DESIGN DESIGNATION

I-435

A.A.D.T. - 2025 = 24976
A.A.D.T. - 2045 = 33639
D.H.V. = 7%
T = 26%
V = 70 M.P.H.
D = 50%

FUNCTIONAL CLASSIFICATION- INTERSTATE

COOKINGHAM DRIVE

A.A.D.T. - 2025 = 2443
A.A.D.T. - 2045 = 3290
D.H.V. = 16%
T = 11%
V = 55 M.P.H.
D = 50%

FUNCTIONAL CLASSIFICATION- MINOR ARTERIAL

NO RIGHT OF WAY TO BE ACQUIRED

CONVENTIONAL SYMBOLS
(USED IN PLANS)

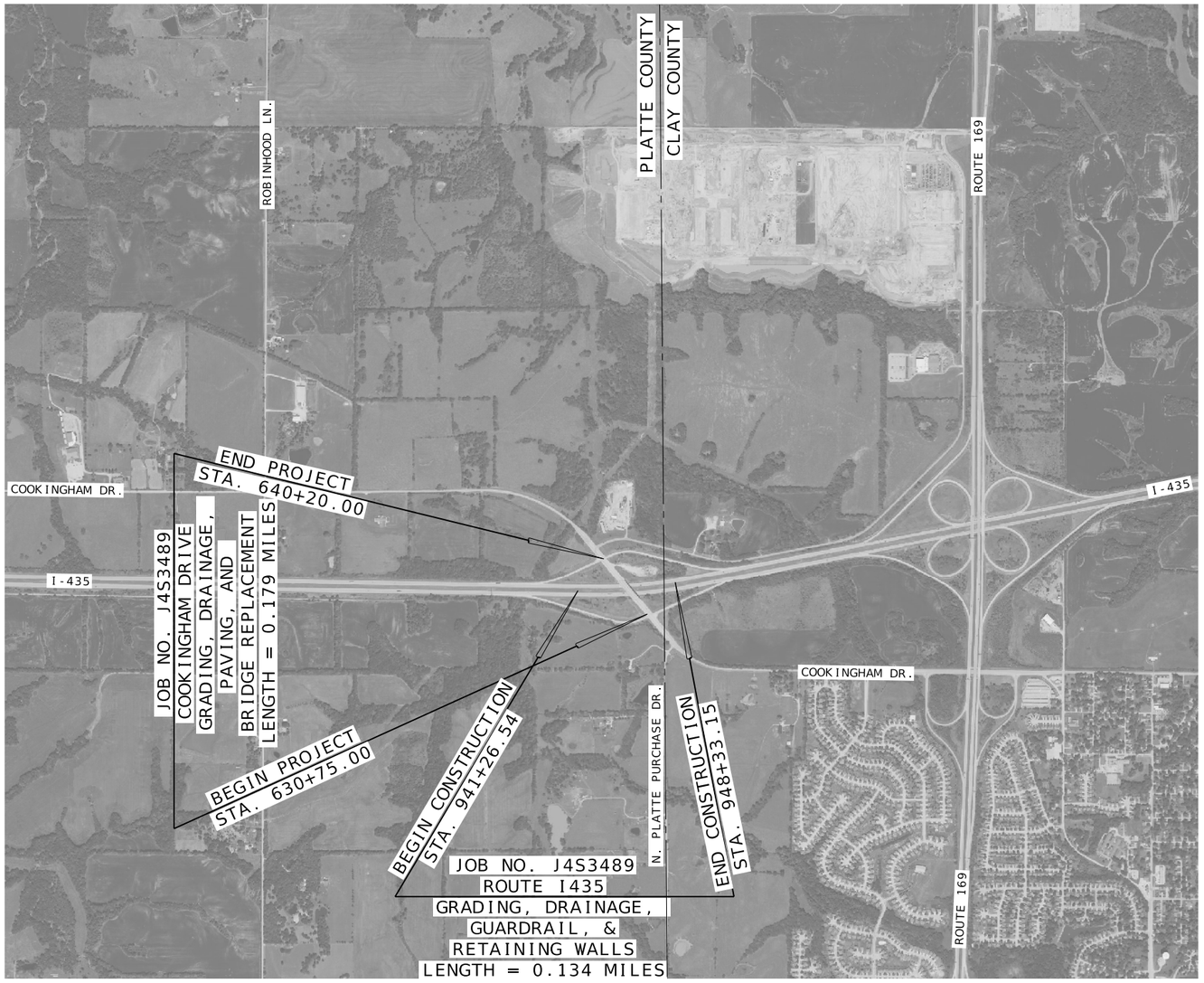
	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	-FO-	FO
OVERHEAD CABLE TV	-OTV-	OTV
UNDERGROUND CABLE TV	-UTV-	UTV
OVERHEAD TELEPHONE	-OT-	OT
UNDERGROUND TELEPHONE	-UT-	UT
OVERHEAD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

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY PLATTE COUNTY SECTIONS 21 & 22 T52N, R33W

KEY MAP
LOCATION OF PLATTE COUNTY



NOT TO SCALE

THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE COMMISSION "AS-IS" AND THE COMMISSION EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK AND PERIL OF THE USER, AND THE COMMISSION SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION. IT IS, THEREFORE, THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE, LOCATION AND STATUS OF ANY FACILITY. SUCH VERIFICATION INCLUDES DIRECT CONTACT WITH THE LISTED UTILITIES.

INDEX OF SHEETS

LENGTH OF PROJECT

COOKINGHAM DRIVE

BEGINNING OF PROJECT	STA.	630+75.00
END OF PROJECT	STA.	640+20.00
APPARENT LENGTH		945.00 FEET
NET LENGTH OF PROJECT		945.00 FEET
STATE LENGTH		0.179 MILES
EQUATIONS AND EXCEPTIONS		0.000 FEET

FOR INFORMATION ONLY
ESTIMATED DISTURBED ACRES 1.0 ACRES

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	1

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

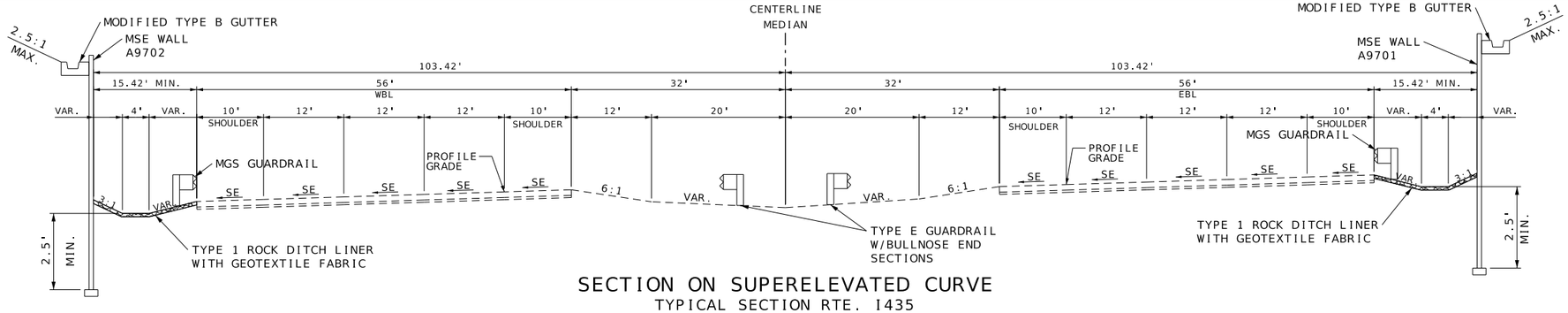
BRIDGE NO.
A9700

DESCRIPTION	DATE

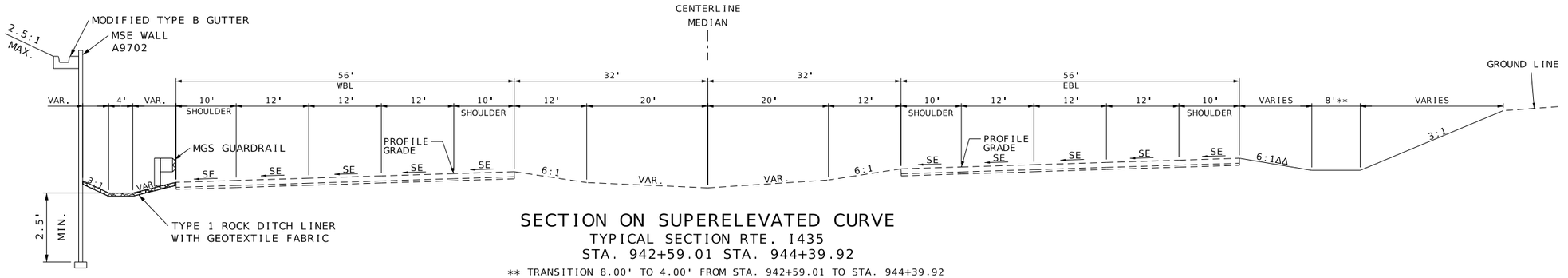
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

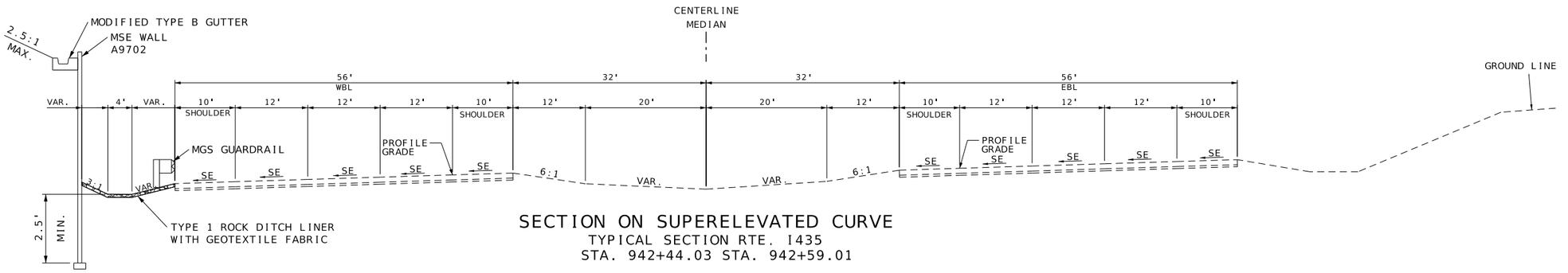


SECTION ON SUPERELEVATED CURVE
TYPICAL SECTION RTE. I435
STA. 944+39.92 TO STA. 945+38.92

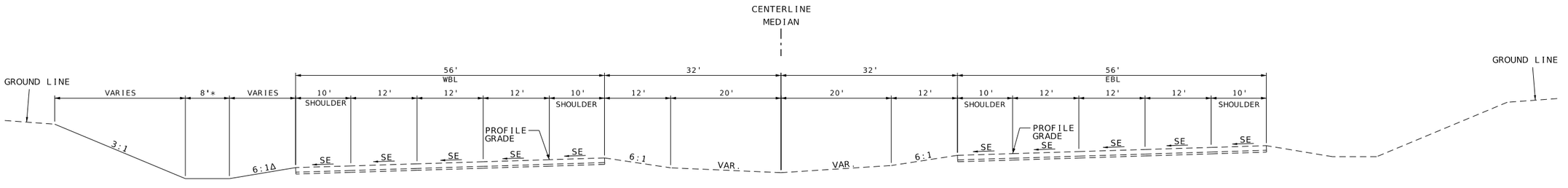


SECTION ON SUPERELEVATED CURVE
TYPICAL SECTION RTE. I435
STA. 942+59.01 STA. 944+39.92

** TRANSITION 8.00' TO 4.00' FROM STA. 942+59.01 TO STA. 944+39.92
ΔΔ TRANSITION 6:1 TO VAR. FROM STA. 942+59.01 TO STA. 944+39.92



SECTION ON SUPERELEVATED CURVE
TYPICAL SECTION RTE. I435
STA. 942+44.03 STA. 942+59.01



SECTION ON SUPERELEVATED CURVE
TYPICAL SECTION RTE. I435
STA. 941+26.54 TO STA. 942+44.03

* TRANSITION 8.00' TO 4.00' FROM STA. 941+26.54 TO STA. 942+44.03
Δ TRANSITION 6:1 TO VAR. FROM STA. 941+26.54 TO STA. 942+44.03

NOT TO SCALE

TYPICAL SHEET
1 OF 4

GRANT C. LUCKENBILL
NUMBER
PE-2012018100
9-26-25
GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	2

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

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

olsson
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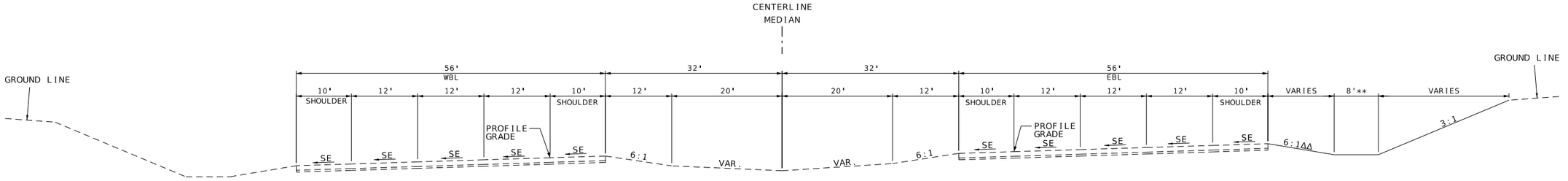
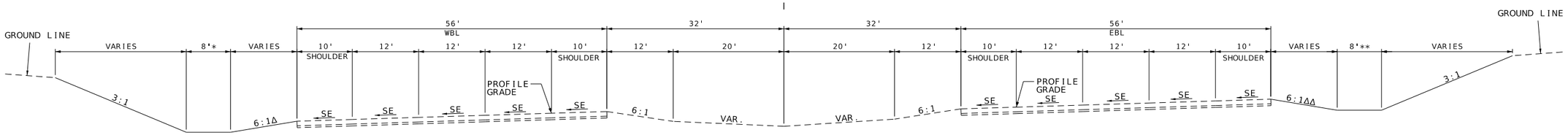


SECTION ON SUPERELEVATED CURVE

TYPICAL SECTION RTE. I435

STA. 947+78.36 TO STA. 948+33.15

** TRANSITION 4.00' TO 8.00' FROM STA. 947+09.52 TO STA. 948+33.15
ΔΔ TRANSITION VAR. TO 6:1 FROM STA. 947+09.52 TO STA. 948+33.15

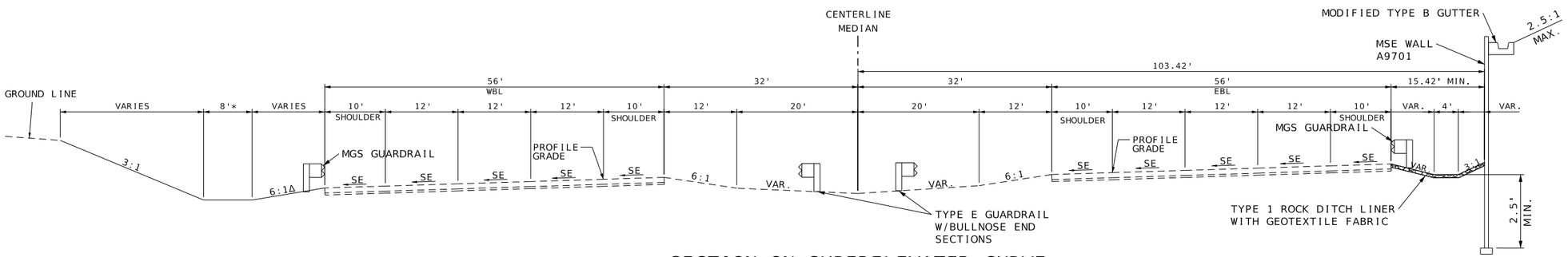


SECTION ON SUPERELEVATED CURVE

TYPICAL SECTION RTE. I435

STA. 947+09.52 TO STA. 947+78.36

* TRANSITION 4.00' TO 8.00' FROM STA. 945+38.92 TO STA. 947+78.36
** TRANSITION 4.00' TO 8.00' FROM STA. 947+09.52 TO STA. 948+33.15
Δ TRANSITION VAR. TO 6:1 FROM STA. 945+38.92 TO STA. 947+78.36
ΔΔ TRANSITION VAR. TO 6:1 FROM STA. 947+09.52 TO STA. 948+33.15



SECTION ON SUPERELEVATED CURVE

TYPICAL SECTION RTE. I435

STA. 945+38.92 TO STA. 947+09.52

* TRANSITION 4.00' TO 8.00' FROM STA. 945+38.92 TO STA. 947+78.36
Δ TRANSITION VAR. TO 6:1 FROM STA. 945+38.92 TO STA. 947+78.36

NOT TO SCALE

TYPICAL SHEET
2 OF 4

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	2

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

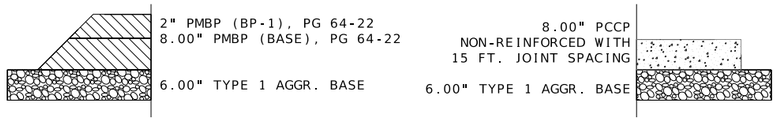
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

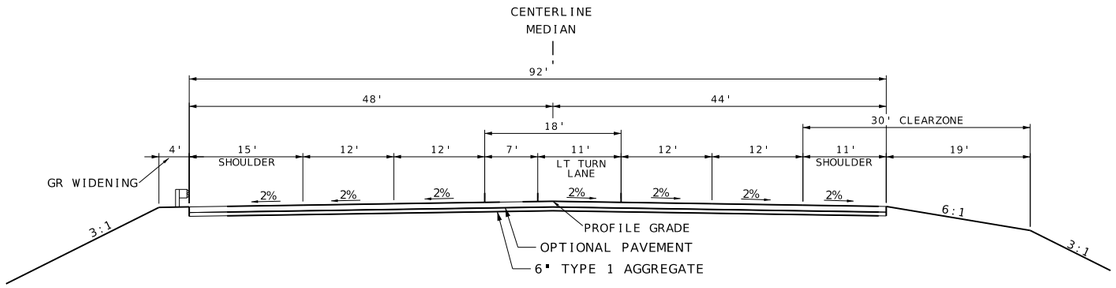
olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

NOTE:
CROSS SECTIONS AND EARTHWORK IN THIS PROJECT ARE BASED ON THE CONCRETE OPTION. CONTRACTOR IS RESPONSIBLE FOR MAKING ANY ADJUSTMENTS WITH NO EXTRA PAY IF ASPHALT OPTION IS USED.

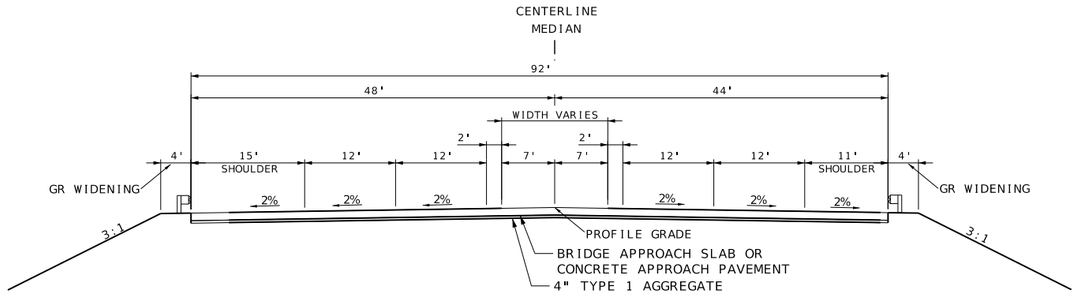
SUBGRADE PROFILE AND CROSS SECTIONS ARE DESIGNED FOR THE THINNER PAVEMENT DESIGN. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE PROFILE GRADE FOR EITHER PAVEMENT DESIGN WITH NO DIRECT PAY. CROSSROAD STRUCTURES ARE DESIGNED TO ACCOMMODATE A MINIMUM COVER BASED ON THE THICKER PAVEMENT DESIGN.

COOKINGHAM OPTIONAL PAVEMENT DESIGN



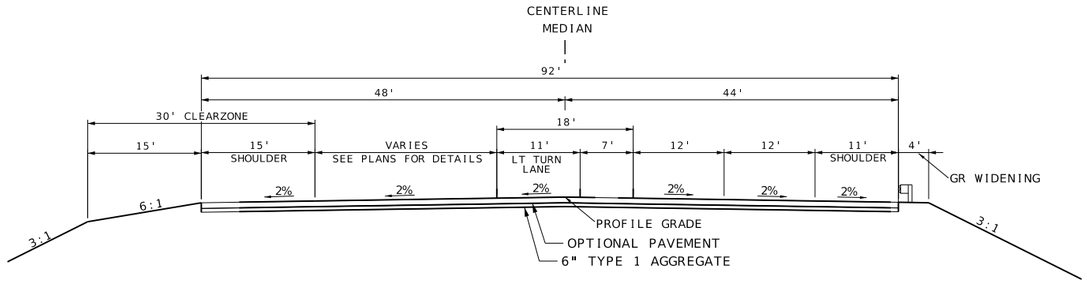


SECTION ON TANGENT
TYPICAL SECTION COOKINGHAM DRIVE
STA. 637+14.32 TO STA. 640+20.00



SECTION ON TANGENT
TYPICAL SECTION COOKINGHAM DRIVE
STA. 632+88.39 TO STA. 633+35.35 APPROACH PAVEMENT
STA. 633+35.35 TO STA. 633+60.35 APPROACH SLAB
STA. 636+39.45 TO STA. 636+64.45 APPROACH SLAB
STA. 636+64.45 TO STA. 637+14.32 APPROACH PAVEMENT

BRIDGE EXCEPTION
STA. 633+60.35 TO STA. 636+39.45



SECTION ON TANGENT
TYPICAL SECTION COOKINGHAM DRIVE
STA. 630+75.00 TO STA. 632+91.01

NOT TO SCALE

TYPICAL SHEET
3 OF 4

GRANT C. LUCKENBILL
NUMBER
PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	2

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

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)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

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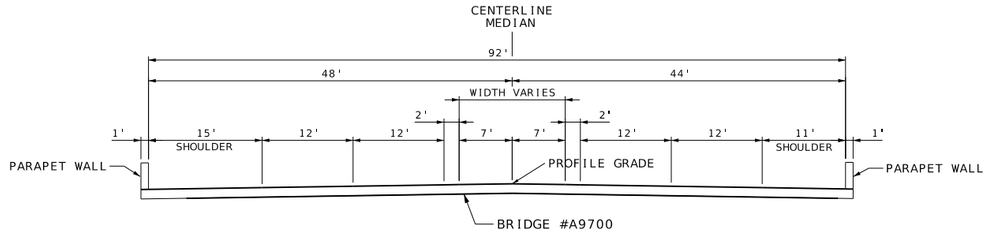
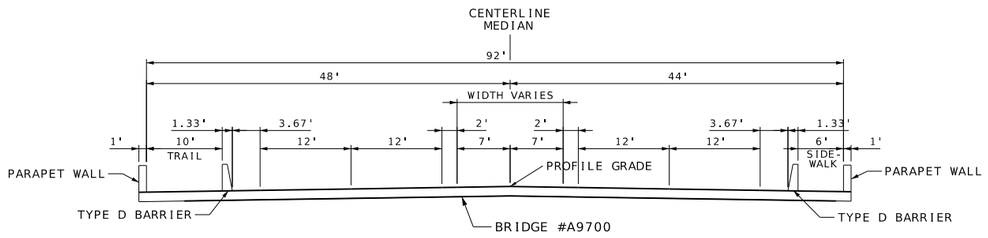


SECTION ON TANGENT
TYPICAL SECTION BRIDGE
STA. 633+60.35 TO STA. 636+39.45



SECTION ON TANGENT
TYPICAL SECTION BRIDGE
FUTURE LAYOUT

BRIDGE EXCEPTION
STA. 633+60.35 TO STA. 636+39.45

NOT TO SCALE

TYPICAL SHEET
4 OF 4

GRANT C. LUCKENBILL
NUMBER
PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	2

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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olsson
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REMOVAL OF IMPROVEMENTS				
SHEET	STA.	STA.	LOCATION	DESCRIPTION
4-5	943+43.31	944+99.59	ROUTE 435 LT	531 SY CONCRETE SLOPE PROTECTION
4-5	943+72.83	946+41.87	ROUTE 435	253' PIPE, 2-FES
4-5	943+85.45	946+28.90	ROUTE 435	428' GUARDRAIL, 2-BULLNOSE END SECTIONS
4	944+08.28		ROUTE 435 LT	1 SIGN, POST & BASE
4	944+09.24		ROUTE 435 RT	1 SIGN, POST & BASE
4-5	945+29.93	946+74.86	ROUTE 435 RT	585 SY CONCRETE SLOPE PROTECTION
5	945+46.61		ROUTE 435 LT	1 PULLBOX
5	945+82.64		ROUTE 435 LT	1 SIGN, POST & BASE
5	946+39.09		ROUTE 435 RT	1 PULLBOX
5	948+25.21		ROUTE 435 RT	1 SIGN, POST & BASE
7	630+75.00		COOKINGHAM DR	89' SAWCUT
7-8	630+75.00	633+09.25	COOKINGHAM DR	2316 SY PAVEMENT
7-8	630+67.08	63261.15	COOKINGHAM DR RT	194' GUARDRAIL
7-8	630+79.20	633+07.06	COOKINGHAM DR RT	105 SY CONCRETE MEDIAN
7	630+88.00		COOKINGHAM DR LT	1 SIGN, 2 POST & BASES
8	632+50.65		COOKINGHAM DR RT	1 SIGN, POST & BASE
8-9	636+77.42	640+20.00	COOKINGHAM DR	3372 SY PAVEMENT
8-9	636+79.62	640+20.37	COOKINGHAM DR LT	157 SY CONCRETE MEDIAN
8	636+97.68	637+43.10	COOKINGHAM DR LT	36 SY PAVED DITCH
8-9	637+22.71	639+16.81	COOKINGHAM DR LT	195' GUARDRAIL
8	637+22.72	637+42.75	COOKINGHAM DR LT	12 SY CURB & PAVEMENT
8	637+39.68		COOKINGHAM DR LT	4' PIPE
8	637+51.16		COOKINGHAM DR LT	1 SIGN, POST & BASE
9	638+29.99		COOKINGHAM DR RT	1 SIGN, POST & BASE
9	639+55.96		COOKINGHAM DR LT	1 SIGN, POST & BASE
9	639+99.78		COOKINGHAM DR RT	1 SIGN, 2 POST & BASES
9	640+20.00		COOKINGHAM DR	88' SAWCUT
1 LUMP SUM				

ADDITIONAL MOBILIZATION FOR SEEDING
2 EACH

MOBILIZATION
1 LUMP SUM

CLEARING AND GRUBBING
1 ACRE

CONTRACTOR FURNISHED SURVEYING & STAKING
1 LUMP SUM

COMPACTING IN CUT				
SHEET NO.	STA.	STA.	LOCATION	COMPACTING IN CUT (STA)
7-8	630+75.	633+60.35	COOKINGHAM DR	2.9
8	636+39.45	640+20.	COOKINGHAM DR	3.8
			TOTAL	6.7

CONCRETE APPROACH PAVEMENT				
PLAN SHEET NO.	STA.	STA.	LOCATION	CONCRETE APPROACH PAVEMENT (SY)
9	632+88.39	633+35.35	COOKINGHAM DR	495.0
9	636+64.45	637+14.32	COOKINGHAM DR	495.0
			TOTAL	990.0

EARTHWORK							
STA.	STA.	LOC.	CLASS A EXCAVATION (CY)	EMBANKMENT IN PLACE (CY)	COMPACTING EMBANKMENT (CY)	CLASS 1 EXCAVATION (CY)	REMARKS
941+26.55	947+78.35	ROUTE 435 WBL	286	248.8	228.8		
942+43.67	945+39.01	ROUTE 435 LT				1523	RETAINING WALL A9702
941+26.55	948+33.14	ROUTE 435 EBL	450.8	1788.3	360.6		
944+40.05	947+08.99	ROUTE 435 RT				1948	RETAINING WALL A9701
945+46.61		ROUTE 435 LT		1			REMOVED PULLBOX FROM SHOULDER
946+39.09		ROUTE 435 RT		1			REMOVED PULLBOX FROM SHOULDER
630+75.00	633+50.60	COOKINGHAM DR	769.5	2995.5	615.6		
636+43.35	640+20.00	COOKINGHAM DR	928.2	1719.2	742.6		
		TOTALS	2434.5	6753.8	1947.6	3471	
		USE	2435	6754	1948	3471	

OPTIONAL PAVEMENT						
SHEET	STA.	STA.	LOCATION	OPTIONAL PAVEMENT (SY)	6" TYPE 1 AGGREGATE BASE (SY)	REMARKS
5	945+46.61		ROUTE 435 LT	0.7	1	
5	946+39.09		ROUTE 435 RT	0.7	1	
7-8	630+75.00	632+88.39	COOKINGHAM DR	2181.3	2181	
8-9	637+14.32	640+20.00	COOKINGHAM DR	3124.7	3125	
9	638+98.40		COOKINGHAM DR RT		289	ENTRANCE
			TOTALS	5307.4	5597	

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: KC
SHEET NO.: 3
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION | DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

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SUMMAY OF QUANTITIES
1 OF 4

GUARDRAIL

SHEET	STA.	STA.	LOCATION	TYPE E GUARDRAIL 6 FT. POST 6 FT- 3 IN SPACING (LF)	MGS GUARDRAIL (LF)	MGS GUARDRAIL 8 FT. POST (LF)	TYPE A CRASHWORTHY END TERMINAL (MASH) (EACH)	BULLNOSE GUARDRAIL SYSTEM (EACH)	BRIDGE APPROACH SECTION (EACH)	MGS END ANCHOR (EACH)
4-5	941+26.55	947+78.35	ROUTE 435 LT			600	1			1
4-5	942+59.01	948+33.14	ROUTE 435 RT			525	1			1
4-5	943+85.75	946+28.85	ROUTE 435	225				2		
7-8	630+68.51	633+06.01	COOKINGHAM DR RT		150		1		1	
8-9	636+92.69	639+17.69	COOKINGHAM DR LT		137.5		1		1	
			TOTALS	225	287.5	1125	4	2	2	2

ROCK DITCH LINER

SHEET	STA.	STA.	LOCATION	LENGTH (FT)	WIDTH (FT)	DEPTH (IN.)	TYPE 1 ROCK DITCH LINER FURNISHING (CY)	TYPE 1 ROCK DITCH LINER PLACING (CY)	SEPARATION GEOTEXTILE (SY)	REMARKS
4-5	942+12.68	945+65.87	ROUTE 435 LT	*	*	8	124.4	124.4	580.5	
4	943+60.26	943+72.33	ROUTE 435	12	4	8	1.2	1.2	5.3	MEDIAN DRAINAGE
4-5	944+25.12	947+30.56	ROUTE 435 RT	*	*	8	124.5	124.5	560.8	
8	635+35.50	636+36.19	COOKINGHAM DR RT	*	*	8	8.4	8.4	37.8	DRAIN FLUME
8	636+99.32	637+47.13	COOKINGHAM DR LT	*	*	8	9.1	9.1	40.9	DRAIN FLUME
						TOTALS	267.6	267.6	1225.3	

* VARIES, SEE PLAN SHEETS.

PAVEMENT MARKING

SHEET	STA.	STA.	LOCATION	CLASS 1 PAVEMENT MARKING PAINT (18-MIL, TYPE P BEADS) 4" WHITE (L.F.)	CLASS 1 PAVEMENT MARKING PAINT (18-MIL, TYPE P BEADS) 4" YELLOW (L.F.)	CLASS 2 PAVEMENT MARKING PAINT (25-MIL., TYPE L BEADS) 6" WHITE (L.F.)	PREFORMED THERMOPLASTIC 24" SOLID WHITE (L.F.)	PREFORMED THERMOPLASTIC 24" SOLID YELLOW (L.F.)	LEFT/RIGHT ARROWS (EA)	REMARKS
4-5	934+33.15	949+33.15	I-435 RT			375				INTERMITTENT LANE LINE
4-5	940+26.54	955+26.54	I-435 LT			375				INTERMITTENT LANE LINE
7	630+00.00	630+31.06	COOKINGHAM DR LT				31			STOP BAR
7-9	630+75.00	640+20.00	COOKINGHAM DR		1891.0					CENTERLINE
7-9	630+75.00	640+20.00	COOKINGHAM DR RT	945.0						EDGELINE
7-9	630+75.00	640+20.00	COOKINGHAM DR LT	945.0						EDGELINE
7-9	630+75.00	640+20.00	COOKINGHAM DR RT	236.0						INTERMITTENT LANE LINE
7-8	630+75.00	633+27.64	COOKINGHAM DR LT	253.0						LANE LINE
7	630+92.93	631+99.13	COOKINGHAM DR LT				23			HASH MARKS
7-9	630+99.17	640+00.83	COOKINGHAM DR					239		HASH MARKS
7	631+41.10		COOKINGHAM DR LT						1	
7	632+65.55		COOKINGHAM DR LT						1	
8-9	633+11.98	640+20.000	COOKINGHAM DR LT	177.0						INTERMITTENT LANE LINE
8-9	636+69.41	640+20.00	COOKINGHAM DR RT	351.0						LANE LINE
9	637+15.12		COOKINGHAM DR RT						1	
9	638+35.88		COOKINGHAM DR RT						1	
9	639+58.28		COOKINGHAM DR RT						1	
9	640+69.42	640+96.28	COOKINGHAM DR RT				27			STOP BAR
			TOTALS	2907	1891	750	81	239	5	

SLOPE PROTECTION

PLAN SHEET NO.	STA.	STA.	LOCATION	CONCRETE SLOPE PROTECTION (SY)
4-5	943+48.64	944+90.39	ROUTE 435 LT	110.4
4-5	945+18.34	946+58.22	ROUTE 435 RT	124.7
			TOTAL	235.1

SUMMAY OF QUANTITIES
2 OF 4

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	3

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

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

TEMPORARY EROSION CONTROL

SHEET NO.	STA.	STA.	LOCATION	ALTERNATE DITCH CHECK (FT)	SEDIMENT TRAP EXCAVATION (CY)	SEDIMENT TRAP ROCK (CY)	TURF REINFORCEMENT MAT (SY)	EROSION CONTROL BLANKET TYPE 3B (SY)	SED. REM. (CY)
21	941+26.43	942+44.03	ROUTE 435 LT					82.4	
21	941+26.43	943+55.3	ROUTE 435 LT					945.8	
21	941+26.51		ROUTE 435 LT		5.0	5.0			
21	941+26.51	942+34.12	ROUTE 435 LT				70.1		
21	942+34.12		ROUTE 435 LT	12					1
21	942+59.01		ROUTE 435 RT		5.0	5.0			
21	942+59.01	944+27.49	ROUTE 435 RT				117.2		
21	942+59.01	945+38.69	ROUTE 435 RT					790.4	
21	942+59.01	944+39.92	ROUTE 435 RT					223.0	
21	943+43.25		ROUTE 435 RT	12					1
21	943+52.26		ROUTE 435	12					1
21	944+27.49		ROUTE 435 RT	12					1
21	944+72.16	947+78.36	ROUTE 435 LT					873.7	
21	945+56.49	947+78.36	ROUTE 435 LT					139.5	
21	945+57.71		ROUTE 435 LT	12					1
21	945+57.51	947+78.36	ROUTE 435 LT				150.5		
21	946+45.00		ROUTE 435	12					1
21	946+50.08	948+33.15	ROUTE 435 RT					585.8	
21	946+68.04		ROUTE 435 LT	12					1
21	947+09.39	948+33.15	ROUTE 435 RT					107.4	
21	947+23.54		ROUTE 435 RT	12					1
21	947+23.54	948+33.15	ROUTE 435 RT				77.8		
21	630+75.00	633+72.37	COOKINGHAM RD LT					511.3	
21	630+75.00	632+83.42	COOKINGHAM RD RT					398.2	
21	636+26.34	640+20.00	COOKINGHAM RD RT					356.0	
21	637+73.24	640+20.00	COOKINGHAM RD LT					500.6	
21	639+05.97	640+20.00	COOKINGHAM RD RT					66.2	
			TOTAL	96	10	10	415.6	5580.3	8

SEEDING AND MULCH

SHEET NO.	STA.	STA.	LOCATION	COOL SEESON GRASS SEEDING (AC)	TEMP. SEED AND MULCH (AC)	MULCHING (AC)
4	941+26.43	942+44.03	ROUTE 435 LT	0.1	0.1	0.2
4	941+26.43	943+55.3	ROUTE 435 LT	0.2	0.1	0.3
4	941+26.51	942+34.12	ROUTE 435 LT	0.1	0.1	0.2
4	942+59.01	944+27.49	ROUTE 435 RT	0.1	0.1	0.2
4	942+59.01	945+38.69	ROUTE 435 RT	0.2	0.1	0.3
4	942+59.01	944+39.92	ROUTE 435 RT	0.1	0.1	0.2
5	944+72.16	947+78.36	ROUTE 435 LT	0.2	0.1	0.3
5	945+56.49	947+78.36	ROUTE 435 LT	0.1	0.1	0.2
5	945+57.51	947+78.36	ROUTE 435 LT	0.1	0.1	0.2
5	946+50.08	948+33.15	ROUTE 435 RT	0.1	0.1	0.2
5	947+09.39	948+33.15	ROUTE 435 RT	0.1	0.1	0.2
5	947+23.54	948+33.15	ROUTE 435 RT	0.1	0.1	0.2
7	630+75.00	633+72.37	COOKINGHAM DR LT	0.1	0.1	0.2
7	630+75.00	632+83.42	COOKINGHAM DR RT	0.1	0.1	0.2
8-9	636+26.34	640+20.00	COOKINGHAM DR RT	0.1	0.1	0.2
9	637+73.24	640+20.00	COOKINGHAM DR LT	0.1	0.1	0.2
9	639+05.97	640+20.00	COOKINGHAM DR RT	0.1	0.1	0.2
			TOTAL	2.0	1.7	3.7

CULVERTS

PLAN SHEET NO.	STA.	STA.	LOCATION	18" GROUP A PIPE (LF)	18" SAFETY SLOPE END SECTION (EACH)	CLASS 3 EXCAVATION (CY)
4	943+66.35	946+48.59	ROUTE 435	255	2	98
			TOTAL	255	2	98

CURB & GUTTER

PLAN SHEET NO.	STA.	STA.	LOCATION	TYPE A INTEGRAL CURB (LF)	MODIFIED TYPE B GUTTER (LF)
4-5	942+43.60	945+39.02	ROUTE 435 LT		295.4
4-5	944+40.07	947+08.94	ROUTE 435 RT		268.9
7-8	632+69.18	633+06.01	COOKINGHAM DR RT	36.8	
7-8	633+35.54	633+72.37	COOKINGHAM DR LT	36.8	
			TOTAL	73.6	564.3

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: KC
SHEET NO.: 3
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DATE	DESCRIPTION

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

SUMMAY OF QUANTITIES
3 OF 4

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00	4	64.00			3	SPEED LIMIT AHEAD
WO4-1L	48X48	16.00	2	32.00			6A	MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00	2	32.00			6A	MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00						MERGE (LEFT)
WO4-1aR	48X48	16.00						MERGE (RIGHT)
WO5-1	48X48	16.00	4	64.00			43	ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	4	64.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	4	64.00			18	DETOUR AHEAD
WO20-3	48X48	16.00	9	144.00			20	ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	2	32.00			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00	4	64.00			5A	2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	4	64.00			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00	4	64.00			21	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	2	4.38			59	WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00	4	32.00			26	END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	10	60.00			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	4	12.00			52	END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	14	168.00			25	SPEED LIMIT XX
R3-1	48X48	16.00	2	32.00			-	NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00	4	64.00			-	NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	12	120.00			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	2	25.00			55	ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00					57	POINT OF PRESENCE
CONST-8	48X36	12.00	4	48.00			-	WORK ZONE NO PHONE ZONE
MO4-11-50A-X	36X78	19.50	4	78.00			-	435 EAST DETOUR
MO4-11-51A-X	36X78	19.50	10	195.00				435 WEST DETOUR

616-10.05 CONSTRUCTION SIGNS	TOTAL 1527	
616-10.10 RELOCATED SIGNS		TOTAL

EFFECTIVE: 07-01-2025

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019	2	IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020	4	REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6122040		WORK ZONE CRASH CUSHION (NARROW)
6122041		WORK ZONE CRASH CUSHION (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161020		CHANNELIZER (DRUM-LIKE)
6161022		CHANNELIZER (CONE)
6161025	185	CHANNELIZER (TRIM-LINE)
6161026		CHANNELIZER (VERTICAL PANEL)
6161030	86	TYPE 3 MOVEABLE BARRICADE
6161033	60	DIRECTION INDICATOR BARRICADE
6161040	6	FLASHING ARROW PANEL
6161047		TYPE 3 OBJECT MARKER
6161055	60	SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A		CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099	5	CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D	1,150	TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED
6173700B		TEMP. TRAFFIC BARRIER ANCHORED, CONTRACTOR FURNISHED/RETAINED
6173706		TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION CONTRACTOR FURNISHED/RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION, CONTRACTOR FURNISHED/RETAINED
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6175011B		RELOCATING TEMP. TRAFFIC BARRIER ANCHORED
6175013		RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS
6175020A		RELOCATING TEMP. TRAFFIC BARRIER HEIGHT
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING
6205301B	3220	TEMP. REMOVABLE MARKING TAPE, 4 IN. WHITE
6205303B	200	TEMP. REMOVABLE MARKING TAPE, 4 IN. YELLOW
6162002	8	TEMPORARY LONG-TERM RUMBLE STRIPS
6207001	790	PAVEMENT MARKING REMOVAL

DESCRIPTION | DATE

JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED 9/26/2025

ROUTE COOKINGHAM DRIVE | STATE MO

DISTRICT KC | SHEET NO. 3

COUNTY PLATTE

JOB NO. J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9700

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)

olsson
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PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

SUMMAY OF QUANTITIES
4 OF 4

SCALE
0 20 40 60

℄ I-435
PI 944+92.61
PC 940+77.71
PT 949+06.69
Δ 6°13'2.3" (LT)
D 0°45'0.0"
L 828.97' (ARC)
T 414.89'
R 7,639.44'

STA. 941+26.55 TO
STA. 947+78.35 ℄ RTE. I435 LT.
BUILD 600' MGS GUARDRAIL,
1 END ANCHOR, AND
1 MGS TYPE A CRASHWORTHY
END TERMINAL (MASH)

940

944+90.00

MATCHLINE STA. 944+90.00

SL
(R)
CONCRETE SLOPE PROTECTION
DRAIN FLUME
SEE STD. PLAN 609.40 FOR DETAILS
MODIFIED TYPE B GUTTER
MSE WALL A9702
℄ COOKINGHAM DRIVE
DRAIN FLUME
EX EOS
EX EOP
STA. 942+12.68 TO STA. 945+65.87 435 LT.
BUILD 124.4 CY TYPE 1 ROCK DITCH LINER
WITH GEOTEXTILE FABRIC
WBL
N39°36'53"W
STA. 943+60.26 TO STA. 943+72.33 435 LT.
BUILD 1.2 CY TYPE 1 ROCK DITCH LINER
WITH GEOTEXTILE FABRIC
FO
(U.I.P.)
℄ ROUTE 435
BEGIN CONSTRUCTION
STA. 941+26.54
STA. 943+85.75 TO
STA. 946+28.85 ℄ RTE. I435
BUILD 225' TYPE E GUARDRAIL,
2- BULLNOSE GUARDRAIL SYSTEM
EBL
STA. 944+25.12 TO STA. 947+30.56 435 RT.
BUILD 124.5 CY TYPE 1 ROCK DITCH LINER
WITH GEOTEXTILE FABRIC
MSE WALL A9701
STA. 943+66.35 TO
STA. 946+48.59
ROUTE I-435
OFF. 4.00' LT.
18" GROUP A PIPE (18")
2- 18" SAFETY SLOPE
END SECTIONS
STA. 942+59.01 TO
STA. 948+33.14 ℄ RTE. I-435 RT.
BUILD 525' MGS GUARDRAIL,
1 END ANCHOR, AND
1 MGS TYPE A CRASHWORTHY
END TERMINAL (MASH)

LEGEND

TYPE 1 ROCK DITCH LINER

CONCRETE SLOPE PROTECTION

GENERAL NOTE:
THE APPROXIMATE LOCATION OF PROPERTY LINES AS SHOWN ON THE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE COMMISSION "AS-IS" AND THE COMMISSION EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE.

