MISSOURI
HIGHWAYS and TRANSPORTATION
COMMISSION

JEFFERSON CITY, MISSOURI

SUPPLEMENTAL PLANS TO JULY 2023 MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION

EFFECTIVE January 1, 2024

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

EFFECTIVE: 01/01/2024

MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION

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203.00E	EXCAVATION AND EMBANKMENT – TYPICAL DETAILS	1	08/01/1998
203.02F	UNDERGRADING – TYPICAL DETAILS	2	01/01/2004
203.10D	TABULATED EARTHWORK AND SECTION DATA	1	02/01/2009
203.20G	SUPERELEVATION, SPIRALS AND WIDENING (UNDIVIDED HIGHWAY)	4	07/01/2017
203.21K	SUPERELEVATION, SPIRALS AND WIDENING (DIVIDED HIGHWAY)	3	07/01/2017
203.22	SUPERELEVATION, SPIRALS AND WIDENING	2	07/01/2018
203.35A	MAILBOX TURNOUTS	1	08/01/1981
203.40G	TYPICAL DETAILS ON AND OFF RAMP	2	10/01/2007
203.41F	TYPICAL DETAILS ON AND OFF RAMPS (ROADWAY WITH 6:1 FORESLOPE)	2	01/01/1995
203.50N	TYPICAL MEDIAN OPENINGS (DIVIDED HIGHWAYS)	2	04/01/2016
203.61B	DRIVEWAY – TYPE I	1	07/01/2020
203.62E	DRIVEWAY – TYPE II	2	07/01/2020
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203.64E	DRIVEWAY – TYPE IV	2	07/01/2020
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204.00D	EMBANKMENT CONTROL – MEASURING DEVICES	1	04/01/1983
204.30	PORE PRESSURE MEASUREMENT DEVICES	1	03/01/1996
401.00C	TYPE A2 AND A3 SHOULDERS, SAFETY EDGE SM	3	07/01/2018
413.20	SCRUB SEAL BROOM CONFIGURATION	1	07/01/2004
502.05S	CONCRETE PAVEMENT AND BASE APPURTENANCES FOR 15 FT. JOINT SPACING	4	04/01/2023
502.10L	DOWEL SUPPORTING UNITS	2	07/01/2023
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506.20	BIG BLOCK UNBONDED CONCRETE OVERLAY	1	07/01/2021
602.00D	RIGHT-OF-WAY AND DRAIN MARKERS	2	01/01/2003
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604.10E	PIPE CULVERT HEADWALLS – ENERGY DISSIPATOR FOR 18” CONCRETE PIPE	1	07/01/2001
604.11E	PIPE CULVERT HEADWALLS – ENERGY DISSIPATOR FOR 24” CONCRETE PIPE	1	07/01/2001
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604.13E	PIPE CULVERT HEADWALLS – ENERGY DISSIPATOR FOR 36” CONCRETE PIPE	1	07/01/2001
604.14E	PIPE CULVERT HEADWALLS – ENERGY DISSIPATOR FOR 42” CONCRETE PIPE	1	07/01/2001
604.15E	PIPE CULVERT HEADWALLS - ENERGY DISSIPATOR FOR 48" CONCRETE PIPE	1	07/01/2001
604.29C	DROP INLET - TYPE X	2	04/01/2018
604.30G	CONCRETE MANHOLES	2	02/01/2009
604.40G	PIPE COLLARS	2	07/01/2021
604.70	SLOTTED DRAIN	2	03/01/1994
605.10I	PAVEMENT UNDERDRAINAGE	4	06/01/2013
606.00AY	GUARDRAIL	7	01/01/2020
606.01F	MEDIAN PIER PROTECTION	9	04/01/2021
606.22U	BRIDGE ANCHOR SECTION - SAFETY BARRIER CURB ON BRIDGE	6	07/01/2016
606.23J	BRIDGE ANCHOR SECTION - THRIE BEAM RAIL ON BRIDGE	5	07/01/2016
606.30L	GUARDRAIL - TERMINAL ANCHOR ENDS	7	04/01/2021
606.31B	CRASHWORTHY END TERMINALS - TYPE A - GRADING LIMITS	1	10/01/2019
606.40D	ONE-STRAND ACCESS RESTRAINT CABLE	2	07/01/2004
606.41M	THREE-STRAND GUARD CABLE	7	04/01/2021
606.50E	MIDWEST GUARDRAIL SYSTEM (MGS)	8	01/01/2023
606.51	MIDWEST GUARDRAIL SYSTEM (MGS) - MEDIAN PIER PROTECTION	2	04/01/2021
606.60B	MIDWEST GUARDRAIL SYSTEM (MGS) - VERTICAL BARRIER TRANSITIONS	6	07/01/2021
606.70B	MIDWEST GUARDRAIL SYSTEM (MGS) - THRIE BEAM RAIL ON BRIDGE	5	04/01/2018
606.80C	MIDWEST GUARDRAIL SYSTEM (MGS) - TERMINAL ANCHOR ENDS	7	07/01/2021
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607.20G	WOVEN WIRE FENCE	2	07/01/2016
608.00K	PAVED APPROACHES	2	07/01/2020
608.10P	CONCRETE SIDEWALK	1	04/01/2015
608.20E	CONCRETE STAIRS	2	04/01/2015
608.30A	CONCRETE MEDIAN STRIP	1	10/01/2020
608.40A	HANDRAILING	4	01/01/2021
608.50A	CURB RAMPS	4	01/01/2023
609.00Q	CONCRETE CURB, CURB AND GUTTER AND GUTTER	2	10/01/2022
609.15D	PAVED DITCHES	1	07/01/2016
609.40U	DRAIN BASIN, SHOULDER PAVING AND FILL SLOPES AT BRIDGE ENDS *	3	10/01/2023
609.60D	ROCK DITCH LINER	1	07/01/2023
609.70C	ROCK LINING FOR CULVERT OUTLET	1	10/01/1981
611.60R	CONCRETE SLOPE PROTECTION	1	07/01/2015
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613.00T	PAVEMENT REPAIR	4	01/01/2020
614.10U	GRATES AND BEARING PLATES	1	10/01/2021
614.11D	CURVED VANE GRATE AND FRAME	1	01/01/2021
614.30E	MANHOLE AND FRAME COVERS	2	07/01/1996
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617.10M	PERMANENT CONCRETE TRAFFIC BARRIER	11	10/01/2020
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619.10J	PAVEMENT EDGE TREATMENT	1	10/01/2017
620.00N	PAVEMENT MARKING	6	10/01/2022
620.10G	TEMPORARY PAVEMENT MARKING	5	07/01/2017
625.00	HOLE PATTERN FOR PAVEMENT SLAB STABILIZATION	1	10/01/1998
626.00H	RUMBLE STRIPS	2	07/01/2022

