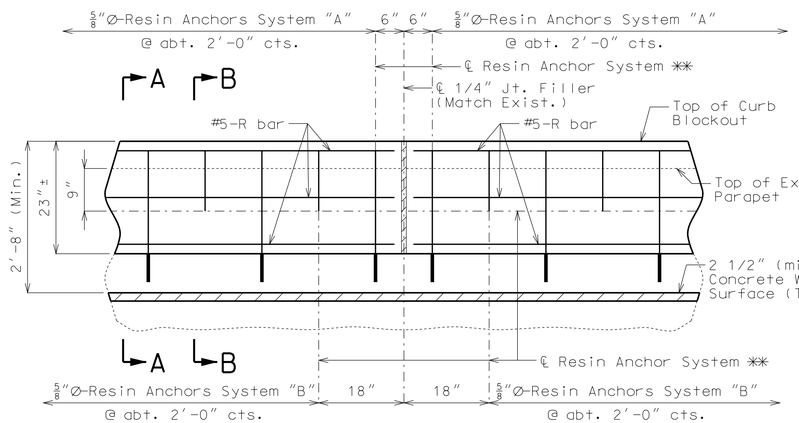



RESIN ANCHOR SYSTEM "A" (170 req'd) (Install in curb)

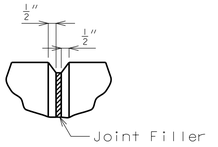
RESIN ANCHOR SYSTEM "B" (124 req'd) (Install in parapet)

* Use manufacturer's embedment length. (5" minimum embedment)

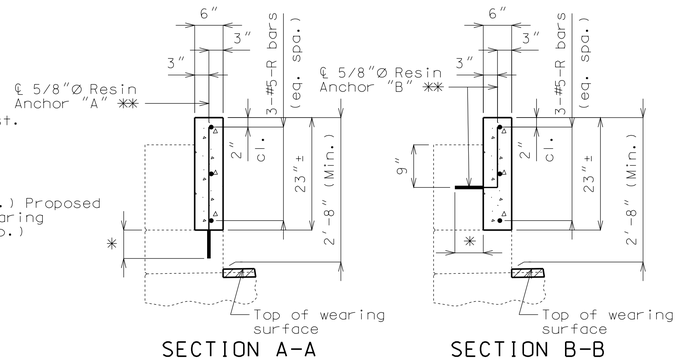
## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR RIGHT CURB BLOCKOUT




## FILLED JOINT DETAIL




SECTION A-A

SECTION B-B

## DETAILS OF RIGHT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

** Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11" for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



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ROUTE I-635 | STATE MO
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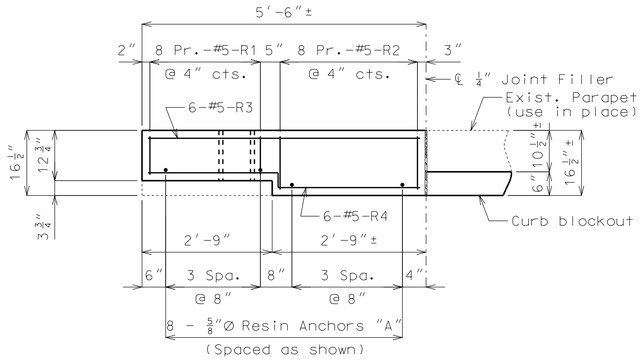
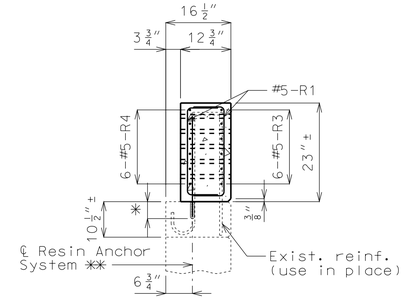
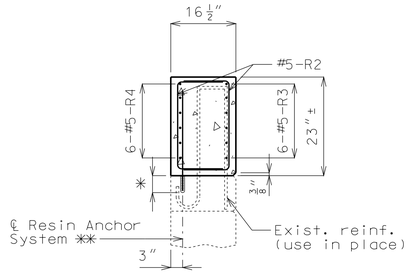



## PLAN SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.

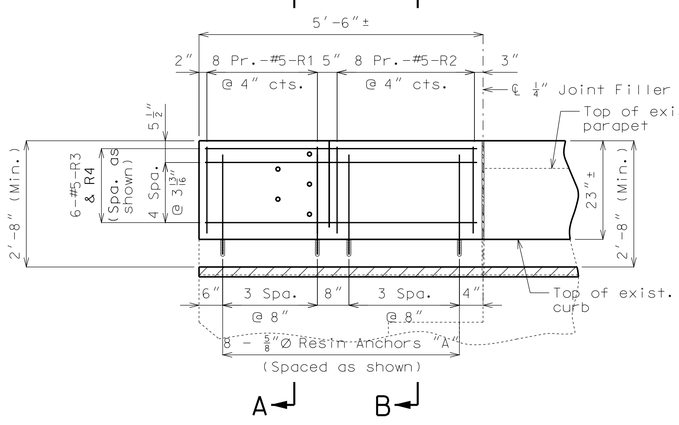



## SECTION A-A



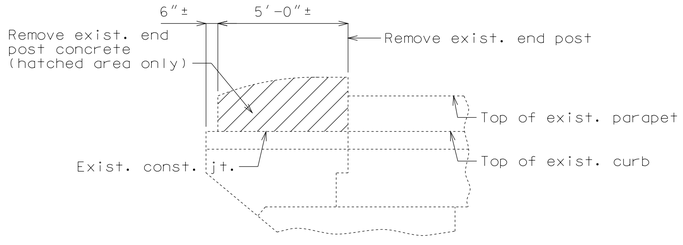

## SECTION B-B

A B




## ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




## PART ELEVATION SHOWING END POST CONCRETE REMOVAL

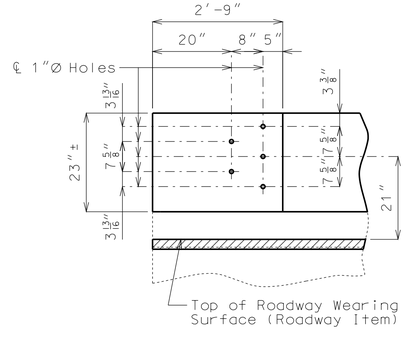
Notes:
For Details of Resin Anchors, see Sheet No. 3.

* Manufacturer's recommended embedment length. (5″ minimum embedment)

** Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




## DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24382

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

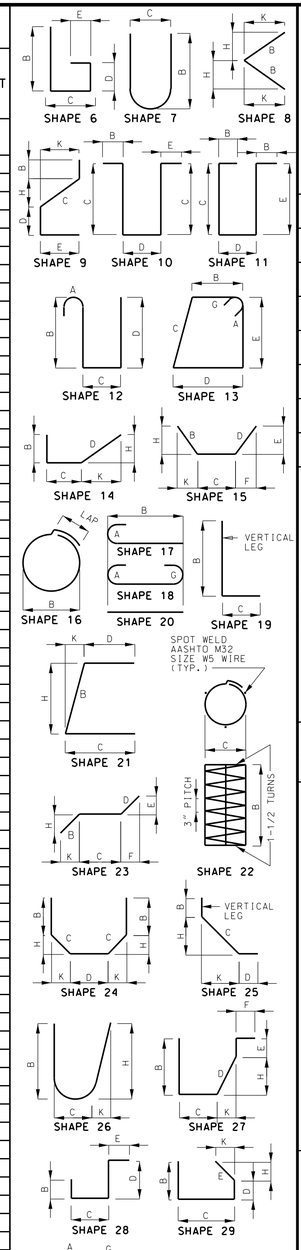
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | 5 | R1 | END POST | E | 10 | S | | | | | | 9.750 | | 20.000 | | | | | | | | | | 3 | 4 | 3 | 1 | 206 |
| 64 | 5 | R2 | END POST | E | 10 | S | | | | | | 13.500 | | 20.000 | | | | | | | | | | 3 | 11 | 3 | 9 | 250 |
| 24 | 5 | R3 | END POST | E | 20 | | | | | 5 | 3.000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 131 |
| 24 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9.000 | 3.750 | | 2 | 6.000 | | | | | | | 5 | 7 | 5 | 4 | 134 |
| 12 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 25 | 6.000 | | | | | | | | | | | | | 25 | 6 | 25 | 6 | 319 |
| 26 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 264 |
| 6 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 32 | 9.000 | | | | | | | | | | | | | 32 | 9 | 32 | 9 | 205 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 1509 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 1509 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 1509 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 1509 |

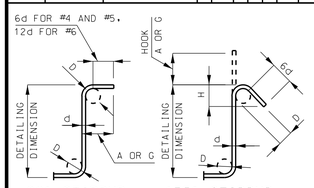
# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|



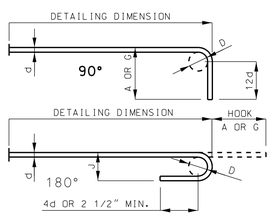

SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | |
|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24382