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

ALL BEARINGS ARE BASED ON STATE PLANE BEARINGS, WEST ZONE.

SEE STANDARD PLAN 609.40 FOR DRAIN FLUME DETAILS.

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT KC
SHEET NO. 4
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

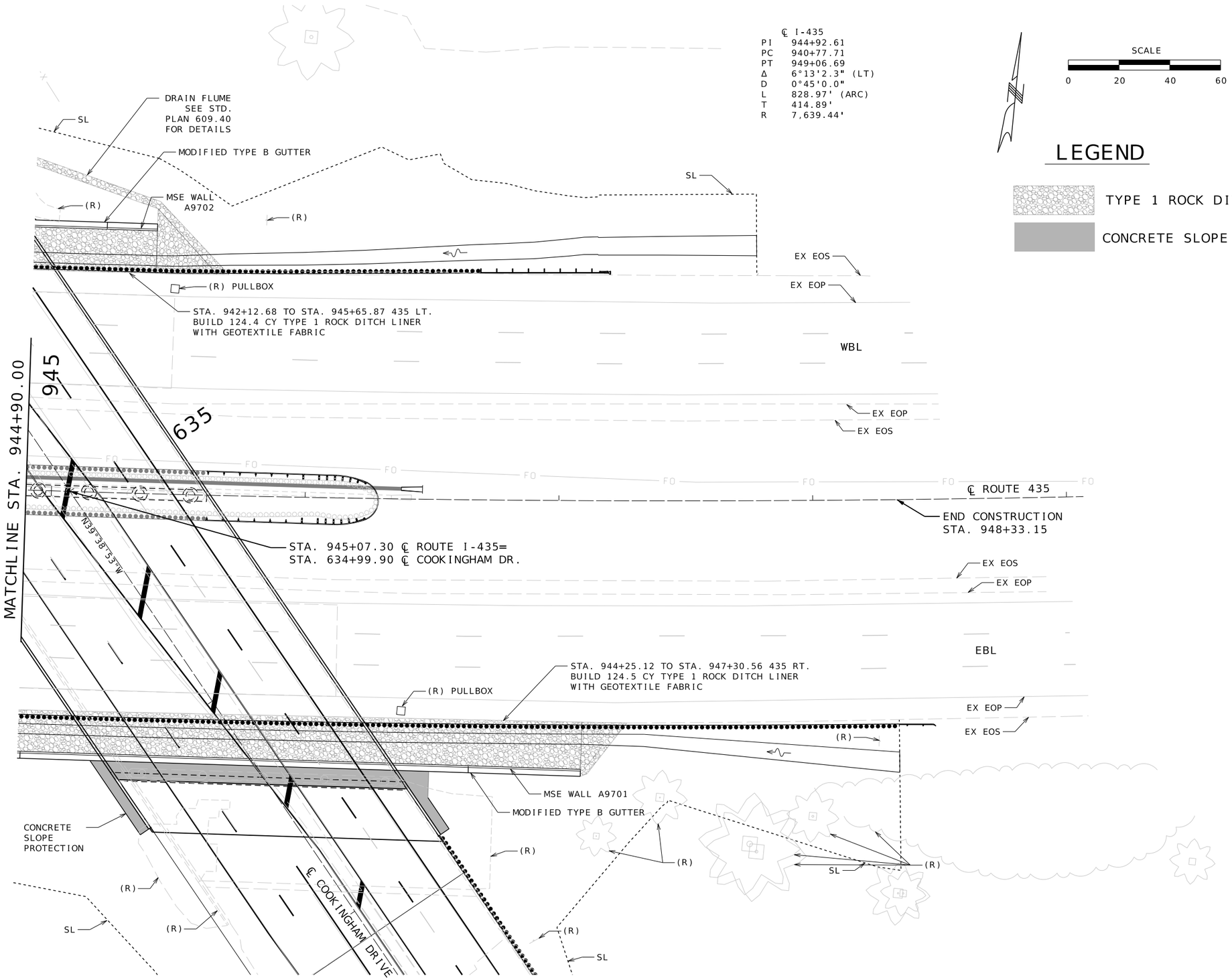
DESCRIPTION | DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

PLAN & PROFILE
SHEET 1 OF 8



SCALE
0 20 40 60

LEGEND

TYPE 1 ROCK DITCH LINER

CONCRETE SLOPE PROTECTION

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	5

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

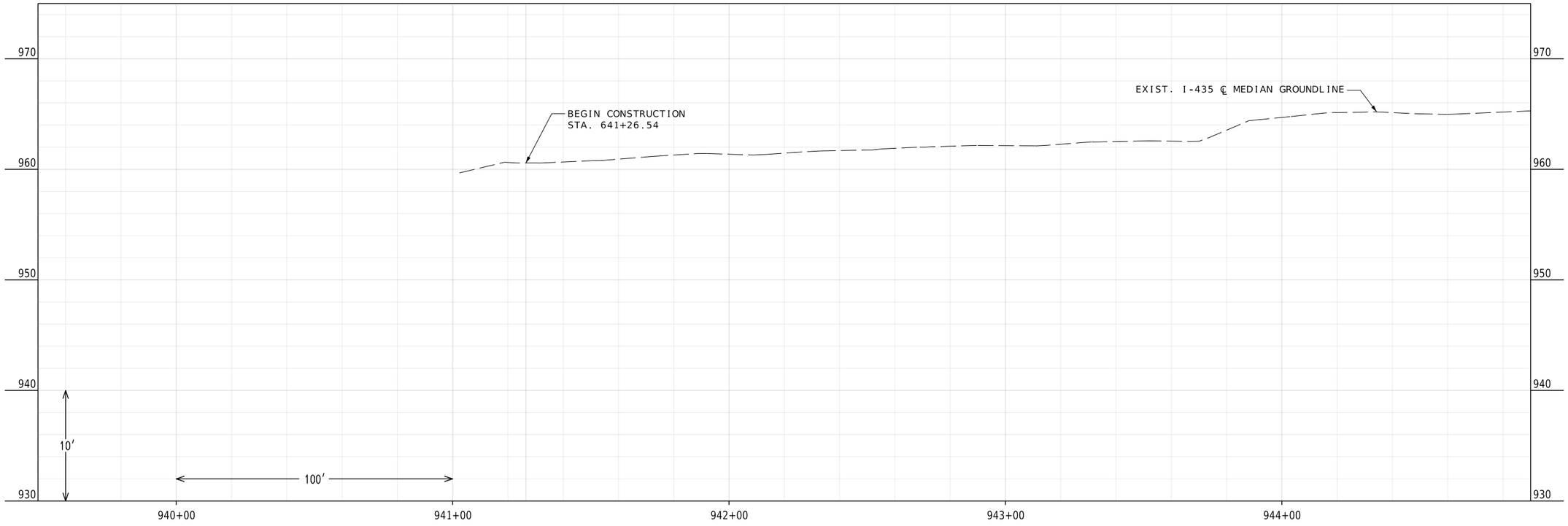
DATE	DESCRIPTION

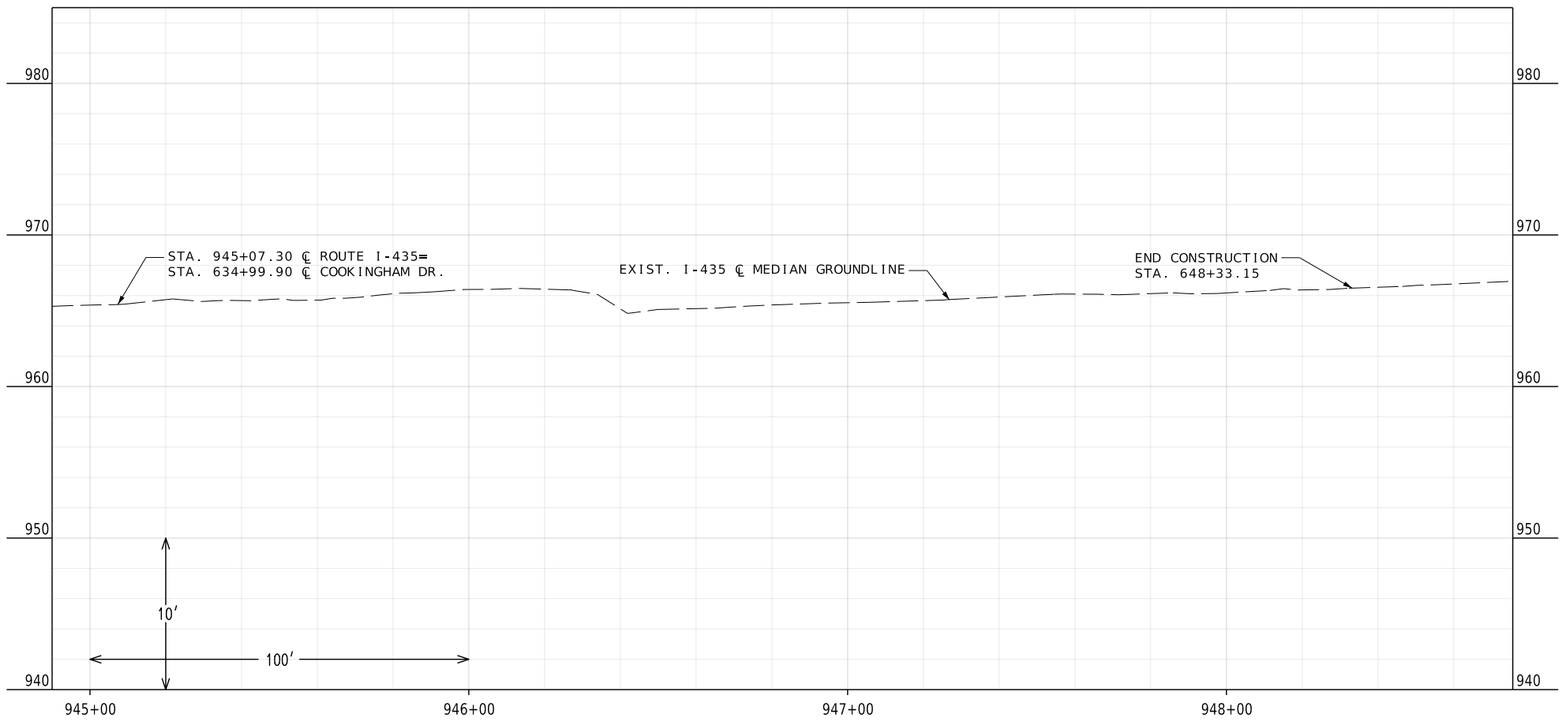
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

PLAN & PROFILE
SHEET 2 OF 8





GRANT C. LUCKENBILL NUMBER PE-2012018100

9-26-25

GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	6

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

olsson
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PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

PLAN & PROFILE
SHEET 3 OF 8

℄ RAMP 2
PI 20+70.85
PC 18+30.61
PT 22+90.05
Δ 41°21'0.0" (LT)
D 9°0'0.0"
L 459.44' (ARC)
T 240.24'
R 636.62'

STA. 629+99.90 ℄ COOKINGHAM DR. =
STA. 23+99.90 ℄ RAMP 2
STA. 0+00.00 ℄ RAMP 4

℄ COOKINGHAM DRIVE
N39°38'53"W

℄ RAMP 2
N65°21'07"E
PT STA 22+90.05

℄ RAMP 4
N65°21'07"E

75°0'0"
75°0'0"

BEGIN PROJECT
STA. 630+75.00

MATCHLINE STA. 632+40.00

EX EOS
EX EOP
D.N.D.
630
(R)
EOS
EOP
SAWCUT

STA. 630+68.51 TO STA. 633+06.01
℄ COOKINGHAM DRIVE RT.
BUILD 150' MGS GUARDRAIL,
1 BRIDGE APPROACH TRANSITION,
AND 1 MGS TYPE A CRASHWORTHY
END TERMINAL (MASH)

SCALE
0 20 40 60

PLAN & PROFILE
SHEET 4 OF 8

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	7

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

SCALE
0 20 40 60

℄ I-435
PI 944+92.61
PC 940+77.71
PT 949+06.69
Δ 6°13'2.3" (LT)
D 0°45'0.0"
L 828.97' (ARC)
T 414.89'
R 7,639.44'

LEGEND

TYPE 1 ROCK DITCH LINER

CONCRETE SLOPE PROTECTION

STA. 632+88.39 TO STA. 633+35.35
℄ COOKINGHAM DRIVE
BUILD 945.0 SY CONCRETE APPROACH PAVEMENT

STA. 634+99.90 ℄ COOKINGHAM DR. =
STA. 945+07.30 ℄ ROUTE 435

MATCHLINE STA. 632+40.00

MATCHLINE STA. 637+80.00

℄ COOKINGHAM DRIVE

℄ ROUTE 435

635

945

EBL

WBL

N39°38'53"W

SL

(R)

EOS

EX EOS

EX EOP

CONCRETE APPROACH PAVEMENT

CONCRETE SLOPE PROTECTION

BRIDGE APPROACH SLAB

TYPE 1 ROCK DITCH LINER

DRAIN FLUME SEE STD. PLAN 609.40 FOR DETAILS

MODIFIED TYPE B GUTTER

MSE WALL A9701

MSE WALL A9702

(R) PULLBOX

U.I.P.

STA. 636+64.45 TO STA. 637+14.32
℄ COOKINGHAM DRIVE
BUILD 945.0 SY CONCRETE APPROACH PAVEMENT

STA. 636+99.32 TO STA. 637+47.13
℄ COOKINGHAM DRIVE LT.
BUILD 9.1 CY ROCK FLUME
WITH GEOTEXTILE FABRIC

STA. 635+35.50 TO STA. 636+36.19
℄ COOKINGHAM DRIVE RT.
BUILD 8.4 CY ROCK FLUME
WITH GEOTEXTILE FABRIC

EXIST. BRIDGE NO. A3287
STA. 633+08.23 ℄ COOKINGHAM DR.
(REMOVE)

BRIDGE NO. A9700
STA. 633+59.74 ℄ COOKINGHAM DR.
PRESTRESSED CONCRETE NU63
GIRDERS (138'-138')
92'-0" ROADWAY WIDTH WITH 42"
VERTICAL PARAPET WALL LT. & RT.

PLAN & PROFILE
SHEET 5 OF 8

GRANT C. LUCKENBILL NUMBER PE-2012018100
5-26-25
GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT KC
SHEET NO. 8
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

STA. 636+92.69 TO STA. 639+17.69
℄ COOKINGHAM DRIVE LT.
BUILD 137.5' MGS GUARDRAIL,
1 BRIDGE APPROACH TRANSITION,
AND 1 MGS TYPE A CRASHWORTHY
END TERMINAL (MASH)

STA. 640+99.90 ℄ COOKINGHAM DR.=
STA. 12+17.78 ℄ RAMP 1
STA. 0+00.00 ℄ RAMP 3

MATCHLINE STA. 637+80.00

640

SL
(R)
EOS
EX EOS
D.N.D.
END PROJECT
STA. 640+20.00
℄ COOKINGHAM DRIVE
N39°38'53"W
SAWCUT
R 25'
R 100'
U.I.P.
EX EOP
℄ RAMP 1
N65°21'07"E
S65°21'07"W
℄ RAMP 3
75°0'0"
OUTER ROAD

TYPE I DRWY. RT.
STA. 638+98.40
℄ COOKINGHAM DR.
W= 20'
GR= -1.57%
AGGREGATE SURFACE

SCALE
0 20 40 60

PLAN & PROFILE
SHEET 6 OF 8

GRANT C. LUCKENBILL
NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	9

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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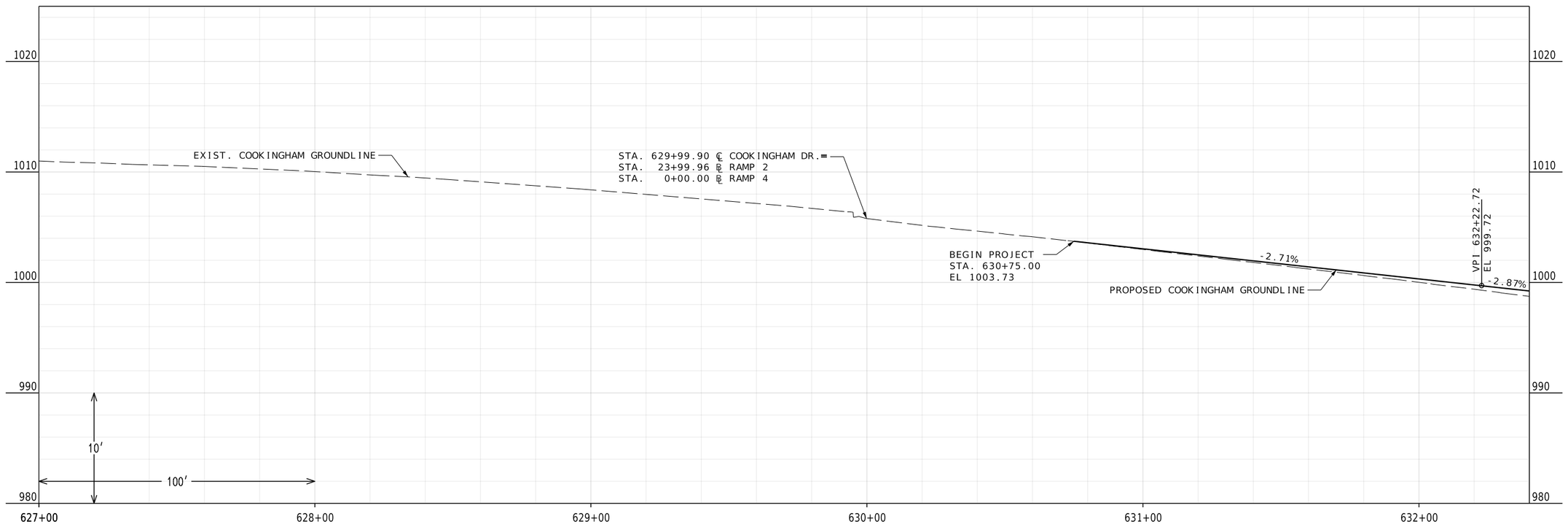
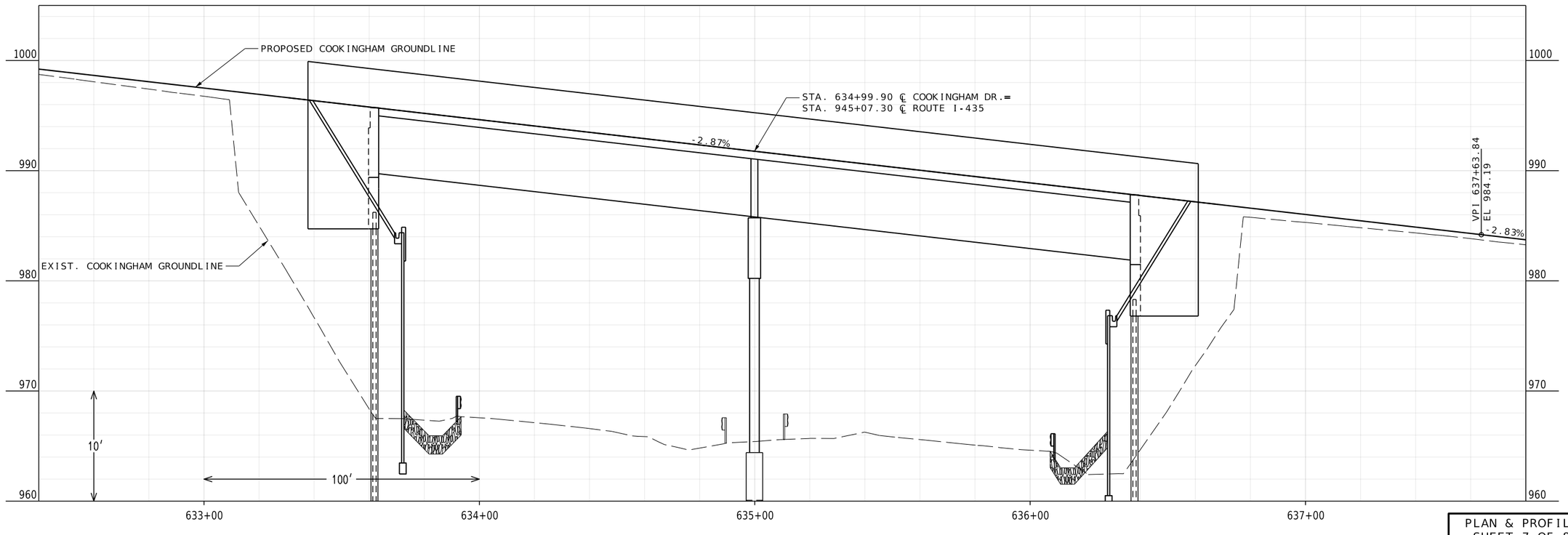
olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592





GRANT C. LUCKENBILL NUMBER PE-2012018100

9-26-25

GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	10

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

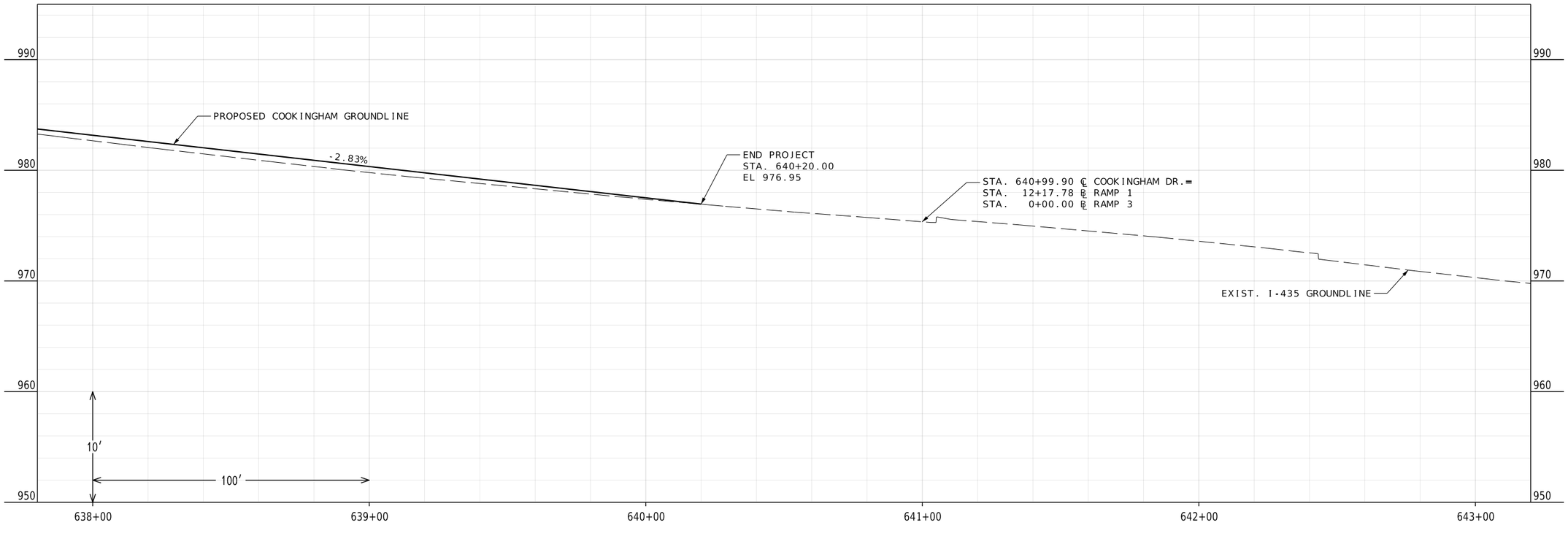
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

PLAN & PROFILE
SHEET 7 OF 8



GRANT C. LUCKENBILL NUMBER PE-2012018100

9-26-25

GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	11

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

PLAN & PROFILE
SHEET 8 OF 8

ALL PROJECT COORDINATES HAVE BEEN PROJECTED FROM THE MISSOURI STATE PLANE COORDINATE (SPC) SYSTEM OF 1983 USING AN AVERAGE PROJECT PROJECTION (GRID TO GROUND) FACTOR. TO GET BACK TO STATE PLANE COORDINATES MULTIPY THE PROJECT COORDINATES BY THE AVERAGE GRID FACTOR AS SHOWN IN THE "REFERENCE CONTROL INFORMATION" PORTION OF THIS TABLE.

PROJECT COORDINATE INFORMATION

COORDINATE SYSTEM	STATE PLANE, MISSOURI WEST
HORIZONTAL DATUM	NAD 1983
VERTICAL DATUM	NAVD 1988
GEOID MODEL	PLATTE COUNTY
ELEVATIONS DETERMINED BY	GPS OBSERVATIONS
PROJECT PROJECTION FACTOR	1.00010131

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM	NAD 1983
CONTROL STATION	PL-06
DESIGNATION	PL-06
CORS_ID	
PID	165006
LATITUDE	39°18'24.53538"
LONGITUDE	94°37'08.25323"
NORTHING (M)	348516.2920
EASTING (M)	839740.2450
ZONE	WEST
PROJECT AVERAGE GRID FACTOR	0.99989870

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

PROJECT NORTHING X AVERAGE GRID FACTOR
= STATE PLANE NORTHING
PROJECT EASTING X AVERAGE GRID FACTOR
= STATE PLANE EASTING

EXAMPLE: CONTROL POINT #5027
N 1142683.91 X 0.99989870 = N 1142568.156
E 2760693.65 X 0.99989870 = E 2760413.992

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT LISTING

SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
	949+06.69	ROUTE 435	1027.15'	1142683.91	2760693.65	1017.48	1/2" REBAR W/ CONTROL POINT CAP IN CONC.	GPS #5027
	635+66.49	COOKINGHAM	190.01'	1143811.35	2760130.29	985.35	1/2" REBAR W/ CONTROL POINT CAP IN CONC.	GPS #5030
				1144937.34	2758563.05	973.83	1/2" REBAR W/ CONTROL POINT CAP IN CONC.	GPS #5056
ALIGNMENTS								
COOKINGHAM								
	627+00.00	℄		1143022.94	2760536.87		BEGIN ALIGNMENT	
	645+35.46	℄		1144436.20	2759365.72		END ALIGNMENT	
RTE I435								
	940+77.71	℄		1143623.13	2759597.23		BEGIN ALIGNMENT/PC CURVE	
	944+92.61	RT	11.258	1143626.64	2760012.11		PI CURVE Δ= 6°13'2.3" LT.	
				1151262.29	2759532.46		CC CURVE	
	949+06.69	℄		1143675.07	2760424.17		END ALIGNMENT/PT CURVE	
RAMP 1								
	8+88.79	℄		1143963.62	2759344.62		BEGIN ALIGNMENT	
	12+17.78	℄		1144100.83	2759643.63		END ALIGNMENT	
RAMP 2								
	18+30.61	℄		1143176.87	2759797.16		BEGIN ALIGNMENT/PC CURVE	
	20+70.85	RT	43.82	1143107.82	2760027.26		PI CURVE Δ= 41°21'0" LT.	
				1143786.63	2759980.12		CC CURVE	
	22+90.05	℄		1143208.02	2760245.62		PT CURVE	
	23+99.96	℄		1143253.85	2760345.51		END ALIGNMENT	
RAMP 3								
	0+00.00	℄		1144100.83	2759643.63		BEGIN ALIGNMENT	
	1+29.57	℄		1144154.86	2759761.40		END ALIGNMENT	
RAMP 4								
	0+00.00	℄		1143253.85	2760345.51		BEGIN ALIGNMENT	
	3+26.26	℄		1143389.92	2760642.05		END ALIGNMENT	

COORDINATE POINT SHEET
SHEET 1 OF 1

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT KC | SHEET NO. 12
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

SPACING AND TAPER LENGTHS FOR WORK ZONE SIGNS, CHANNELIZERS AND CONCRETE BARRIER

SIGN SPACING FOR ADVANCE SIGN SERIES (1)		
PERMANENT POSTED SPEED MPH	UNDIVIDED HIGHWAYS	DIVIDED HIGHWAYS
0-35	200′	200′
40-45	350′	500′
50-55	500′	1000′
60-70	1000′	SA - 1000′ SB - 1500′ SC - 2640′

TAPER LENGTHS AND END TREATMENTS FOR CONCRETE BARRIER				
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (2)			END TREATMENT (3)
	10′	11′	12′	
<40	160′	168′	176′	BARRIER HEIGHT TRANSITION
>40	160′	168′	176′	APPROVED CRASH CUSHION

TAPER LENGTHS AND SPACING FOR CHANNELIZERS							
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH			MINIMUM SHOULDER TAPER LENGTH (T1) BASED ON 10′ SHOULDER	BUFFER LENGTH FT.	MAXIMUM CHANNELIZER SPACING	
	10′	11′	12′			THROUGH TAPER	THROUGH WORK AREA
0-35	205′	225′	245′	70′	280′	35′	40′
40-45	450′	495′	540′	150′	400′	40′	80′
50-55	550′	605′	660′	185′	560′	50′	80′
60-70	700′	770′	840′	235′	840′	60′	120′

NOTE:
SEE STANDARD PLAN 616.10 FOR TEMPORARY TRAFFIC CONTROL DEVICES.

NOTES:

(1) SPACING BETWEEN SIGNS AND SPACING BETWEEN LAST SIGN AND FLAGGER, BEGINNING OF TAPER, OF SIGNED CONDITION MAY BE ADJUSTED BY INCREASING TO ACCOMMODATE FIELD CONDITIONS AND VISIBILITY.

(2) TAPER LENGTHS SHOWN INCLUDE LENGTH REQUIRED FOR LANE AND 10′ SHOULDER.

(3) CONCRETE BARRIER MAY BE INSTALLED AT AND 8:1 FLARE RATE FROM THE SHOULDER POINT TO THE LIMITS OF THE CLEAR ZONE WHERE THE SIDE SLOPE IS 6:1 OR FLATTER. CONTRACTOR MY PROVIDE CONCRETE BARRIER AT OWN EXPENSE. INCIDENTAL TO PROJECT.

GENERAL NOTES:

1. AS WITH ALL CONSTRUCTION ACTIVITIES TRAFFIC SITUATIONS ARE SUBJECT TO CHANGE. THE CONTRACTOR SHALL BE AWARE THAT ALL TEMPORARY TRAFFIC CONTROL SHALL CONFORM TO THE STANDARDS OUTLINED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) THE MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION, SECTION 600 AND SHALL FOLLOW THE GUIDELINES IN THE MODOT 'TRAFFIC CONTROL FOR FIELD OPERATIONS MANUAL'.

2. TWO (2) PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE SUPPLIED A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE OF ANY TURNING RESTRICTIONS, LANE CLOSURES, OR DETOURS REQUIRED BY THE TEMPORARY TRAFFIC CONTROL.

3. PLACE A 'ROAD WORK AHEAD' SIGN ON THE APPROACH TO ALL INTERSECTIONS WHERE THE ADVANCE SIGNING FOR THE TEMPORARY TRAFFIC CONTROL EXTENDS PAST THAT INTERSECTION.

4. NOTIFY CHRIS KARLIN. MODOT RESIDENT ENGINEER AT 816-728-0370 (OFFICE) 48-HOURS IN ADVANCE OF ANY LANE CLOSURE OR ROADWAY CLOSURE.

5. ALL EXISTING SIGNS SHALL BE USED IN PLACE. ADJUSTED AND/OR COVERED AS CONDITIONS REQUIRE.

6. REFER TO MODOT STANDARD PLANS 619.10J. SHEETS 1-3 FOR "PAVEMENT EDGE TREATMENT" DETAILS. THE CONTRACTOR SHALL BE REQUIRED TO FOLLOW THIS STANDARD DURING WORKING AND NON-WORKING HOURS.

7. ALL STATIONING, DISTANCES, AND SPACING OF WORK ZONES DEVICES ARE APPROXIMATE AND MAY BE REVISED AS APPROVED BY ENGINEER.

8. TYPE III MOVEABLE BARRICADES TO BE LOCATED AS APPROVED BY THE ENGINEER TO FIT FIELD CONDITIONS.

9. FIRST ORDER OF WORK ON ALL PHASES SHALL BE PLACEMENT OF ALL WORK ZONE WARNING DEVICES AND SIGNS AS NOTED.

10. SIGNS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED OR AS APPROVED BY THE ENGINEER.

11. SIGNS LEFT IN PLACE OVERNIGHT MUST BE MOUNTED AT 5′ MINIMUM.

12. ALTERNATE TRAFFIC CONTROL MAY BE USED AS NEEDED AT THE APPROVAL OF THE ENGINEER.

13. SPEED LIMIT SIGNS INDICATING THE NORMAL SPEED LIMIT SHALL BE INSTALLED AT THE END OF THE WORK ZONE, NO FURTHER WORK ZONES WILL BE ENCOUNTERED WITHIN THE NEXT 1/2 MILE.

14. TEMPORARY SPEED LIMIT SIGNS SHALL BE COVERED OR REMOVED WHEN THE CONDITIONS REQUIRING REDUCED SPEEDS DO NOT EXIST.

15. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF CHANNELIZERS OR CONSTRUCTION SIGNS.

16. DISTANCE MAY BE ADJUSTED (INCREASED, TYPICALLY) ACCORDING TO FIELD CONDITIONS.

17. REFER TO MODOT STANDARD PLAN, 612.20 FOR SAND FILLED IMPACT ATTENUATORS AND 617.20 FOR TEMPORARY CONCRETE TRAFFIC BARRIER.