* REVISED OR ADDED SINCE JULY 2023

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

EFFECTIVE: 01/01/2024

MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION

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703.11J	CONCRETE SINGLE BOX CULVERT – FLARED WINGS (SQUARED)	3	01/01/2021
703.12J	CONCRETE SINGLE BOX CULVERT – STRAIGHT WINGS (LEFT ADVANCE)	3	01/01/2021
703.13J	CONCRETE SINGLE BOX CULVERT – FLARED WINGS (LEFT ADVANCE)	3	01/01/2021
703.14J	CONCRETE SINGLE BOX CULVERT – STRAIGHT WINGS (RIGHT ADVANCE)	3	01/01/2021
703.15E	CONCRETE SINGLE BOX CULVERT – FLARED WINGS (RIGHT ADVANCE)	3	01/01/2021
703.16	CONCRETE SINGLE BOX CULVERT – CUT SECTIONS	1	01/01/2021
703.17A	CONCRETE SINGLE BOX CULVERT – MEMBER SIZES AND REINFORCEMENT	14	07/01/2023
703.37C	CONCRETE BOX CULVERT – EXTERIOR WING REINFORCEMENT	2	04/01/2011
703.38A	CONCRETE BOX CULVERT – CUTTING DETAILS	2	10/01/2009
703.40H	CONCRETE DOUBLE BOX CULVERT – STRAIGHT WINGS (SQUARE)	3	01/01/2021
703.41H	CONCRETE DOUBLE BOX CULVERT – FLARED WINGS (SQUARE)	3	01/01/2021
703.42H	CONCRETE DOUBLE BOX CULVERT – STRAIGHT WINGS (LEFT ADVANCE)	3	01/01/2021
703.43H	CONCRETE DOUBLE BOX CULVERT – FLARED WINGS (LEFT ADVANCE)	3	01/01/2021
703.44H	CONCRETE DOUBLE BOX CULVERT – STRAIGHT WINGS (RIGHT ADVANCE)	3	01/01/2021
703.45C	CONCRETE DOUBLE BOX CULVERT – FLARED WINGS (RIGHT ADVANCE)	3	01/01/2021
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703.47A	CONCRETE DOUBLE BOX CULVERT – MEMBER SIZES AND REINFORCEMENT	27	07/01/2023
703.60E	CONCRETE BOX STRUCTURE – PIPE INLET	1	07/01/2001
703.80H	CONCRETE TRIPLE BOX CULVERT – STRAIGHT WINGS (SQUARE)	3	01/01/2021
703.81H	CONCRETE TRIPLE BOX CULVERT – FLARED WINGS (SQUARE)	3	01/01/2021
703.82H	CONCRETE TRIPLE BOX CULVERT – STRAIGHT WINGS (LEFT ADVANCE)	3	01/01/2021
703.83H	CONCRETE TRIPLE BOX CULVERT – FLARED WINGS (LEFT ADVANCE)	3	01/01/2021
703.84H	CONCRETE TRIPLE BOX CULVERT – STRAIGHT WINGS (RIGHT ADVANCE)	3	01/01/2021
703.85C	CONCRETE TRIPLE BOX CULVERT – FLARED WINGS (RIGHT ADVANCE)	3	01/01/2021
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703.87A	CONCRETE TRIPLE BOX CULVERT – MEMBER SIZES AND REINFORCEMENT	27	07/01/2023
706.35H	BAR SUPPORTS FOR CONCRETE REINFORCEMENT	1	07/01/2004
712.40L	STEEL DAMS AT EXPANSION JOINTS	1	10/01/2019
725.00C	CORRUGATED METAL PIPE INSTALLATION METHODS	5	04/01/2011
725.31C	METAL CURTAIN WALL AND METAL INLETS	1	07/01/2004
726.30J	RIGID CULVERT INSTALLATION METHODS	2	04/01/2015
730.00E	THERMOPLASTIC PIPE INSTALLATION METHODS	1	04/01/2015
731.00U	PRECAST MANHOLES	2	07/01/2016
731.10S	PRECAST DROP INLET	8	01/01/2022
732.00S	FLARED END SECTION	3	07/01/2021
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732.10H	SAFETY SLOPE END SECTION	3	01/01/2021
733.00	PRECAST CONCRETE BOX CULVERT TIES	1	07/01/2021
805.00	SEEDING	1	07/01/2022
806.10K	TEMPORARY EROSION CONTROL MEASURES	6	01/01/2023
808.00	TYPICAL PLANTING ILLUSTRATIONS	3	07/01/2004

STANDARD NO.	DRAWING TITLE	NO. OF SHEETS	EFFECTIVE DATE
901.00AB	HIGHWAY LIGHTING – POLES, FOUNDATION & APPURTENANCES FOR 30' M.H.	4	01/01/2021
901.01AJ	HIGHWAY LIGHTING – POLES, FOUNDATION & APPURTENANCES FOR 45' M.H.	6	01/01/2021
901.02B	HIGHWAY LIGHTING – CABLE, CONDUIT AND TRENCHING	1	04/01/2002
901.30F	HIGHWAY LIGHTING – BASE MOUNTED CONTROL STATION	2	04/01/2005
901.80D	HIGHWAY LIGHTING – POWER SUPPLY ASSEMBLY – SECONDARY SERVICE	2	04/01/2002
901.85B	HIGHWAY LIGHTING SYMBOLS	1	04/01/2018
902.00Q	TRAFFIC SIGNALS	2	07/01/2023
902.05	TRAFFIC SIGNALS – ACCESSIBLE PEDESTRIAN SIGNALS	2	04/01/2021
902.10Q	TRAFFIC SIGNALS – CONTROLLERS CONDUIT LOCATION	1	04/01/2005
902.15K	TRAFFIC SIGNALS – POWER SUPPLY ASSEMBLY	3	07/01/2004
902.20G	TRAFFIC SIGNALS – CONCRETE PULL BOXES	3	04/01/2019
902.21C	TRAFFIC SIGNALS – TELEPHONE INTERCONNECT	1	03/01/1996
902.30P	TRAFFIC SIGNALS – POST BASES	2	07/01/2019
902.40R	TRAFFIC SIGNALS – TUBULAR STEEL POSTS	3	04/01/2018
902.50M	TRAFFIC SIGNALS – INDUCTION LOOP DETECTORS	2	04/01/2020
902.70Q	TRAFFIC SIGNALS – RIGID SPAN WIRE DETAILS	3	01/01/2022
902.80L	TRAFFIC SIGNALS – TRAFFIC SIGNAL SYMBOLS	1	04/01/2020
903.01J	STANDARD ARROW DETAILS	2	10/01/2016
903.02AP	HIGHWAY SIGNING	8	10/01/2019
903.03BR	POST INSTALLATION AND SIGN MOUNTING DETAILS	16	07/01/2023
903.04F	HIGHWAY SIGNING – WEIGH STATION	1	02/01/2012
903.05L	HIGHWAY SIGNING – TUBULAR SUPPORT STEEL – TYPE S, ONE TUBE	2	10/01/2022
903.06L	HIGHWAY SIGNING – TUBULAR SUPPORT STEEL – TYPE S, TWO TUBE	2	10/01/2022
903.07L	HIGHWAY SIGNING – TUBULAR SUPPORT STEEL – TYPE C	2	10/01/2022
903.08K	HIGHWAY SIGNING – TUBULAR SUPPORT STEEL – TYPE B	2	10/01/2022
903.10BE	OVERHEAD SIGN TRUSSES – ALUMINUM *	6	10/01/2023
903.12AA	OVERHEAD SIGN TRUSSES – BUTTERFLY AND CANTILEVER STRUCTURAL STEEL	7	01/01/2021
903.60AC	OVERHEAD SIGN TRUSSES – STRUCTURAL STEEL	5	01/01/2021