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

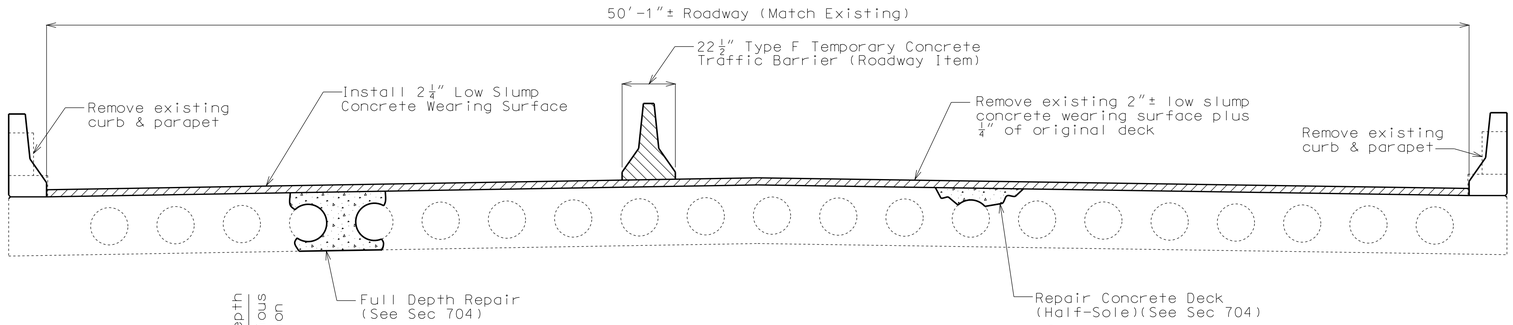
Detailed Apr. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.

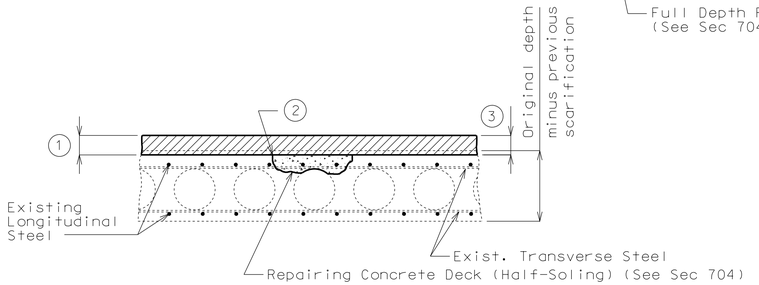
SEC/SUR 4 TWP 50N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

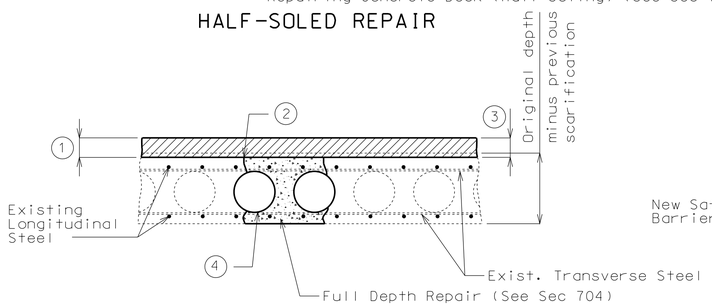
## U.I.P. & REHAB. EXISTING (35'-70'-38') CONTINUOUS CONCRETE VOIDED SLAB SPANS




SECTION THRU SLAB



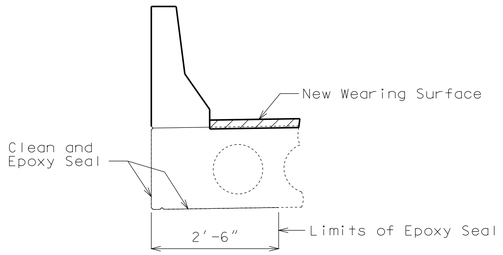

HALF-SOLED REPAIR



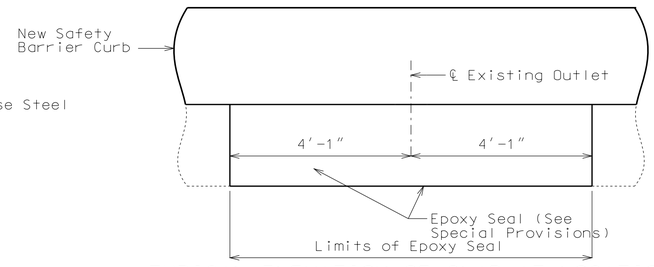

FULL DEPTH REPAIR

1. Remove existing wearing surface.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2¼" (min.) Low Slump Concrete Wearing Surface
4. Reform existing weephole, if encountered.

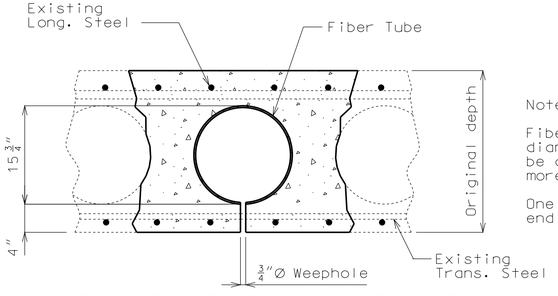
DECK REPAIR DETAILS




TYPICAL SECTION OF SLAB AT LOCATION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL




TYPICAL ELEVATION OF SLAB AT LOCATION OF EXISTING CURB OUTLET




SECTION SHOWING VOID TUBE REPLACEMENT

Notes:

Fiber tubes for producing voids shall have an outside diameter of 15¾" and a wall thickness of 0.30" and shall be anchored to joists carrying the floor form at not more than 4'-0" centers.

One ¾"Ø Weephole shall be provided at 2" from each end of each new void.

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Safety Barrier Curb) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## Estimated Quantities

| | Item | | Total |
|---|---|---|---|
| | Removal of Concrete Wearing Surface | sq. foot | 7277 |
| | Curb Removal | linear foot | 323 |
| | Low Slump Concrete Wearing Surface | sq. yard | 809 |
| * | Safety Barrier Curb | linear foot | 323 |
| | Repairing Concrete Deck (Half-Soling) | sq. foot | 550 |
| | Full Depth Repair | sq. foot | 250 |
| | Clean and Epoxy Seal | sq. foot | 599 |
| | Cored Slab Drains | each | 2 |

* Safety Barrier Curb shall be cast-in-place option or slip form option.

## REPAIRS TO BRIDGE: RTE. I-635 SBL OVER HIGH DRIVE

STATE ROAD NORTH OF RTE. 9

IN RIVERSIDE

STA. 64+95.11± (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

Detailed Mar. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.



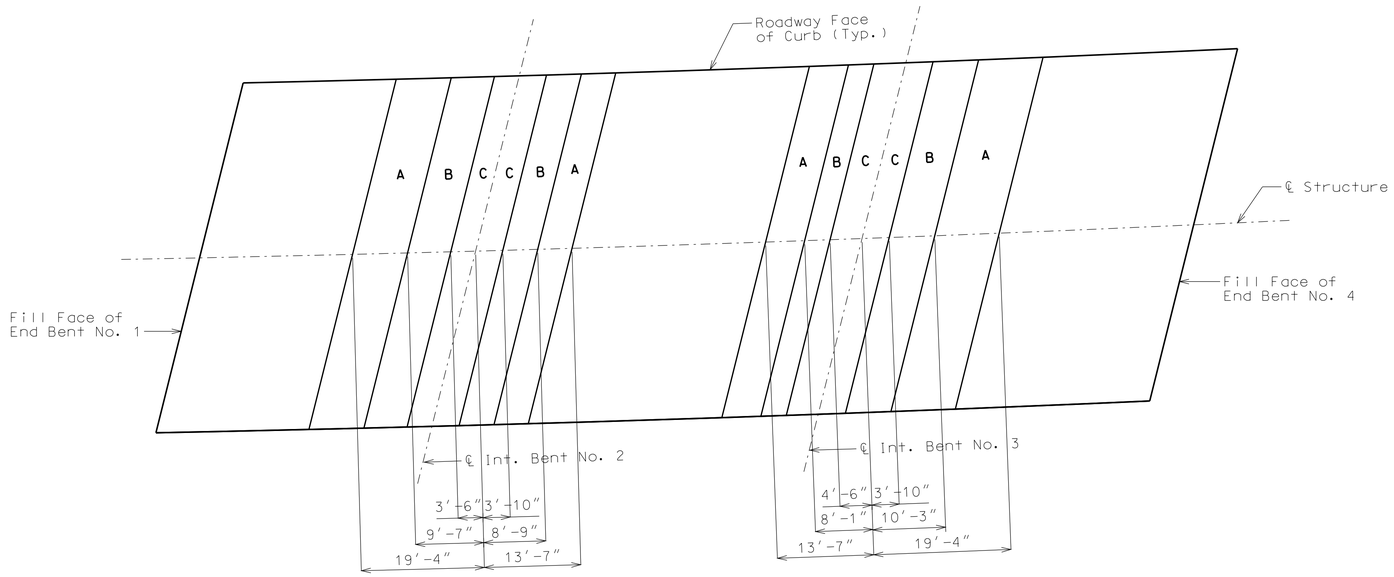
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24842