JEREMY SCOTT STRETZ
NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	13

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

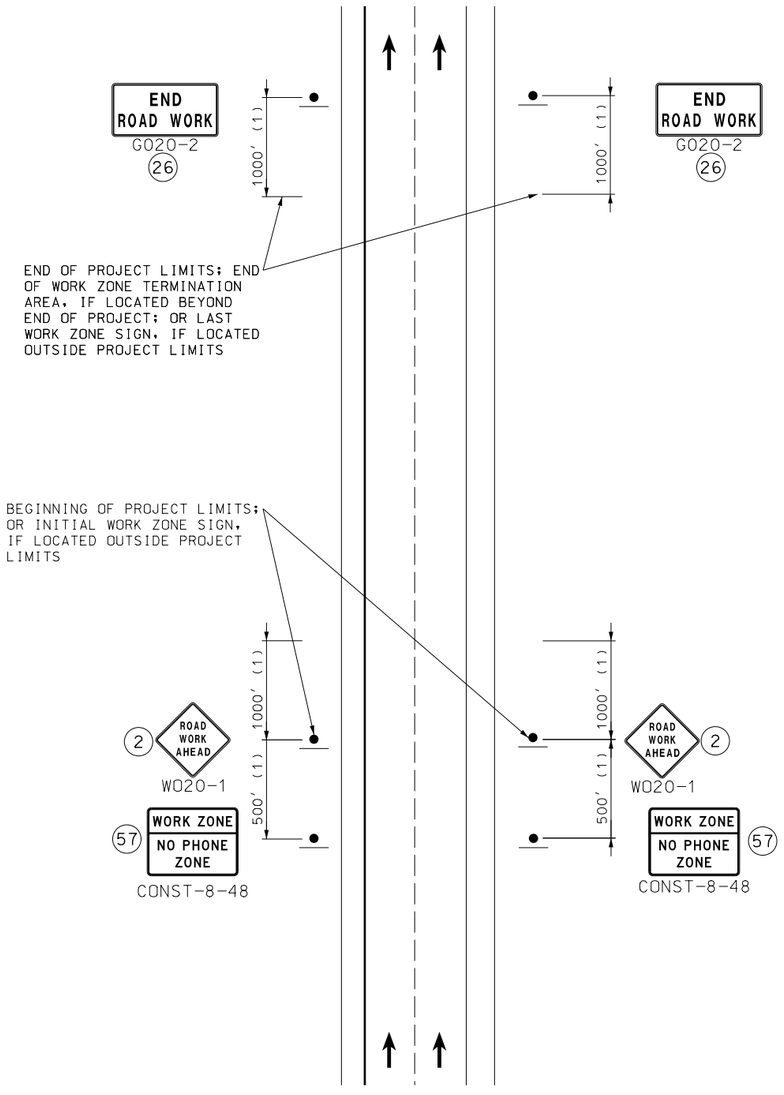
BRIDGE NO.
A9700

DESCRIPTION	DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



I-435
BEGIN/END PROJECT SIGNING

NOTES:

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 ADVANCED WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

JEREMY SCOTT STRETZ
NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	14

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

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

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PHONE: 816.361.1177
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TRAFFIC CONTROL
SHEET 2 OF 8

SIGN SPACING FOR ADVANCE SIGN SERIES (1) (2)		
PERMANENT POSTED SPEED MPH	S UNDIVIDED HIGHWAYS	S DIVIDED HIGHWAYS
0-35	200′	200′
40-45	350′	500′
50-55	500′	1000′
60-70	1000′	SA - 1000′ SB - 1500′ SC - 2640′

SHOULDER WORK NOTES:
PROVIDE SIGNS ON LEFT AND RIGHT SIDES OF DIVIDED HIGHWAYS.

ROAD WORK AHEAD SIGN NOT NEEDED IF SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITY AREA WHERE ANOTHER ROAD WORK AHEAD SIGN IS ALREADY USED.

SEE EPG 616.12 WORK ZONE SPEED LIMIT GUIDELINES.

(1) NEXT XX MILES SIGN NOT REQUIRED FOR NARROW LANE SECTIONS LESS THAN ONE MILE.

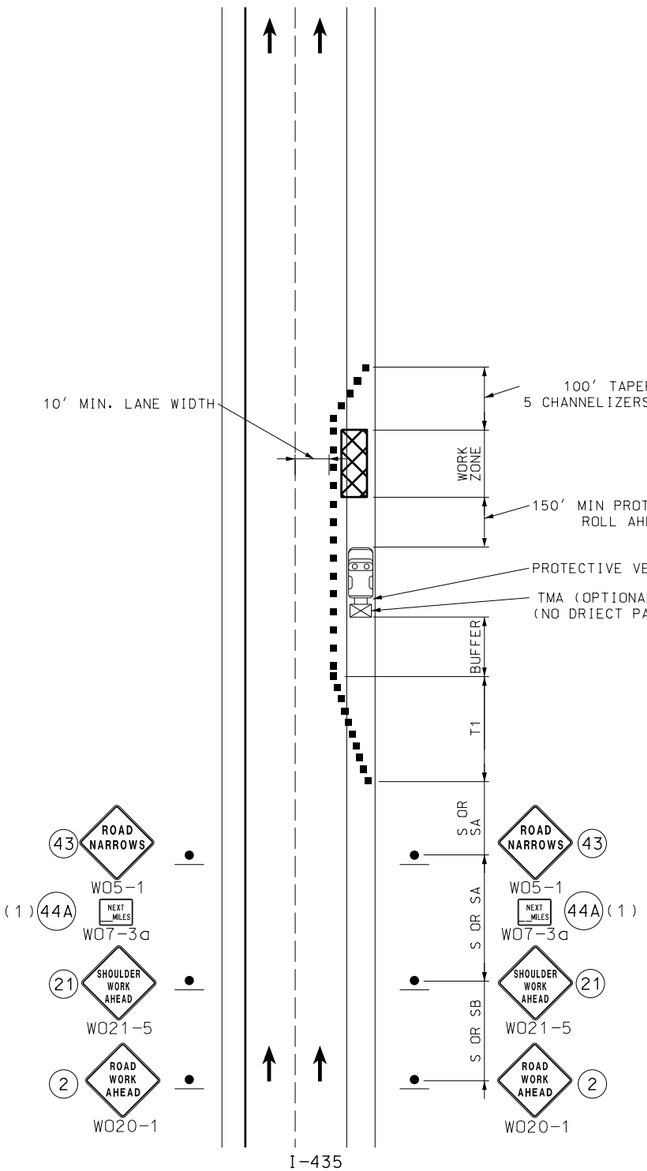
THE PROTECTIVE VEHICLE MAY BE OMITTED IF A TAPER AND CHANNELIZING DEVICES ARE USED.

VEHICLE-MOUNTED SIGNS SHALL BE MOUNTED IN A MANNER SUCH THAT THEY ARE NOT OBSCURED BY EQUIPMENT OR SUPPLIES. SIGN LEGENDS ON VEHICLE-MOUNTED SIGNS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.

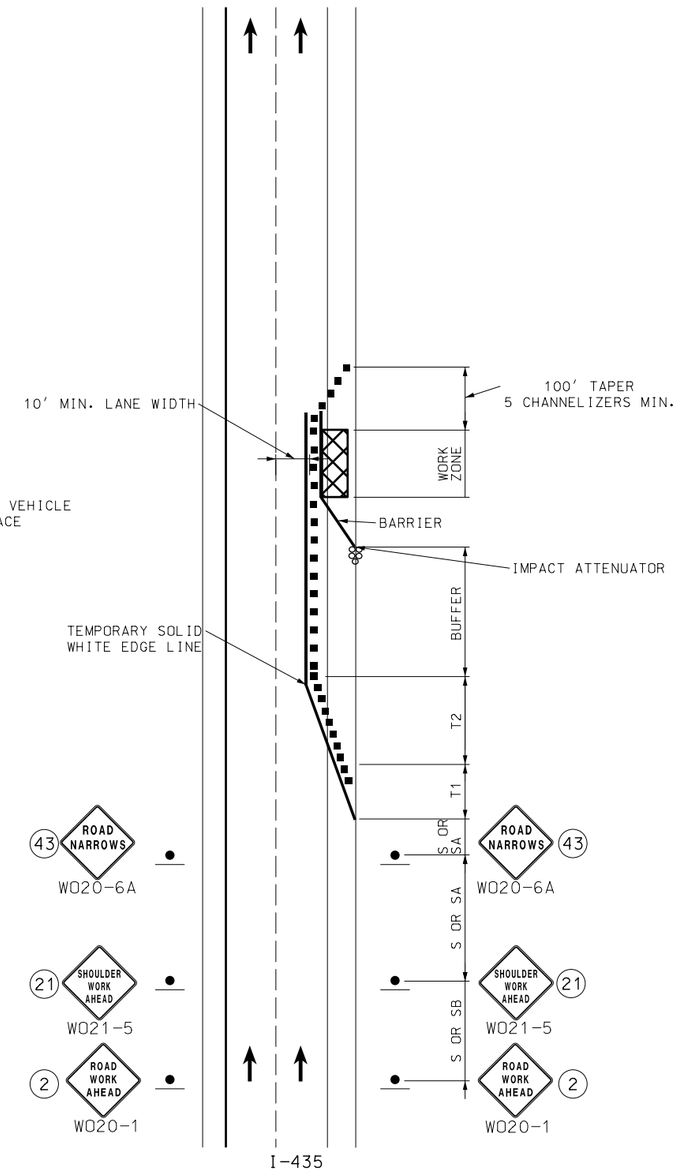
VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF VEHICLES ROTATING LIGHTS OR STROBE LIGHTS.

SHADOW AND WORK VEHICLES SHALL DISPLAY HIGH-DENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

SEE SHEET 13 FOR TAPER LENGTHS AND CHANNELIZER SPACING.



SHOULDER WORK WITH MINOR ENCROACHMENT
ON DIVIDED AND UNDIVIDED HIGHWAYS



SHOULDER CLOSURE WITH MINOR ENCROACHMENT
AND BARRIER PROTECTION

JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER MO# PE-2017023856

DATE PREPARED 9/26/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT KC
SHEET NO. 15
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION
DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

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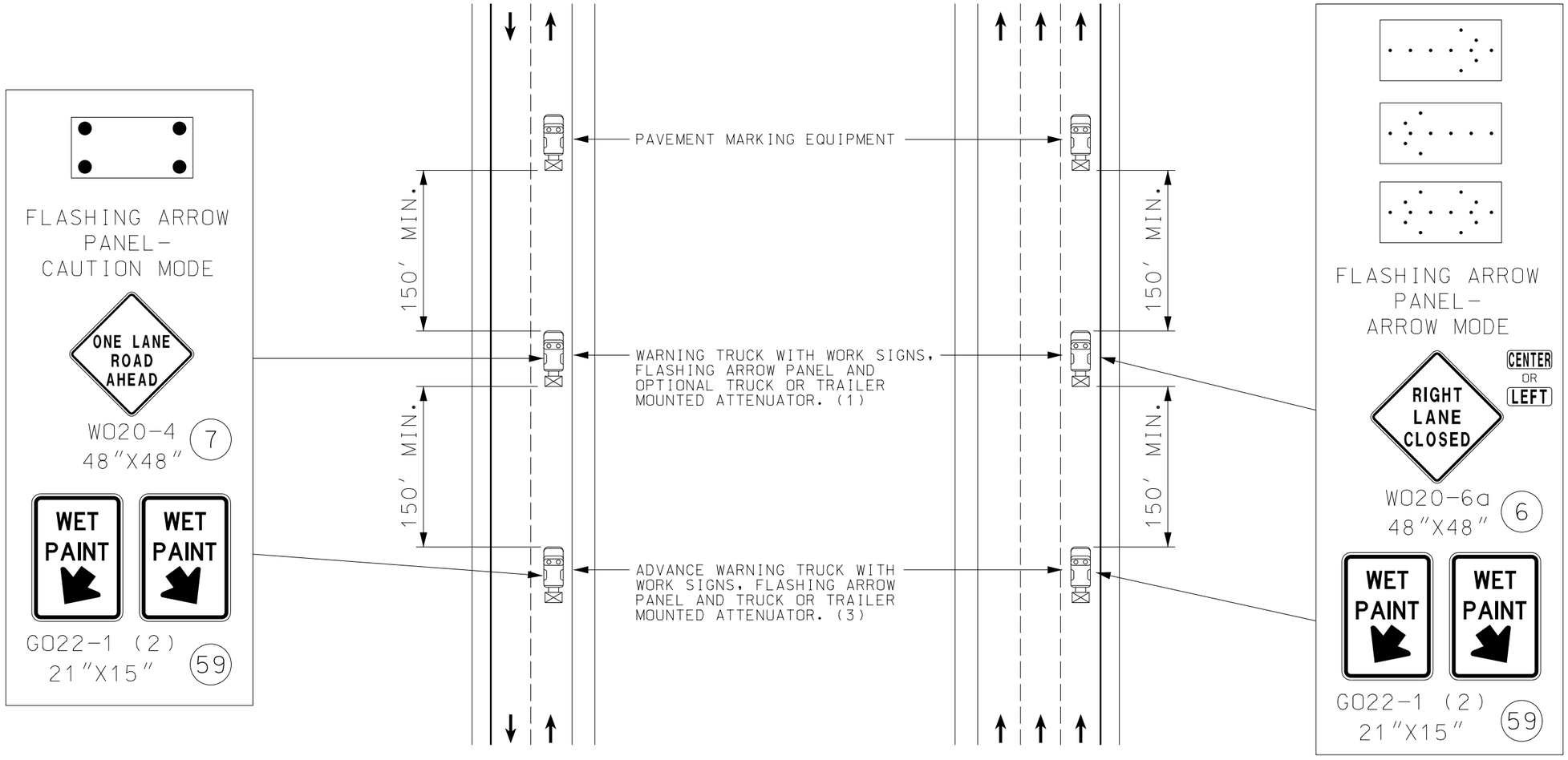


TWO-LANE UNDIVIDED HIGHWAY

MULTI-LANE DIVIDED HIGHWAY

NOTES:
UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PROVIDE ADDITIONAL PROTECTIVE TRUCKS EQUIPPED WITH PROPER WARNING DEVICES.

PROTECTIVE TRUCK AND WORK VEHICLES SHALL DISPLAY HIGH-INTENSITY ROTATION, FLASHING, OSCILLATION, OR STROBE LIGHTS.

VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLES'S HIGH-INTENSITY ROTATION, FLASHING, OSCILLATING, OR STROBE LIGHTS.

(1)TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD IS MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.

(2) WET PAINT SIGNS ARE INSTALLED TO INDICATE THE SIDE IN WHICH THE PAVEMENT MARKING MATERIAL IS BEING APPLIED. AT THE CONTRACTOR'S OPTION, A FRONT FACING WET PAINT SIGN MAY BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT MARKING EQUIPMENT.

(3) ADVANCE WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL OR SPACING SHOWN, WHICH EVER IS GREATER.

STRIPING OPERATION

TRAFFIC CONTROL
SHEET 4 OF 8

JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	16

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

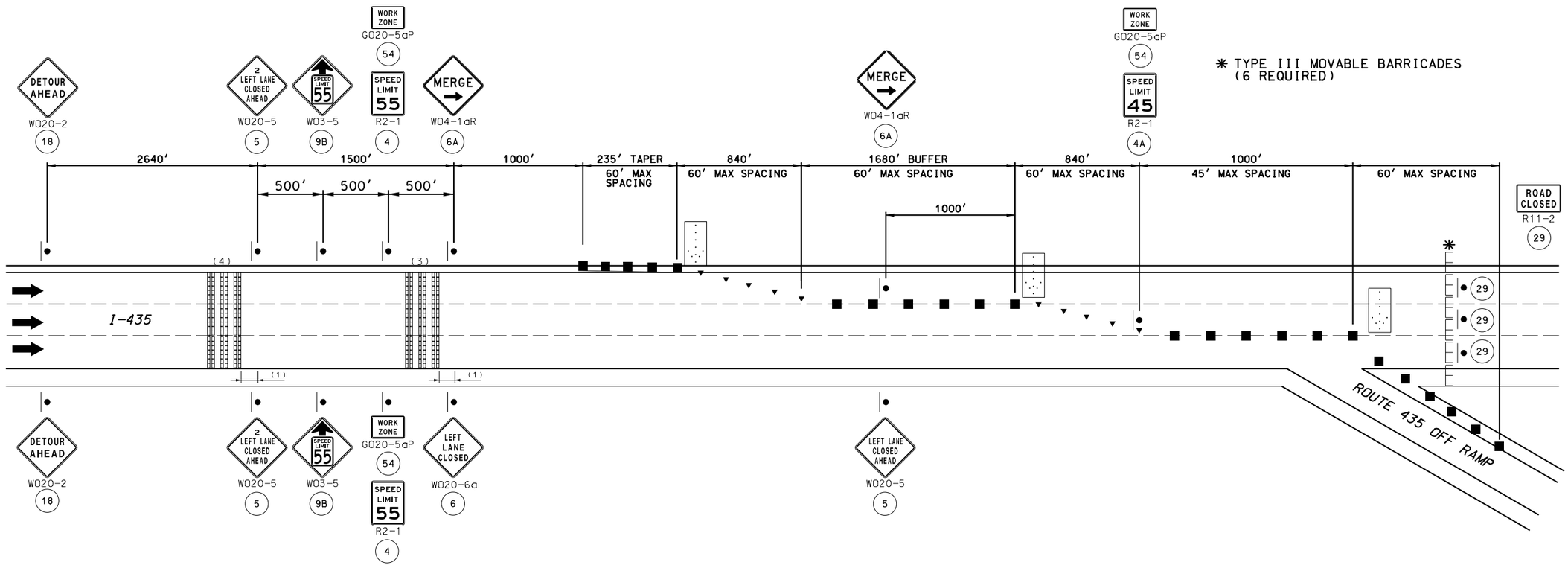
DESCRIPTION	DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

STAGE
ROUTE I-435
BRIDGE REPLACEMENT



NOTES:

NO DIRECT PAY WILL BE MADE FOR RELOCATING, COVERING, UNCOVERING, OR REMOVING SIGNS.

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

LOCATE FLASHING ARROW PANEL AT BEGINNING OF TAPER WHEN FEASIBLE. ARROW PANELS ARE ALWAYS LOCATED BEHIND CHANNELIZERS.

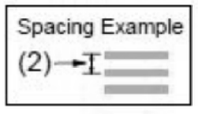
SPACING OF SIGNS SHOWN ON THE PLANS ARE MINIMUM AND MAY BE ADJUSTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

SEE SPECIAL PROVISIONS FOR I-435 CLOSURE RESTRICTIONS.

DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.

(1) SPACINGS MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS.

SHORT-TERM RUMBLE STRIPS		
SPEED (1) MPH	DISTANCE (1)	SPACING (2)
0 - 45 OPTIONAL	120 FT	10 FT
50 - 55	160 FT	15 FT
60 - 70	200 FT	20 FT



Spacing (2) may need to be adjusted if temporary rumbles strips are sliding or moving.

SEE EPG 616.6.87 TEMPORARY RUMBLE STRIPS FOR RUMBLE STRIP GUIDANCE AND LOCATIONS.

TEMPORARY RUMBLE STRIPS SHALL BE ORANGE, IN COLOR.

LONG-TERM RUMBLE STRIPS SHALL CONSIST OF 5 STRIPS SEPARATE AT 10-12 FT. CENTERS OR MANUFACTURE'S RECOMMENDATION.

TWO OR FOUR SETS OF RUMBLE STRIPS MAY BE USED SIMULTANEOUSLY COVERING LOCATIONS (3) AND (4). IF ONLY TWO SETS ARE USED, THE PREFERRED PLACEMENT IS AT LOCATION (3)

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- DIRECTIONAL INDICATOR
- TYPE 3 MOVABLE BARRICADE
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL
- LONG-TERM RUMBLE STRIPS

NOT TO SCALE

JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED: 9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	17

COUNTY: PLATTE

JOB NO.: J4S3489

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A9700

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

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
olsson
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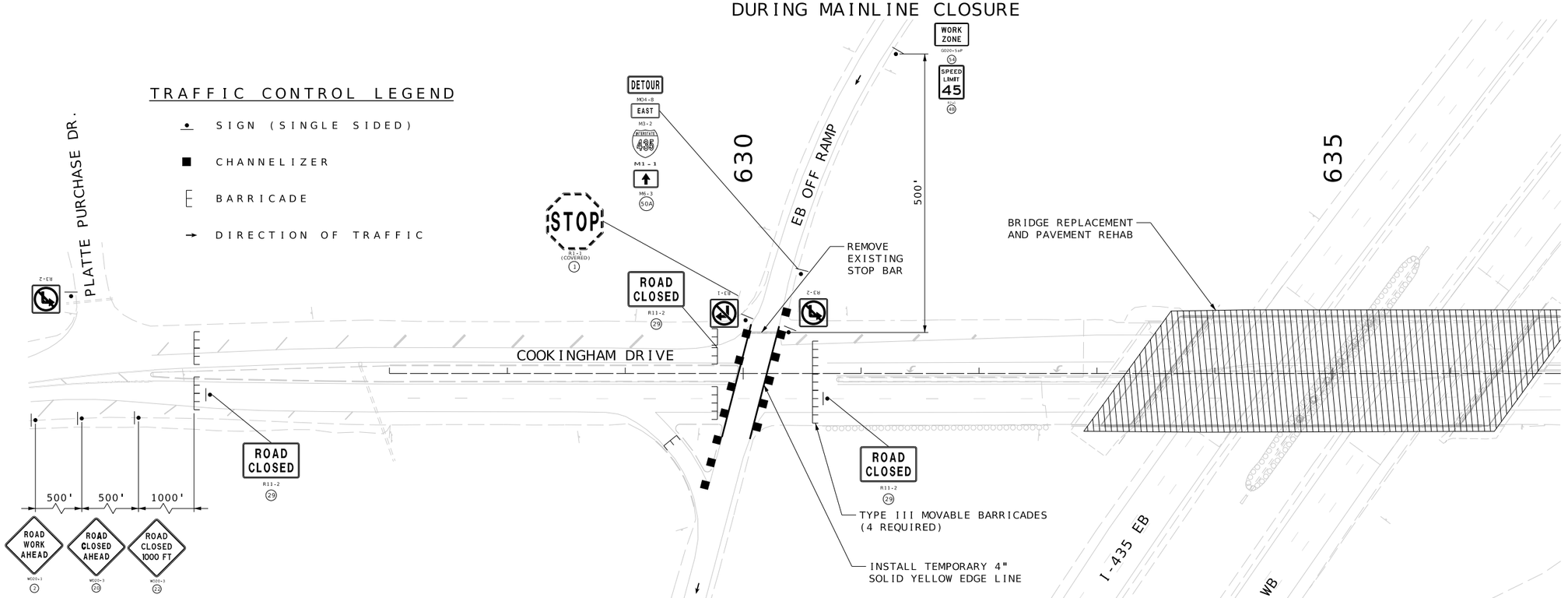
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

TRAFFIC CONTROL SHEET 5 OF 8

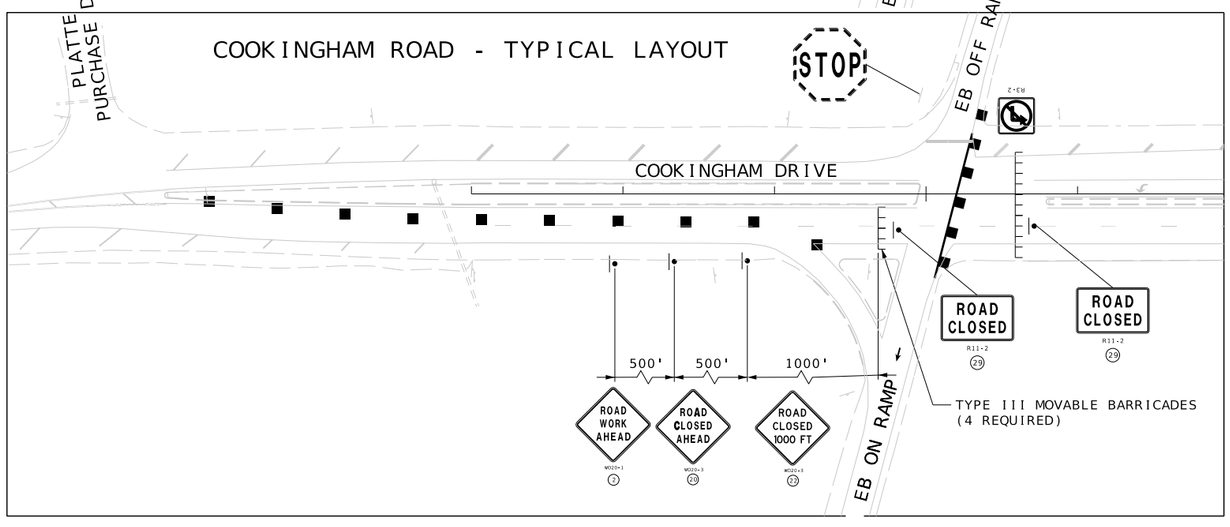
ROUTE I-435
BRIDGE REPLACEMENT
AND COOKINGHAM DRIVE PAVEMENT REHAB
DURING MAINLINE CLOSURE

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- BARRICADE
- DIRECTION OF TRAFFIC



COOKINGHAM ROAD - TYPICAL LAYOUT



SCALE
0 50 100 150

TRAFFIC CONTROL
SHEET 6 OF 8

JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	18

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

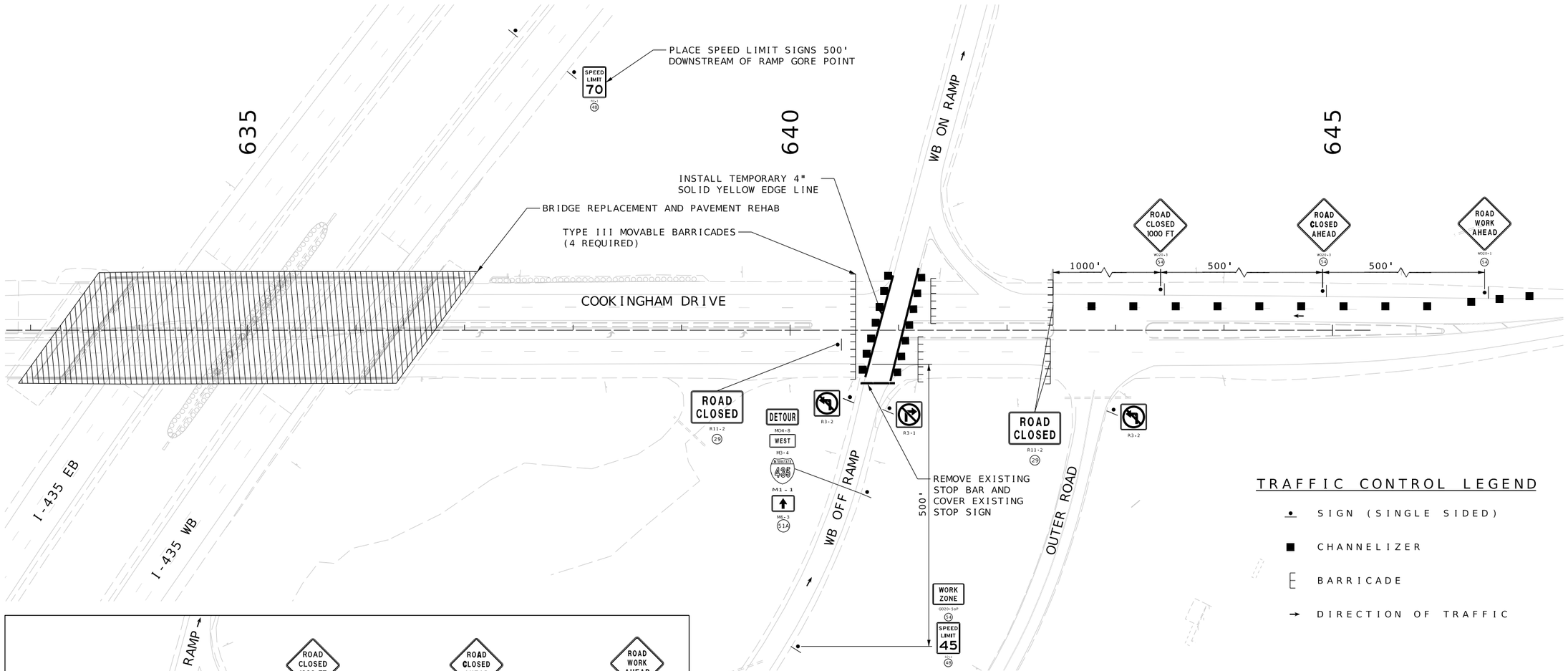
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

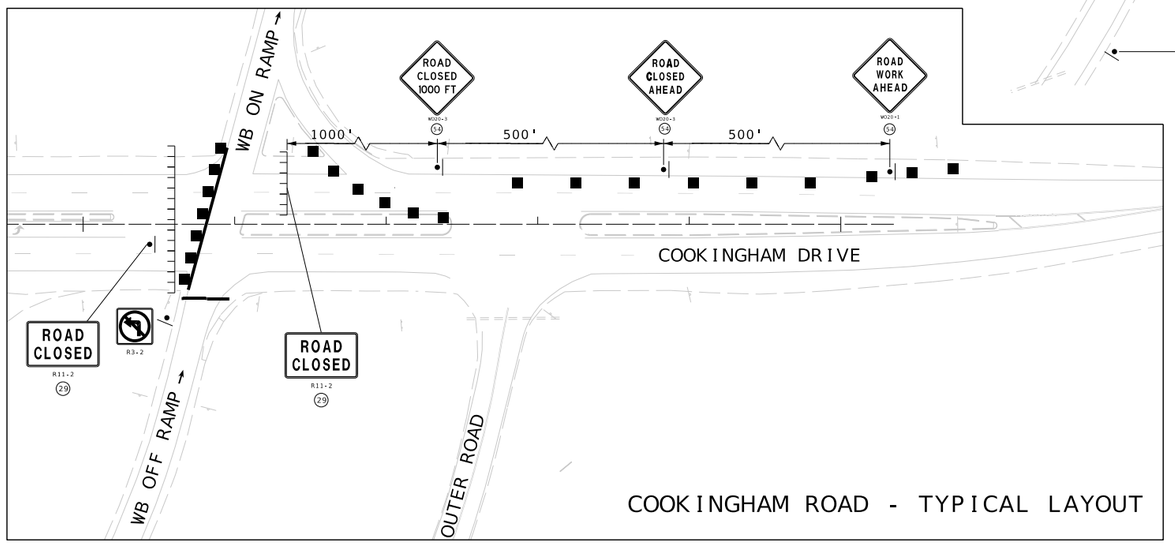
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

ROUTE I-435
BRIDGE REPLACEMENT
AND COOKINGHAM DRIVE PAVEMENT REHAB
DURING MAINLINE CLOSURE





COOKINGHAM ROAD - TYPICAL LAYOUT

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- BARRICADE
- DIRECTION OF TRAFFIC

SCALE
0 50 100 150

TRAFFIC CONTROL
SHEET 7 OF 8

JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	19

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

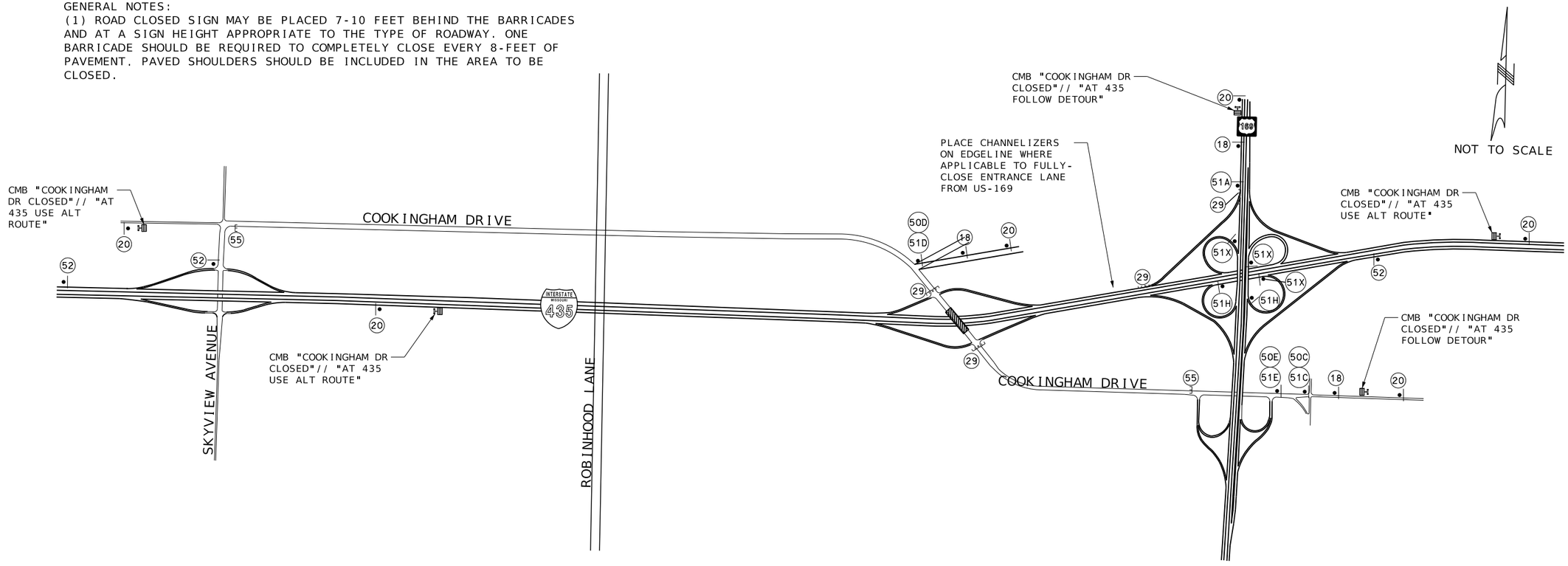
DESCRIPTION	DATE

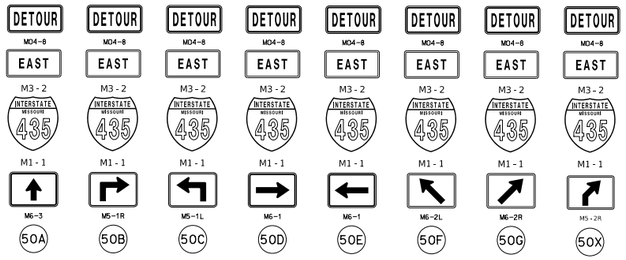
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

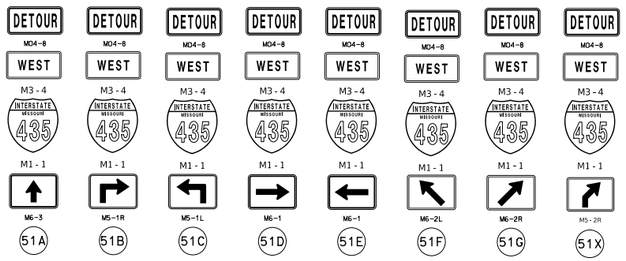
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

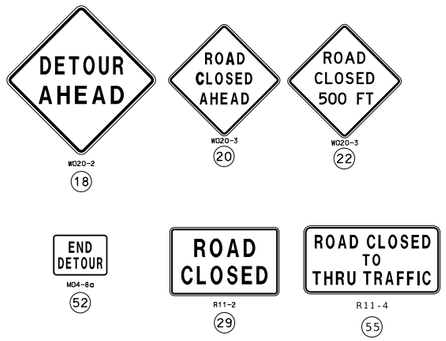
olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

GENERAL NOTES:
(1) ROAD CLOSED SIGN MAY BE PLACED 7-10 FEET BEHIND THE BARRICADES AND AT A SIGN HEIGHT APPROPRIATE TO THE TYPE OF ROADWAY. ONE BARRICADE SHOULD BE REQUIRED TO COMPLETELY CLOSE EVERY 8-FEET OF PAVEMENT. PAVED SHOULDERS SHOULD BE INCLUDED IN THE AREA TO BE CLOSED.









JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED: 9/26/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: KC
SHEET NO.: 20
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION	DATE

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

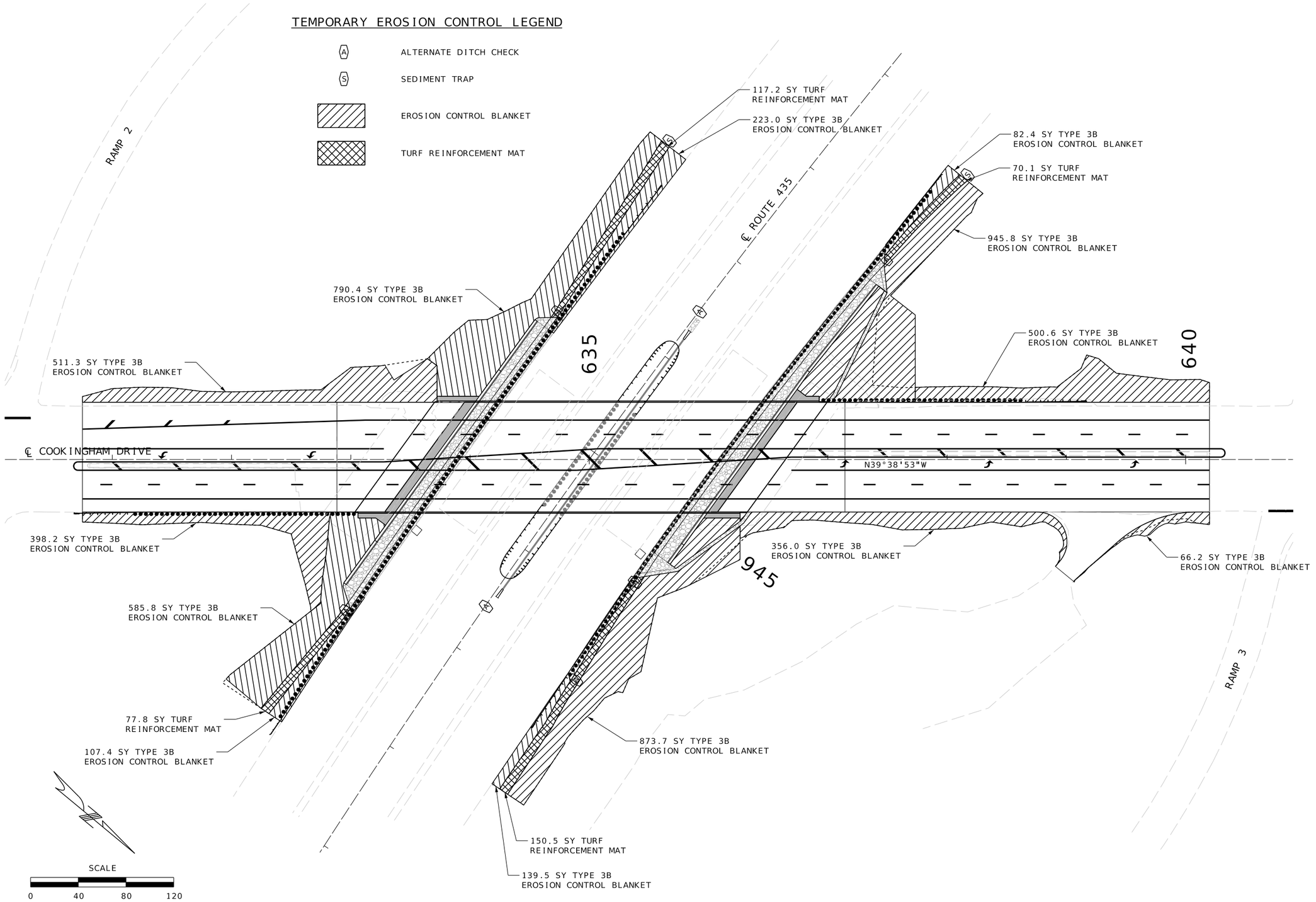
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

TRAFFIC CONTROL
SHEET 8 OF 8

TEMPORARY EROSION CONTROL LEGEND

- (A) ALTERNATE DITCH CHECK
- (S) SEDIMENT TRAP
- EROSION CONTROL BLANKET
- TURF REINFORCEMENT MAT



TEMPORARY EROSION CONTROL SHEET
SHEET 1 OF 1

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL–ENGINEER
MO# PE-2012018100

DATE PREPARED 9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	21

COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

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)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

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COOKINGHAM DRIVE

630

MATCHLINE STA. 635+10.00

EX L#215

EXISTING CABLE-CONDUIT (DND)

EX L#214

EX L#213

EXISTING CABLE-CONDUIT IN 2" CONDUIT (DND)

MATCHLINE STA. 635+10.00

635

435

640

MATCHLINE STA. 640+12.53

COOKINGHAM DRIVE

INSTALL NEW CONCRETE PULL BOX TO INTERCEPT EXISTING CABLE-CONDUIT SPLICE NEW CABLE-CONDUIT TO EXISTING TO RECONNECT CIRCUITRY STA:632+04+49, OFF:60.4' RT.

