

GENE FIELD RD.  
 A.A.D.T. - 2024 = 7,186  
 A.A.D.T. - 2044 = 8,766  
 D.H.V. = 8.3%  
 T = 3.9%  
 V = 30 M.P.H.  
 D = 54% (EB) / 46% (WB)  
 FUNCTIONAL CLASSIFICATION-MINOR ARTERIAL

I - 29

A.A.D.T. - 2024 = 37,821

A.A.D.T. - 2044 = 51,058

D.H.V. = 7.5%

T = 29.3%

V = 70 M.P.H.

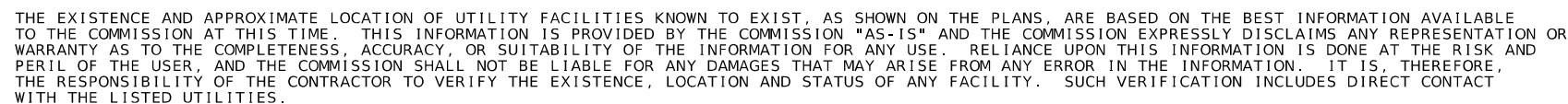
D = 49% (NB) / 51% (SB)

FUNCTIONAL CLASSIFICATION - INTERSTATE

|                              |         |          |         |     |         |
|------------------------------|---------|----------|---------|-----|---------|
| BUILDINGS AND STRUCTURES     |         | EXISTING |         | NEW |         |
| GUARD RAIL                   |         |          |         |     |         |
| GUARD CABLE                  |         |          |         |     |         |
| CONCRETE RIGHT-OF-WAY MARKER |         |          |         |     |         |
| STEEL RIGHT-OF-WAY MARKER    |         |          |         |     |         |
| LOCATION SURVEY MARKER       |         |          |         |     |         |
| UTILITIES                    |         |          |         |     |         |
| FIBER OPTICS                 | — FO —  |          | — FO —  |     | — FO —  |
| OVERHEAD CABLE TV            | — OTV — |          | — OTV — |     | — OTV — |
| UNDERGROUND CABLE TV         | — UTV — |          | — UTV — |     | — UTV — |
| OVERHEAD TELEPHONE           | — OT —  |          | — OT —  |     | — OT —  |
| UNDERGROUND TELEPHONE        | — UT —  |          | — UT —  |     | — UT —  |
| OVERHEAD POWER               | — OE —  |          | — OE —  |     | — OE —  |
| UNDERGROUND POWER            | — UE —  |          | — UE —  |     | — UE —  |
| SANITARY SEWER               | — S —   |          | — S —   |     | — S —   |
| STORM SEWER                  | — SS —  |          | — SS —  |     | — SS —  |
| GAS                          | — G —   |          | — G —   |     | — G —   |
| WATER                        | — W —   |          | — W —   |     | — W —   |
| MANHOLE                      |         |          | SAN     |     |         |
| FIRE HYDRANT                 |         |          | HYD     |     |         |
| WATER VALVE                  |         |          | WV      |     |         |
| WATER METER                  |         |          | WM      |     |         |
| DROP INLET                   |         |          | DI      |     |         |
| DITCH BLOCK                  |         |          |         |     |         |
| GROUND MOUNTED SIGN          |         |          |         |     |         |
| LIGHT POLE                   |         |          | SIGN    |     |         |
| H-FRAME POWER POLE           |         |          |         |     |         |
| TELEPHONE PEDESTAL           |         |          | PED     |     |         |
| CHAIN LINK                   |         |          |         |     |         |
| WOVEN WIRE                   |         |          |         |     |         |
| GATE POST                    |         |          |         |     |         |
| BENCHMARK                    |         |          | BM      |     |         |

NOTE: DASHED OR OPEN SYMBOLS INDICATE  
EXISTING FEATURES

**KEY MAP**  
LOCATION OF BUCHANAN COUNTY



| DESCRIPTION                           | SHEET<br>NUMBER |
|---------------------------------------|-----------------|
| TITLE SHEET -----                     | 1               |
| TYPICAL SECTIONS (TS) (2 SHEETS)----- | 2               |
| QUANTITIES (QU) (3 SHEETS)-----       | 3               |
| PLAN SHEET (PL)-----                  | 4               |
| PROFILE SHEET (PR)-----               | 5               |
| REFERENCE POINTS (RP)-----            | 6               |
| COORDINATE POINTS (CP)-----           | 7               |
| SPECIAL SHEETS (SS)-----              | 8-12            |
| TRAFFIC CONTROL SHEETS (TC)-----      | 13-31           |
| EROSION CONTROL SHEETS (EC)-----      | 32-33           |
| PAVEMENT MARKING & SIGNING (PM/SN)--- | 34-35           |
| CULVERT SECTIONS (CS)-----            | 36-37           |
| BRIDGE DRAWINGS (B)                   |                 |
| A9735-----                            | 1-34            |
| CROSS SECTIONS (XS)-----              | 1-13            |

|                      |      |             |
|----------------------|------|-------------|
| BEGINNING OF PROJECT | STA. | 3+05.00     |
| END OF PROJECT       | STA. | 7+50.00     |
| APPARENT LENGTH      |      | 445.00 FEET |

EQUATIONS AND EXCEPTIONS:

|                       |        |       |
|-----------------------|--------|-------|
| TOTAL CORRECTIONS     | 0.00   | FEET  |
| NET LENGTH OF PROJECT | 445.00 | FEET  |
| STATE LENGTH          | 0.084  | MILES |

|                           |            |
|---------------------------|------------|
| FOR INFORMATION ONLY      |            |
| ESTIMATED DISTURBED ACRES | 0.77 ACRES |



THIS SHEET HAS BEEN  
SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

|               |             |
|---------------|-------------|
| ROUTE<br>- 29 | STATE<br>MO |
|---------------|-------------|

|               |                |
|---------------|----------------|
| ISTRICT<br>NW | SHEET NO.<br>1 |
|---------------|----------------|

BUCHANAN

J113332

CONTRACT ID.

|             |
|-------------|
| PROJECT NO. |
|-------------|

BRIDGE NO.

[illegible]

105 WEST CAPITOL  
N CITY, MO 65102  
(1-888-275-6036)

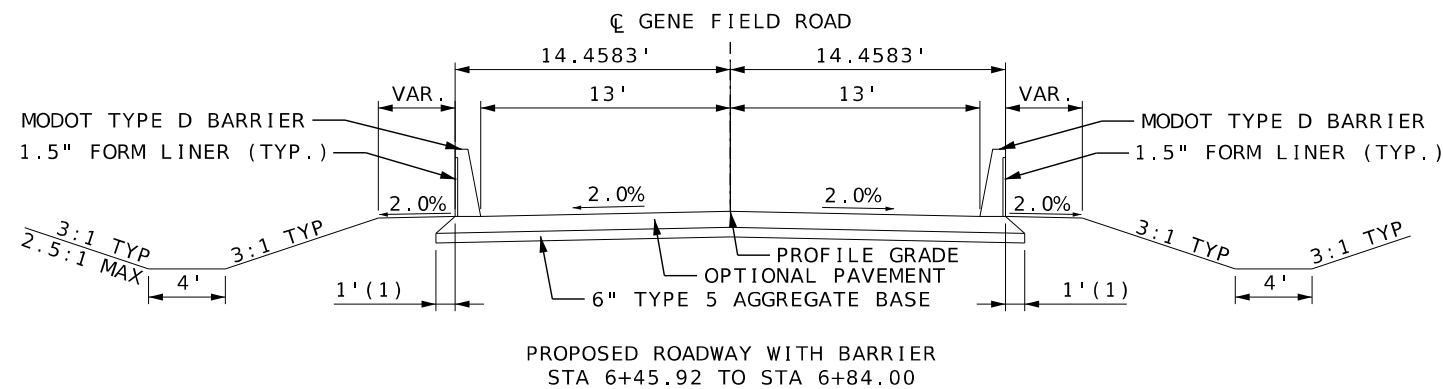
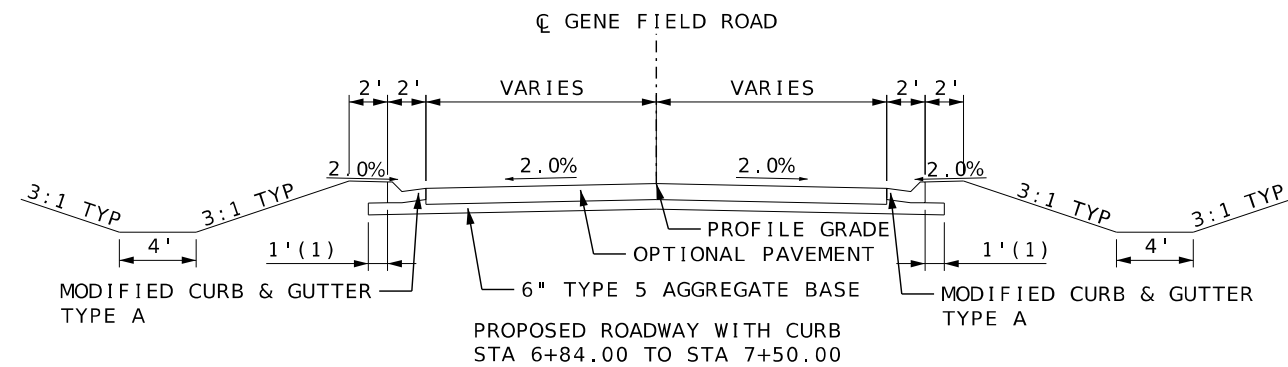


**GBA**  
301 Renner Blvd, Ste. 300  
Lenexa, KS 66219  
913.492.0400  
GBAteam.com

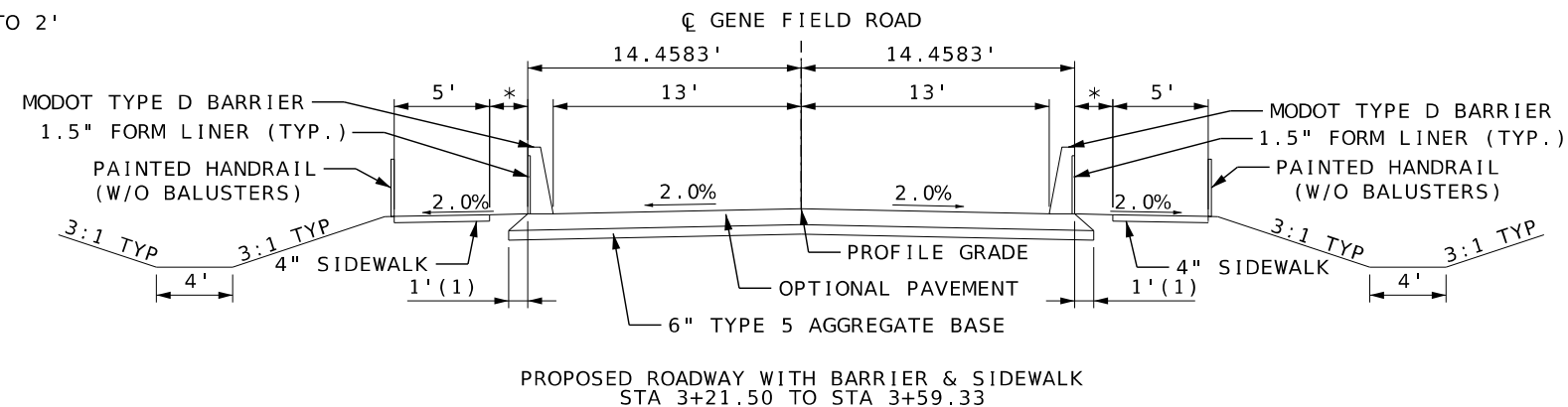
GEORGE BUTLER  
ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

ELBY P. REYNOLDS  
PROFESSIONAL  
ENGINEER  
PE-2023018931

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



\* VARIABLE 0' TO 2'

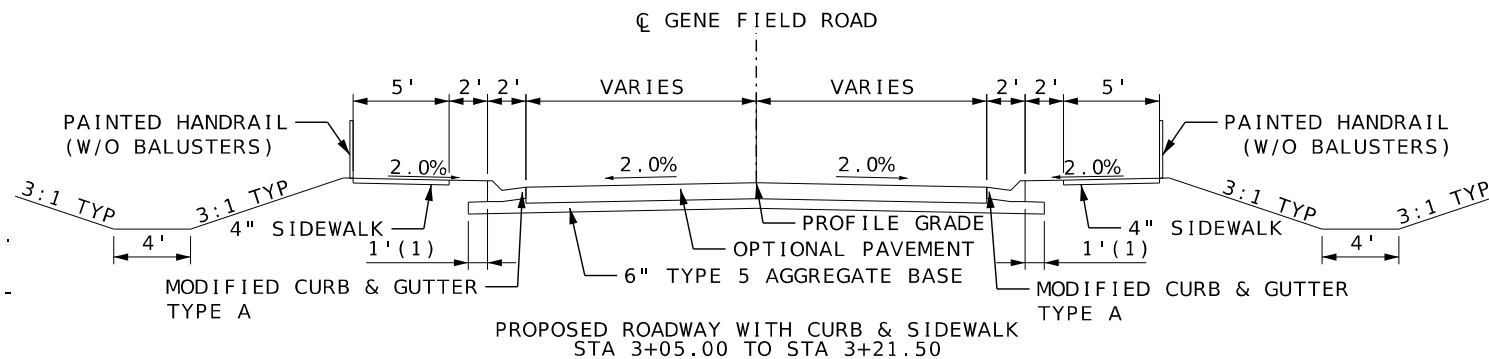


NOTE :

1. SEE CROSS SECTIONS FOR VARIATIONS.
2. MODIFIED CURB AND GUTTER TYPE A SHALL FOLLOW STD DWG 609.00R CURB AND GUTTER TYPE A (MOUNTABLE) LAYOUT WITH A 1'-3" GUTTER REPLACING THE STANDARD 2'-3" GUTTER AND MATCHING EXISTING ADJACENT CURB AND GUTTER AT THE TIE IN LOCATIONS.
2. MODIFIED CURB AND GUTTER TYPE A TO BE PAID FOR AS BID ITEM NO. 6091042 - CURB AND GUTTER TYPE A.

(1) INCIDENTAL BASE (NO DIRECT PAY)

NOT TO SCALE



OPTIONAL PAVEMENT

HMA DESIGN:  
10.0" BIT. PAVEMENT  
2.0" BP-1 PG 64-22  
8.0" BIT. BASE PG 64-22

PCCP DESIGN:  
8.5" JPCP WIDENED SLAB (15 FT. JOINTS,  
1 1/4" DOWELS)

TYPICAL SECTIONS  
SHEET 1 OF 2



THIS SHEET HAS BEEN  
SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

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

|          |           |
|----------|-----------|
| DISTRICT | SHEET NO. |
| NW       | 2         |

COUNTY  
BUCHANAN

JOB NO.  
J113332

|              |   |
|--------------|---|
| CONTRACT ID. | H |
|--------------|---|

|             |   |
|-------------|---|
| PROJECT NO. | 5 |
|-------------|---|

BRIDGE NO.

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

GBA

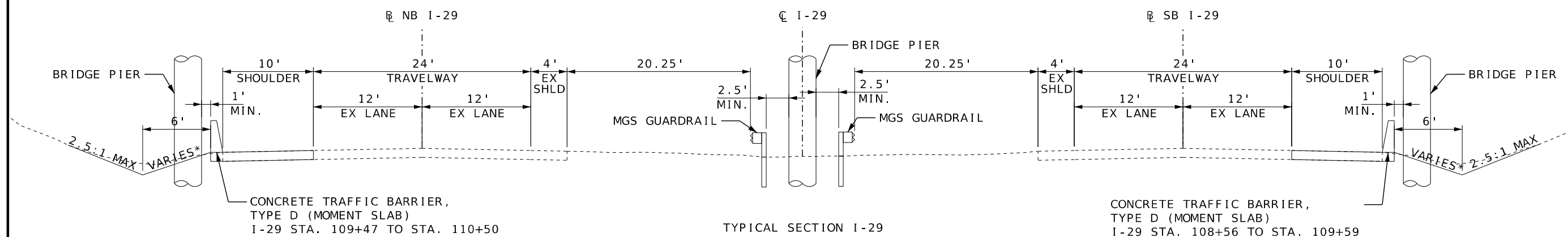
9801 Renner Blvd, Ste. 300  
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PE-2023018931

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NOT TO SCALE

[illegible]

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

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

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

|                                    |
|------------------------------------|
| ADDITIONAL MOBLIZATION FOR SEEDING |
| 1 EACH                             |

|                       |
|-----------------------|
| CLEARING AND GRUBBING |
| 1 ACRE                |

| EARTHWORK |               |               |             |                         |                            |                          |                         |               |
|-----------|---------------|---------------|-------------|-------------------------|----------------------------|--------------------------|-------------------------|---------------|
| SHEET NO. | ROADWAY       | STATION BEGIN | STATION END | CLASS A EXCAVATION (CY) | COMPACTING EMBANKMENT (CY) | EMBANKMENT IN PLACE (CY) | COMPACTING IN CUT (STA) | REMARKS       |
| 4         | GENE FIELD RD | 3+05.00       | 3+79.33     | 104                     | 103                        | 90                       | 0.8                     |               |
| 4         | GENE FIELD RD | 3+66.19       | 4+51.33     | 228                     | 26                         | 0                        | 0.9                     | WEST ABUTMENT |
| 4         | GENE FIELD RD | 5+53.51       | 6+39.06     | 201                     | 8                          | 0                        | 0.9                     | EAST ABUTMENT |
| 4         | GENE FIELD RD | 6+25.92       | 7+50.00     | 150                     | 150                        | 220                      | 1.3                     |               |
|           |               |               |             |                         |                            |                          |                         |               |
|           |               | PAY TOTALS    |             | 683                     | 287                        | 310                      | 3.9                     |               |

NO SHRINKAGE FACTOR APPLIED.

| PAVEMENT  |               |               |             |       |                        |
|-----------|---------------|---------------|-------------|-------|------------------------|
| SHEET NO. | ROADWAY       | STATION BEGIN | STATION END | SIDE  | OPTIONAL PAVEMENT (SY) |
| 4         | GENE FIELD RD | 3+05.00       | 3+59.33     | RT/LT | 151.0                  |
| 4         | GENE FIELD RD | 6+45.92       | 7+50.00     | RT/LT | 289.9                  |
|           |               |               |             |       |                        |
|           |               | PAY TOTAL     |             |       | 440.9                  |

| SHOULDER  |         |               |             |      |                                                                 |
|-----------|---------|---------------|-------------|------|-----------------------------------------------------------------|
| SHEET NO. | ROADWAY | STATION BEGIN | STATION END | SIDE | CONCRETE PAVEMENT (10.5 IN. NON-REINFORCED. 15 FT. JOINTS) (SY) |
| 4         | I-29    | 108+56.00     | 109+59.00   | RT   | 114.1                                                           |
| 4         | I-29    | 109+47.00     | 110+50.00   | LT   | 115.1                                                           |
|           |         |               |             |      |                                                                 |
|           |         | PAY TOTAL     |             |      | 229.2                                                           |

| AGGREGATE |               |               |             |       |                                           |
|-----------|---------------|---------------|-------------|-------|-------------------------------------------|
| SHEET NO. | ROADWAY       | STATION BEGIN | STATION END | SIDE  | TYPE 5 AGGREGATE FOR BASE (6" THICK) (SY) |
| 4         | GENE FIELD RD | 3+05.00       | 3+59.33     | RT/LT | 151.0                                     |
| 4         | GENE FIELD RD | 6+45.92       | 7+50.00     | RT/LT | 290.0                                     |
| 4         | I-29          | 108+56.00     | 109+59.00   | RT    | 115.0                                     |
| 4         | I-29          | 109+47.00     | 110+50.00   | LT    | 116.0                                     |
|           |               |               |             |       |                                           |
|           |               | PAY TOTAL     |             |       | 672                                       |

| SIDEWALK  |               |               |             |      |                               |                                                      |
|-----------|---------------|---------------|-------------|------|-------------------------------|------------------------------------------------------|
| SHEET NO. | ROADWAY       | STATION BEGIN | STATION END | SIDE | CONCRETE SIDEWALK, 4 IN. (SY) | SIDEWALK PAINTED HAND-RAILING WITHOUT BALUSTERS (LF) |
| 4         | GENE FIELD RD | 3+05.00       | 3+55.46     | LT   | 28.0                          | 14                                                   |
| 4         | GENE FIELD RD | 3+05.00       | 3+64.54     | RT   | 33.7                          | 24                                                   |
|           |               |               |             |      |                               |                                                      |
|           |               | PAY TOTALS    |             |      | 61.7                          | 38                                                   |

| REMOVAL OF IMPROVEMENTS |               |               |             |       |                     |            |      |
|-------------------------|---------------|---------------|-------------|-------|---------------------|------------|------|
| SHEET NO.               | ROADWAY       | STATION BEGIN | STATION END | SIDE  | ITEM                | QUANTITY   | UNIT |
| 4                       | GENE FIELD RD | 3+05          | 3+87        | RT/LT | FULL DEPTH PAVEMENT | 216        | SY   |
| 4                       | GENE FIELD RD | 3+05          | -           | RT/LT | SAWCUT              | 24         | LF   |
| 4                       | GENE FIELD RD | 3+29          | -           | LT    | TREE                | 1          | EA   |
| 4                       | GENE FIELD RD | 3+37          | -           | LT    | TREE                | 1          | EA   |
| 4                       | GENE FIELD RD | 3+41          | 3+82        | LT    | GUARDRAIL           | 41         | LF   |
| 4                       | GENE FIELD RD | 3+47          | 3+87        | RT    | GUARDRAIL           | 41         | LF   |
| 4                       | GENE FIELD RD | 3+70          | -           | LT    | DRAIN FLUME         | 1          | EA   |
| 4                       | GENE FIELD RD | 3+77          | -           | RT    | DRAIN FLUME         | 1          | EA   |
| 4                       | GENE FIELD RD | 3+83          | -           | RT    | SIGN                | 1          | EA   |
| 4                       | GENE FIELD RD | 6+18          | 6+59        | LT    | GUARDRAIL           | 41         | LF   |
| 4                       | GENE FIELD RD | 6+19          | 7+50        | RT/LT | FULL DEPTH PAVEMENT | 353        | SY   |
| 4                       | GENE FIELD RD | 6+20          | -           | LT    | SIGN                | 1          | EA   |
| 4                       | GENE FIELD RD | 6+23          | 6+64        | RT    | GUARDRAIL           | 41         | LF   |
| 4                       | GENE FIELD RD | 6+30          | -           | LT    | DRAIN FLUME         | 1          | EA   |
| 4                       | GENE FIELD RD | 6+36          | -           | RT    | DRAIN FLUME         | 1          | EA   |
| 4                       | GENE FIELD RD | 7+50          | -           | RT/LT | SAWCUT              | 24         | LF   |
| 4                       | I-29          | 108+14        | 109+17      | RT    | GUARDRAIL           | 104        | LF   |
| 4                       | I-29          | 108+20        | 110+31      | RT    | GUARDRAIL           | 218        | LF   |
| 4                       | I-29          | 108+20        | 110+43      | RT/LT | GUARDRAIL           | 224        | LF   |
| 4                       | I-29          | 109+17        | 109+51      | RT    | CONCRETE BARRIER    | 34         | LF   |
| 4                       | I-29          | 109+55        | 109+88      | LT    | CONCRETE BARRIER    | 34         | LF   |
| 4                       | I-29          | 109+88        | 110+95      | LT    | GUARDRAIL           | 108        | LF   |
| 4                       | I-29          | 110+42        | 110+88      | LT    | GUARDRAIL           | 46         | LF   |
|                         |               |               |             |       |                     |            |      |
|                         |               | PAY TOTAL     |             |       |                     | 1 LUMP SUM |      |

FOR INFORMATION ONLY. NO DIRECT PAY.

| CURB AND GUTTER |               |               |             |      |                             |  |
|-----------------|---------------|---------------|-------------|------|-----------------------------|--|
| SHEET NO.       | ROADWAY       | STATION BEGIN | STATION END | SIDE | CURB AND GUTTER TYPE A (LF) |  |
| 4               | GENE FIELD RD | 3+05.00       | 3+21.50     | LT   | 17                          |  |
| 4               | GENE FIELD RD | 3+05.00       | 3+28.00     | RT   | 23                          |  |
| 4               | GENE FIELD RD | 6+77.50       | 7+50.00     | LT   | 73                          |  |
| 4               | GENE FIELD RD | 6+84.00       | 7+50.00     | RT   | 66                          |  |
|                 |               |               |             |      |                             |  |
|                 |               | PAY TOTAL     |             |      | 179                         |  |

| CONCRETE TRAFFIC BARRIER |               |               |             |      |                                       |                                                     |                  |
|--------------------------|---------------|---------------|-------------|------|---------------------------------------|-----------------------------------------------------|------------------|
| SHEET NO.                | ROADWAY       | STATION BEGIN | STATION END | SIDE | CONCRETE TRAFFIC BARRIER, TYPE D (LF) | CONCRETE TRAFFIC BARRIER, TYPE D (MOMENT SLAB) (LF) | FORM LINERS (SY) |
| 4                        | GENE FIELD RD | 3+21.50       | 3+55.85     | LT   | 35                                    | -                                                   | 6                |
| 4                        | GENE FIELD RD | 3+28.00       | 3+63.20     | RT   | 36                                    | -                                                   | 7                |
| 4                        | GENE FIELD RD | 6+42.04       | 6+77.50     | LT   | 36                                    | -                                                   | 7                |
| 4                        | GENE FIELD RD | 6+49.40       | 6+84.00     | RT   | 35                                    | -                                                   | 6                |
| 4                        | I-29          | 108+56.00     | 109+59.00   | RT   | -                                     | 103                                                 | -                |
| 4                        | I-29          | 109+47.00     | 110+50.00   | LT   | -                                     | 104                                                 | -                |
|                          |               |               |             |      |                                       |                                                     |                  |
|                          |               | PAY TOTALS    |             |      | 142                                   | 207                                                 | 26               |

| GUARDRAIL |         |               |             |      |                    |                                                        |                                                 |                                               |                                               |                  |
|-----------|---------|---------------|-------------|------|--------------------|--------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------|------------------|
| SHEET NO. | ROADWAY | STATION BEGIN | STATION END | SIDE | MGS GUARDRAIL (LF) | MGS GUARDRAIL, 8 FT. POSTS, 6 FT. - 3 IN. SPACING (LF) | MGS VERTICAL CONCRETE BARRIER TRANSITION (EACH) | TYPE A CRASHWORTHY END TERMINAL (MASH) (EACH) | TYPE B CRASHWORTHY END TERMINAL (MASH) (EACH) | REMARKS          |
| 4         | I-29    | 107+06.60     | 108+56.60   | RT   | -                  | 112.5                                                  | 1                                               | 1                                             | -                                             | SB I-29 SHOULDER |
| 4         | I-29    | 108+54.10     | 110+53.74   | LT   | 200                | -                                                      | -                                               | -                                             | 1                                             | MEDIAN           |
| 4         | I-29    | 108+54.08     | 110+53.78   | RT   | 200                | -                                                      | -                                               | -                                             | 1                                             | MEDIAN           |
| 4         | I-29    | 110+49.40     | 111+98.57   | LT   | -                  | 112.5                                                  | 1                                               | 1                                             | -                                             | NB I-29 SHOULDER |
|           |         |               |             |      |                    |                                                        |                                                 |                                               |                                               |                  |
|           |         | PAY TOTALS    |             |      | 400                | 225                                                    | 2                                               | 2                                             | 2                                             |                  |

| DRAIN BASIN |               |            |      |                  |                         |                  |                     |
|-------------|---------------|------------|------|------------------|-------------------------|------------------|---------------------|
| SHEET NO.   | ROADWAY       | STATION    | SIDE | DRAIN BASIN (EA) | CLASS 3 EXCAVATION (CY) | ROCK LINING (CY) | REMARKS             |
| 4, 36       | GENE FIELD RD | 3+53.00    | LT   | 1                | 12                      | -                | SEE CULVERT SECTION |
| 4, 36       | GENE FIELD RD | 3+59.50    | RT   | 1                | 10                      | 2                | SEE CULVERT SECTION |
| 4, 37       | GENE FIELD RD | 6+46.00    | LT   | 1                | 8                       | 2                | SEE CULVERT SECTION |
| 4, 37       | GENE FIELD RD | 6+52.50    | RT   | 1                | 11                      | 2                | SEE CULVERT SECTION |
|             |               |            |      |                  |                         |                  |                     |
|             |               | PAY TOTALS |      | 4                | 41                      | 6                |                     |

| PAVED DITCH |               |               |             |      |                  |
|-------------|---------------|---------------|-------------|------|------------------|
| SHEET NO.   | ROADWAY       | STATION BEGIN | STATION END | SIDE | PAVED DITCH (SY) |
| 33          | GENE FIELD RD | 3+51.50       | 4+10.00     | LT   | 62.5             |
|             |               |               |             |      |                  |
|             |               | PAY TOTAL     |             |      | 62.5             |

SUMMARY OF QUANTITIES  
SHEET 1 OF 3



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SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
I-29

STATE  
MO

DISTRICT  
NW

SHEET NO.  
3

COUNTY  
BUCHANAN

JOB NO.  
J113332

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.

GBA

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| SIGN          | SIZE    | AREA  | QTY     | TOTAL AREA | RELOC   | TOTAL RELOC | SIGN | DESCRIPTION                                      | SIGN                | SIZE    | AREA  | QTY     | TOTAL SQ. FT. | RELOC   | TOTAL RELOC | SIGN | DESCRIPTION                                     | ITEM NUMBER | TOTAL QTY | EFFECTIVE: 07-01-2025                                                          |  |  |  |  |
|---------------|---------|-------|---------|------------|---------|-------------|------|--------------------------------------------------|---------------------|---------|-------|---------|---------------|---------|-------------|------|-------------------------------------------------|-------------|-----------|--------------------------------------------------------------------------------|--|--|--|--|
| IN.           | SQ. FT. | EACH  | SQ. FT. | EACH       | SQ. FT. | NO.         |      |                                                  | IN.                 | SQ. FT. | EACH  | SQ. FT. | EACH          | SQ. FT. | NO.         |      |                                                 |             |           |                                                                                |  |  |  |  |
| WARNING SIGNS |         |       |         |            |         |             |      |                                                  | GUIDE SIGNS         |         |       |         |               |         |             |      |                                                 |             |           | DESCRIPTION                                                                    |  |  |  |  |
| WO1-1L        | 48X48   | 16.00 |         |            |         |             |      | TURN (SYMBOL LEFT)                               | E05-1               | 36X48   | 12.00 |         |               |         |             |      | GORE EXIT                                       | 6122008     |           | IMPACT ATTENUATOR 40 MPH (SAND BARRELS)                                        |  |  |  |  |
| WO1-1R        | 48X48   | 16.00 |         |            |         |             |      | TURN (SYMBOL RIGHT)                              | E05-2               | 48X36   | 12.00 |         |               |         |             |      | EXIT OPEN                                       | 6122009     |           | IMPACT ATTENUATOR 45 MPH (SAND BARRELS)                                        |  |  |  |  |
| WO1-2L        | 48X48   | 16.00 |         |            |         |             |      | CURVE (SYMBOL LEFT)                              | E05-2a              | 48X36   | 12.00 |         |               |         |             |      | EXIT CLOSED                                     | 6122010     |           | IMPACT ATTENUATOR 50 MPH (SAND BARRELS)                                        |  |  |  |  |
| WO1-2R        | 48X48   | 16.00 |         |            |         |             |      | CURVE (SYMBOL RIGHT)                             | GO20-1              | 60X24   | 10.00 |         |               |         |             |      | ROAD WORK NEXT XX MILES                         | 6122012     |           | IMPACT ATTENUATOR 55 MPH (SAND BARRELS)                                        |  |  |  |  |
| WO1-3L        | 48X48   | 16.00 |         |            |         |             |      | REVERSE TURN (SYMBOL LEFT)                       | GO20-2              | 48X24   | 8.00  |         |               |         |             |      | END ROAD WORK                                   | 6122014     |           | IMPACT ATTENUATOR 60 MPH (SAND BARRELS)                                        |  |  |  |  |
| WO1-3R        | 48X48   | 16.00 |         |            |         |             |      | REVERSE TURN (SYMBOL RIGHT)                      | GO20-4              | 36X18   | 4.50  |         |               |         |             |      | PILOT CAR FOLLOW ME                             | 6122017     |           | IMPACT ATTENUATOR 65 MPH (SAND BARRELS)                                        |  |  |  |  |
| WO1-4L        | 48X48   | 16.00 |         |            |         |             |      | REVERSE CURVE (SYMBOL LEFT)                      | GO20-4a             | 42X30   | 8.75  |         |               |         |             |      | PILOT CAR IN USE WAIT & FOLLOW                  | 6122019     | 2         | IMPACT ATTENUATOR 70 MPH (SAND BARRELS)                                        |  |  |  |  |
| WO1-4R        | 48X48   | 16.00 |         |            |         |             |      | REVERSE CURVE (SYMBOL RIGHT)                     | GO20-4a             | 18X12   | 1.50  |         |               |         |             |      | PILOT CAR IN USE WAIT & FOLLOW                  | 6122020     |           | REPLACEMENT SAND BARREL                                                        |  |  |  |  |
| WO1-4bL       | 48X48   | 16.00 |         |            |         |             |      | DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)         | GO20-5aP            | 36X24   | 6.00  | 8       | 48.00         |         |             |      | WORK ZONE (PLAQUE)                              | 6122030     |           | IMPACT ATTENUATOR (RELOCATION)                                                 |  |  |  |  |
| WO1-4bR       | 48X48   | 16.00 |         |            |         |             |      | DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)        | MO4-8a              | 24X18   | 3.00  |         |               |         |             |      | END DETOUR                                      | 6122040     | 2         | WORK ZONE CRASH CUSHION (NARROW)                                               |  |  |  |  |
| WO1-4cL       | 48X48   | 16.00 |         |            |         |             |      | TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)         | MO4-9L              | 48X36   | 12.00 |         |               |         |             |      | DETOUR (LEFT)                                   | 6122041     |           | WORK ZONE CRASH CUSHION (RELOCATION)                                           |  |  |  |  |
| WO1-4cR       | 48X48   | 16.00 |         |            |         |             |      | TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)        | MO4-9R              | 48X36   | 12.00 |         |               |         |             |      | DETOUR (RIGHT)                                  | 6123001     |           | TRUCK MOUNTED ATTENUATOR (TMA)                                                 |  |  |  |  |
| WO1-6         | 60X30   | 12.50 |         |            |         |             |      | HORIZONTAL ARROW (SYMBOL)                        | MO4-9P              | 48X12   | 4.00  |         |               |         |             |      | STREET NAME (PLAQUE)                            | 6161012     |           | BUOYS (BOATS KEEP OUT)                                                         |  |  |  |  |
| WO1-6a        | 72X36   | 18.00 |         |            |         |             |      | HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)     | MO4-10L             | 48X18   | 6.00  |         |               |         |             |      | DETOUR ARROW (LEFT)                             | 6161013     |           | BUOYS (NO WAKE)                                                                |  |  |  |  |
| WO1-7         | 60X30   | 12.50 |         |            |         |             |      | DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)            | MO4-10L             | 48X18   | 6.00  | 2       | 12.00         |         |             |      | DETOUR ARROW (RIGHT)                            | 6161014     |           | SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)                                         |  |  |  |  |
| WO1-7a        | 72X36   | 18.00 |         |            |         |             |      | DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.) | REGULATORY SIGNS    |         |       |         |               |         |             |      |                                                 | 6161020     |           | CHANNELIZER (DRUM-LIKE)                                                        |  |  |  |  |
| WO1-8         | 18X24   | 3.00  |         |            |         |             |      | CHEVRON (SYMBOL)                                 | R1-1                | 48X48   | 13.25 |         |               |         |             |      | STOP                                            | 6161022     |           | CHANNELIZER (CONE)                                                             |  |  |  |  |
| WO1-8a        | 30X36   | 7.50  |         |            |         |             |      | CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)            | R1-2                | 48TRI.  | 6.93  |         |               |         |             |      | YIELD                                           | 6161025     | 369       | CHANNELIZER (TRIM-LINE)                                                        |  |  |  |  |
| WO3-1         | 48X48   | 16.00 |         |            |         |             |      | STOP AHEAD (SYMBOL)                              | R1-2a               | 36X36   | 9.00  |         |               |         |             |      | TO ONCOMING TRAFFIC (PLAQUE)                    | 6161026     |           | CHANNELIZER (VERTICAL PANEL)                                                   |  |  |  |  |
| WO3-2         | 48X48   | 16.00 |         |            |         |             |      | YIELD AHEAD (SYMBOL)                             | R1-3P               | 30X12   | 2.50  |         |               |         |             |      | ALL WAY (PLAQUE)                                | 6161030     | 87        | TYPE 3 MOVEABLE BARRICADE                                                      |  |  |  |  |
| WO3-3         | 48X48   | 16.00 |         |            |         |             |      | SIGNAL AHEAD (SYMBOL)                            | R2-1                | 36X48   | 12.00 | 8       | 96.00         |         |             |      | SPEED LIMIT XX                                  | 6161033     | 106       | DIRECTION INDICATOR BARRICADE                                                  |  |  |  |  |
| WO3-4         | 48X48   | 16.00 |         |            |         |             |      | BE PREPARED TO STOP                              | R3-1                | 48X48   | 16.00 | 4       | 64.00         |         |             |      | NO RIGHT TURN (SYMBOL)                          | 6161040     | 5         | FLASHING ARROW PANEL                                                           |  |  |  |  |
| WO3-5         | 48X48   | 16.00 | 12      | 192.00     |         |             |      | SPEED LIMIT AHEAD                                | R3-2                | 48X48   | 16.00 | 4       | 64.00         |         |             |      | NO LEFT TURN (SYMBOL)                           | 6161047     |           | TYPE 3 OBJECT MARKER                                                           |  |  |  |  |
| WO4-1L        | 48X48   | 16.00 |         |            |         |             |      | MERGE (SYMBOL FROM LEFT)                         | R3-2                | 48X48   | 16.00 | 4       | 64.00         |         |             |      | NO LEFT TURN (SYMBOL)                           | 6161055     | 106       | SEQUENTIAL FLASHING WARNING LIGHT                                              |  |  |  |  |
| WO4-1R        | 48X48   | 16.00 |         |            |         |             |      | MERGE (SYMBOL FROM RIGHT)                        | R3-3                | 36X36   | 9.00  |         |               |         |             |      | NO TURNS                                        | 6161070     |           | TUBULAR MARKER                                                                 |  |  |  |  |
| WO4-1aL       | 48X48   | 16.00 | 1       | 16.00      |         |             |      | MERGE (LEFT)                                     | R3-4                | 48X48   | 16.00 |         |               |         |             |      | NO U-TURN (SYMBOL)                              | 6161095     |           | RADAR SPEED ADVISORY SYSTEM                                                    |  |  |  |  |
| WO4-1aR       | 48X48   | 16.00 | 4       | 64.00      |         |             |      | MERGE (RIGHT)                                    | R3-7L               | 30X30   | 6.25  |         |               |         |             |      | LEFT LANE MUST TURN LEFT                        | 6161096     |           | CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED                         |  |  |  |  |
| WO5-1         | 48X48   | 16.00 | 1       | 16.00      |         |             |      | ROAD/BRIDGE/RAMP NARROWS                         | R3-7R               | 30X30   | 6.25  |         |               |         |             |      | RIGHT LANE MUST TURN RIGHT                      | 6161098A    | 10        | CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED |  |  |  |  |
| WO5-3         | 48X48   | 16.00 |         |            |         |             |      | ONE LANE BRIDGE                                  | R4-1                | 36X48   | 12.00 |         |               |         |             |      | PASS WITH CARE                                  | 6161099     |           | CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED    |  |  |  |  |
| WO5-5         | 48X48   | 16.00 |         |            |         |             |      | NARROW LANES                                     | R4-2                | 36X48   | 12.00 |         |               |         |             |      | KEEP RIGHT (HORIZONTAL ARROW)                   | 6162000A    |           | WORK ZONE TRAFFIC SIGNAL SYSTEM                                                |  |  |  |  |
| WO6-1         | 48X48   | 16.00 |         |            |         |             |      | DIVIDED HIGHWAY (SYMBOL)                         | R4-7a               | 36X48   | 12.00 |         |               |         |             |      | KEEP LEFT (HORIZONTAL ARROW)                    | 6162002     |           | TEMPORARY LONG-TERM RUMBLE STRIPS                                              |  |  |  |  |
| WO6-2         | 48X48   | 16.00 |         |            |         |             |      | DIVIDED HIGHWAY END (SYMBOL)                     | R4-8a               | 36X48   | 12.00 |         |               |         |             |      | DO NOT ENTER                                    | 6173600D    |           | TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED                       |  |  |  |  |
| WO6-3         | 48X48   | 16.00 |         |            |         |             |      | TWO WAY TRAFFIC (SYMBOL)                         | R5-1                | 30X30   | 6.25  |         |               |         |             |      | WRONG WAY                                       | 6173700B    |           | TEMP. TRAFFIC BARRIER ANCHORED, CONTRACTOR FURNISHED/RETAINED                  |  |  |  |  |
| WO7-3a        | 30X24   | 5.00  |         |            |         |             |      | NEXT XX MILES (PLAQUE)                           | R5-1a               | 36X24   | 6.00  |         |               |         |             |      | ONE WAY ARROW (LEFT)                            | 6173706     |           | TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION, CONTRACTOR FURNISHED/RETAINED      |  |  |  |  |
| WO8-1         | 48X48   | 16.00 |         |            |         |             |      | BUMP                                             | R6-1L               | 54X18   | 6.75  |         |               |         |             |      | ONE WAY ARROW (RIGHT)                           | 6174000A    |           | TEMP. TRAFFIC BARRIER HEIGHT TRANSITION, CONTRACTOR FURNISHED/RETAINED         |  |  |  |  |
| WO8-2         | 48X48   | 16.00 |         |            |         |             |      | DIP                                              | R6-1R               | 54X18   | 6.75  |         |               |         |             |      | ONE WAY (LEFT)                                  | 6175010A    |           | RELOCATING TEMPORARY TRAFFIC BARRIER                                           |  |  |  |  |
| WO8-3         | 48X48   | 16.00 |         |            |         |             |      | PAVEMENT ENDS                                    | R6-2L               | 24X30   | 5.00  |         |               |         |             |      | ONE WAY (RIGHT)                                 | 6175011B    |           | RELOCATING TEMP. TRAFFIC BARRIER ANCHORED                                      |  |  |  |  |
| WO8-4         | 48X48   | 16.00 |         |            |         |             |      | SOFT SHOULDER                                    | R6-2R               | 24X30   | 5.00  |         |               |         |             |      | ONE WAY (RIGHT)                                 | 6175013     |           | RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS                                     |  |  |  |  |
| WO8-5         | 48X48   | 16.00 |         |            |         |             |      | SLIPPERY WHEN WET (SYMBOL)                       | R9-9                | 24X12   | 2.00  | 2       | 4.00          |         |             |      | SIDEWALK CLOSED                                 | 6175020A    |           | RELOCATING TEMP. TRAFFIC BARRIER HEIGHT                                        |  |  |  |  |
| WO8-6         | 48X48   | 16.00 |         |            |         |             |      | TRUCK CROSSING                                   | R9-11L              | 24X18   | 3.00  |         |               |         |             |      | SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE  | 6208064A    |           | TEMPORARY RAISED PAVEMENT MARKER                                               |  |  |  |  |
| WO8-6c        | 48X48   | 16.00 |         |            |         |             |      | TRUCK ENTRANCE                                   | R9-11R              | 24X18   | 3.00  |         |               |         |             |      | SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE | 9029400     |           | TEMPORARY TRAFFIC SIGNALS                                                      |  |  |  |  |
| WO8-7         | 36X36   | 9.00  |         |            |         |             |      | LOOSE GRAVEL                                     | R10-6               | 24X36   | 6.00  |         |               |         |             |      | STOP HERE ON RED (45° ARROW)                    | 9029401     |           | TEMPORARY TRAFFIC SIGNALS AND LIGHTING                                         |  |  |  |  |
| WO8-7a        | 36X36   | 9.00  |         |            |         |             |      | FRESH OIL / LOOSE GRAVEL                         | R11-2               | 48X30   | 10.00 | 12      | 120.00        |         |             |      | ROAD CLOSED                                     | 6169901     | 1         | MISC. (TRAFFIC CONTROL TYPE 7)                                                 |  |  |  |  |
| WO8-9         | 48X48   | 16.00 |         |            |         |             |      | LOW SHOULDER                                     | R11-3a              | 60X30   | 12.50 | 2       | 25.00         |         |             |      | ROAD CLOSED XX MILES AHEAD                      |             |           |                                                                                |  |  |  |  |
| WO8-11        | 48X48   | 16.00 |         |            |         |             |      | UNEVEN LANES                                     | R11-4               | 60X30   | 12.50 | 2       | 25.00         |         |             |      | LOCAL TRAFFIC ONLY                              |             |           |                                                                                |  |  |  |  |
| WO8-12        | 48X48   | 16.00 |         |            |         |             |      | NO CENTER LINE                                   | CONST-3A            | 60X48   | 20.00 |         |               |         |             |      | ROAD CLOSED TO THRU TRAFFIC                     |             |           |                                                                                |  |  |  |  |
| WO8-15        | 48X48   | 16.00 |         |            |         |             |      | GROOVED PAVEMENT                                 | CONST-3X            | 56X12   | 4.67  |         |               |         |             |      | FINE SIGN                                       |             |           |                                                                                |  |  |  |  |
| WO8-15P       | 30X24   | 5.00  |         |            |         |             |      | MOTORCYCLE (PLAQUE)                              | MISCELLANEOUS SIGNS |         |       |         |               |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO8-17L       | 48X48   | 16.00 |         |            |         |             |      | SHOULDER DROP-OFF (SYMBOL LEFT)                  | CONST-5             | 48X36   | 12.00 |         |               |         |             |      | POINT OF PRESENCE                               |             |           |                                                                                |  |  |  |  |
| WO8-17R       | 48X48   | 16.00 |         |            |         |             |      | SHOULDER DROP-OFF (SYMBOL RIGHT)                 | CONST-5             | 96X48   | 32.00 |         |               |         |             |      | POINT OF PRESENCE                               |             |           |                                                                                |  |  |  |  |
| WO8-17P       | 30X24   | 5.00  |         |            |         |             |      | SHOULDER DROP-OFF (PLAQUE)                       | CONST-8             | 48X36   | 12.00 |         |               |         |             |      | WORK ZONE NO PHONE ZONE                         |             |           |                                                                                |  |  |  |  |
| W10-1         | 42RND.  | 9.62  |         |            |         |             |      | RAILROAD CROSSING                                | SPECIAL             | 36X78   | 19.50 | 12      | 234.00        |         |             |      | 50A                                             |             |           |                                                                                |  |  |  |  |
| WO12-1        | 24X24   | 4.00  | 1       | 4.00       |         |             |      | DOUBLE DOWN ARROW (SYMBOL)                       | SPECIAL             | 36X78   | 19.50 | 3       | 58.50         |         |             |      | 50B                                             |             |           |                                                                                |  |  |  |  |
| WO12-2        | 48X48   | 16.00 |         |            |         |             |      | LOW CLEARANCE (SYMBOL)                           | SPECIAL             | 36X78   | 19.50 | 3       | 58.50         |         |             |      | 50C                                             |             |           |                                                                                |  |  |  |  |
| WO12-2x       | 24X18   | 3.00  |         |            |         |             |      | LOW CLEARANCE (PLAQUE)                           | SPECIAL             | 36X78   | 19.50 | 1       | 19.50         |         |             |      | 50D                                             |             |           |                                                                                |  |  |  |  |
| WO12-2a       | 84X24   | 14.00 |         |            |         |             |      | OVERHEAD LOW CLEARANCE (FEET AND INCHES)         | SPECIAL             | 36X78   | 19.50 | 1       | 19.50         |         |             |      | 50E                                             |             |           |                                                                                |  |  |  |  |
| WO12-4        | 120X60  | 50.00 |         |            |         |             |      | LOW CLEARANCE XX FT XX IN XX MILES AHEAD         | SPECIAL             | 36X78   | 19.50 | 1       | 19.50         |         |             |      | 50F                                             |             |           |                                                                                |  |  |  |  |
| WO12-5        | 120X60  | 50.00 |         |            |         |             |      | WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD     | SPECIAL             | 36X78   | 19.50 | 1       | 19.50         |         |             |      | 50G                                             |             |           |                                                                                |  |  |  |  |
| WO13-1        | 30X30   | 6.25  |         |            |         |             |      | ADVISORY SPEED (PLAQUE)                          | SPECIAL             | 36X78   | 19.50 | 9       | 175.50        |         |             |      | 50H                                             |             |           |                                                                                |  |  |  |  |
| WO16-2        | 30X24   | 5.00  |         |            |         |             |      | XXX FEET (PLAQUE)                                | SPECIAL             | 36X78   | 19.50 | 2       | 39.00         |         |             |      | 50H                                             |             |           |                                                                                |  |  |  |  |
| WO16-3        | 30X24   | 5.00  |         |            |         |             |      | X MILE (PLAQUE)                                  | SPECIAL             | 36X78   | 19.50 | 2       | 39.00         |         |             |      | 50H                                             |             |           |                                                                                |  |  |  |  |
| WO20-1        | 48X48   | 16.00 | 22      | 352.00     |         |             |      | ROAD/BRIDGE/RAMP WORK AHEAD                      | SPECIAL             | 60X30   | 12.50 | 2       | 25.00         |         |             |      | 50H                                             |             |           |                                                                                |  |  |  |  |
| WO20-2        | 48X48   | 16.00 | 6       | 96.00      |         |             |      | DETOUR AHEAD                                     | SPECIAL             | 60X30   | 12.50 | 4       | 50.00         |         |             |      | 50H                                             |             |           |                                                                                |  |  |  |  |
| WO20-3        | 48X48   | 16.00 | 14      | 224.00     |         |             |      | ROAD CLOSED AHEAD                                | R11-3b              | 60X30   | 12.50 | 4       | 50.00         |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO20-4        | 48X48   | 16.00 |         |            |         |             |      | ONE LANE ROAD AHEAD                              | WO21-5aR            | 48X48   | 16.00 | 4       | 64.00         |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO20-5        | 48X48   | 16.00 | 9       | 144.00     |         |             |      | RIGHT/CENTER/LEFT LANE CLOSED AHEAD              | WO21-5bR            | 48X48   | 16.00 | 4       | 64.00         |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO20-5a       | 48X48   | 16.00 |         |            |         |             |      | 2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD           | TOTAL               |         |       |         |               |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO20-6a       | 48X48   | 16.00 | 4       | 64.00      |         |             |      | RIGHT/CENTER/LEFT LANE CLOSED                    | CONSTRUCTION SIGNS  |         |       |         | 2526.50       |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO20-7a       | 48X48   | 16.00 |         |            |         |             |      | FLAGGER (SYMBOL)                                 | 616-10.10           |         |       |         |               |         | TOTAL       |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO21-2        | 36X36   | 9.00  |         |            |         |             |      | FRESH OIL                                        | RELOCATED SIGNS     |         |       |         |               |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO21-5        | 48X48   | 16.00 |         |            |         |             |      | SHOULDER WORK / SHOULDER WORK AHEAD              |                     |         |       |         |               |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO22-1        | 48X48   | 16.00 |         |            |         |             |      | BLASTING ZONE AHEAD                              |                     |         |       |         |               |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO22-2        | 42X36   | 10.50 |         |            |         |             |      | TURN OFF 2-WAY RADIO AND PHONE                   |                     |         |       |         |               |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| WO22-3        | 42X36   | 10.50 |         |            |         |             |      | END BLASTING ZONE                                |                     |         |       |         |               |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |
| GO22-1        | 21X15   | 2.19  |         |            |         |             |      | WET PAINT (ARROW PIVOTS)                         |                     |         |       |         |               |         |             |      |                                                 |             |           |                                                                                |  |  |  |  |