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Full Depth Repair.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
9/24/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A24842

| DESCRIPTION | DATE |
|---|---|

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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Detailed Apr. 2013
Checked Apr. 2013

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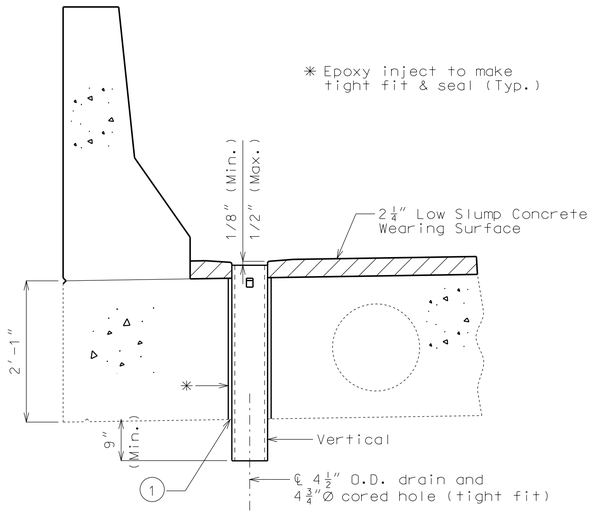
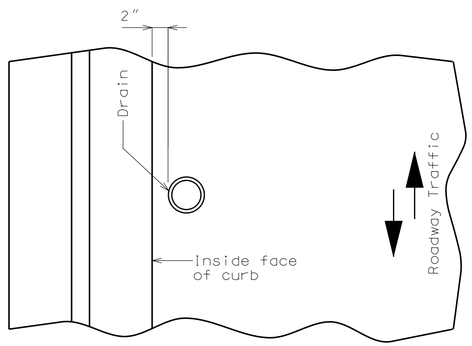
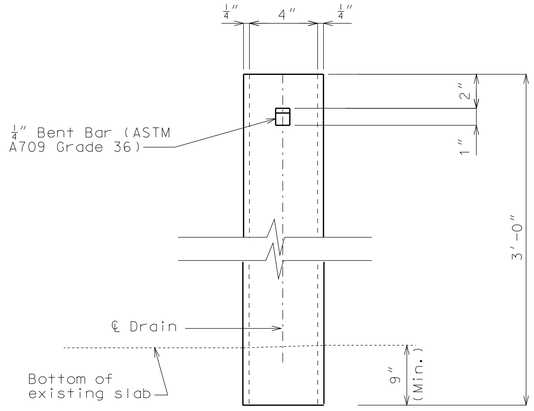



PART SECTION NEAR DRAIN

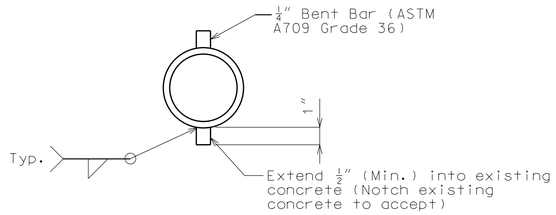
(1) Use backer rod around drain @ bottom of slab and epoxy inject for the top




PART PLAN OF SLAB AT DRAIN




ELEVATION OF DRAIN




PLAN OF DRAIN

SLAB DRAIN DETAILS

Notes:

Slab drains may be fabricated from 1/4" structural steel tubing ASTM A500 or A501.

Locate drains in slab by dimensions shown in Part Section Near Drain.

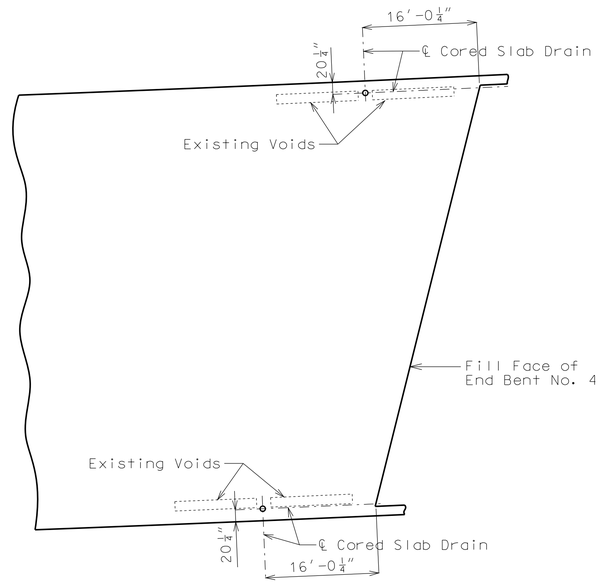
The drains shall be galvanized in accordance with ASTM A123.

Shop drawings will not be required for the slab drains.

Cost of cored slab drains complete in place will be considered completely covered by the contract unit price for Cored Slab Drains.

Holes in slab for slab drains shall be cored. Percussion drilling will not permitted.

Drains shall be inserted through slab such that damage to galvanized coating is minimized.




PART PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013

ROUTE I-635 | STATE MO

DISTRICT BR | SHEET NO. 3

COUNTY PLATTE

JOB NO. J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A24842

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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Detailed Apr. 2013
Checked Apr. 2013

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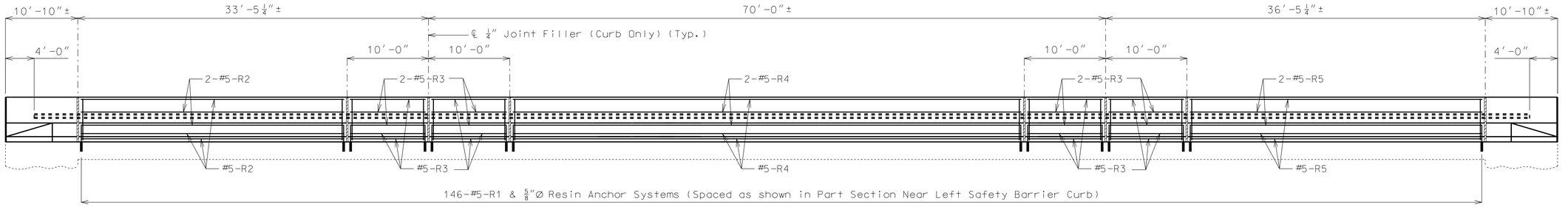



Note:

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

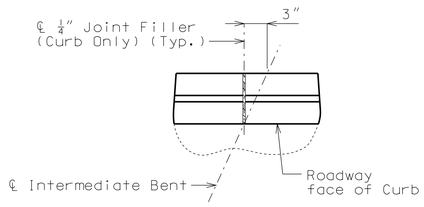
## SECTION NEAR LEFT SAFETY BARRIER CURB

(Right Safety Barrier Curb similar)

Notes:

Longitudinal dimensions shown are arc dimensions.

Low Slump Concrete Wearing Surface not shown for clarity.




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

Notes:

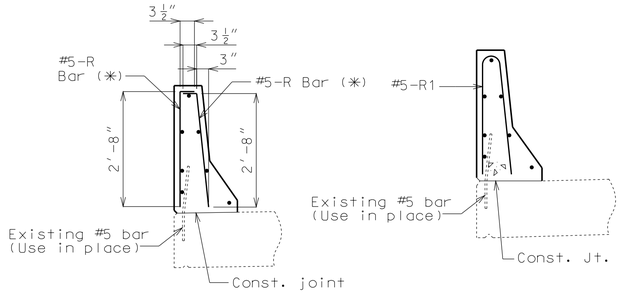
388-5/8″Ø Resin Anchor required (length = 2′-3″)

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

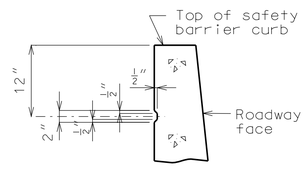
The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

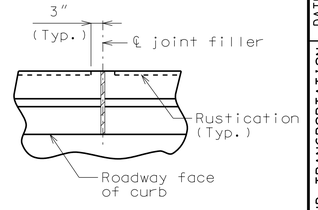



## R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)




## PART SECTION SHOWING RUSTICATION DETAILS




## PART PLAN SHOWING SAFETY BARRIER CURB JOINT

Notes:

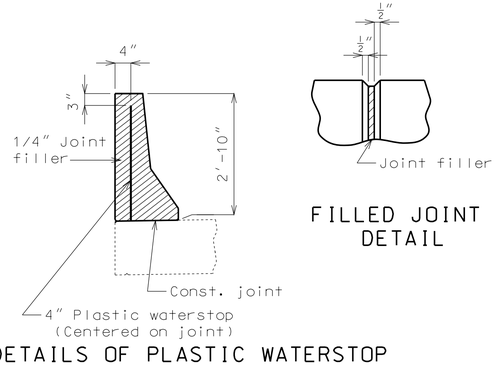
Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a 1/2″ radius or a 3/4″ bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.