ABANDON REMNANT OF CABLE-CONDUIT IN PLACE

EXISTING CABLE-CONDUIT CIRCUIT #202 2#6 (DND)

ABANDON REMNANT OF CABLE-CONDUIT IN PLACE

INSTALL NEW BRIDGE CONDUIT SYSTEM ON STRUCTURE FOR FUTURE CONNECTION (SEE BRIDGE PLANS)

ABANDON EXISTING CABLE-CONDUIT IN 2" CONDUIT

INSTALL NEW CONCRETE PULL BOX TO INTERCEPT EXISTING CABLE-CONDUIT SPLICE NEW CABLE-CONDUIT TO EXISTING TO RECONNECT CIRCUITRY STA:638+39.50, OFF:60.0' RT.

INSTALL 4" CONDUIT WITH CABLE-CONDUIT

DND EXISTING FIBER OPTIC LINE

INSTALL NEW CABLE-CONDUIT

INSTALL NEW CONCRETE PULL BOX STA:634+58.53, OFF:272.4' RT.

1

2

3

SCALE

0 30 60 90

LIGHTING LEGEND

	CONTROLLER, LIGHTING		LED-A LUMINAIRE
	CONTROLLER, LIGHTING (EXISTING)		LED-B LUMINAIRE
	WOOD POST		LED-C LUMINAIRE
	POWER SUPPLY	P.S.	POWER SOURCE
JCT.	JUNCTION BOX		PULL BOX (EXISTING)
	PULL BOX CONCRETE TYPE 1		PULL BOX CONCRETE TYPE 2
	PULL BOX PREFORMED TYPE 1		PULL BOX PREFORMED TYPE 2
	CONDUIT, RIGID (TRENCH)		CONDUIT, RIGID (PUSHED)
M	CONDUIT, RIGID (MEDIAN)	B	CONDUIT, RIGID (BRIDGE)
	CONDUIT, RIGID (EXISTING)		CABLE-CONDUIT (EXISTING)
			CABLE-CONDUIT

LIGHTING
SHEET 1 OF 3

JEREMY SCOTT STRETZ
NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	22

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

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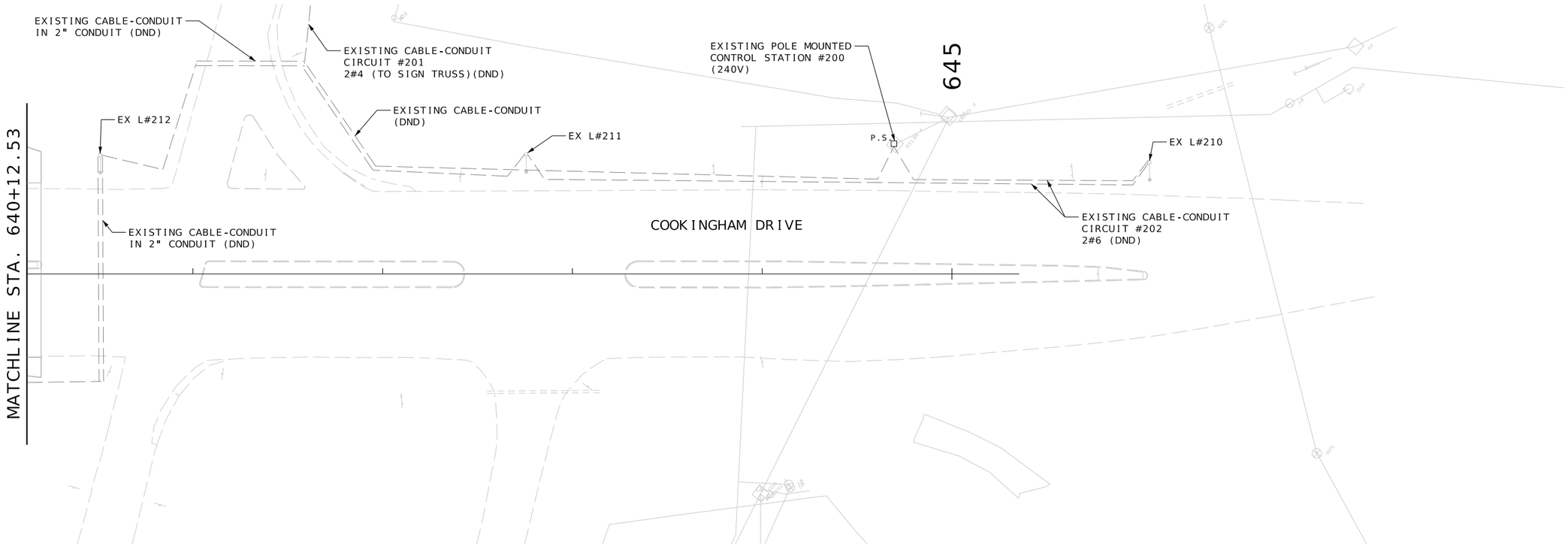

LIGHTING LEGEND			
	CONTROLLER, LIGHTING		LED-A LUMINAIRE
	CONTROLLER, LIGHTING (EXISTING)		LED-B LUMINAIRE
	WOOD POST		LED-C LUMINAIRE
	POWER SUPPLY	P.S.	POWER SOURCE
JCT.	JUNCTION BOX		PULL BOX (EXISTING)
	PULL BOX CONCRETE TYPE 1		PULL BOX CONCRETE TYPE 2
	PULL BOX PREFORMED TYPE 1		PULL BOX PREFORMED TYPE 2
	CONDUIT, RIGID (TRENCH)		CONDUIT, RIGID (PUSHED)
	CONDUIT, RIGID (MEDIAN)		CONDUIT, RIGID (BRIDGE)
	CONDUIT, RIGID (EXISTING)		CABLE-CONDUIT (EXISTING)
			CABLE-CONDUIT

SCALE

0 30 60 90

LIGHTING
SHEET 2 OF 3

JEREMY SCOTT STRETZ
NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	23

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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CABLE AND CABLE CONDUIT

SH. NUM.	CIRCUIT	FROM	TO	CTR. TO CTR.	CONDUIT, 4 IN. RIGID, PUSHED (LF) 9014004	CABLE-CONDUIT 1 IN., 2 CONDUCTORS (AND 1 BARE NEUTRAL) 6 AWG (LF) 9017404	TRENCHING, TYPE I (LF) 9015010
1	EX 202	BOX 1	BOX 2	330	326	336	
1	EX 202	BOX 2	BOX 3	438		444	438
SUBTOTAL					326	780	438
5% FOR SNAKING					X	39	X
TOTAL					326	820	438

PREFORMED PULL BOXES

SH. NUM.	PULL BOX NO.	ROADWAY	STA.	OFF.	PULLBOX, CONCRETE STANDARD (EACH) 9016120
1	BOX 1	COOKINGHAM DRIVE	632+09.58	63.4' RT.	1
1	BOX 2	COOKINGHAM DRIVE	634+58.53	272.4' RT.	1
1	BOX 3	COOKINGHAM DRIVE	638+39.50	60.0' RT.	1
TOTAL					3

JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
10/28/2025

ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: KC
SHEET NO.: 24
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION | DATE

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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SIGNS						CONCRETE FOOTINGS EMBEDDE	STRUCTURAL STEEL POST*				PIPE POST*					BACKING BARS** 2" x 3/8" BARS @ 2.55 LBS PER FT				TOTAL ITEM NO. 9031210	U-CHANNEL POST	PERFORATED SQUARE STEEL TUBE POST						CONCRETE FOOTINGS EMBEDDED	CONCRETE FOOTINGS BOLT DOWN	REMARKS AND OTHER REQUIRED ITEMS
SIGN NO.	SIGN SIZE	STATION	HORZ CLEAR IF NOT STD	LOCATION	SIGN DTL. SHT. NO.	ITEM NO. 9031010	POST DES NO.	POST NO. 1	POST NO. 2	LBS PER FT	TOTAL ITEM NO. 9031210	POST DES NO.	POST NO. 1	POST NO. 2	POST NO. 3	LBS PER FT	TOTAL	NO. EACH	LGTH IN.	TOTAL LF	TOTAL LBS		ITEM NO. 9031260A	2.5 IN. POST NO. 1	2.5 IN. POST NO. 2	TOTAL ITEM NO. 9031280	2.25" INSERT (6 FT) ITEM NO. 9031272A	ANCHORS DRIVEN 7-GA. ITEM NO. 9031281	ANCHORS CONCRETE 7-GA. ITEM NO. 9031285	BREAKWAY ASSEMBLY	ITEM NO. 9031010	ITEM NO. 9031020	
						CY		LF	LF		LBS		LF	LF	LF		LBS		IN.	LF	LBS	LBS	LF	LF		LF		EA	EA	EA	EACH	CY	CY	
1	24"X30"	629+91.52	0.15' RT.	COOKINGHAM DRIVE																				16		16			1				NEW SIGN
2	24"X30"	641+08.54	0.00' RT.	COOKINGHAM DRIVE																				16		16			1				NEW SIGN
3	96"X84"	630+88.00	50.2' LT.	COOKINGHAM DRIVE		0.54	2	15.85	16.10	15	479.25																						REMOVE & RESET ON NEW POSTS
4	ASSEMBLY	632+50.65	51.9' RT.	COOKINGHAM DRIVE																				16		16		1					REMOVE & RESET ON NEW POSTS
5	48"X24"	948+25.21	95.1' RT.	I-435																													REMOVE "ADOPT-A-HIGHWAY" SIGN
6	12"X36"	944+09.86	92.0' RT.	I-435																				16		16		1					REMOVE & RESET ON NEW POSTS
7	36"X48"	945+82.64	108.9' LT.	I-435																													REMOVE "BUCKLE-UP, ITS THE LAW" SIGN
8	12"X36"	944+08.28	93.5' LT.	I-435																				16		16		1					REMOVE & RESET ON NEW POSTS
9	ASSEMBLY	637+51.16	50.4' LT.	COOKINGHAM DRIVE																				16		16		1					REMOVE & RESET ON NEW POSTS
10	48"X48"	638+29.99	52.5' RT.	COOKINGHAM DRIVE																				16		16		1					REMOVE & RESET ON NEW POSTS
11	48"X48"	639+55.96	53.7' LT.	COOKINGHAM DRIVE																				16		16		1					REMOVE & RESET ON NEW POSTS
SUBTOTAL						0.54					479.25															128		6	2				
TOTAL						0.50					480.0															128		6	2				

✳ BREAKAWAY ASSEMBLY IS INCIDENTAL FOR PIPE AND STRUCTURAL STEEL POSTS
✳✳ REFER TO MODOT DETAIL 903.03BL FOR INSTALLATION OF DELINEATORS

ROUND PIPE POST AND FOOTING DATA TABLE

NOM. SIZE	WEIGHT		STUB LENGTH	FOOTING		CONCRETE
(IN.)	LBS/FT	LBS/IN		DIA.	DEPTH	C.Y.
2½	5.79	0.48	4'- 3½"	12"	4'-6"	0.13
3	7.58	0.63	4'- 3½"	12"	4'-6"	0.13
4	10.79	0.90	5'- 3½"	18"	5'-6"	0.36

POST AND FOOTING DATA TABLE

POST DES. NO.	NOM. SIZE	POST WEIGHT LBS/FT	POST WEIGHT LBS/IN	STUB LENGTH	FOOTING DIA.	LEVEL GROUND DEPTH	LEVEL GROUND C.Y.	6:1 GRADE DEPTH	6:1 GRADE C.Y.	4:1 GRADE DEPTH	4:1 GRADE C.Y.	3:1 OR 2:1 GRADE DEPTH	3:1 OR 2:1 GRADE C.Y.
1	W6	9.0	0.75	3'-0"	15"	3'-0"	0.14	3'-2"	0.15	3'-3"	0.16	3'-6"	0.17
2	W6	15.0	1.25	4'-0"	24"	4'-0"	0.47	4'-2"	0.50	4'-3"	0.51	4'-6"	0.54
3	W8	18.0	1.50	4'-6"	28"	4'-6"	0.71	4'-8"	0.73	4'-9"	0.74	5'-0"	0.78
4	W10	22.0	1.83	5'-0"	36"	5'-0"	1.31	5'-2"	1.36	5'-3"	1.39	5'-6"	1.45
5	W10	26.0	2.17	5'-0"	36"	5'-0"	1.31	5'-3"	1.37	5'-5"	1.43	5'-9"	1.52
6	W12	35.0	2.92	5'-6"	36"	5'-6"	1.44	5'-9"	1.52	5'-11"	1.56	6'-3"	1.65

SIGN SUMMARY

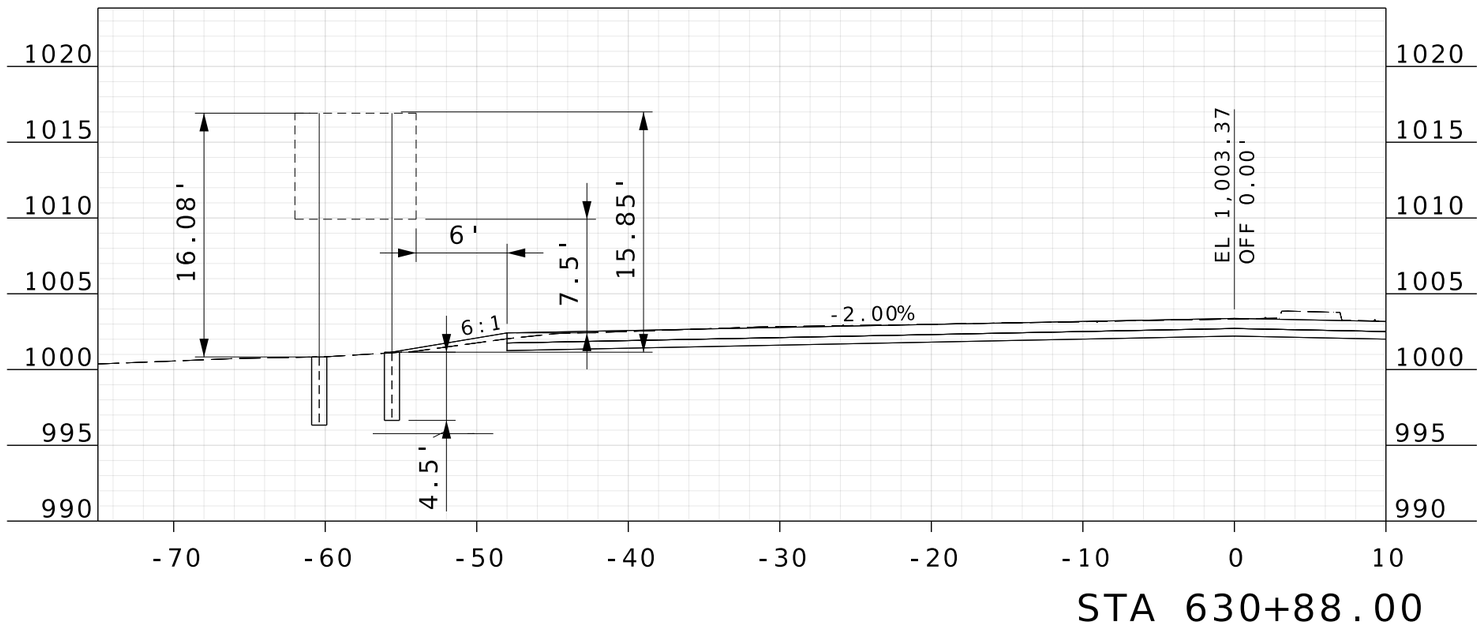
STANDARD SIGN OR SPECIAL SIGN NO.	SIGN DETAIL SHEET NO.	NO. EACH	SIZE, TYPE & SQUARE FEET SIZE	FLAT SHEET SH ITEM NO. 9035004A	STRUCTURAL ST ITEM NO. 9035011A
R4-7	STD.	2	24"X30"	10.0	
SUBTOTAL				10.0	0.0
TOTAL			TOTAL	10	0

STANDARD SIGN ASSEMBLIES

SIGN NO.	STATION	LOCATION	SH
1	629+91.52	0.15' RT.	1
2	641+08.54	0.00' RT.	1
		TOTAL	2

R4-7 24"X30" R4-7

(3) COOKINGHAM DR.
STA. 630+88.00 LT.
96" X 84"
2-#2 WF STRUCTURE
STEEL POST
0.54 CY CONCRETE



STA 630+88.00

JEREMY SCOTT STRETZ NUMBER PE-2017023856
JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED 9/26/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT KC
SHEET NO. 25
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION
DATE

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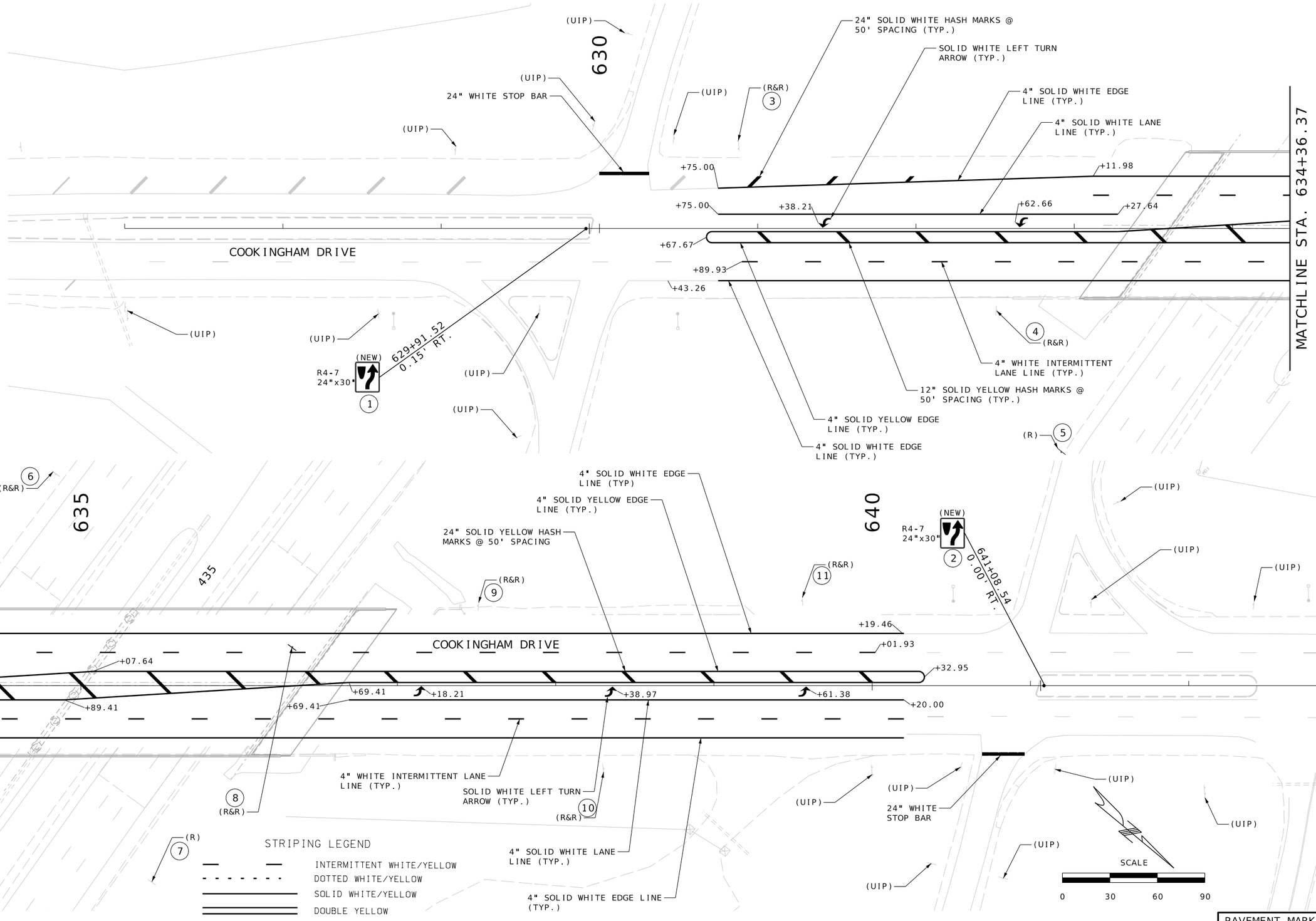
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

SIGNING
SHEET 1 OF 1



PAVEMENT MARKING
SHEET 1 OF 1

JEREMY SCOTT STRETZ NUMBER PE-2017023856

JEREMY SCOTT STRETZ-ENGINEER
MO# PE-2017023856

DATE PREPARED
9/26/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	26

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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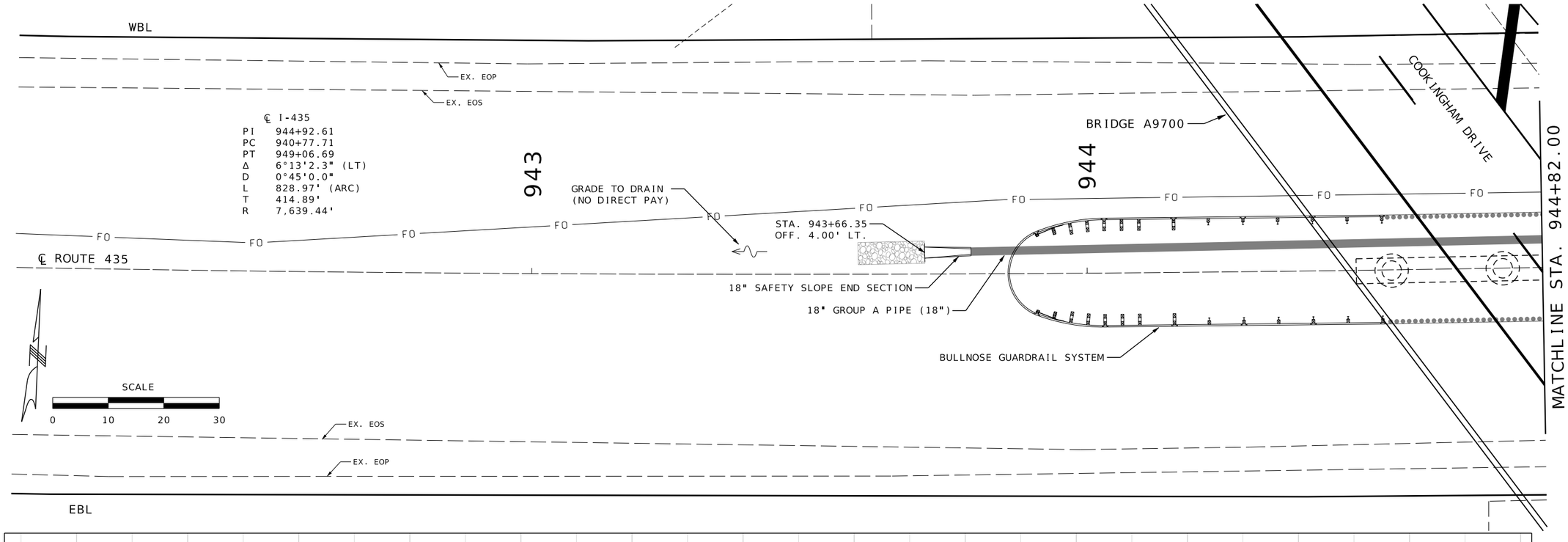

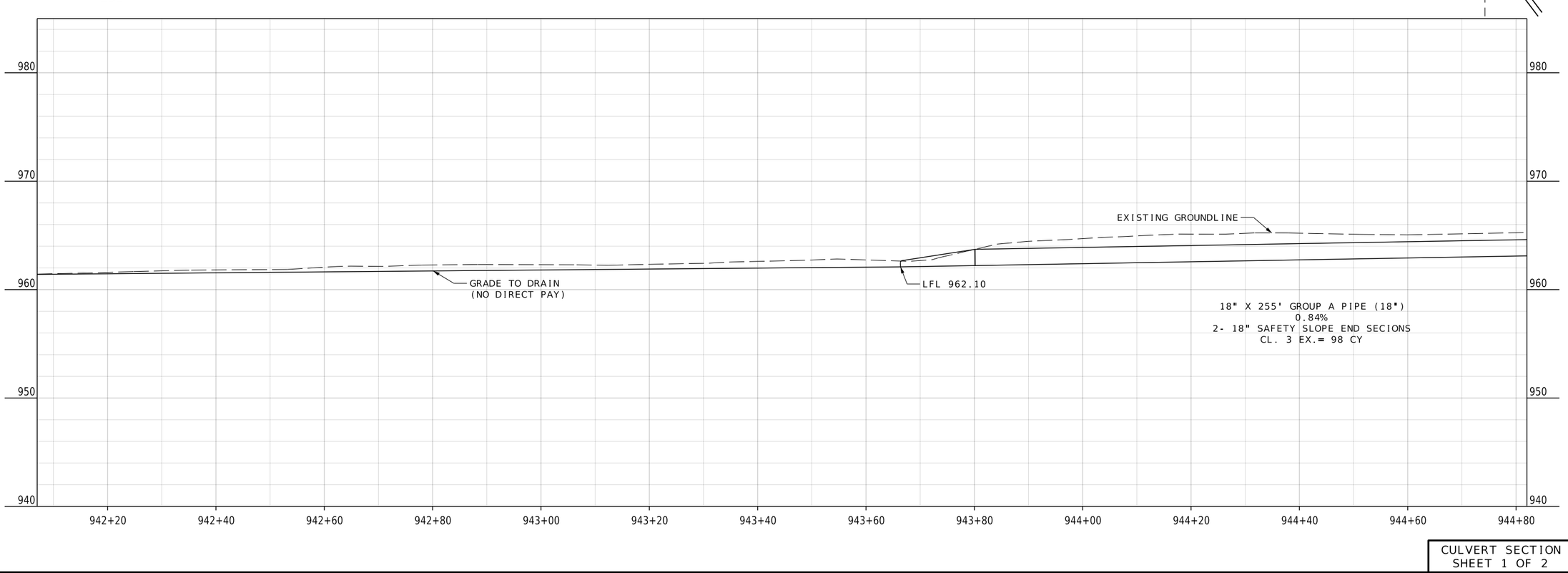

CULVERT SECTION
SHEET 1 OF 2

GRANT C. LUCKENBILL NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT KC | SHEET NO. 27
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

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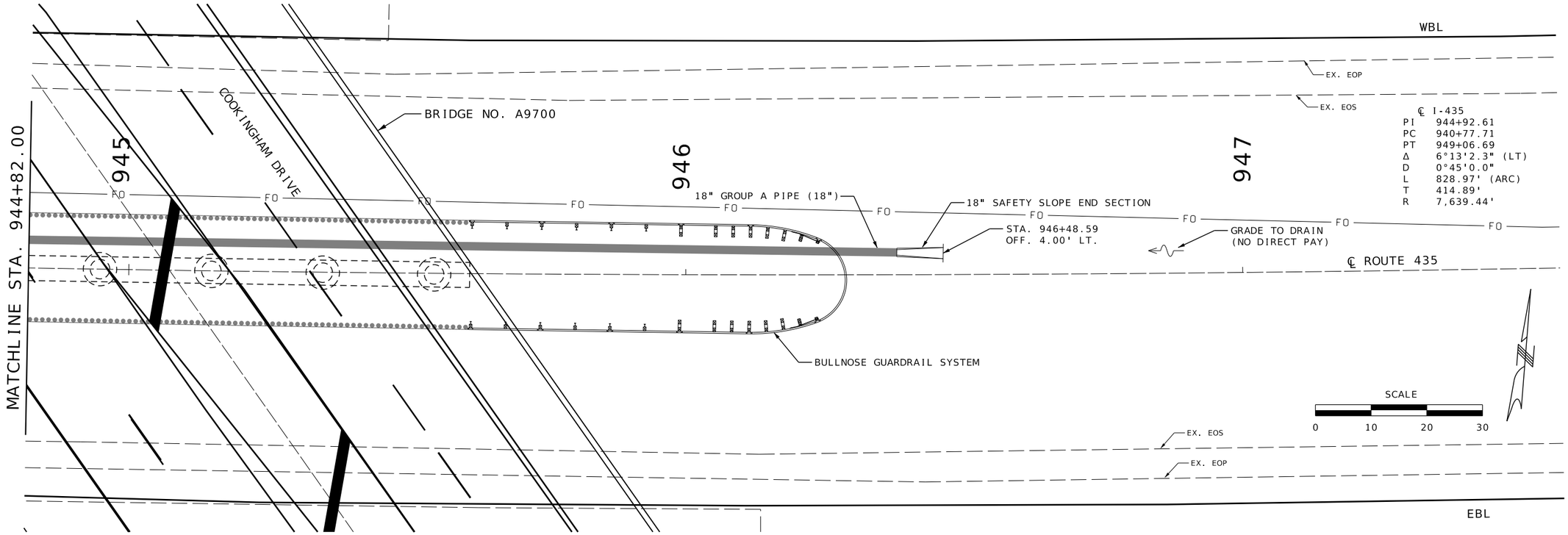

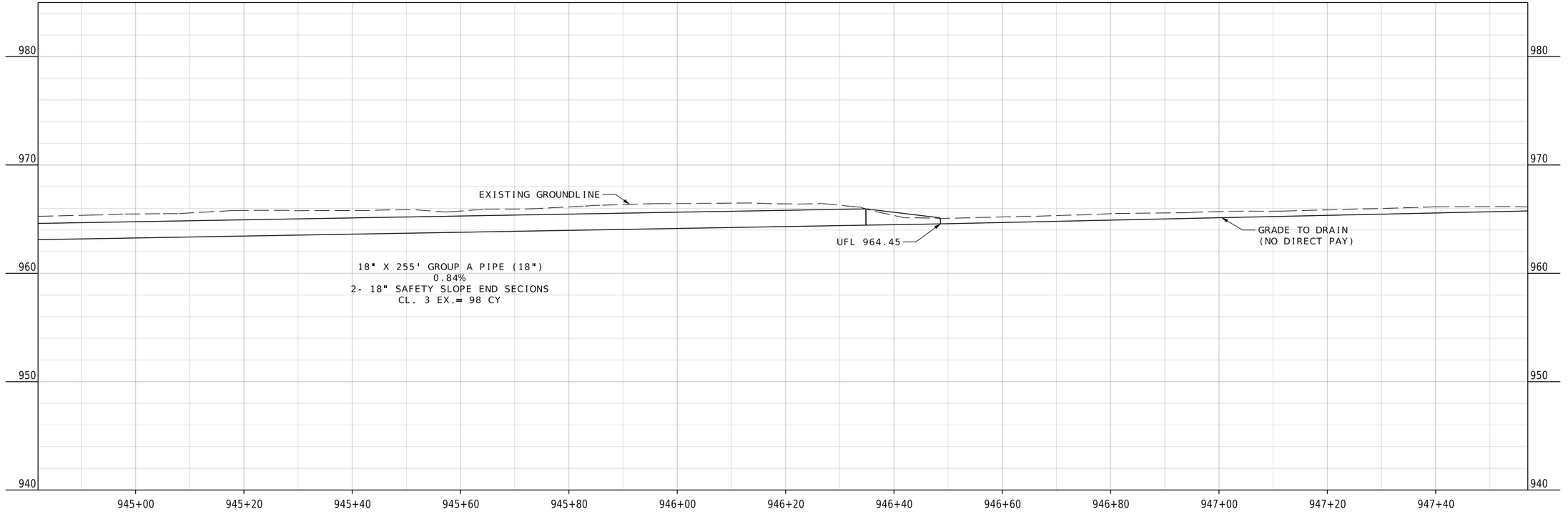

CULVERT SECTION
SHEET 2 OF 2

GRANT C. LUCKENBILL
NUMBER PE-2012018100
9-26-25
GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
KC	28

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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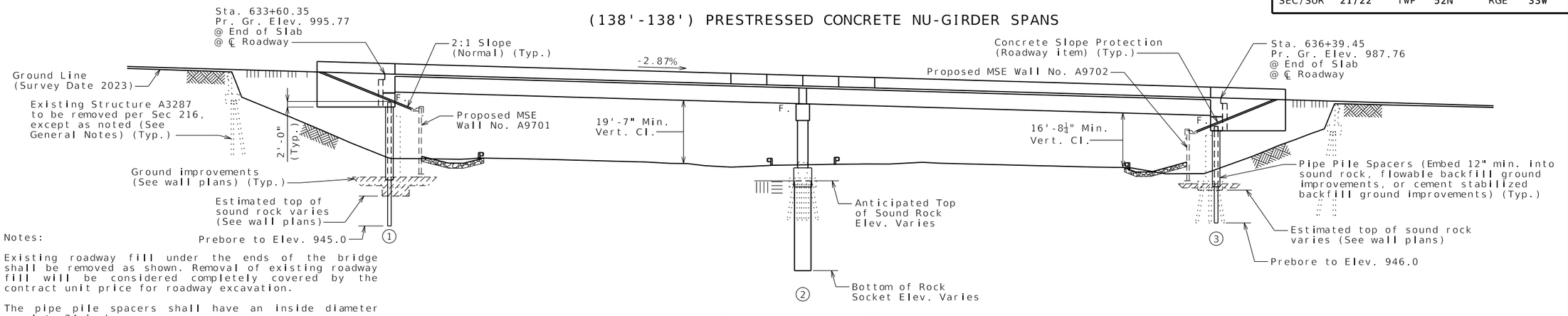
SEC/SUR 21/22 TWP 52N RGE 33W

(138'-138') PRESTRESSED CONCRETE NU-GIRDER SPANS



GENERAL ELEVATION

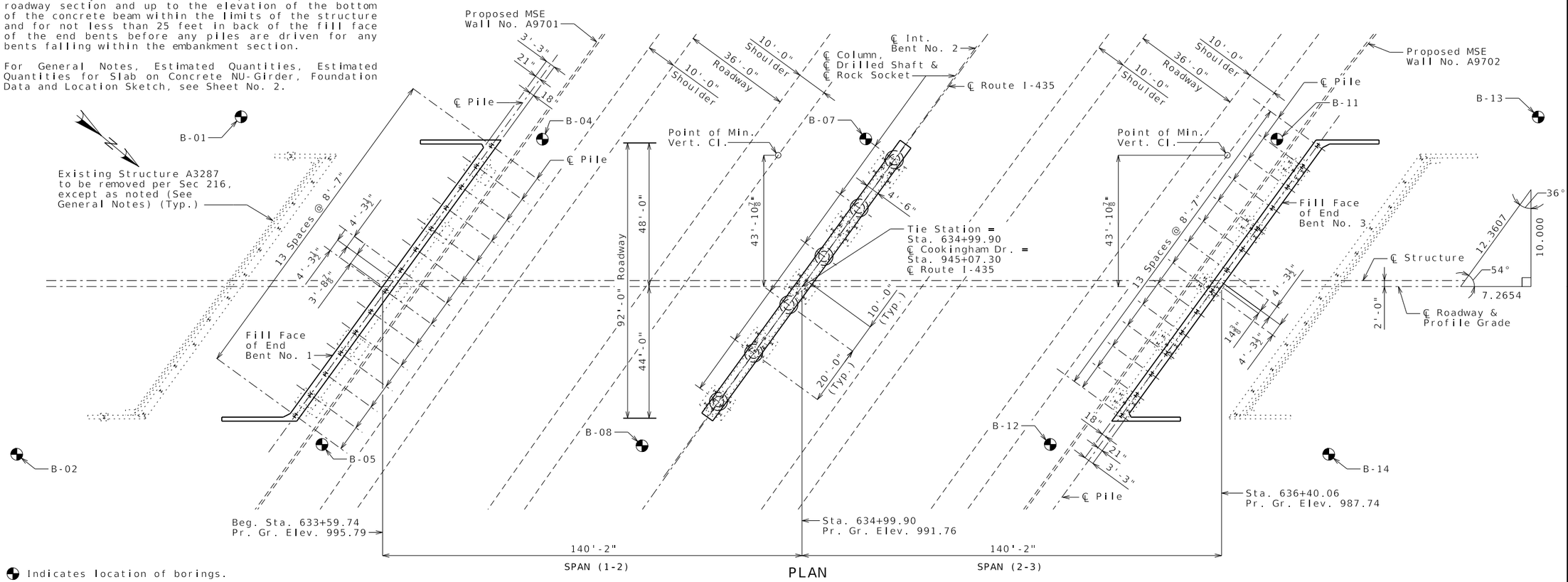
Notes:

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.

The pipe pile spacers shall have an inside diameter equal to 24 inches.

Roadway fill, exclusive of Select Granular Backfill for Structural Systems, shall be completed to the final roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for not less than 25 feet in back of the fill 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 NU-Girder, Foundation Data and Location Sketch, see Sheet No. 2.



PLAN

℄ 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 Sheet(s) No. 30 thru 37 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.

GPS #5030 - 1/2" REBAR W/ CONTROL POINT CAP IN CONC.
STA. 635+66.49, 190.01' RT, ELEV. 985.35

BRIDGE: COOKINGHAM DRIVE OVER ROUTE I-435

COOKINGHAM DRIVE FROM ROUTE 169 TO ROUTE C
ABOUT 1.0 MILES WEST OF ROUTE 169
BEGINNING STATION 633+59.74

Designed Apr. 2025
Detailed May 2025
Checked Aug. 2025

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

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
BR	1

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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Estimated Quantities

Item		Substr.	Superstr.	Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot			38
Removal of Bridges (A3287)	lump sum			1
Bridge Approach Slab (Major)	sq. yard		510	510
Drilled Shafts (6 ft. 0 in. Dia.)	linear foot	32.3		32.3
Rock Sockets (5 ft. 6 in. Dia.)	linear foot	180.0		180.0
Video Camera Inspection	each	6		6
Foundation Inspections Holes	linear foot	246.0		246.0
Sonic Logging Testing	each	6		6
Galvanized Structural Steel Piles (14 in.)	linear foot	1050		1050
Pile Wave Analysis	each	2		2
Pre-Bore for Piling	linear foot	406		406
Pile Point Reinforcement	each	28		28
Class B Concrete (Substructure)	cu. yard	136.9		136.9
Class B-1 Concrete (Substructure)	cu. yard	144.6		144.6
Slab on Concrete NU-Girder	sq. yard		2915	2915
42 in. Parapet Wall	linear foot		641	641
NU 63, Prestressed Concrete NU-Girder	linear foot		2765	2765
Reinforcing Steel (Bridges)	pound		71,590	71,590
Conduit System on Structure	lump sum		1	1
Steel Intermediate Diaphragm for P/S Concrete Girders	each		36	36
Vertical Drain at End Bents	each			2
Laminated Neoprene Bearing Pad (Tapered)	each		40	40
Pipe Pile Spacers	each	28		28

All concrete above the construction joint in the end bents is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All concrete above the intermediate beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

Foundation Data

Type	Design Data		Bent Number 1	Bent Number 2	Bent Number 3
Load Bearing Pile	Pile Type and Size		HP14x73	-	HP14x73
	Number	ea	14	-	14
	Approximate Length Per Each	ft	42	-	33
	Pile Point Reinforcement	ea	All	-	All
	Min. Galvanized Penetration (Elev.)	ft	Full Length	-	Full Length
	Pile Driving Verification Method		WEAP	-	WEAP
	Resistance Factor		0.5	-	0.5
	Minimum Nominal Axial Compressive Resistance	kip	638	-	638
Rock Socket	Number	ea	-	6	-
	Foundation Material		-	Weak Rock	-
	Elevation Range	ft	-	*	-
	Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	-	10.0	-
	Minimum Nominal Axial Compressive Resistance (Tip Resistance)	ksf	-	72.5	-

* Below Anticipated Tip of Casing Elevation as shown on Sheet No. 7
WEAP = Wave Equation Analysis of Piles

Rock Socket (Drilled Shafts):
Minimum Nominal Axial Compressive Resistance = $\frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}}$
(Side + Tip Resistance)

Load Bearing Pile:
Minimum Nominal Axial Compressive Resistance = $\frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}}$

Prebore for piles at Bents No. 1 and 3 to elevations 945.0 and 946.0, respectively.