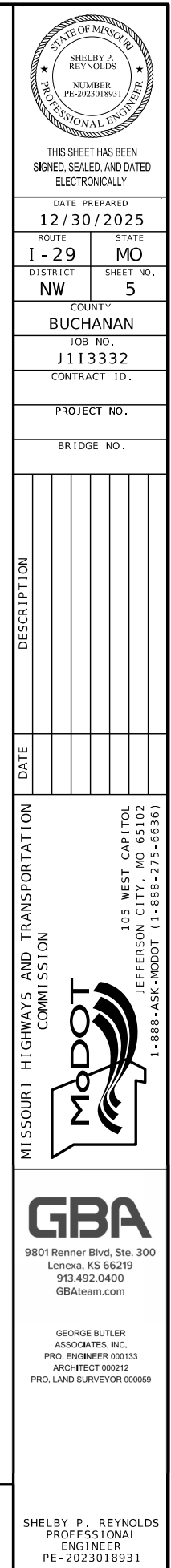
STATE OF MISSOURI  
LEE BAER  
NUMBER  
PE-2021000150  
PROFESSIONAL ENGINEER

DATE PREPARED  
12/30/2025  
ROUTE  
1 - 29  
STATE  
MO  
DISTRICT  
NW  
SHEET NO.  
3  
COUNTY  
BUCHANAN  
JOB NO.  
J113332  
CONTRACT ID.  
PROJECT NO.  
BRIDGE NO.

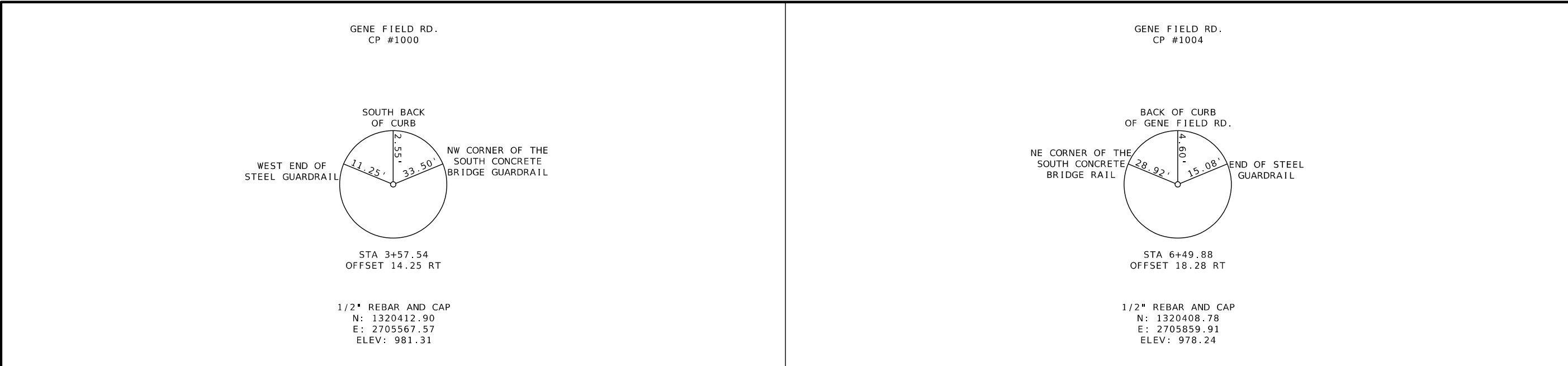
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)  
MERGE MIDWEST ENGINEERING  
ENGINEERING, LLC  
MO CERT. OF AUTH. 2017010974  
2668 W CATALPA ST.  
OLATHE, KS 66061  
(913) 788-1985  
WWW.MERGEMIDWEST.COM  
LEE BAER  
PROFESSIONAL ENGINEER  
PE-2021000150

SUMMARY OF QUANTITIES  
SHEET 3 OF 3









THIS SHEET HAS BEEN  
SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

|                 |                |
|-----------------|----------------|
| ROUTE<br>I - 29 | STATE<br>MO    |
| DISTRICT<br>NW  | SHEET NO.<br>6 |

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
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MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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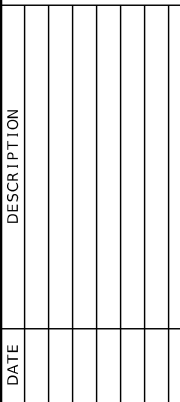
**GBA**  
9801 Renner Blvd, Ste. 300  
Lenexa, KS 66219  
913.492.0400  
GBAteam.com

GEORGE BUTLER  
ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

SHELBY P. REYNOLDS  
PROFESSIONAL  
ENGINEER  
PE-2023018931

REFERENCE POINTS  
SHEET 1 OF 1

|                                                                                                                           |                                                     |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| PROJECT COORDINATE INFORMATION                                                                                            |                                                     |
| COORDINATE SYSTEM                                                                                                         | MODIFIED STATE PLANE                                |
| HORIZONTAL DATUM                                                                                                          | NAD83                                               |
| VERTICAL DATUM                                                                                                            | NAVD88                                              |
| GEOID MODEL                                                                                                               | GEOID 18                                            |
| ELEVATIONS DETERMINED BY                                                                                                  | R12i GNSS UNIT                                      |
| PROJECT PROJECTION FACTOR                                                                                                 | 1.0000921                                           |
| REFERENCE CONTROL INFORMATION                                                                                             |                                                     |
| COORDINATE SYSTEM                                                                                                         | MISSOURI COORDINATE SYSTEM 1983 (WEST ZONE)         |
| CONTROL STATION                                                                                                           | MODOT GNSS CONTINUOUSLY OPERATING REFERENCE STATION |
| DESIGNATION                                                                                                               | MODOT PLATTE CITY CORS ARP                          |
| CORS_ID                                                                                                                   | MOPL                                                |
| PID                                                                                                                       | DN5836                                              |
| LATITUDE                                                                                                                  | 39°23'04.07194" N                                   |
| LONGITUDE                                                                                                                 | 94°47'00.04266" W                                   |
| NORTHING (M)                                                                                                              | 357,168.095                                         |
| EASTING (M)                                                                                                               | 825,589.628                                         |
| ZONE                                                                                                                      | MISSOURI WEST 2403                                  |
| PROJECT AVERAGE GRID FACTOR                                                                                               | 0.9999079                                           |
| EXAMPLE OF PROJECT COORDINATE TO S.P.C.                                                                                   |                                                     |
| PROJECT NORTHING X AVERAGE GRID FACTOR<br>= STATE PLANE NORTHING                                                          |                                                     |
| PROJECT EASTING X AVERAGE GRID FACTOR<br>= STATE PLANE EASTING                                                            |                                                     |
| EXAMPLE: CONTROL POINT #105<br>N 1320609.32 X 0.9999079 = N 1320487.692 SP<br>E 2705655.88 X 0.9999079 = E 2705406.689 SP |                                                     |
| LINEAR UNIT CONVERSION                                                                                                    |                                                     |
| 1 METER = 3.280833333 US SURVEY FEET (USFT)                                                                               |                                                     |

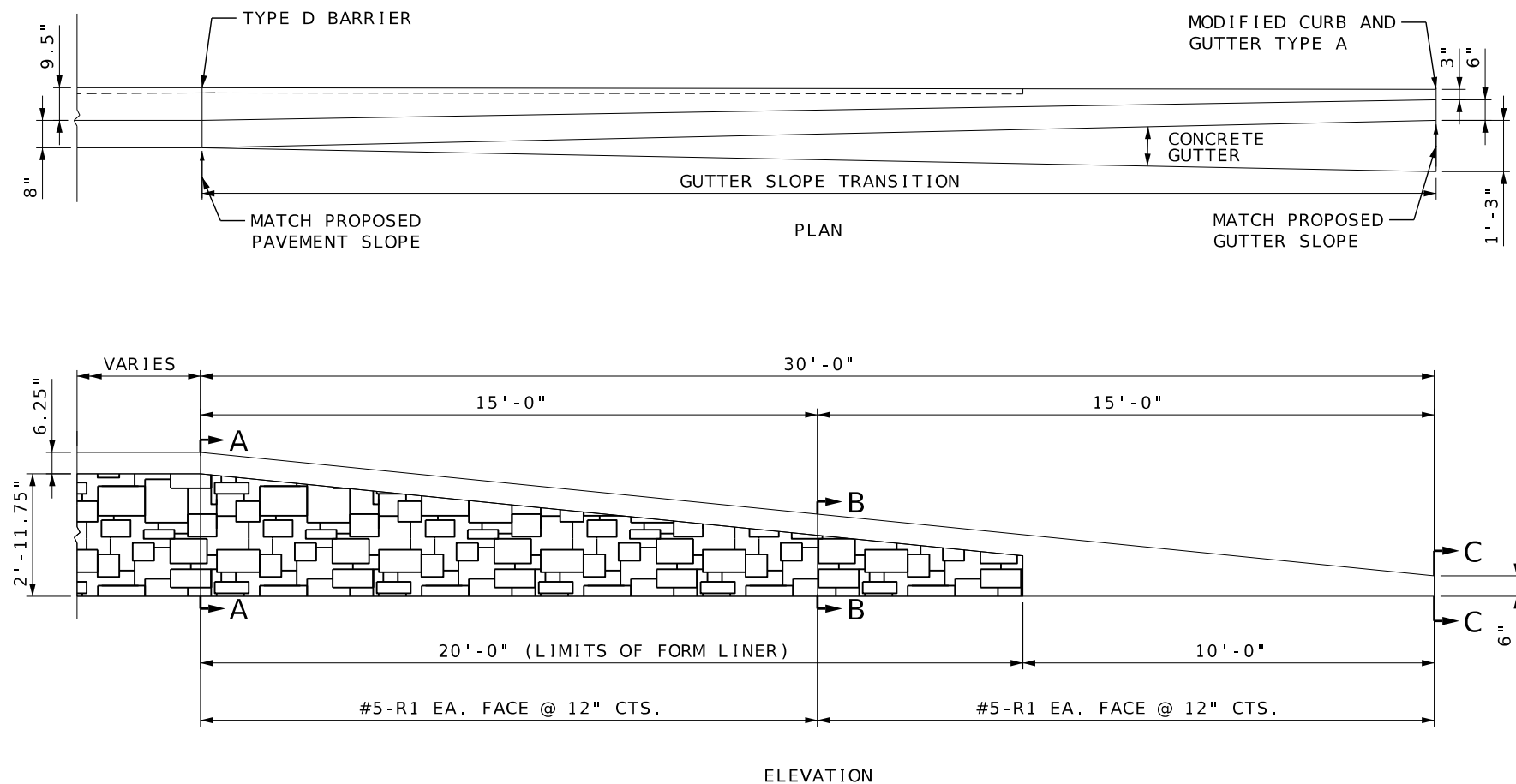
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SHELBY P. REYNOLDS  
PROFESSIONAL  
ENGINEER  
PE-2023018931

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

COORDINATE POINTS  
SHEET 1 OF 1





#### NOTES:

ALL TOP AND END EDGES SHALL BE CHAMFERED  $\frac{3}{4}$  INCH.

EXPANSION JOINTS SHALL BE PROVIDED IN THE BARRIER TO MATCH EXPANSION JOINTS IN PAVEMENT.

FOR DELINEATOR DETAILS, SEE SHEET NUMBER 1 OF THE MISSOURI STANDARD PLAN 617.10. DELINEATORS SHALL BE PLACED AS DEFINED IN THE JOB SPECIAL PROVISIONS.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE  $1\frac{1}{2}$ ". UNLESS OTHERWISE SHOWN.

PERMANENT BARRIER HEIGHT TRANSITION TO BE PAID FOR BY THE LINEAR FOOT AS BID ITEM 6173100 CONCRETE TRAFFIC BARRIER, TYPE D.

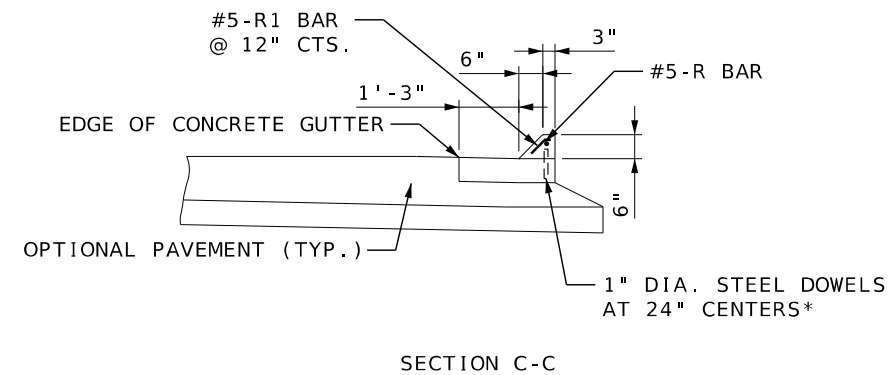
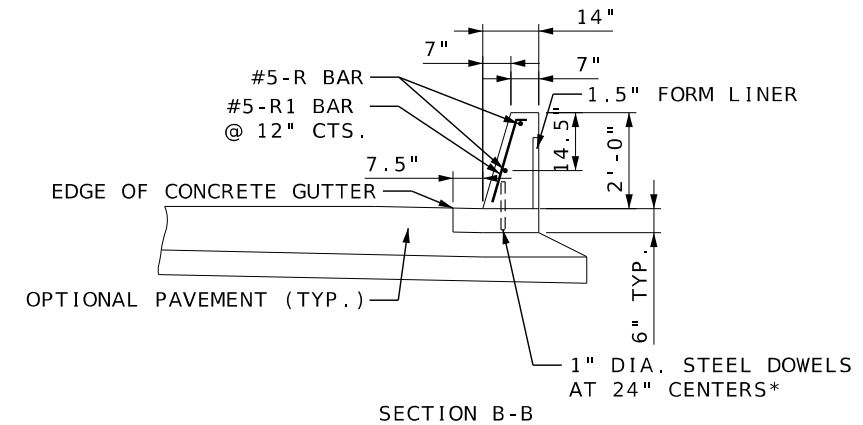
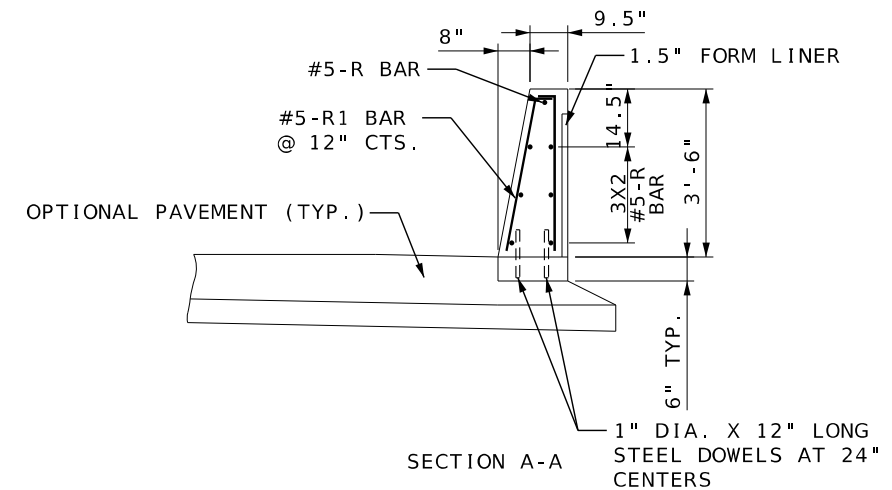
#### FORM LINER NOTES:

THE COST OF FORM LINERS, COMPLETE IN PLACE, WILL BE CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR FORM LINERS, PER SQUARE YARD.

FORM LINER SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIAL PROVISIONS AND BE SIMILAR IN APPEARANCE TO FORM LINER ON BRIDGE A07001 - COOK ROAD OVER I-29.

THE FOLLOWING IS A LIST OF FORM LINER MANUFACTURERS AND TYPES WHICH MAY BE USED. DEPTH OF RELIEF FOR ALL FORM LINER PATTERNS SHALL VARY UP TO  $1\frac{1}{2}$ ". THE HEIGHT AT ANY SINGLE STONE SHALL BE 15" MAXIMUM.

- (1) SCOTT SYSTEM, INC.: FORM LINER PATTERN #167 "ASHLAR STONE"
- (2) FITZGERALD FORMLINERS: FORM LINER PATTERN #16986 "GEORGETOWN ASHLAR"
- (3) GREENSTREAK: FORM LINER PATTERN #330 "ASHLAR STONE"
- (4) SPEC FORMLINERS: FORM LINER PATTERN #1515 "SC ASHLAR"
- (5) CUSTOMROCK: FORM LINER PATTERN #12020 "TOLLWAY ASHLAR"
- (6) AN APPROVED EQUAL



\*LENGTH OF DOWEL BAR EQUALS  
HEIGHT OF CURB PLUS 3"

SPECIAL SHEET  
PERMANENT BARRIER  
HEIGHT TRANSITION



THIS SHEET HAS BEEN  
SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE I-29 STATE MO

DISTRICT NW SHEET NO. 8

COUNTY BUCHANAN

JOB NO. J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

| DESCRIPTION | DATE |
|-------------|------|
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MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

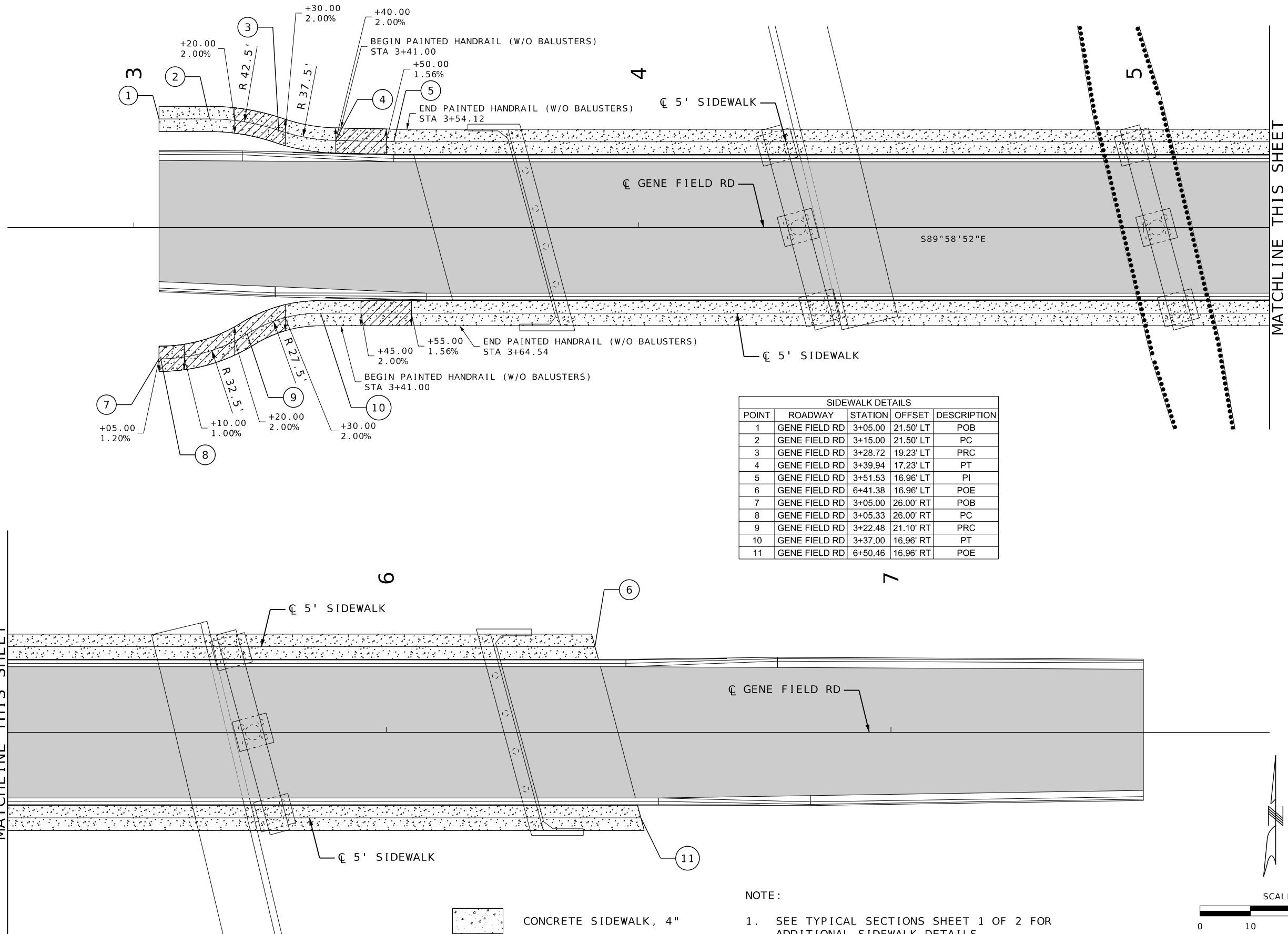
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**GBA**

9801 Renner Blvd, Ste. 300  
Lenexa, KS 66219  
913.492.0400  
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ASSOCIATES, INC.  
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ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

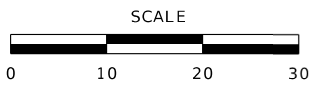
SHELBY P. REYNOLDS  
PROFESSIONAL  
ENGINEER  
PE-2023018931



| SIDEWALK DETAILS |               |         |           |             |
|------------------|---------------|---------|-----------|-------------|
| POINT            | ROADWAY       | STATION | OFFSET    | DESCRIPTION |
| 1                | GENE FIELD RD | 3+05.00 | 21.50' LT | POB         |
| 2                | GENE FIELD RD | 3+15.00 | 21.50' LT | PC          |
| 3                | GENE FIELD RD | 3+28.72 | 19.23' LT | PRC         |
| 4                | GENE FIELD RD | 3+39.94 | 17.23' LT | PT          |
| 5                | GENE FIELD RD | 3+51.53 | 16.96' LT | PI          |
| 6                | GENE FIELD RD | 6+41.38 | 16.96' LT | POE         |
| 7                | GENE FIELD RD | 3+05.00 | 26.00' RT | POB         |
| 8                | GENE FIELD RD | 3+05.33 | 26.00' RT | PC          |
| 9                | GENE FIELD RD | 3+22.48 | 21.10' RT | PRC         |
| 10               | GENE FIELD RD | 3+37.00 | 16.96' RT | PT          |
| 11               | GENE FIELD RD | 6+50.46 | 16.96' RT | POE         |

-  CONCRETE SIDEWALK, 4"
-  CROSS SLOPE TRANSITION

- NOTE :
- SEE TYPICAL SECTIONS SHEET 1 OF 2 FOR ADDITIONAL SIDEWALK DETAILS.
  - SEE STANDARD PLAN 608.40A FOR SIDEWALK HANDRAILING WITHOUT BALUSTERS DETAILS.



SPECIAL SHEET  
SIDEWALK DETAILS



THIS SHEET HAS BEEN  
SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE I-29 STATE MO  
DISTRICT NW SHEET NO. 9

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

MODOT

GBA

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ASSOCIATES, INC.  
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ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

SHELBY P. REYNOLDS  
PROFESSIONAL  
ENGINEER  
PE-2023018931



THIS SHEET HAS BEEN  
SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE I-29 STATE MO

DISTRICT NW SHEET NO. 10

COUNTY  
BUCHANAN

JOB NO.  
J113332

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)

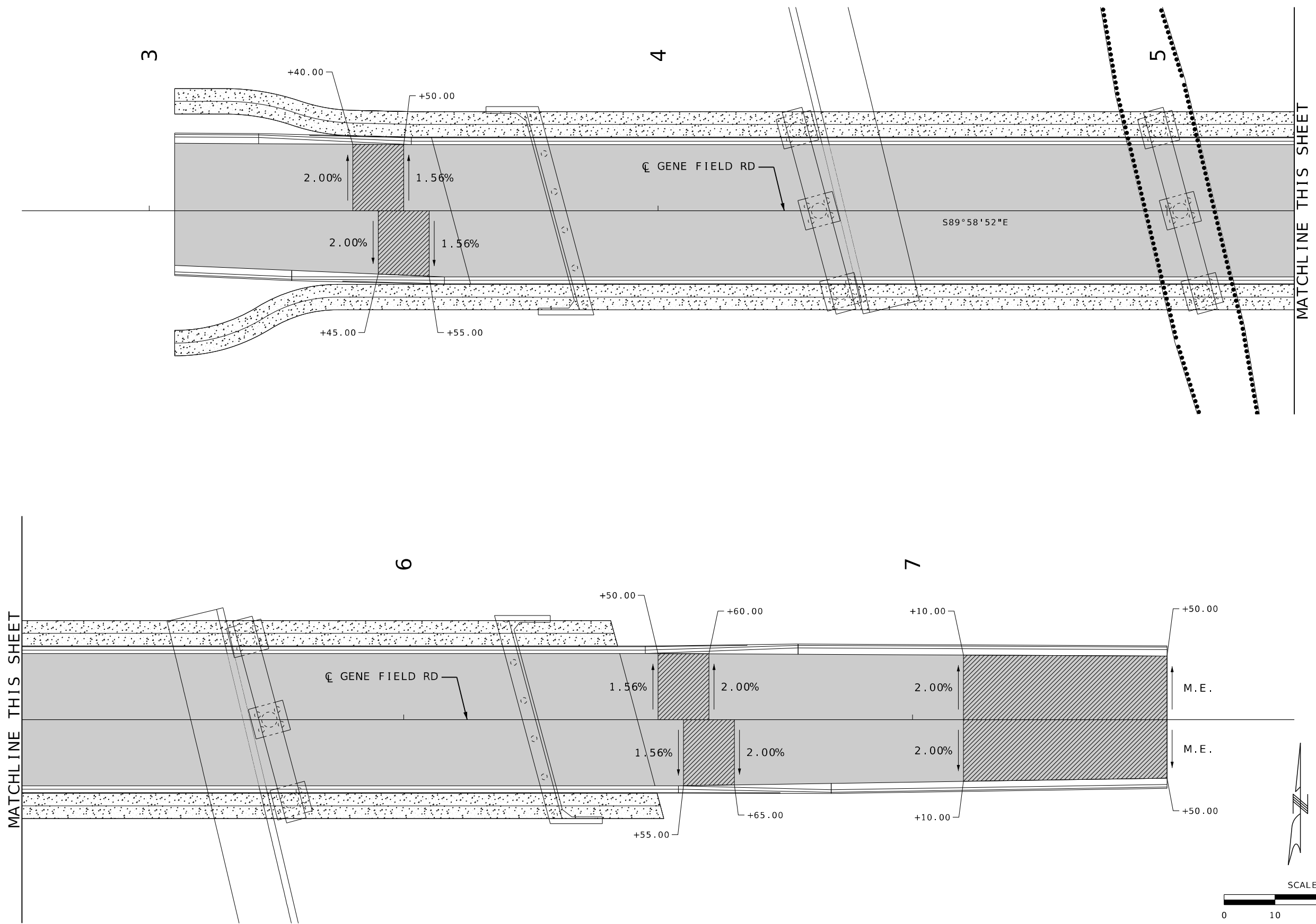


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PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

SHELBY P. REYNOLDS  
PROFESSIONAL  
ENGINEER  
PE-2023018931

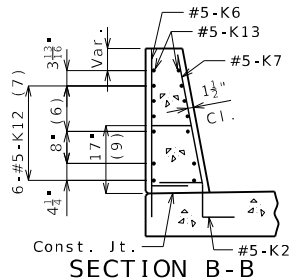
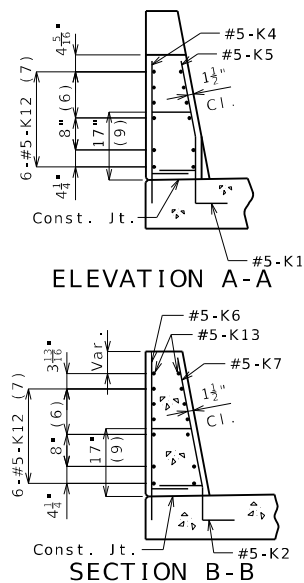
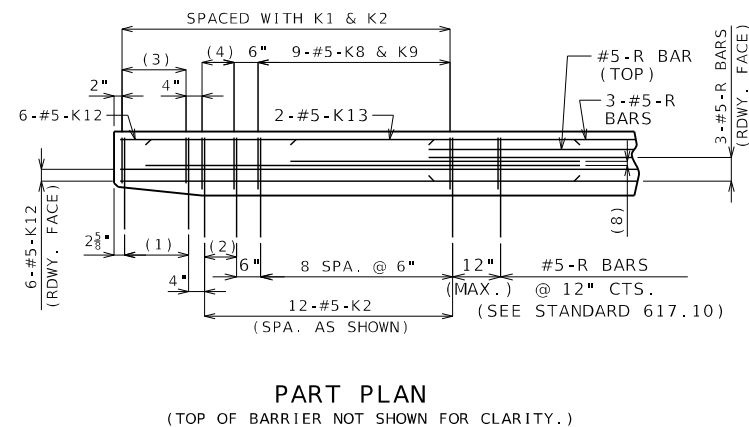
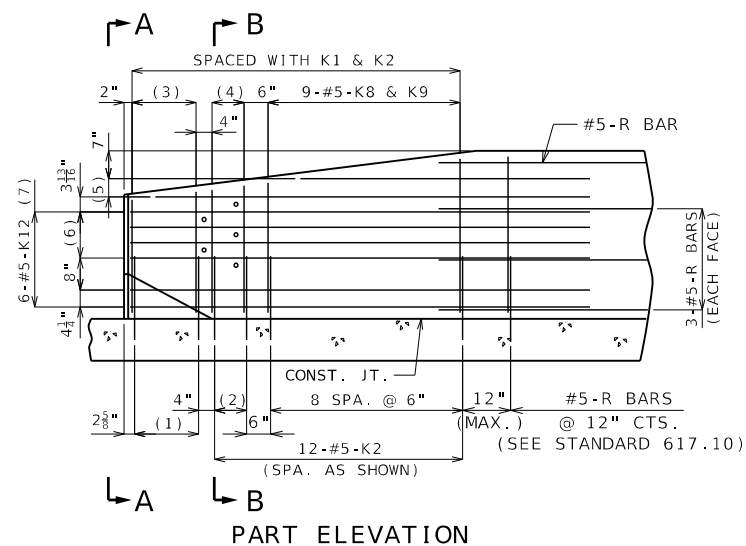
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED. REV.



CROSS SLOPE TRANSITION

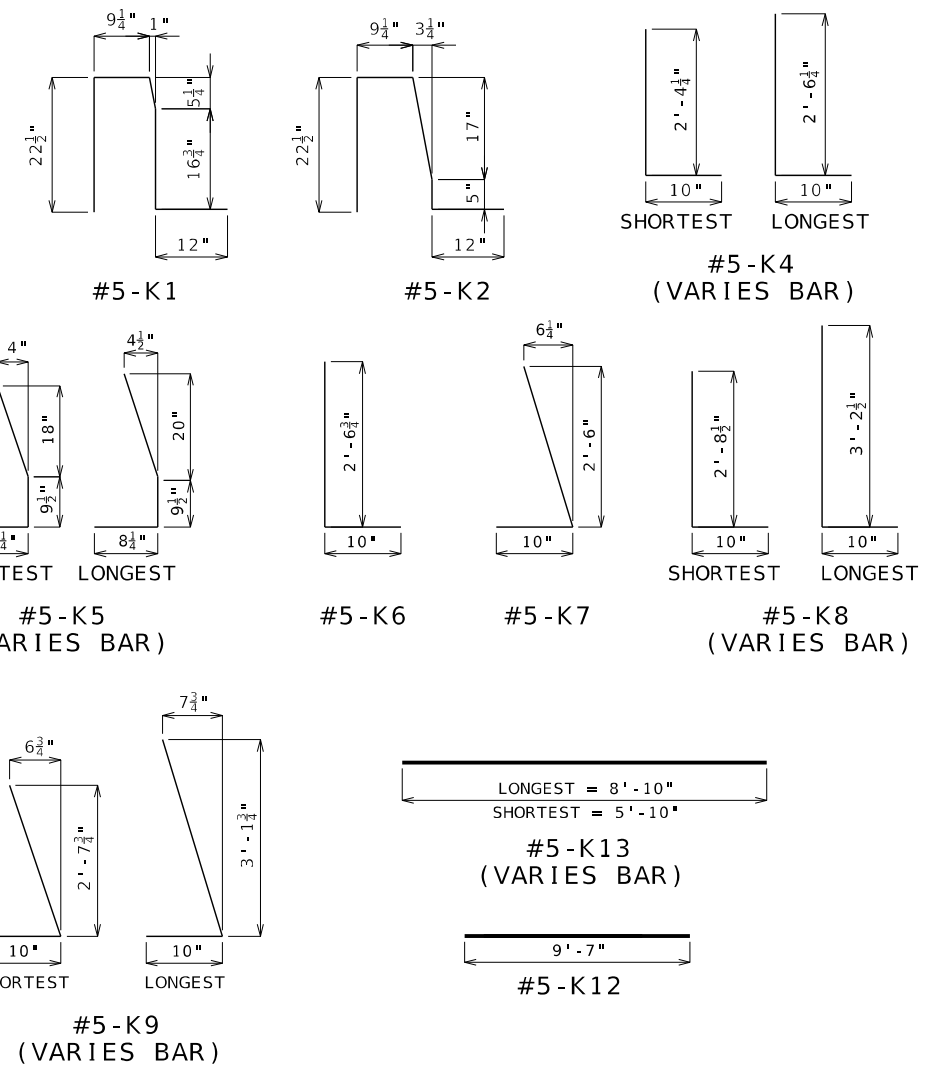
SPECIAL SHEET  
SUPERELEVATION DETAILS





- (1) 5-#5-K1 @ 4" CTS.
- (2) 2 SPACES @ 4"
- (3) 5-#5-K4 & K5
- (4) 3-#5-K6 & K7
- (5) 2-#5-K13 @  $4\frac{1}{2}$ " CTS., EACH FACE
- (6) 3 SPACES @  $3\frac{1}{8}$ "
- (7) SPACED AS SHOWN, EACH FACE
- (8) 2-#5-K13 (ROADWAY FACE)
- (9) TO TOP OF BAR

NOTE: USE A MINIMUM LAP OF 2'-6" BETWEEN HORIZONTAL K BARS AND R BARS.



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

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| ROUTE<br>I - 29 | STATE<br>MO |
|-----------------|-------------|

|                |                 |
|----------------|-----------------|
| DISTRICT<br>NW | SHEET NO.<br>12 |
|----------------|-----------------|

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO. \_\_\_\_\_

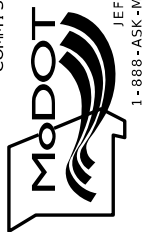
BRIDGE NO.