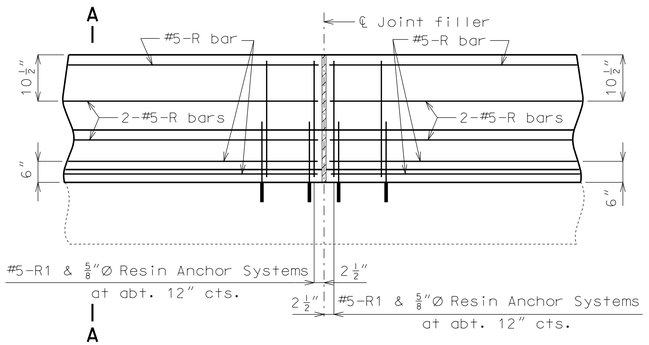

## DETAILS OF PLASTIC WATERSTOP

## FILLED JOINT DETAIL

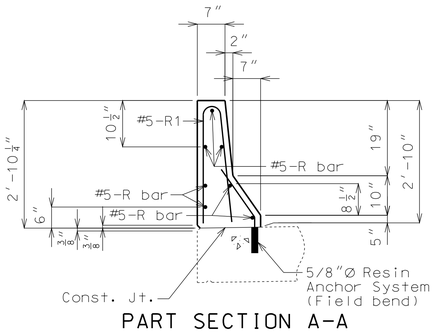
Notes:

Plastic waterstop shall be placed in all safety barrier curb filled joints, except structures with superelevation, use on all lower safety barrier curb joints only.

Cost of plastic waterstop, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.




## PART SECTION NEAR LEFT SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)




## PART SECTION A-A

Notes:

Use a minimum lap of 2′-11″ for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.50 sq. ft.



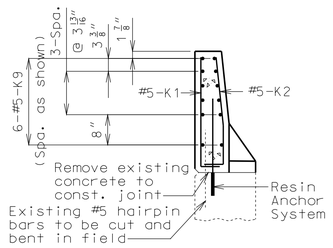
DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24842

DESCRIPTION | DATE

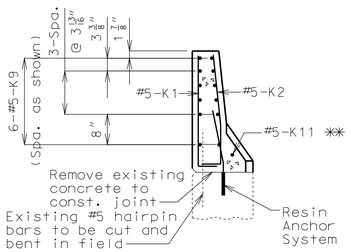
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



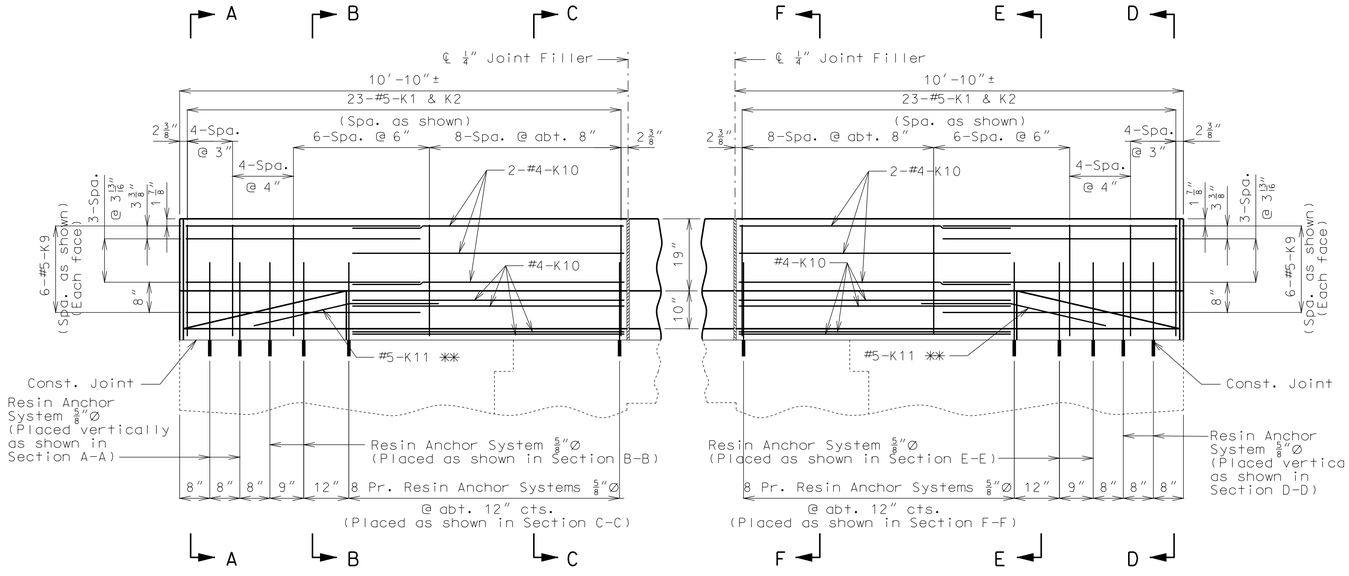
Detailed Apr. 2013
Checked Apr. 2013




SECTION A-A

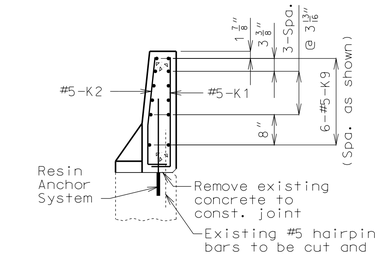



SECTION B-B

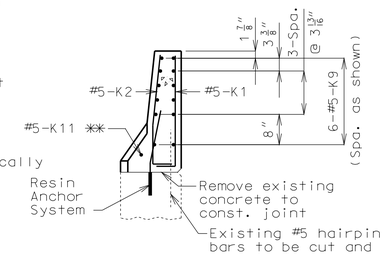



ELEVATION ELEVATION

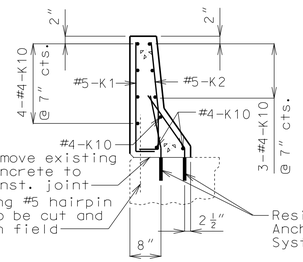
** Fit bar to follow transition face of curb.



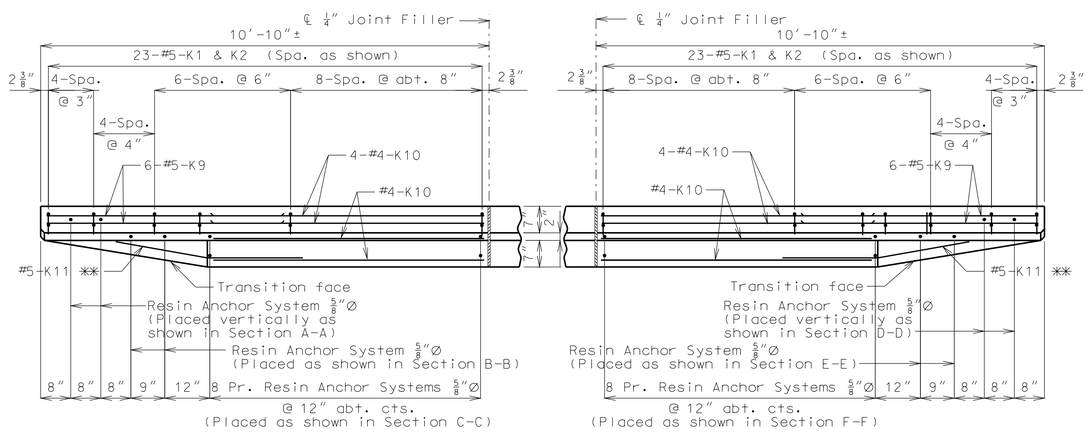

SECTION D-D



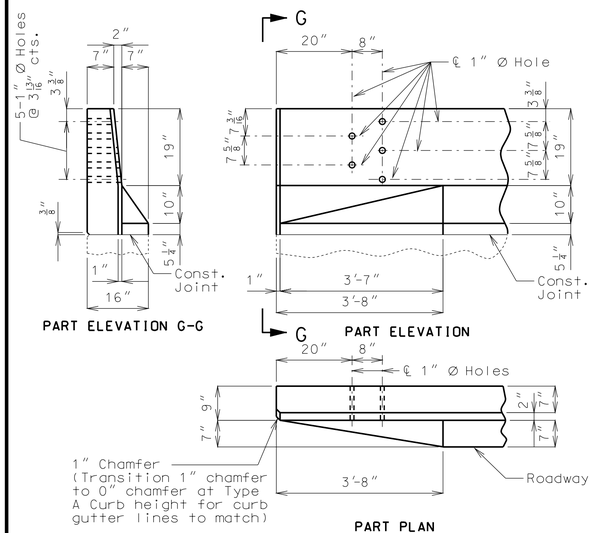

SECTION E-E




SECTION C-C




PLAN PLAN




DETAILS OF GUARD RAIL ATTACHMENT

Notes:

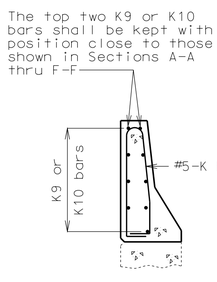
Use a minimum lap of 2'-0" between K9 and K10 bars.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

For Resin Anchor Notes, see Sheet No. 4.