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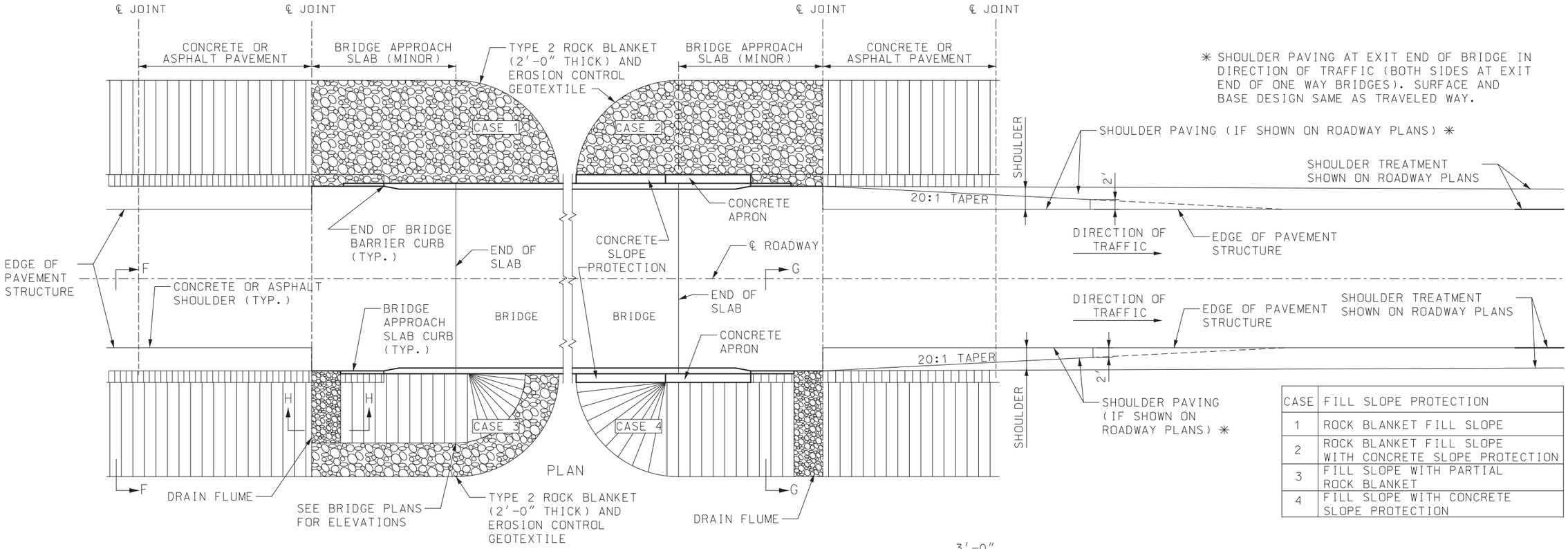
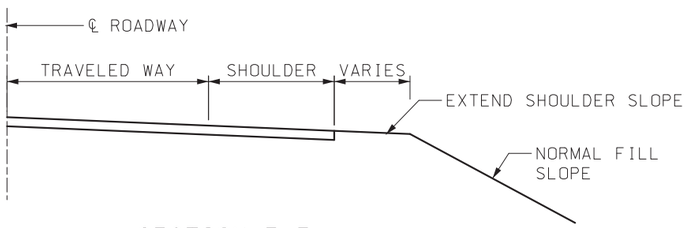
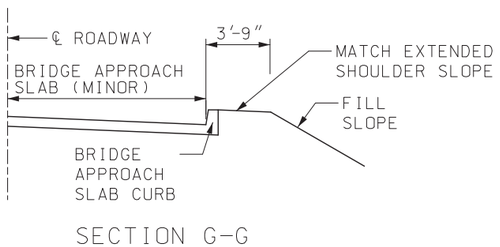


CASE	FILL SLOPE PROTECTION
1	ROCK BLANKET FILL SLOPE
2	ROCK BLANKET FILL SLOPE WITH CONCRETE SLOPE PROTECTION
3	FILL SLOPE WITH PARTIAL ROCK BLANKET
4	FILL SLOPE WITH CONCRETE SLOPE PROTECTION



SECTION F-F



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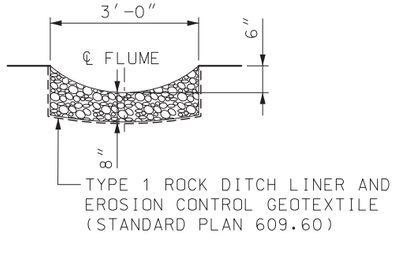
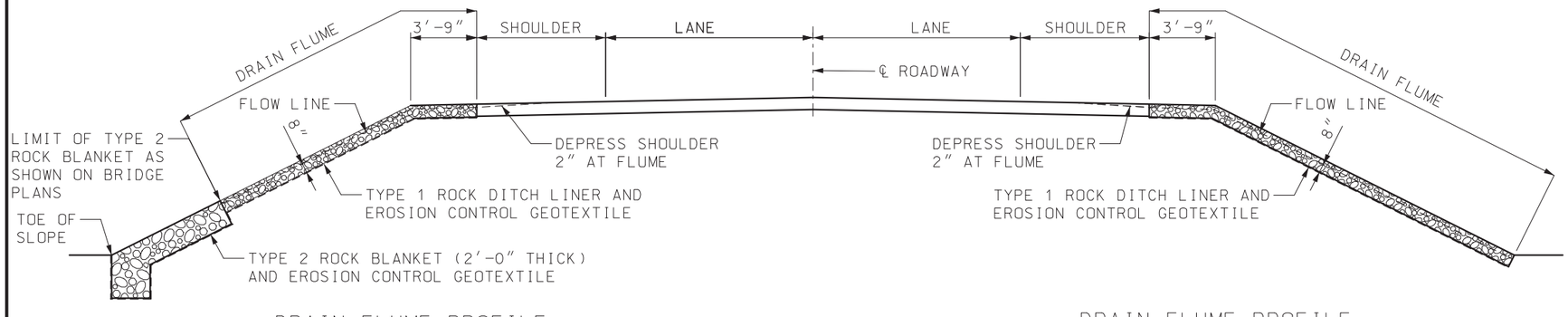


SECTION H-H



DRAIN FLUME PROFILE WITH PARTIAL ROCK BLANKET

DRAIN FLUME PROFILE WITHOUT ROCK BLANKET

GENERAL NOTES:

SEE STANDARD PLANS 606.00, 606.22, 606.23, 606.30, 606.50, 606.60, 606.70 AND 606.80 FOR DETAILS OF GUARDRAILS AND BRIDGE ANCHOR SECTIONS.

FOR DETAILS OF BRIDGE APPROACH SLAB (MINOR ROAD), SEE BRIDGE PLANS.

CONSTRUCT DRAIN FLUMES AND/OR FILL SLOPE PROTECTION WHEN SHOWN ON ROADWAY PLANS.

PAYMENT FOR DRAIN FLUMES, COMPLETE IN PLACE, INCLUDING EXCAVATION, WILL BE PAID FOR AS TYPE 1 ROCK DITCH LINER. GEOTEXTILE WILL BE PAID SEPARATELY.

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

STATE OF MISSOURI
TRAVIS D. KOESTNER
NUMBER PE-30042
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DRAIN FLUME, SHOULDER PAVING AND FILL SLOPE AT BRIDGE ENDS

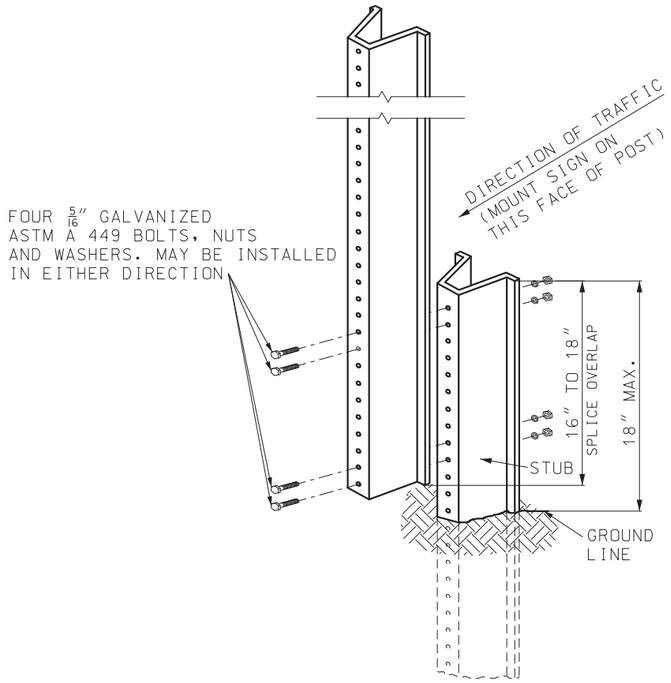
(MINOR AND LOW VOLUME ROUTES)

DATE EFFECTIVE: 10/1/2023
DATE PREPARED: 7/6/2023

609.40U

SHEET NO. 3 OF 3

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



U-CHANNEL POST DETAIL

USE OF SPLICE IS OPTIONAL.

SPLICE OVERLAP SHALL BE POSITION ENTIRELY BETWEEN GROUND LINE AND 18" ABOVE GROUND LINE.

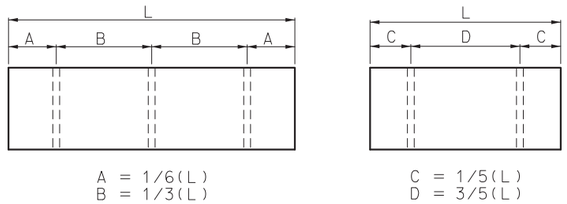
ONLY ONE SPLICE WILL BE ALLOWED PER POST.