All piles shall be galvanized down to the minimum galvanized penetration (elevation).

Pile point reinforcement need not be galvanized. Shop drawings will not be required for pile point reinforcement.

HP piles are anticipated to be driven to refusal on rock. Review all borings for depth of rock and restrict driving as appropriate to comply with hard rock driving criteria in accordance with Sec 702. When pile refusals on rock occurs, as approved by the engineer, the minimum nominal axial compressive resistance is verified and no additional pile driving verification method is required.

Detailed May 2025
Checked Aug. 2025

General Notes:

Design Specifications:

2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Ed.)
Seismic Design Category = A (Nonseismic)
Design earthquake response spectral acceleration coefficient at 1.0 second period, S_{D1}= 0.07
Acceleration Coefficient (effective peak ground acceleration coefficient), A_s= 0.046

Design Loading:

Vehicular = HL-93
Future Wearing Surface = 35 lb/sf
Earth = 120 lb/cf
Equivalent Fluid Pressure = 45 lb/cf (Min.)
Superstructure: Simply-Supported, Non-Composite for dead load.
Continuous Composite for live load.

Design Unit Stresses:

Class B Concrete	(Substructure at Bents No. 1 & 3)	f'c = 3,000 psi
Class B-2 Concrete	(Drilled Shafts and Rock Sockets)	f'c = 4,000 psi
Class B-2 Concrete	(Superstructure, except Prestressed Girders & Parapet Wall)	f'c = 4,000 psi
Class B-1 Concrete	(Substructure at Bent No. 2, except Drilled Shafts and Rock Sockets)	f'c = 4,000 psi
Class B-1 Concrete	(Parapet Wall)	f'c = 4,000 psi
Reinforcing Steel	(ASTM A615 Grade 60)	fy = 60,000 psi
Structural Steel HP Pile	(ASTM A709 Grade 50)	fy = 50,000 psi

For prestressed girder stresses, see Sheets No. 13 & 14.

Neoprene Pads:

Neoprene Bearing Pads shall be 60 durometer and shall be in accordance with Sec 716.

Joint Filler:

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

Reinforcing Steel:

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

Traffic Handling:

Traffic to be maintained on Route I-435 except for weekend and overnight closures for demolition and girder placement. Traffic to be routed onto the ramps during Route I-435 closures. See traffic control plans for details.

Vertical clearance for Route I-435 traffic during construction shall be 16'-0" minimum over a 45'-0" wide horizontal opening of the roadway in each direction.

Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.

Removal of Existing Structure:

Fully remove footings at existing Intermediate Bent No. 2.

Remove existing footings and piles in conflict with drilled shaft installation at existing Intermediate Bent No. 3. Existing footing excavation to be backfilled with an approved lean clay and compacted prior to installation of drilled shafts.

Fully remove existing footings and remove piles to top of sound rock at existing Intermediate Bent No. 4.

All labor and materials necessary to complete this work will be completely covered by the contract lump sum price for Removal of Bridges (A3287).

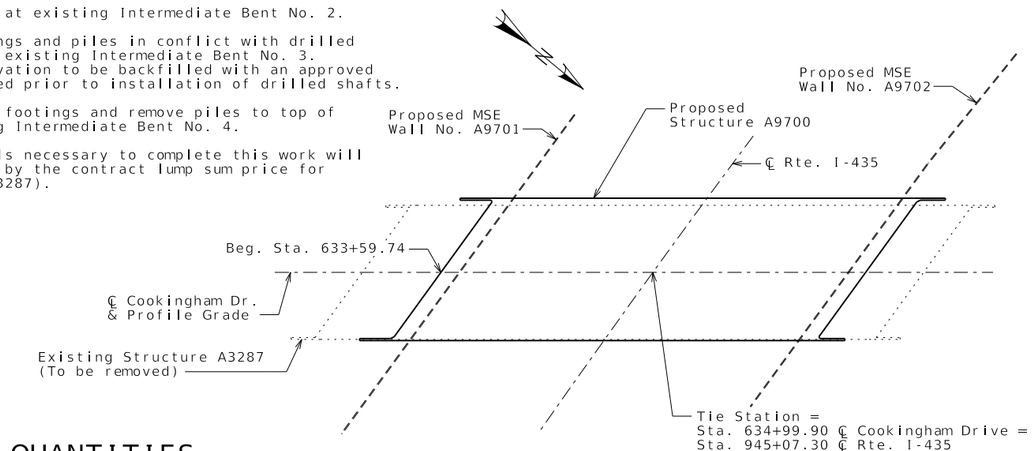
Estimated Quantities for Slab on Concrete NU-Girder

Item		Total
Class B-2 Concrete	cu. yard	1003
Reinforcing Steel (Epoxy Coated)	pound	230,410

The table of Estimated Quantities for Slab on Concrete NU-Girder represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard longitudinally from end of slab to end of slab and transversely from out to out of bridge slab (or with the horizontal dimensions as shown on the plan of slab). Payment for stay-in-place corrugated steel forms, conventional forms, all concrete and epoxy coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

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

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



LOCATION SKETCH

GENERAL NOTES AND QUANTITIES

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

LAUREN A. KITCHEN NUMBER PE-2025040501 PROFESSIONAL ENGINEER STATE OF MISSOURI
9/25/2025

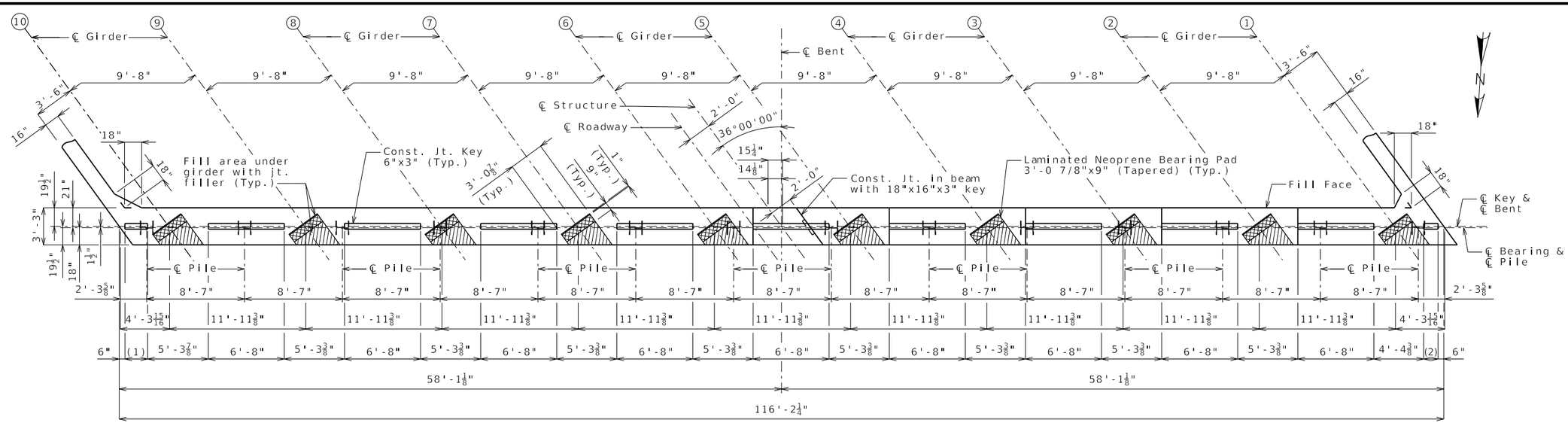
DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION	DATE

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

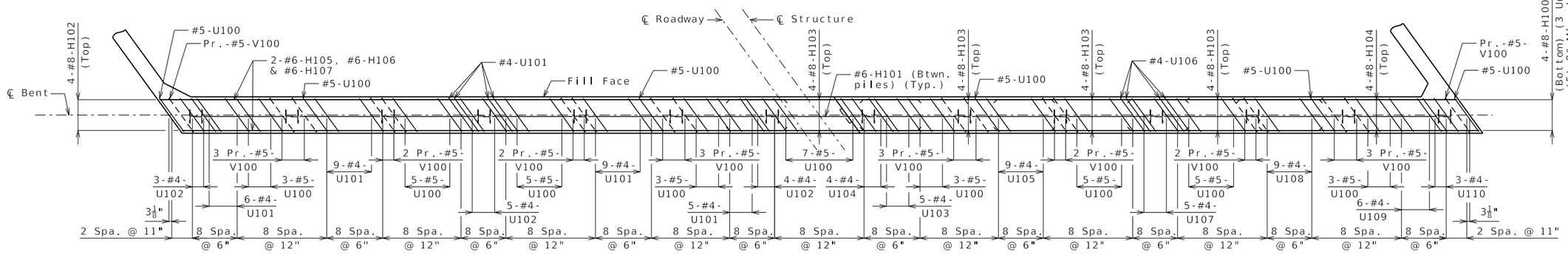
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



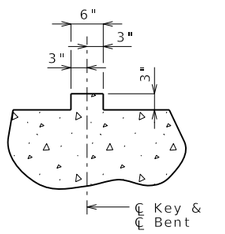
PLAN OF BEAM

(1) 23"
(2) 16"

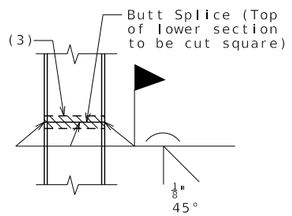


PLAN OF BEAM SHOWING REINFORCEMENT

(Keys and steps not shown for clarity.)



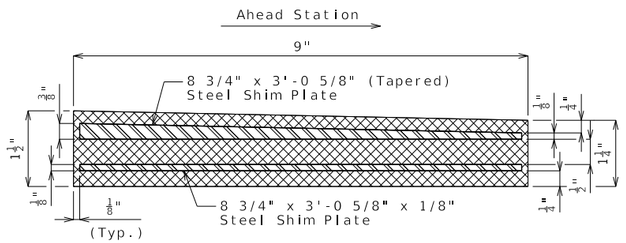
SECTION THRU KEY



STEEL PILE SPLICE

(If required)

(3) Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.



SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

Substructure Quantity Table for Bent No. 1		
Item		Quantity
Galvanized Structural Steel Piles (14 in.)	linear foot	588
Pre-Bore for Piling	linear foot	252
Pile Point Reinforcement	each	14
Class B Concrete (Substructure)	cu. yard	69.2

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

Notes:

Work this sheet with Sheets No. 4 & 5.

The U bars and pairs of V bars shall be placed parallel to centerline of roadway.

Reinforcing steel shall be shifted to clear piles. U bars shall clear piles by at least 1 1/2 inches.

DETAILS OF END BENT NO. 1

Detailed May 2025
Checked Aug. 2025

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

LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 3
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

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DESCRIPTION | DATE

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105 WEST CAPITOL
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1301 BURLINGTON STREET, STE. 100
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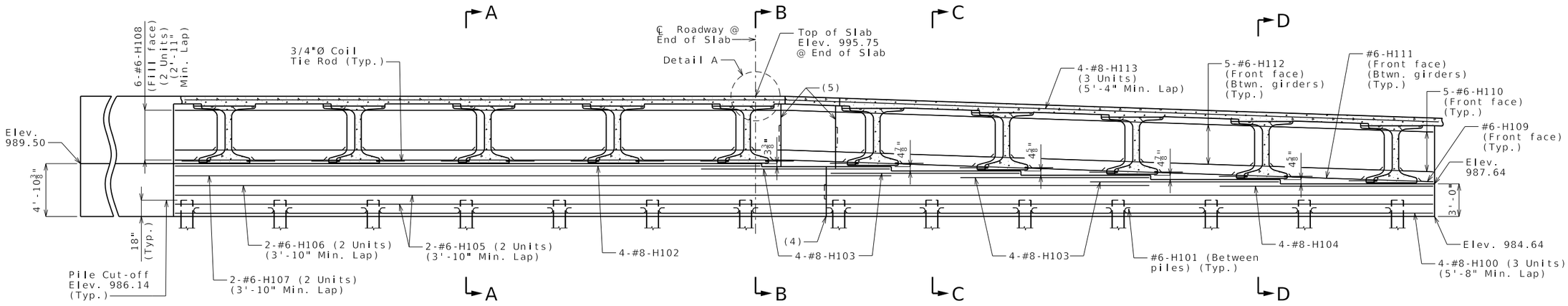
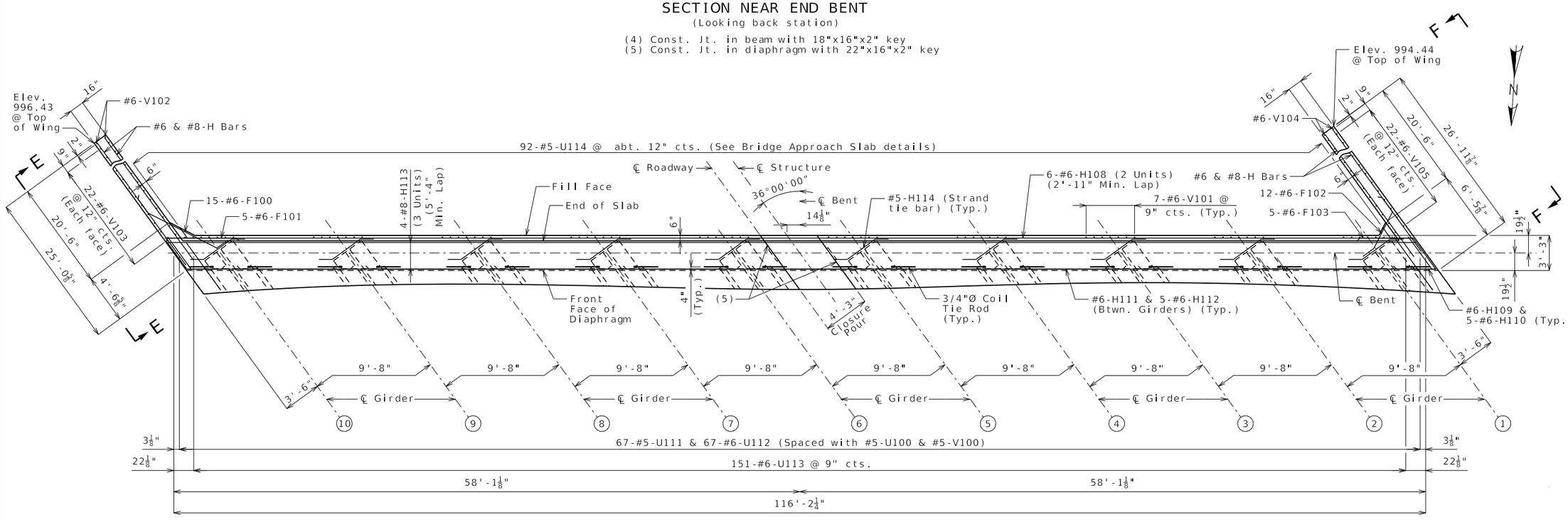
CERTIFICATE OF AUTHORITY NO. 001592



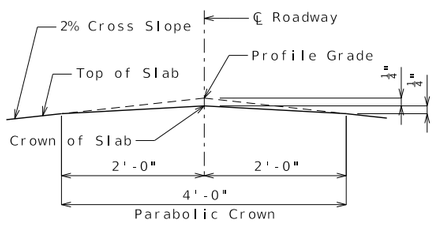
SECTION NEAR END BENT

(Looking back station)

(4) Const. Jt. in beam with 18"x16"x2" key
(5) Const. Jt. in diaphragm with 22"x16"x2" key



PART PLAN



DETAIL A

DETAILS OF END BENT NO. 1

Notes:

Work this sheet with Sheets No. 3 & 5.

For Sections A-A thru D-D and Elevations E-E & F-F, see Sheet No. 5.

The #6-F100 & #6-F102 bars shall be bent in the field to clear girders.

The U bars shall be placed parallel to centerline of roadway.

All concrete in the end bent above top of beam and below top of slab shall be Class B-2.

Strands at end of girders shall be field bent or, if necessary, cut in field to maintain 1 1/2" inch minimum clearance to fill face of end bent.

For locations of coil tie rods and #5-H114 (strand tie bar), see Sheets No. 13 & 14.

For details of vertical drain at end bents, see Sheet No. 6.

For details of bridge approach slab, see Sheet No. 25.

Detailed May 2025
Checked Aug. 2025

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

Sheet No. 4 of 37

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
3/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 4
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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

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1301 BURLINGTON STREET, STE. 100
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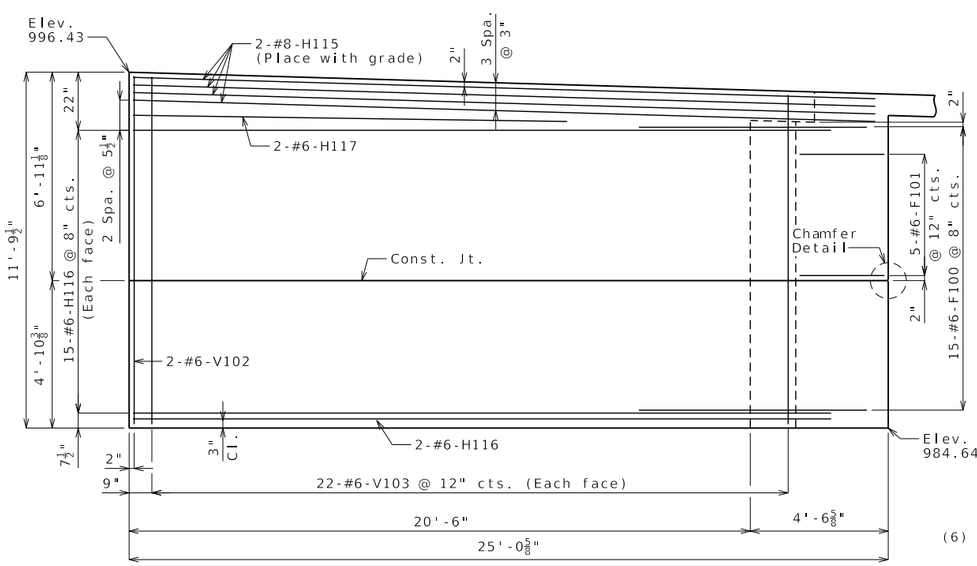
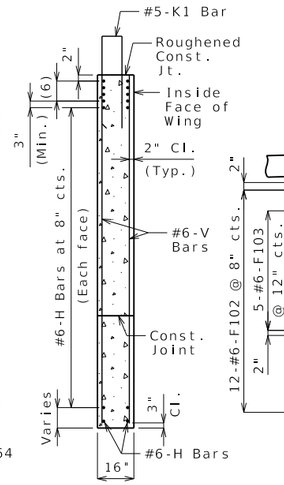
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

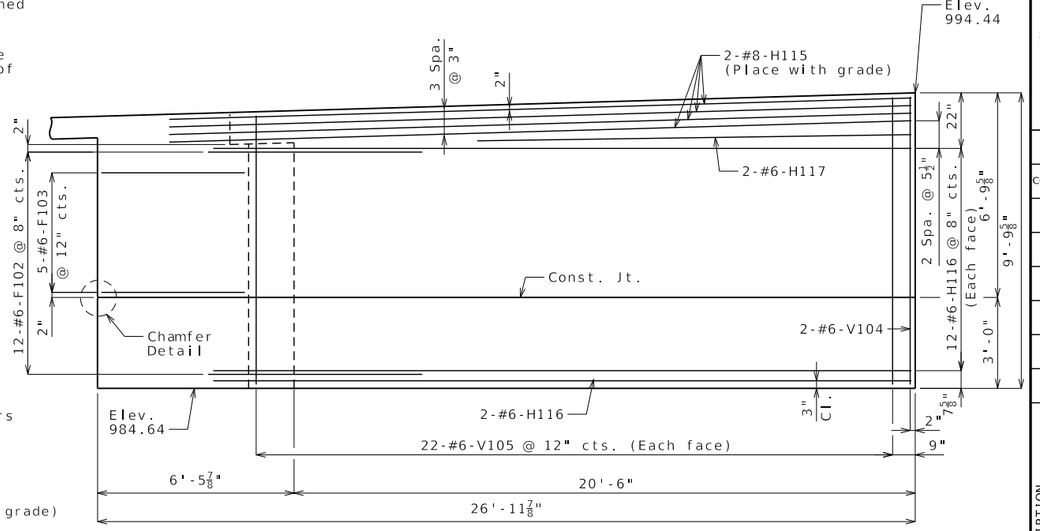


ELEVATION E-E

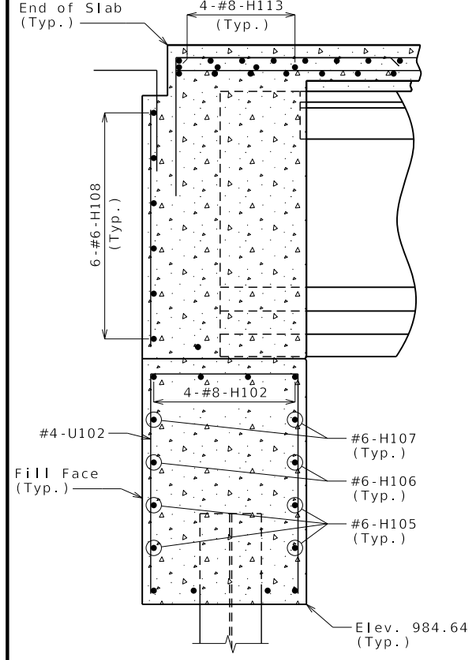


TYPICAL SECTION THRU WING

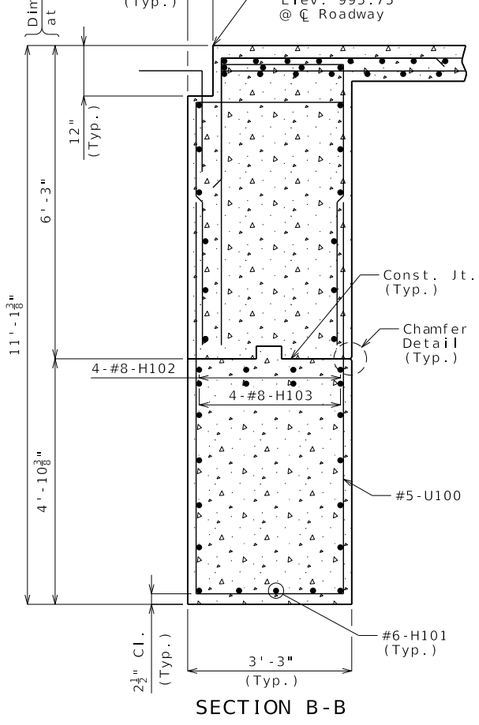
(6) #8-H Bars at 3" cts. (Each face)(Place with grade)



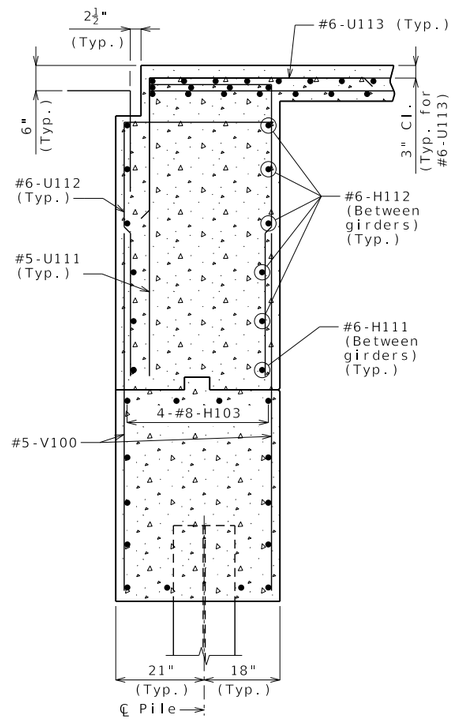
ELEVATION F-F



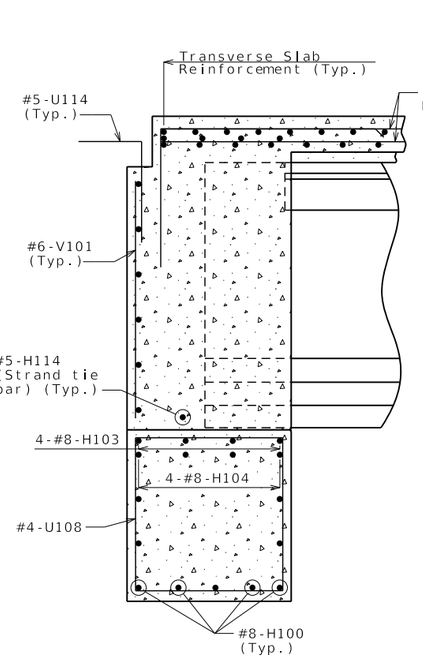
SECTION A-A



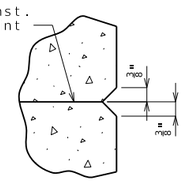
SECTION B-B



SECTION C-C



SECTION D-D



CHAMFER DETAIL

Notes:

Work this sheet with Sheets No. 3 & 4.

For locations of Sections A-A thru D-D and Elevations E-E & F-F, see Sheet No. 4.

For reinforcement of the parapet, see Sheets No. 21 thru 23.

DETAILS OF END BENT NO. 1

Detailed May 2025
Checked Aug. 2025

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

LAUREN A. KITCHEN NUMBER PE-2025040501 PROFESSIONAL ENGINEER STATE OF MISSOURI
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 5
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

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)

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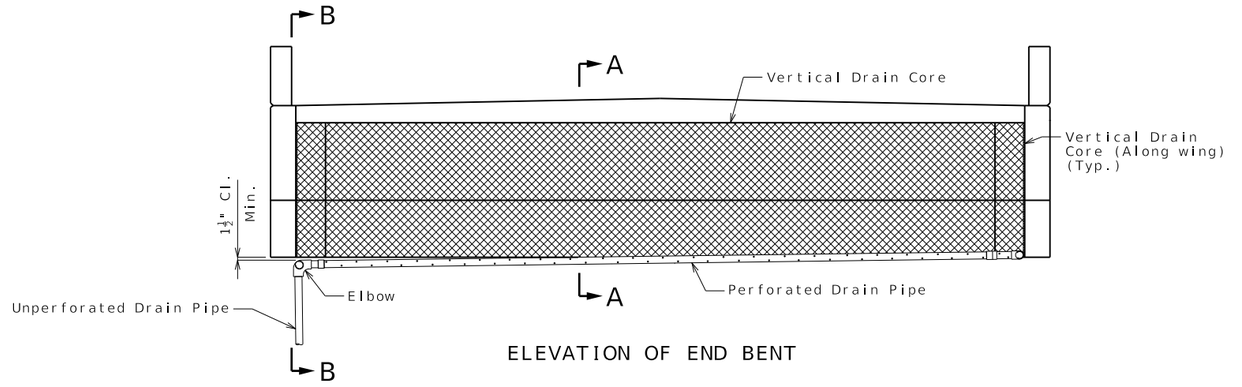
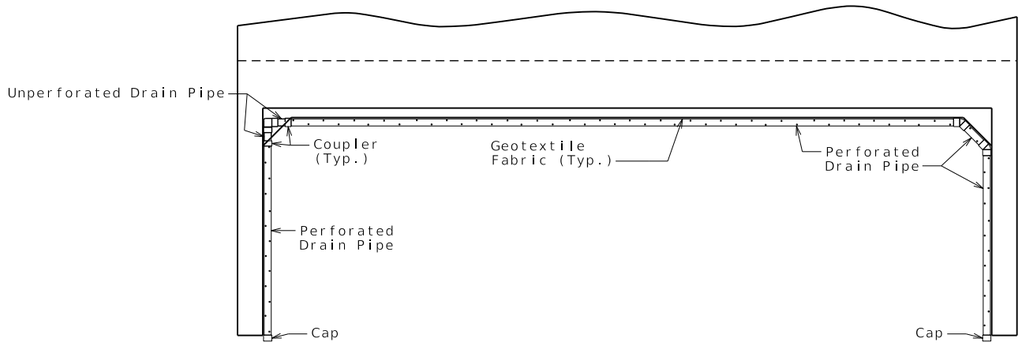
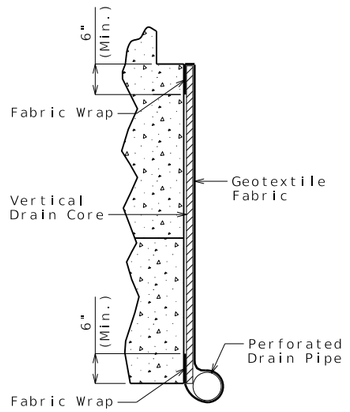
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



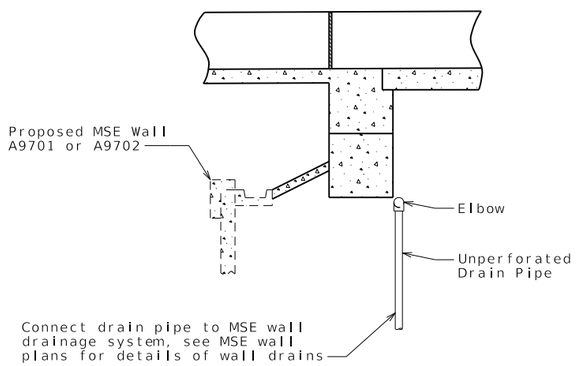
ELEVATION OF END BENT



PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



SECTION B-B

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

(Squared end bent shown, skewed end bent similar)

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

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

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 6
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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NORTH KANSAS CITY, MO 64116
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CERTIFICATE OF AUTHORITY NO. 001592

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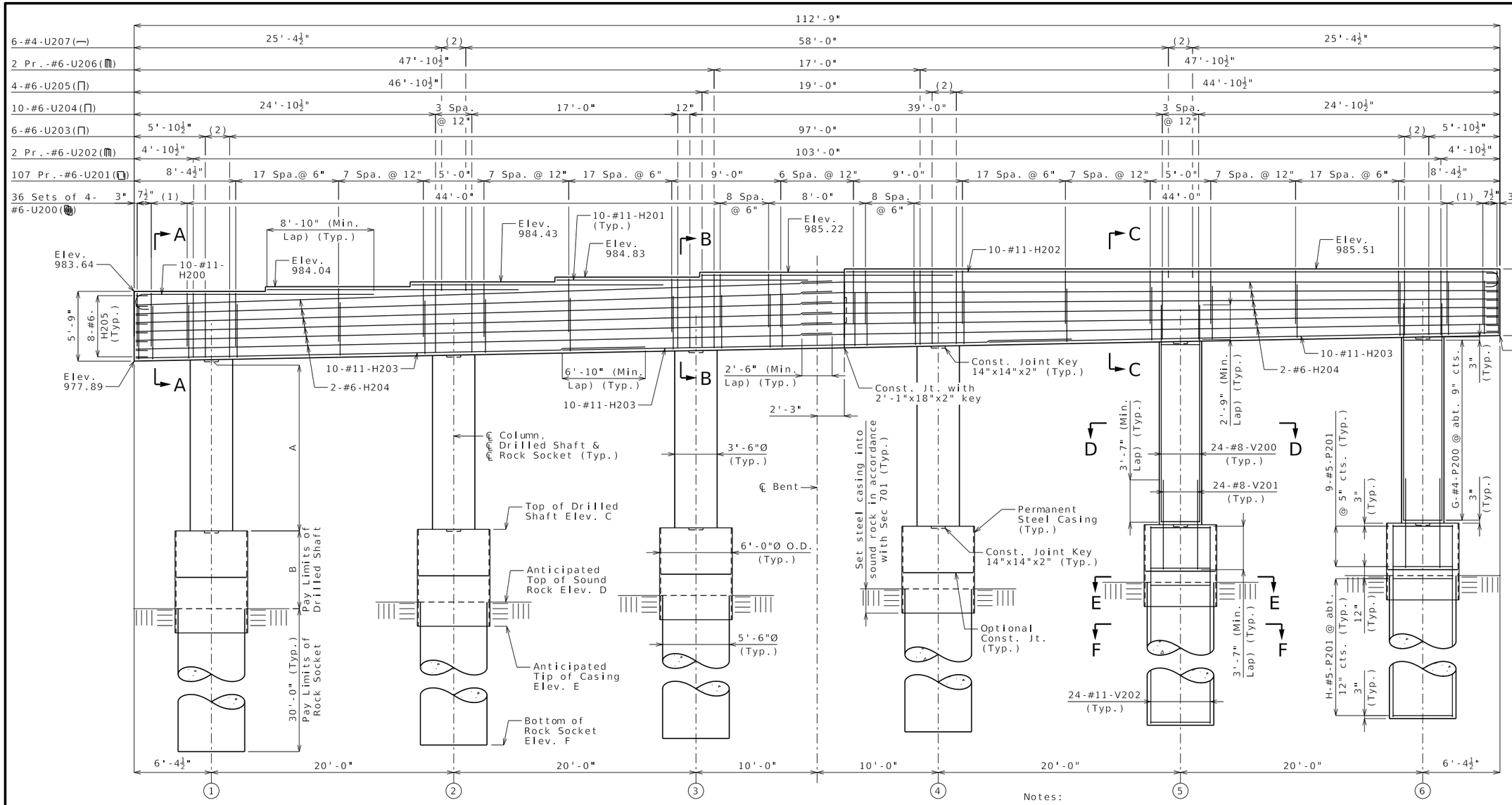

ELEVATION

(1) 7 Spa. @ 6"
(2) 2 Spa. @ 12"

Table of Variables						
	Column Number					
	1	2	3	4	5	6
A - Column Height	14'-1⅛"	14'-4"	14'-6⅞"	14'-9¾"	15'-0⅝"	15'-3½"
B - Drilled Shaft Height	6'-5"	6'-0"	5'-7"	5'-2"	4'-9"	4'-4"
C - Top of Drilled Shaft Elevation	963.92	964.05	964.19	964.32	964.45	964.59
D - Anticipated Top of Sound Rock Elevation	957.50	958.05	958.60	959.15	959.70	960.26
E - Anticipated Tip of Casing Elevation	955.50	956.05	956.60	957.15	957.70	958.26
F - Bottom of Rock Socket Elev.	927.50	928.05	928.60	929.15	929.70	930.26
G - Number of #4-P200 Bars	20	20	20	21	21	21
H - Number of #5-P201 Bars	33	33	32	32	31	31

DETAILS OF INTERMEDIATE BENT NO. 2

Notes:

Thickness of permanent steel casing shall be in accordance with Sec 701.

An additional 4 feet has been added to #11-V202 bar lengths and an additional 24-#5-P201 bars have been added in the quantities, if required, for possible change in drilled shaft or rock socket length. The additional V-bar length shall be cut off or included in the reinforcement lap if not required. The additional P-bars shall be spaced similarly to that shown in elevation, if required, or to a lesser spacing if not required, but not less than 6-inch cts.

Sonic logging testing shall be performed on all drilled shafts and rock sockets.

The cost of any required excavation to the top of the drilled shafts will be considered completely covered by the contract unit price for other items.

The tip of casing shall not extend below the anticipated tip of casing elevation without approval of the engineer.

Column or dowel reinforcement shall be placed prior to pouring drilled shaft concrete in the area of the lap. Dowel bar or column reinforcement shall not be inserted after drilled shaft pour is complete.

Remove sediment laitance and weak concrete to sound concrete prior to setting column/dowel reinforcement if optional construction joint is used.

Work this sheet with Sheets No. 8 & 9.

For Substructure Quantity Table, see Sheet No. 8.

Detailed May 2025
Checked Aug. 2025

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

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STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 7
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION | DATE

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CERTIFICATE OF AUTHORITY NO. 001592

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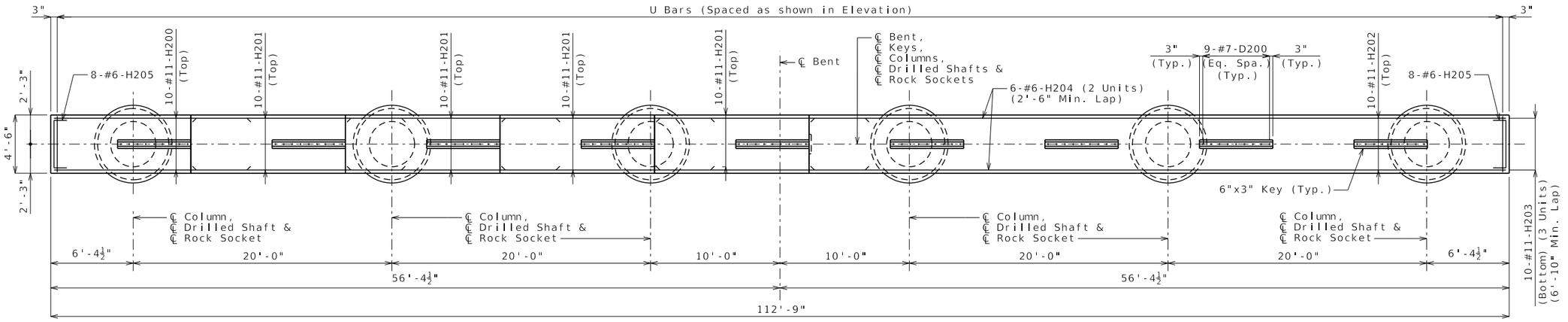
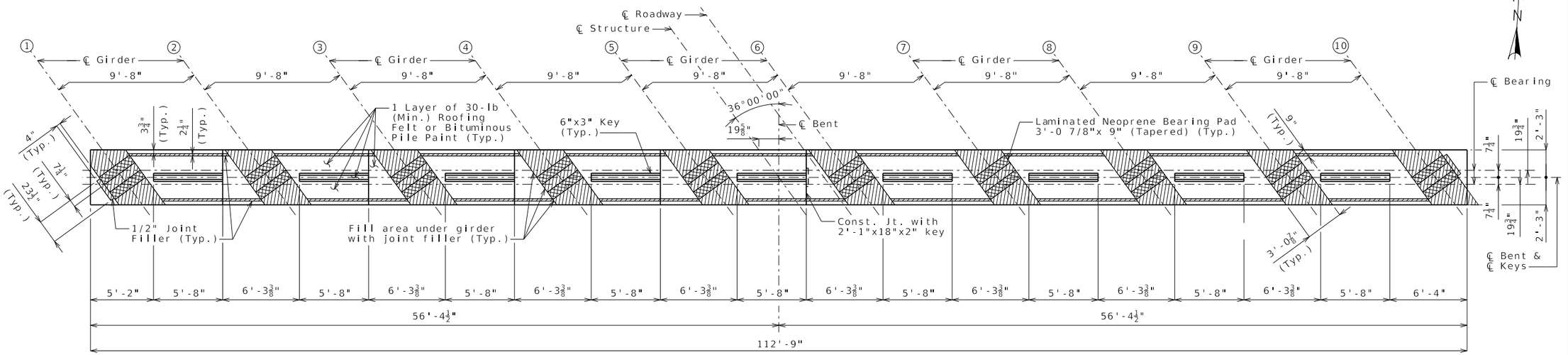
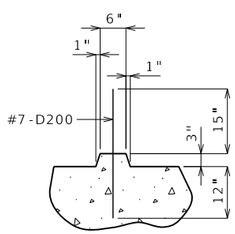


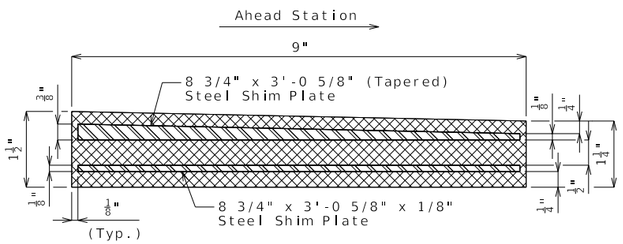
PLAN OF BEAM SHOWING REINFORCEMENT



PLAN OF BEAM



SECTION THRU KEY



SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

Substructure Quantity Table for Bent No. 2		
Item		Quantity
Drilled Shafts (6 ft. 0 in. Dia.)	linear foot	32.3
Rock Sockets (5 ft. 6 in. Dia.)	linear foot	180.0
Video Camera Inspection	each	6
Foundation Inspection Holes	linear foot	246.0
Sonic Logging Testing	each	6
Class B-1 Concrete (Substructure)	cu. yard	144.6
Reinforcing Steel (Bridges)	pound	71,590

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

All reinforcement in the drilled shafts and rock sockets is included in the substructure quantities.