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**MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION**

 **MoDOT**

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



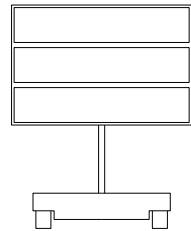
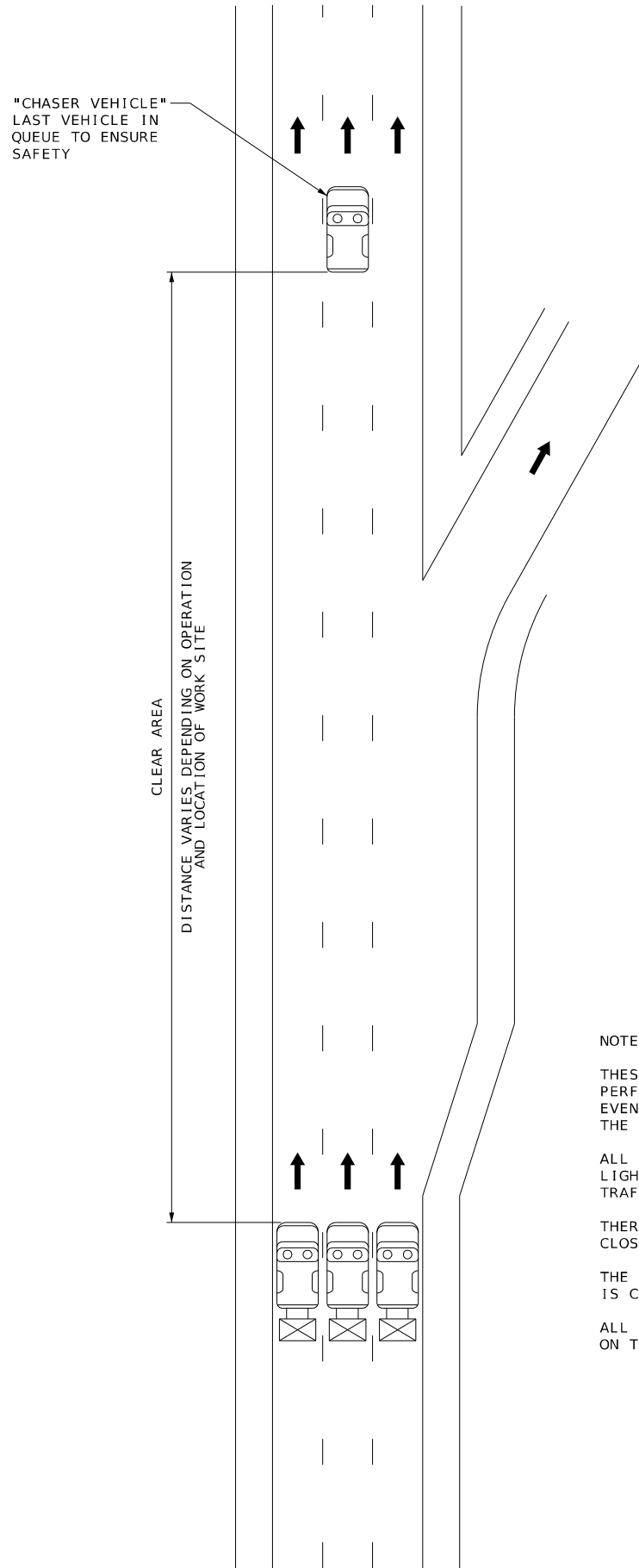
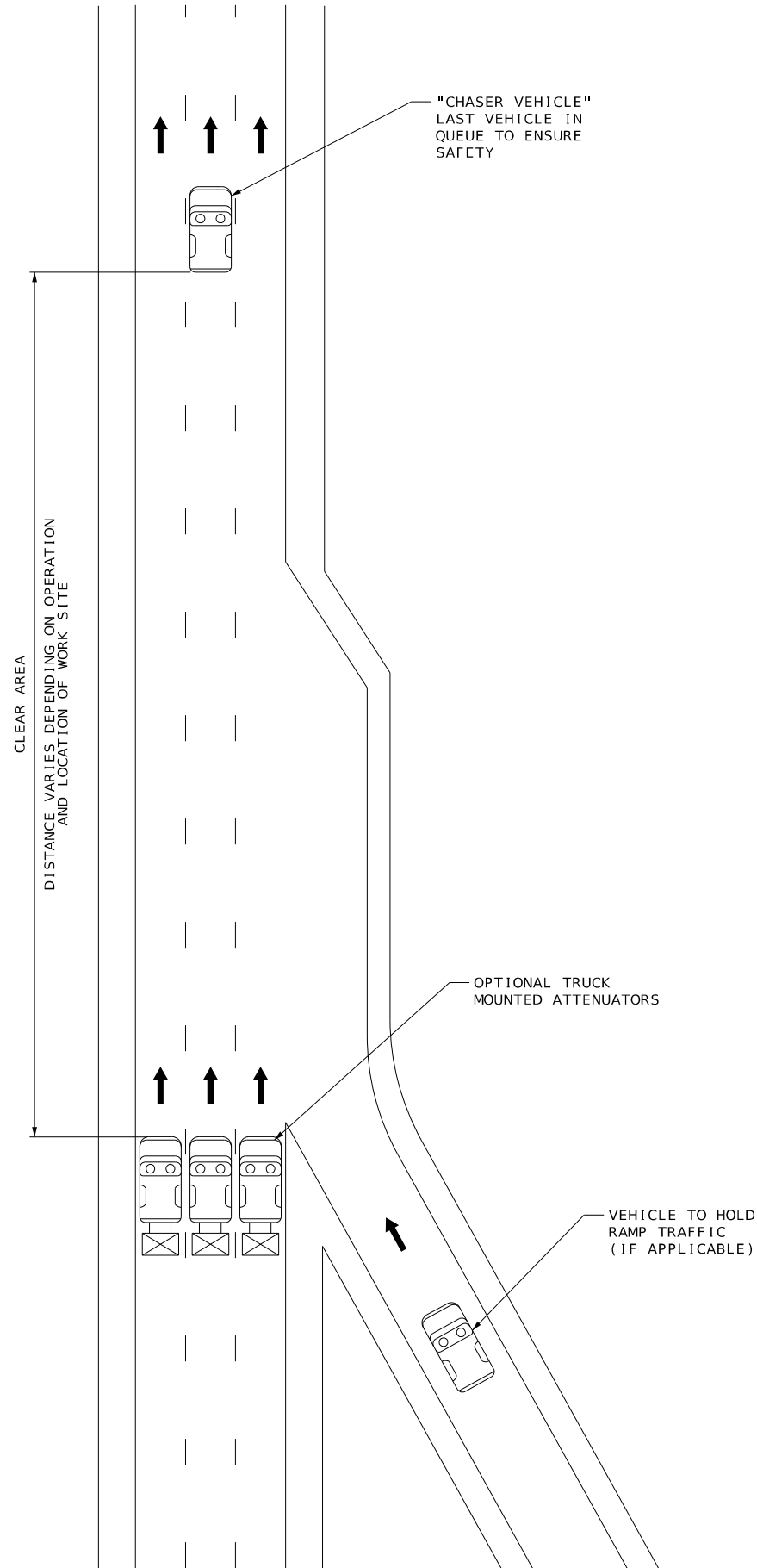
**GBA**  
9801 Renner Blvd, Ste. 300  
Lenexa, KS 66219  
913.492.0400  
GBAteam.com

GEORGE BUTLER  
ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

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NOTES:

THESE TRAFFIC CONTROL FIGURES DEPICT THE MINIMUM REQUIREMENTS TO PERFORM A ROLLING STOP. IF THE ROLLING STOP IS OR CAN BE A PLANNED EVENT, THEN A SITE SPECIFIC TRAFFIC CONTROL PLAN SHOULD BE DEVELOPED. THE ROLLING STOP PLAN SHOULD BE APPROVED BY THE ENGINEER.

ALL TRAFFIC CONTROL VEHICLES SHALL BE EQUIPPED WITH FLASHING WARNING LIGHTS. TRAFFIC CONTROL VEHICLES USED TO STOP OR SLOW DOWN MAINLINE TRAFFIC MAY BE EQUIPPED WITH OPTIONAL TRUCK MOUNTED ATTENUATORS.

THERE SHOULD BE A MINIMUM OF ONE VEHICLE PER LANE DURING THE ROAD CLOSURE.

THE ENGINEER SHALL BE NOTIFIED AND ON SITE WHEN A ROLLING STOP IS CONDUCTED.

ALL ON RAMP TRAFFIC IN THE VICINITY OF THE WORK SITE SHALL BE STOPPED ON THE RAMP BY A TRAFFIC CONTROL VEHICLE EQUIPPED WITH FLASHING LIGHTS.

SETUP  
TYPE 7  
ROLLING  
ROAD BLOCK

TRAFFIC CONTROL  
TYPICAL APPLICATIONS  
SHEET 1 OF 1



DATE PREPARED  
12/30/2025

|                    |                 |
|--------------------|-----------------|
| ROUTE<br>1-29      | STATE<br>MO     |
| DISTRICT<br>NW     | SHEET NO.<br>13 |
| COUNTY<br>BUCHANAN |                 |
| JOB NO.<br>J113332 |                 |
| 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)

MERGE  
MIDWEST  
ENGINEERING

MERGE MIDWEST  
ENGINEERING, LLC  
MO CERT. OF AUTH. 2017010974  
2668 W CATALPA ST.  
OLATHE, KS 66061  
(913) 788-1985  
WWW.MERGE MIDWEST.COM

LEE BAER  
PROFESSIONAL  
ENGINEER  
PE-2021000150



The diagram illustrates the placement of traffic signs for road improvements on two types of roadways: Two-Lane Undivided and Multi-Lane Divided.

### TWO-LANE UNDIVIDED

- Approach:** Signs are placed upstream of the work zone. From top to bottom: "ROAD WORK NEXT XX MILES" (GO20-1), "WORK ZONE NO PHONE ZONE" (SPECIAL 4), and "END ROAD WORK" (GO20-2). Distances between signs are 500' (1) and 500' (1).
- Work Zone:** The central area where construction occurs.
- Exit:** Signs are placed downstream. From top to bottom: "END ROAD WORK" (GO20-2), "WORK ZONE NO PHONE ZONE" (SPECIAL 4), and "ROAD WORK NEXT XX MILES" (GO20-1). Distances between signs are 500' (1) and 500' (1).
- Project Limits:** A central sign reads "Road Improvements Spring 2017 CONST-5-96 (2) (3)". Arrows indicate the "BEGINNING OF PROJECT LIMITS; OR INITIAL WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS." and the "END OF PROJECT LIMITS; END OF WORK ZONE TERMINATION AREA, IF LOCATED BEYOND END OF PROJECT; OR LAST WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECTS LIMITS."

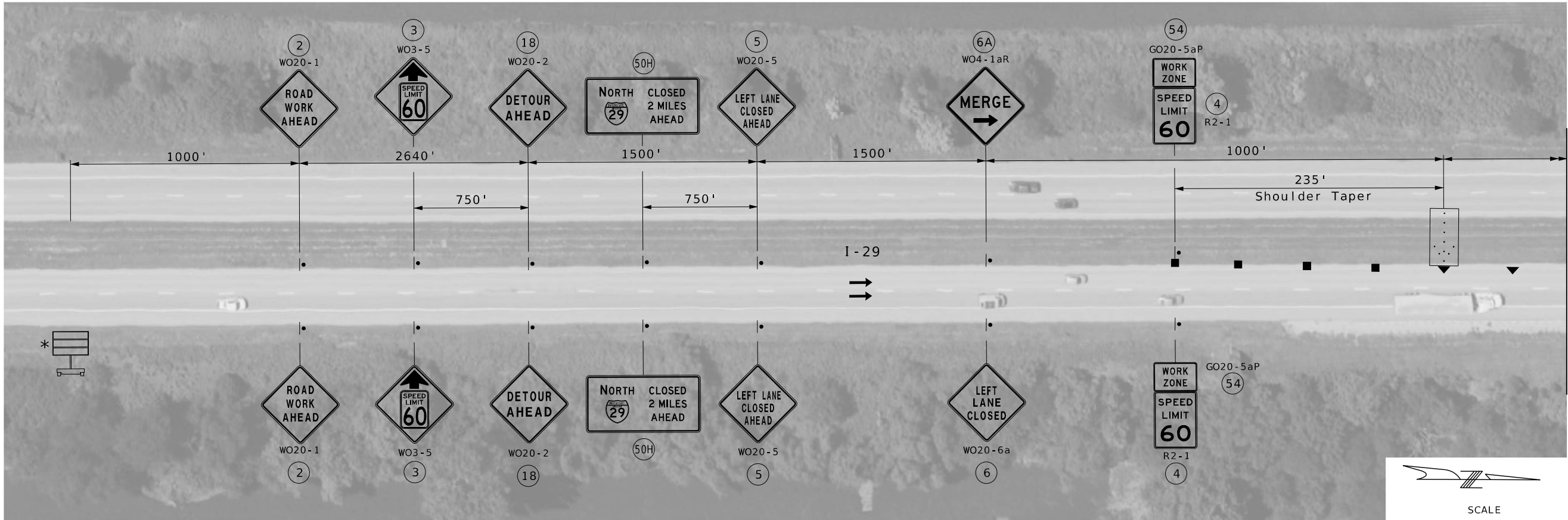
### MULTI-LANE DIVIDED

- Approach:** Similar to the two-lane undivided section, with "ROAD WORK NEXT XX MILES" (GO20-1), "WORK ZONE NO PHONE ZONE" (SPECIAL 4), and "END ROAD WORK" (GO20-2) signs.
- Work Zone:** The central area where construction occurs.
- Exit:** Similar to the two-lane undivided section, with "END ROAD WORK" (GO20-2), "WORK ZONE NO PHONE ZONE" (SPECIAL 4), and "ROAD WORK NEXT XX MILES" (GO20-1) signs.
- Project Limits:** A central sign reads "Road Improvements Spring 2017 CONST-5-48 (2) (3)". Arrows indicate the "BEGINNING OF PROJECT LIMITS; OR INITIAL WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS." and the "END OF PROJECT LIMITS; END OF WORK ZONE TERMINATION AREA, IF LOCATED BEYOND END OF PROJECT; OR LAST WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECTS LIMITS."

**NOTES:**

- SIGN GO20-1 IS REQUIRED PER EPG §16.6.56.
- SIGN GO20-2 IS USED ON ALL PROJECTS WHERE SIGN GO20-1 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.
- (2) CONST-5-96 OR CONST-5-48 SIGN IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS. IF A VISIBLE LOCATION WITHIN THE PROJECT IS NOT AVAILABLE, THE SIGN MAY BE PLACED 500 FEET BEFORE SIGN GO20-1 ROAD WORK NEXT XX MILES.
- (3) THE "POINT OF PRESENCE" SIGN IS AVAILABLE IN TWO SIZES DEPENDING ON ROADWAY CONDITIONS. THE 48 IN. X 36 IN. SIGN IS USED ON LOW VOLUME ROUTES THAT CARRY 400 AADT OR LESS, ON PROJECTS THAT HAVE A DURATION OF 4 WEEKS OR LESS OR IN URBAN AREAS WHERE THERE IS INSUFFICIENT RIGHTS OF WAY FOR AN EIGHT FOOT WIDE SIGN. THE 96 IN. X 48 IN. VERSION OF THE SIGN IS USED IN ALL OTHER APPLICATIONS, BUT CAN ALSO BE USED IN PLACE OF THE 48 IN. x 36 IN. SIGN IF ADDED EMPHASIS IS DEEMED NECESSARY.
- (4) THE "WORK ZONE NO PHONE ZONE" SIGN IS PLACED A MINIMUM OF 500 FEET BEFORE THE ROAD WORK AHEAD SIGN.





MATCHLINE THIS SHEET



|                             |                 |
|-----------------------------|-----------------|
| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I-29               | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>15 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| CONTRACT ID.                |                 |
| PROJECT NO.                 |                 |
| BRIDGE NO.                  |                 |

| DATE | DESCRIPTION |
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

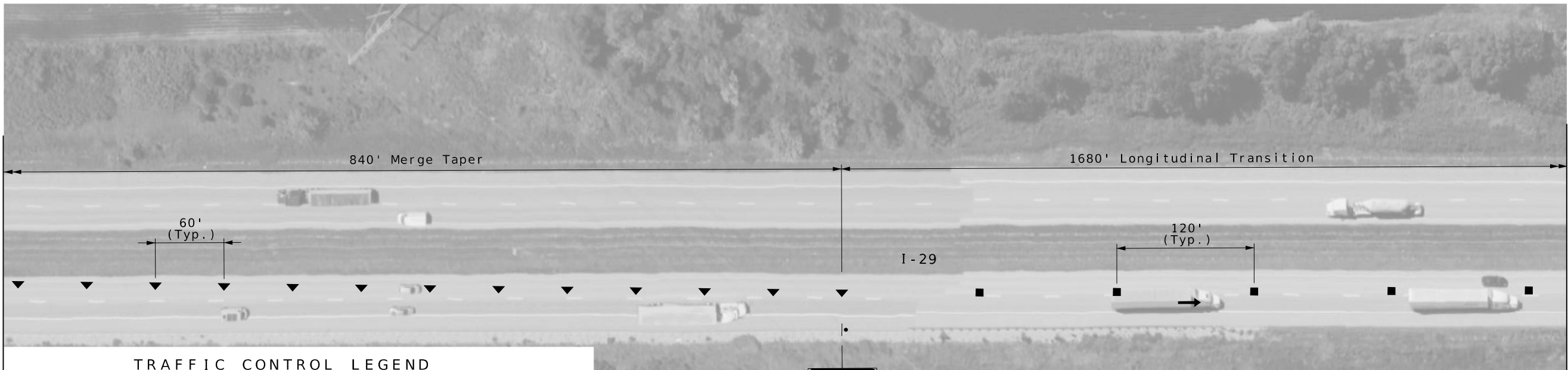
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



MERGE MIDWEST  
ENGINEERING, LLC  
MO CERT. OF AUTH. 2017010974  
2668 W CATALPA ST.  
OLATHE, KS 66061  
(913) 788-1985  
WWW.MERGE1DMIDWEST.COM  
LEE BAER  
PROFESSIONAL  
ENGINEER  
PE-2021000150

XXX\_TC\_01-J113332\_150.dgn

2:25:45 PM 12/30/2025 REV.



MATCHLINE (SEE SHEET 16)

TRAFFIC CONTROL LEGEND

- |                                                                         |                            |
|-------------------------------------------------------------------------|----------------------------|
| • SIGN (SINGLE SIDED)                                                   | ■ CHANNELIZER              |
| ▬ SIGN (DOUBLE SIDED)                                                   | ⌈ BARRICADE                |
| ⚠ FLAGGER                                                               | 📄 CHANGEABLE MESSAGE BOARD |
| ▲ DIRECTIONAL INDICATION BARRICADE W/SEQUENTIAL FLASHING WARNING LIGHTS | ⬆ FLASHING ARROW PANEL     |



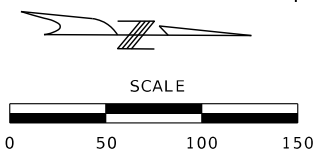
General Note:  
Sheets 15-29 and sheet 31 are to be in place for the full closure of I-29.

CMS locations shown on sheet 30 are to be in place 7 days prior to the full closure of I-29.

Full closure of I-29 shall be limited to weekends (7pm Saturday to 5am Monday).

See project specifications for work hour restrictions and additional information.

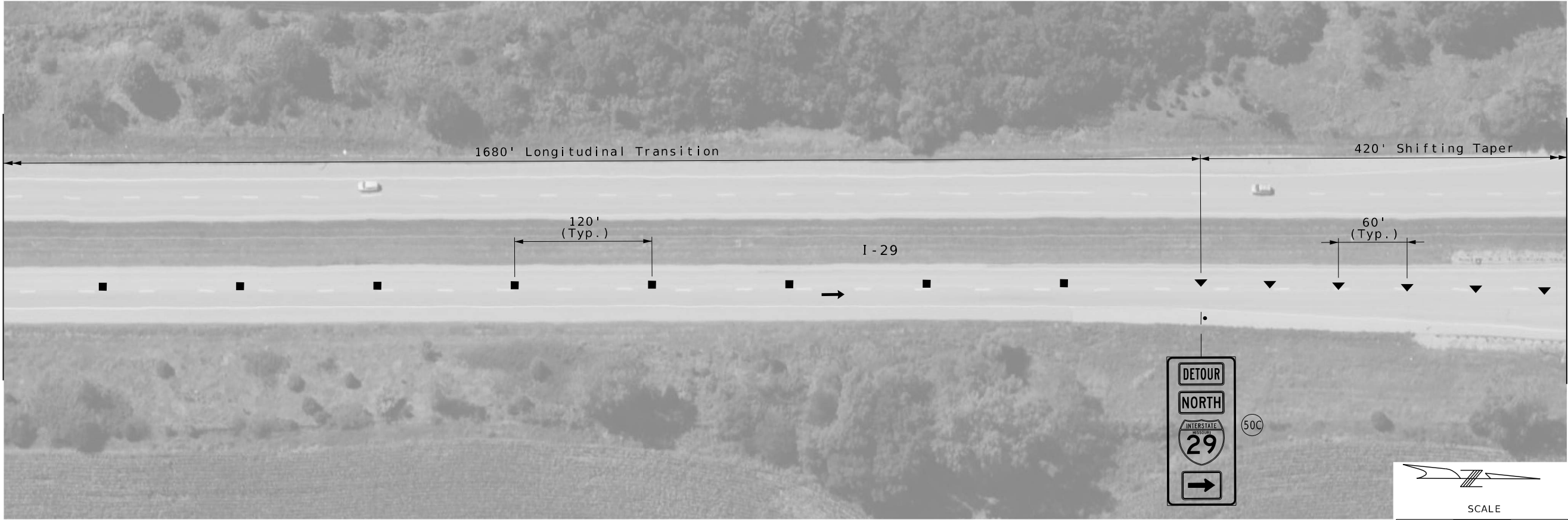
\* See "Changeable Message Sign Locations & Message" Sheet for Messages.



TRAFFIC CONTROL SHEET  
I-29 AT I-229 (SOUTH)  
SHEET 1 OF 2



MATCHLINE  
(SEE SHEET 15)



MATCHLINE THIS SHEET



|                             |                 |
|-----------------------------|-----------------|
| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I-29               | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>16 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| 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)

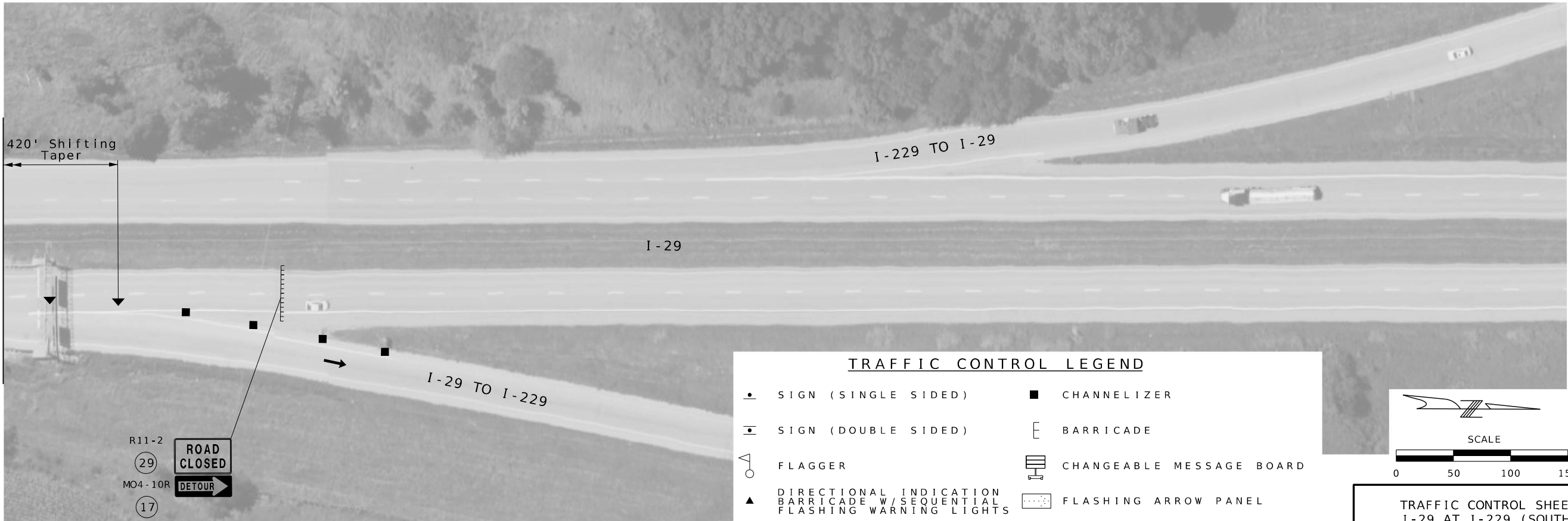
MoDOT



MERGE MIDWEST  
ENGINEERING, LLC  
MO CERT. OF AUTH. 2017010974  
2668 W CATALPA ST.  
OLATHE, KS 66061  
(913) 788-1985  
WWW.MERGEMIDWEST.COM

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PROFESSIONAL  
ENGINEER  
PE-2021000150

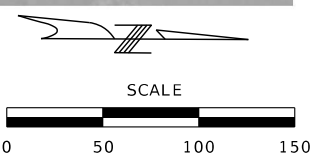
MATCHLINE THIS SHEET



MATCHLINE THIS SHEET

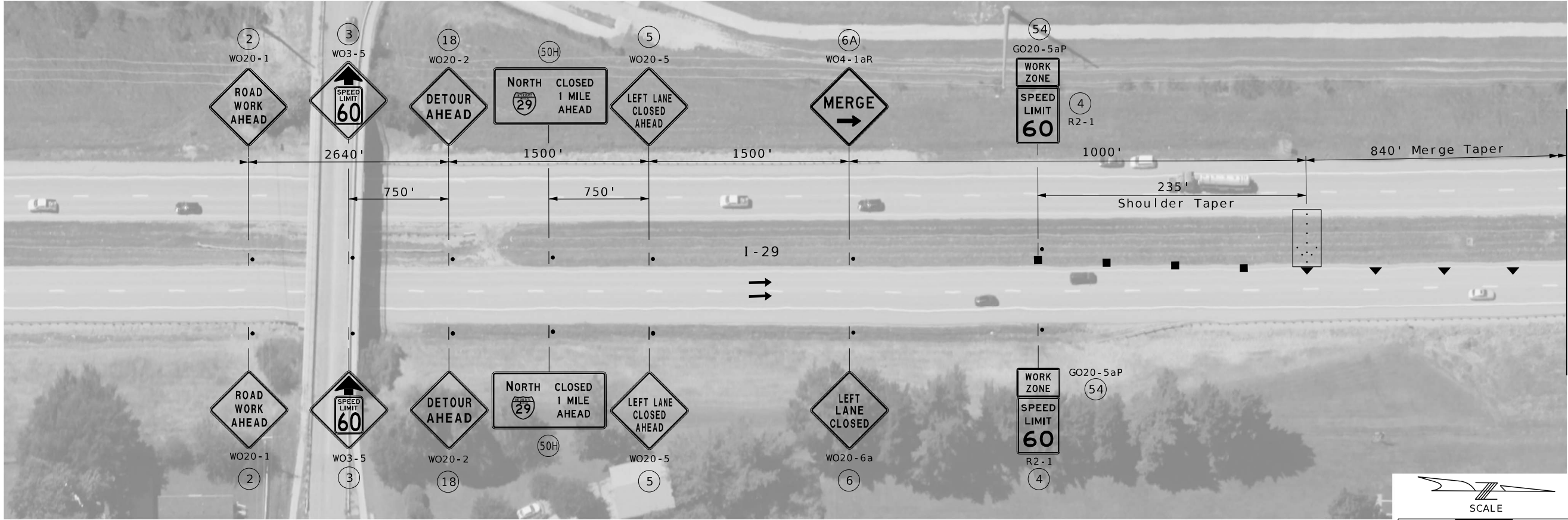
#### TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- |— SIGN (DOUBLE SIDED)
- |— BARRICADE
- △ FLAGGER
- |— CHANGEABLE MESSAGE BOARD
- ▲ DIRECTIONAL INDICATION BARRICADE W/SEQUENTIAL FLASHING WARNING LIGHTS
- |— FLASHING ARROW PANEL



TRAFFIC CONTROL SHEET  
I-29 AT I-229 (SOUTH)  
SHEET 2 OF 2





MATCHLINE THIS SHEET



DATE PREPARED  
12/30/2025  
ROUTE I-29 STATE MO  
DISTRICT NW SHEET NO. 17  
COUNTY BUCHANAN  
JOB NO. J113332  
CONTRACT ID.  
PROJECT NO.  
BRIDGE NO.

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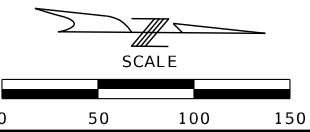


MATCHLINE THIS SHEET  
(SEE SHEET 18)

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- ◯ FLAGGER
- ▲ DIRECTIONAL INDICATION BARRICADE W/SEQUENTIAL FLASHING WARNING LIGHTS
- CHANNELIZER
- E BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL

\* See "Changeable Message Sign Locations & Message" Sheet for Messages.



TRAFFIC CONTROL SHEET  
I-29 AT US-36  
SHEET 1 OF 3

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

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OLATHE, KS 66061  
(913) 788-1985  
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PROFESSIONAL ENGINEER  
PE-2021000150

XXX\_TC\_03\_J113332\_150.dgn

2:27:12 PM 12/30/2025 REV.



MATCHLINE  
(SEE SHEET 17)



MATCHLINE THIS SHEET



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|-----------------------------|-----------------|
| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I - 29             | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>18 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| CONTRACT ID.                |                 |
| PROJECT NO.                 |                 |
| BRIDGE NO.                  |                 |

| DATE | DESCRIPTION |
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MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

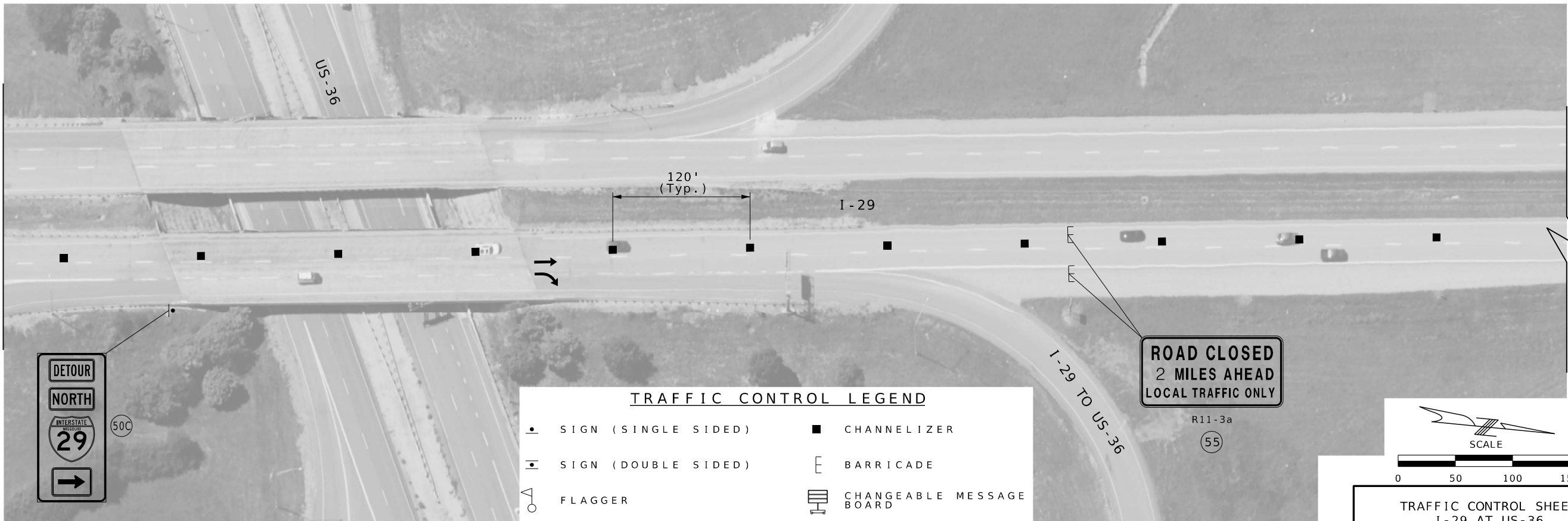


105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



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ENGINEERING, LLC  
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OLATHE, KS 66061  
(913) 788-1985  
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PROFESSIONAL  
ENGINEER  
PE-2021000150

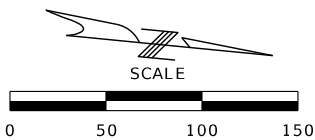
MATCHLINE THIS SHEET



SEE SHEET 20

#### TRAFFIC CONTROL LEGEND

|   |                                                                       |   |                          |
|---|-----------------------------------------------------------------------|---|--------------------------|
| • | SIGN (SINGLE SIDED)                                                   | ■ | CHANNELIZER              |
| ◐ | SIGN (DOUBLE SIDED)                                                   | E | BARRICADE                |
| ⚠ | FLAGGER                                                               | 📺 | CHANGEABLE MESSAGE BOARD |
| ▲ | DIRECTIONAL INDICATION BARRICADE W/SEQUENTIAL FLASHING WARNING LIGHTS | 🔦 | FLASHING ARROW PANEL     |

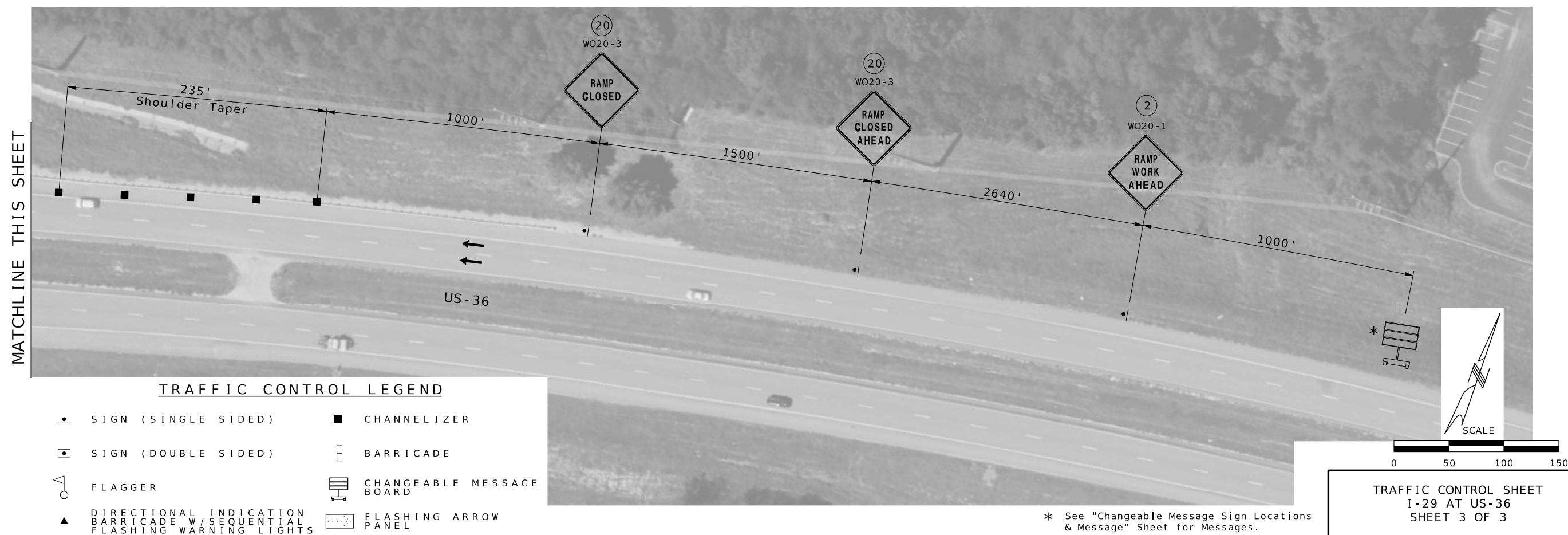
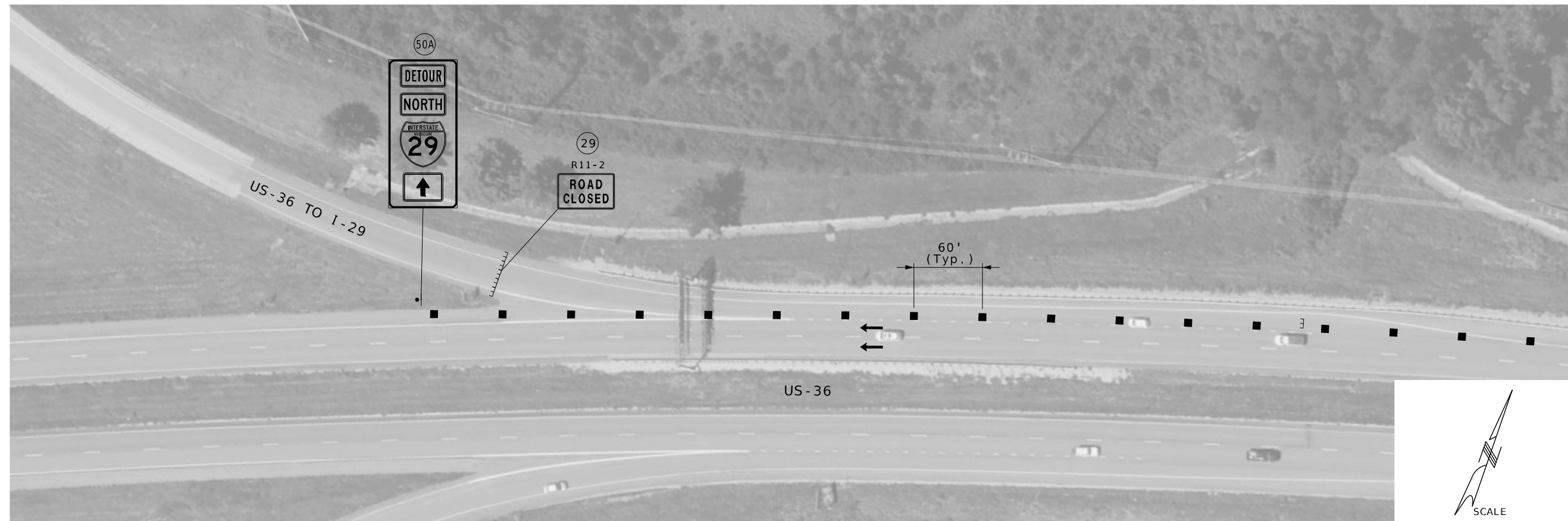


TRAFFIC CONTROL SHEET  
I-29 AT US-36  
SHEET 2 OF 3

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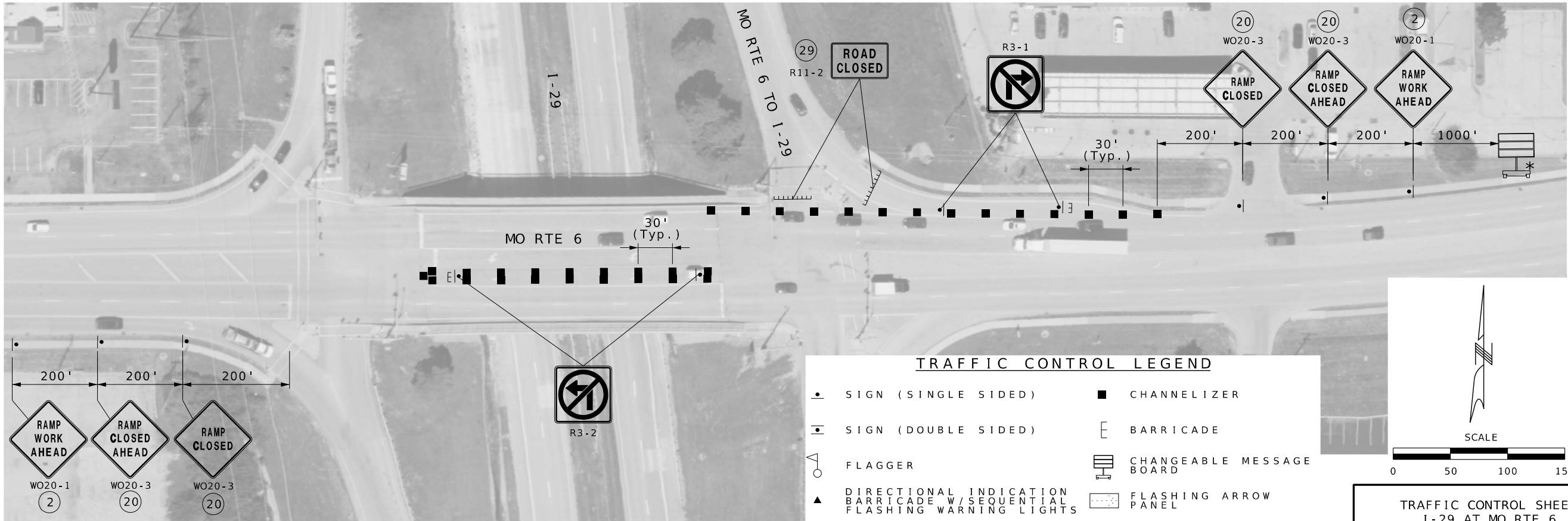
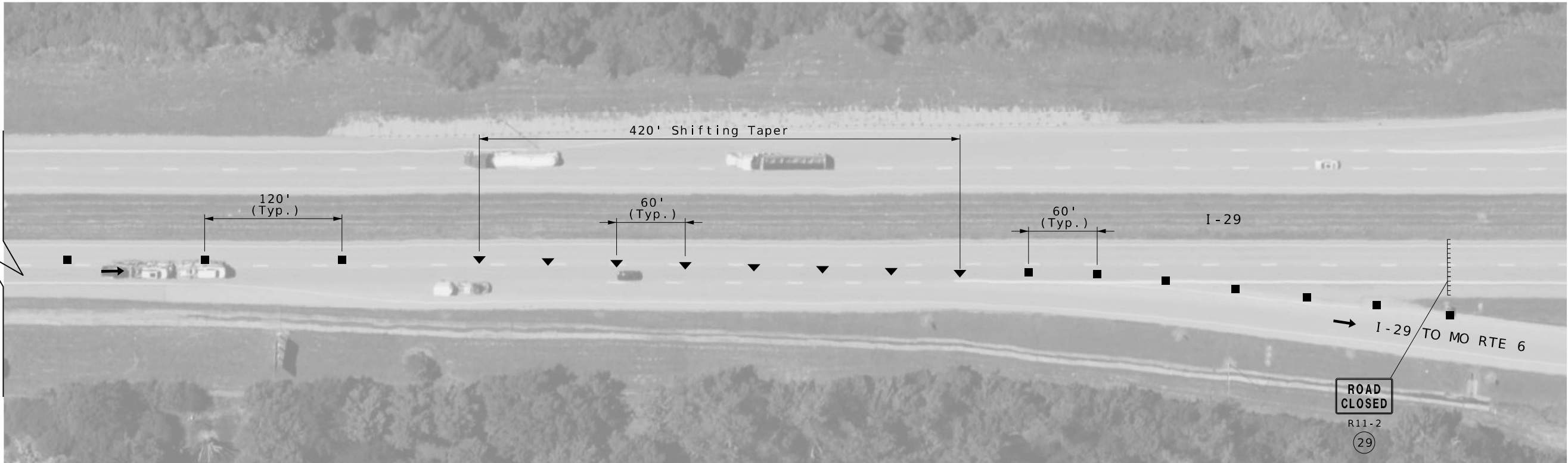
2:28:24 PM 12/30/2025 REV.



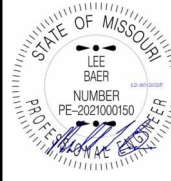




SEE SHEET 18



TRAFFIC CONTROL SHEET  
I-29 AT MO RTE 6  
SHEET 1 OF 1



|                             |                 |
|-----------------------------|-----------------|
| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I-29               | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>20 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| CONTRACT ID.                |                 |
| PROJECT NO.                 |                 |
| BRIDGE NO.                  |                 |

| DATE | DESCRIPTION |
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

**MoDOT**

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

**MERGE MIDWEST ENGINEERING**

MERGE MIDWEST ENGINEERING, LLC  
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OLATHE, KS 66061  
(913) 788-1985  
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PROFESSIONAL ENGINEER  
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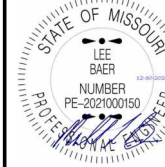


MATCHLINE THIS SHEET  
(SEE SHEET 22)

TRAFFIC CONTROL LEGEND

- |   |                                                                       |   |                          |
|---|-----------------------------------------------------------------------|---|--------------------------|
| • | SIGN (SINGLE SIDED)                                                   | ■ | CHANNELIZER              |
| ◐ | SIGN (DOUBLE SIDED)                                                   | E | BARRICADE                |
| ◑ | FLAGGER                                                               | ⏏ | CHANGEABLE MESSAGE BOARD |
| ▲ | DIRECTIONAL INDICATION BARRICADE W/SEQUENTIAL FLASHING WARNING LIGHTS | ⏏ | FLASHING ARROW PANEL     |

TRAFFIC CONTROL SHEET  
I-29 AT US-169 (NORTH)  
SHEET 1 OF 3



DATE PREPARED  
12/30/2025  
ROUTE  
I-29  
STATE  
MO  
DISTRICT  
NW  
SHEET NO.  
21  
COUNTY  
BUCHANAN  
JOB NO.  
J113332  
CONTRACT ID.  
PROJECT NO.  
BRIDGE NO.