POST TYPE

SIGN AREA (SQ.FT.)	U-CHANNEL	WOOD	PERFORATED SQUARE STEEL TUBING
≤ 10	1 – 3.0 LB./FT.*	1 – 4" X 4"*	1 – 2" 12 GA.*
> 10 ≤ 16	2 – 3.0 LB./FT.	2 – 4" X 4" 1 – 4" X 6"*	2 – 2" 12 GA. 1 – 2½" 12 GA.
> 16 ≤ 24	2 – 3.0 LB./FT.	2 – 4" X 6"	3 – 2" 12 GA.**
> 24 ≤ 32	3 – 3.0 LB./FT.	2 – 4" X 6"	N/A
> 30 ≤ 50	N/A	2 – 6" X 6"	N/A

* SIGNS GREATER THAN 4 FEET IN WIDTH, EXCEPT DIAMOND SHAPE SIGNS, REQUIRE TWO POSTS.

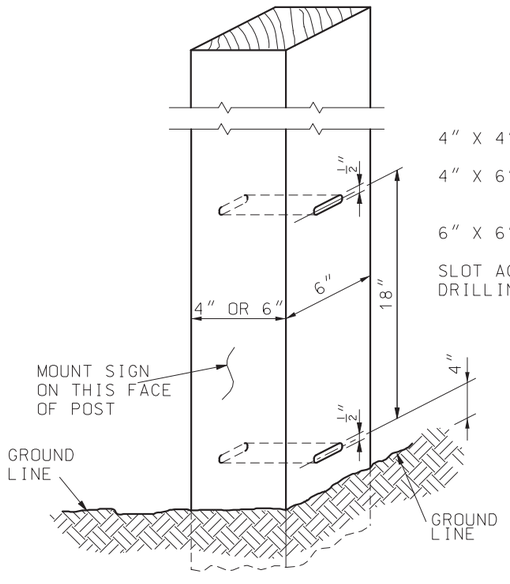
** REQUIRES SLIP BASE PER MANUFACTURER'S RECOMMENDATION.



A = 1/6(L)
B = 1/3(L)

C = 1/5(L)
D = 3/5(L)

POST SPACING



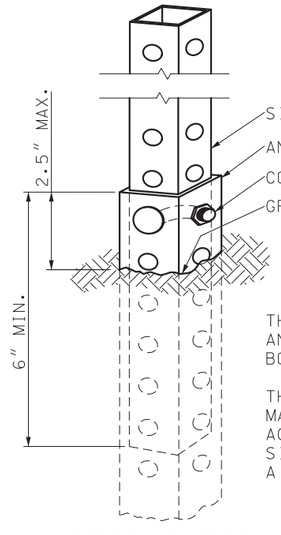
4" X 4" WOOD POST – NO SLOTS OR HOLES REQUIRED

4" X 6" WOOD POST – 1½" X ½" SLOT ON 6" SIDE OR 1½" DIA. HOLE ON 6" SIDE

6" X 6" WOOD POST – 2" X ½" SLOT OR 2" DIA. HOLE

SLOT ACROSS NEUTRAL AXIS FORMED BY SUCCESSIVE DRILLING WITH ½" BIT.

WOOD POST DETAIL



THE SIGN POST MAY BE ATTACHED TO THE ANCHOR WITH A CORNER BOLT OR STRAIGHT BOLT PER MANUFACTURER'S SPECIFICATION.

THE ANCHOR SHALL BE SIZED AS PER MANUFACTURER'S RECOMMENDATIONS TO ACCEPT THE POST SIZE SPECIFIED. THE SIGN ASSEMBLY SHALL BE MAINTAINED IN A PLUMB POSITION.

PERFORATED SQUARE STEEL TUBE POST DETAIL

GENERAL NOTES:

ALL POSTS SHALL BE EMBEDDED A MINIMUM OF 3 FEET.

SIGN INSTALLATION DETAILS SHOWN SHALL APPLY TO ALL POSTS IN A MULTI-POST INSTALLATION.

AT THE ENGINEERS DISCRETION A FLUORESCENT PAINT SHALL BE APPLIED HEAVILY TO BOTH SIDES OF U-CHANNEL POST STUB FOR A LENGTH OF AT LEAST 6 INCHES BELOW THE TOP OF THE STUB.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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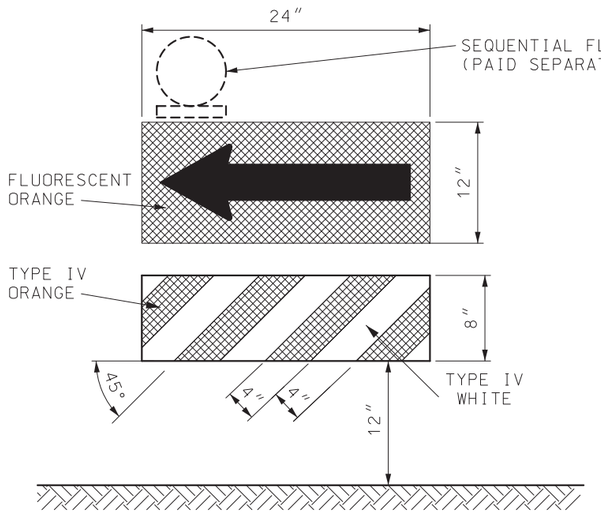
STATE OF MISSOURI
TRAVIS D. KOESTNER
NUMBER PE-30042
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

TEMPORARY TRAFFIC CONTROL DEVICES POST INSTALLATION DETAILS

DATE EFFECTIVE: 10/1/2023
DATE PREPARED: 7/6/2023

616.10BC

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

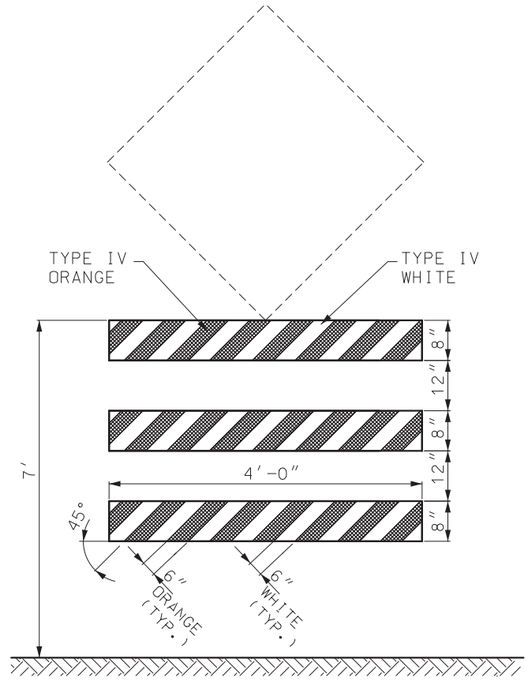


DIRECTION INDICATOR BARRICADE

VERTICAL DIMENSIONS DO NOT INCLUDE PROJECTIONS DESIGNED FOR EASE OF HANDLING.

DIRECTION INDICATOR BARRICADES SHALL NOT BE USED IN SHIFTING TAPERS UNLESS SHOWN ON THE PLANS.

THE PANELS SHALL BE SECURELY ATTACHED TO A SUPPORT THAT IS PORTABLE, CAPABLE OF REMAINING UPRIGHT AND ENTIRELY FREE STANDING.



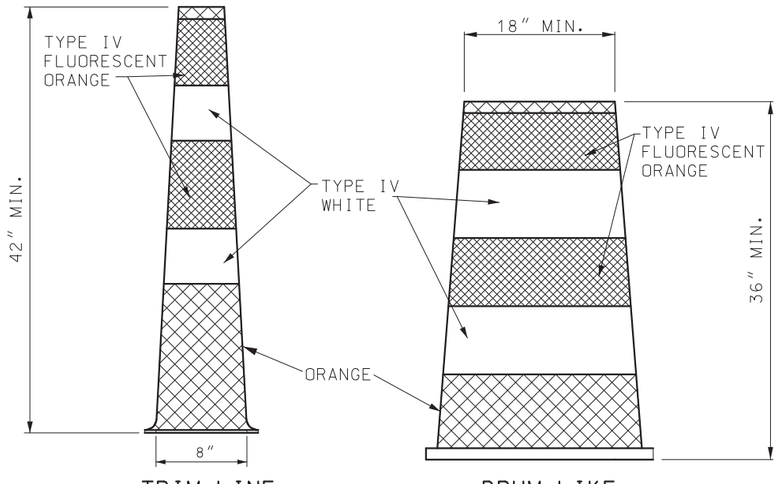
ADVANCE WARNING RAIL SYSTEM

MAXIMUM WEIGHT OF SIGN SHALL NOT EXCEED 25 LBS.