Notes:

For steps 2 inches or more, use 2 1/4 x 1/2 inch jont filler up vertical face.

Work this sheet with Sheets No. 7 & 9.

DETAILS OF INTERMEDIATE BENT NO. 2

Detailed May 2025
Checked Aug. 2025

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

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_008_J4S3489_INTERMEDIATE BENT NO. 2 (2 OF 3).dgn 3:11:44 PM 9/25/2025

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
BR	8

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9700

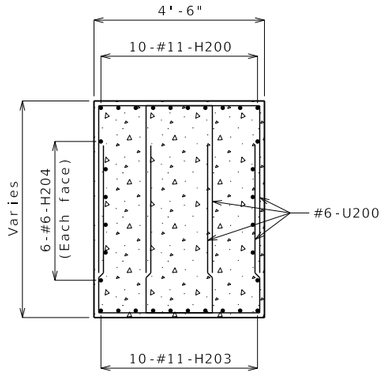
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DESCRIPTION

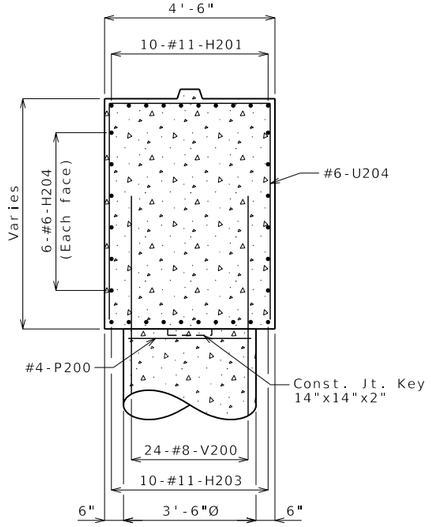
DATE

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

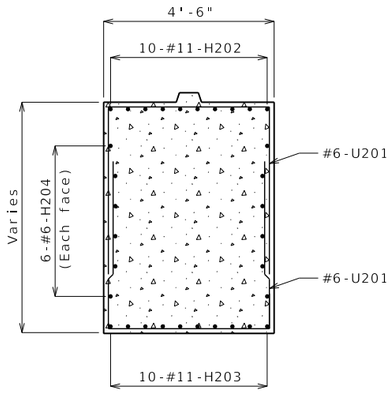
olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



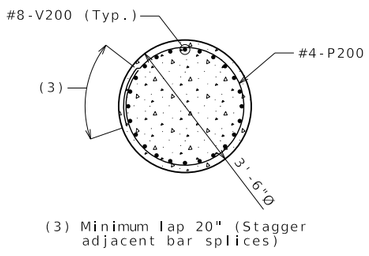
SECTION A-A



SECTION B-B

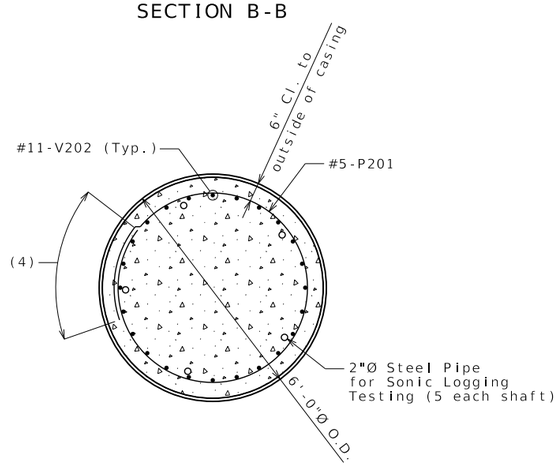


SECTION C-C



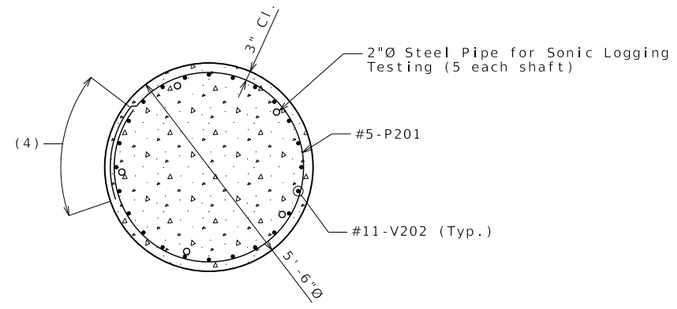
(3) Minimum lap 20" (Stagger adjacent bar splices)

SECTION D-D



(4) Minimum lap 2'-1" (Stagger adjacent bar splices)

SECTION E-E



SECTION F-F

Notes:

Work this sheet with Sheets No. 7 and 8.

DETAILS OF INTERMEDIATE BENT NO. 2

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

LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
STATE OF MISSOURI
9/25/2025

DATE PREPARED 9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
BR	9

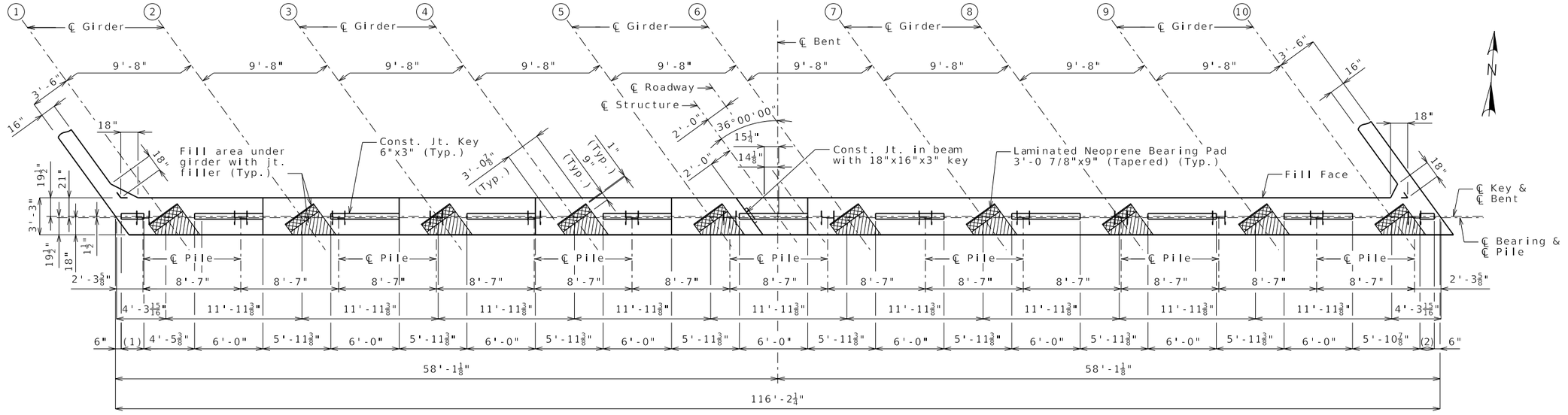
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION	DATE

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

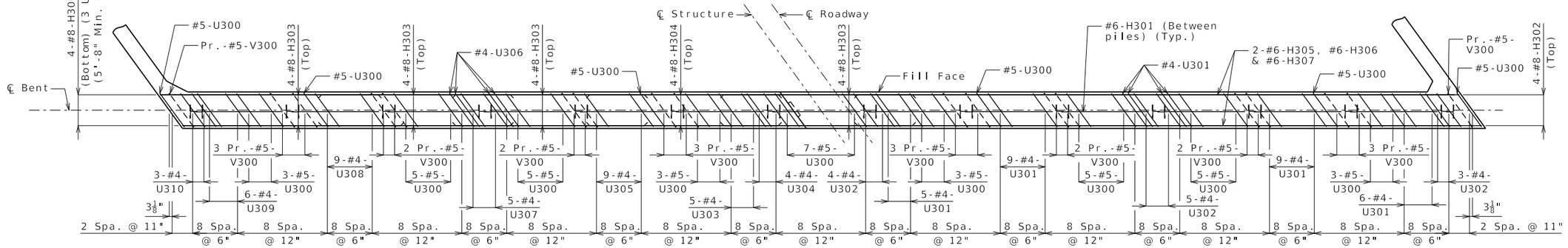
olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_009_J4S3489_INTERMEDIATE BENT NO. 2 (3 OF 3).dgn 3:11:46 PM 9/25/2025



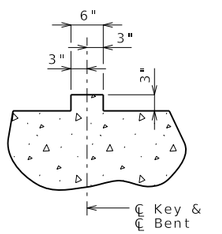
PLAN OF BEAM

(1) 23"
(2) 16"

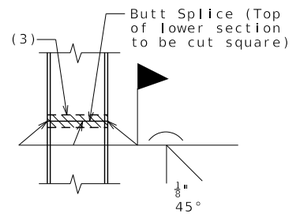


PLAN OF BEAM SHOWING REINFORCEMENT

(Keys and steps not shown for clarity.)



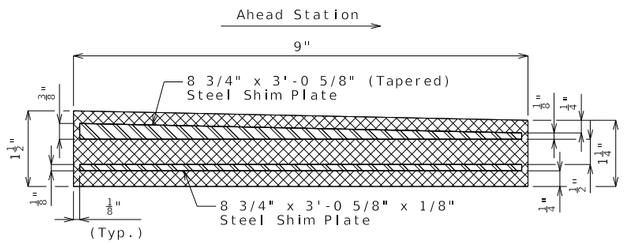
SECTION THRU KEY



STEEL PILE SPLICE

(If required)

(3) Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.



SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

Substructure Quantity Table for Bent No. 3		
Item		Quantity
Galvanized Structural Steel Piles (14 in.)	linear foot	462
Pre-Bore for Piling	linear foot	196
Pile Point Reinforcement	each	14
Class B Concrete (Substructure)	cu. yard	67.7

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

Notes:

Work this sheet with Sheets No. 11 & 12.

The U bars and pairs of V bars shall be placed parallel to centerline of roadway.

Reinforcing steel shall be shifted to clear piles. U bars shall clear piles by at least 1 1/2 inches.

DETAILS OF END BENT NO. 3

Detailed May 2025
Checked Aug. 2025

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

LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
STATE OF MISSOURI
9/25/2025

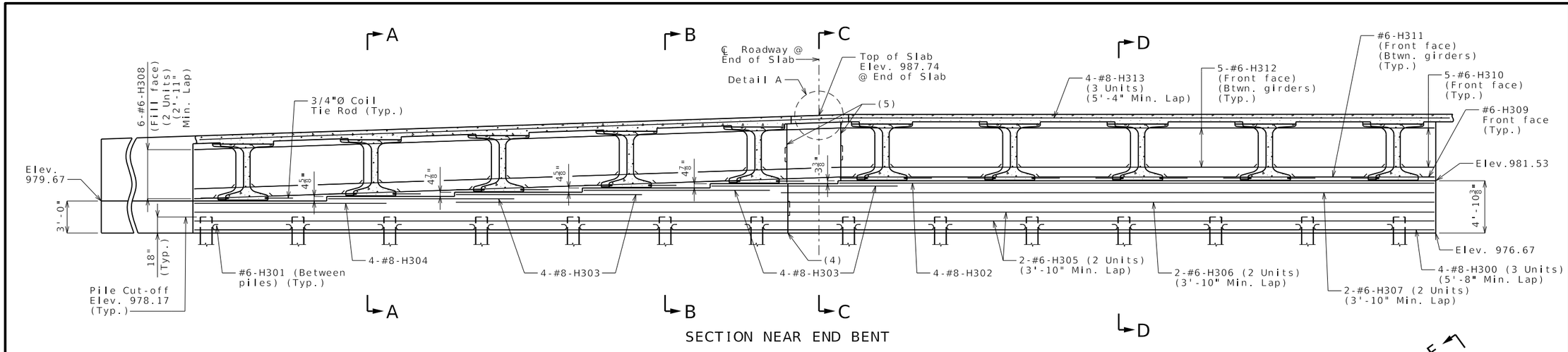
DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 10
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

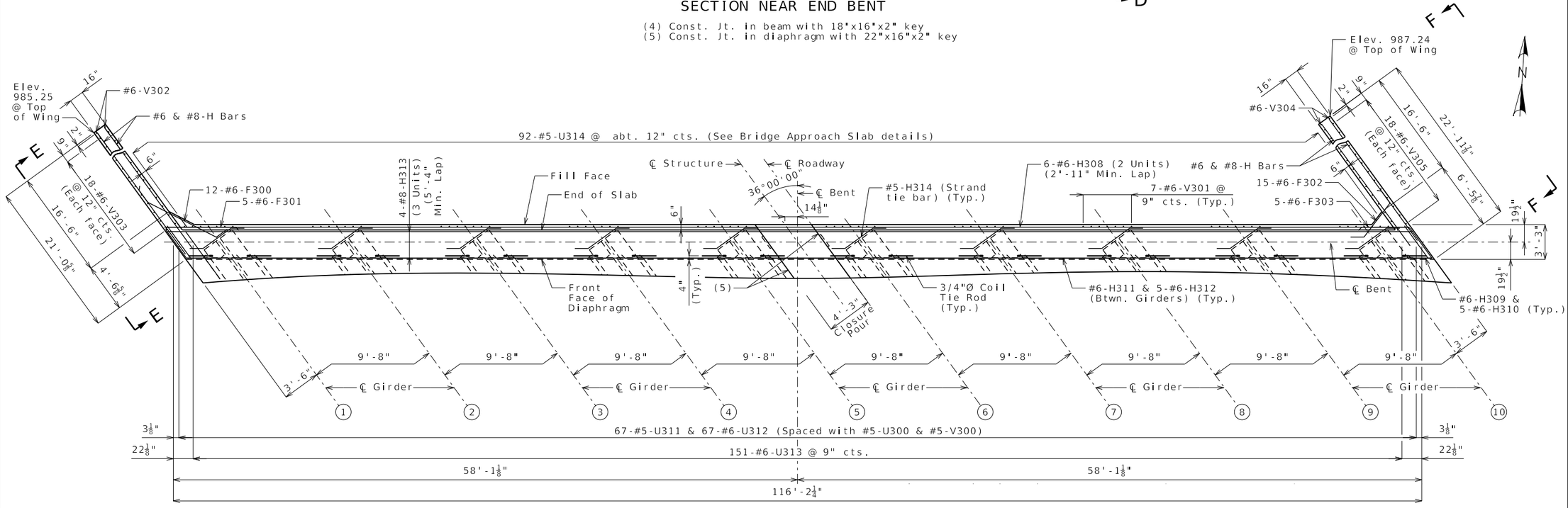
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

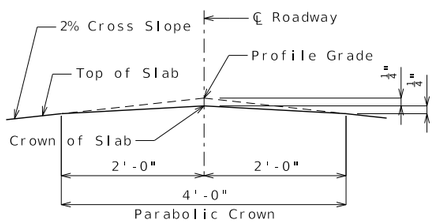


SECTION NEAR END BENT

(4) Const. Jt. in beam with 18"x16"x2" key
(5) Const. Jt. in diaphragm with 22"x16"x2" key



PART PLAN



DETAIL A

DETAILS OF END BENT NO. 3

Notes:

Work this sheet with Sheets No. 10 & 12.

For Sections A-A thru D-D and Elevations E-E & F-F, see Sheet No. 12.

The #6-F300 & #6-F302 bars shall be bent in the field to clear girders.

The U bars shall be placed parallel to centerline of roadway.

All concrete in the end bent above top of beam and below top of slab shall be Class B-2.

Strands at end of girders shall be field bent or, if necessary, cut in field to maintain 1 1/2" inch minimum clearance to fill face of end bent.

For locations of coil tie rods and #5-H314 (strand tie bar), see Sheets No. 13 & 14.

For details of vertical drain at end bents, see Sheet No. 6.

For details of bridge approach slab, see Sheet No. 25.

Detailed May 2025
Checked Aug. 2025

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

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
3/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 11
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
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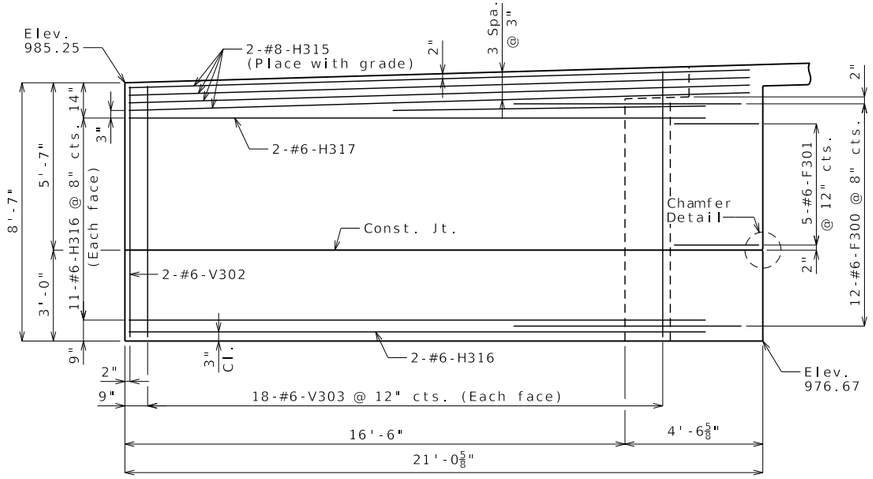
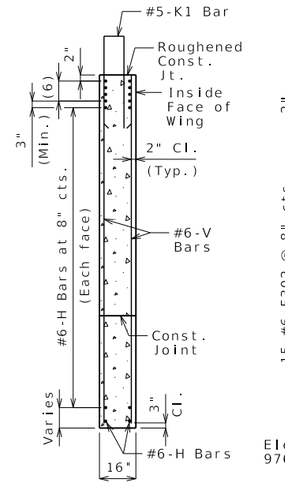
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

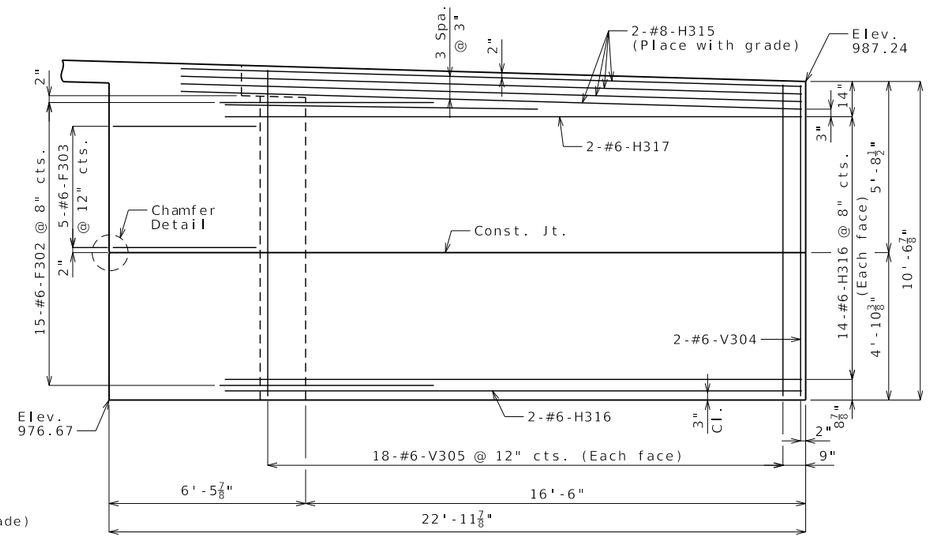


ELEVATION E-E

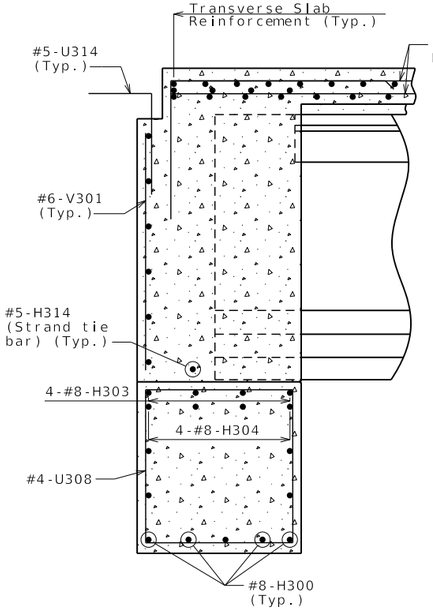


TYPICAL SECTION THRU WING

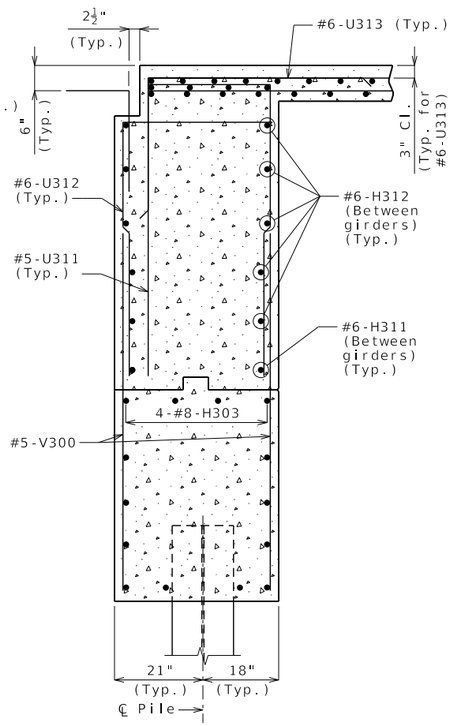
(6) #8-H Bars at 3" cts. (Each face)(Place with grade)



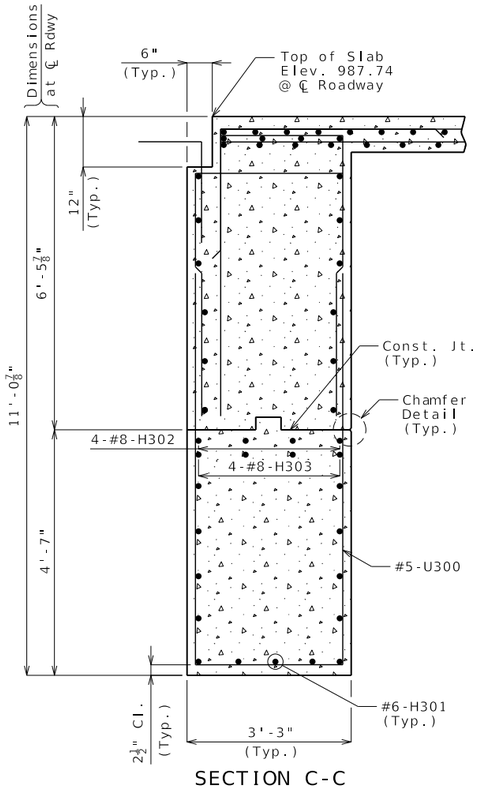
ELEVATION F-F



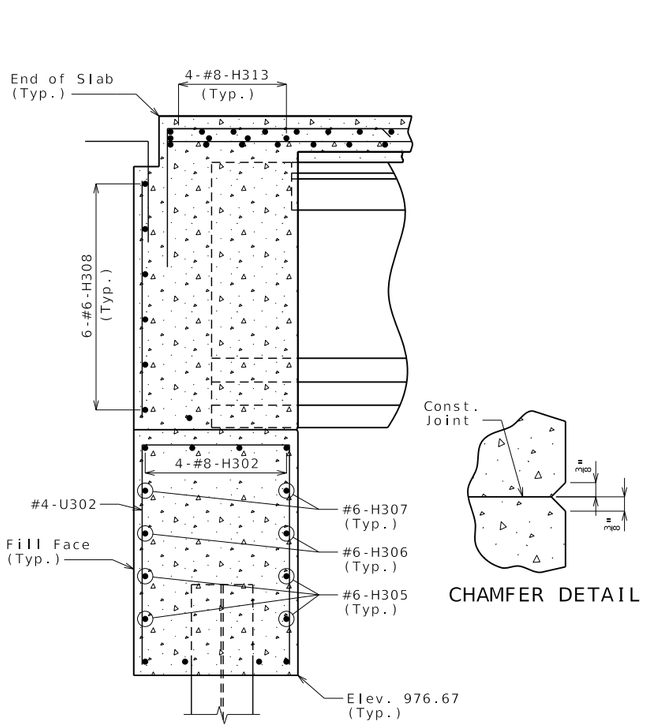
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

CHAMFER DETAIL

Notes:

Work this sheet with Sheets No. 10 & 11.

For locations of Sections A-A thru D-D and Elevations E-E & F-F, see Sheet No. 11.

For reinforcement of the parapet, see Sheets No. 21 thru 23.

DETAILS OF END BENT NO. 3

Detailed May 2025
Checked Aug. 2025

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

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

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1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

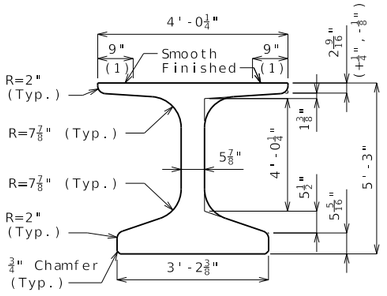
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 12
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

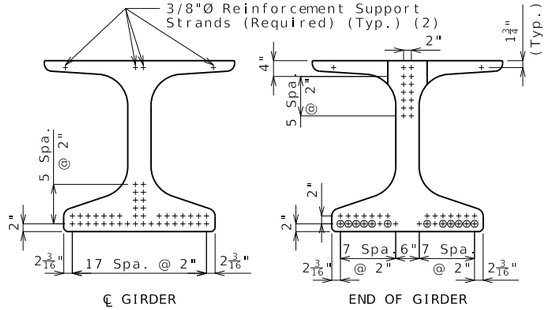
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

(1) Fabricator shall apply a bond breaker to this region.



DIMENSIONS

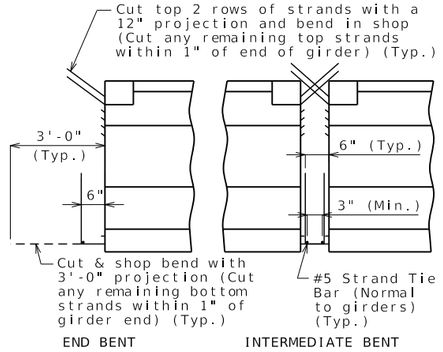
(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about ℄ Girder. May be moved laterally in pairs.



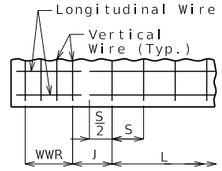
STRAND ARRANGEMENT

+ Indicates prestressing strand.

○ Indicates cut & shop bend with 3'-0" projection.



STRANDS AT GIRDER ENDS



WELDED WIRE PLACEMENT

S = Vertical wire spacing

L = Length of WWR mats

J = Distance between WWR mats

Bill of Reinforcing Steel

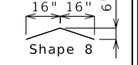
Bars Each Girder

No.	Size/Mark	Length	Shape
160	3 G1	2'-10"	8
2	4 G3	4'-9"	20
2	4 G4	2'-3"	20
2	4 G5	3'-4"	20
10	4 G6	Varies	20

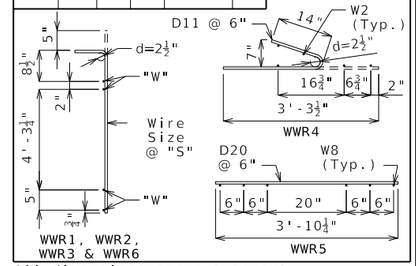
Welded Wire Each Girder

Mark	Size	S	W	L	J
WWR1	D31	4"	W12	7'-4"	11½"
WWR2	D31	12"	W12	26'-0"	24"
WWR3	D31	24"	W12	62'-0"	--
WWR6	D31	2"	W12	16"	4"

Bending Diagrams



Shape 20



All dimensions are out to out.

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

Actual bar lengths are measured along centerline of bar to the nearest inch.

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

All bar reinforcement shall be Grade 60.

WWR shall not be epoxy coated.

G4 and G5 not required for interior girders. Half no. of G3, G4, G5 and G6 not required for ext. girders of end spans.

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 8000 psi and f'ci = 6500 psi.

Use 42 strands, 0.6"Ø Grade 270, with an initial prestress force of 1845 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

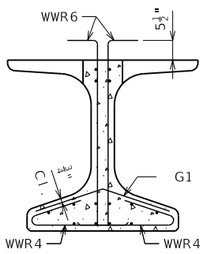
Exterior and interior girders are the same except: coil ties, top flange blockout, holes for steel intermediate diaphragms.

For Girder Camber Diagram, see Sheet No. 17.

The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed. For location of holes and details of steel intermediate diaphragms, see Sheet No. 15.

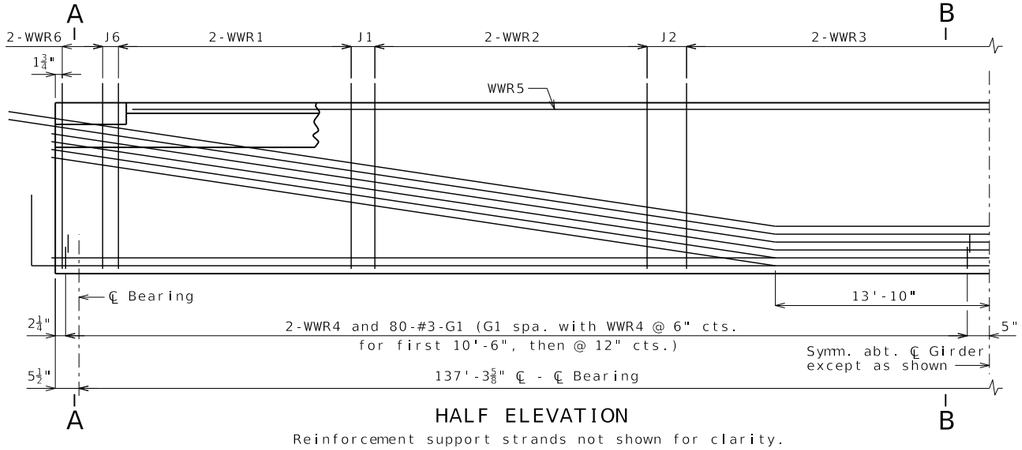
For location of coil ties at concrete diaphragms and integral bents, see Sheets No. 4, 11 and 16.

Alternate bar reinforcing steel details are provided and may be used. The same type of reinforcing steel shall be used for all girders in all spans.



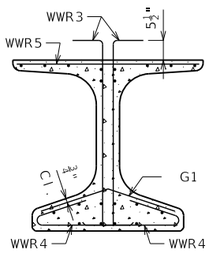
SECTION A-A

Strands not shown for clarity.



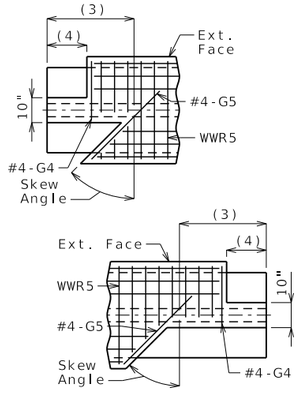
HALF ELEVATION

Reinforcement support strands not shown for clarity.



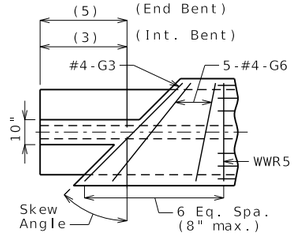
SECTION B-B

Strands not shown for clarity.



LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT

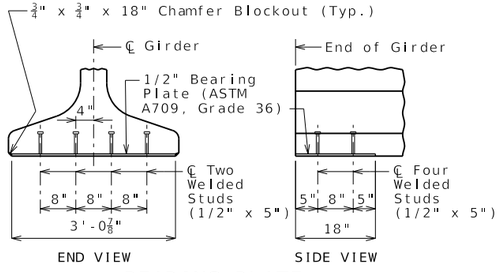
Rotate 180° for right ext.



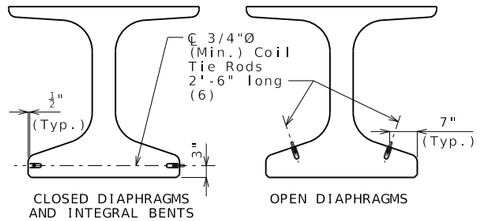
INTERIOR GIRDER AT ALL BENTS & EXTERIOR GIRDER AT END BENT

TOP FLANGE BLOCKOUT

Top Flange Blockout Dimensions			
	(3)	(4)	(5)
Span (1-2)	2'-2⅛"	9⅜"	23⅝"
Span (2-3)	22½"	5¾"	27¼"



BEARING PLATE



COIL TIES

Exclude coil tie at exterior face of exterior girders except at integral end bents.

(6) 2'-4" at exterior face of exterior girders at end bents

NU-GIRDERS - SPANS (1-2) AND (2-3)

Detailed May 2025
Checked Aug. 2025

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

LAUREN A. KITCHEN NUMBER PE-2025040501 PROFESSIONAL ENGINEER STATE OF MISSOURI
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 13
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

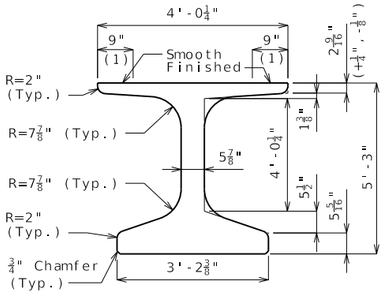
DESCRIPTION
DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

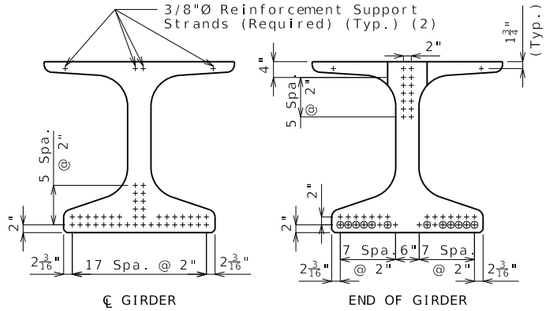
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

(1) Fabricator shall apply a bond breaker to this region.



DIMENSIONS

(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about ℄ Girder. May be moved laterally in pairs.

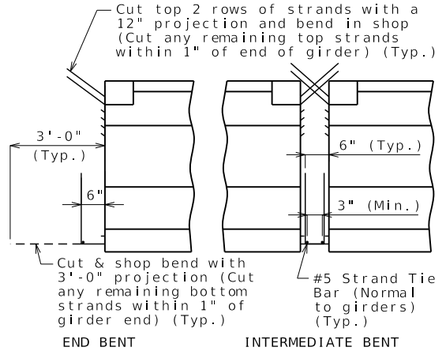


℄ GIRDER END OF GIRDER

STRAND ARRANGEMENT

+ Indicates prestressing strand.

o Indicates cut & shop bend with 3'-0" projection.

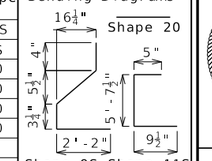


END BENT INTERMEDIATE BENT

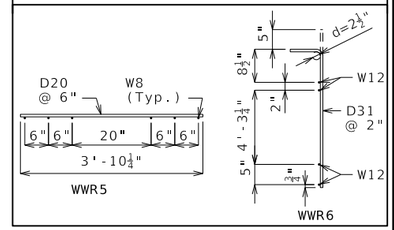
STRANDS AT GIRDER ENDS

Bill of Reinforcing Steel - Each Girder			
No.	Size/ Mark	Length	Shape
238	5 B1	6'-8"	11S
258	4 D1	4'-0"	9S
2	4 G3	4'-9"	20
2	4 G4	2'-3"	20
2	4 G5	3'-4"	20
10	4 G6	Varies	20

Bending Diagrams



Welded Wire Reinforcement - Each Girder



All dimensions are out to out.

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

Actual bar lengths are measured along centerline of bar to the nearest inch.

Minimum clearance to reinforcing shall be one inch.

All bar reinforcement shall be Grade 60.

The two D1 bars may be furnished as one bar at the fabricator's option.

All B1 bars shall be epoxy coated.

G4 and G5 not required for interior girders. Half no. of G3, G4, G5 and G6 not required for ext. girders of end spans.

General Notes:

Concrete for prestressed girders shall be Class A-1 with f'c = 8000 psi and f'ci = 6500 psi.

Use 42 strands, 0.6"Ø Grade 270, with an initial prestress force of 1845 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

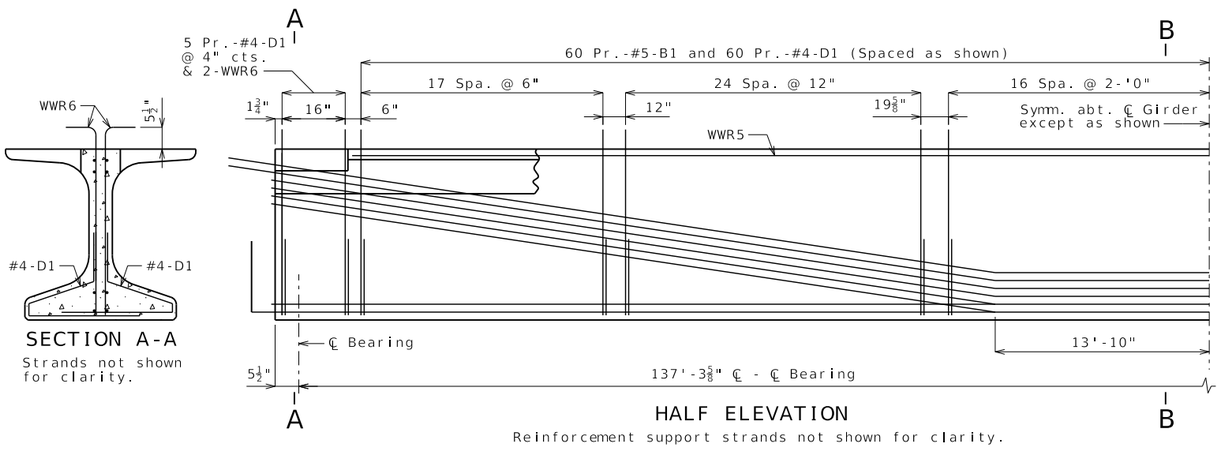
Exterior and interior girders are the same except: coil ties, top flange blockout, holes for steel intermediate diaphragms.

For Girder Camber Diagram, see Sheet No. 17.

The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed. For location of holes and details of steel intermediate diaphragms, see Sheet No. 15.

For location of coil ties at concrete diaphragms and integral bents, see Sheets No. 4, 11 and 16.

Alternate bar reinforcing steel details are provided and may be used. The same type of reinforcing steel shall be used for all girders in all spans.

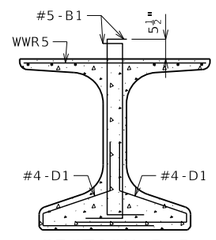


SECTION A-A

Strands not shown for clarity.

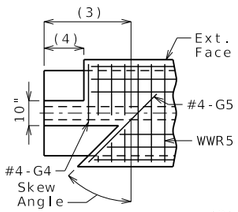
HALF ELEVATION

Reinforcement support strands not shown for clarity.