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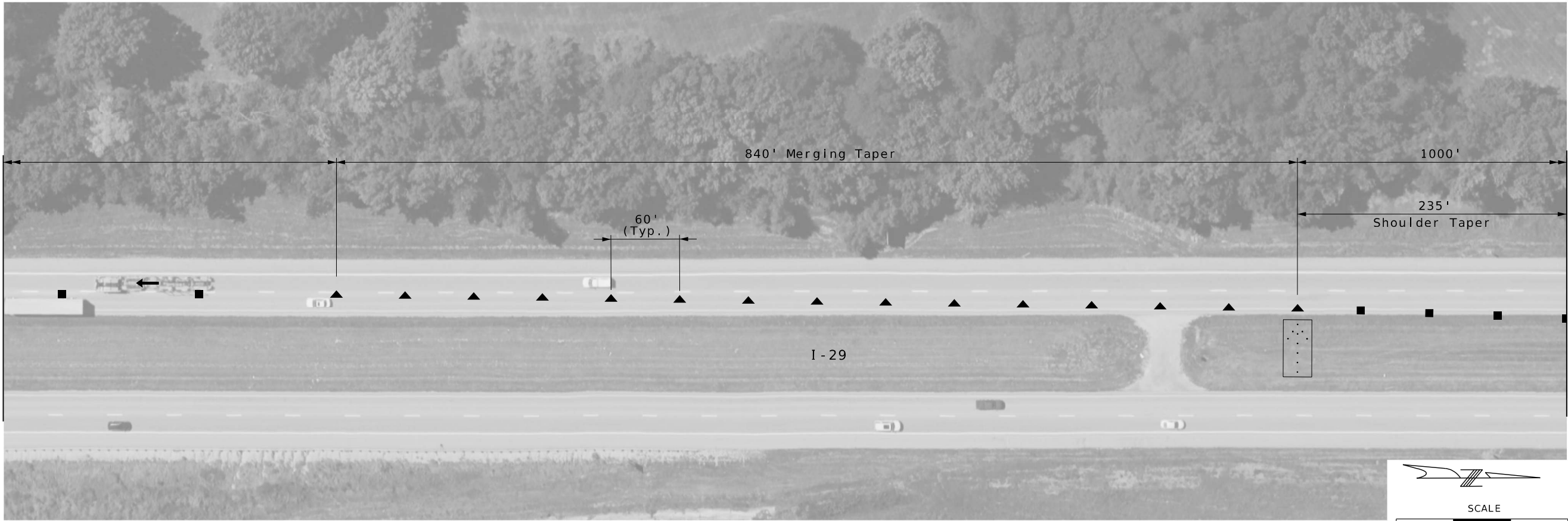
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
MoDOT  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

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ENGINEERING, LLC  
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OLATHE, KS 66061  
(913) 788-1985  
WWW.MERGE1DMIDWEST.COM

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PROFESSIONAL  
ENGINEER  
PE-2021000150

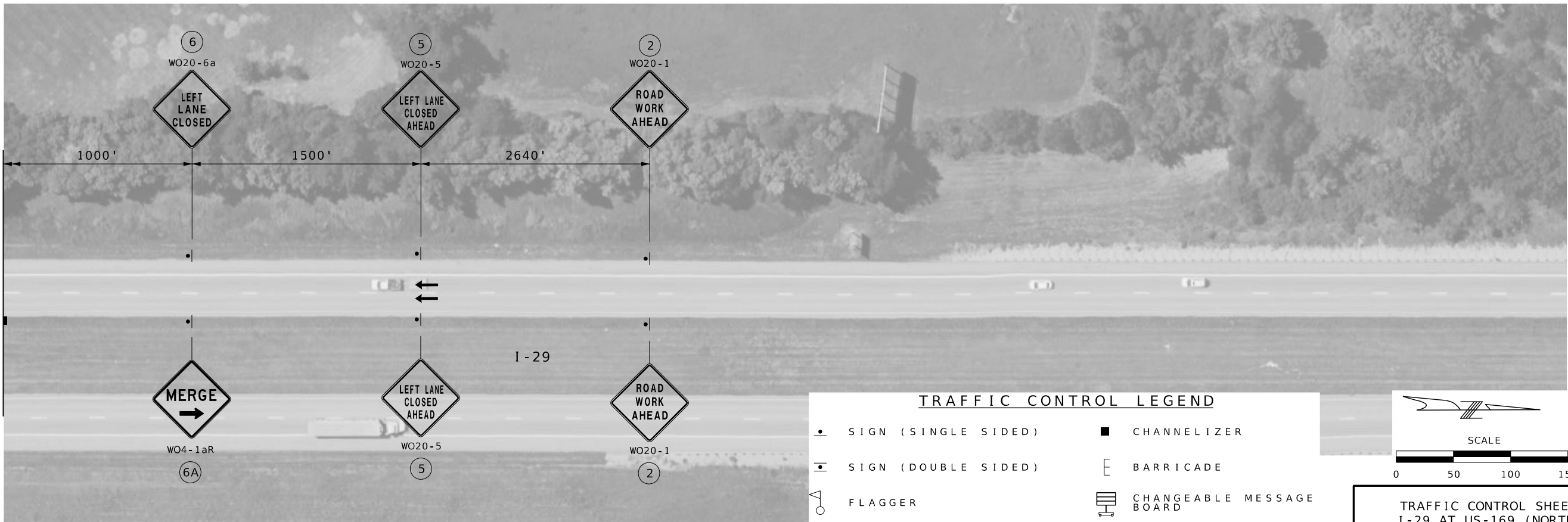


MATCHLINE  
(SEE SHEET 21)



MATCHLINE THIS SHEET

MATCHLINE THIS SHEET



\* See "Changeable Message Sign Locations & Message" Sheet for Messages.



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|-----------------------------|-----------------|
| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I - 29             | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>22 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| CONTRACT ID.                |                 |
| PROJECT NO.                 |                 |
| BRIDGE NO.                  |                 |

| DATE | DESCRIPTION |
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

**MoDOT**

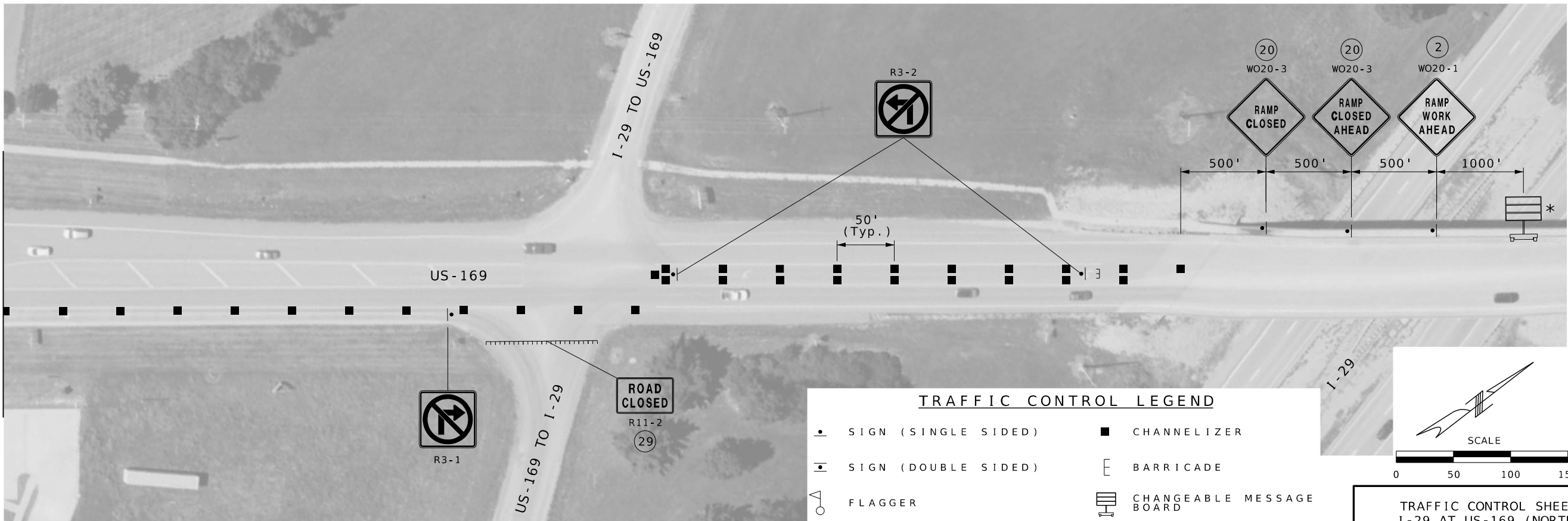
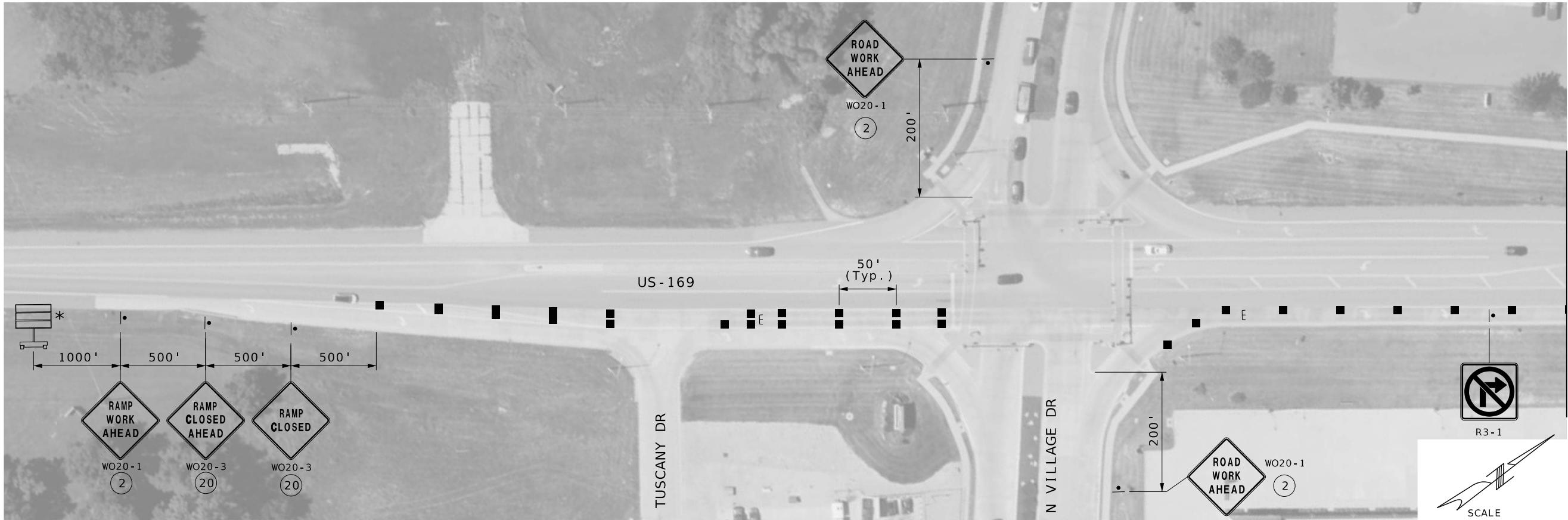
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**MERGE MIDWEST ENGINEERING**

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WWW.MERGE MIDWEST.COM

LEE BAER  
PROFESSIONAL ENGINEER  
PE-2021000150





| TRAFFIC CONTROL LEGEND |                                                                       |  |                          |
|------------------------|-----------------------------------------------------------------------|--|--------------------------|
|                        | SIGN (SINGLE SIDED)                                                   |  | CHANNELIZER              |
|                        | SIGN (DOUBLE SIDED)                                                   |  | BARRICADE                |
|                        | FLAGGER                                                               |  | CHANGEABLE MESSAGE BOARD |
|                        | DIRECTIONAL INDICATION BARRICADE W/SEQUENTIAL FLASHING WARNING LIGHTS |  | FLASHING ARROW PANEL     |

\* See "Changeable Message Sign Locations & Message" Sheet for Messages.

TRAFFIC CONTROL SHEET  
I-29 AT US-169 (NORTH)  
SHEET 3 OF 3



|                             |                 |
|-----------------------------|-----------------|
| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I-29               | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>23 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| CONTRACT ID.                |                 |
| PROJECT NO.                 |                 |
| BRIDGE NO.                  |                 |

| DATE | DESCRIPTION |
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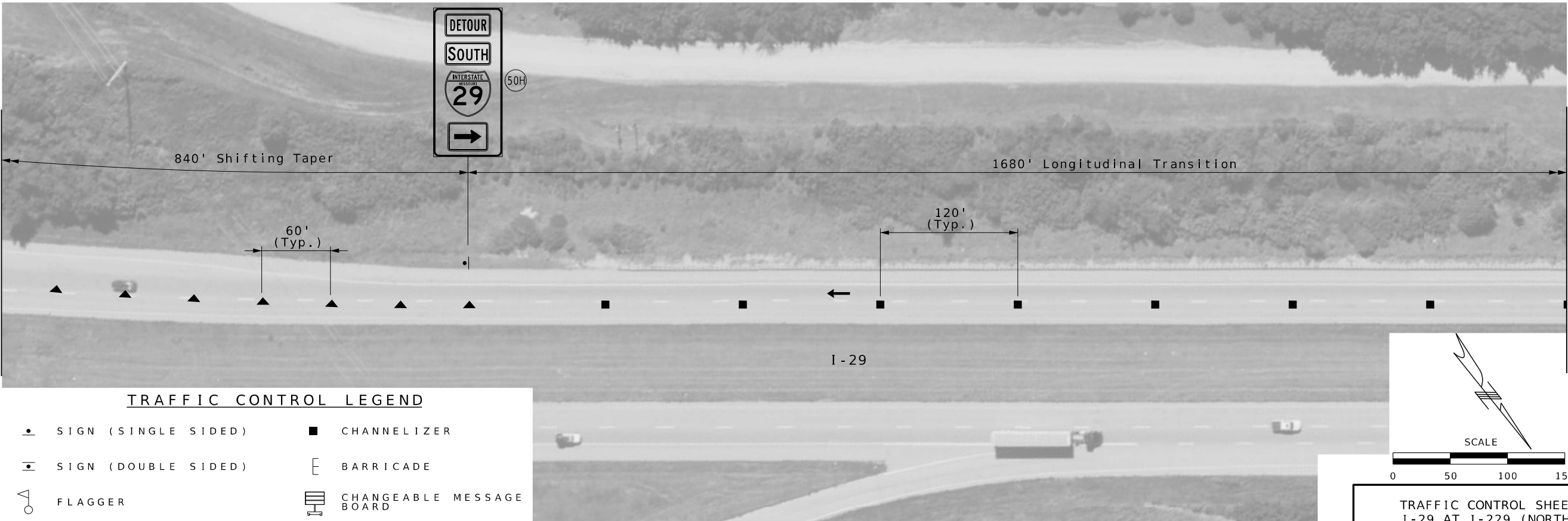
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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OLATHE, KS 66061  
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PROFESSIONAL  
ENGINEER  
PE-2021000150





TRAFFIC CONTROL LEGEND

- |                                                                          |                          |
|--------------------------------------------------------------------------|--------------------------|
| • SIGN (SINGLE SIDED)                                                    | ■ CHANNELIZER            |
| — SIGN (DOUBLE SIDED)                                                    | E BARRICADE              |
| ○ FLAGGER                                                                | CHANGEABLE MESSAGE BOARD |
| ▲ DIRECTIONAL INDICATION BARRICADE W/ SEQUENTIAL FLASHING WARNING LIGHTS | FLASHING ARROW PANEL     |

TRAFFIC CONTROL SHEET  
I-29 AT I-229 (NORTH)  
SHEET 1 OF 2



DATE PREPARED  
12/30/2025  
ROUTE  
I-29  
STATE  
MO  
DISTRICT  
NW  
SHEET NO.  
24  
COUNTY  
BUCHANAN  
JOB NO.  
J113332  
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)



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ENGINEERING, LLC  
MO CERT. OF AUTH. 2017010974  
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OLATHE, KS 66061  
(913) 788-1985  
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PROFESSIONAL  
ENGINEER  
PE-2021000150

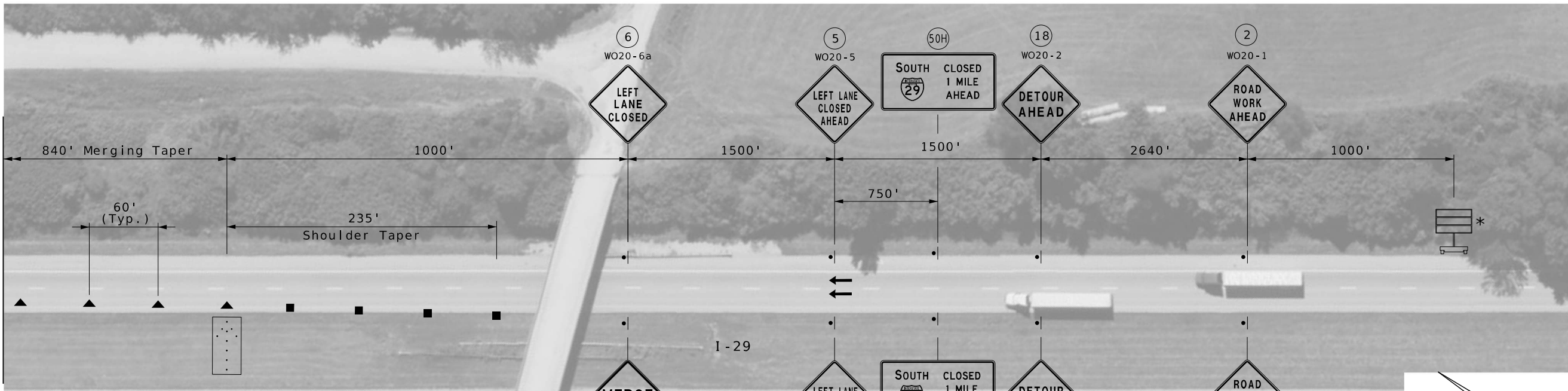


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(SEE SHEET 24)



MATCHLINE THIS SHEET

MATCHLINE THIS SHEET



#### TRAFFIC CONTROL LEGEND

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|--------------------------------------------------------------------------|----------------------------|
| ● SIGN (SINGLE SIDED)                                                    | ■ CHANNELIZER              |
| ⏏ SIGN (DOUBLE SIDED)                                                    | ⌈ BARRICADE                |
| ⏏ FLAGGER                                                                | ⏏ CHANGEABLE MESSAGE BOARD |
| ▲ DIRECTIONAL INDICATION BARRICADE W/ SEQUENTIAL FLASHING WARNING LIGHTS | ⏏ FLASHING ARROW PANEL     |

\* See "Changeable Message Sign Locations & Message" Sheet for Messages.

TRAFFIC CONTROL SHEET  
I-29 AT I-229 (NORTH)  
SHEET 2 OF 2



DATE PREPARED  
12/30/2025  
ROUTE  
I-29  
STATE  
MO  
DISTRICT  
NW  
SHEET NO.  
25  
COUNTY  
BUCHANAN  
JOB NO.  
J113332  
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)

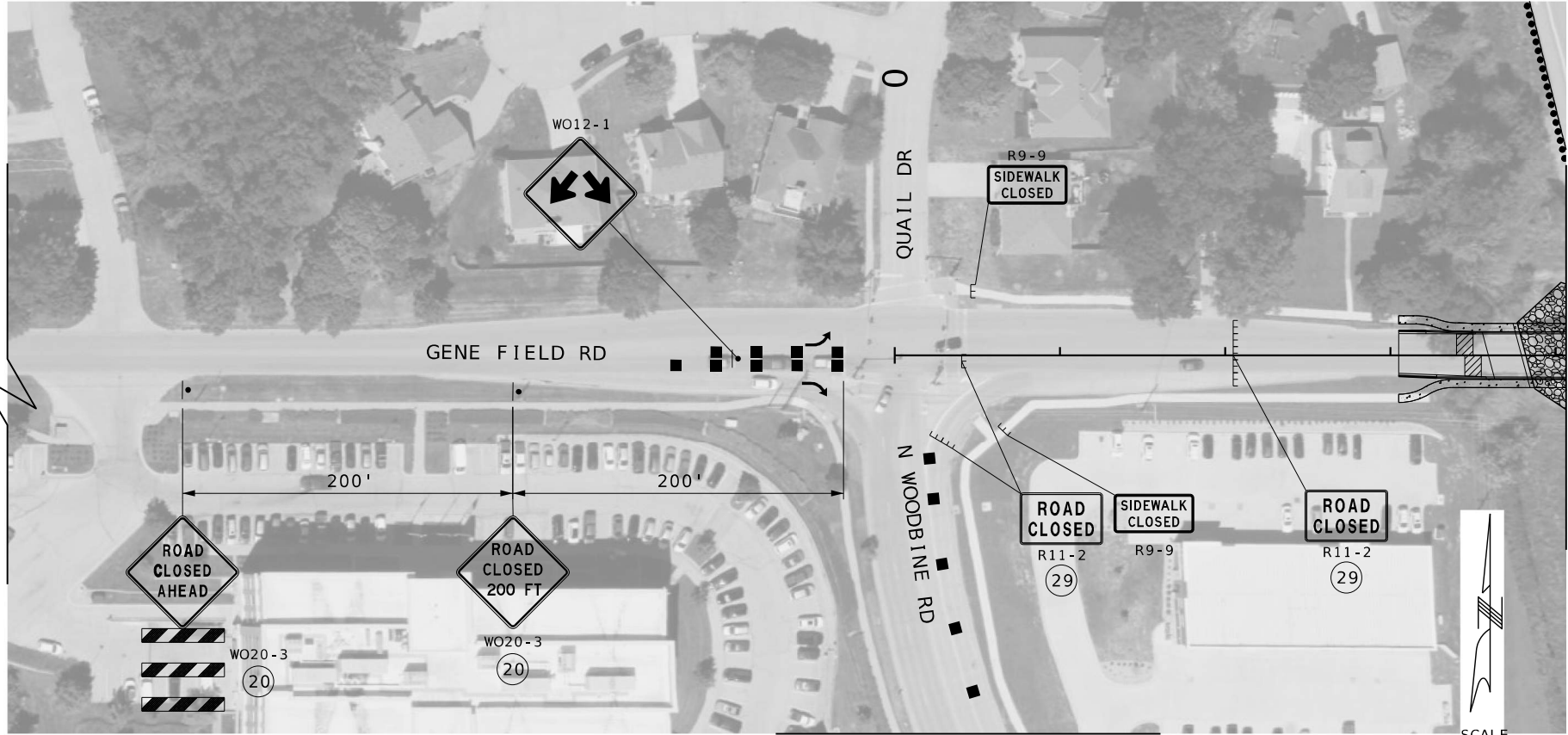
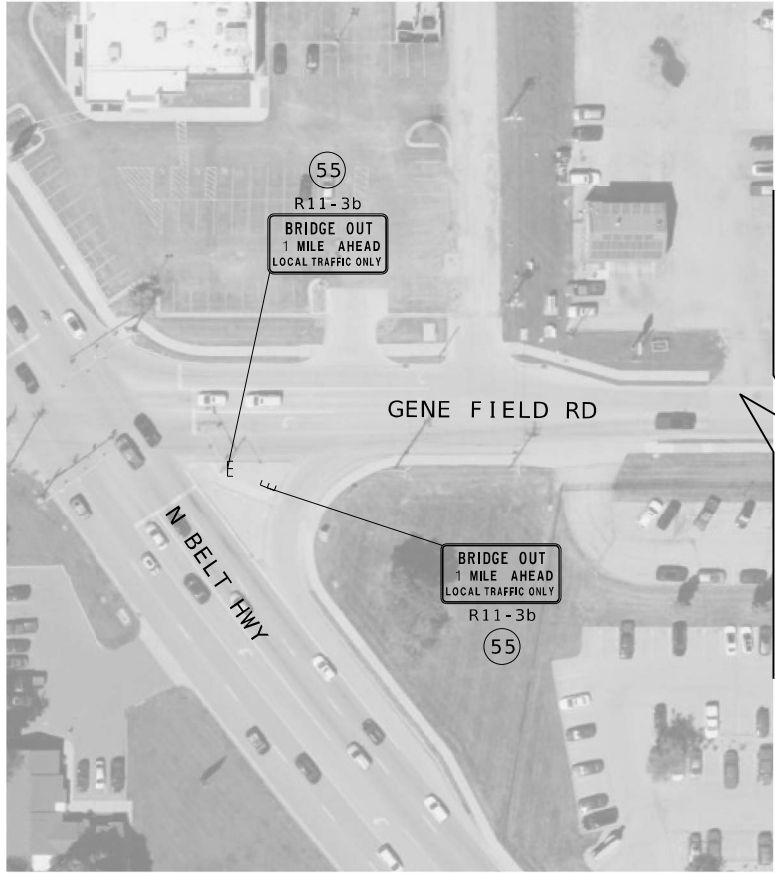


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OLATHE, KS 66061  
(913) 788-1985  
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LEE BAER  
PROFESSIONAL  
ENGINEER  
PE-2021000150

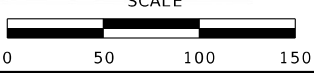
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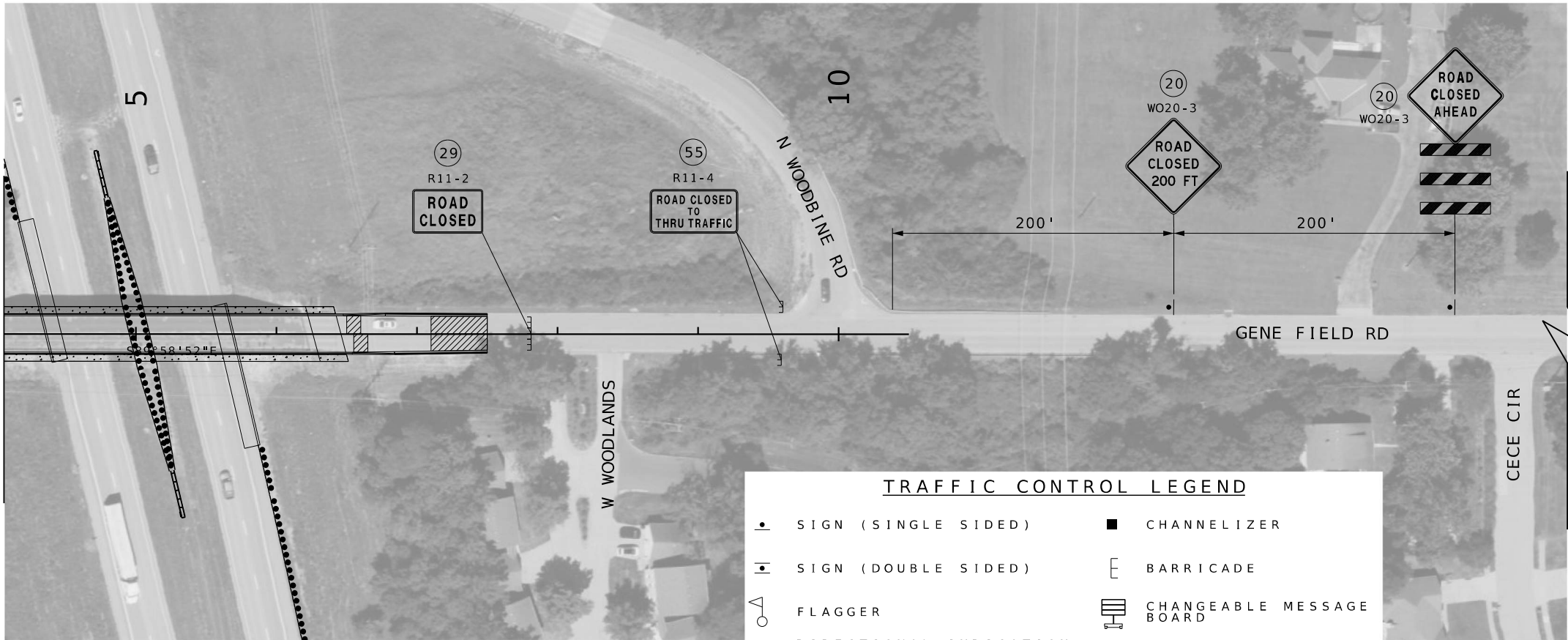




MATCHLINE  
(SEE SHEET 27)

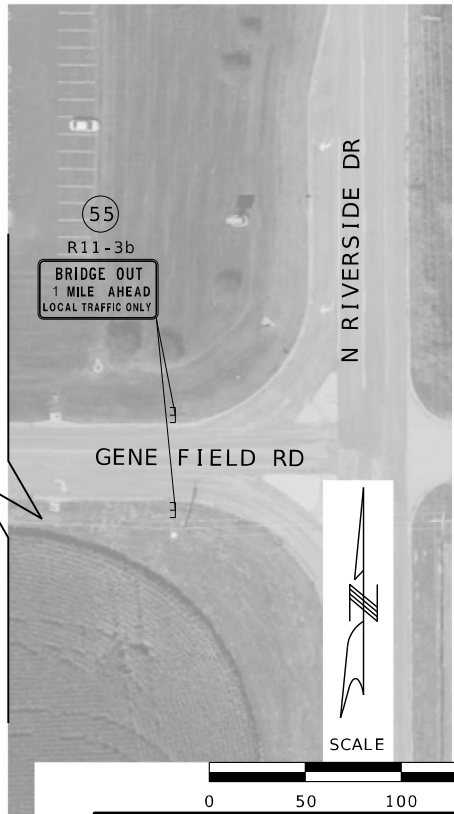


MATCHLINE THIS SHEET

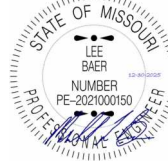


TRAFFIC CONTROL LEGEND

- |                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| • SIGN (SINGLE SIDED)                                                    | ■ CHANNELIZER              |
| • SIGN (DOUBLE SIDED)                                                    | ⌈ BARRICADE                |
| ○ FLAGGER                                                                | ⌈ CHANGEABLE MESSAGE BOARD |
| ▲ DIRECTIONAL INDICATION BARRICADE W/ SEQUENTIAL FLASHING WARNING LIGHTS |                            |



TRAFFIC CONTROL SHEET  
GENE FIELD RD  
SHEET 1 OF 2



DATE PREPARED  
12/30/2025  
ROUTE  
I-29  
STATE  
MO  
DISTRICT  
NW  
SHEET NO.  
26  
COUNTY  
BUCHANAN  
JOB NO.  
J113332  
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)



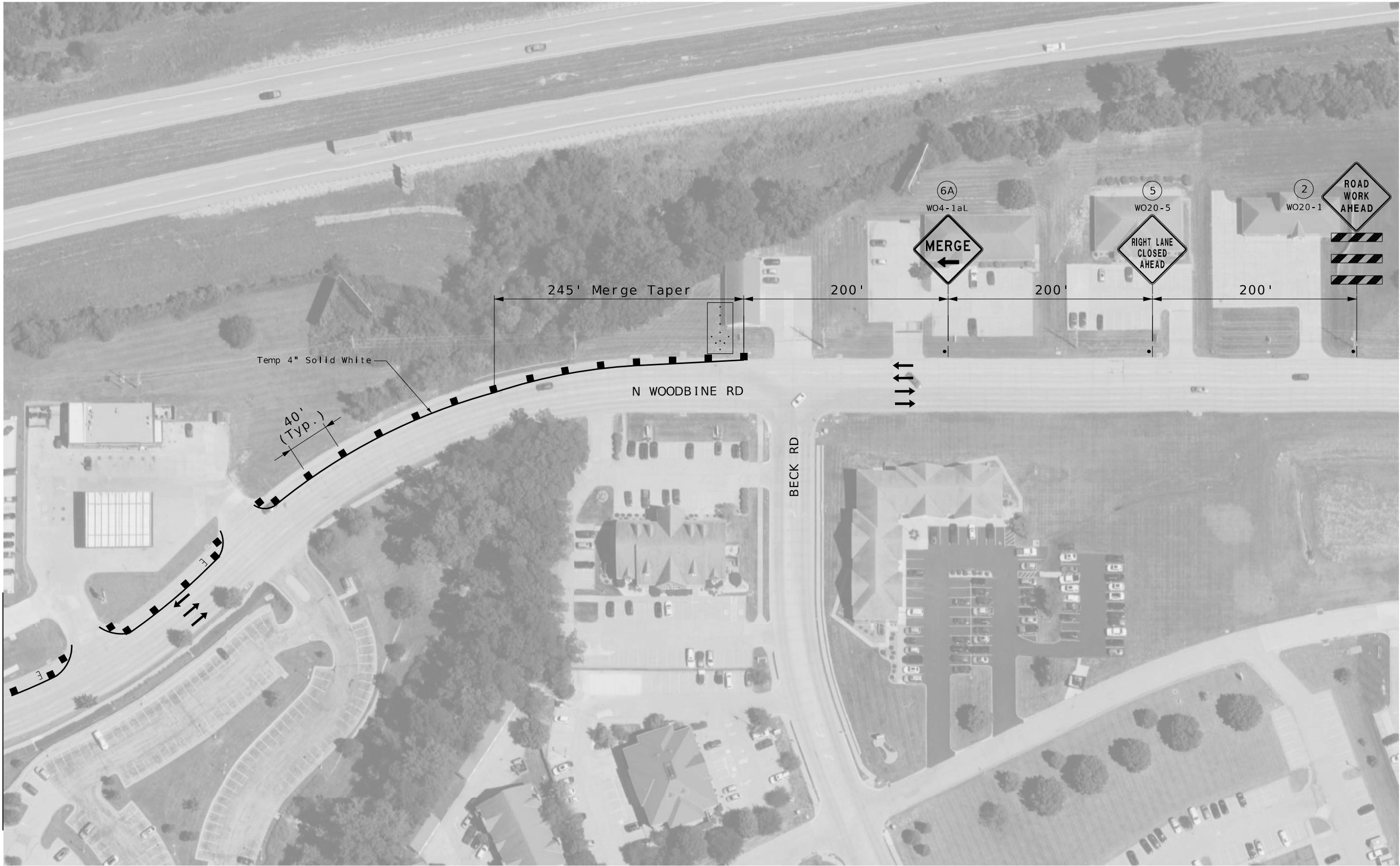
MERGE MIDWEST  
ENGINEERING, LLC  
MO CERT. OF AUTH. 2017010974  
2668 W CATALPA ST.  
OLATHE, KS 66061  
(913) 788-1985  
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LEE BAER  
PROFESSIONAL  
ENGINEER  
PE-2021000150

XXX\_TC\_11-J113332\_150.dgn

2:35:13 PM 12/30/2025 REV.

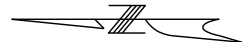


MATCHLINE  
(SEE SHEET 26)

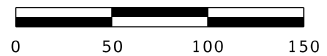


TRAFFIC CONTROL LEGEND

- |                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| • SIGN (SINGLE SIDED)                                                    | ■ CHANNELIZER              |
| ◐ SIGN (DOUBLE SIDED)                                                    | ⌈ BARRICADE                |
| ⦿ FLAGGER                                                                | ⌚ CHANGEABLE MESSAGE BOARD |
| ▲ DIRECTIONAL INDICATION BARRICADE W/ SEQUENTIAL FLASHING WARNING LIGHTS |                            |



SCALE



TRAFFIC CONTROL SHEET  
GENE FIELD RD  
SHEET 2 OF 2



DATE PREPARED  
12/30/2025

ROUTE 1-29 STATE MO

DISTRICT NW SHEET NO. 27

COUNTY BUCHANAN

JOB NO. J113332

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)

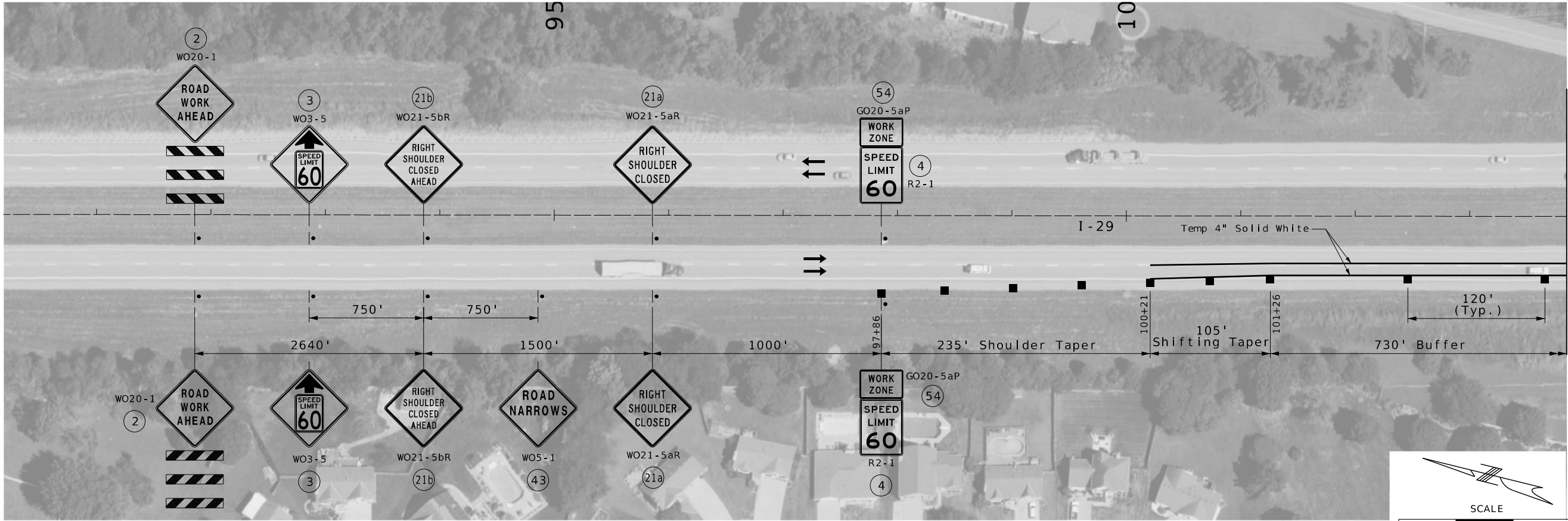


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ENGINEERING, LLC  
MO CERT. OF AUTH. 2017010974  
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OLATHE, KS 66061  
(913) 788-1985  
WWW.MERGEMIDWEST.COM  
LEE BAER  
PROFESSIONAL  
ENGINEER  
PE-2021000150

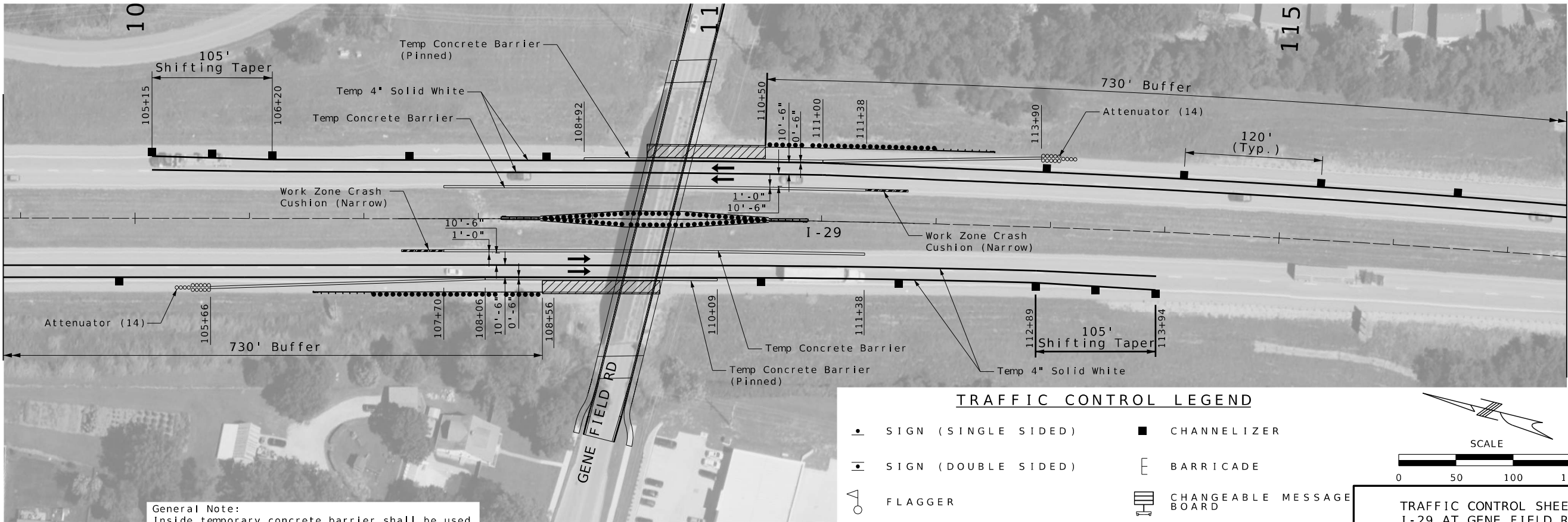
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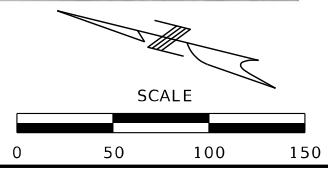
MATCH LINE THIS SHEET



MATCH LINE (SEE SHEET 29)

| TRAFFIC CONTROL LEGEND |                                                                       |   |                          |
|------------------------|-----------------------------------------------------------------------|---|--------------------------|
| •                      | SIGN (SINGLE SIDED)                                                   | ■ | CHANNELIZER              |
| •                      | SIGN (DOUBLE SIDED)                                                   | E | BARRICADE                |
| △                      | FLAGGER                                                               | □ | CHANGEABLE MESSAGE BOARD |
| ▲                      | DIRECTIONAL INDICATION BARRICADE W/SEQUENTIAL FLASHING WARNING LIGHTS | □ | FLASHING ARROW PANEL     |

General Note:  
Inside temporary concrete barrier shall be used for median work alone and while outside temporary concrete barrier is in place.



TRAFFIC CONTROL SHEET  
I-29 AT GENE FIELD RD  
SHEET 1 OF 2



|                             |                 |
|-----------------------------|-----------------|
| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I-29               | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>28 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| CONTRACT ID.                |                 |
| PROJECT NO.                 |                 |
| BRIDGE NO.                  |                 |

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105 WEST CAPITAL  
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1-888-ASK-MODOT (1-888-275-6636)

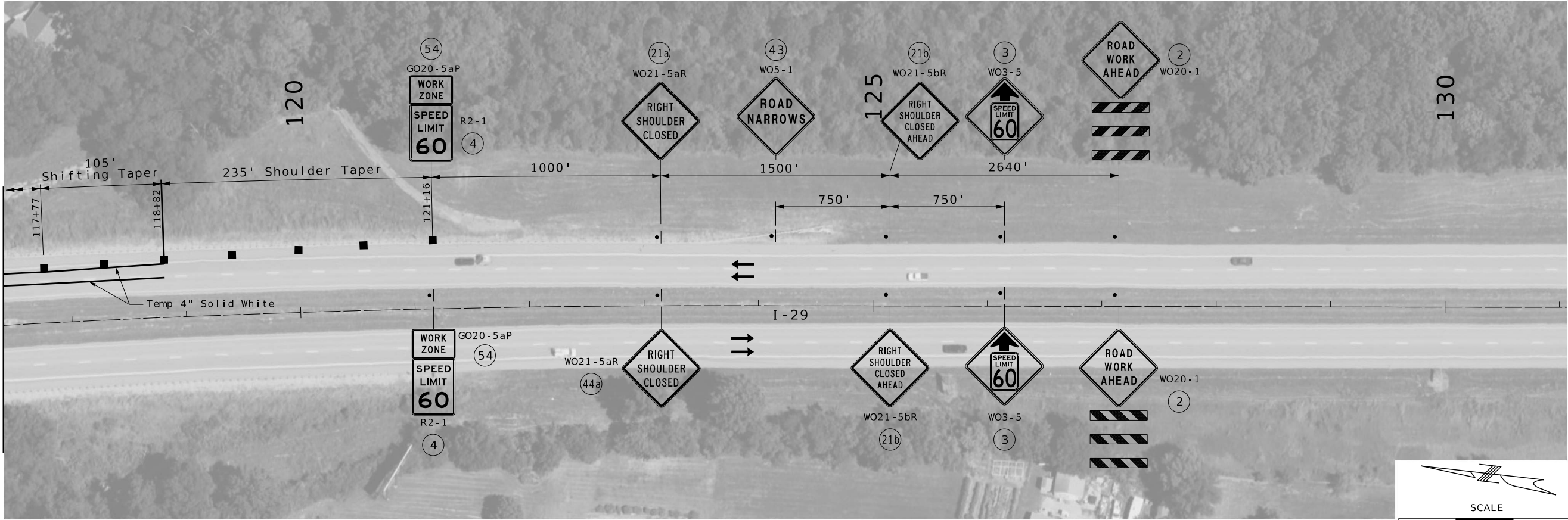
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(913) 788-1985  
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LEE BAER  
PROFESSIONAL ENGINEER  
PE-2021000150



MATCH LINE  
(SEE SHEET 28)



TRAFFIC CONTROL LEGEND

- |   |                                                                       |   |                          |
|---|-----------------------------------------------------------------------|---|--------------------------|
| ● | SIGN (SINGLE SIDED)                                                   | ■ | CHANNELIZER              |
| ⬮ | SIGN (DOUBLE SIDED)                                                   | E | BARRICADE                |
| ⚠ | FLAGGER                                                               | ⚡ | CHANGEABLE MESSAGE BOARD |
| ▲ | DIRECTIONAL INDICATION BARRICADE W/SEQUENTIAL FLASHING WARNING LIGHTS | ⚡ | FLASHING ARROW PANEL     |

TRAFFIC CONTROL SHEET  
I-29 AT GENE FIELD RD  
SHEET 2 OF 2



DATE PREPARED  
12/30/2025  
ROUTE  
I-29  
STATE  
MO  
DISTRICT  
NW  
SHEET NO.  
29  
COUNTY  
BUCHANAN  
JOB NO.  
J113332  
CONTRACT ID.  
PROJECT NO.  
BRIDGE NO.