THE SIGN AND RAIL SYSTEM MAY BE MOUNTED AS TWO SEPARATE CRASHWORTHY DEVICES. THE RAIL SYSTEM SHALL BE LOCATED DIRECTLY IN FRONT OF THE SIGN WITH 7 TO 10 FEET SEPARATING THE TWO DEVICES.

WHERE MARKING IS NOT PROVIDED ON THE BACKSIDE, STRIPS OF 3″ WIDE TYPE IV ORANGE SHEETING MAY BE APPLIED TO THE ENDS OF EACH RAIL TO HELP DELINEATE THE DEVICE.

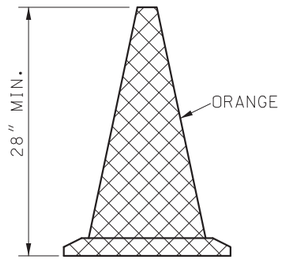
WHITE AND ORANGE REFLECTIVE SHEETING SHALL BE IN ACCORDANCE WITH SEC 1042.2.7.4.



CHANNELIZERS

STRIPES ON TRIM-LINE CHANNELIZERS SHALL BE 6″ TO 8″.
STRIPES ON DRUM-LIKE CHANNELIZERS SHALL BE 4″ TO 6″.

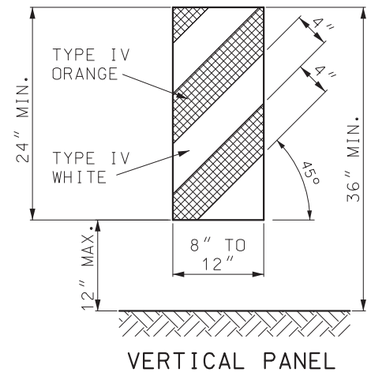
WHITE AND FLUORESCENT ORANGE REFLECTIVE SHEETING SHALL BE IN ACCORDANCE WITH SEC 1042.2.7.3.



CONE

CONES SHALL MAINTAIN THEIR SHAPE UPON EXPOSURE TO NORMAL WORK CONDITIONS.

CONES SHALL BE USED DURING DAYLIGHT HOURS ONLY.



VERTICAL PANEL

VERTICAL PANELS SHALL BE SECURELY ATTACHED TO A SUPPORT THAT IS PORTABLE, CAPABLE OF REMAINING UPRIGHT AND ENTIRELY FREE STANDING.

GENERAL NOTES:

WHITE, ORANGE, AND FLUORESCENT ORANGE REFLECTIVE SHEETING SHALL BE IN ACCORDANCE WITH SEC 1042.2.7.

BALLAST FOR TRAFFIC CONTROL DEVICES SHALL CONFORM TO MANUFACTURERS' RECOMMENDATION FOR FIELD CONDITIONS WHEN APPLICABLE.

SEQUENTIAL FLASHING WARNING LIGHTS SHALL BE IN ACCORDANCE WITH SEC 1063.5.

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY, AT NO ADDITIONAL COST, USE DRUM-LIKE CHANNELIZERS IN LIEU OF TRIM-LINE CHANNELIZERS TO PROVIDE LONGITUDINAL CHANNELIZATION WITHIN THE ACTIVITY AREA WHERE NO RAMPS, INTERSECTIONS OR LIMITED LATERAL CLEARANCE EXISTS.

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY, AT NO ADDITIONAL COST, USE DIRECTION INDICATOR BARRICADES IN LIEU OF TRIM-LINE CHANNELIZERS IN MERGING TAPERS.

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY, AT NO ADDITIONAL COST, USE VERTICAL PANELS IN LIEU OF TRIM-LINE CHANNELIZERS TO PROVIDE LONGITUDINAL CHANNELIZATION WITHIN THE ACTIVITY AREA.

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY, AT NO ADDITIONAL COST, USE CONES IN LIEU OF TRIM-LINE CHANNELIZERS DURING DAYTIME OPERATIONS ON MINOR ROUTES.

PANEL AND RAIL MARKINGS FOR TRAFFIC DELINEATION SHALL SLOPE DOWNWARD TOWARD THE INTENDED DIRECTION OF TRAVEL. ILLUSTRATIONS SHOWN ARE FOR INSTANCES WHERE TRAFFIC MOVES TO THE LEFT, REVERSE CONFIGURATIONS SHALL BE USED FOR TRAFFIC MOVEMENTS TO THE RIGHT. MARKINGS SHALL ONLY BE APPLIED TO THE FRONT OF EACH RAIL OR PANEL, OR MAY BE APPLIED TO BOTH THE FRONT AND BACK PROVIDING THE MARKING ON THE BACK DOES NOT CONFLICT WITH INTENDED OPPOSING TRAFFIC MOVEMENT.

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

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

STATE OF MISSOURI
TRAVIS D. KOESTNER
NUMBER PE-30042
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

TEMPORARY TRAFFIC CONTROL DEVICES
CHANNELIZERS AND DIRECTION INDICATOR BARRICADE

DATE EFFECTIVE: 10/1/2023
DATE PREPARED: 7/14/2023
616.10BC
SHEET NO. 3 OF 9

W020-1

(2)

W020-4

(7)

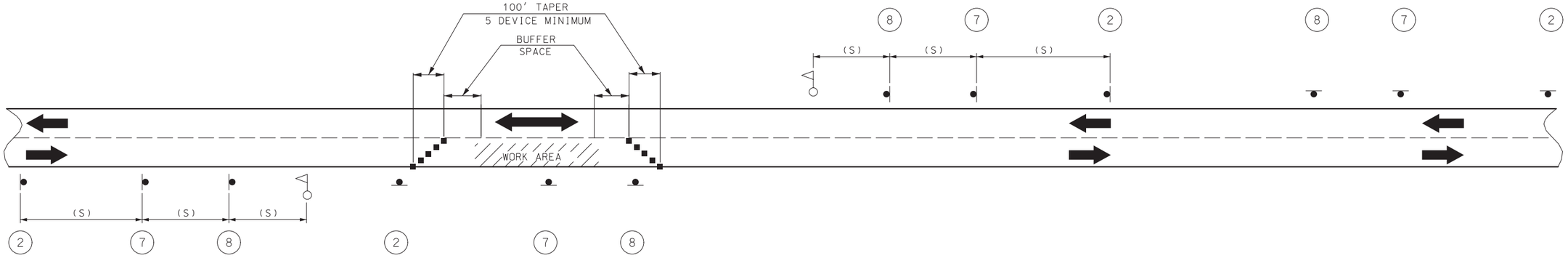
W020-7a

(8)

G020-4

(53)

SIGN 53, "PILOT CAR FOLLOW ME" SHALL BE THE CONTRACTOR'S RESPONSIBILITY WHEN IN USE DURING OPERATION.



SET 1

ACTIVE

SET 2

INACTIVE

SET 3

ACTIVE

SET 4

INACTIVE

NOTES:

DAYLIGHT FLAGGING OPERATIONS ONLY.

CHANNELIZING DEVICES LOCATED DOWNSTREAM OF THE ONE-LANE, TWO-WAY TAPER ARE OPTIONAL. THESE DEVICES SHOULD BE ELIMINATED WHEN THEIR USE WILL REDUCE THE USABLE LANE WIDTH, INCLUDING ANY ACCEPTABLE SHOULDERS, TO LESS THAN 10' OR WILL SIGNIFICANTLY AFFECT THE RESURFACING OPERATION.