# DETAILS OF SAFETY BARRIER CURB AT END BENTS

(Left barrier curb shown; right barrier curb similar)




(K3 or K4 thru K8 bars not shown for clarity)

K1-K2 BAR PERMISSIBLE ALTERNATE SHAPE (***)

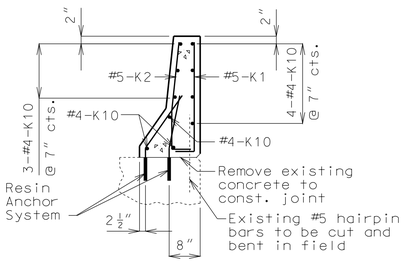
(***) The K1 and K2 bar combination may be furnished as one bar as shown, at the contractor's option.




SECTION D-D




SECTION E-E




SECTION F-F

Detailed Apr. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.



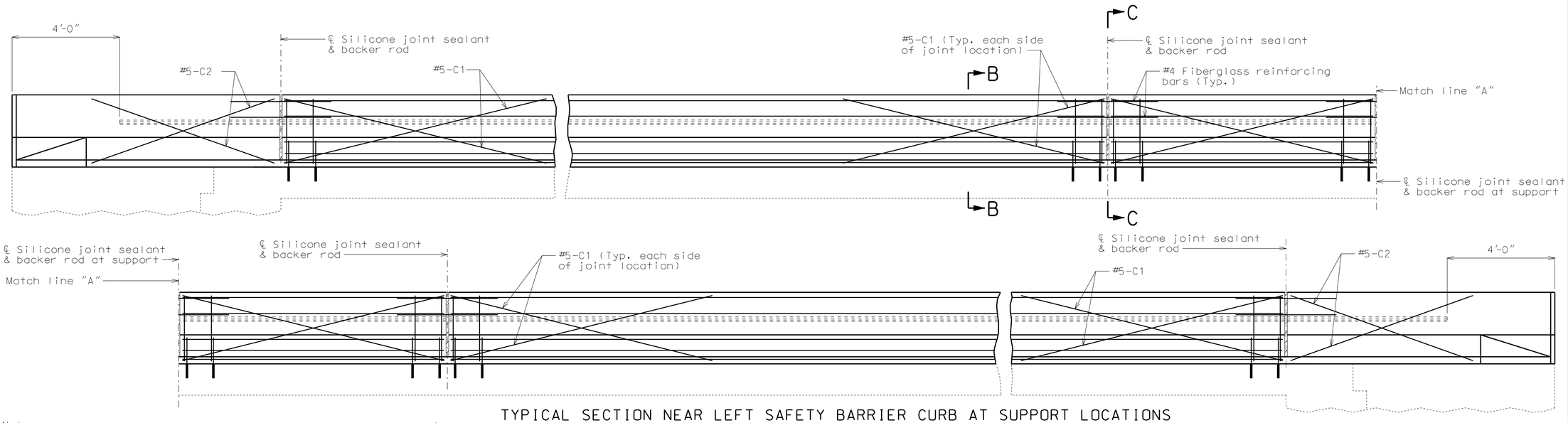
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24842

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.




## TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

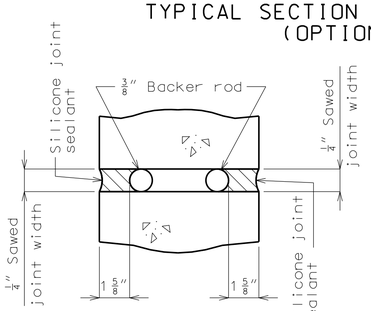
Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.




SECTION A-A

Notes:

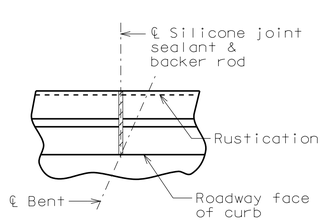
Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Plastic waterstop shall not be used with slip-form option.

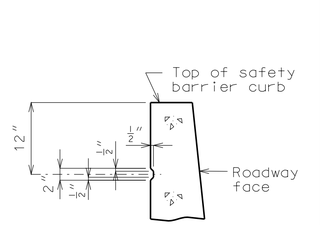
C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

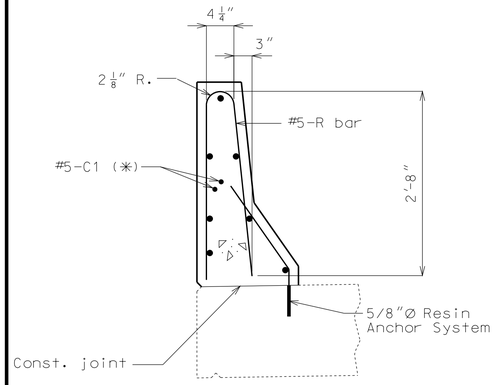



PART PLAN SHOWING SAFETY BARRIER CURB JOINT




PART SECTION SHOWING RUSTICATION DETAILS

RUSTICATION DETAIL



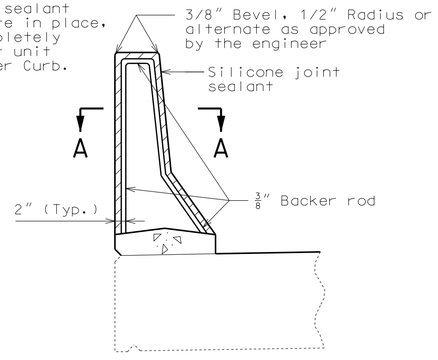

PART SECTION B-B

Note:

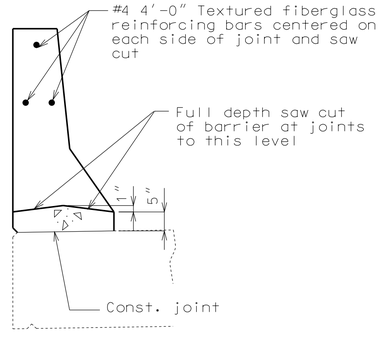
(✳) Each side of joint location.

Note:

Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.




SECTION THRU JOINT




PART SECTION C-C

## OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

(Left barrier curb shown, right barrier curb similar.)

Detailed Apr. 2013
Checked Apr. 2013

Note: This drawing is not to scale. Follow dimensions.



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24842

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

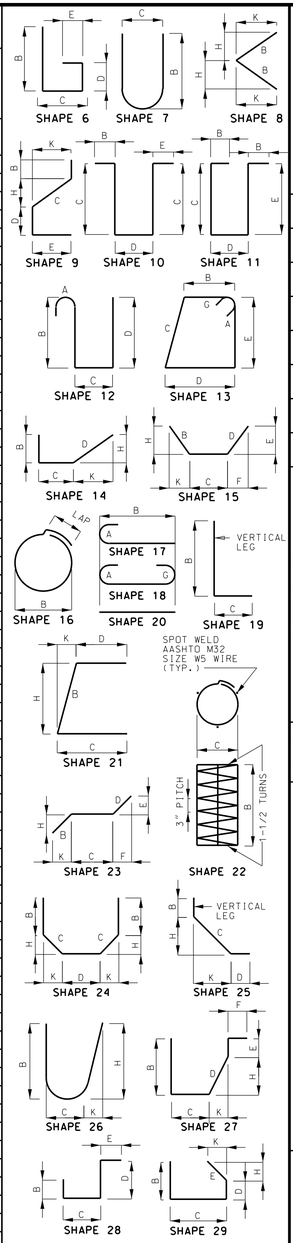
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

# BILL OF REINFORCING STEEL

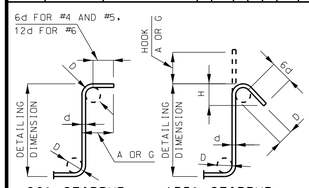
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BARRIER CURB | | | | | | | | | | | | | | | | | | | | | | | | | |
| 92 | 5 | K1 | BARRIER CURB | E | 19 | S | | | | 2 | 7.000 | 5.125 | | | | | | | | | | | | 3 | 0 | 2 | 11 | 280 |
| 92 | 5 | K2 | BARRIER CURB | E | 14 | S | | | | | 5.125 | 13.125 | | 18.000 | | | | | | 2.000 | | 17.875 | | 3 | 0 | 2 | 11 | 280 |
| 48 | 5 | K9 | BARRIER CURB | E | 20 | | | | | 5 | 7.000 | | | | | | | | | | | | | 5 | 7 | 5 | 7 | 280 |
| 42 | 4 | K10 | BARRIER CURB | E | 20 | | | | | 7 | 0.000 | | | | | | | | | | | | | 7 | 0 | 7 | 0 | 196 |
| 4 | 5 | K11 | BARRIER CURB | E | 8 | | | | | 2 | 2.125 | | | | | | | | | 2 | 2.000 | 2.375 | | 4 | 4 | 4 | 4 | 18 |
| 292 | 5 | R1 | BARRIER CURB | E | 26 | | | | | 2 | 8.000 | 4.250 | | 2 | 8.125 | | | | | 2 | 8.000 | 3.000 | | 5 | 6 | 5 | 6 | 1675 |
| 14 | 5 | R2 | BARRIER CURB | E | 20 | | | | | 23 | 2.000 | | | | | | | | | | | | | 23 | 2 | 23 | 2 | 338 |
| 58 | 5 | R3 | BARRIER CURB | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 590 |
| 14 | 5 | R4 | BARRIER CURB | E | 20 | | | | | 49 | 9.000 | | | | | | | | | | | | | 49 | 9 | 49 | 9 | 726 |
| 14 | 5 | R5 | BARRIER CURB | E | 20 | | | | | 26 | 2.000 | | | | | | | | | | | | | 26 | 2 | 26 | 2 | 382 |
| 40 | 5 | C1 | SLIP FORM | E | 20 | | | | | 10 | 0.000 | | | | | | | | | | | | | 10 | 0 | 10 | 0 | 417 |
| 8 | 5 | C2 | SLIP FORM | E | 20 | | | | | 7 | 4.000 | | | | | | | | | | | | | 7 | 4 | 7 | 4 | 61 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 196 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 5047 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 5243 |
| | | | Safety Barrier Curb | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 196 |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 4569 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 4765 |
| | | | Slip Form Option | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 478 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 478 |

# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

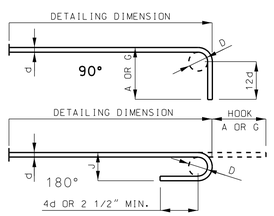



BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | |
|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | |
| BAR SIZE | D (IN.) | 90° HOOK HOOK A OR G | 135° HOOK HOOK A OR G | 135° HOOK APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| | | ALL GRADES | | |
| BAR SIZE | D (IN.) | 180° HOOKS A OR G | 180° HOOKS J | 90° HOOKS A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #4-K10 & #5-R3 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 9/24/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A24842

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

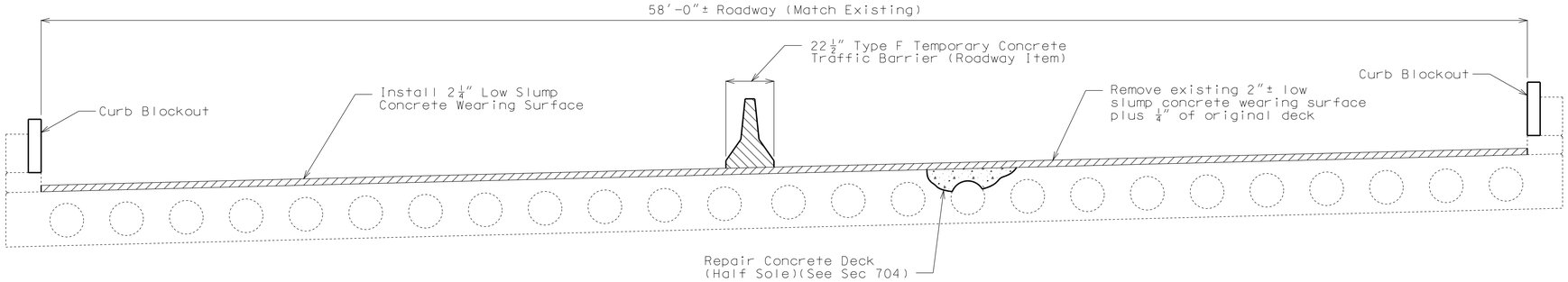
Detailed May 2013
Checked May 2013

Note: This drawing is not to scale. Follow dimensions.

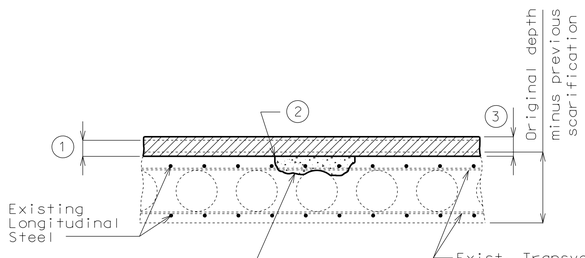
SEC/SUR 4 TWP 50N RGE 33W

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## U.I.P. & REHAB.EXISTING (49'-70'-58') CONTINUOUS CONCRETE VOIDED SLAB SPANS



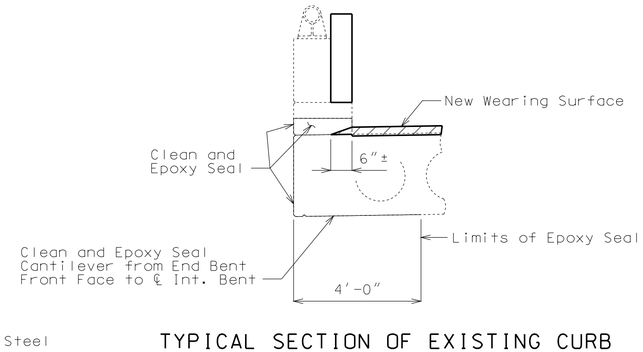

SECTION THRU SLAB



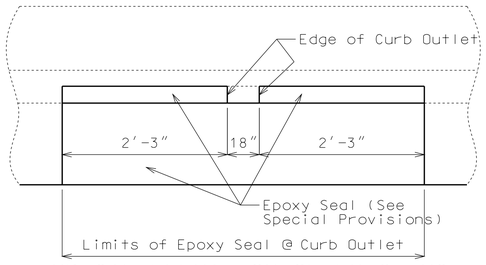

HALF-SOLED REPAIR

1. Remove existing wearing surface plus 1/4" of existing deck.
2. One inch vertical side shall be established outside the deteriorated area. See Sec 704.
3. 2¼" (min.) for Low Slump Concrete Wearing Surface

DECK REPAIR DETAILS




TYPICAL SECTION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL




TYPICAL ELEVATION OF EXISTING CURB SHOWING OUTLET

| Estimated Quantities | | |
|---|---|---|
| Item | | Total |
| Removal of Concrete Wearing Surface | sq. foot | 10,413 |
| Low Slump Concrete Wearing Surface | sq. yard | 1157 |
| Curb Blockout | linear foot | 391 |
| Repairing Concrete Deck (Half-Soling) | sq. foot | 700 |
| Clean and Epoxy Seal | sq. foot | 1432 |
| | | |
| | | |
| | | |
| | | |

## General Notes:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Bridge Deck Rating = 6

Design Unit Stresses:
Class B-1 Concrete (Curb Blockout) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:
Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain steel and 30 diameters for deformed bars, unless otherwise noted.

## REPAIRS TO BRIDGE: I-635 NBL OVER HIGH DRIVE

STATE ROAD NORTH OF RTE. 9

IN RIVERSIDE

STA. 64+67.15± (MATCH EXISTING)

| |
|---|
| STD. 617.10 |
| STD. 617.20 |
| STD. 706.35 |

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DATE PREPARED 10/7/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| BR | 1 |

COUNTY PLATTE

JOB NO. J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A25762

| DATE | DESCRIPTION |
|---|---|
| | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.


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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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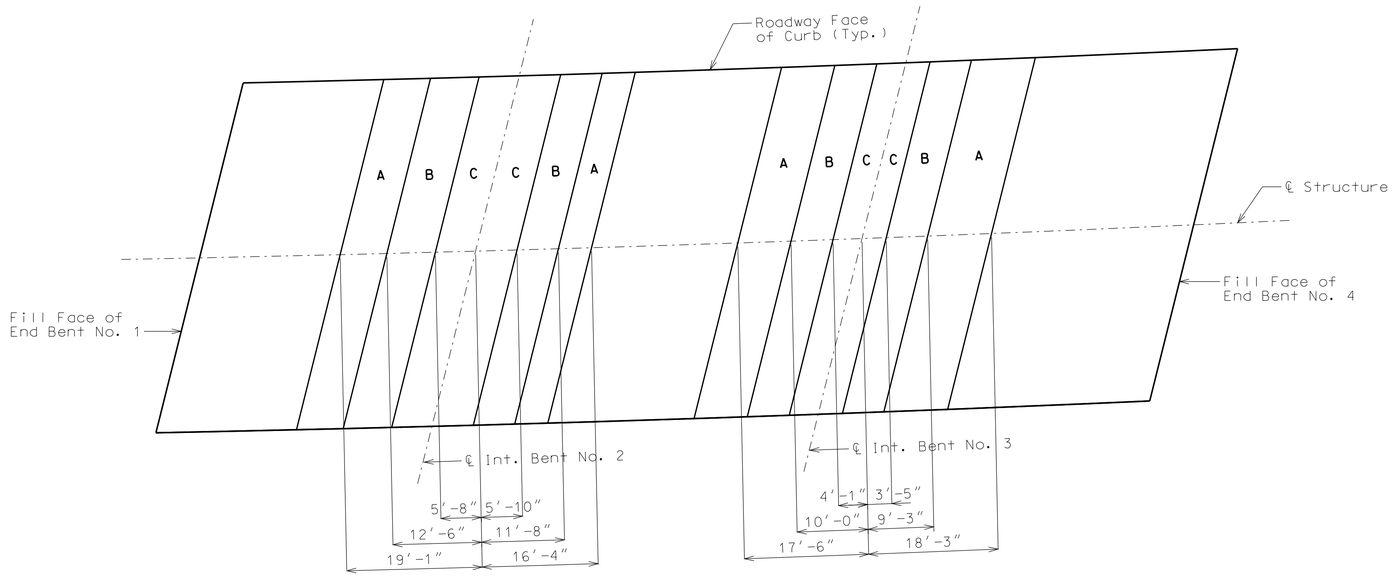
Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.




PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

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10/7/2013

| ROUTE | STATE |
|---|---|
| I-635 | MO |
| DISTRICT | SHEET NO. |
| BR | 2 |

COUNTY
PLATTE

JOB NO.
J412374

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A25762

| DESCRIPTION | DATE |
|---|---|
| | |

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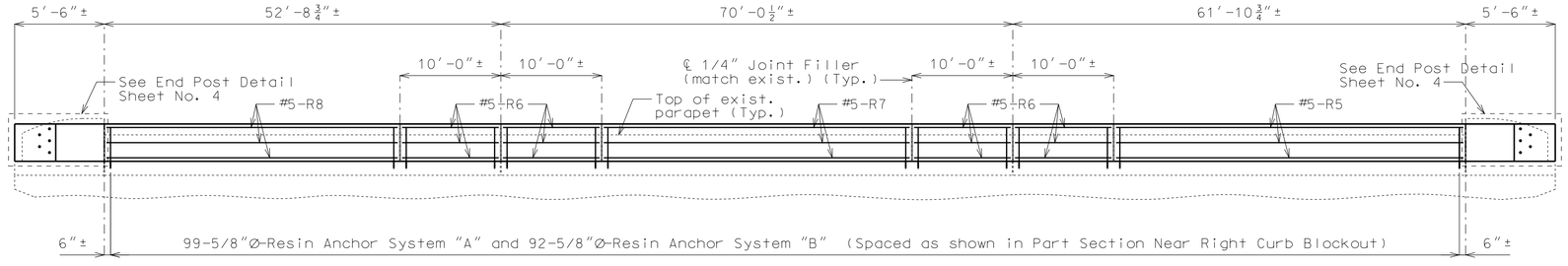
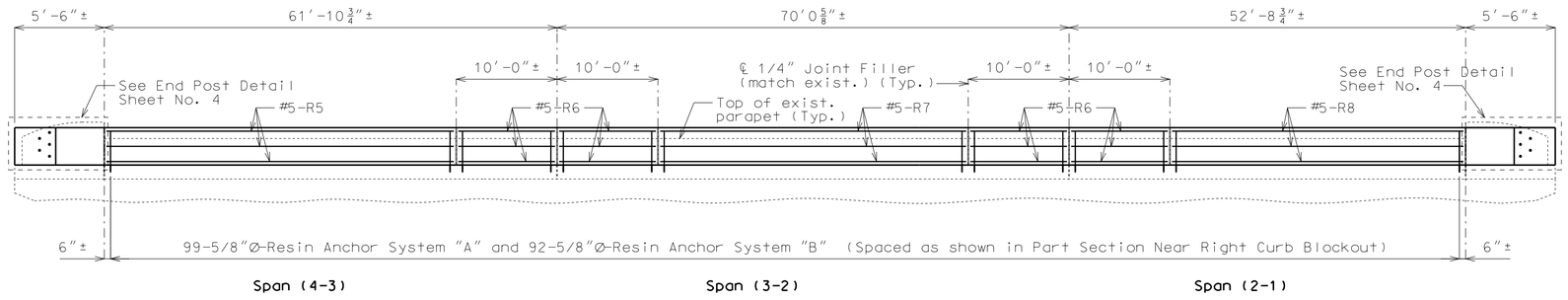


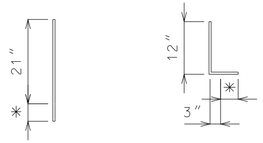

## SECTION NEAR LEFT CURB BLOCKOUT




## SECTION NEAR RIGHT CURB BLOCKOUT

Note: Longitudinal dimensions shown are arc dimensions along grade and are taken at top and ℄ of Parapet.

Bridge rail and concrete wearing surface not shown for clarity.

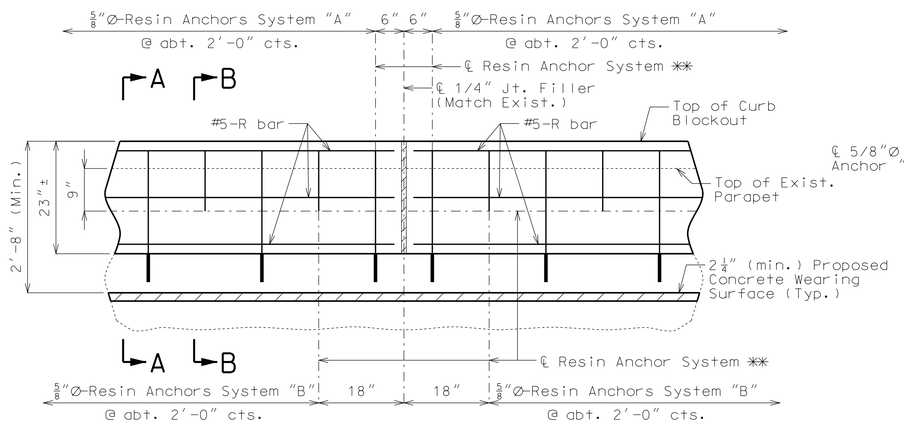



RESIN ANCHOR SYSTEM "A" (230 req'd) (Install in curb)

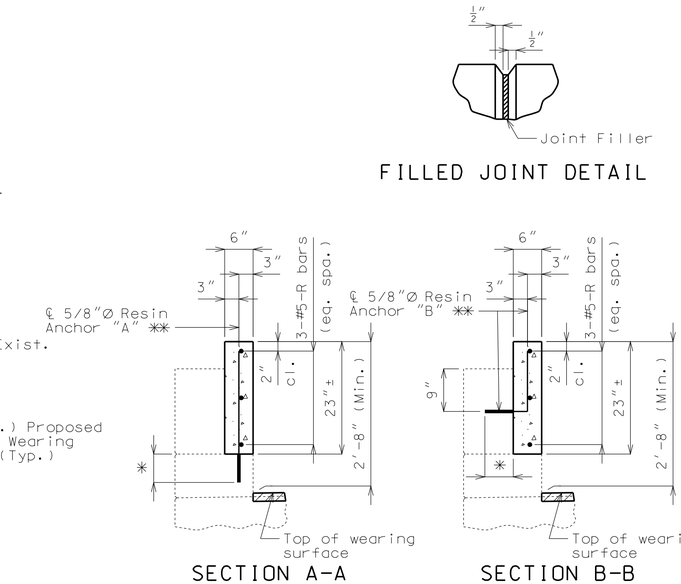
RESIN ANCHOR SYSTEM "B" (184 req'd) (Install in parapet)

* Use manufacturer's embedment length. (5″ minimum embedment)

## DETAILS OF RESIN ANCHORS




## PART SECTION NEAR RIGHT CURB BLOCKOUT




## DETAILS OF RIGHT CURB BLOCKOUT




FILLED JOINT DETAIL

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top and ℄ of parapet from end of wing to end of wing. (Match existing curb and parapet)

All exposed edges of curb blockout shall have 1/2″ radius or 3/8″ bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

** Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f′c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

Detailed Mar. 2013
Checked Mar. 2013

Note: This drawing is not to scale. Follow dimensions.