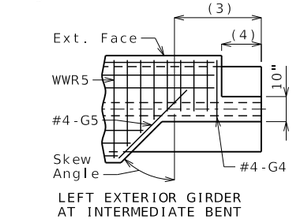
SECTION B-B

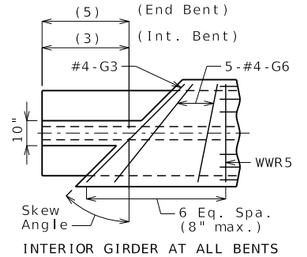
Strands not shown for clarity.



LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT

Rotate 180° for right ext.

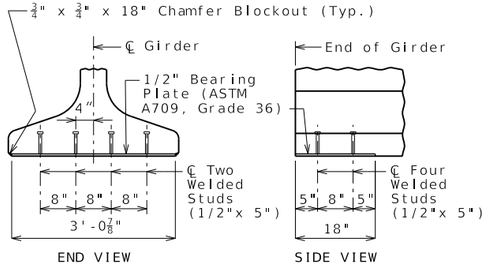




INTERIOR GIRDER AT ALL BENTS & EXTERIOR GIRDER AT END BENT

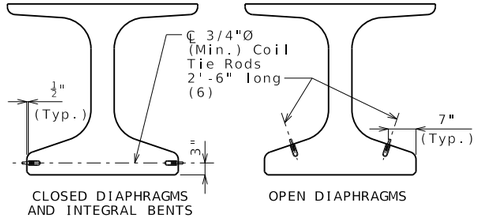
TOP FLANGE BLOCKOUT

Top Flange Blockout Dimensions			
	(3)	(4)	(5)
Span (1-2)	2'-2⅜"	9⅜"	23⅜"
Span (2-3)	22½"	5¾"	27¼"



END VIEW SIDE VIEW

BEARING PLATE



CLOSED DIAPHRAGMS AND INTEGRAL BENTS

OPEN DIAPHRAGMS

COIL TIES

Exclude coil tie at exterior face of exterior girders except at integral end bents.

(6) 2'-4" at exterior face of exterior girders at end bents

NU-GIRDERS (ALTERNATE REINFORCEMENT) - SPANS (1-2) AND (2-3)

Detailed May 2025
Checked Aug. 2025

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

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED 9/25/2025

ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT BR | SHEET NO. 14
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DATE	DESCRIPTION

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

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

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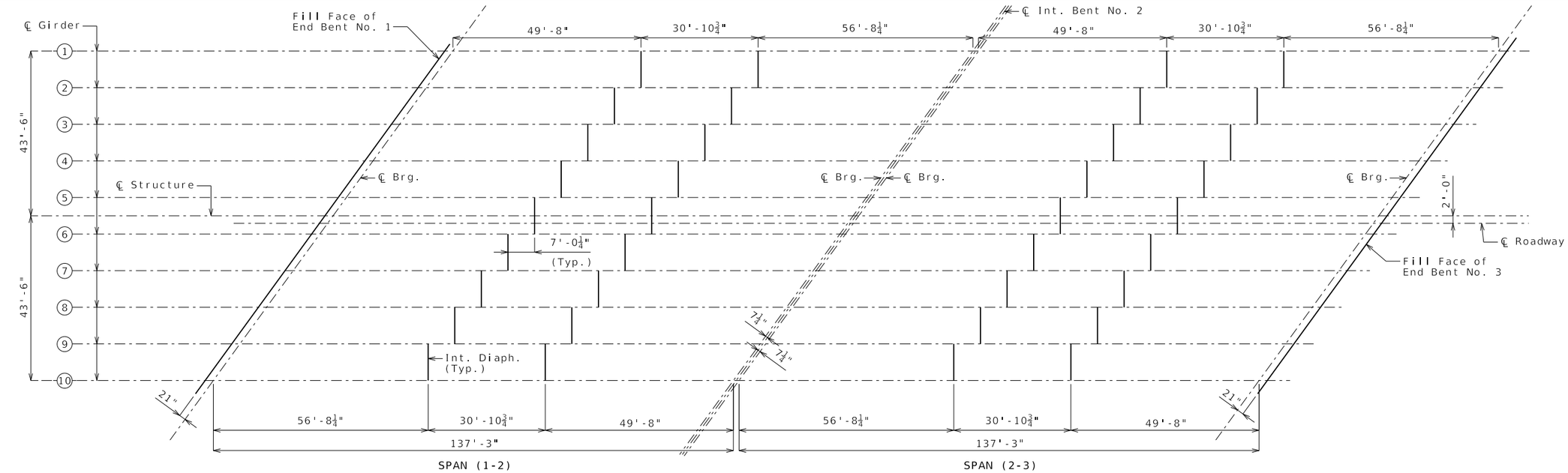
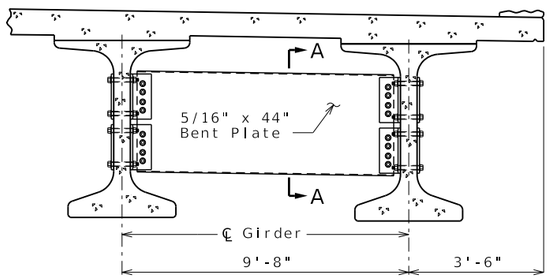
CERTIFICATE OF AUTHORITY NO. 001592

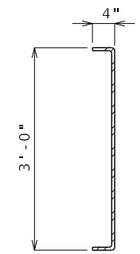


PLAN SHOWING LOCATION OF STEEL INTERMEDIATE DIAPHRAGMS

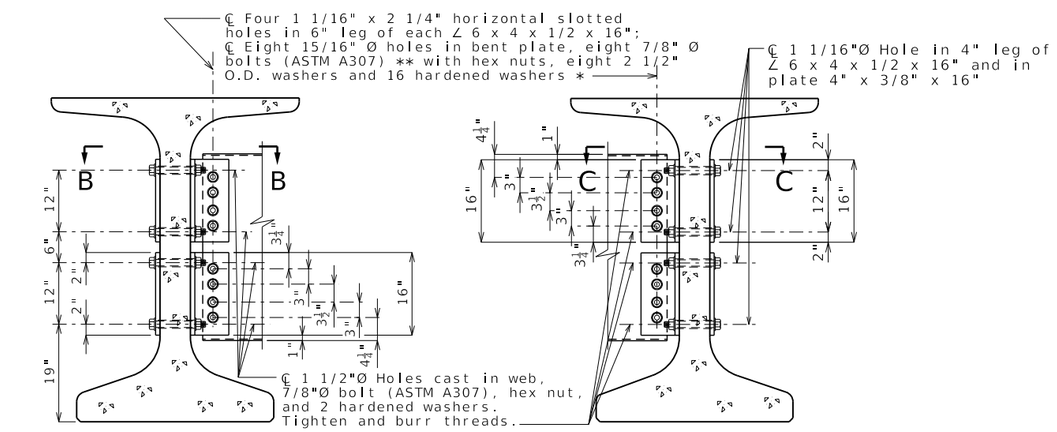
Longitudinal dimensions are horizontal.



PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS

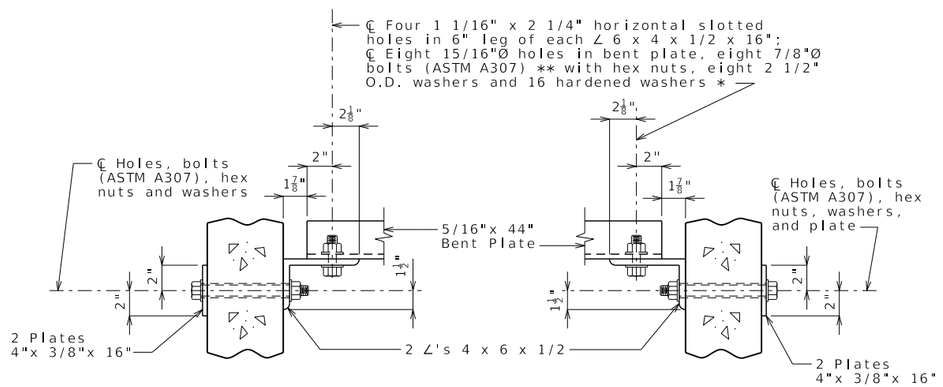


SECTION A-A



SECTION THRU INT. GIRDER AT DIAPHRAGM

SECTION THRU EXT. GIRDER AT DIAPHRAGM



SECTION B-B

SECTION C-C

STEEL DIAPHRAGM NOTES:

* In lieu of 2 1/2" outside diameter washers, contractor may substitute a 3/16" (Min. thickness) plate with four 15/16" Ø holes and one hardened washer per bolt.

** Bolts shall be tightened to provide a tension of one-half that specified in Sec 712 for high strength bolt installation. ASTM F3125 Grade A325 Type 1 bolts may be substituted for and installed in accordance with the requirements for the specified ASTM A307 bolts.

All diaphragm materials including bolts, nuts, and washers shall be galvanized.

Fabricated structural steel shall be ASTM A709 Grade 36 except as noted.

Payment for furnishing and installing steel intermediate diaphragms will be considered completely covered by the contract unit price for Steel Intermediate Diaphragm for P/S Concrete Girders.

Shop drawings will not be required for steel intermediate diaphragms and angle connections.

STEEL INTERMEDIATE DIAPHRAGMS

Detailed May 2025
Checked Aug. 2025

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CERTIFICATE OF AUTHORITY NO. 001592

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 15
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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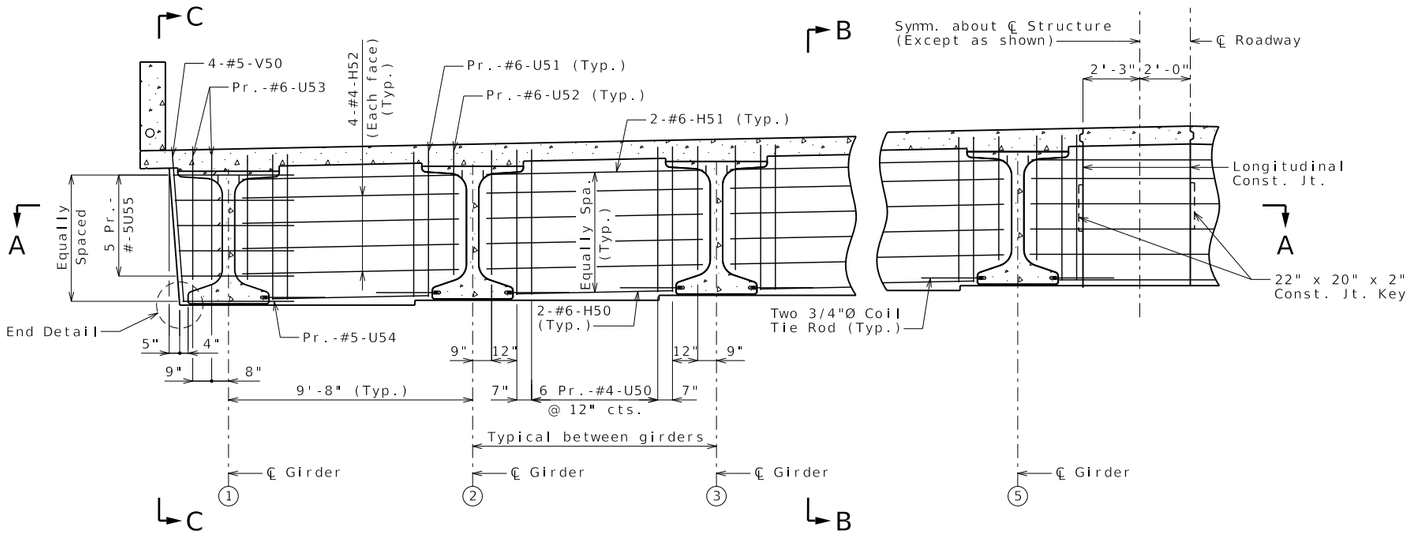
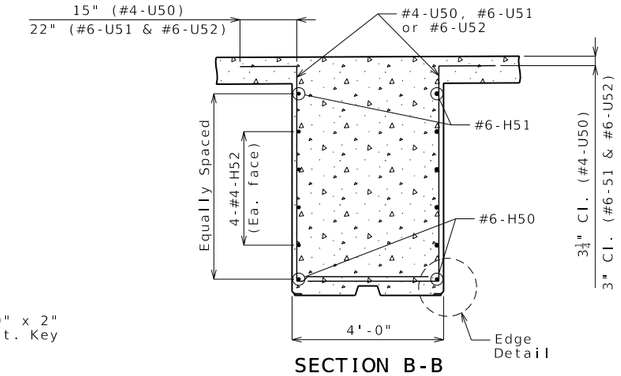
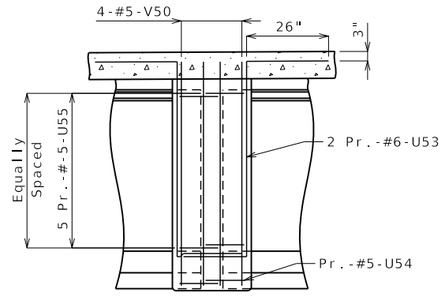


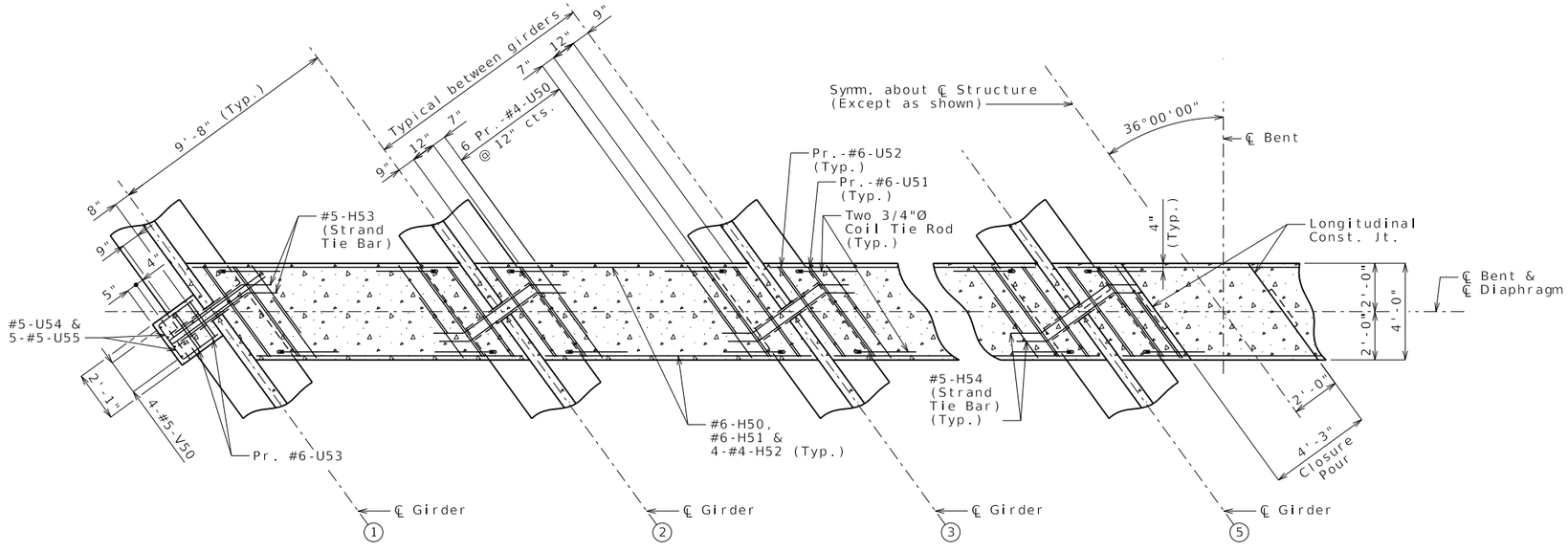
PART SECTION NEAR INTERMEDIATE BENT
Normal to ℄ Structure



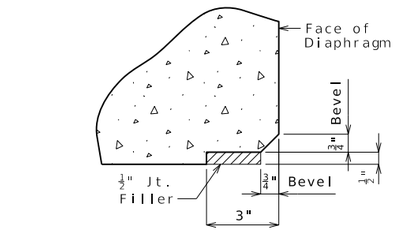
SECTION B-B



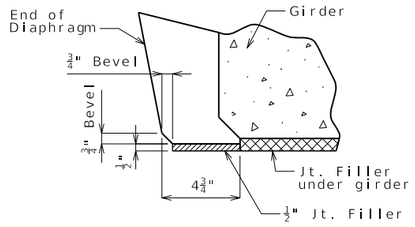
ELEVATION C-C
Barrier not shown for clarity.



SECTION A-A



EDGE DETAIL



END DETAIL

Notes:

For location of Strand Tie Bars, see Sheets No. 13 & 14.

For location and details of Coil Tie Rods, see Sheets No. 13 & 14.

Diaphragms at intermediate bents shall be built vertical.

All U-bars in diaphragms are to be placed parallel to ℄ Roadway.

CONCRETE DIAPHRAGMS AT INTERMEDIATE BENT NO. 2

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 16
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

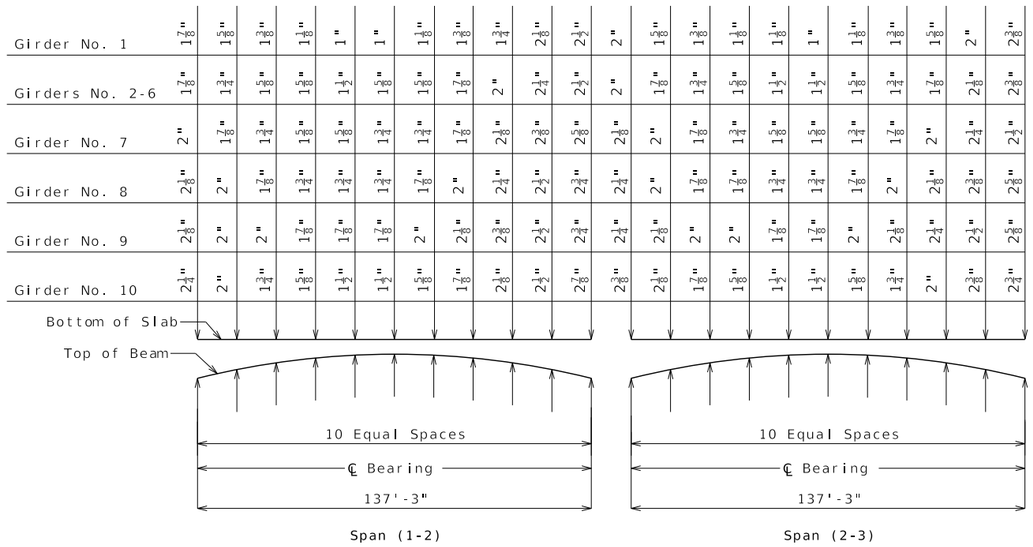
DESCRIPTION | DATE

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

Detailed May 2025
Checked Aug. 2025

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

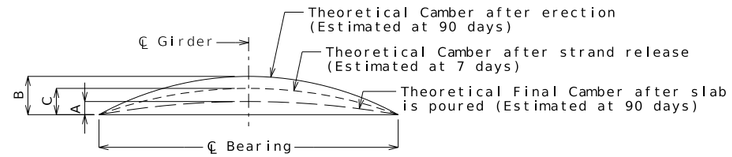
\\oa.ad.oaconsulting.com\fnts-ns1\projects\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_016_J4S3489_CONCRETE DIAPHRAGMS AT INTERMEDIATE BENT NO 2.dgn 3:11:59 PM 9/25/2025



THEORETICAL SLAB HAUNCHING DIAGRAM (ESTIMATED AT 90 DAYS)

If girder camber is different from that shown in the camber diagram, in order to maintain minimum slab thickness, an adjustment of the slab haunches, an increase in slab thickness or a raise in grade uniformly throughout the structure shall be necessary. The haunch shall be limited to ensure the projecting girder reinforcement is embedded into slab at least 2 inches. No payment will be made for additional labor or materials required for variation in haunching, slab thickness or grade adjustment.

Concrete in the slab haunches is included in the Estimated Quantities for Slab on Concrete NU Girder.

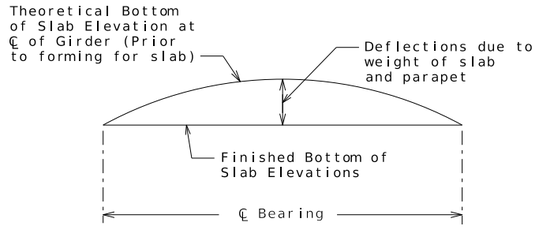


Girder	Span (1-2)			Span (2-3)		
	A	B	C	A	B	C
Exterior	1 1/8"	4 3/8"	2 1/2"	1 1/8"	4 3/8"	2 1/2"
Interior	5/8"			5/8"		

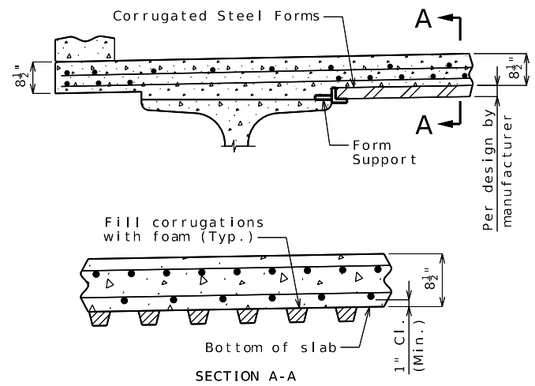
GIRDER CAMBER DIAGRAM

Conversion Factors for Girder Camber (Estimated at 90 days):

0.1 pt. = 0.314 x 0.5 pt.
0.2 pt. = 0.593 x 0.5 pt.
0.3 pt. = 0.813 x 0.5 pt.
0.4 pt. = 0.952 x 0.5 pt.



TYPICAL SLAB ELEVATIONS DIAGRAM



OPTIONAL STAY-IN-PLACE FORM DETAILS

Stay-In-Place Forms:

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

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

Form sheets shall not rest directly on the top of girder flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Drilling holes in the girder flanges will not be permitted. All steel fabrication and construction shall be in accordance with Sec 1080 and 712. Certified field welders will not be required for welding of the form supports.

The design of stay-in-place corrugated steel forms is per manufacturer which shall be in accordance with Sec 703 for false work and forms. Maximum actual weight of corrugated steel forms allowed shall be 4 psf assumed for girder loading.

Theoretical Bottom of Slab Elevations at Centerline of Girder (Prior to forming for slab) (Estimated at 90 days)

Girder Number	Span (1-2) (137'-3" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	993.16	992.85	992.53	992.19	991.84	991.45	991.05	990.62	990.16	989.70	989.22
2	993.55	993.26	992.95	992.62	992.27	991.89	991.88	991.05	990.58	990.10	989.61
3	993.95	993.65	993.34	993.02	992.67	992.29	991.88	991.44	990.98	990.50	990.01
4	994.34	994.05	993.74	993.41	993.06	992.68	992.27	991.84	991.37	990.89	990.40
5	994.74	994.44	994.13	993.81	993.46	993.08	992.67	992.23	991.77	991.29	990.80
6	995.02	994.72	994.41	994.09	993.74	993.36	992.95	990.62	992.05	991.57	991.08
7	995.03	994.73	994.27	994.10	993.75	993.37	992.96	992.52	992.06	991.58	991.09
8	995.03	994.74	994.43	994.11	993.76	993.38	992.97	992.53	992.07	991.59	991.10
9	995.04	994.75	994.44	994.12	993.77	993.39	992.98	992.54	992.08	991.60	991.10
10	995.05	994.74	994.42	994.09	993.73	993.35	992.95	992.51	992.06	991.59	991.11
Girder Number	Span (2-3) (137'-3" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	989.18	988.86	988.55	988.21	987.85	987.47	987.07	986.63	986.18	985.71	985.24
2	989.57	989.27	988.97	988.64	988.29	987.91	987.50	987.06	986.60	986.12	985.63
3	989.97	989.67	989.36	989.03	988.68	988.30	987.90	987.46	987.00	986.52	986.03
4	990.36	990.06	989.76	989.43	989.08	988.70	988.29	987.85	987.39	986.91	986.42
5	990.75	990.46	990.15	989.82	989.47	989.09	988.69	988.25	987.79	987.31	986.82
6	991.04	990.74	990.43	990.11	989.76	989.38	988.97	988.53	988.07	987.59	987.10
7	991.05	990.75	990.44	990.12	989.77	989.39	988.98	988.54	988.08	987.60	987.11
8	991.05	990.76	990.45	990.13	989.77	989.40	988.99	988.55	988.09	987.61	987.11
9	991.06	990.77	990.46	990.13	989.78	989.40	989.00	988.56	988.10	987.61	987.12
10	991.07	990.76	990.44	990.11	989.75	989.37	988.96	988.53	988.08	987.61	987.13

Elevations are based on a constant slab thickness of 8 1/2" and include allowance for theoretical dead load deflections due to weight of slab and parapet.

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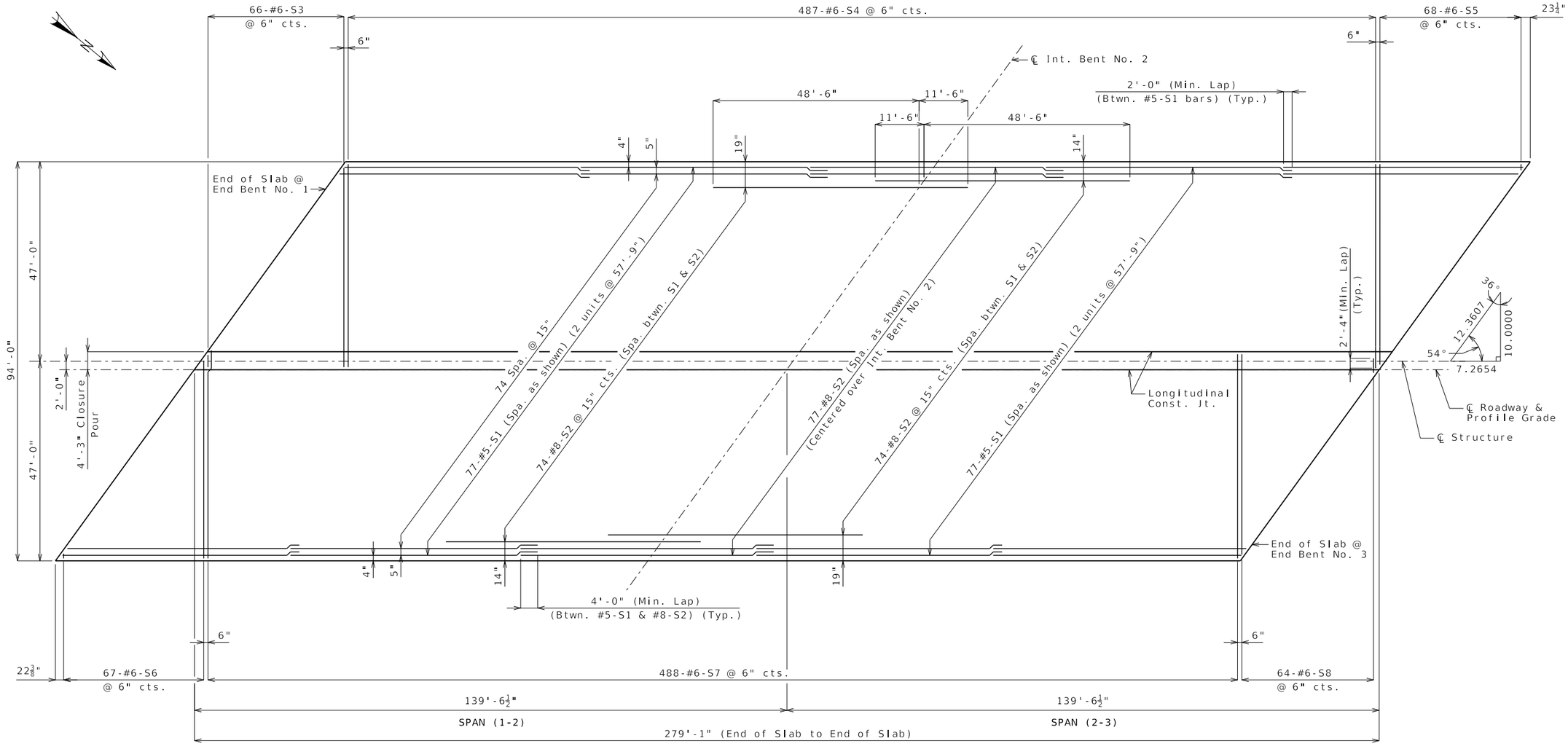
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 17
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



PLAN OF SLAB SHOWING TOP REINFORCEMENT

Notes:

Longitudinal slab dimensions are measured horizontally.

For Plan of Slab Showing Bottom Reinforcement, see Sheet No. 19.

For Section Thru Slab and Slab Pouring Sequence, see Sheet No. 20.

For details and reinforcing of Parapet Wall not shown, see Sheets No. 21 thru 23.

For Theoretical Bottom of Slab Elevations, Girder Camber Diagram, and Theoretical Slab Haunching Diagram, see Sheet No. 17.

Detailed May 2025
Checked Aug. 2025

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

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

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

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
BR	18

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

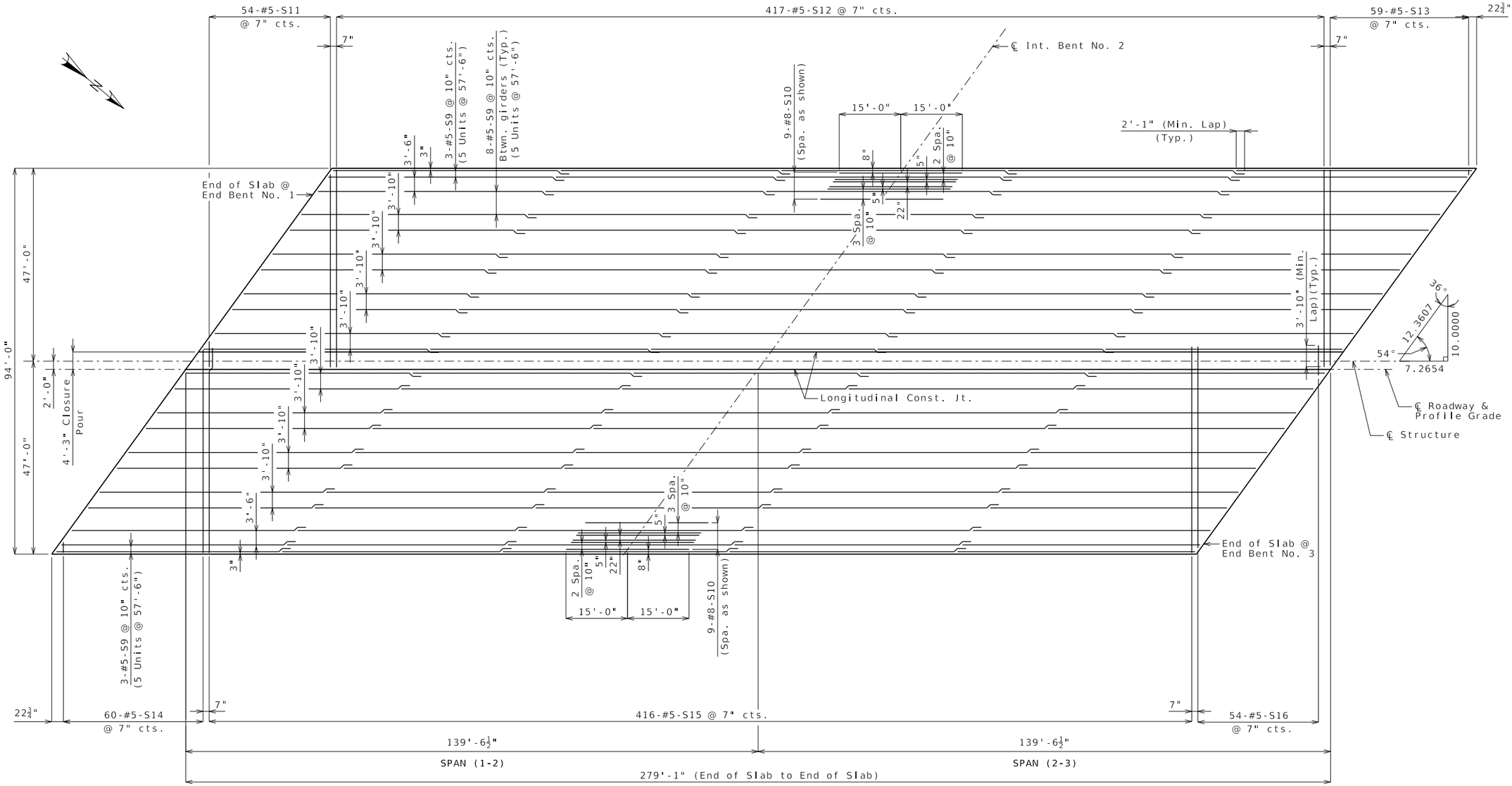
PROJECT NO.

BRIDGE NO.
A9700

DESCRIPTION	DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



Notes:

Longitudinal slab dimensions are measured horizontally.

For Plan of Slab Showing Top Reinforcement, see Sheet No. 18.

For Section Thru Slab and Slab Pouring Sequence, see Sheet No. 20.

For details and reinforcing of Parapet Wall not shown, see Sheets No. 21 thru 23.

For Theoretical Bottom of Slab Elevations, Girder Camber Diagram, and Theoretical Slab Haunching Diagram, see Sheet No. 17.

PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

Detailed May 2025
Checked Aug. 2025

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STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 19
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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

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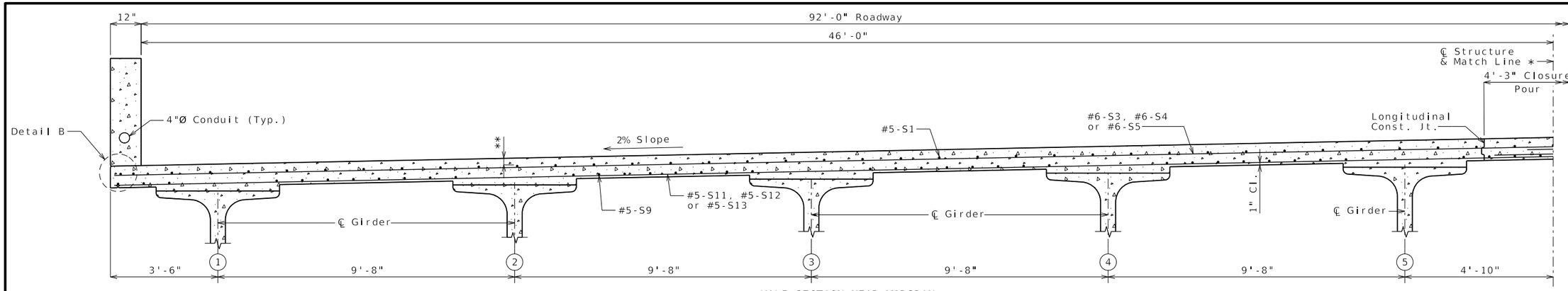
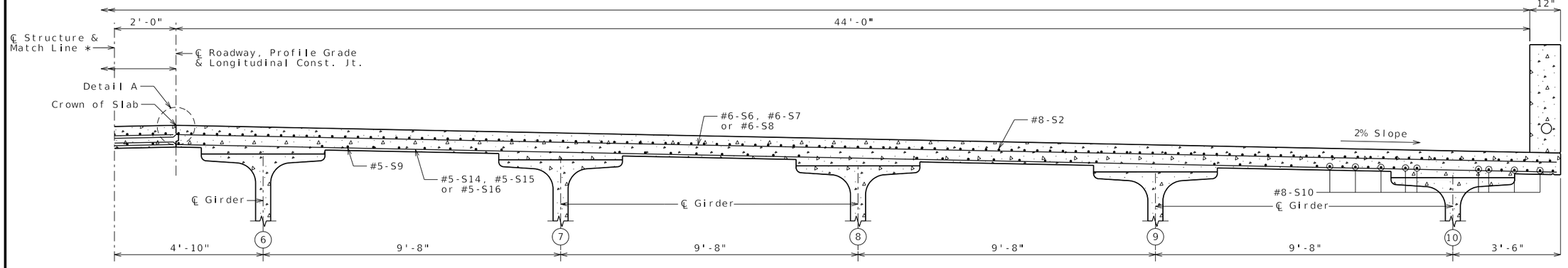
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



HALF SECTION NEAR MIDSPAN

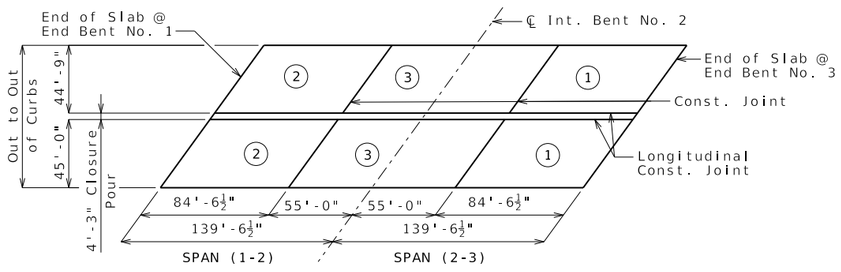


HALF SECTION NEAR INTERMEDIATE BENT

SECTION THRU SLAB

* Symm. about ℄ Structure except as shown

** $3\frac{1}{8}$" Cl. (#5 Bar)
$2\frac{3}{4}$" Cl. (#8 Bar)



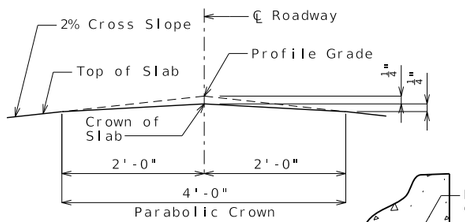
	Sequence of Pours			Min. Rate of Pour Cu. Yds./Hr.
	Direction			With Retarder
Basic Sequence	1	2	3	25
	Up Grade			
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703.				
Alternate A Pours	1	3 + 2		76
	End to 3	1 to End		
Alternate B Pours	1 + 3 + 2			76
	End to End			

The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours, and shall pour and satisfactorily finish the slab pours at the rate given.

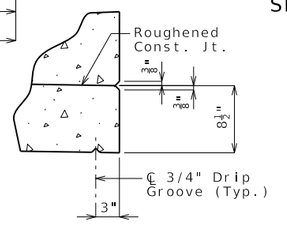
The concrete diaphragm at the intermediate bent and integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

The longitudinal construction joints may be omitted with approval of the engineer. When the longitudinal construction joints are omitted, the minimum rate of pour shall be increased by a factor of 1.92.

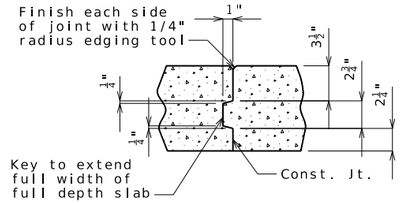
SLAB POURING SEQUENCE



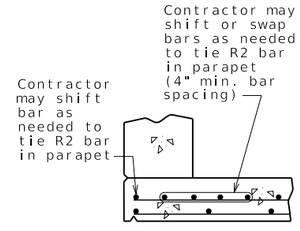
DETAIL A



DETAIL B



SLAB CONSTRUCTION JOINT



OPTIONAL SHIFTING TOP BARS AT PARAPET WALL

Notes:

Expansive Class B-2 concrete shall be used in the closure pour. Forms shall be released before the closure pour.

For reinforcement of Parapet Wall not shown, see Sheets No. 21 thru 23.

For Theoretical Bottom of Slab Elevations, Girder Camber Diagram, and Theoretical Slab Haunching Diagram, see Sheet No. 17.