SIGN SETS 1 AND 3 ARE ACTIVE AND (I.E., SIGNS FACE ONCOMING TRAFFIC) SIGN SETS 2 AND 4 ARE INACTIVE (I.E., SIGNS DO NOT FACE EITHER DIRECTION OF TRAFFIC) WHEN THE RESURFACING OPERATION IS LOCATED BETWEEN SIGN SETS 1 AND 3.

WHEN SIGN SETS 2 AND 4 ARE ACTIVE, SIGN SETS 1 AND 3 BECOME INACTIVE AND ARE ADVANCED TO BECOME SETS 2 AND 4 WITH SIGN LEGENDS TURNED AWAY FROM BOTH DIRECTIONS OF TRAFFIC. WHEN THE RESURFACING OPERATION ADVANCES TO BETWEEN SIGN SETS 2 AND 4, SIGN SETS 2 AND 4 BECOME ACTIVE (I.E., NEW SIGN SETS 1 AND 3) AND SIGN SETS 1 AND 3 ADVANCED IN THE DIRECTION OF THE OPERATION (I.E., NEW SIGN SETS 2 AND 4).

■ - CHANNELIZERS

- FLAGGER

SPEED	SIGN SPACING (FT) (1)	BUFFER SPACE
PERMANENT POSTED (MPH)	NON-DIVIDED HIGHWAYS (S)	LENGTH (FT)
0-35	200	280
40-45	350	400
50-55	500	560
60-70	1000	840

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

SPACING MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS.

NOT TO SCALE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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1-888-ASK-MODOT (1-888-275-6636)

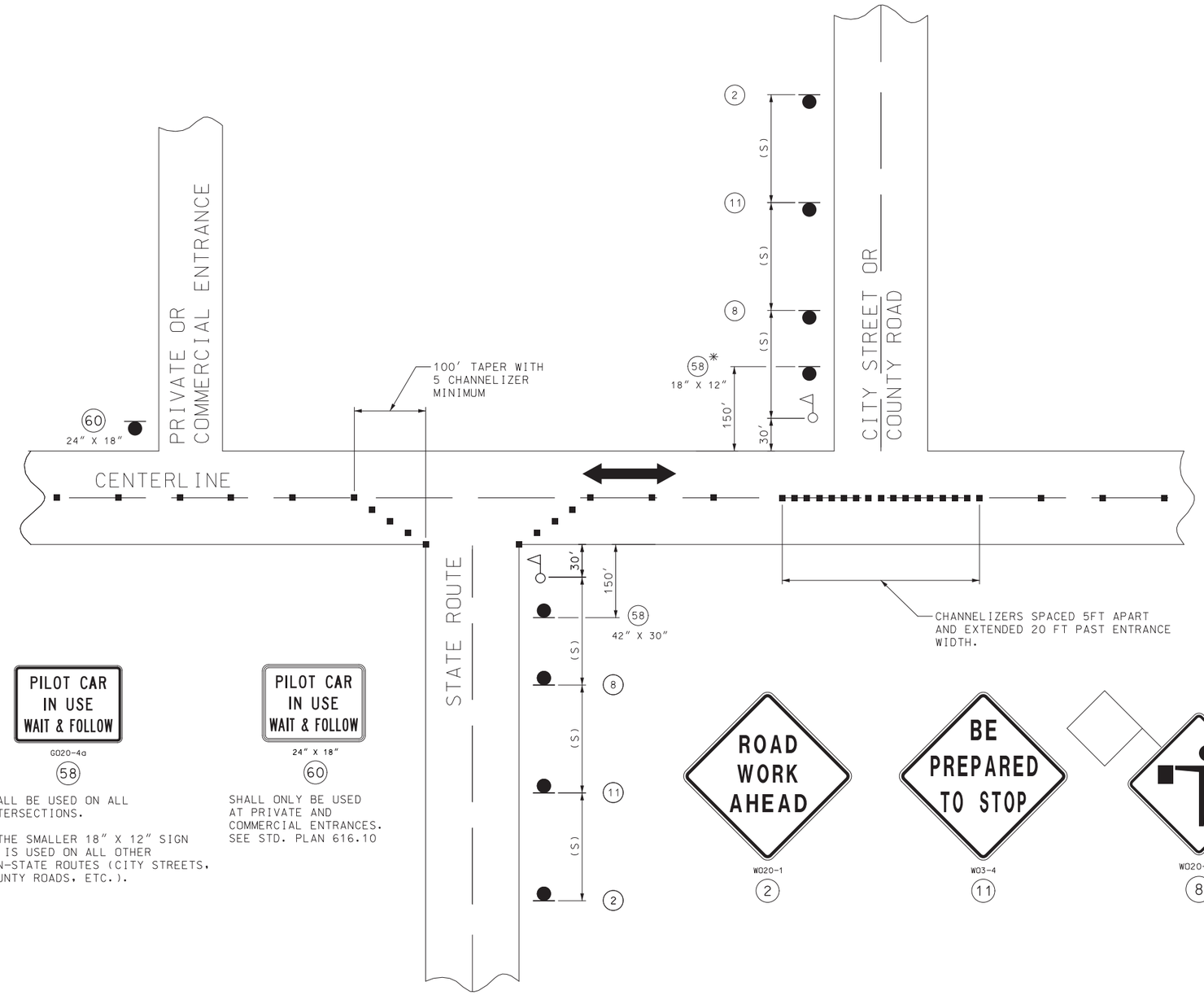
STATE OF MISSOURI
TRAVIS D. KOESTNER
NUMBER PE-30042
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

TEMPORARY TRAFFIC CONTROL PLANS

PAVEMENT TREATMENTS FOR TWO-LANE ROADWAYS

DATE EFFECTIVE: 1/1/2024
DATE PREPARED: 9/26/2023

616.20A



SPEED	SIGN SPACING (FT) (1)	CHANNELIZER SPACING (FT)
PERMANENT POSTED (MPH)	NON-DIVIDED HIGHWAYS (S)	BUFFER/ WORK AREA (TYP.)
0-35	200	40
40-45	350	80
50-55	500	80
60-70	1000	120

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

SPACING MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS.

NOTES:
WARNING SIGNS SHALL BE ERECTED AT EACH INTERSECTION WITH ANOTHER STATE HIGHWAY WITHIN THE WORK ZONE.

ADDITIONAL WARNING SIGNS SHALL BE ERECTED AT OTHER INTERSECTIONS WITHIN THE WORK ZONE, AS DIRECTED BY THE ENGINEER.

■ - CHANNELIZERS (AS SPECIFIED)

- FLAGGER

NOT TO SCALE

G020-4a

58

SHALL BE USED ON ALL INTERSECTIONS.

* THE SMALLER 18" X 12" SIGN 58 IS USED ON ALL OTHER NON-STATE ROUTES (CITY STREETS, COUNTY ROADS, ETC.).

24" X 18"

60

SHALL ONLY BE USED AT PRIVATE AND COMMERCIAL ENTRANCES. SEE STD. PLAN 616.10

W020-1

2

W03-4

11

W020-7a

8

SIDE ROADS ENTERING WORK ZONES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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TRAVIS D. KOESTNER
NUMBER PE-30042
PROFESSIONAL ENGINEER
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TEMPORARY TRAFFIC CONTROL PLANS