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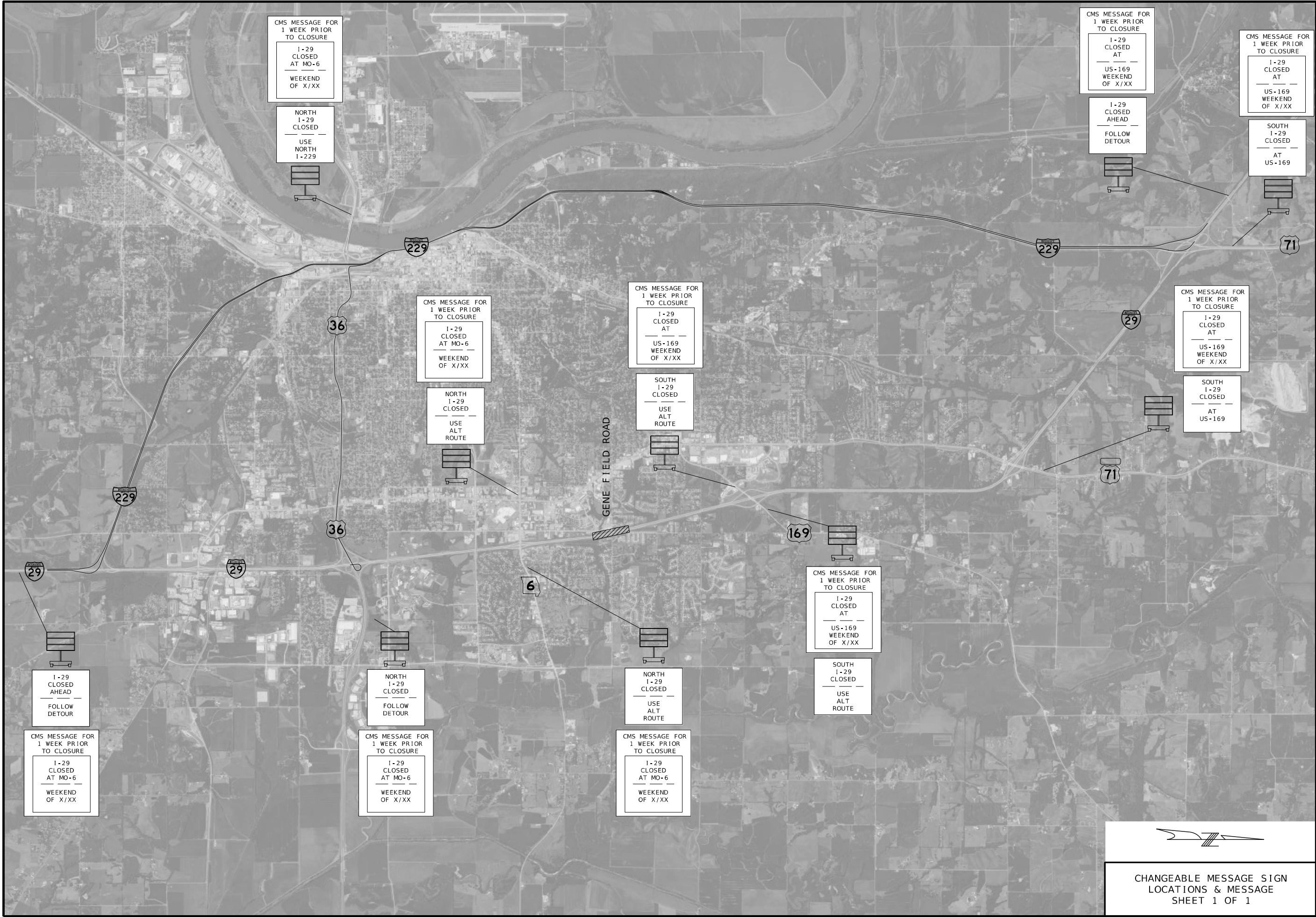


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CHANGEABLE MESSAGE SIGN  
LOCATIONS & MESSAGE  
SHEET 1 OF 1

STATE OF MISSOURI  
LEE BAER  
NUMBER  
PE-2021000150  
PROFESSIONAL ENGINEER

DATE PREPARED  
12/30/2025

ROUTE  
I-29

DISTRICT  
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COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

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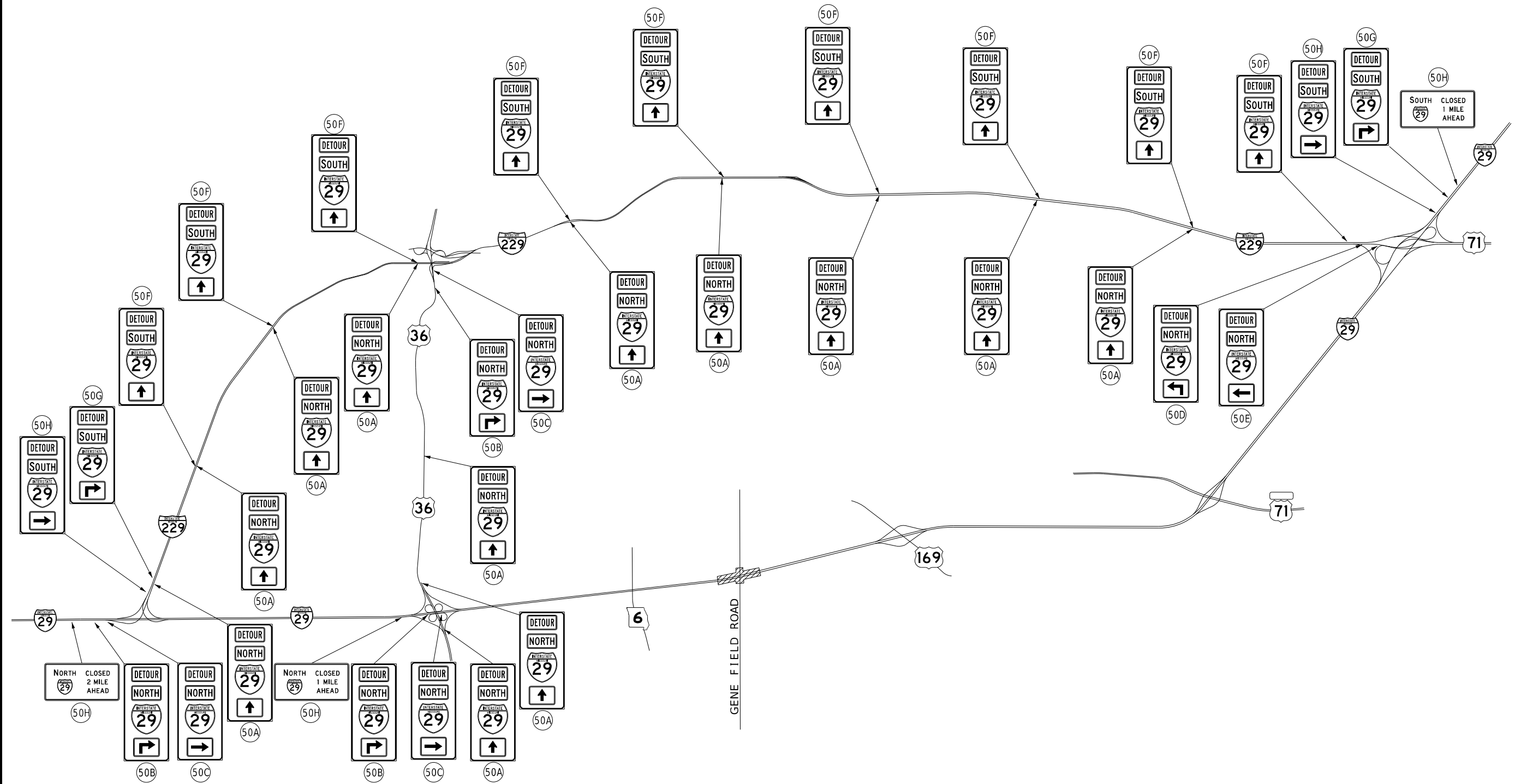
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1-29 DETOUR  
SHEET 1 OF 1



|                             |                 |
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| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I - 29             | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>31 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| CONTRACT ID.                |                 |
| PROJECT NO.                 |                 |
| BRIDGE NO.                  |                 |

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TEMPORARY EROSION CONTROL LEGEND

 ROCK DITCH CHECK  
 SILT FENCE

GENE FIELD RD.  
STA 6+45, LT  
INSTALL 1 ROCK DITCH CHECKS

GENE FIELD RD.  
STA 5+70, 30' LT TO 5+80, 40' LT  
STA 5+80, 40' LT TO 5+90, 45' LT  
STA 5+90, 45' LT TO 6+27, 50' LT  
INSTALL 63 LF SILT FENCE

GENE FIELD RD.  
STA 6+78, LT  
INSTALL 1 ROCK DITCH CHECKS

GENE FIELD RD.  
STA 7+11 TO 7+47, LT  
INSTALL 3 ROCK DITCH CHECKS  
AT 18' SPACING

GENE FIELD RD.  
STA 3+37, LT  
INSTALL 1 ROCK DITCH CHECKS

GENE FIELD RD.  
STA 3+50, LT  
INSTALL 1 ROCK DITCH CHECKS



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DATE PREPARED  
12/30/2025

|                 |                 |
|-----------------|-----------------|
| ROUTE<br>I - 29 | STATE<br>MO     |
| DISTRICT<br>NW  | SHEET NO.<br>32 |

COUNTY  
BUCHANAN

JOB NO.  
1113333

CONTRACT ID.

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|-------------|
| PROJECT NO. |
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BRIDGE NO.

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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JEFFERSON CITY, MO 65102  
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GEORGE BUTLER  
ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

SHELBY P. REYNOLDS  
PROFESSIONAL  
ENGINEER  
PE-2023018931

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REV.

SCALE



10

08-2008

UT —

## COMPOSITION

TEMPORARY  
EROSION CONTROL  
SHEET 1 OF 1

PERMANENT EROSION CONTROL LEGEND

- |                                                                                   |                     |
|-----------------------------------------------------------------------------------|---------------------|
|  | TYPE 2 ROCK BLANKET |
|  | SEEDING W/ ECB      |
|  | PAVED DITCH         |

I-29  
STA 108+56 to 109+59, RT  
INSTALL 0.1 ACRES  
SEEDING - COOL SEASON MIXTURES

GENE FIELD RD.  
STA 6+28.81 to 7+00, LT  
INSTALL 0.1 ACRES  
SEEDING - COOL SEASON MIXTURES  
W/ 346 SY TYPE 2C ECB

GENE FIELD RD.  
STA 7+00 to 7+50, LT  
INSTALL 0.1 ACRES  
SEEDING - COOL SEASON MIXTURES  
W/ 204 SY TYPE 2D ECB

GENE FIELD RD.  
STA 3+05 to 4+22, LT  
INSTALL 0.1 ACRES  
SEEDING - COOL SEASON MIXTURES  
W/ 214 SY TYPE 2C ECB

GENE FIELD RD.  
STA 3+51.50 to 4+10, LT  
INSTALL 62.5 SY PAVED DITCH

GENE FIELD RD.  
STA 3+05 to 3+76.44, RT  
INSTALL 0.1 ACRES  
SEEDING - COOL SEASON MIXTURES  
W/ 221 SY TYPE 2C ECB

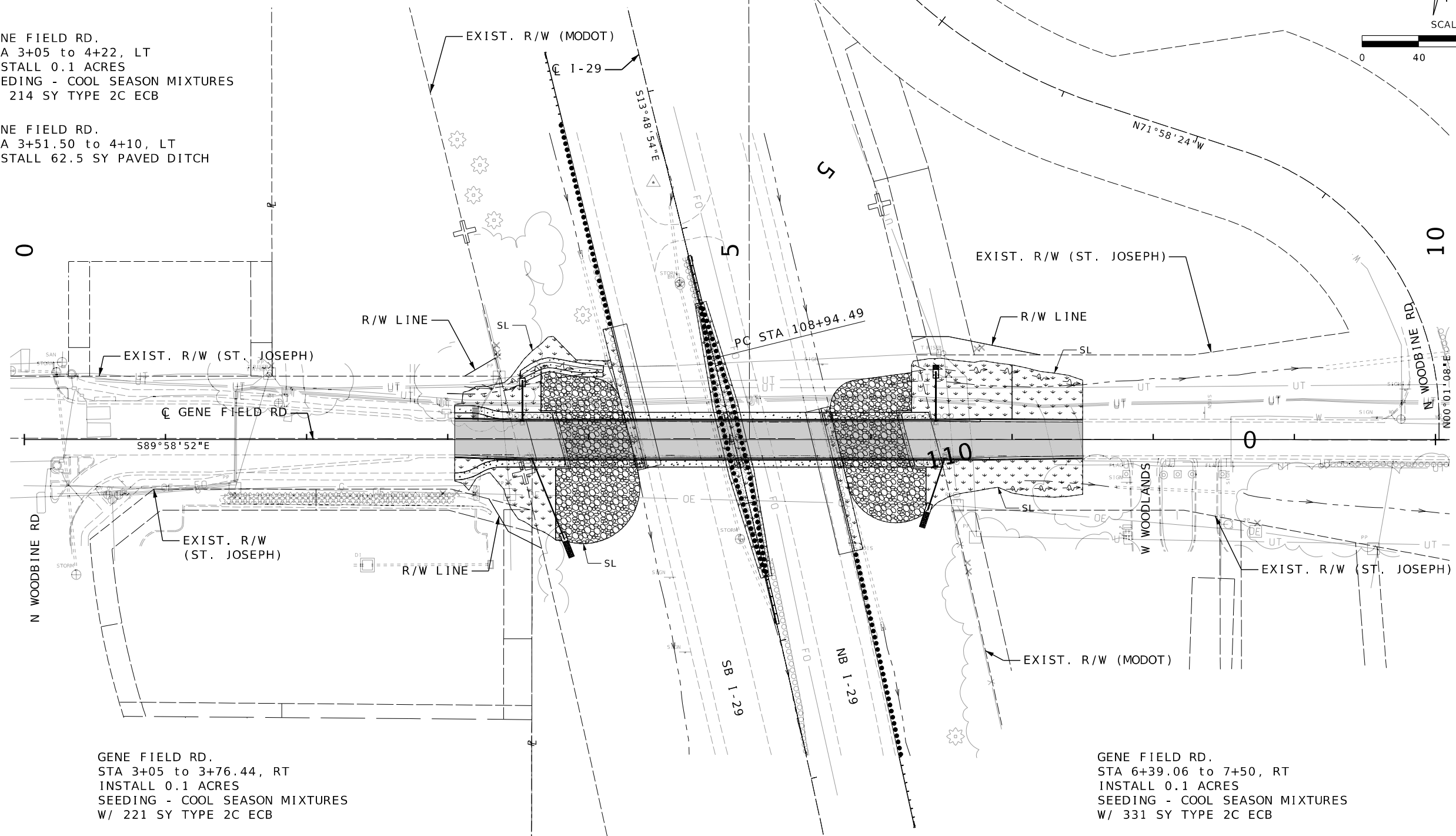
GENE FIELD RD.  
STA 3+66.19 to 4+36.21, LT/RT  
INSTALL 447 CY TYPE 2 ROCK BLANKET  
W/ 670 SY PERMANENT EROSION CONTROL GEOTEXTILE

I-29  
STA 109+47 to 110+50, LT  
INSTALL 0.1 ACRES  
SEEDING - COOL SEASON MIXTURES

1-29  
STA 108+54.09 to 110+53.76, LT/RT  
INSTALL 0.1 ACRES  
SEEDING - COOL SEASON MIXTURES

GENE FIELD RD.  
STA 6+39.06 to 7+50, RT  
INSTALL 0.1 ACRES  
SEEDING - COOL SEASON MIXTURES  
W/ 331 SY TYPE 2C ECB

GENE FIELD RD.  
STA 5+71.69 to 6+39.06, LT/RT  
INSTALL 376 CY TYPE 2 ROCK BLANKET  
W/ 564 SY PERMANENT EROSION CONTROL GEOTEXTILE



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SIGNED, SEALED, AND DATED  
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DATE PREPARED  
12/30/2025

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| ROUTE<br>I - 29 | STATE<br>MO     |
| DISTRICT<br>NW  | SHEET NO.<br>33 |

COUNTY  
BUCHANAN

JOB NO.  
1113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

[illegible]

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COMMISSION**

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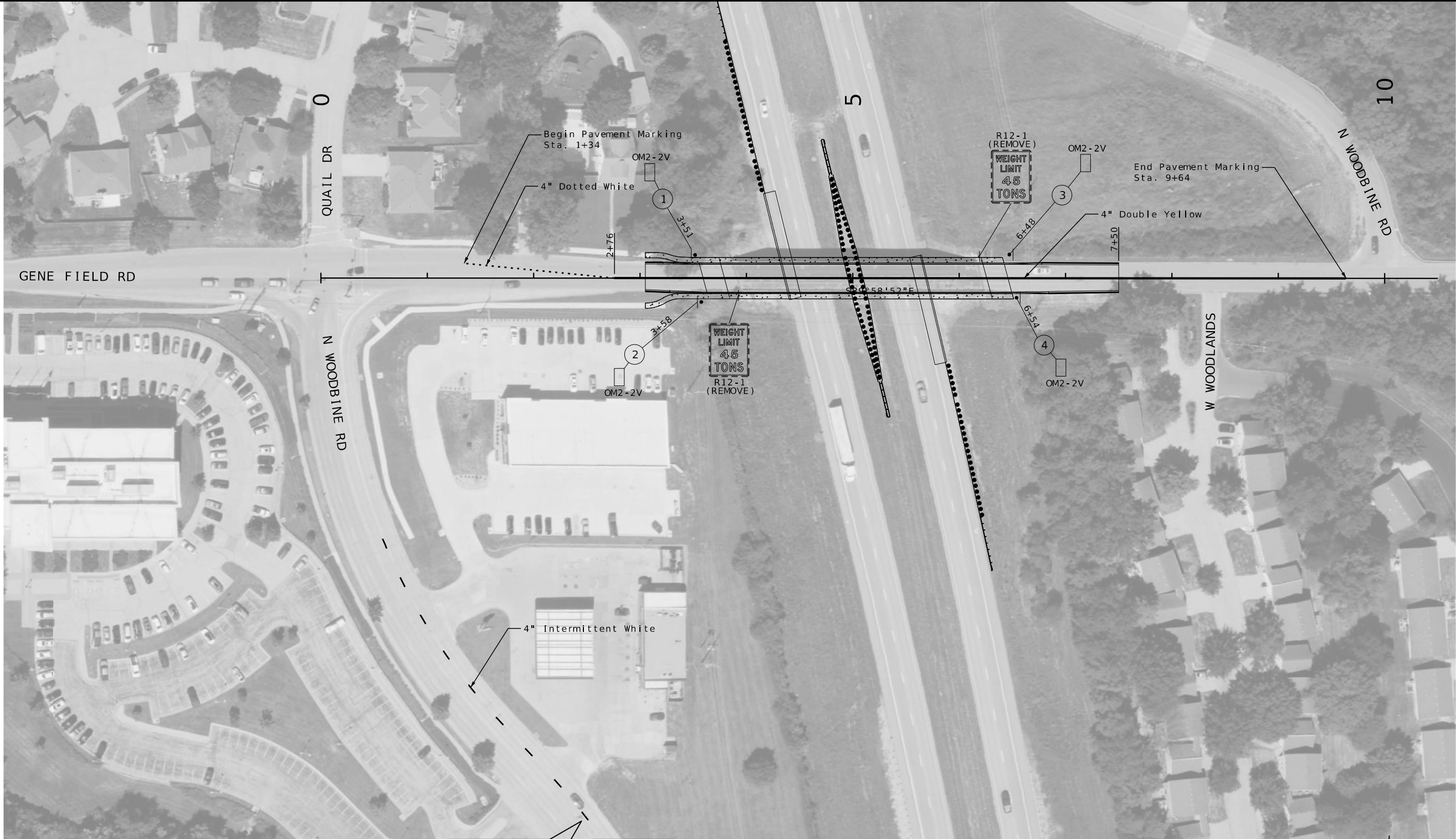


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PERMANENT  
EROSION CONTROL  
SHEET 1 OF 1







SCALE

0 50 100 150

PAVEMENT MARKING AND SIGNING  
GENE FIELD RD & N WOODBINE RD  
SHEET 1 OF 1



|                             |                 |
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| DATE PREPARED<br>12/30/2025 |                 |
| ROUTE<br>I-29               | STATE<br>MO     |
| DISTRICT<br>NW              | SHEET NO.<br>34 |
| COUNTY<br>BUCHANAN          |                 |
| JOB NO.<br>J113332          |                 |
| CONTRACT ID.                |                 |
| PROJECT NO.                 |                 |
| BRIDGE NO.                  |                 |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



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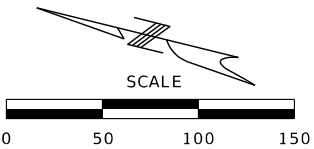
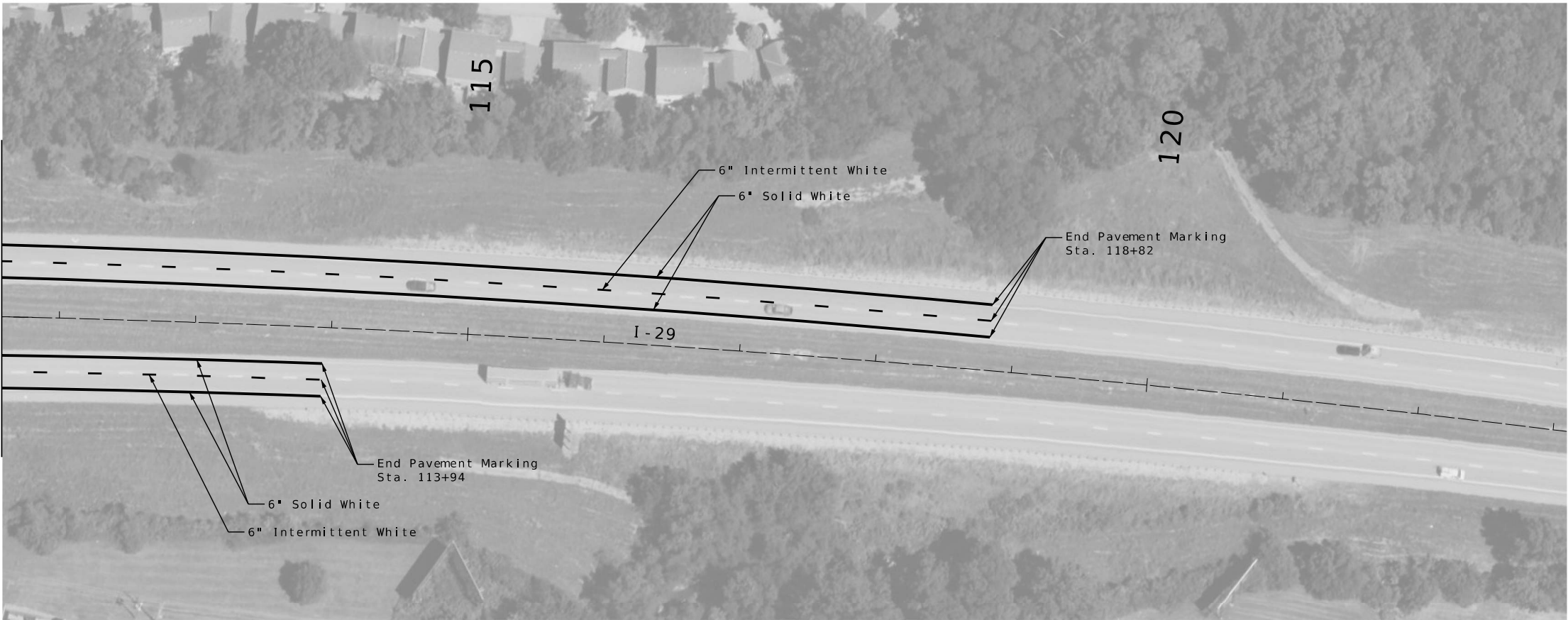
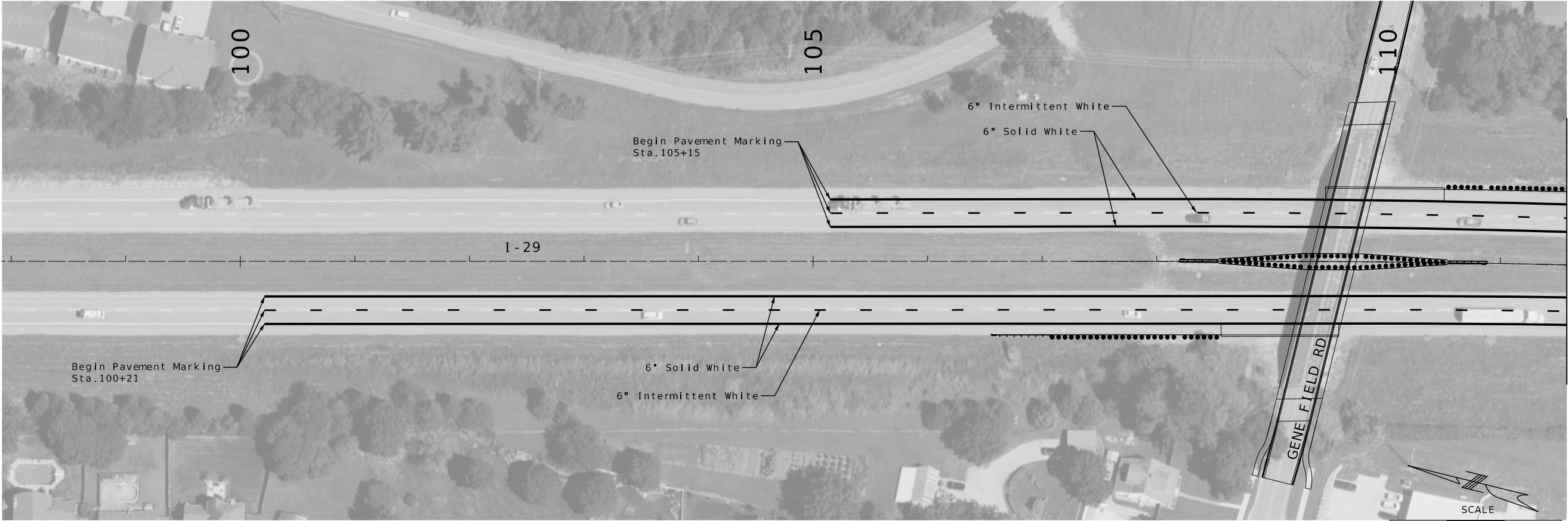
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PAVEMENT MARKING AND SIGNING  
I-29  
SHEET 1 OF 1



DATE PREPARED  
12/30/2025

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|----------------|-----------------|
| ROUTE<br>I-29  | STATE<br>MO     |
| DISTRICT<br>NW | SHEET NO.<br>35 |

COUNTY  
BUCHANAN  
JOB NO.  
J113332  
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

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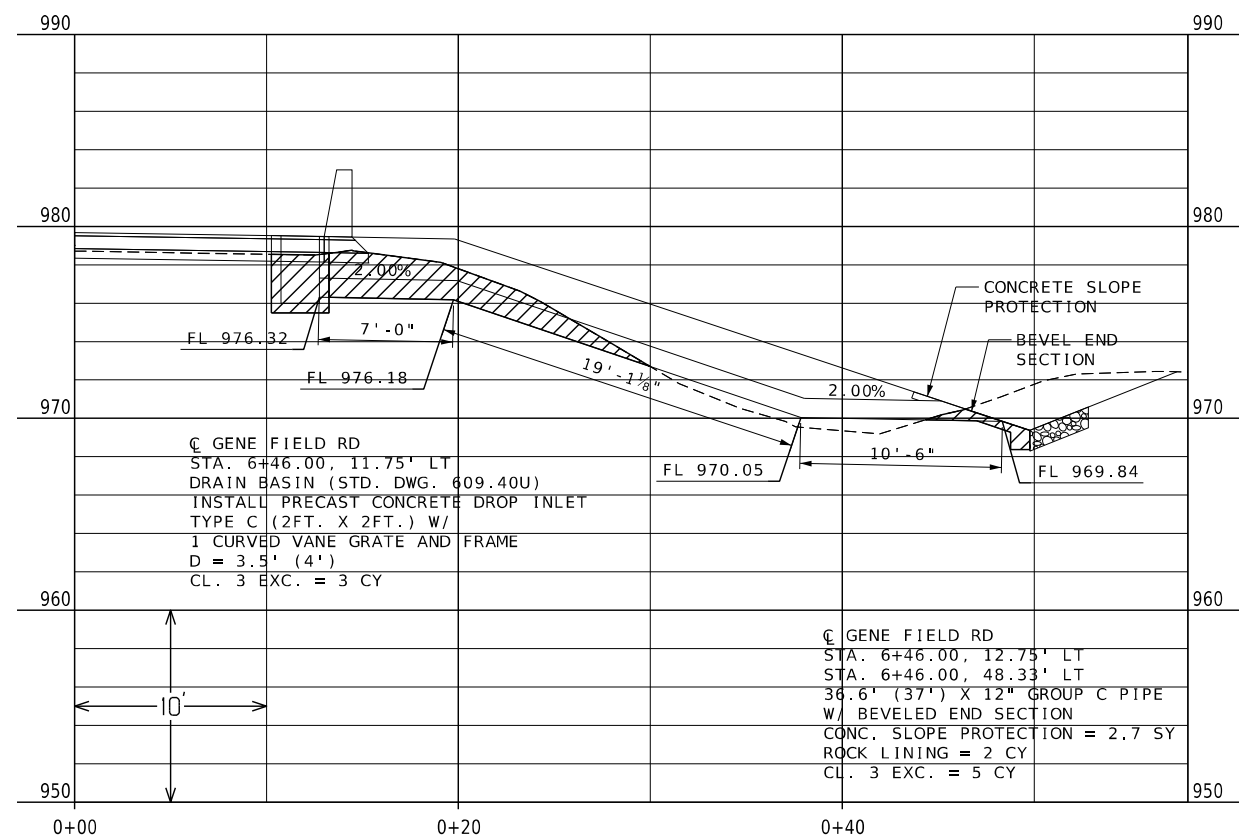
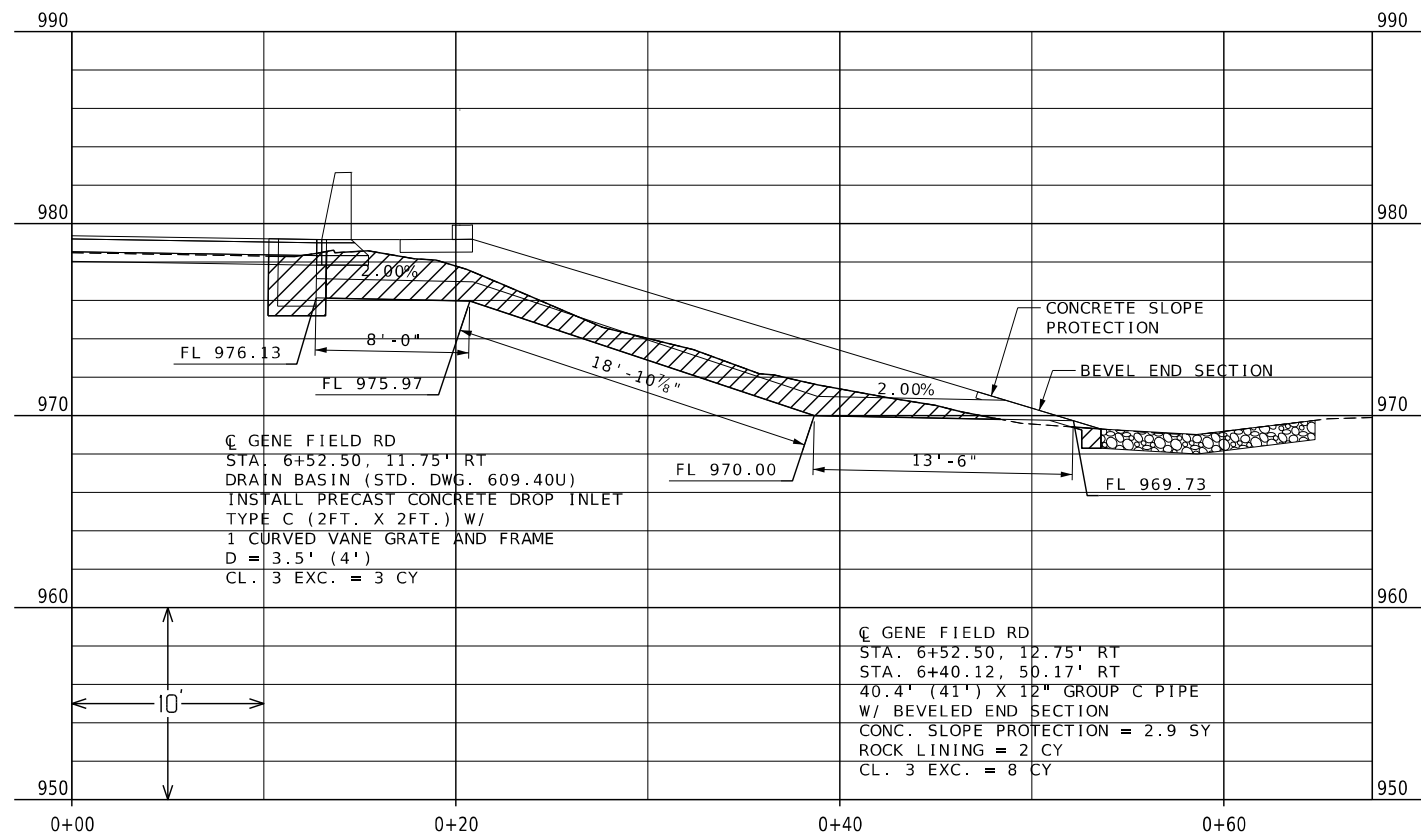
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 = CLASS 3 EXCAVATION

 = ROCK LINING

CULVERT SECTIONS  
SHEET 2 OF 2



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| ROUTE  | STATE |
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| DISTRICT | SHEET NO |
| NW       | 37       |

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

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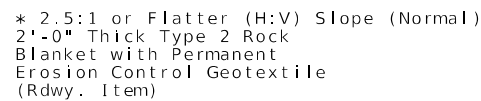
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| SEC/SUR 2 | TWP 57N | RGE 35W |
|-----------|---------|---------|



● Indicates location of borings.

### Notice and Disclaimer Regarding Boring Log Data

The locations of all subsurface borings for this structure are shown on the plan sheet(s) for this structure. The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, are shown on Sheets No. 32-34 and may be included in the Electronic Bridge Deliverables. They will also be available from the Project Contact upon written request. No greater significance or weight should be given to the boring data depicted on the plan sheets than is given to the subsurface data available from the district or elsewhere.

The Commission does not represent or warrant that any such boring data accurately depicts the conditions to be encountered in constructing this project. A contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the boring data depicted here or those available from the district, or on any other documentation not expressly warranted, which the contractor may obtain from the Commission.

Notes:

Roadway fill shall be completed to the final roadway section and up to the elevation of the concrete beam within the limits of the structure and for not less than 25 feet in back of the full face of the end bents before any piles are driven for any bents falling within the embankment section.

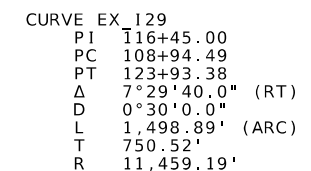
For General Notes, Estimated Quantities, Estimated Quantities  
for Slab on Concrete Beam, Foundation Data and Location Sketch,  
see Sheet No. 2.

Existing roadway fill under the ends of the bridge shall be removed as shown. Removal of existing roadway fill will be considered completely covered by the contract unit price for roadway excavation.

All longitudinal dimensions shown are horizontal.

All bents are parallel.

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



```
** Minimum Horizontal Clearance
*** To tangent line from tie station
```

## PLAN

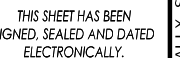
B.M. 201 - Anchor Rivet & Washer in Concrete  
N: 1320536.99  
E: 2705674.77  
EL: 965.96

BRIDGE: GENE FIELD ROAD OVER ROUTE 1-29

ROUTE 1-29 FROM ROUTE 6 TO ROUTE 169

ABOUT 1.1 MILES NORTH OF ROUTE 6

TIE STA. 109+53.84



DATE PREPARED  
12/30/2025

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

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| DISTRICT | SHEET NO. |
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COUNTY  
BUCHANAN

JOB NO.  
1113332

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| CONTRACT ID. | H |
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| PROJECT NO. |  |
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| BRIDGE NO. | A9735 |
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ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

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Checked Dec. 2025

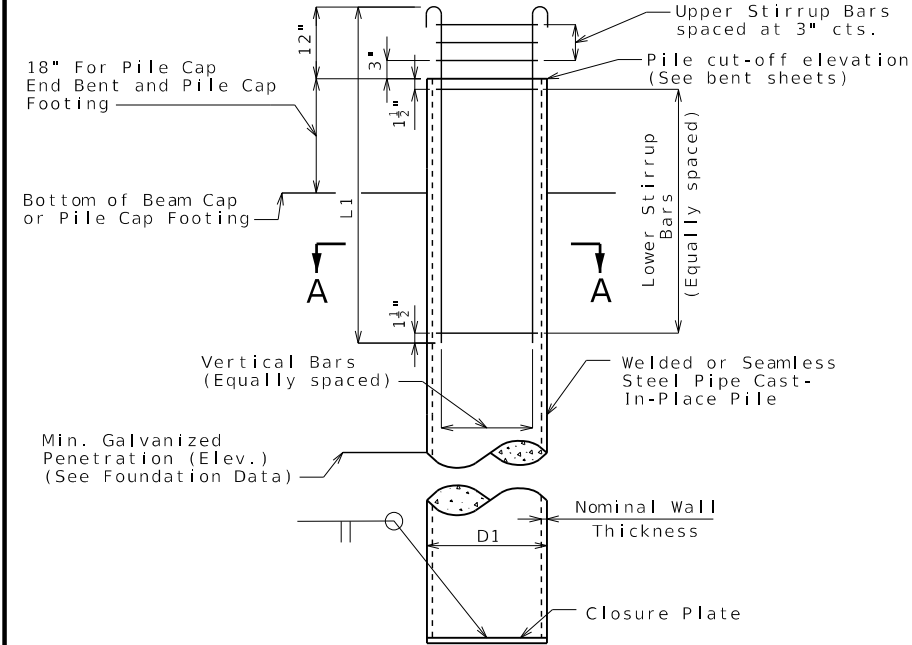
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 34

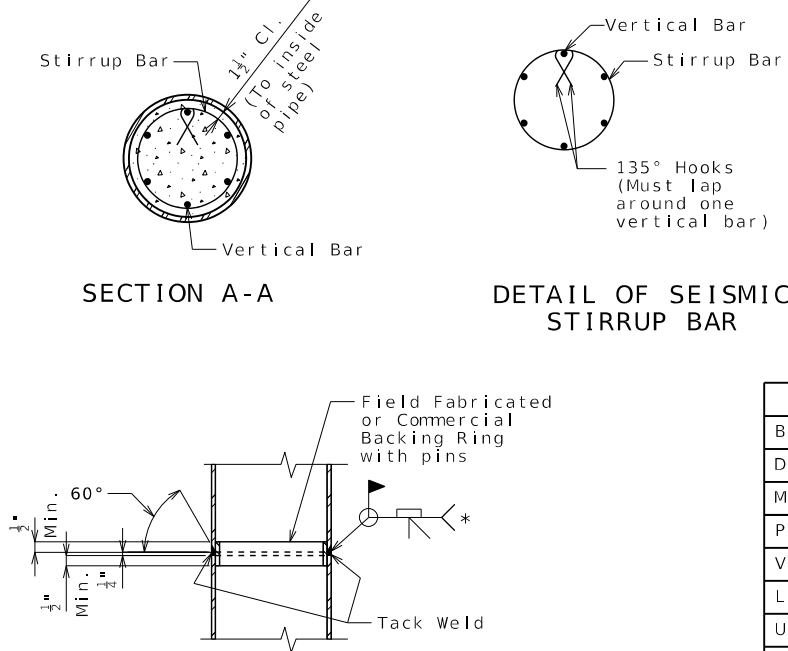
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Detailed Dec. 2025  
Checked Dec. 2025



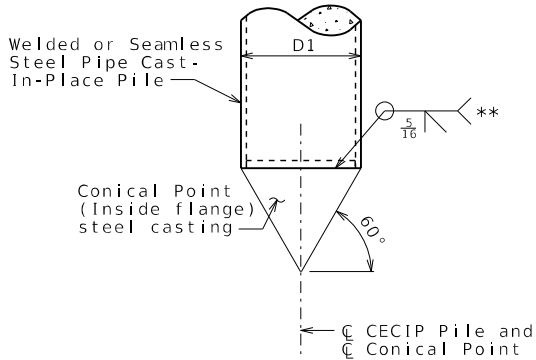


GALVANIZED CLOSED ENDED CAST-IN-PLACE (CECIP) CONCRETE PILE WITHOUT PILE POINT REINFORCEMENT



STEEL PIPE PILE SPLICE

\* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.



MANUFACTURED CONICAL PILE POINT (Omit closure plate)

\*\* If the conical pile point is not pre-beveled, place a 3/8" bevel at 40 degrees on the pipe.

| Galvanized Closed Ended Cast-In-Place (CECIP) Concrete Pile Data |           |           |           |           |           |
|------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Bent Number                                                      | 1         | 2         | 3         | 4         | 5         |
| D1, CECIP Pile (O.D.)                                            | 14"       | 14"       | 14"       | 14"       | 14"       |
| Min. Nominal Wall Thickness                                      | 1/2"      | 1/2"      | 1/2"      | 1/2"      | 1/2"      |
| Pile Point Reinforcement                                         | Conical   | Conical   | Conical   | Conical   | Conical   |
| Vertical Bars                                                    | 6-#5-V110 | 6-#5-V210 | 6-#5-V310 | 6-#5-V410 | 6-#5-V510 |
| L1, Length of Vertical Bars                                      | 5'-3"     | 5'-3"     | 5'-3"     | 5'-3"     | 5'-3"     |
| Upper Stirrup Bars                                               | 3-#4-P110 | 3-#4-P210 | 3-#4-P310 | 3-#4-P410 | 3-#4-P510 |
| Lower Stirrup Bars                                               | 5-#4-P110 | 5-#4-P210 | 5-#4-P310 | 5-#4-P410 | 5-#4-P510 |

Notes:

Welded or seamless steel shell (pipe) shall be ASTM A252 Modified Grade 3 (fy = 50,000 psi) with physical and chemical requirements that meet ASTM A572 Grade 50. Pipe certification and source material certification shall be required.

Concrete for cast-in-place pile shall be Class B-1.

Steel casting for conical pile point reinforcement shall be ASTM A148 Grade 90-60.

The minimum wall thickness of any spot or local area of any type shall not be more than 12.5% under the specified nominal wall thickness.

The contractor shall determine the pile wall thickness required to avoid damage from all driving activities, but wall thickness shall not be less than the minimum specified. No additional payment will be made for furnishing a thicker pile wall than specified on the plans.

Splices of pipe for cast-in-place concrete pile shall be made watertight and to the full strength of the pipe above and below the splice to permit hard driving without damage. Pipe damaged during driving shall be replaced without cost to the state. Pipe sections used for splicing shall be at least 5 feet in length.

At the contractor's option, the hooks of vertical bars embedded in the beam cap may be oriented inward or outward.

The hooks of vertical bars embedded in the pile cap footing should be oriented outward for all seismic categories.

Reinforcing steel for cast-in-place piles is included in the Bill of Reinforcing Steel.

All reinforcement for cast-in-place pile at end bents is included in the Estimated Quantities for Slab on Concrete Beam. Reinforcement for cast-in-place pile at intermediate bents is included in the substructure quantity tables.