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DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A25762

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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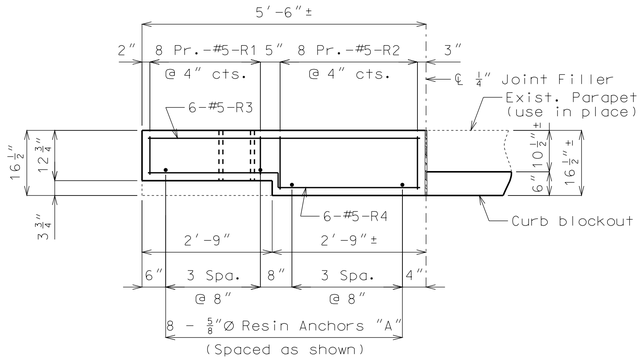
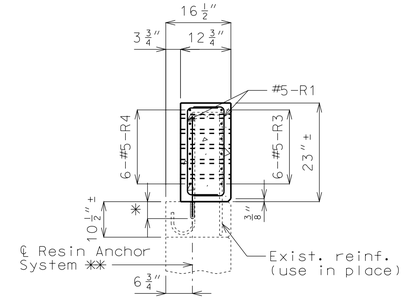
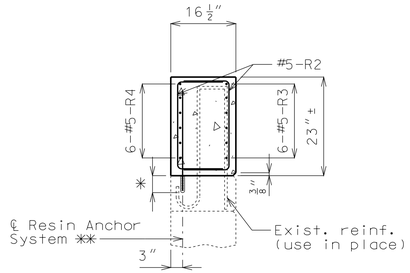



## PLAN SHOWING END POST REINFORCEMENT

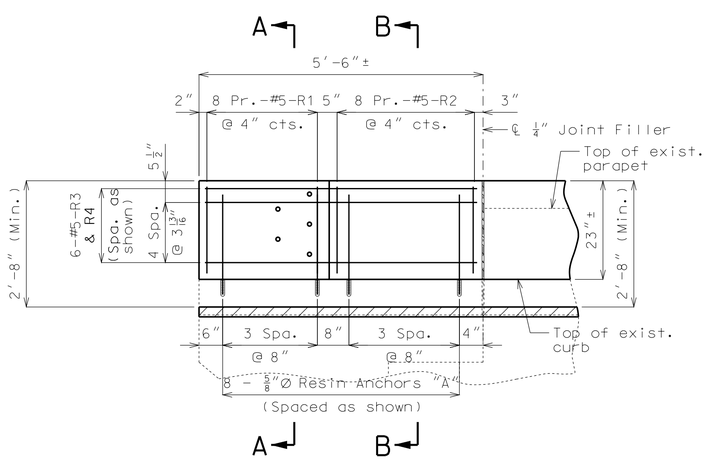
Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




## SECTION A-A

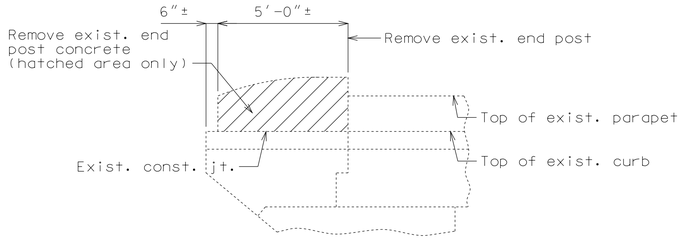



## SECTION B-B




## ELEVATION SHOWING END POST REINFORCEMENT

Note: Existing vertical reinforcement, use-in-place, not shown for clarity.




## PART ELEVATION SHOWING END POST CONCRETE REMOVAL

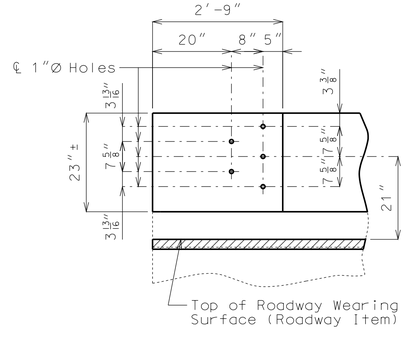
Notes:
For Details of Resin Anchors, see Sheet No. 3.

* Manufacturer's recommended embedment length. (5″ minimum embedment)

** Shift resin anchors where necessary to clear exist. reinforcement.

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout (linear foot).

Bridge rail not shown for clarity.




## DETAILS OF GUARD RAIL ATTACHMENT

# DETAILS OF END POST AT END BENTS

Detailed Mar. 2013
Checked Mar. 2013

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DATE PREPARED: 10/7/2013
ROUTE: I-635 | STATE: MO
DISTRICT: BR | SHEET NO.: 4
COUNTY: PLATTE
JOB NO.: J412374
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A25762

| DESCRIPTION | DATE |
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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JEFFERSON CITY, MO 65102
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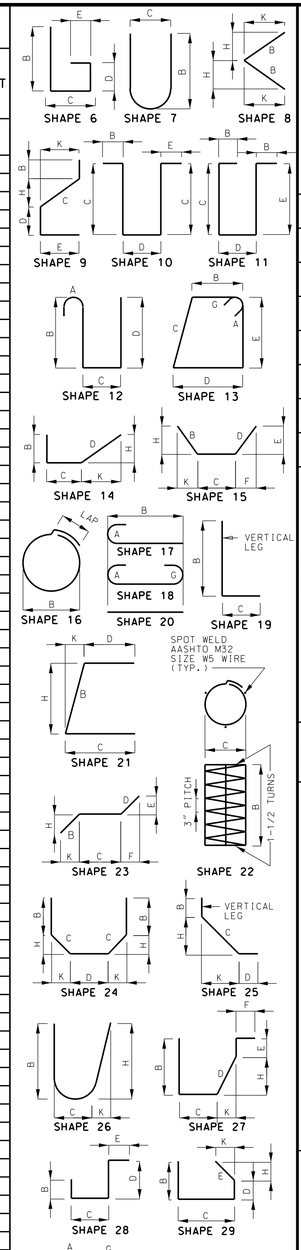
# BILL OF REINFORCING STEEL

| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BLOCKOUT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | 5 | R1 | END POST | E | 10 | S | | | | | | 9.750 | | 20.000 | | | | | | | | | | 3 | 4 | 3 | 1 | 206 |
| 64 | 5 | R2 | END POST | E | 10 | S | | | | | | 13.500 | | 20.000 | | | | | | | | | | 3 | 11 | 3 | 9 | 250 |
| 24 | 5 | R3 | END POST | E | 20 | | | | | 5 | 3.000 | | | | | | | | | | | | | 5 | 3 | 5 | 3 | 131 |
| 24 | 5 | R4 | END POST | E | 28 | S | | | | | | 2 | 9.000 | 3.750 | | 2 | 6.000 | | | | | | | 5 | 7 | 5 | 4 | 134 |
| 6 | 5 | R5 | BLOCKOUT | E | 20 | | | | | 51 | 8.000 | | | | | | | | | | | | | 51 | 8 | 51 | 8 | 323 |
| 26 | 5 | R6 | BLOCKOUT | E | 20 | | | | | 9 | 9.000 | | | | | | | | | | | | | 9 | 9 | 9 | 9 | 264 |
| 6 | 5 | R7 | BLOCKOUT | E | 20 | | | | | 49 | 9.000 | | | | | | | | | | | | | 49 | 9 | 49 | 9 | 311 |
| 6 | 5 | R8 | BLOCKOUT | E | 20 | | | | | 42 | 6.000 | | | | | | | | | | | | | 42 | 6 | 42 | 6 | 266 |
| | | | TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 1885 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | TOTAL | E | | | | | | | | | | | | | | | | | | | | | | | | 1885 |
| | | | Slab on Girder | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | E | | | | | | | | | | | | | | | | | | | | | | | | 1885 |
| | | | TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | 1885 |

# BILL OF REINFORCING STEEL

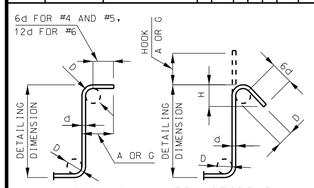
| NO. REQ'D. | MARK NO. SIZE | MARK | LOCATION | EPOXY (E) | SHAPE NO. | STIRRUP (S) | SUBSTR. (X) | VARIES (V) | NO. EACH | DIMENSIONS B FT. | B IN. | C FT. | C IN. | D FT. | D IN. | E FT. | E IN. | F FT. | F IN. | H FT. | H IN. | K FT. | K IN. | NOMINAL LENGTH FT. | NOMINAL LENGTH IN. | ACTUAL LENGTH FT. | ACTUAL LENGTH IN. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|




SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

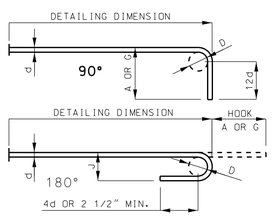
(SHAPE 35 SHALL BE A DEFORMED OR PLAIN SPIRAL BAR OR WIRE.)

BENDING DIAGRAMS




| STIRRUP HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| GRADES 40 - 50 - 60 KSI | | | | |
| BAR SIZE | D (IN.) | 90° HOOK | 135° HOOK | |
| | | HOOK A OR G | HOOK A OR G | APPROX. H |
| #4 | 2" | 4 1/2" | 4 1/2" | 3" |
| #5 | 2 1/2" | 6" | 5 1/2" | 3 3/4" |
| #6 | 4 1/2" | 12" | 8" | 4 1/2" |

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.




| END HOOK DIMENSIONS | | | | |
|---|---|---|---|---|
| BAR SIZE | D (IN.) | ALL GRADES | | |
| | | 180° HOOKS | | 90° HOOKS |
| | | A OR G | J | A OR G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 12" |
| #7 | 5 1/4" | 10" | 7" | 14" |
| #8 | 6" | 11" | 8" | 16" |
| #9 | 9 1/2" | 15" | 11 3/4" | 19" |
| #10 | 10 3/4" | 17" | 13 1/4" | 22" |
| #11 | 12" | 19" | 14 3/4" | 2'-0" |
| #14 | 18 1/4" | 2'-3" | 21 3/4" | 2'-7" |

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

**NOTE:**

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

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DATE PREPARED 10/7/2013
ROUTE I-635 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PLATTE
JOB NO. J412374
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A25762

DESCRIPTION | DATE

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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Checked Apr. 2013

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