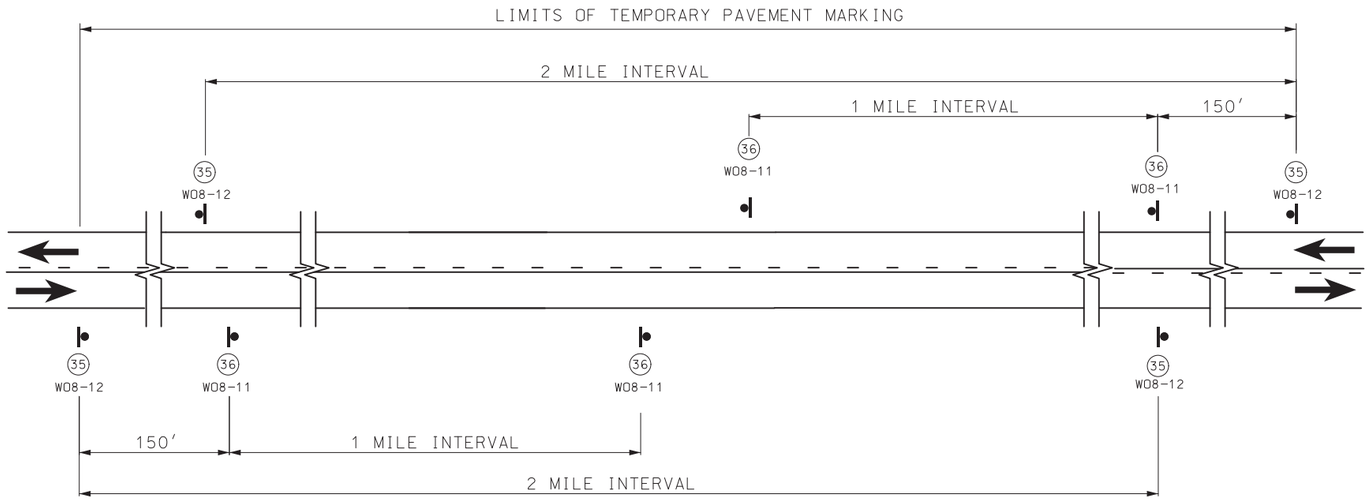
PAVEMENT TREATMENTS FOR TWO-LANE ROADWAYS

DATE EFFECTIVE: 1/1/2024
DATE PREPARED: 9/26/2023

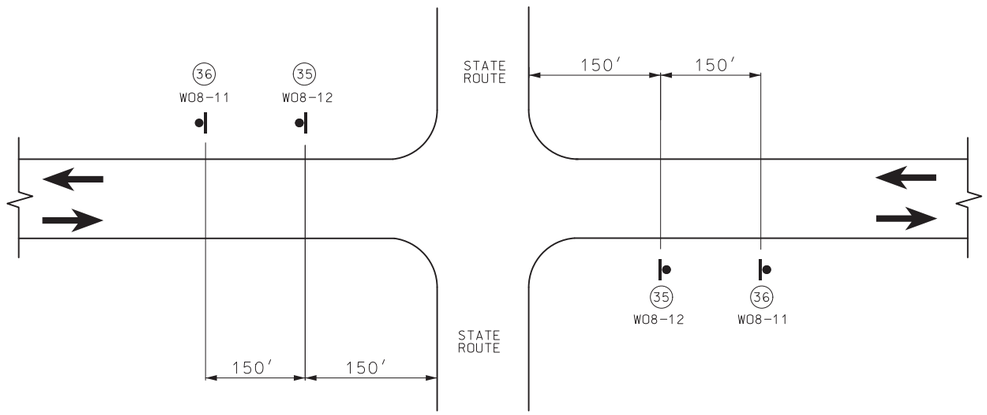
616.20A

SHEET NO. 3 OF 5

NOT TO SCALE



SIGN SPACING AND TEMPORARY STRIPING FOR MAINLINE



SIGN SPACING AT STATE ROUTE INTERSECTIONS
SHOWING TEMPORARY STRIPING FOR MAINLINE

W08-12
35

W08-11
36

NOTES:

SIGN (35) AND TEMPORARY RAISED PAVEMENT MARKING (SEE STANDARD PLAN 620.10) INSTALLED WHERE CENTERLINE STRIPING HAS BEEN COVERED OR REMOVED. SIGNS ARE TO REMAIN IN PLACE UNTIL THE PERMANENT CENTERLINE PAVEMENT MARKINGS ARE IN PLACE. SIGNS SHALL BE COVERED OR REMOVED WHEN PAVEMENT CENTERLINE MARKING HAS BEEN INSTALLED.

SIGN (35) IS PLACED AT APPROXIMATELY TWO-MILE INTERVALS AND AT STATE ROUTE JUNCTIONS. WHEN THE INSTALLATION AT A JUNCTION IS WITHIN ONE-EIGHTH MILE OF THE NORMAL MAINLINE SIGN (35) , THE LATTER MAY BE ELIMINATED.

ALL SIGNS SHALL BE POST MOUNTED AND IN ACCORDANCE WITH STANDARD PLAN 616.10 AND 903.03.

SEE STANDARD PLAN 620.10 FOR ALL TEMPORARY PAVEMENT MARKING.

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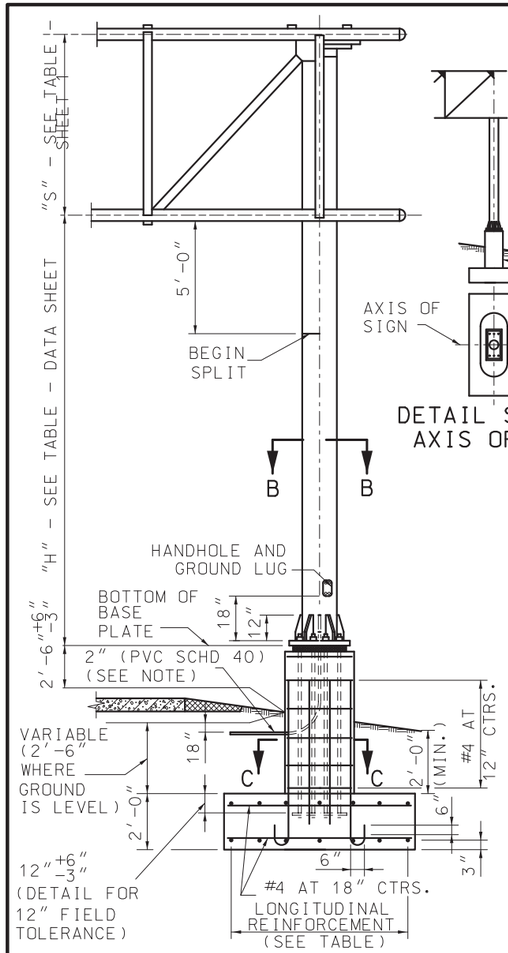
TRAVIS D. KOESTNER
NUMBER PE-30042
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

TEMPORARY TRAFFIC CONTROL PLANS

PAVEMENT TREATMENTS FOR TWO-LANE ROADWAYS

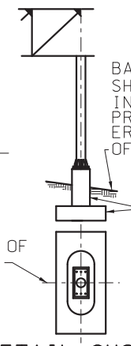
DATE EFFECTIVE: 1/1/2024
DATE PREPARED: 9/26/2023

616.20A

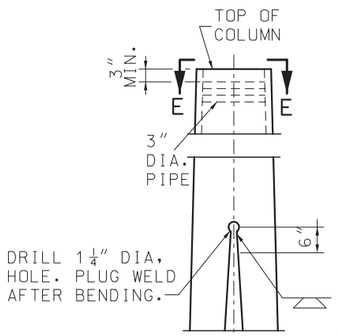


ELEVATION

NOTE:
THE 2" CONDUIT IN THE CONCRETE PEDESTAL SHALL BE PVC SCHEDULE 40 AND SHALL BE PLACED WITH A MINIMUM RADIUS BEND OF $9\frac{1}{2}$".