For Foundation Data table, see Sheet No. 2.

STATE OF MISSOURI

DUSTIN TREGNAGO

NUMBER

PE-2016012977

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED

12/30/2025

ROUTE

1-29

STATE

MO

DISTRICT

BR

SHEET NO.

3

COUNTY

BUCHANAN

JOB NO.

J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A9735

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MODOT

105 WEST CAPITOL

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PRO. ENGINEER 000133

ARCHITECT 000212

PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO

PROFESSIONAL ENGINEER

PE-2016012977

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

Detailed Dec. 2025  
Checked Dec. 2025

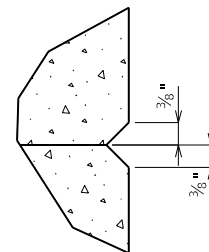
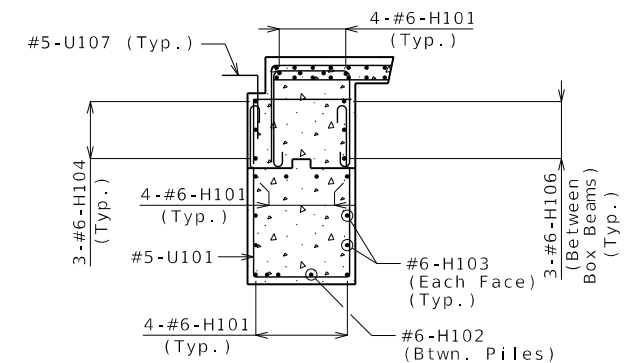
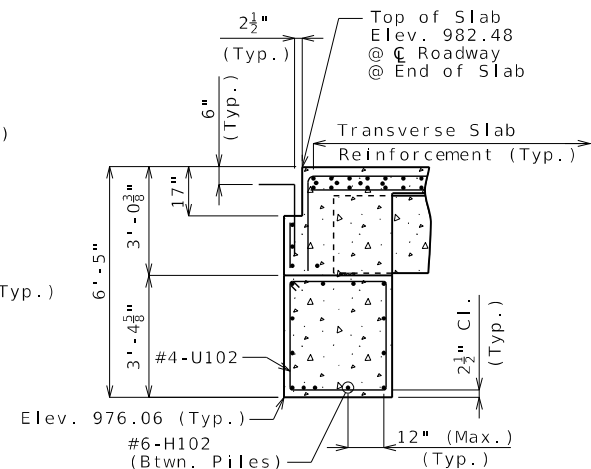
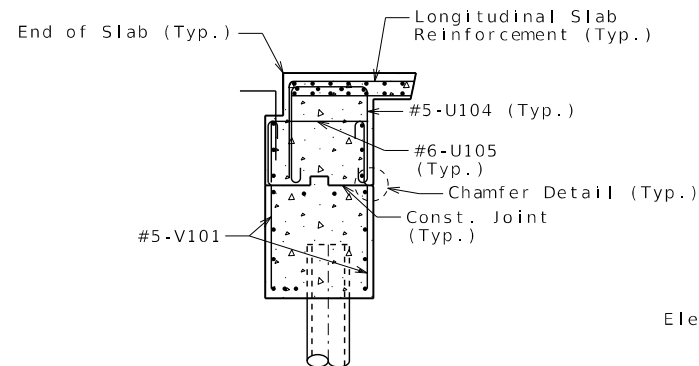
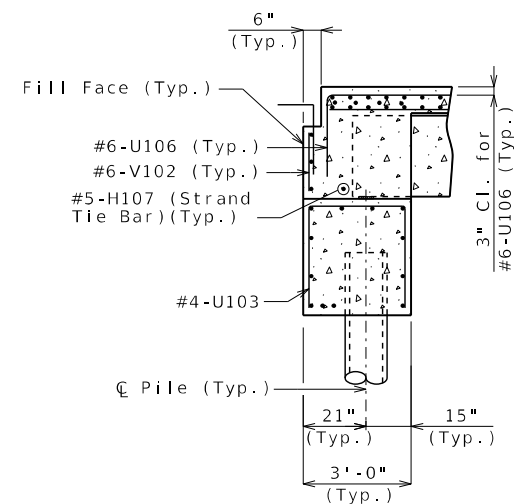
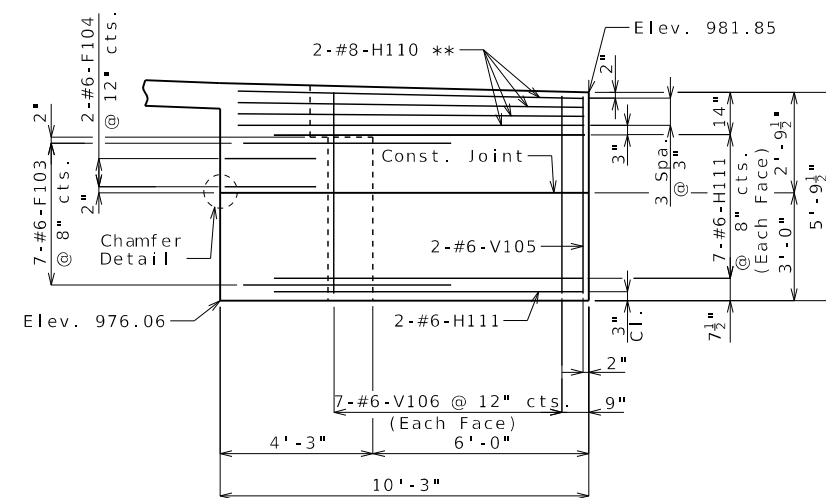
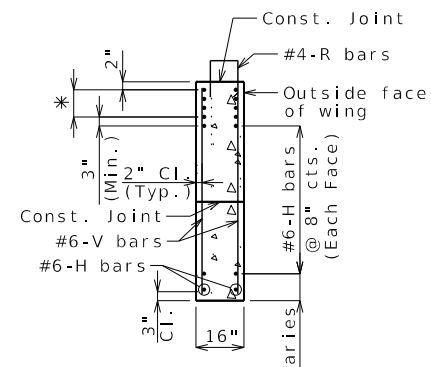
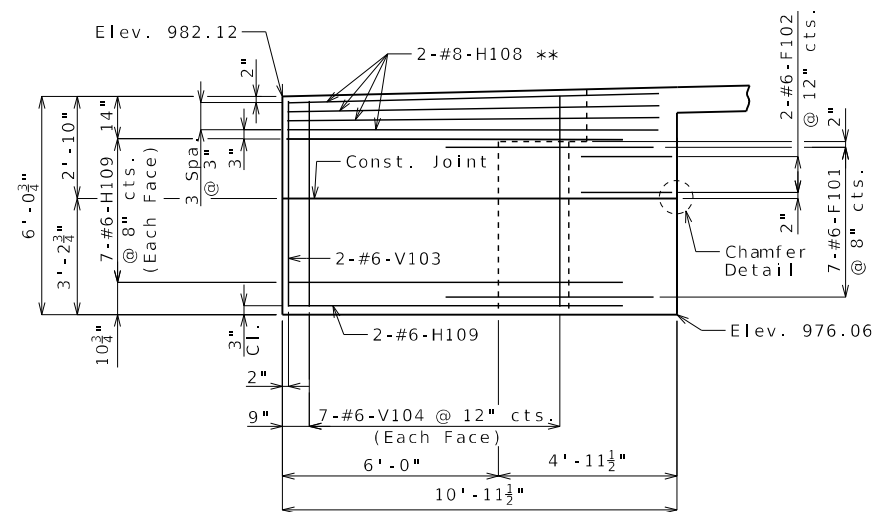
GALVANIZED CLOSED ENDED CAST-IN-PLACE (CECIP) CONCRETE PILE  
Note: This drawing is not to scale. Follow dimensions. Sheet No. 3 of 34

c:\bms\gba-pw-01\dmcgill@gbateam.com\dms27374\B\_A9735\_03\_J113332\_CastInPlace\_Piles.dgn 4:30:57 PM 12/30/2025









Notes:

Work this sheet with Sheets No. 4 & 5.

For location of Elevations A-A & B-B and Sections C-C, D-D, E-E & F-F, see Sheet No. 5.

For reinforcement of the pedestrian curb, see Sheet No. 25.

| Substructure Quantity Table for Bent No. 1       |             |          |
|--------------------------------------------------|-------------|----------|
| Item                                             |             | Quantity |
| Class 1 Excavation                               | cu. yard    | 40       |
| Galvanized Cast-in-Place Concrete Piles (14 in.) | linear foot | 372      |
| Dynamic Pile Testing                             | each        | 1        |
| Pile Point Reinforcement                         | each        | 6        |
| Class B Concrete (Substructure)                  | cu. yard    | 17.4     |

Note:

Note:  
These quantities are included in the Estimated Quantities shown on Sheet No. 2.



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

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

|          |           |
|----------|-----------|
| DISTRICT | SHEET NO. |
| BR       | 6         |

COUNTY  
BUCHANAN

JOB NO.  
J113332

|              |          |
|--------------|----------|
| CONTRACT ID. | FILE NO. |
|--------------|----------|

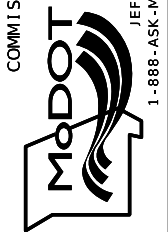
|             |  |
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| PROJECT NO. |  |
|-------------|--|

|            |  |
|------------|--|
| BRIDGE NO. |  |
| A9735      |  |

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

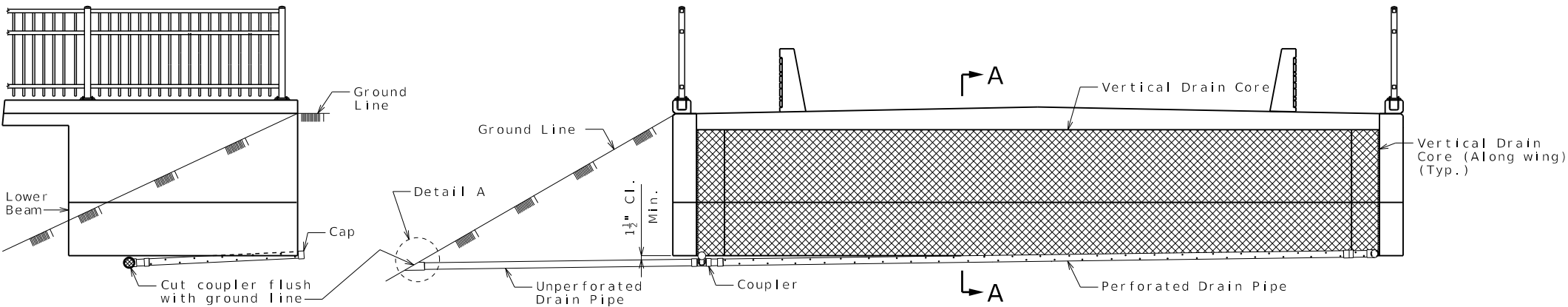
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275.6636)



9801 Renner Blvd, Ste. 300  
Lenexa, KS 66219  
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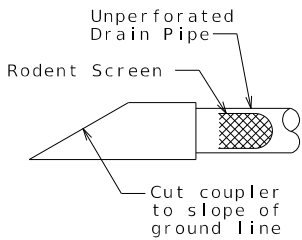
GEORGE BUTLER  
ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

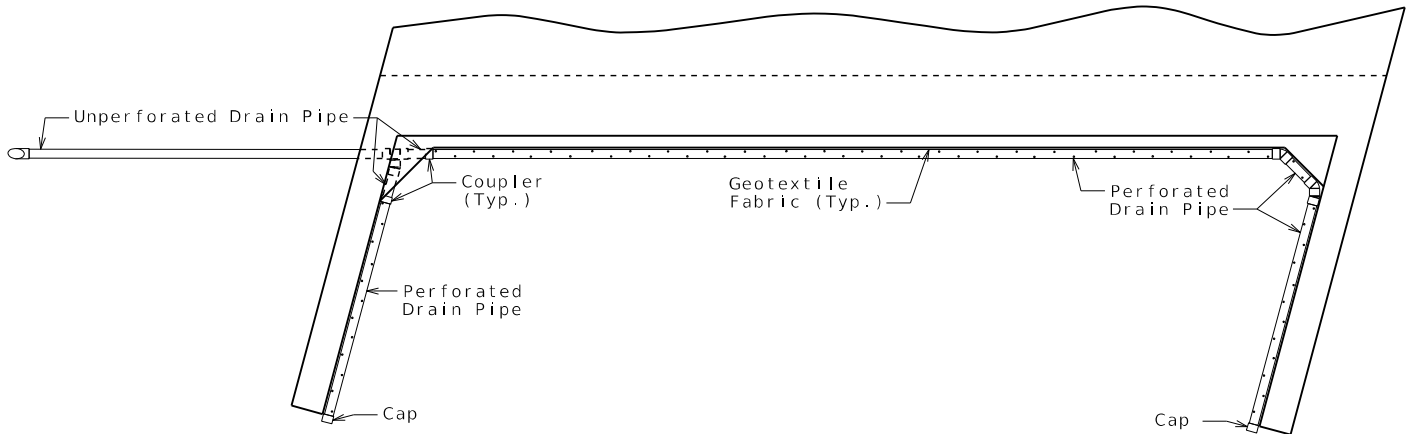


ELEVATION OF WING

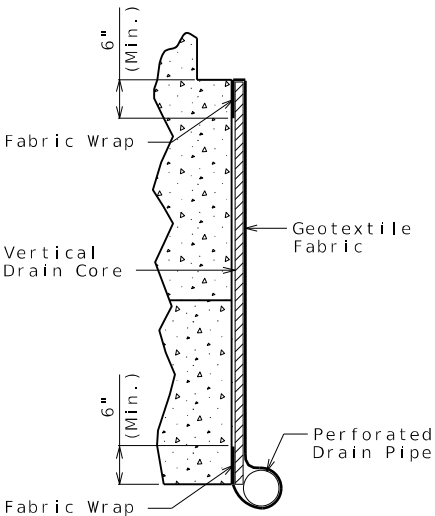
ELEVATION OF END BENT



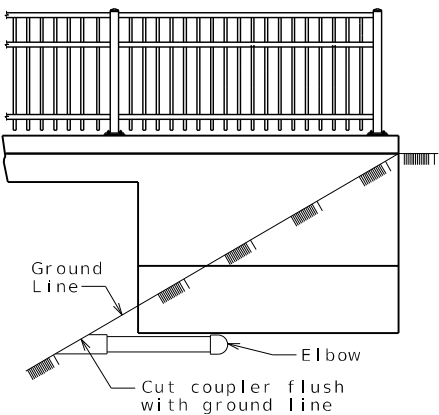
DETAIL A



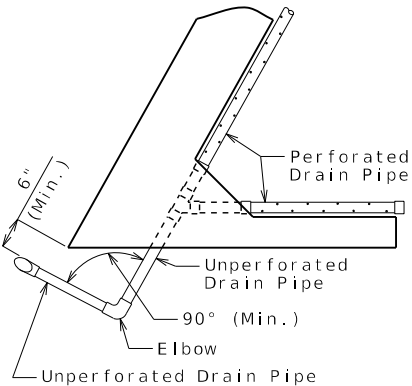
PLAN OF END BENT



PART SECTION A-A  
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

OPTIONAL TURNED DRAIN  
(Use only when straight drain is not practical.)

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings 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

Detailed Dec. 2025  
Checked Dec. 2025

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

Sheet No. 7 of 34



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
1-29

DISTRICT  
BR

STATE  
MO

SHEET NO.  
7

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

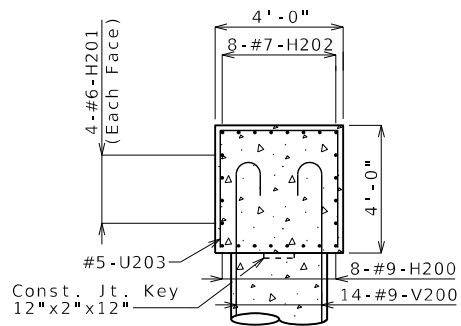
MODOT

GBA

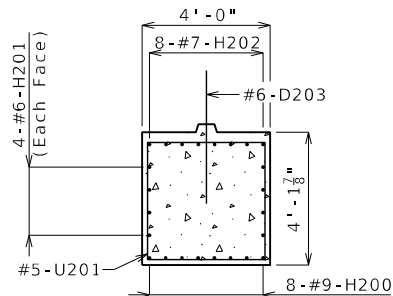
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ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

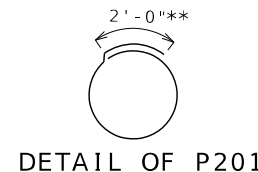
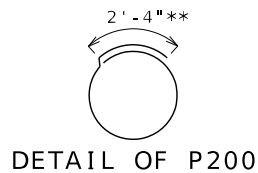
DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977



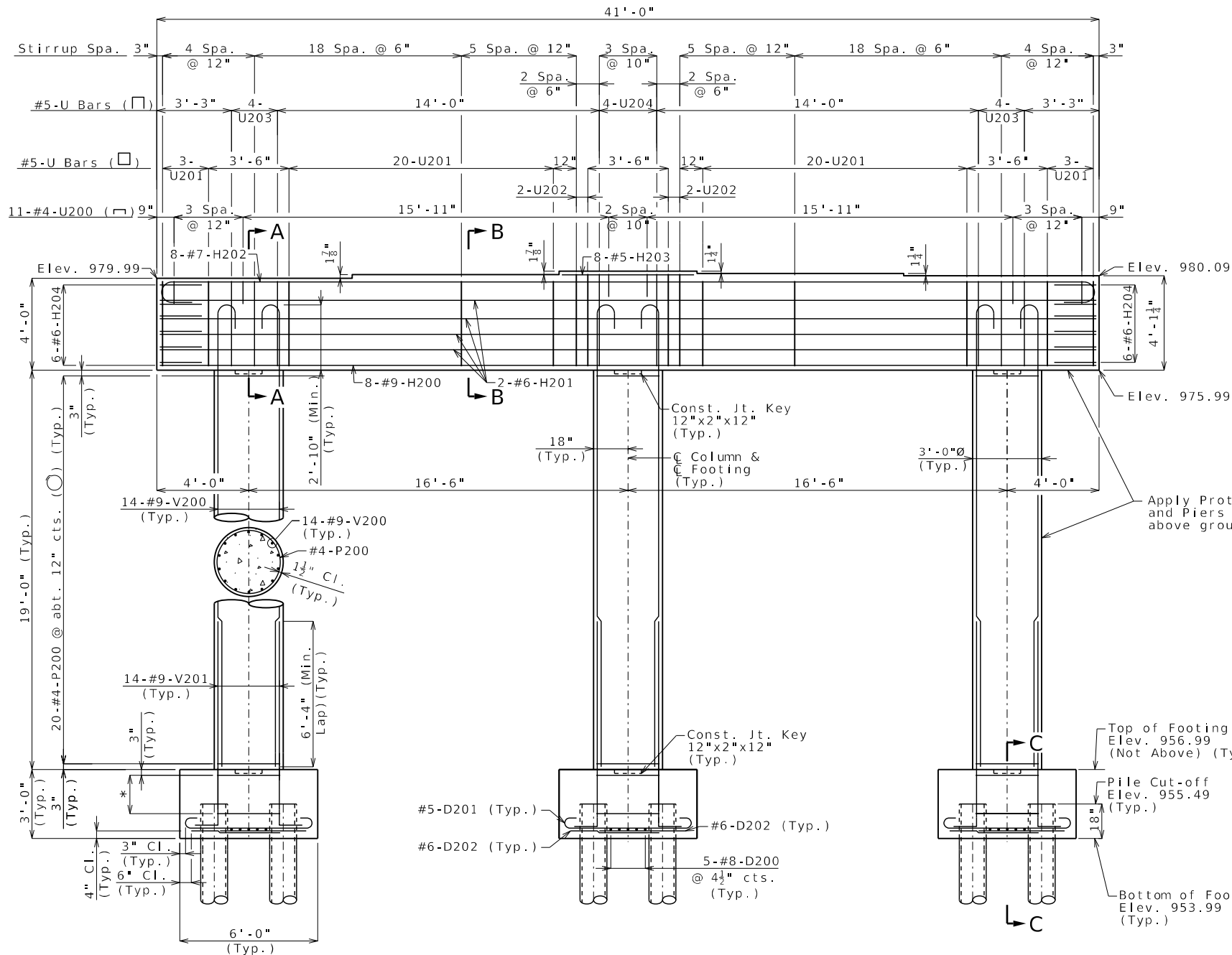
SECTION A-A



SECTION B-B



\*\* Minimum lap  
(Stagger adjacent  
bar splices)



ELEVATION

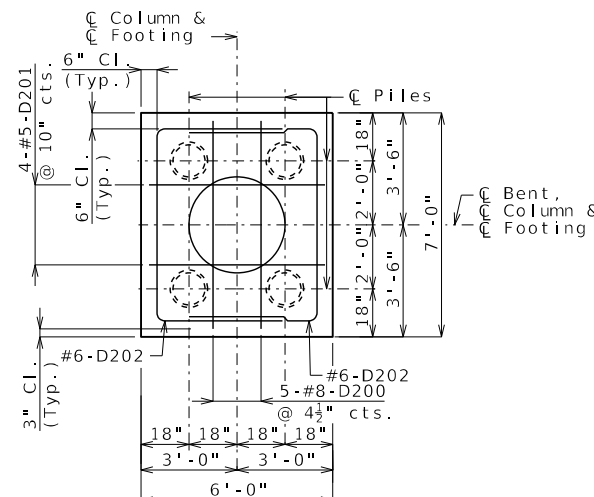
(Beam Keys not shown for clarity)

\* 3-#4-P201 @ 10" cts. (○) (Typ.)

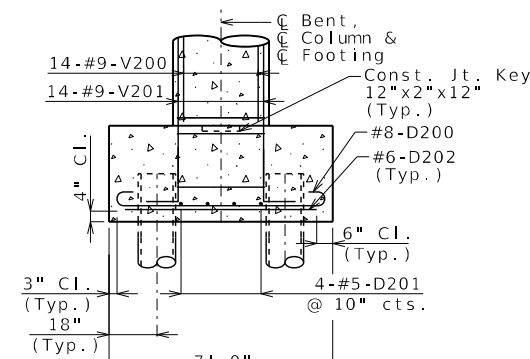
## DETAILS OF INTERMEDIATE BENT NO. 2

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

Sheet No. 8 of 34



PLAN OF FOOTING



SECTION C-C

Note:

Work this sheet with Sheet No. 9.



THIS SHEET HAS BEEN  
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DATE PREPARED  
12/30/2025

ROUTE  
1-29

STATE  
MO

DISTRICT  
BR

SHEET NO.  
8

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

ModOT

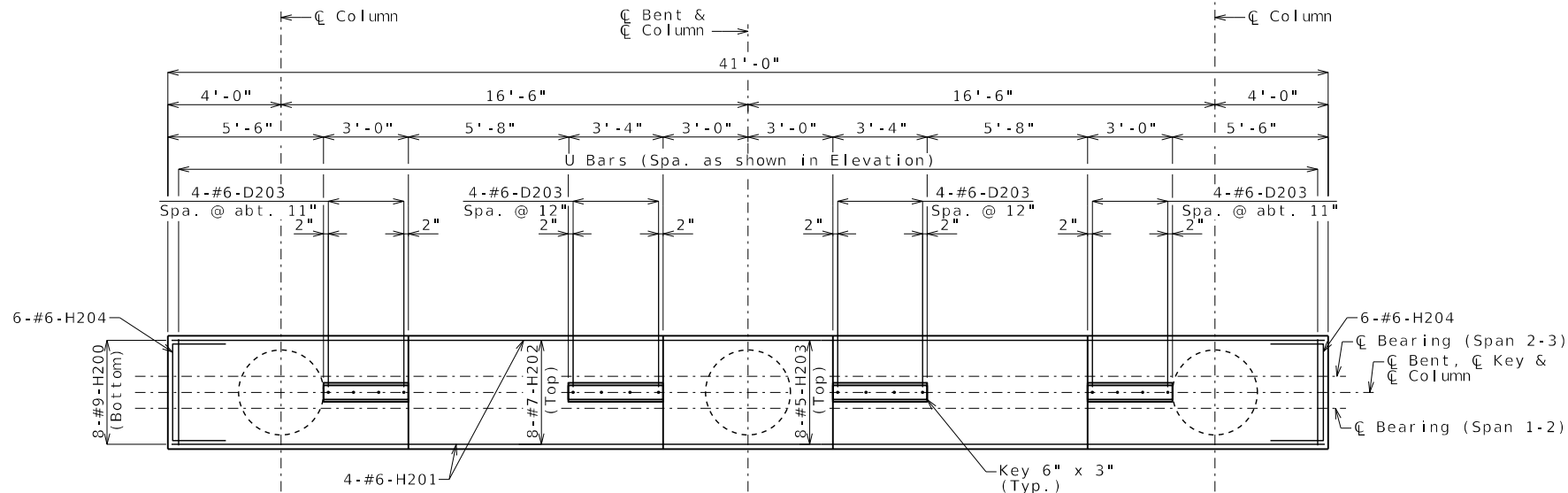
GBA

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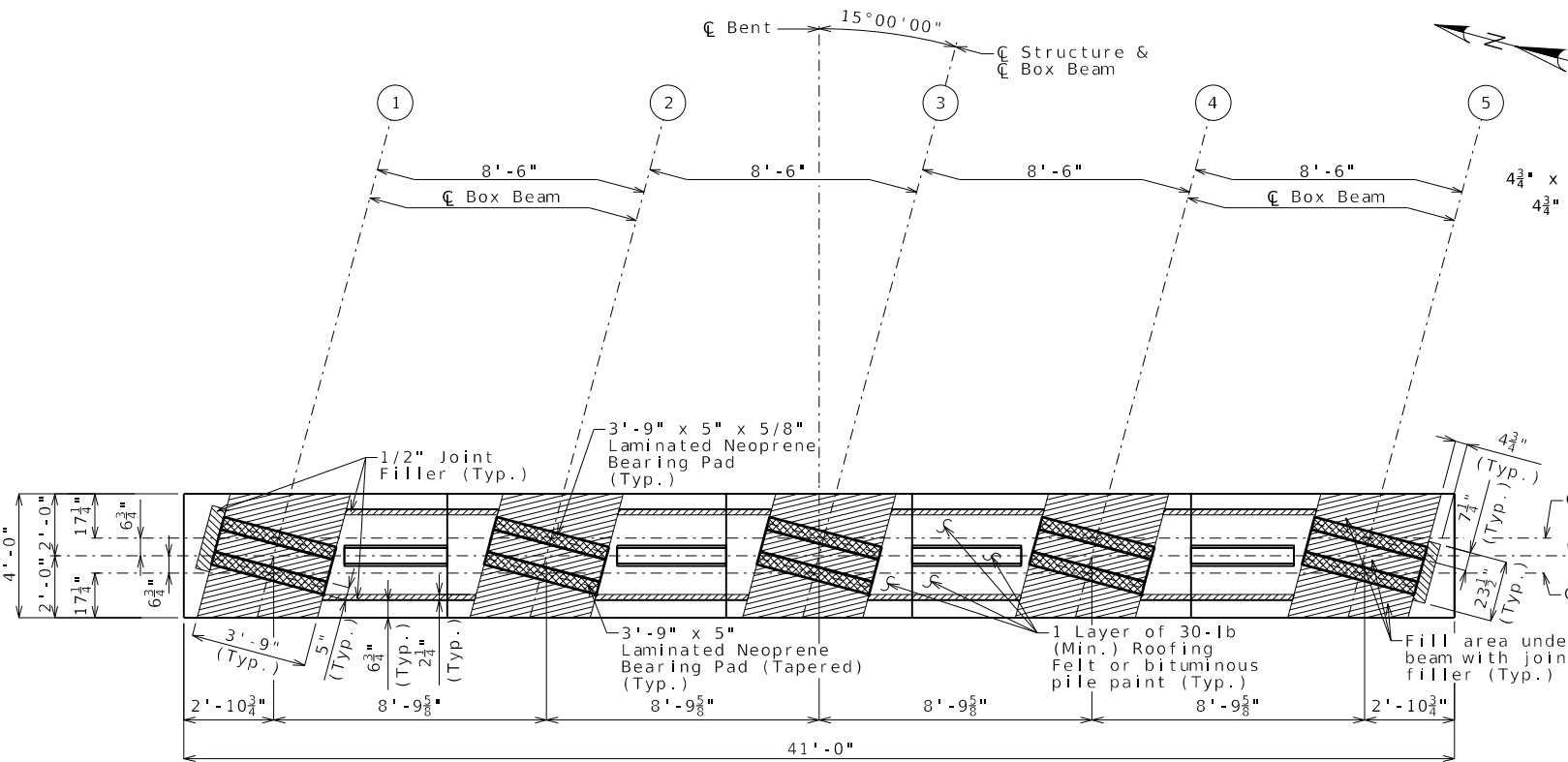
GEORGE BUTLER  
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PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977



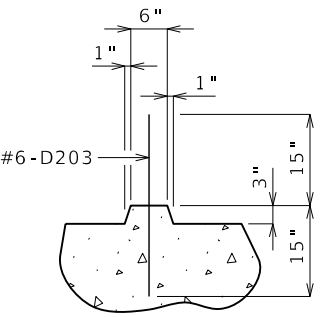


PLAN SHOWING REINFORCEMENT

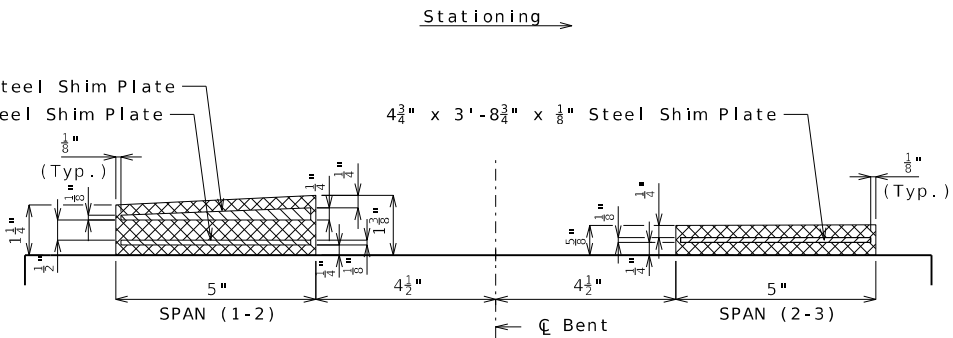


PLAN OF BEAM

Notes:  
For steps 2 inches or more, use 2 1/4 x 1/2 inch joint filler up vertical face.  
Work this sheet with Sheet No. 8.



SECTION THRU KEY



TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PADS ALONG BENT

| Substructure Quantity Table for Bent No. 2       |             |          |
|--------------------------------------------------|-------------|----------|
| Item                                             |             | Quantity |
| Class 1 Excavation                               | cu. yard    | 80       |
| Galvanized Cast-in-Place Concrete Piles (14 in.) | linear foot | 804      |
| Dynamic Pile Testing                             | each        | 1        |
| Pile Point Reinforcement                         | each        | 12       |
| Class B Concrete (Substructure)                  | cu. yard    | 53.5     |
| Reinforcing Steel (Bridges)                      | pound       | 1240     |
| Reinforcing Steel (Epoxy Coated)                 | pound       | 8740     |

These quantities are included in the Estimated Quantities table on Sheet No. 2.

DETAILS OF INTERMEDIATE BENT NO. 2

Detailed Dec. 2025  
Checked Dec. 2025

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

Sheet No. 9 of 34

c:\bms\gba-pw-01\dmcgill@gbateam.com\dms27374\B\_A9735\_09\_J113332\_Intermediate\_Bent\_2-2.dgn 3:50:09 PM 12/30/2025



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
1-29

STATE  
MO

DISTRICT  
BR

SHEET NO.  
9

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

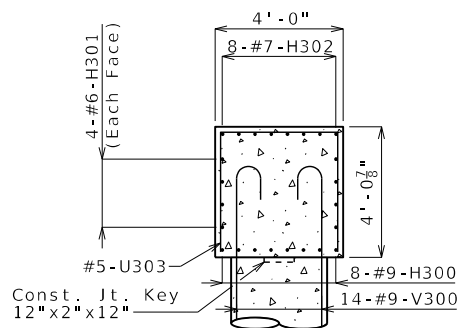
MODOT

GBA

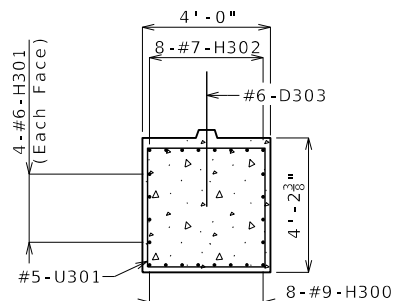
9801 Renner Blvd. Ste. 300  
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GEORGE BUTLER  
ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

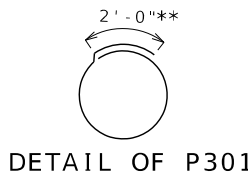
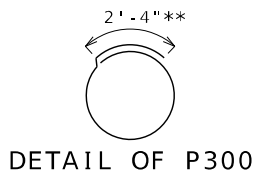
DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977



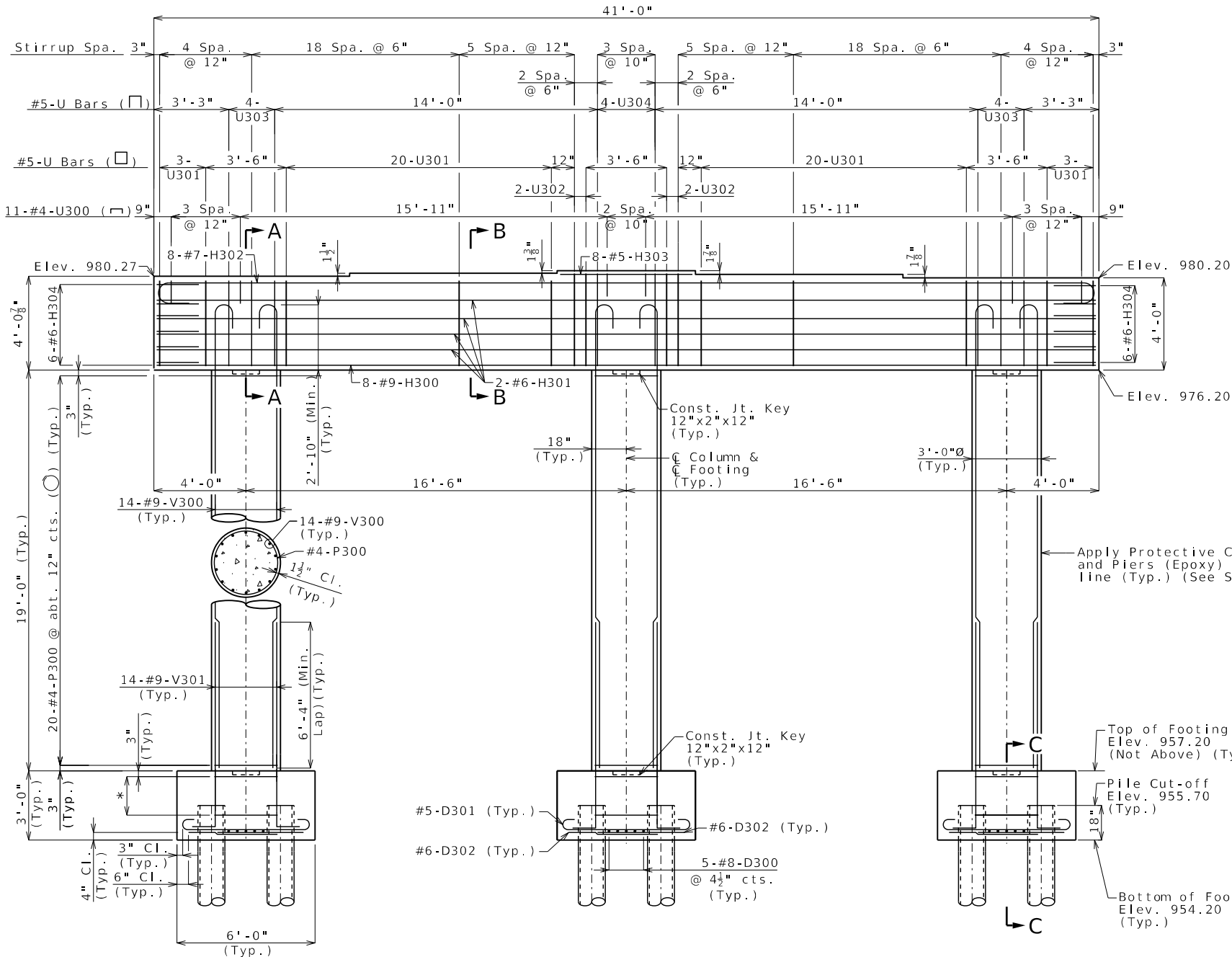
SECTION A-A



SECTION B-B



\*\* Minimum lap  
(Stagger adjacent  
bar splices)



ELEVATION

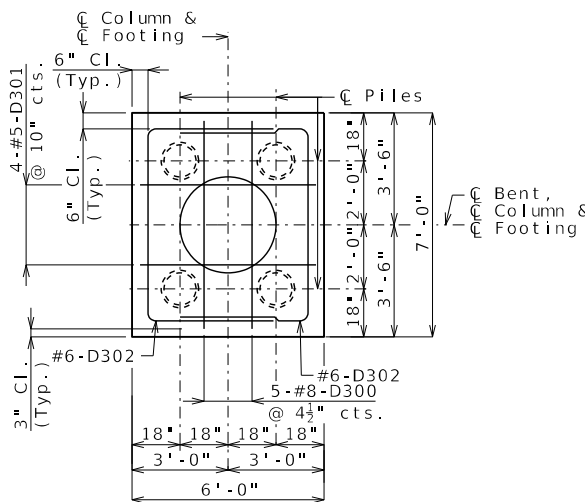
(Beam Keys not shown for clarity)

\* 3-#4-P301 @ 10" cts. (○) (Typ.)

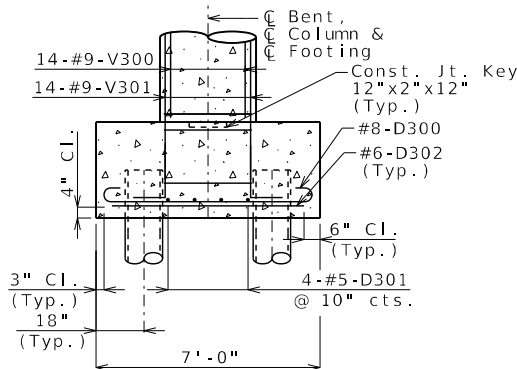
DETAILS OF INTERMEDIATE BENT NO. 3

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

Sheet No. 10 of 34



PLAN OF FOOTING



SECTION C-C

Note:

Work this sheet with Sheet No. 11.



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
1-29

STATE  
MO

DISTRICT  
BR

SHEET NO.  
10

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

MODOT

GBA

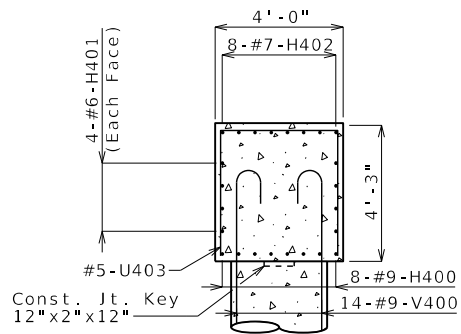
9801 Renner Blvd, Ste. 300  
Lenexa, KS 66219  
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ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

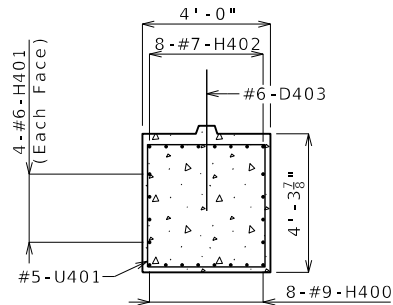
DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977



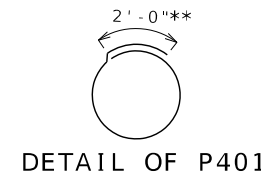
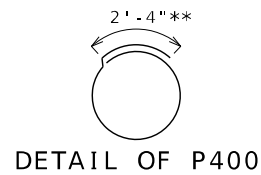




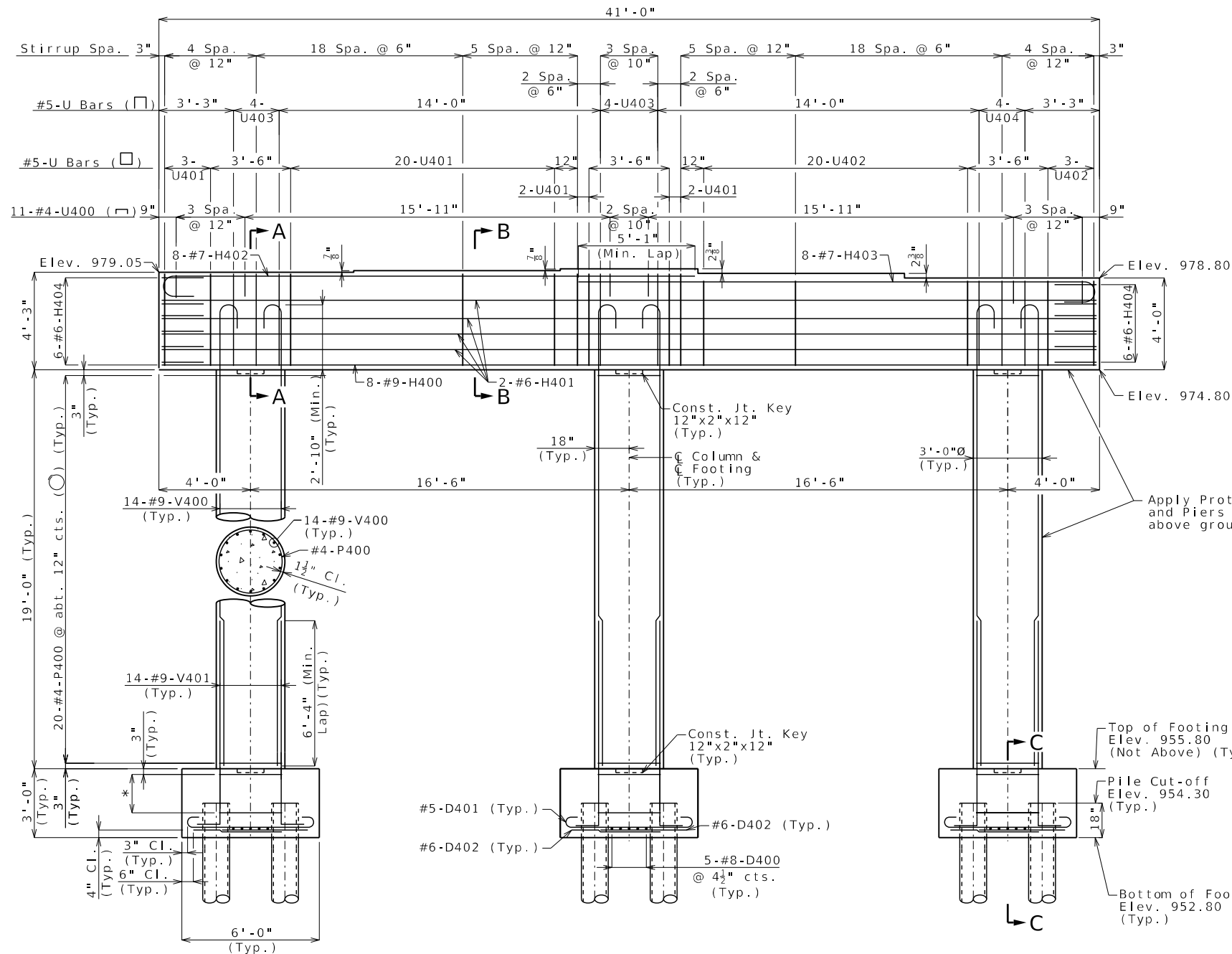
SECTION A-A



SECTION B-B



\*\* Minimum lap  
(Stagger adjacent  
bar splices)



ELEVATION

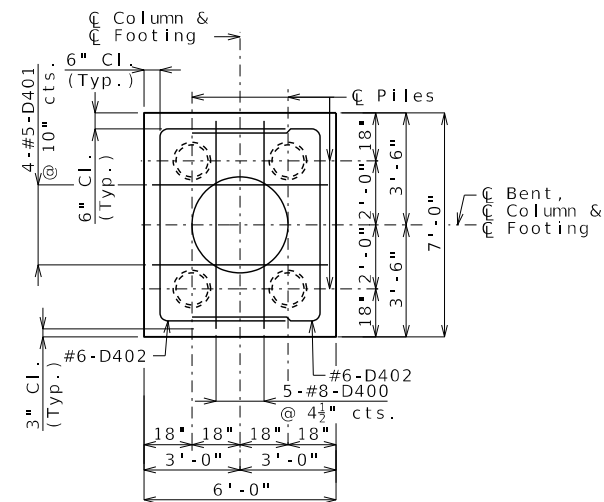
(Beam Keys not shown for clarity)

\* 3-#4-P401 @ 10" cts. (Typ.)

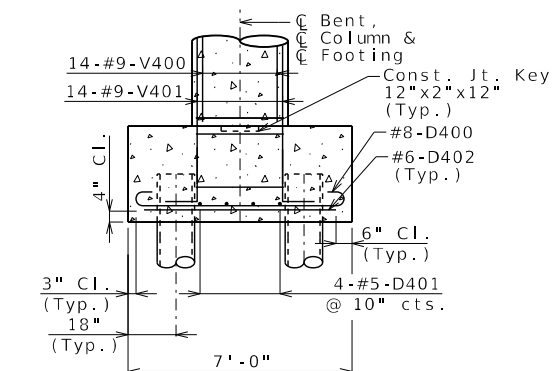
## DETAILS OF INTERMEDIATE BENT NO. 4

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

Sheet No. 12 of 34



PLAN OF FOOTING



SECTION C-C

Note:

Work this sheet with Sheet No. 13.



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
1-29

STATE  
MO

DISTRICT  
BR

SHEET NO.  
12

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

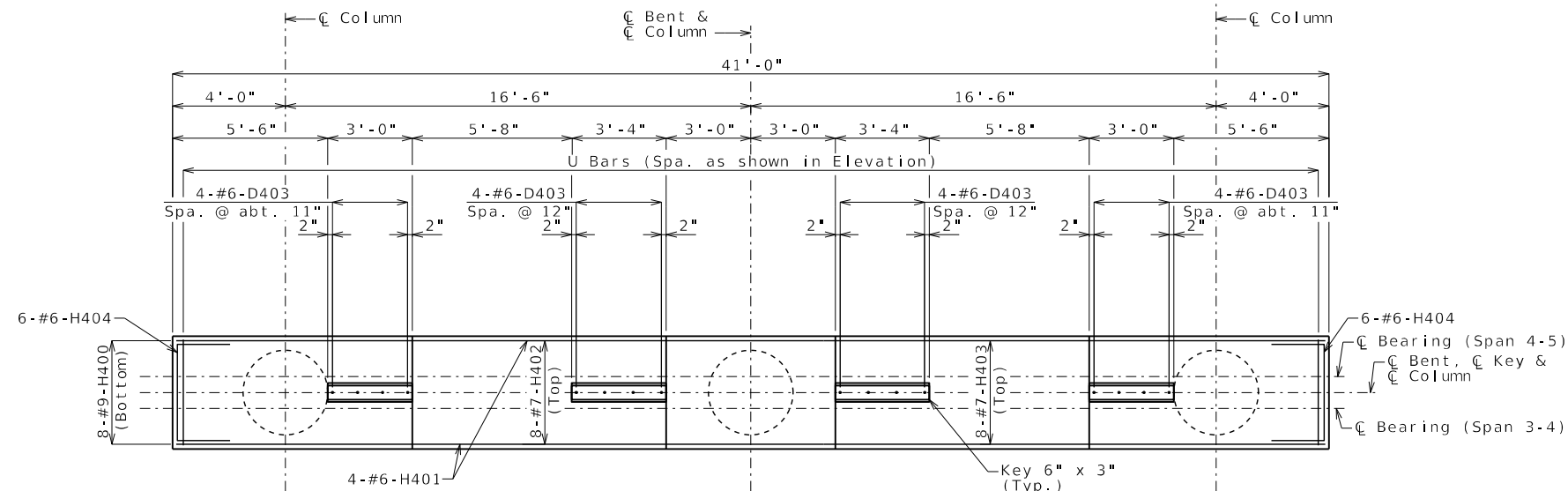
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Lenexa, KS 66219  
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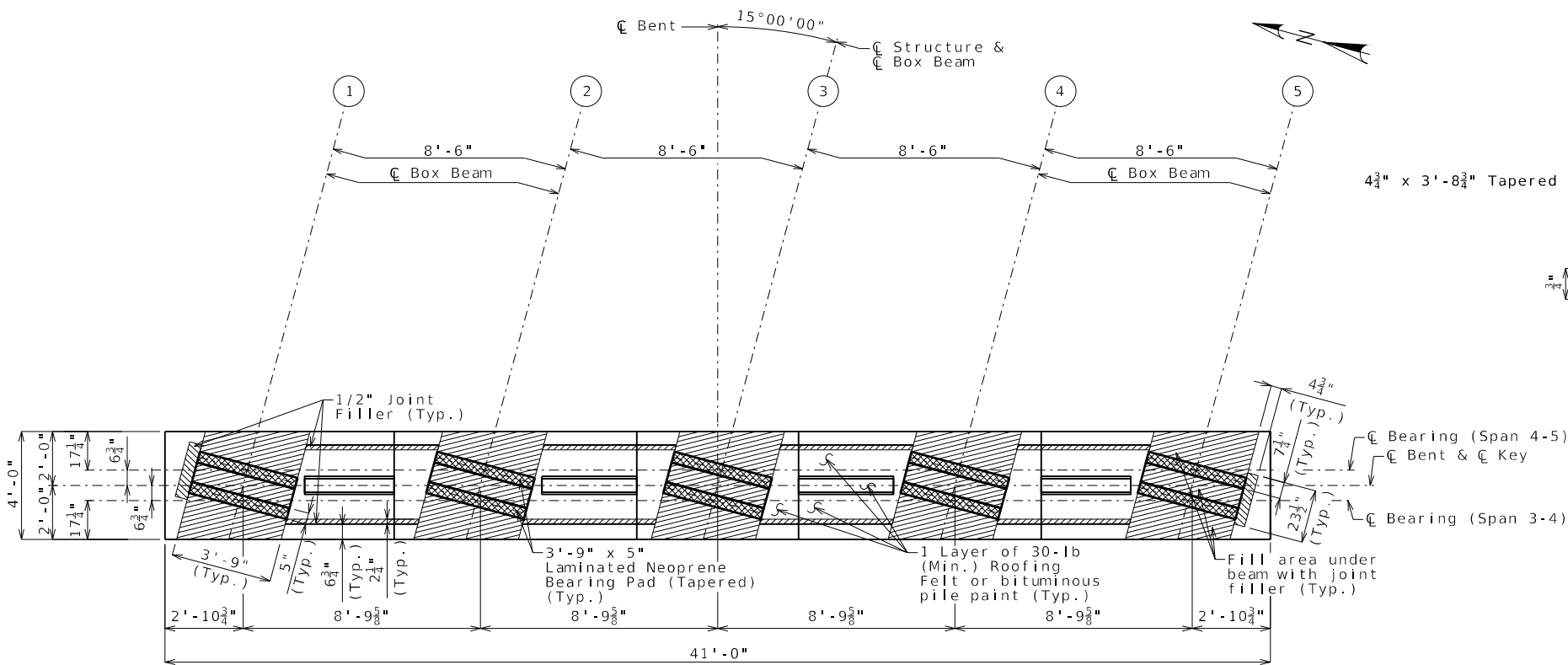
GEORGE BUTLER  
ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

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Checked Dec. 2025

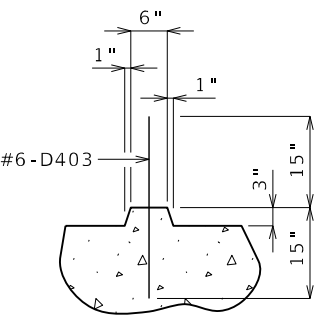


PLAN SHOWING REINFORCEMENT

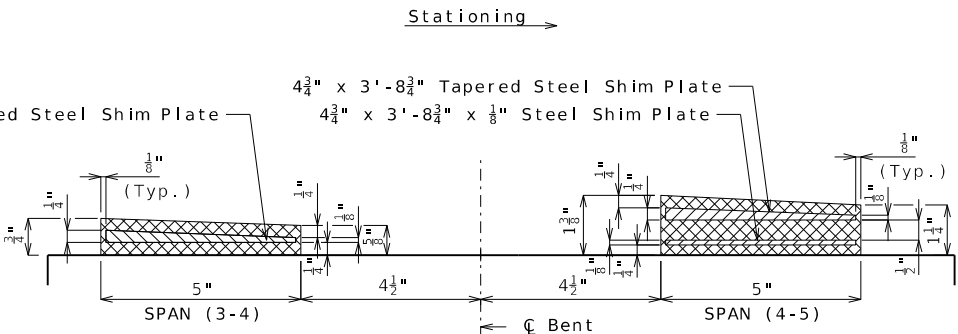


PLAN OF BEAM

Notes:  
For steps 2 inches or more, use 2 1/4 x 1/2 inch joint filler up vertical face.  
Work this sheet with Sheet No. 12.



SECTION THRU KEY



TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PADS (TAPERED) ALONG BOX BEAM

| Substructure Quantity Table for Bent No. 4       |             |          |
|--------------------------------------------------|-------------|----------|
| Item                                             |             | Quantity |
| Class 1 Excavation                               | cu. yard    | 80       |
| Galvanized Cast-in-Place Concrete Piles (14 in.) | linear foot | 804      |
| Dynamic Pile Testing                             | each        | 1        |
| Pile Point Reinforcement                         | each        | 12       |
| Class B Concrete (Substructure)                  | cu. yard    | 54.0     |
| Reinforcing Steel (Bridges)                      | pound       | 1240     |
| Reinforcing Steel (Epoxy Coated)                 | pound       | 8790     |

These quantities are included in the Estimated Quantities table on Sheet No. 2.



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
1-29

STATE  
MO

DISTRICT  
BR

SHEET NO.  
13

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MODOT

GBA

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Lenexa, KS 66219  
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ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

DETAILS OF INTERMEDIATE BENT NO. 4

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

Sheet No. 13 of 34









```
* #8-H bars @ 3" cts.  
  (Each face)(Place with grade)  
** Place with grade
```



Notes:

Work this sheet with Sheets No. 14 & 15.

For location of Elevations A-A & B-B and Sections C-C, D-D, E-E & F-F, see Sheet No. 15.

For reinforcement of the pedestrian curb, see Sheet No. 25.



| Substructure Quantity Table for Bent No. 5       |             |          |
|--------------------------------------------------|-------------|----------|
| Item                                             |             | Quantity |
| Class 1 Excavation                               | cu. yard    | 40       |
| Galvanized Cast-in-Place Concrete Piles (14 in.) | linear foot | 372      |
| Dynamic Pile Testing                             | each        | 1        |
| Pile Point Reinforcement                         | each        | 6        |
| Class B Concrete (Substructure)                  | cu. yard    | 17.8     |

Note:  
These quantities are included in the Estimated Quantities shown on Sheet No. 2.



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| ROUTE  | STATE |
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| BR       | 16       |

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102



GEORGE BUTLER  
ASSOCIATES, INC.  
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ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

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

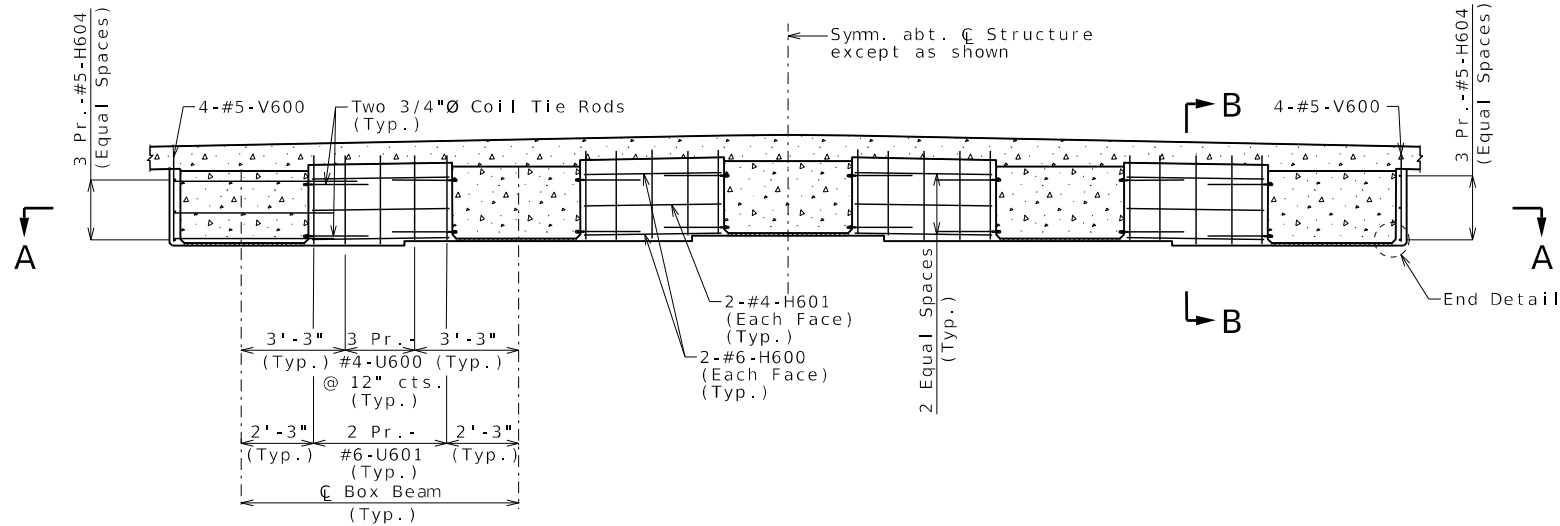
## DETAILS OF END BENT NO. 5

Sheet No. 16 of 34

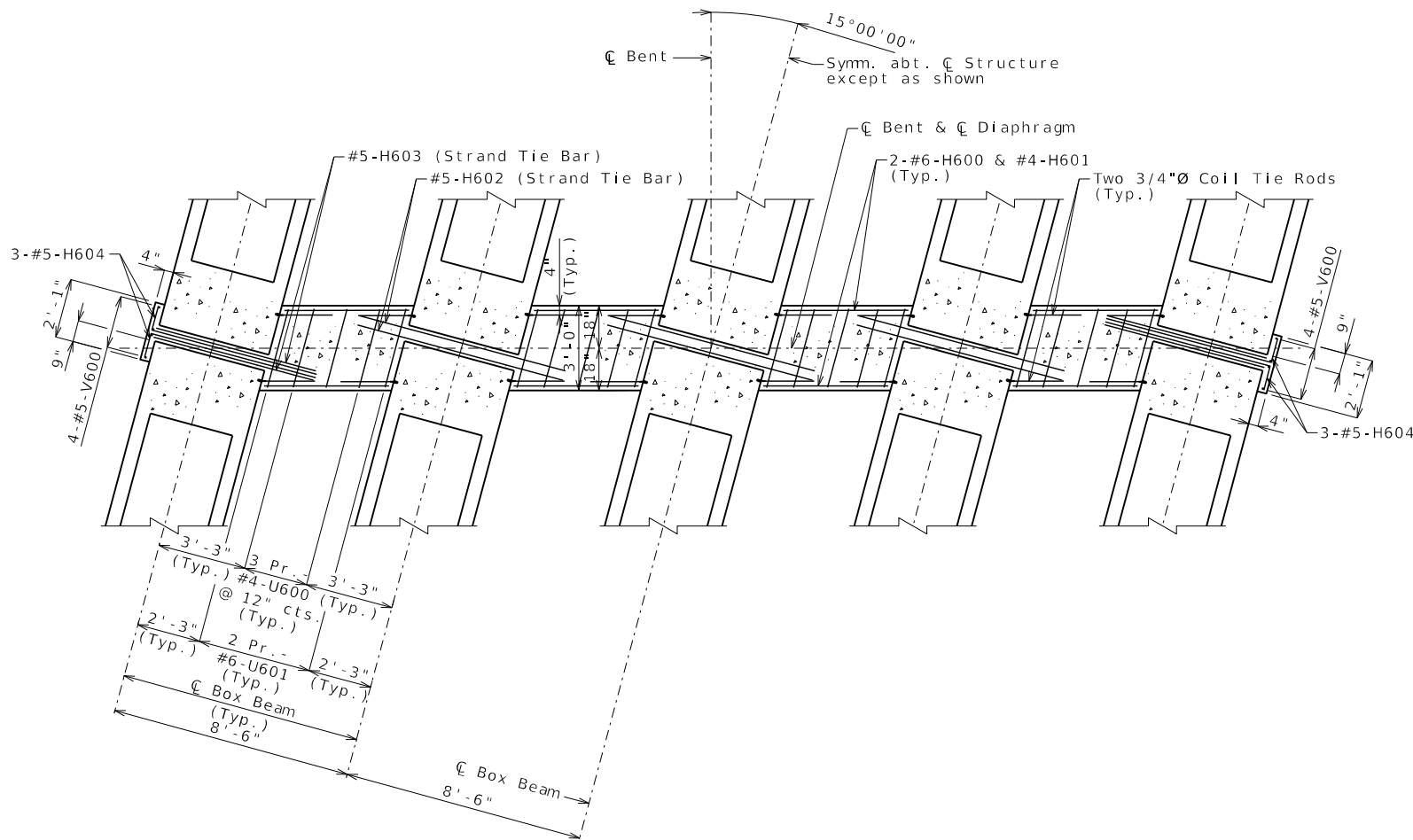




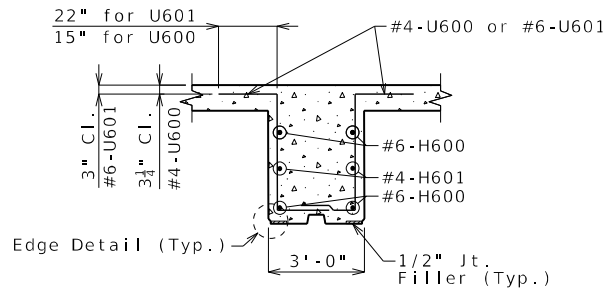




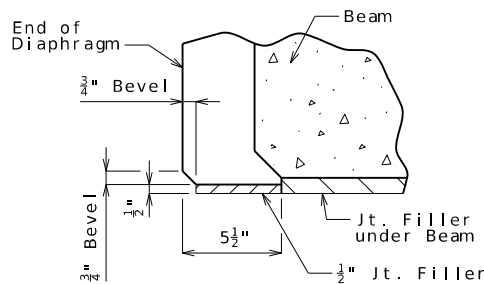
SECTION NEAR INTERMEDIATE BENT  
Normal to  $\text{CL}$  Structure



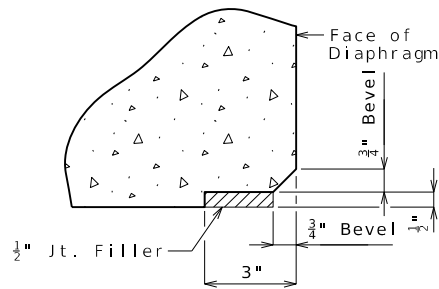
SECTION A-A



SECTION B-B



END DETAIL



EDGE DETAIL

Notes:  
For location of Strand Tie Bars, see Sheets No. 17 & 18.  
For location and details of Coil Tie Rods, see Sheets No. 17 & 18.  
Diaphragms at intermediate bents shall be built vertically.  
All U-bars in diaphragms are to be placed parallel to  $\text{CL}$  Roadway.



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SHEET NO.  
19

COUNTY  
BUCHANAN

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CONTRACT ID.

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BRIDGE NO.  
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MISSOURI HIGHWAYS AND TRANSPORTATION  
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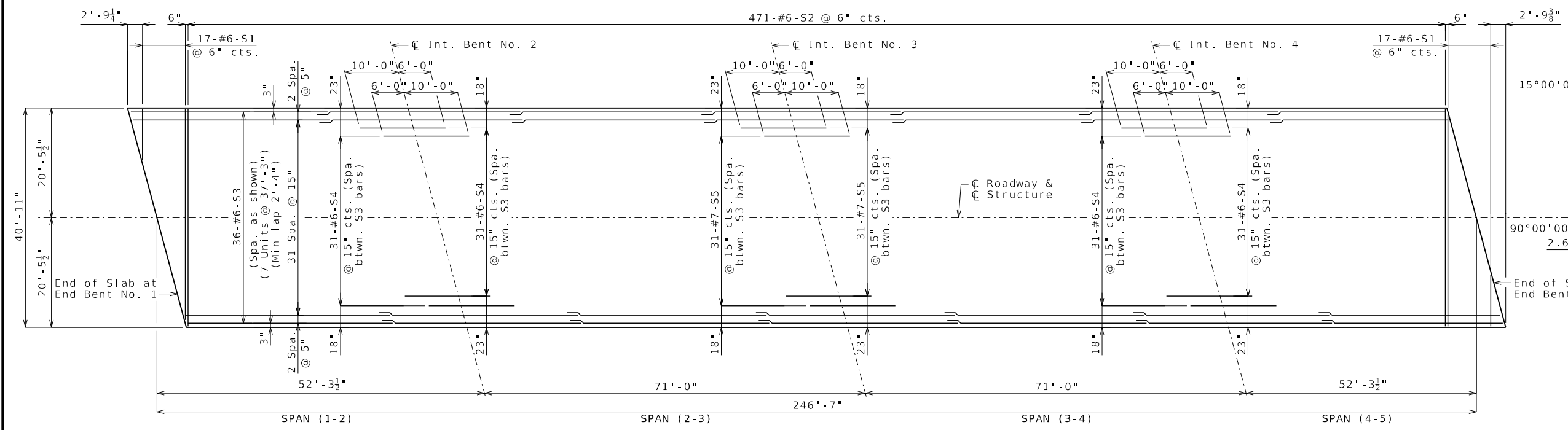
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 19 of 34

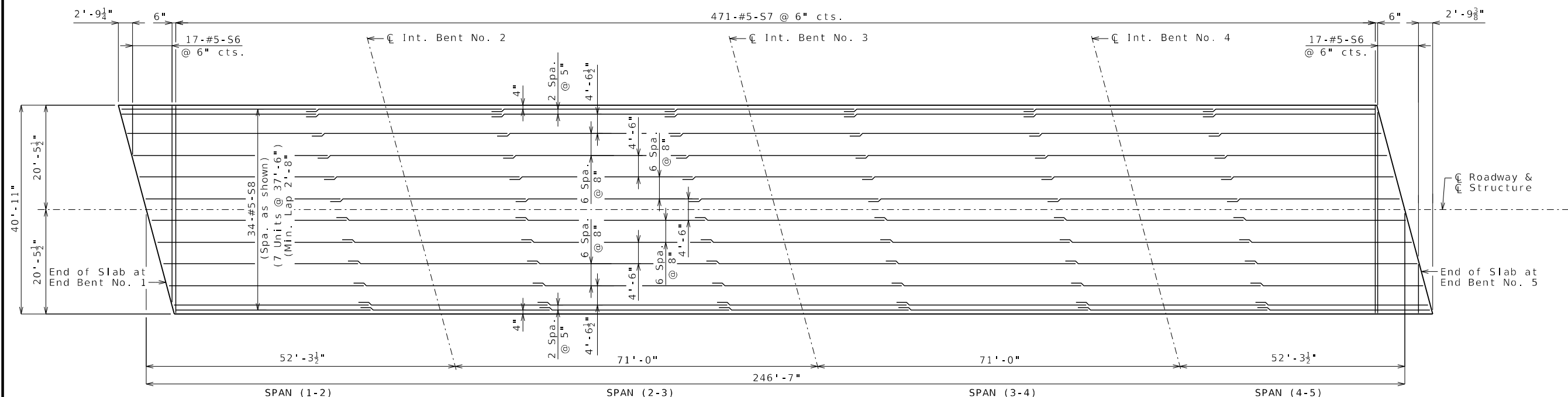
# CONCRETE DIAPHRAGMS AT INTERMEDIATE BENTS

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PLAN OF SLAB SHOWING TOP REINFORCEMENT



PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

Notes:  
Longitudinal slab dimensions are measured horizontally.  
For details and reinforcement of the barrier and pedestrian curb not shown, see Sheets No. 23 thru 25.  
For Theoretical Bottom of Slab Elevations, Beam Camber Diagram and Theoretical Slab Haunching Diagram, see Sheet No. 20.  
For Section Thru Slab, Optional Stay-In-Place Form Details, Slab Construction Joint Detail and Slab Pouring Sequence, see Sheet No. 22.

PLAN OF SLAB SHOWING REINFORCEMENT

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Note: This drawing is not to scale. Follow dimensions. Sheet No. 21 of 34



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DISTRICT BR SHEET NO. 21

COUNTY BUCHANAN

JOB NO. J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9735

DESCRIPTION

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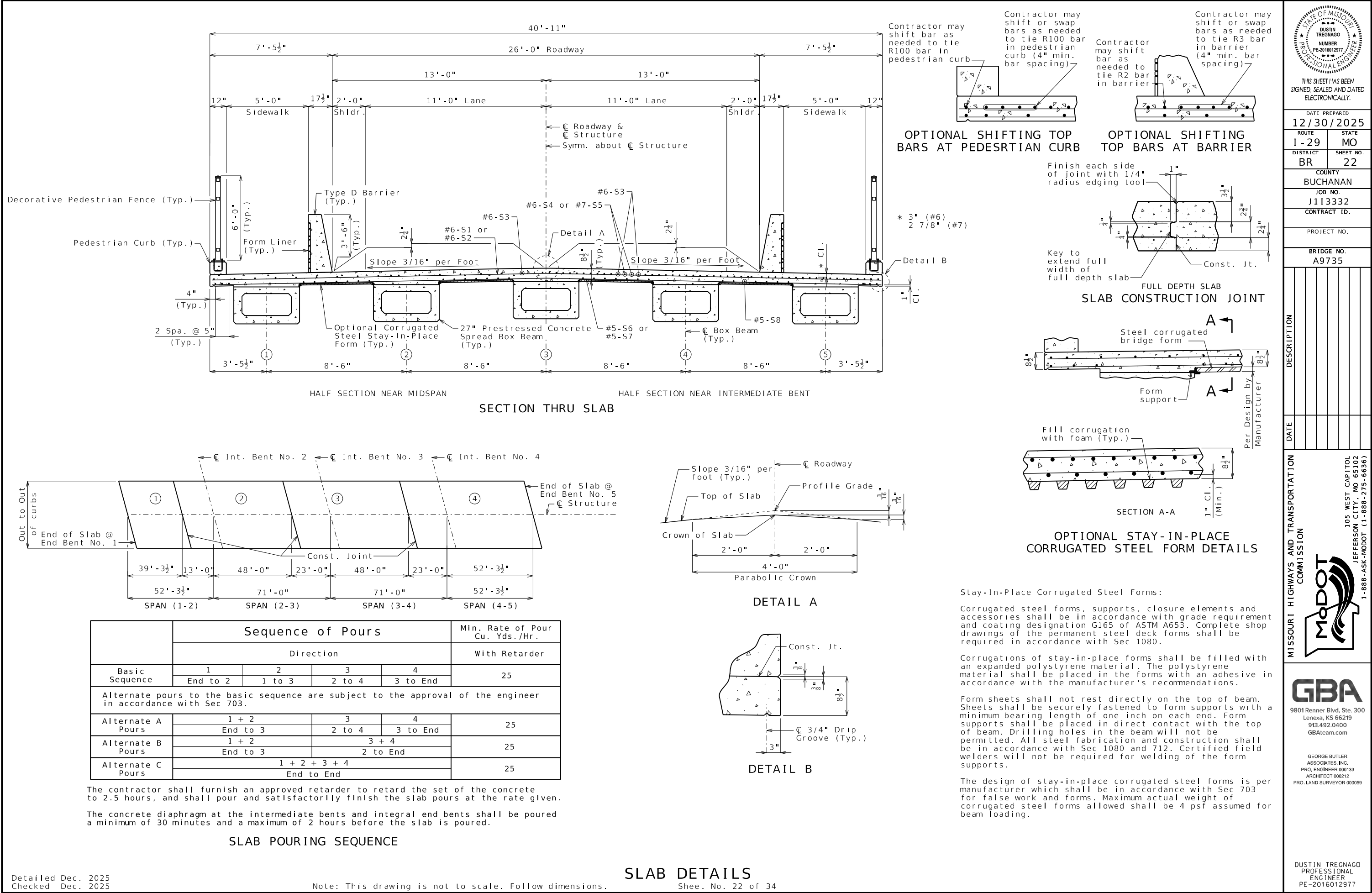
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DUSTIN TREGNAGO

NUMBER

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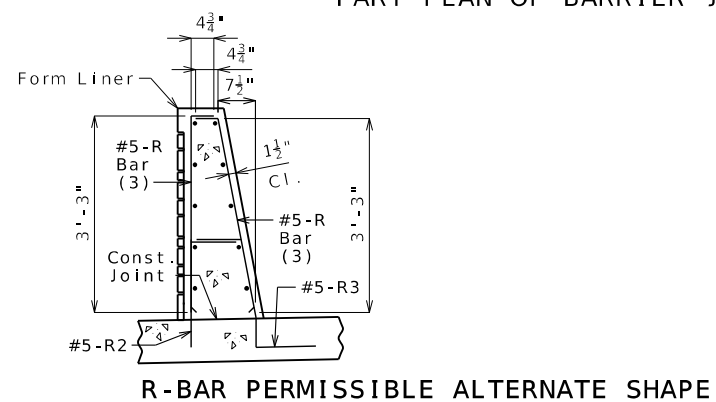
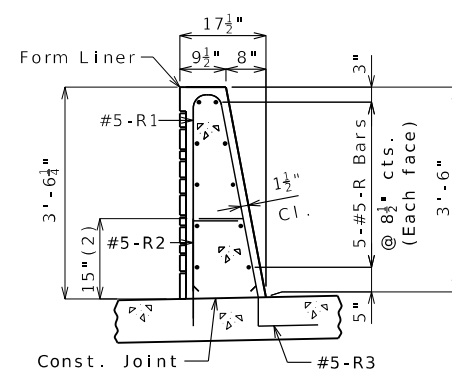
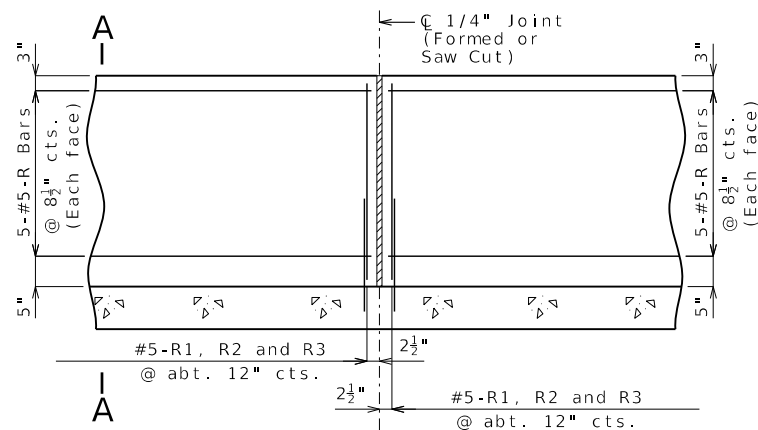
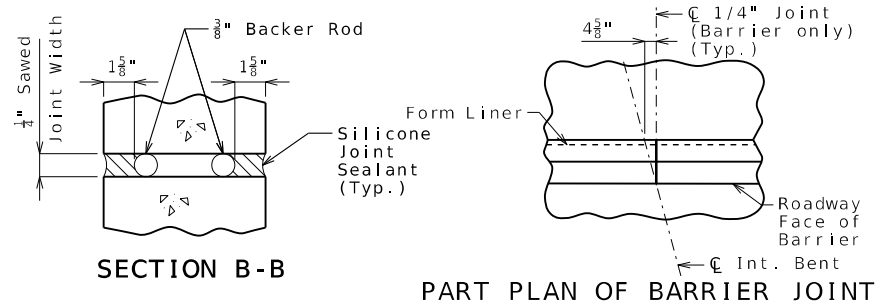
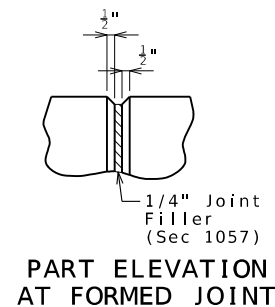
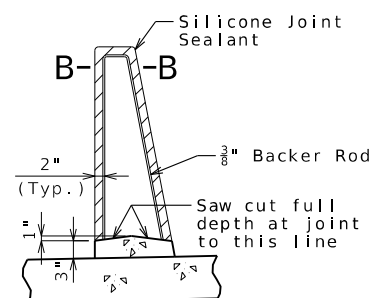
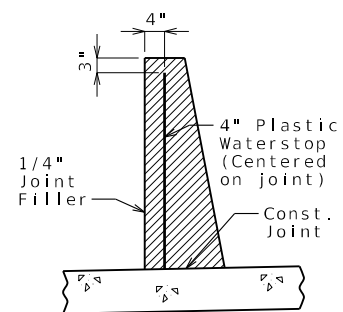
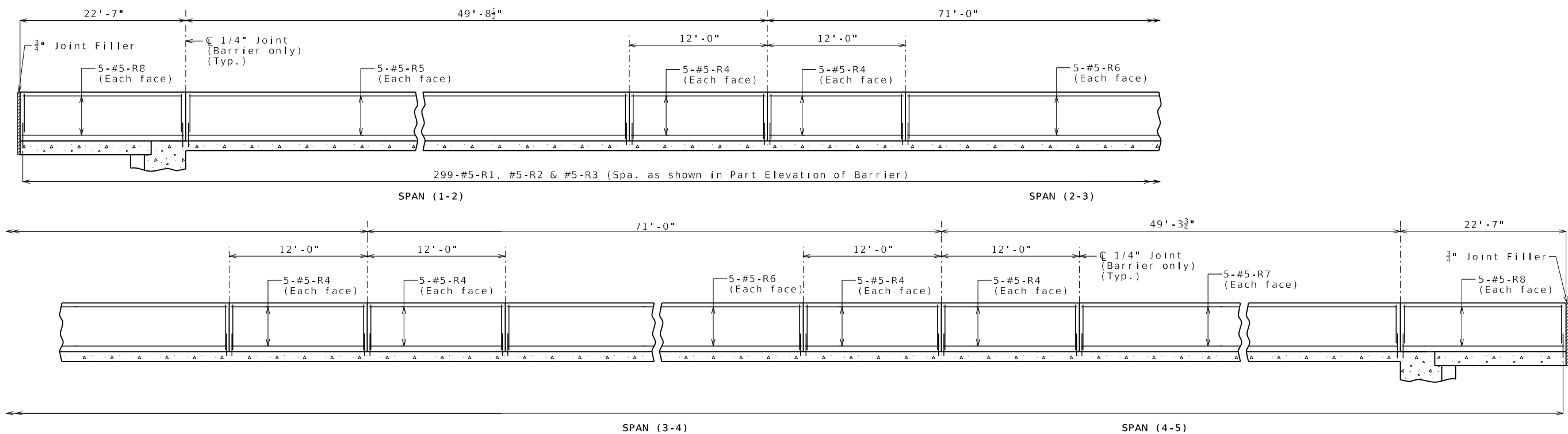
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PROFESSIONAL ENGINEER

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General Notes:

Conventional forming shall be used. Saw cut joints may be used with conventional forming.

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

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

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

Concrete in barrier shall be Class B-1.

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

Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 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 Type D Barrier.

Joint sealant and backer rods shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

For details of form liner, see Sheet No. 24.

Plastic waterstop shall not be used with saw cut joints.



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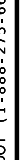
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COUNTY  
BUCHANAN

JOB NO.  
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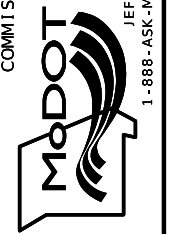
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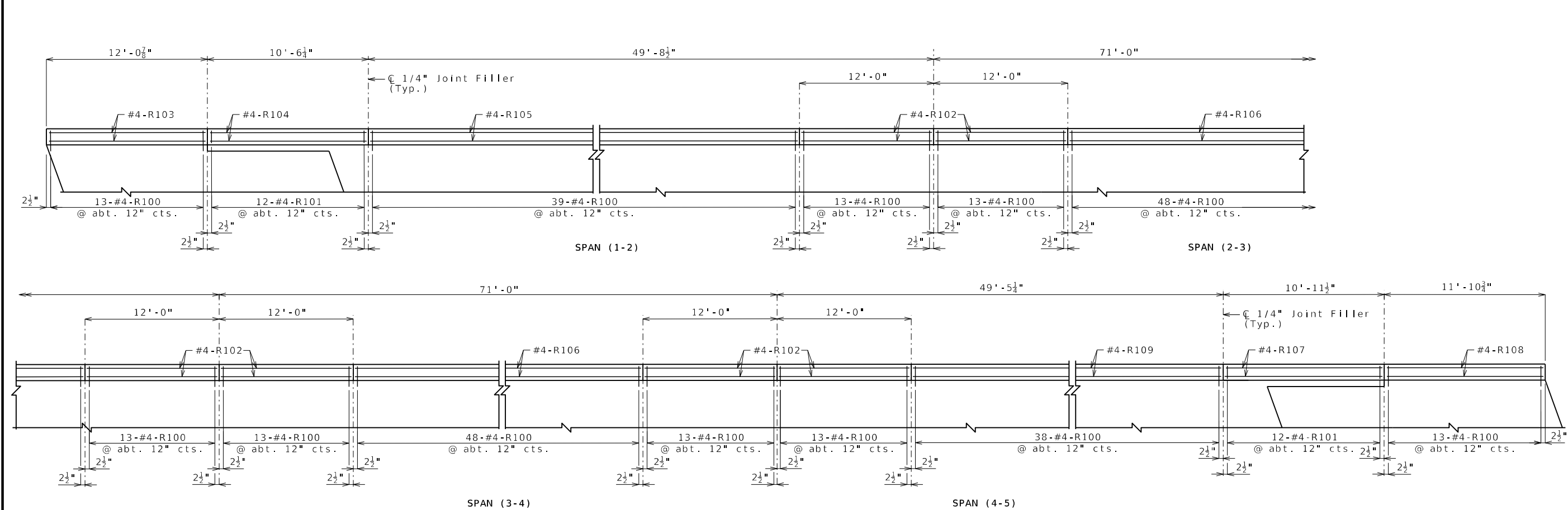
Note: This drawing is not to scale. Follow dimensions.

### TYPE D BARRIER

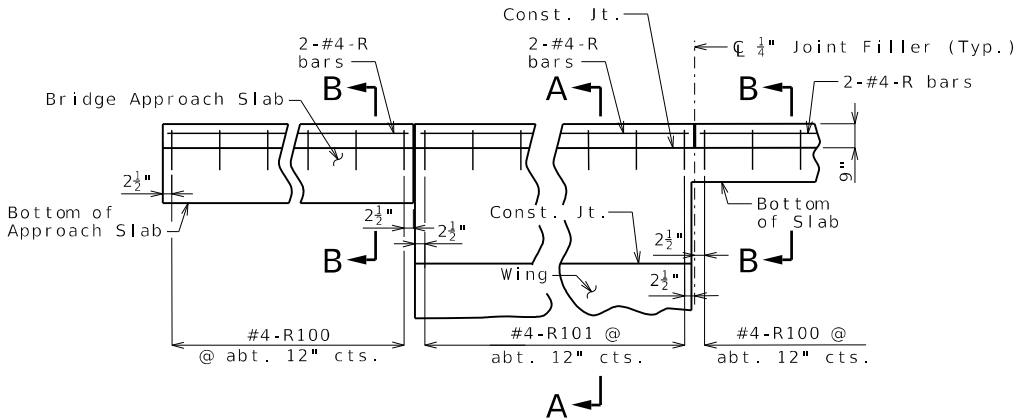
Sheet No. 23 of 34



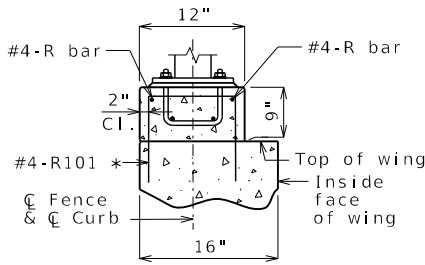




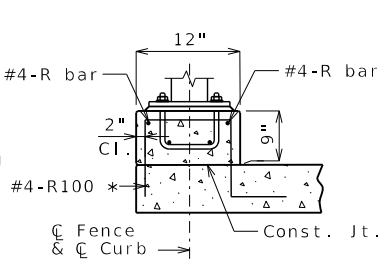
PLAN OF PEDESTRIAN CURB SHOWING REINFORCEMENT  
(Left curb shown, right curb similar)  
Longitudinal dimensions are horizontal.



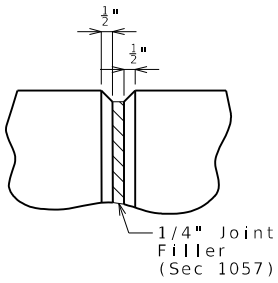
PART ELEVATION OF PEDESTRIAN CURB AT END BENT



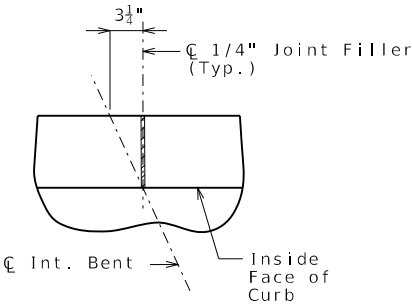
SECTION A-A



SECTION B-B



PART ELEVATION AT CURB JOINT



PART PLAN SHOWING JOINT LOCATION

Notes:

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

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

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

Concrete in curb shall be Class B-1.

Measurement of pedestrian curb is to the nearest linear foot, measured along the outside top of curb from end of bridge approach slab to end of bridge approach slab.

Center of posts shall clear curb joints or ends by at least 6 inches.

Minimum lap for longitudinal R-bars is 2'-7".

Slab reinforcement not shown for clarity.

For details of decorative pedestrian fence, see Sheet No. 26.



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25

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BUCHANAN

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Notes:

These details are a general representation of a Decorative Pedestrian Fence. The actual fence components and component positions may be different than what is shown.

Fence shall have a gloss black finish (Federal Standard #17038). See special provisions.

Base plate shall be ASTM A709, Grade 50.

All base plates, U-bolts, hex nuts and washers shall be galvanized in accordance with ASTM A123 and Sec 1081.

Measurement of decorative pedestrian fence will be made horizontally and to the nearest linear foot along centerline fence.

Payment for furnishing and erecting the fence, complete in place, will be considered completely covered by the contract unit price for (72 in.) Decorative Pedestrian Fence (Structures).

All fence posts shall be vertical.

Grout shall be placed under the post base plates in accordance with Sec 1066.

Decorative pedestrian fencing shall be in accordance with 2020-AASHTO LRFD Bridge Design Specifications, 9th Ed.

Shop drawings and structural calculations will not be required for the decorative pedestrian fences on the Bridge Pre-qualified Products List.

All materials used in fabrication and construction of the decorative pedestrian fencing shall be in accordance with the manufacturer's specifications, except as modified in the contract documents.