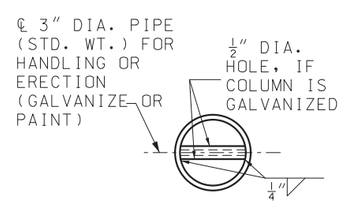
DETAIL SHOWING AXIS OF SIGN



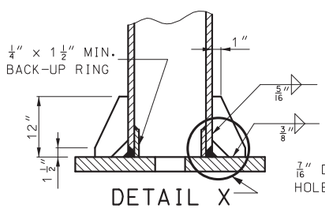
PART ELEVATION

POST TYPE	PIPE COLUMN	DIMENSION "E"	SPLIT	BASE PLATE SIZE*	ANCHOR BOLTS DIA.	PEDESTAL SIZE* a	PEDESTAL SIZE* b	FOOTING SIZE*	LONGITUDINAL FOOTING REINFORCEMENT TOP	LONGITUDINAL FOOTING REINFORCEMENT BOTTOM	CONCRETE C.Y.
I	12" STD. AT 65.42	8½"	6"	2'-6"x 23"x 1½"	6 AT 2¼"	4'-0"	2'-11"	7'-0"x 14'-6"	7-#5 BARS	7-#6 BARS	10.9
II	14" O.D. AT 72.09	8½"	9½"	3'-0"x 2'-0"x 1½"	6 AT 2¼"	4'-4"	3'-0"	8'-0"x 16'-0"	8-#5 BARS	9-#6 BARS	13.2
III	16" O.D. AT 82.77	8¾"	11½"	3'-4"x 2'-2"x 1¾"	6 AT 2¼"	4'-8"	3'-2"	8'-6"x 17'-6"	9-#5 BARS	9-#7 BARS	15.2
IV	18" O.D. AT 93.45	9½"	12½"	3'-7"x 2'-4"x 2"	6 AT 2½"	5'-1"	3'-4"	9'-6"x 19'-0"	10-#5 BARS	10-#8 BARS	18.1
V	20" O.D. AT 104.13	9½"	13"	3'-10"x 2'-9"x 2"	8 AT 2½"	5'-4"	3'-9"	10'-0"x 20'-0"	10-#5 BARS	10-#8 BARS	20.6
VI	24" O.D. AT 125.49	9½"	10½"	4'-0"x 3'-3"x 2"	8 AT 2½"	5'-6"	4'-3"	10'-6"x 21'-0"	11-#5 BARS	11-#8 BARS	23.3
VII	24" O.D. AT 125.49	9½"	13½"	4'-3"x 3'-3"x 2"	8 AT 2½"	5'-9"	4'-3"	11'-0"x 22'-0"	11-#5 BARS	11-#9 BARS	25.1

* BASE PLATES, PEDESTAL, AND FOOTINGS, LONGER SIDES SHALL BE NORMAL TO AXIS OF SIGN.

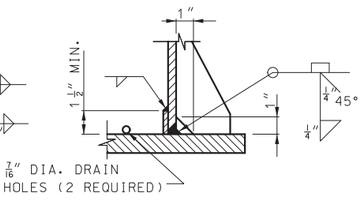


PART SECTION E-E



DETAIL X

PART SECTION A-A



DETAIL X

GENERAL NOTES:

A TAPERED TUBE OF EQUIVALENT SIZE AND THICKNESS MAY BE SUBSTITUTED FOR PIPE POST.

ALL STEEL PIPE COLUMNS SHALL BE EITHER GRADE "B" SEAMLESS STEEL PIPE OR GRADE "B" ELECTRIC RESISTANCE WELDED STEEL PIPE; ASTM SPECIFICATION A53. NO OBJECTIONABLE SEAMS WILL BE PERMITTED.

ALL STRUCTURES SHALL BE GROUNDED.

BURR THREADS ON ALL ANCHOR BOLTS.

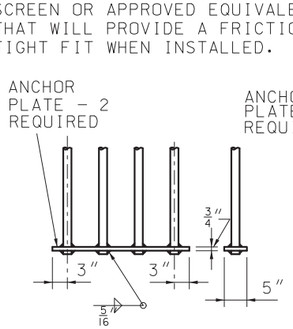
A HORIZONTAL WELDED SPLICE MAY BE FABRICATED IN THE COLUMN BETWEEN THE TOP OF PIPE AND 4'-0" BELOW THE BOTTOM CHORDS OF THE TRUSS WHEN DETAILED ON THE PIPE AND 4'-0" BELOW THE BOTTOM CHORDS OF THE TRUSS WHEN DETAILED ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER.

GROUND LUGS SHALL BE LOCATED INSIDE COLUMN NEAR HAND HOLE.

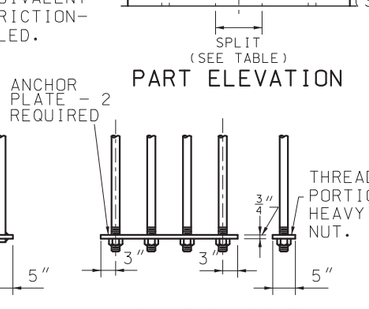
QUANTITIES FOR PEDESTAL, BASED ON NOMINAL HEIGHT OF 5'-0".

QUANTITIES FOR FOOTING, BASED ON NOMINAL DEPTH OF 2'-0".

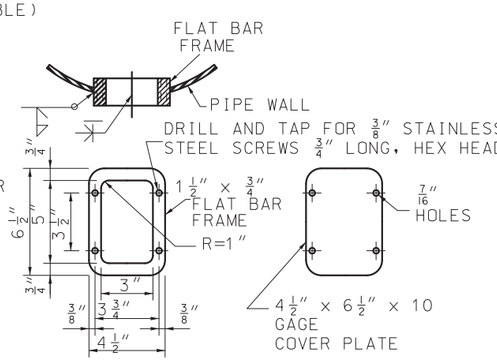
QUANTITIES SHOWN ARE FOR ONE COLUMN ONLY.



ANCHORAGE DETAIL A

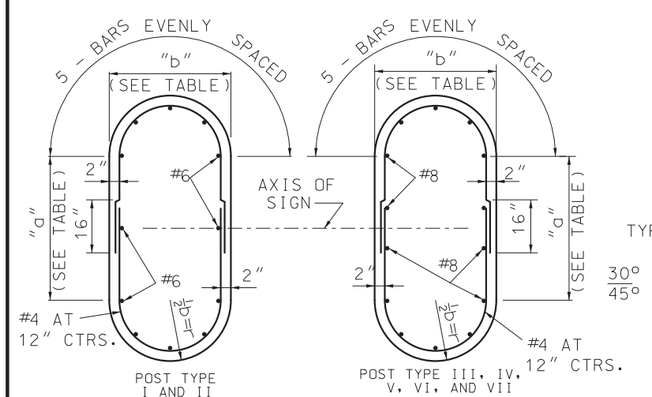


ANCHORAGE DETAIL B (OPTIONAL)

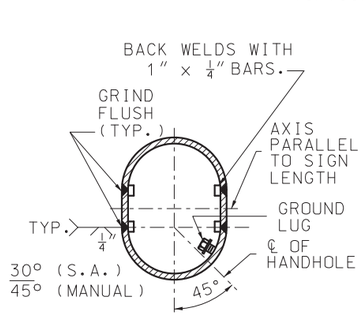


HANDHOLE AND COVER DETAIL

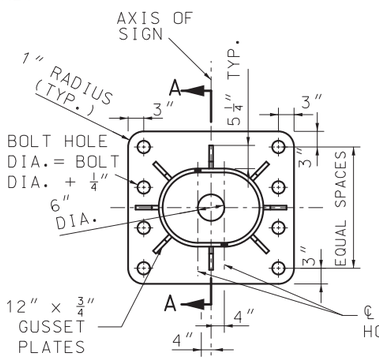
NOTE: HANDHOLE REQUIRED ONLY IN POWER COLUMN.



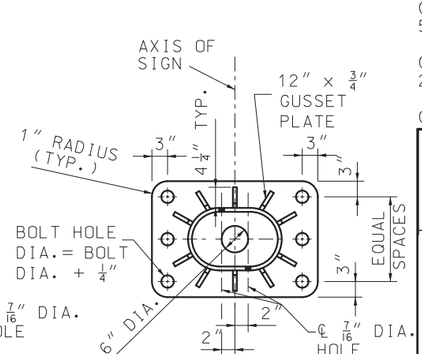
SECTION C-C
(TYPICAL SECTION SHOWING REINFORCING STEEL)
NOTE: FOR DETAILS OF ALTERNATE PEDESTAL, SEE SHEET NO. 5 OF 6.



SECTION B-B
(FOR SPLIT COLUMNS ONLY)



8 ANCHOR TYPE



6 ANCHOR TYPE

TYPICAL BASE PLATES

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

STATE OF MISSOURI
NICOLE A. KOLB HOOD
NUMBER PE-2001018754
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

OVERHEAD SIGN TRUSSES

ALUMINUM

DATE EFFECTIVE: 10/1/2023
DATE PREPARED: 7/6/2023

903.10BE

SHEET NO. 4 OF 6

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