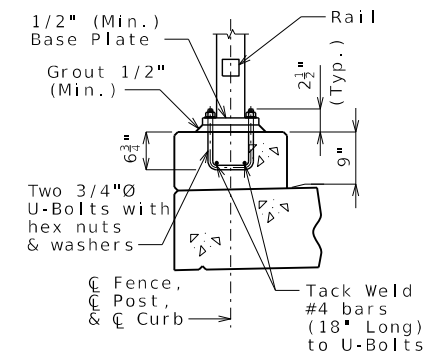
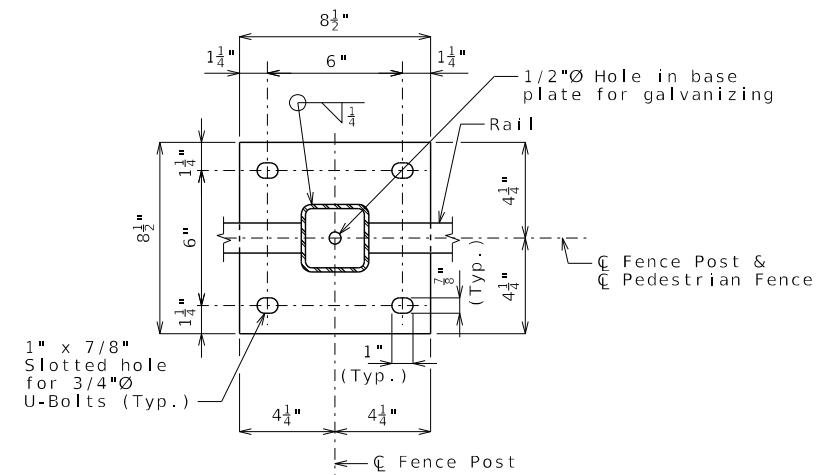
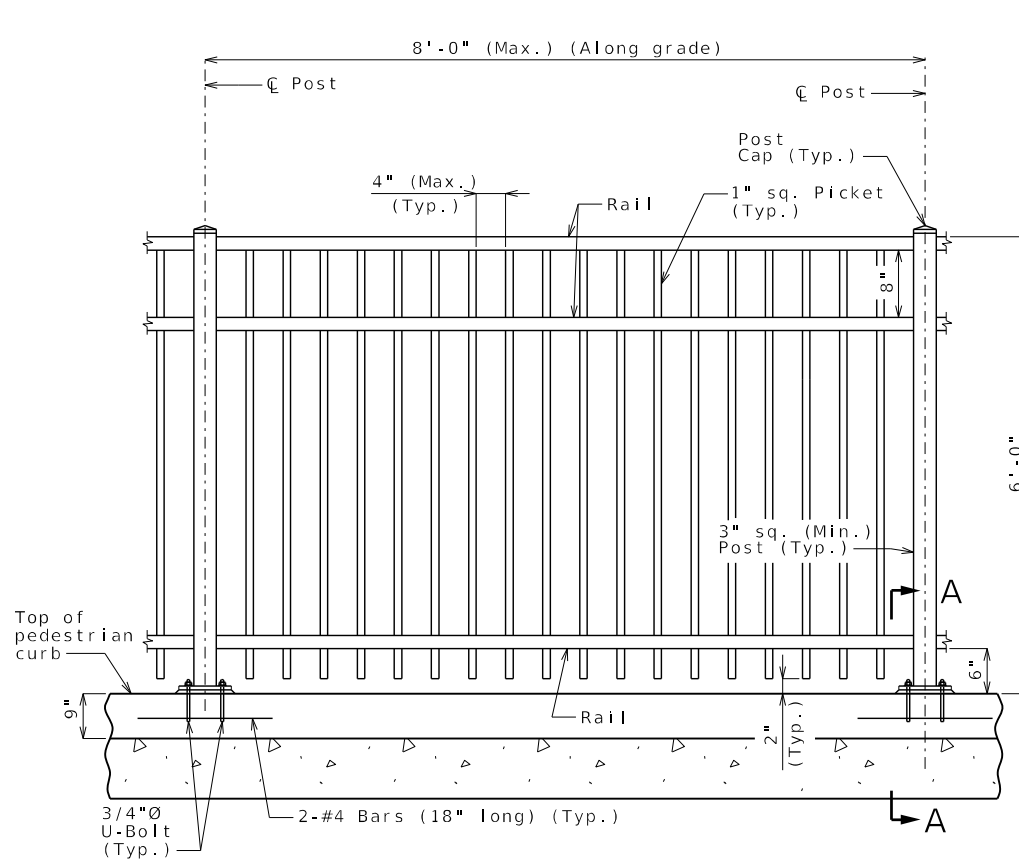
Decorative pedestrian fencing system shall be supplied by only one manufacturer. Decorative pedestrian fencing system shall include all components except the U-bolts, hardware, and #4 bars welded to the U-bolts. The assembly of the pickets to the rails and the rails to the posts shall be the same as the style mentioned for the manufacturer.

See Bridge Pre-qualified Products List (BPPL) for a list of approved manufacturers.

Substitution for the U-bolt cages will not be permitted.

U-bolts shall be ASTM F1554 Grade 36.

For details of pedestrian curb, see Sheet No. 25.



SECTION A-A  
1/2-inch diameter hole in base  
plate not shown for clarity.



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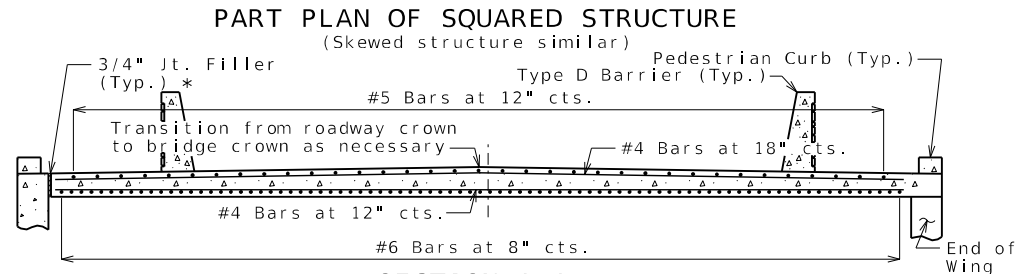
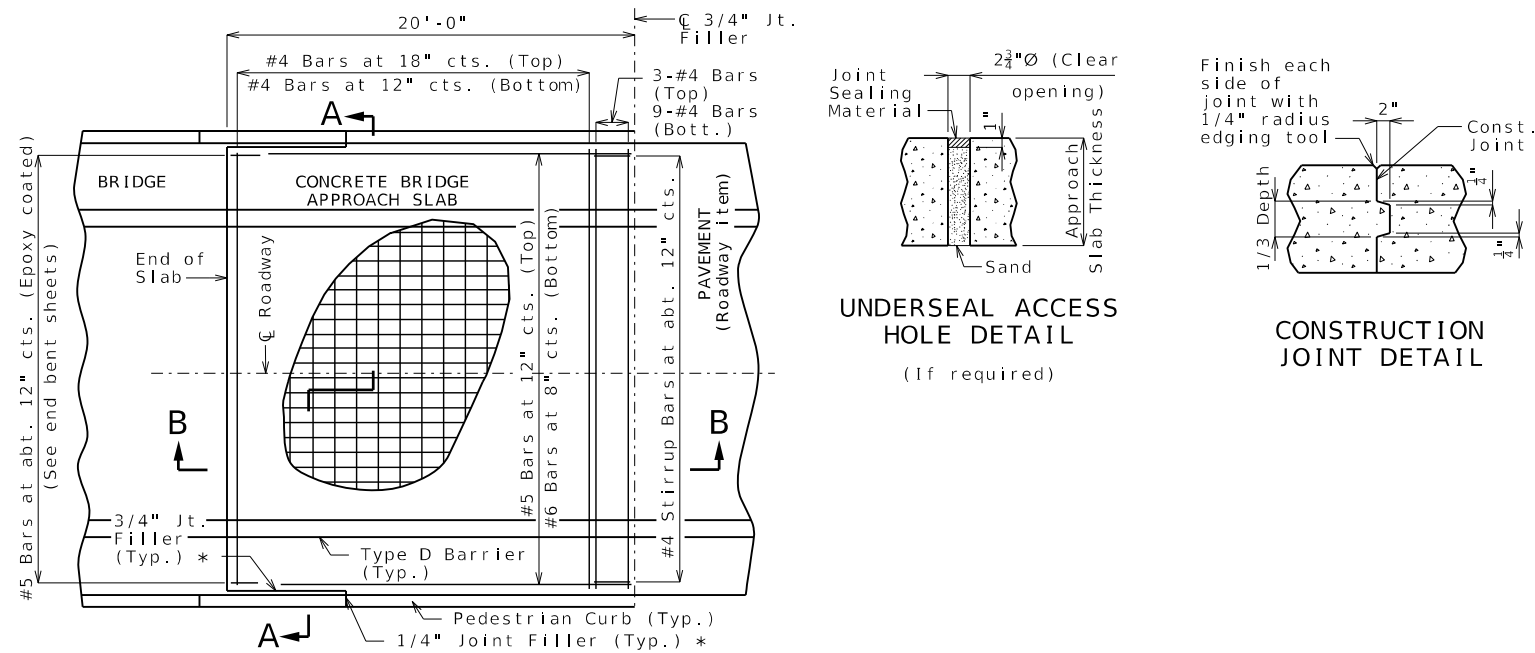
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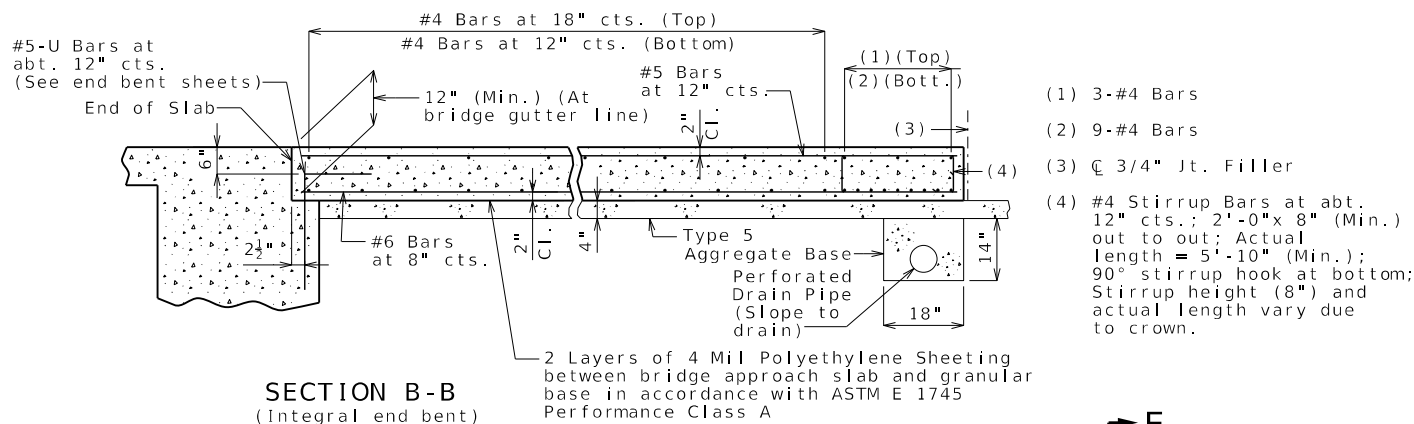
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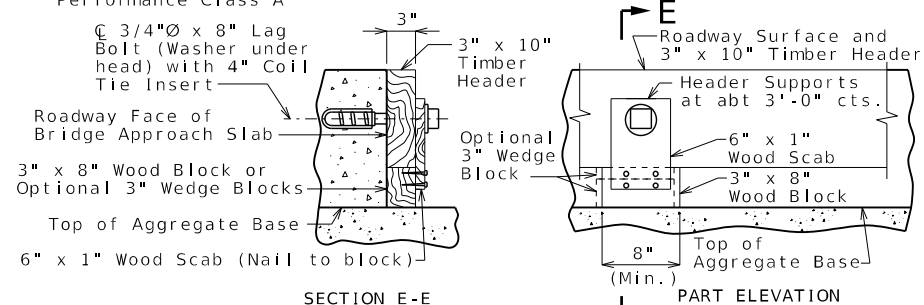
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ENGINEER  
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With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



- (1) 3-#4 Bars
- (2) 9-#4 Bars
- (3)  $\text{C } 3/4" \text{ Jt. Filler}$
- (4) #4 StIRRUP Bars at abt. 12" cts.; 2'-0"x 8" (Min.) out to out; Actual length = 5'-10" (Min.); 90° stirrup hook at bottom; StIRRUP height (8") and actual length vary due to crown.



**DETAILS OF TIMBER HEADER**  
Remove timber header when concrete pavement is placed.

## CONCRETE SLAB

## BRIDGE APPROACH SLAB (MINOR)

Notes For  
Concrete Slab Only:

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

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

Longitudinal construction joints in bridge approach slab shall be aligned with longitudinal construction joints in bridge slab.

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

The reinforcing steel in the bridge approach slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 26 inches for #4 bars, or by mechanical bar splice.

Mechanical bar splices shall be in accordance with Sec 710.

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

Payment for furnishing all materials, labor and excavation necessary to construct the concrete bridge approach slab, including the timber header, 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 (Minor) per square yard.

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.

\* Seal joint between vertical face of approach slab and wing with sealant in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

General Notes:

The contractor shall pour and satisfactorily finish the bridge slab before placing the bridge approach slab.



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| BR       | 27        |

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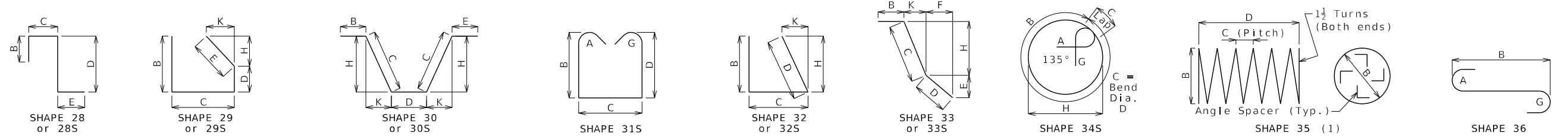
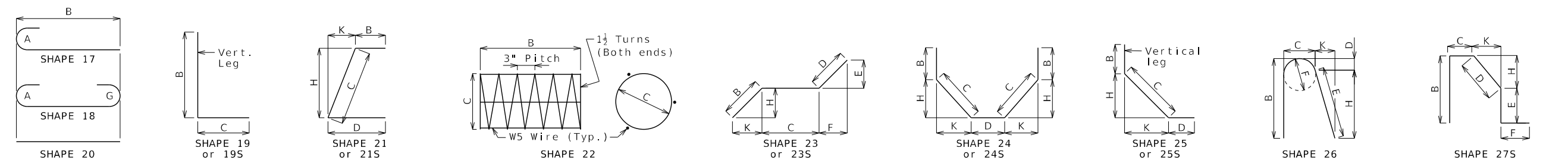
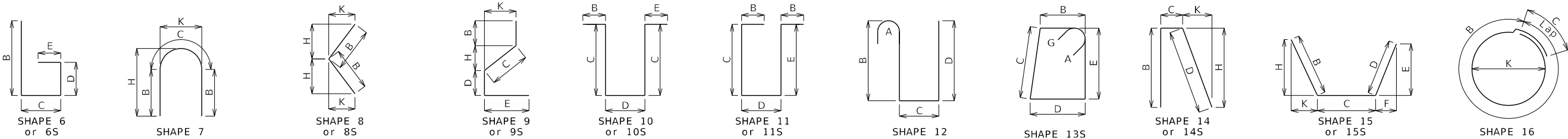
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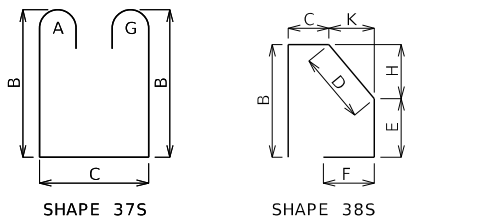
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| Finished Bend Dimensions D and Hook Dimensions                                                                                               |      |                                  |                                  |                                  |                                  |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|
| Standard Pin Bend Shapes                                                                                                                     |      |                                  |                                  |                                  |                                  |                                 |
| Size                                                                                                                                         | Case | D                                | A or G                           |                                  | J                                |                                 |
|                                                                                                                                              |      |                                  | 90°                              | 180°                             | 90°                              | 180°                            |
| #4                                                                                                                                           | 1    | 3"                               | 8"                               | 6"                               | 4"                               |                                 |
| #5                                                                                                                                           | 1    | 3 <sup>3</sup> / <sub>4</sub> "  | 10"                              | 7"                               | 5"                               |                                 |
| #6                                                                                                                                           | 1    | 4 <sup>1</sup> / <sub>2</sub> "  | 12"                              | 8 <sup>1</sup> / <sub>4</sub> "  | 6"                               |                                 |
| #7                                                                                                                                           | 2    | 5 <sup>1</sup> / <sub>4</sub> "  | 14"                              | 9 <sup>3</sup> / <sub>4</sub> "  | 7"                               |                                 |
|                                                                                                                                              | 3    | 7"                               | 15"                              | 11 <sup>1</sup> / <sub>2</sub> " | 8 <sup>3</sup> / <sub>4</sub> "  |                                 |
| #8                                                                                                                                           | 2    | 6"                               | 16"                              | 11"                              | 8"                               |                                 |
|                                                                                                                                              | 3    | 8"                               | 17"                              | 13 <sup>1</sup> / <sub>4</sub> " | 10"                              |                                 |
| #9                                                                                                                                           | 1    | 9 <sup>1</sup> / <sub>2</sub> "  | 19 <sup>1</sup> / <sub>2</sub> " | 15 <sup>1</sup> / <sub>2</sub> " | 11 <sup>3</sup> / <sub>4</sub> " |                                 |
| #10                                                                                                                                          | 1    | 10 <sup>3</sup> / <sub>4</sub> " | 22"                              | 17 <sup>1</sup> / <sub>2</sub> " | 13 <sup>1</sup> / <sub>4</sub> " |                                 |
| #11                                                                                                                                          | 1    | 12"                              | 24 <sup>1</sup> / <sub>2</sub> " | 19 <sup>1</sup> / <sub>2</sub> " | 14 <sup>7</sup> / <sub>8</sub> " |                                 |
| #14                                                                                                                                          | 1    | 18 <sup>1</sup> / <sub>4</sub> " | 31 <sup>1</sup> / <sub>4</sub> " | 27 <sup>1</sup> / <sub>2</sub> " | 21 <sup>5</sup> / <sub>8</sub> " |                                 |
| #18                                                                                                                                          | 1    | 24"                              | 41 <sup>1</sup> / <sub>2</sub> " | 36 <sup>1</sup> / <sub>4</sub> " | 28 <sup>1</sup> / <sub>2</sub> " |                                 |
| Stirrup Pin Bend Shapes (S)                                                                                                                  |      |                                  |                                  |                                  |                                  |                                 |
| Size                                                                                                                                         | Case | D                                | A or G                           |                                  | H                                | J                               |
|                                                                                                                                              |      |                                  | 90°                              | 135°                             | 180°                             | 135°                            |
| #4                                                                                                                                           | 2    | 2"                               | 4 <sup>1</sup> / <sub>2</sub> "  | 4 <sup>1</sup> / <sub>2</sub> "  | 5"                               | 2 <sup>7</sup> / <sub>8</sub> " |
|                                                                                                                                              | 3    | 3"                               | 5"                               | 5 <sup>1</sup> / <sub>4</sub> "  | 6"                               | 3"                              |
| #5                                                                                                                                           | 2    | 2 <sup>1</sup> / <sub>2</sub> "  | 5 <sup>3</sup> / <sub>4</sub> "  | 5 <sup>3</sup> / <sub>4</sub> "  | 5 <sup>3</sup> / <sub>4</sub> "  | 3 <sup>5</sup> / <sub>8</sub> " |
|                                                                                                                                              | 3    | 3 <sup>3</sup> / <sub>4</sub> "  | 6 <sup>1</sup> / <sub>4</sub> "  | 6 <sup>1</sup> / <sub>2</sub> "  | 7"                               | 3 <sup>7</sup> / <sub>8</sub> " |
| #6                                                                                                                                           | 1    | 4 <sup>1</sup> / <sub>2</sub> "  | 12"                              | 7 <sup>1</sup> / <sub>4</sub> "  | 8 <sup>1</sup> / <sub>4</sub> "  | 4 <sup>5</sup> / <sub>8</sub> " |
| Applicable for all grades of steel.                                                                                                          |      |                                  |                                  |                                  |                                  |                                 |
| Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only. |      |                                  |                                  |                                  |                                  |                                 |



BENDING DIAGRAMS

All dimensions are out to out. (1) Shall be a deformed or plain spiral bar or wire.

Shapes ending with an S shall be bent in accordance with stirrup pin bend shapes.

Unless otherwise noted, finished bending diameter D is the same for all bends of a shape.

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.

STATE OF MISSOURI  
DUSTIN TREGNAGO  
PROFESSIONAL ENGINEER  
NUMBER  
PE-201601297

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
I - 29

DISTRICT  
BR

STATE  
MO

SHEET NO.  
28

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

MODOT

GBA

9801 Renner Blvd. Ste. 300  
Lenexa, KS 66219  
913.492.0400  
GBAteam.com

GEORGE BUTLER  
ASSOCIATES, INC.  
PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

Detailed Dec. 2025  
Checked Dec. 2025

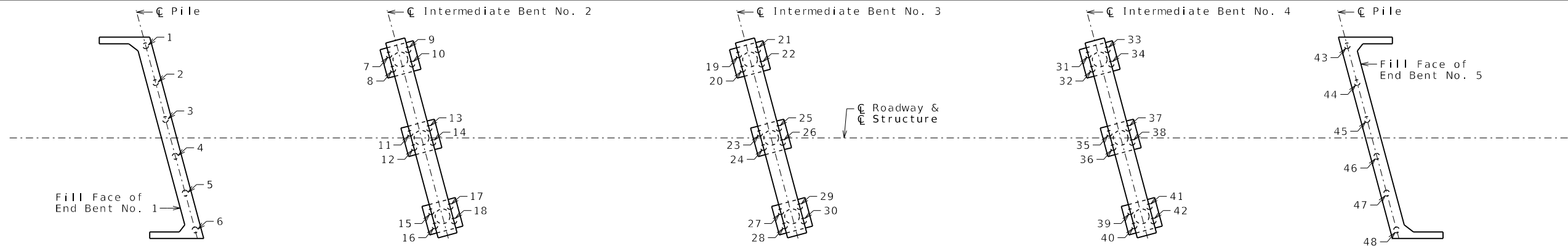
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 28 of 34

c:\bms\gba-pw-01\dmcgill@gbateam.com\dms27374\B\_A9735\_28\_J113332\_Bill\_Reinforcing\_ShapesTotals.dgn 4:04:33 PM 12/30/2025







| As-Built Pile Data      |                      |                                              |                                         |                                            |         |
|-------------------------|----------------------|----------------------------------------------|-----------------------------------------|--------------------------------------------|---------|
| Pile No.                | Length in Place (ft) | PDA Nom. Axial Compressive Resistance (kips) | PDA End of Drive Blow Count (blows/in.) | Actual End of Drive Blow Count (blows/in.) | Remarks |
| End Bent No. 1          |                      |                                              |                                         |                                            |         |
| 1                       |                      |                                              |                                         |                                            |         |
| 2                       |                      |                                              |                                         |                                            |         |
| 3                       |                      |                                              |                                         |                                            |         |
| 4                       |                      |                                              |                                         |                                            |         |
| 5                       |                      |                                              |                                         |                                            |         |
| 6                       |                      |                                              |                                         |                                            |         |
|                         |                      |                                              |                                         |                                            |         |
| Intermediate Bent No. 2 |                      |                                              |                                         |                                            |         |
| 7                       |                      |                                              |                                         |                                            |         |
| 8                       |                      |                                              |                                         |                                            |         |
| 9                       |                      |                                              |                                         |                                            |         |
| 10                      |                      |                                              |                                         |                                            |         |
| 11                      |                      |                                              |                                         |                                            |         |
| 12                      |                      |                                              |                                         |                                            |         |
| 13                      |                      |                                              |                                         |                                            |         |
| 14                      |                      |                                              |                                         |                                            |         |
| 15                      |                      |                                              |                                         |                                            |         |
| 16                      |                      |                                              |                                         |                                            |         |
| 17                      |                      |                                              |                                         |                                            |         |
| 18                      |                      |                                              |                                         |                                            |         |
|                         |                      |                                              |                                         |                                            |         |
| Intermediate Bent No. 3 |                      |                                              |                                         |                                            |         |
| 19                      |                      |                                              |                                         |                                            |         |
|                         |                      |                                              |                                         |                                            |         |

| As-Built Pile Data      |                      |                                              |                                         |                                            |         |
|-------------------------|----------------------|----------------------------------------------|-----------------------------------------|--------------------------------------------|---------|
| Pile No.                | Length in Place (ft) | PDA Nom. Axial Compressive Resistance (kips) | PDA End of Drive Blow Count (blows/in.) | Actual End of Drive Blow Count (blows/in.) | Remarks |
| Int. Bent No. 3 (Cont.) |                      |                                              |                                         |                                            |         |
| 20                      |                      |                                              |                                         |                                            |         |
| 21                      |                      |                                              |                                         |                                            |         |
| 22                      |                      |                                              |                                         |                                            |         |
| 23                      |                      |                                              |                                         |                                            |         |
| 24                      |                      |                                              |                                         |                                            |         |
| 25                      |                      |                                              |                                         |                                            |         |
| 26                      |                      |                                              |                                         |                                            |         |
| 27                      |                      |                                              |                                         |                                            |         |
| 28                      |                      |                                              |                                         |                                            |         |
| 29                      |                      |                                              |                                         |                                            |         |
| 30                      |                      |                                              |                                         |                                            |         |
|                         |                      |                                              |                                         |                                            |         |
| Intermediate Bent No. 4 |                      |                                              |                                         |                                            |         |
| 31                      |                      |                                              |                                         |                                            |         |
| 32                      |                      |                                              |                                         |                                            |         |
| 33                      |                      |                                              |                                         |                                            |         |
| 34                      |                      |                                              |                                         |                                            |         |
| 35                      |                      |                                              |                                         |                                            |         |
| 36                      |                      |                                              |                                         |                                            |         |
| 37                      |                      |                                              |                                         |                                            |         |
| 38                      |                      |                                              |                                         |                                            |         |
| 39                      |                      |                                              |                                         |                                            |         |
|                         |                      |                                              |                                         |                                            |         |

[illegible]

Note:  
Indicate in remarks column:  
A. Pile type and grade  
B. Batter  
C. Driven to practical refusal  
D. PDA test pile  
E. Minimum tip elevation controlled  
(Use when actual blow count is less than PDA blow count due to minimum tip elevation requirement. A plus sign (+) shall be placed after the PDA nominal axial compressive resistance value indicating actual value is higher than PDA value.)

This sheet to be completed by MoDOT construction personnel.



THIS SHEET HAS BEEN  
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ELECTRONICALLY.

DATE PREPARED  
2/30/2025

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

|          |           |
|----------|-----------|
| DISTRICT | SHEET NO. |
| BR       | 31        |

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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



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PRO. ENGINEER 000133  
ARCHITECT 000212  
PRO. LAND SURVEYOR 000059

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977



Gene Field Road Bridge over I-29  
Gene Field Road and I-29 | St. Joseph, Missouri  
Terracon Project No. 02255086



Boring Log No. B-1

| Model Layer | Graphic Log | Location: See Exploration Plan<br>Latitude: 39.7921° Longitude: -94.7967°                                                                                                                                                           | Depth (Ft.) | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits<br>LL-PL-PI | Percent Fines |
|-------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|-------------|----------------|--------------------|---------------------------------------|-------------------|-----------------------|------------------------------|---------------|
| 1           |             | 3" ASPHALT<br>4" AGGREGATE BASE<br>FILL - LEAN TO FAT CLAY, dark brown and gray                                                                                                                                                     | 0.3         |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 0.6         |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 979.5       |                          |             | 10             | 6-4-4<br>N=8       |                                       | 14.4              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 10             |                    |                                       | 21.4              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 17             | 3-5-7<br>N=12      |                                       | 20.0              |                       |                              |               |
| 2           |             | LEAN CLAY (CL), trace sand, gray and red brown, soft to medium stiff                                                                                                                                                                | 15.0        |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 965         |                          |             | 13             |                    | 4080                                  | 20.3              | 100                   | 56-24-32                     |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 18             | 1-1-1<br>N=2       |                                       | 31.0              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 18             | 3-3-4<br>N=7       |                                       | 23.5              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 28.5        |                          |             | 18             | 5-6-8<br>N=14      |                                       | 22.5              |                       |                              |               |
| 3           |             | FAT CLAY (CH), with sand and gravel, dark gray and red brown, stiff                                                                                                                                                                 |             |                          |             | 18             | 4-5-8<br>N=13      |                                       | 21.7              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 17             | 5-5-8<br>N=13      |                                       | 22.7              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 15             | 4-4-6<br>N=10      |                                       | 24.7              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 18             | 5-6-7<br>N=13      |                                       | 22.0              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 18             | 5-6-9<br>N=15      |                                       | 17.4              |                       |                              |               |
| 4           |             | FAT CLAY (CH), with sand and gravel, dark gray and dark brown, very stiff to hard<br>POORLY GRADED SAND (SP), dark gray, dense<br>FAT CLAY (CH), with sand and gravel, dark gray, hard<br>POORLY GRADED SAND (SP), dark gray, dense | 58.5        |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 921.5       |                          |             | 18             | 8-11-15<br>N=26    |                                       | 20.6              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 18             | 6-9-13<br>N=22     |                                       | 16.9              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 70.0        |                          |             | 15             | 19-15-14<br>N=29   |                                       | 21.5              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 74.0        |                          |             | 16             | 19-24-26<br>N=50   |                                       | 17.8              |                       |                              |               |
|             |             | POORLY GRADED SAND (SP), dark gray, dense                                                                                                                                                                                           | 78.5        |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 901.5       |                          |             | 17             | 18-19-23<br>N=42   |                                       | 19.2              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     |             |                          |             | 18             | 19-15-17<br>N=32   |                                       | 19.0              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 93.5        |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                     | 886.5       |                          |             | 18             | 6-10-13<br>N=23    |                                       | 22.6              |                       |                              |               |
|             |             | FAT CLAY (CH), with gravel and rock fragments, dark gray, very stiff<br>Boring Terminated at 95 Feet                                                                                                                                | 885         |                          |             |                |                    |                                       |                   |                       |                              |               |

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).  
See Supporting Information for explanation of symbols and abbreviations.

**Notes**  
Elevation Reference: Elevations obtained using Google Earth.  
Classification of rock estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types.

**Water Level Observations**  
Groundwater not encountered prior to wash boring.

**Advancement Method**  
0-15 feet PA  
15-95 feet Wash Boring

**Abandonment Method**  
Boring backfilled with Auger Cuttings and/or Bentonite  
Surface Capped with Asphalt

**Drill Rig**  
518 CME 850

**Hammer Type**  
Automatic

**Driller**  
MR

**Logged by**  
MR

**Boring Started**  
09-16-2025

**Boring Completed**  
09-16-2025

Facilities | Environmental | Geotechnical | Materials

Gene Field Road Bridge over I-29  
Gene Field Road and I-29 | St. Joseph, Missouri  
Terracon Project No. 02255086



Boring Log No. B-2

| Model Layer | Graphic Log | Location: See Exploration Plan<br>Latitude: 39.7922° Longitude: -94.7965°                                                                                                                                                                                                                                                                                                                                                                | Depth (Ft.) | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits<br>LL-PL-PI | Percent Fines |
|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|-------------|----------------|--------------------|---------------------------------------|-------------------|-----------------------|------------------------------|---------------|
| 1           |             | 4" ASPHALT<br>6" CONCRETE<br>4" AGGREGATE BASE<br>FILL - LEAN TO FAT CLAY, trace gravel, light brown<br>LEAN CLAY (CL), with silt and sand, light brown and gray, stiff                                                                                                                                                                                                                                                                  | 0.3         |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.8         |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 967.5       |                          |             | 6              | 7-3-5<br>N=8       |                                       | 18.5              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 967         |                          |             | 24             |                    | 2860                                  | 21.6              | 104                   |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 963         |                          |             | 14             | 3-3-5<br>N=8       |                                       | 21.6              |                       |                              |               |
| 2           |             | LEAN CLAY (CL), with silt and sand, light brown and gray, stiff                                                                                                                                                                                                                                                                                                                                                                          | 18.5        |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 949.5       |                          |             | 18             | 2-4-5<br>N=9       |                                       | 23.0              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 24             |                    | 3630                                  | 20.1              | 108                   | 39-16-23                     | 68            |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 18             | 3-3-5<br>N=8       |                                       | 20.2              |                       |                              | 57            |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 18             | 3-4-7<br>N=11      |                                       | 25.7              |                       |                              |               |
| 3           |             | FAT CLAY (CH), with sand and gravel, light brown and gray, stiff to very stiff                                                                                                                                                                                                                                                                                                                                                           |             |                          |             | 18             | 4-4-8<br>N=12      |                                       | 23.8              |                       |                              | 62            |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 18             | 6-7-13<br>N=20     |                                       | 19.3              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 39.0        |                          |             | 18             | 25-19-28<br>N=47   |                                       | 18.0              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 10             | 6-7-12<br>N=19     |                                       | 17.0              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 18             | 7-7-20<br>N=27     |                                       | 17.0              |                       |                              |               |
| 4           |             | POORLY GRADED SAND WITH CLAY (SP-SC), some gravel, gray to dark gray, medium dense to dense<br>FAT CLAY (CH), with sand and gravel, light brown and dark gray, very stiff to hard<br>POORLY GRADED SAND (SP), dark gray, dense<br>FAT CLAY (CH), with sand and gravel, gray to dark gray, very stiff to hard<br>- limestone boulder within glacial till at 80.5 feet<br>- rock fragments below 92.5 feet<br>Boring Terminated at 94 Feet | 49.0        |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 919         |                          |             | 18             | 20-23-25<br>N=48   |                                       | 15.5              |                       |                              | 12            |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 18             | 30-28-34<br>N=62   |                                       | 18.9              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 68.5        |                          |             | 18             | 18-22-21<br>N=43   |                                       | 20.9              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 899.5       |                          |             | 18             | 6-7-11<br>N=18     |                                       | 21.4              |                       |                              |               |
|             |             | POORLY GRADED SAND (SP), dark gray, dense                                                                                                                                                                                                                                                                                                                                                                                                |             |                          |             | 18             | 34-24-23<br>N=47   |                                       | 20.5              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 18             | 6-8-16<br>N=24     |                                       | 24.8              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                          |             | 18             | 15-28-36<br>N=64   |                                       | 20.2              |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 94.0        |                          |             |                |                    |                                       |                   |                       |                              |               |
|             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                          | 874         |                          |             |                |                    |                                       |                   |                       |                              |               |

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).  
See Supporting Information for explanation of symbols and abbreviations.

**Notes**  
Elevation Reference: Elevations obtained using Google Earth.  
Classification of rock estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types.

**Water Level Observations**  
Groundwater not encountered prior to wash boring.

**Advancement Method**  
0-15 feet PA  
15-94 feet Wash Boring

**Abandonment Method**  
Boring backfilled with Auger Cuttings and/or Bentonite  
Surface Capped with Asphalt

**Drill Rig**  
1279 CME 750

**Hammer Type**  
Automatic

**Driller**  
BT

**Logged by**  
SB

**Boring Started**  
09-17-2025

**Boring Completed**  
09-18-2025

Facilities | Environmental | Geotechnical | Materials



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
I-29

STATE  
MO

DISTRICT  
BR

SHEET NO.  
32

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

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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DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

BORING DATA

Note: For locations of borings, see Sheet No. 1.

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

Sheet No. 32 of 34

Detailed Dec. 2025  
Checked Dec. 2025

**Terracon**  
15620 W 113th St  
Lenexa, KS

# Boring Log No. B-4

| Model Layer | Graphic Log                                                                         | Location: See Exploration Plan<br>Latitude: 39.7921° Longitude: -94.7960° | Depth (Ft.)                                                                                                 | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits<br>LL-PL-PI | Percent Fines |
|-------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------|-------------|----------------|--------------------|---------------------------------------|-------------------|-----------------------|------------------------------|---------------|
| 3           |  | 0.3<br>0.9                                                                | 3" ASPHALT<br>8" CONCRETE<br>LEAN TO FAT CLAY (CL/CH), with sand, light brown and gray, stiff to very stiff |                          |             | 8<br>24        | 4-6-9<br>N=15      |                                       | 16.3<br>17.9      | 108                   |                              |               |
|             |                                                                                     | 15.0                                                                      | CLAYEY SAND (SC), yellow brown, medium dense                                                                |                          |             | 24             |                    | 4940                                  | 21.0              | 107                   | 46-17-29                     | 70            |
|             |                                                                                     | 19.5                                                                      | FAT CLAY (CH), with sand and gravel, gray, stiff to very stiff                                              |                          |             | 18             | 4-7-9<br>N=16      |                                       | 24.6              |                       |                              |               |
|             |                                                                                     | 28.0                                                                      | FAT CLAY (CH), with sand and gravel, dark gray to gray, very stiff to hard                                  |                          |             | 18             | 3-4-6<br>N=10      |                                       | 23.5              |                       |                              |               |
|             |                                                                                     |                                                                           |                                                                                                             |                          |             | 13             | 9-12-17<br>N=29    |                                       | 16.0              |                       |                              |               |
|             |                                                                                     |                                                                           |                                                                                                             |                          |             | 18             | 5-8-11<br>N=19     |                                       | 19.0              |                       |                              |               |
|             |                                                                                     |                                                                           |                                                                                                             |                          |             | 13             | 6-7-28<br>N=35     |                                       | 17.2              |                       |                              |               |
|             |                                                                                     |                                                                           |                                                                                                             |                          |             | 18             | 8-6-13<br>N=19     |                                       | 17.0              |                       |                              |               |
|             |                                                                                     |                                                                           |                                                                                                             |                          |             | 11             | 12-14-18<br>N=32   |                                       | 26.8              |                       |                              | 37            |
|             |                                                                                     |                                                                           |                                                                                                             |                          |             | 18             | 8-10-12<br>N=22    |                                       | 17.2              |                       |                              |               |
| 4           |  | 48.5                                                                      | CLAYEY SAND (SC), with gravel, dark gray, medium dense to dense                                             |                          |             | 18             | 9-14-20<br>N=34    |                                       | 21.2              |                       |                              |               |
|             |                                                                                     |                                                                           |                                                                                                             |                          |             | 18             | 6-9-16<br>N=25     |                                       | 17.6              |                       |                              |               |
|             |                                                                                     |                                                                           |                                                                                                             |                          |             | 6              | 7-9-12<br>N=21     |                                       | 21.7              |                       |                              |               |
|             |                                                                                     | 78.0                                                                      | - possible limestone boulder within glacial till at 77 feet<br>Auger Refusal at 78 Feet                     |                          |             | 0              | 50/1"              |                                       |                   |                       |                              |               |



MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

DUSTIN TREGNAGO  
PROFESSIONAL  
ENGINEER  
PE-2016012977

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

Note: For locations of borings, see Sheet No. 1.

Sheet No. 33 of 34

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Gene Field Road Bridge over I-29  
Gene Field Road and I-29 | St. Joseph, Missouri  
Terracon Project No. 02255086



Boring Log No. B-5

| Model Layer                                                                                                                                                                                                  | Graphic Log | Location: See Exploration Plan<br>Latitude: 39.7921° Longitude: -94.7957°                  | Depth (Ft.) | Water Level Observations                                                                                                                                                                      | Sample Type | Recovery (In.) | Field Test Results | Unconfined Compressive Strength (psf)                                                                                                                                                                                    | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits<br>LL-PL-PI | Percent Fines |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------|------------------------------|---------------|
| 1                                                                                                                                                                                                            |             | 0.2' <b>2" ASPHALT</b>                                                                     | 0.2         |                                                                                                                                                                                               |             | 12             | 4-5-8              |                                                                                                                                                                                                                          | 15.5              |                       |                              |               |
|                                                                                                                                                                                                              |             | 0.4' <b>3" AGGREGATE BASE</b>                                                              | 0.4         |                                                                                                                                                                                               |             | 14             | N=13               | 6280                                                                                                                                                                                                                     | 16.1              | 111                   | 45-17-28                     |               |
|                                                                                                                                                                                                              |             | <b>FILL - LEAN TO FAT CLAY</b> , trace sand and gravel, brown and gray                     |             |                                                                                                                                                                                               |             | 16             | 3-3-6              |                                                                                                                                                                                                                          | 19.6              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 16             | N=9                |                                                                                                                                                                                                                          | 21.1              |                       |                              |               |
|                                                                                                                                                                                                              |             | - tree root at 9.5 feet                                                                    |             |                                                                                                                                                                                               |             |                | 5-7-9              |                                                                                                                                                                                                                          |                   |                       |                              |               |
| 3                                                                                                                                                                                                            |             | 15.0' <b>FAT CLAY (CH)</b> , with sand and gravel, red brown and gray, stiff to very stiff | 15.0        |                                                                                                                                                                                               |             | 20             |                    | 6370                                                                                                                                                                                                                     | 22.9              | 102                   | 45-21-24                     |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | 3-4-6              |                                                                                                                                                                                                                          | 19.6              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | 3-4-5              |                                                                                                                                                                                                                          | 22.8              |                       |                              | 69            |
|                                                                                                                                                                                                              |             | - sand lense from 28.5 to 29 feet                                                          |             |                                                                                                                                                                                               |             | 18             | 8-4-10             |                                                                                                                                                                                                                          | 21.1              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | N=14               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | 3-4-7              |                                                                                                                                                                                                                          | 24.0              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | N=11               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | 3-5-6              |                                                                                                                                                                                                                          | 24.3              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | N=11               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | 3-3-5              |                                                                                                                                                                                                                          | 24.1              |                       |                              |               |
| 4                                                                                                                                                                                                            |             | 53.5' <b>FAT CLAY (CH)</b> , with sand and gravel, gray, very stiff to hard                | 53.5        |                                                                                                                                                                                               |             | 18             | 7-9-11             |                                                                                                                                                                                                                          | 17.6              |                       |                              | 67            |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | N=20               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | 10-13-14           |                                                                                                                                                                                                                          | 17.5              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | N=27               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             | 63.5' <b>POORLY GRADED SAND (SP)</b> , gray, dense to very dense                           | 63.5        |                                                                                                                                                                                               |             | 18             | 10-16-25           |                                                                                                                                                                                                                          | 15.1              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 18             | N=41               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             | 68.5' <b>CLAYEY SAND (SC)</b> , gray, dense to very dense                                  | 68.5        |                                                                                                                                                                                               |             | 10             | 21-26-31           |                                                                                                                                                                                                                          | 21.3              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 10             | N=57               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             | 73.5' <b>POORLY GRADED SAND (SP)</b> , gray, dense to very dense                           | 73.5        |                                                                                                                                                                                               |             | 12             | 26-29-32           |                                                                                                                                                                                                                          | 22.1              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 12             | N=61               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 15             | 16-19-22           |                                                                                                                                                                                                                          | 26.9              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 15             | N=41               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             | 93.5' <b>FAT CLAY (CH)</b> , gray, very stiff                                              | 93.5        |                                                                                                                                                                                               |             | 15             | 26-33-30           |                                                                                                                                                                                                                          | 16.5              |                       |                              |               |
|                                                                                                                                                                                                              |             |                                                                                            |             |                                                                                                                                                                                               |             | 15             | N=63               |                                                                                                                                                                                                                          |                   |                       |                              |               |
|                                                                                                                                                                                                              |             | 95.0' <b>FAT CLAY (CH)</b> , gray, very stiff                                              | 95.0        |                                                                                                                                                                                               |             | 18             | 7-9-16             |                                                                                                                                                                                                                          | 21.3              |                       |                              |               |
|                                                                                                                                                                                                              |             | <b>Boring Terminated at 95 Feet</b>                                                        |             |                                                                                                                                                                                               |             |                |                    |                                                                                                                                                                                                                          |                   |                       |                              |               |
| See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).<br>See Supporting Information for explanation of symbols and abbreviations.   |             |                                                                                            |             | <b>Water Level Observations</b><br>Groundwater not encountered prior to wash boring.                                                                                                          |             |                |                    | <b>Drill Rig</b><br>518 CME 850<br><br><b>Hammer Type</b><br>Automatic<br><br><b>Driller</b><br>MR<br><br><b>Logged by</b><br>FC<br><br><b>Boring Started</b><br>09-15-2025<br><br><b>Boring Completed</b><br>09-15-2025 |                   |                       |                              |               |
| <b>Notes</b><br>Elevation Reference: Elevations obtained using Google Earth.<br>Classification of rock estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types. |             |                                                                                            |             | <b>Advancement Method</b><br>0-15 feet PA<br>15-95 feet Wash Boring<br><br><b>Abandonment Method</b><br>Boring backfilled with Auger Cuttings and/or Bentonite<br>Surface Capped with Asphalt |             |                |                    |                                                                                                                                                                                                                          |                   |                       |                              |               |

Facilities | Environmental | Geotechnical | Materials

BORING DATA

Note: For locations of borings, see Sheet No. 1.

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

Sheet No. 34 of 34

STATE OF MISSOURI

DUSTIN TREGNAGO

NUMBER

PE-201601297

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
12/30/2025

ROUTE  
I-29

STATE  
MO

DISTRICT  
BR

SHEET NO.  
34

COUNTY  
BUCHANAN

JOB NO.  
J113332

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9735

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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Checked Dec. 2025

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