For Plan of Slab Showing Bottom Reinforcement, see Sheet No. 19.

For Plan of Slab Showing Top Reinforcement, see Sheet No. 18.

SLAB DETAILS

Detailed May 2025
Checked Aug. 2025

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

LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
STATE OF MISSOURI
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 20
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

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)
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olsson
1301 BURLINGTON STREET, STE. 100
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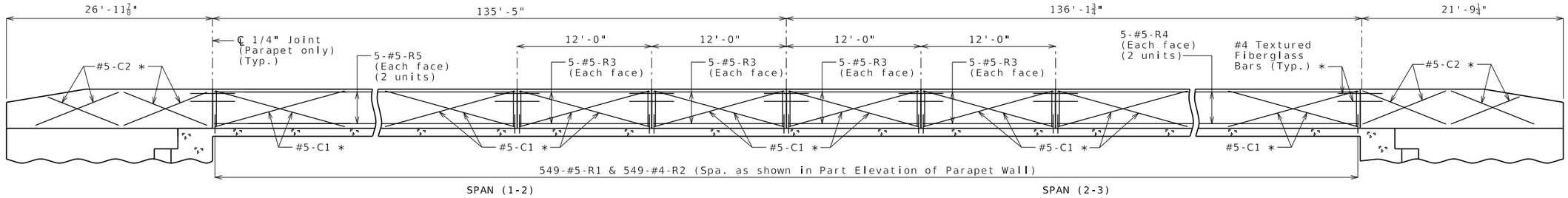
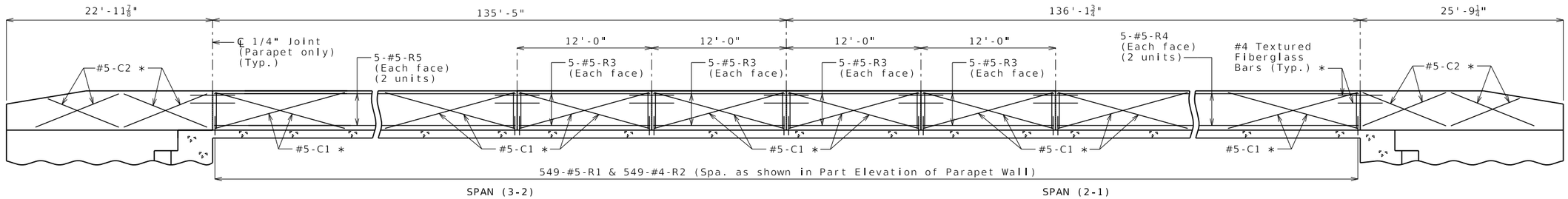
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



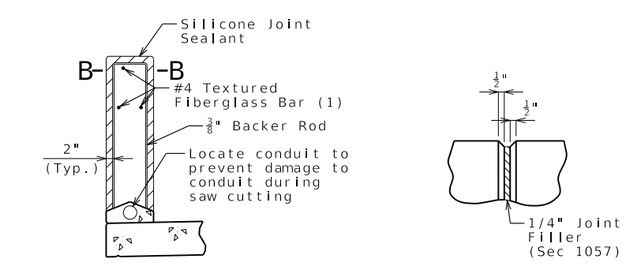
ELEVATION OF LEFT 42 IN. PARAPET WALL

Longitudinal dimensions are horizontal.
Conduit not shown for clarity.



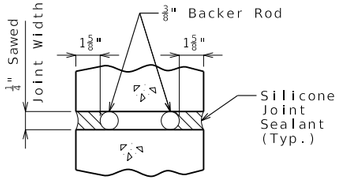
ELEVATION OF RIGHT 42 IN. PARAPET WALL

Longitudinal dimensions are horizontal.
Conduit not shown for clarity.

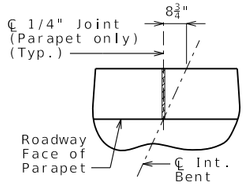


SECTION THRU SAW CUT JOINT

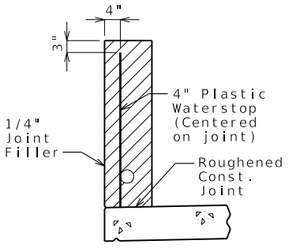
PART ELEVATION AT FORMED JOINT



SECTION B-B



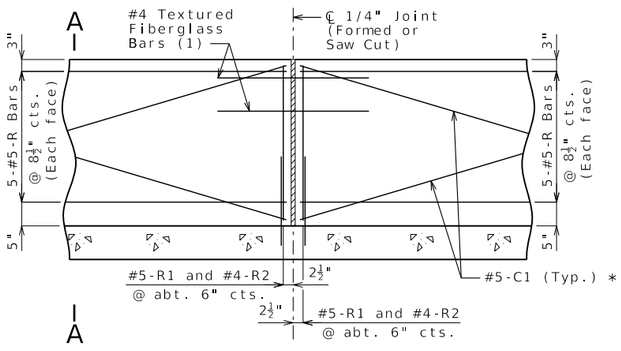
PART PLAN SHOWING JOINT LOCATION



WATERSTOP DETAIL

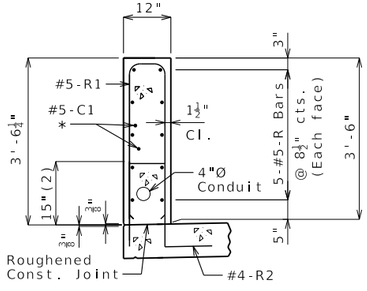
Plastic waterstop shall be placed in all formed joints, except structures with superelevation, use on lower joints only.

Cost of plastic waterstop, complete in place, will be considered completely covered by the contract unit price for 42 in. Parapet Wall.



PART ELEVATION OF PARAPET WALL

(1) Four feet long, centered on joint, slip-formed option only

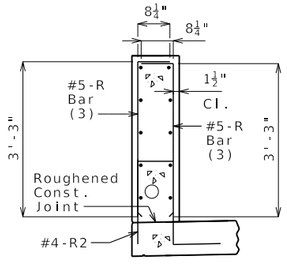


SECTION A-A

Use a minimum lap of 2'-6" for #5 horizontal parapet bars.

The cross-sectional area above the slab is 3.51 square feet.

(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

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

General Notes:

* Slip-formed option only.

Conventional forming or slip forming may be used. Saw cut joints may be used with conventional forming.

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

All exposed edges of parapet 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 42 in. Parapet Wall per linear foot.

Concrete in parapet shall be Class B-1.

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

Concrete traffic barrier delineators shall be placed on top of the parapet 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 42 in. Parapet Wall.

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

For slip- formed option, both sides of parapet shall have a vertically broomed finish and the top shall have a transversely broomed finish.

Plastic waterstop shall not be used with saw cut joints.

Conduit shall be included in both parapets, See Sheet No. 24 for details of conduit system on structure.

42 IN. PARAPET WALL

Detailed May 2025
Checked Aug. 2025

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

STATE OF MISSOURI
LAUREN A. KITCHEN
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PROFESSIONAL ENGINEER
9/25/2025

olsson
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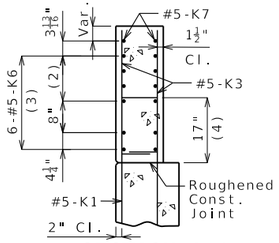
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 21
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

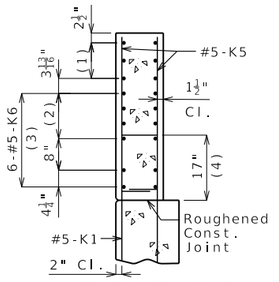
DESCRIPTION | DATE

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

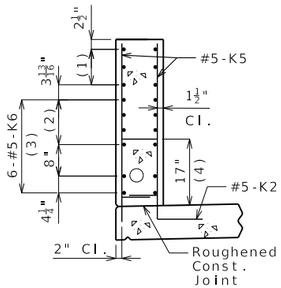
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



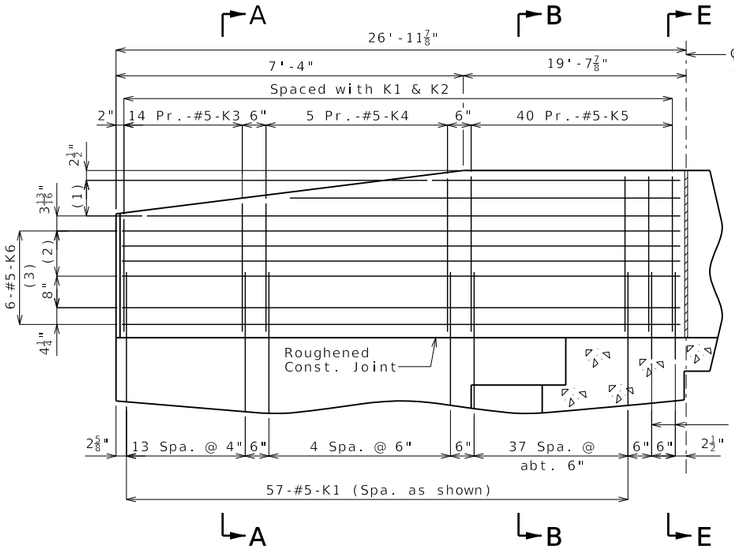
SECTION A-A



SECTION B-B



SECTION E-E



PART ELEVATION

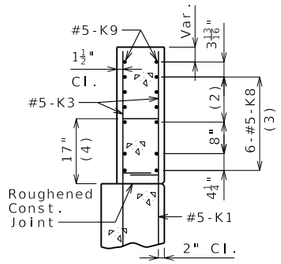
(1) 3-#5-K7 @ 4½" cts., each face

(2) 3 spaces @ 3 13/16"

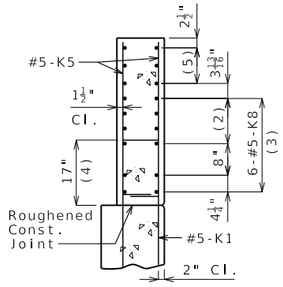
(3) Spaced as shown, each face

(4) To top of bar

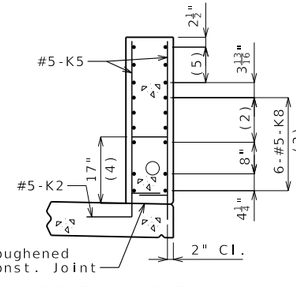
(5) 3-#5-K9 @ 4½" cts., each face



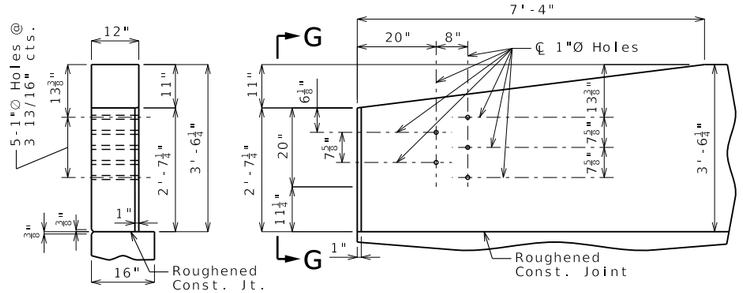
SECTION C-C



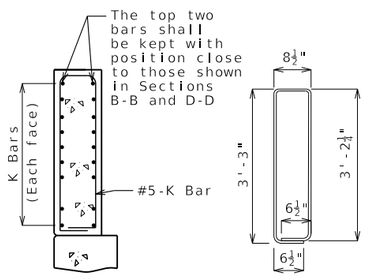
SECTION D-D



SECTION F-F



DETAILS OF GUARD RAIL ATTACHMENT



K5 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

The K5 bar combination may be furnished as one bar as shown, at the ontractor's option.

All dimensions are out to out.

General Notes:

Concrete traffic barrier delineators shall be placed on top of the parapet 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 42 in. Parapet Wall.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 1/2" except as shown for bars embedded into end bent.

LEFT 42 IN. PARAPET WALL AT END BENTS

Detailed May 2025
Checked Aug. 2025

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

F:\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_022_J4S3489_LEFT 42 IN. PARAPET WALL AT END BENTS.dgn 3:12:11 PM 9/25/2025

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

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

DATE PREPARED 9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
BR	22

COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION	DATE

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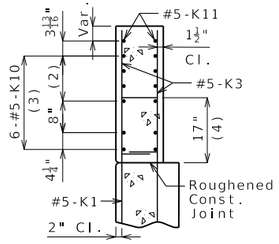
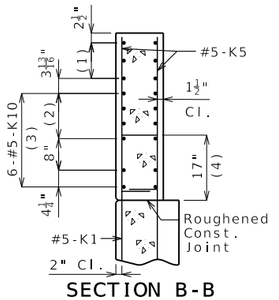
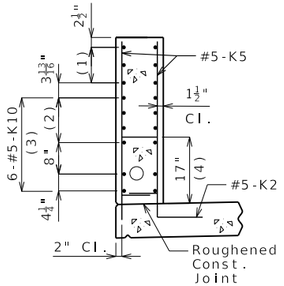


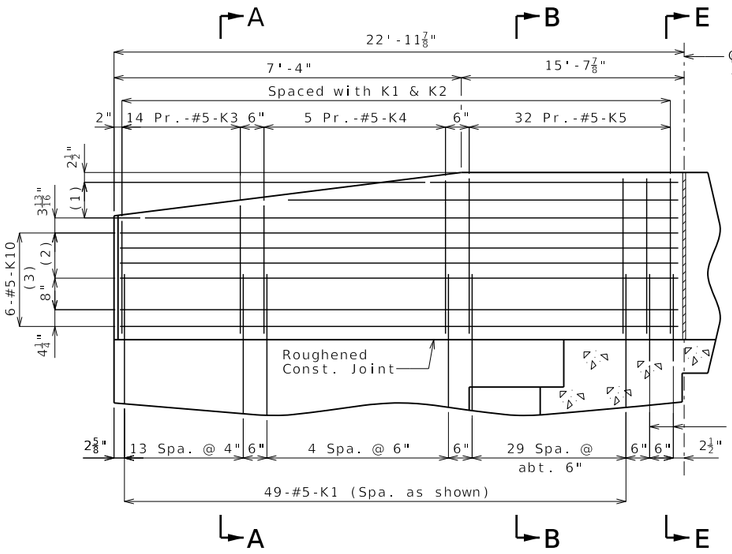
SECTION A-A



SECTION B-B



SECTION E-E



PART ELEVATION

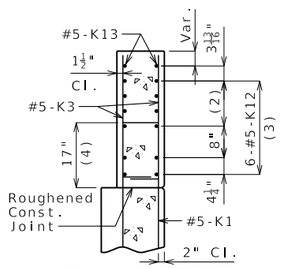
(1) 3-#5-K11 @ 4½" cts., each face

(2) 3 spaces @ 3 13/16"

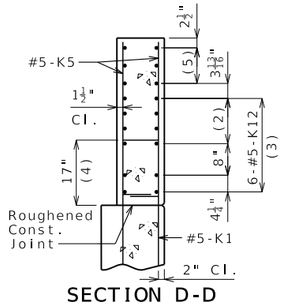
(3) Spaced as shown, each face

(4) To top of bar

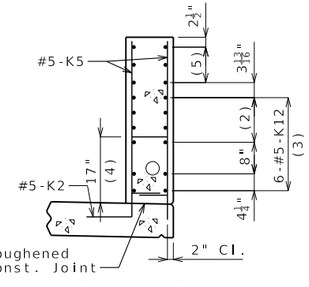
(5) 3-#5-K13 @ 4½" cts., each face



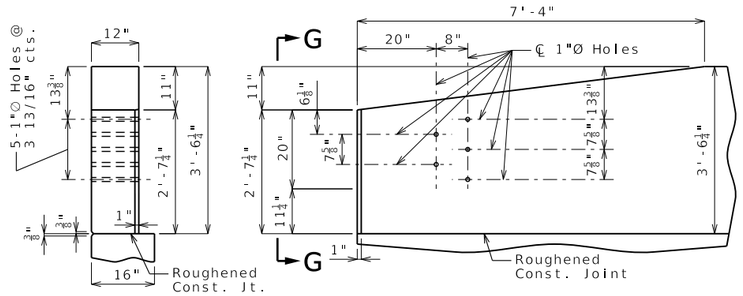
SECTION C-C



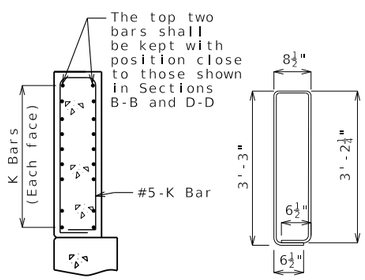
SECTION D-D



SECTION F-F



DETAILS OF GUARD RAIL ATTACHMENT



K5 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

The K5 bar combination may be furnished as one bar as shown, at the ontractor's option.

All dimensions are out to out.

General Notes:

Concrete traffic barrier delineators shall be placed on top of the parapet 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 42 in. Parapet Wall.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 1/2" except as shown for bars embedded into end bent.

RIGHT 42 IN. PARAPET WALL AT END BENTS

Detailed May 2025
Checked Aug. 2025

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

F:\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_023_J4S3489_RIGHT 42 IN. PARAPET WALL AT END BENTS.dgn 3:12:13 PM 9/25/2025

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
BR	23

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

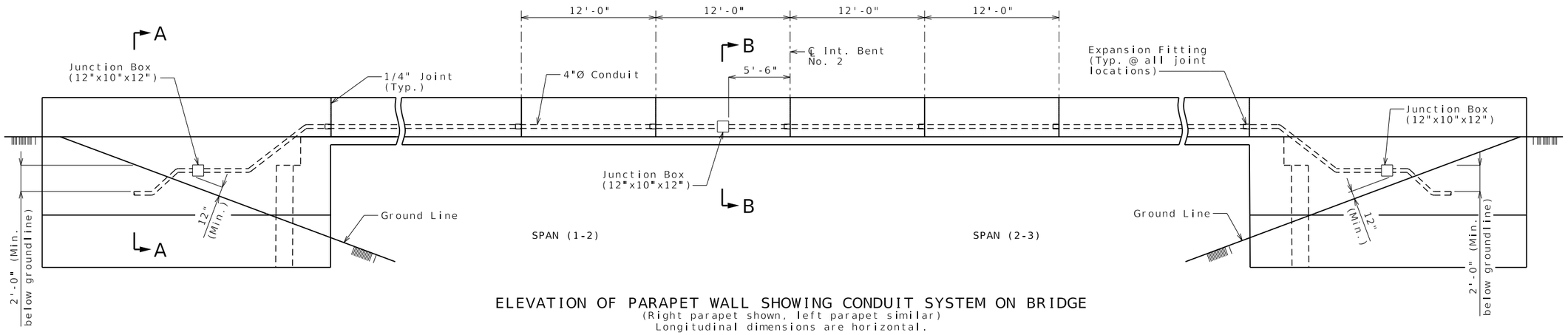
BRIDGE NO.
A9700

DESCRIPTION	DATE

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

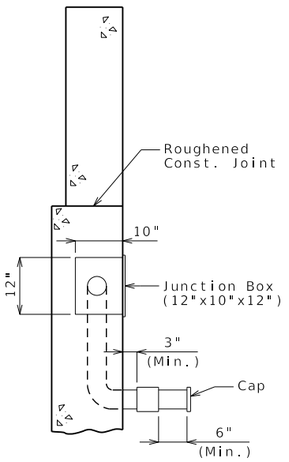
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

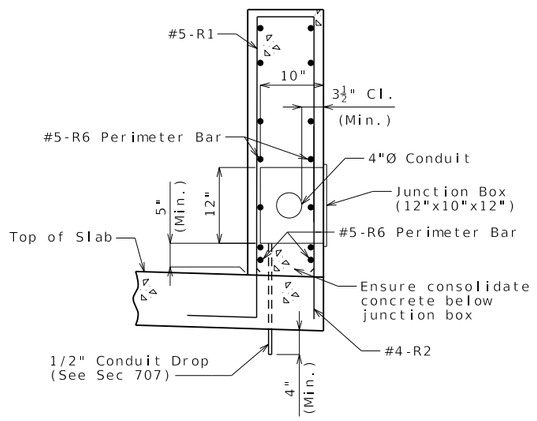


ELEVATION OF PARAPET WALL SHOWING CONDUIT SYSTEM ON BRIDGE

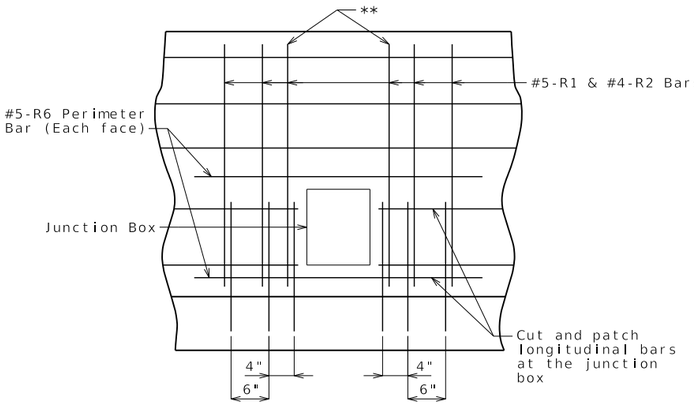
(Right parapet shown, left parapet similar)
Longitudinal dimensions are horizontal.



SECTION A-A

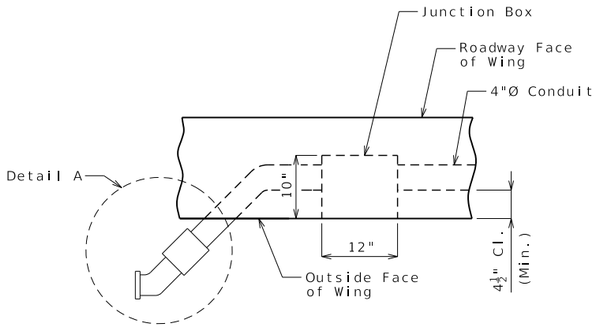


SECTION B-B

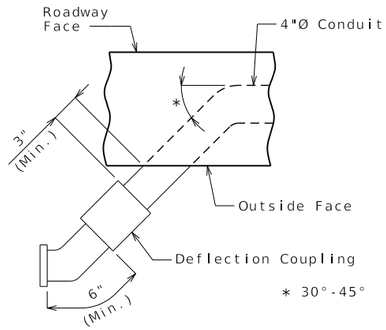


PART ELEVATION OF BARRIER OVER SLAB SHOWING PERIMETER STEEL

** Shift bars to clear junction box



PART PLAN SHOWING JUNCTION BOX IN WING



DETAIL A

CONDUIT DETAILS

Notes:

All conduits shall be rigid nonmetallic schedule 40 heavy wall polyvinyl chloride (PVC) with 3 1/2-inch minimum cover in barrier and 4 1/2-inch minimum cover in abutment wing. Each section of conduit shall bear the Underwriters Laboratories (UL) label.

Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

Expansion fittings shall be placed as shown and set in accordance with the manufacturer's requirements and based on the air temperature at the time of setting given an estimated total expansion movement of 1 inch at filled joints using a maximum temperature range of 120°F and a maximum temperature of 110°F.

All end bent and barrier junction boxes shall be PVC molded in accordance withSec 1062 and designed for flush mounting. The conduit terminations shall be permanent or separable. The terminations and covers shall be of watertight construction and shall meet requirements for NEMA 4 or NEMA 4X enclosure.

Drainage shall be provided at low points or other critical locations of all conduits and all junction boxes in accordance with Sec 707. All conduits shall be sloped to drain where possible.

Junction box size shown on plan may require special order. Smaller junction box may be substituted if junction box meets conduit installation, clearance and project requirements.

MoDOT Construction Personnel: Indicate in field and on bridge plans for future work the exact location of buried conduit at ends of bridge that are capped and not immediately used.

Payment for furnishing and installing Conduit System, complete in place, will be considered completely covered by the contract lump sum price for Conduit System on Structure.

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 24
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION | DATE

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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1301 BURLINGTON STREET, STE. 100
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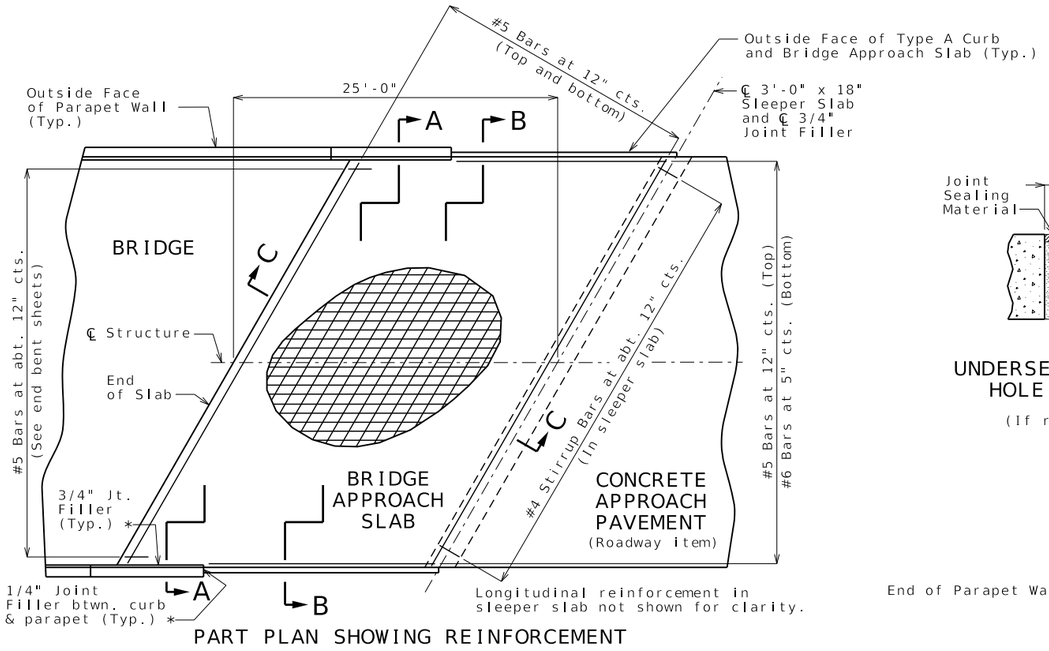
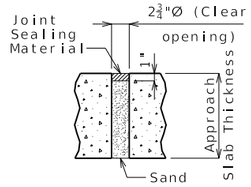
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

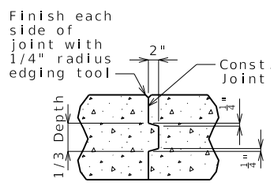


PART PLAN SHOWING REINFORCEMENT



UNDERSEAL ACCESS HOLE DETAIL

(If required)



CONSTRUCTION JOINT DETAIL

General Notes:

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

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

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.

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

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 24 inches for #5 bars and 40 inches for #6 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.

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

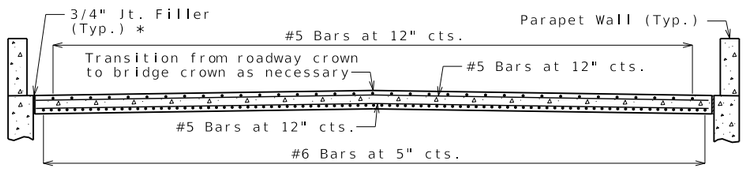
Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge slab.

For concrete approach pavement details, see roadway plans.

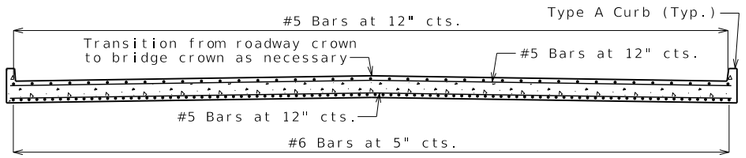
See Missouri Standard Plan 609.00 for details of Type A curb.

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

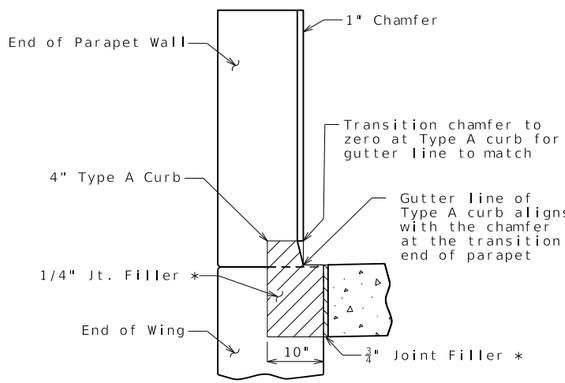
* Seal joint between vertical face of approach slab and wing with sealant in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.



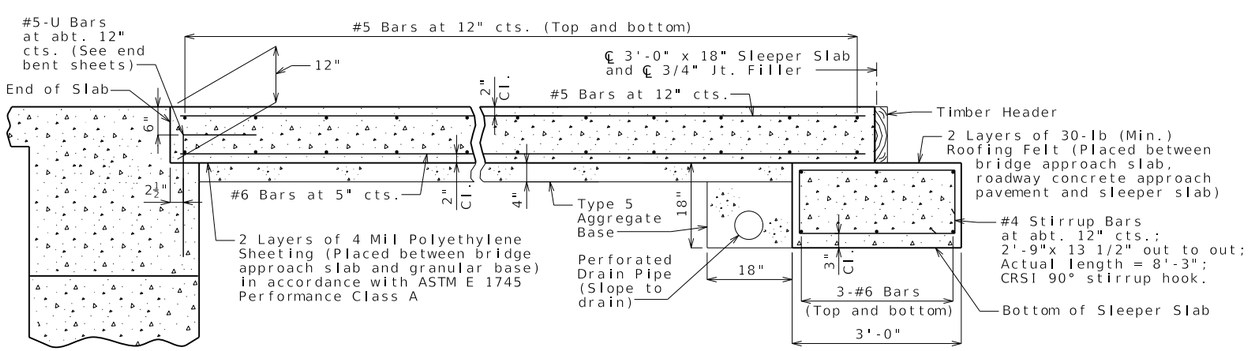
SECTION A-A



SECTION B-B



SECTION BETWEEN CURB AND PARAPET WALL



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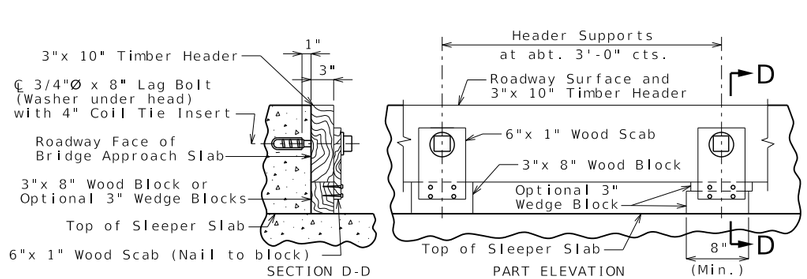

DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

BRIDGE APPROACH SLAB (MAJOR)

Detailed May 2025
Checked Aug. 2025

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

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 25
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DATE | DESCRIPTION

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
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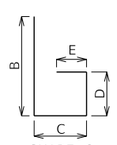
CERTIFICATE OF AUTHORITY NO. 001592



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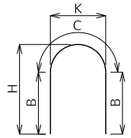

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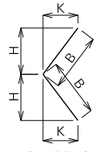

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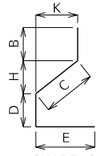

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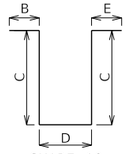

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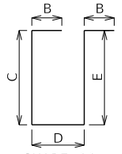

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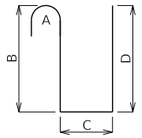

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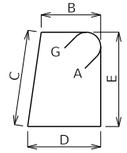

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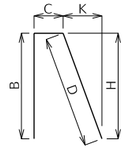

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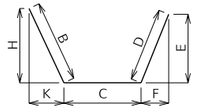

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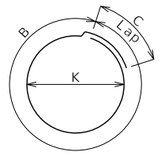

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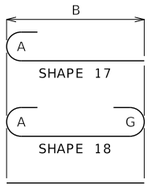
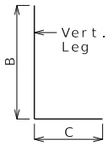


SHAPE 17
SHAPE 18
SHAPE 20



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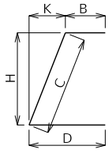

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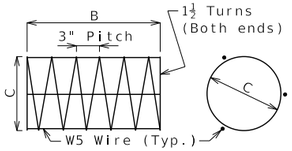

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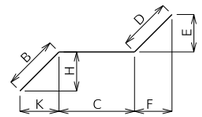

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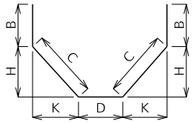

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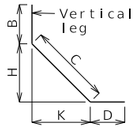

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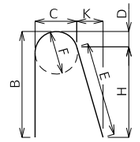

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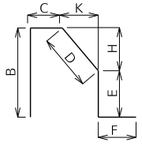

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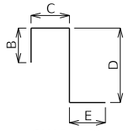

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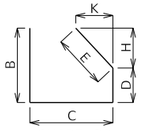

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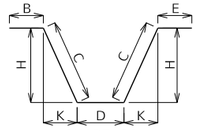

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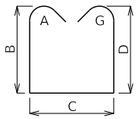

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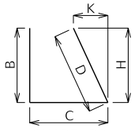

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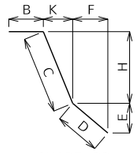
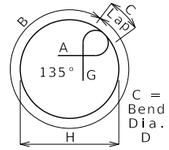
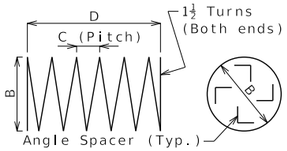


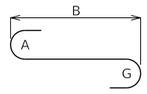
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

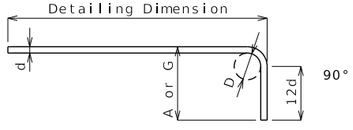


SHAPE 36

Finished Bend Diameters D and Hook Dimensions

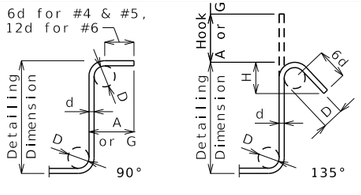
Standard Pin Bend Shapes

Size	Case	D	A or G		J
			90°	180°	180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"



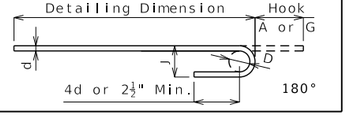
Stirrup Pin Bend Shapes (S)

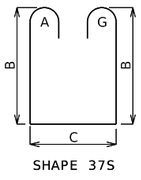
Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4½"	5"	2⅝"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"



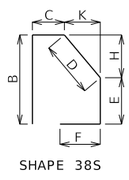
Applicable for all grades of steel.

Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only.





SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

All dimensions are out to out.

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.

(1) Shall be a deformed or plain spiral bar or wire.

Four angle or channel spacers are required for each column spiral. Spacers are to be placed on inside of spirals. Length and weight of column spirals do not include splices or spacers.

Reinforcing Steel Totals (Pounds)

	Size	Substructure		Superstructure				Entire Bridge	
				Slab		Parapet Wall	Slip Form		
		Plain	Epoxy	Plain	Epoxy			Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	985	0	0	3105	3545	0	985	6650
	5	4975	0	0	76,858	18,805	535	4975	96,147
	6	9426	0	0	102,451	0	0	9426	102,451
	7	414	0	0	0	0	0	414	0
	8	9837	0	0	47,993	0	0	9837	47,993
	9	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0
	11	45,948	0	0	0	0	0	45,948	0
	14	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0
By Type		71,585	0	0	230,407	22,350	535	71,585	253,292

All superstructure reinforcing steel shall be epoxy coated unless otherwise specified.

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed May 2025
Checked Aug. 2025

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

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 26
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

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

DESCRIPTION | DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		Substructure													
		Int Bent 2													
81	7 D200	BEAM		20		2 6.00							2 6	2 6	414
10	11 H200	BEAM		17		19 8.00							21 4	21 4	1133
40	11 H201	BEAM		20		20 10.00							20 10	20 10	4428
10	11 H202	BEAM		17		53 10.00							55 6	55 6	2949
30	11 H203	BEAM		20		42 1.00							42 1	42 1	6708
24	6 H204	BEAM		20		57 6.00							57 6	57 6	2073
16	6 H205	BEAM		10S			12.00	4 1.50					6 2	5 10	140
123	4 P200	COLUMN		16		10 2.50	20.00					3 3.00	11 11	11 9	965
270	5 P201	DRILLED SHAFT		16		15 8.50	2 1.00					5 0.00	17 9	17 8	4975
144	6 U200	BEAM		10S			4 5.00	3 0.00					11 10	11 6	2487
214	6 U201	BEAM		10S			4 5.00	4 3.00					13 1	12 9	4098
4	6 U202	BEAM		10S			5 4.00	3 0.00					13 8	13 4	80
6	6 U203	BEAM		10S			5 4.00	4 3.00					14 11	14 7	131
10	6 U204	BEAM		10S			5 8.50	4 3.00					15 8	15 4	230
4	6 U205	BEAM		10S			6 1.00	4 3.00					16 5	16 1	97
4	6 U206	BEAM		10S			6 1.75	3 0.00					15 4	15 0	90
6	4 U207	BEAM		10S			6.00	4 3.00					5 3	5 1	20
144	8 V200	COLUMN		20		18 2.00							18 2	18 2	6985
144	8 V201	DRILLED SHAFT		20		7 5.00							7 5	7 5	2852
144	11 V202	DRILLED SHAFT		20		40 2.00							40 2	40 2	30730
		Superstructure													
		End Bent 1													
15	6 F100	WING BRACE	E	15S		20.00	7 3.25	20.00	17.75	9.00	9.00	17.75	10 7	10 6	237
5	6 F101	DIAPHRAGM	E	21S			6 9.25	3 7.50			5 5.75	3 11.75	10 5	9 11	74
12	6 F102	WING BRACE	E	15S		20.00	3 10.00	20.00	17.75	9.00	9.00	17.75	7 2	7 1	128
5	6 F103	DIAPHRAGM	E	21S		3 7.50	4 11.75				4 0.25	2 11.25	8 7	8 7	64
12	8 H100	BEAM	E	20		42 5.00							42 5	42 5	1359
13	6 H101	BEAM	E	18		7 2.25							8 7	8 7	168
4	8 H102	BEAM	E	20	1	54 2.00							54 2	54 2	
		INCR. = 8.00"				56 2.00							56 2	56 2	589
16	8 H103	BEAM	E	20		18 5.00							18 5	18 5	787
4	8 H104	BEAM	E	20		20 4.00							20 4	20 4	217
8	6 H105	BEAM	E	20		59 11.00							59 11	59 11	720
4	6 H106	BEAM	E	20		47 6.00							47 6	47 6	285
4	6 H107	BEAM	E	20		35 7.00							35 7	35 7	214
12	6 H108	DIAPHRAGM	E	20		59 5.00							59 5	59 5	1071
2	6 H109	DIAPHRAGM	E	20		2 0.00							2 0	2 0	6
10	6 H110	DIAPHRAGM	E	20		3 6.00							3 6	3 6	53
9	6 H111	DIAPHRAGM	E	20		7 8.00							7 8	7 8	104
45	6 H112	DIAPHRAGM	E	20		10 7.00							10 7	10 7	715
12	8 H113	DIAPHRAGM	E	20		42 3.00							42 3	42 3	1354
10	5 H114	STRAND TIE	E	23S		15.00	3 2.50	15.00	8.75	12.25	8.75	12.25	5 9	5 8	59
16	8 H115	WING	E	20		24 2.00							24 2	24 2	1032
58	6 H116	WING	E	20		23 1.00							23 1	23 1	2011
4	6 H117	WING	E	20		14 4.00							14 4	14 4	86
45	5 U100	BEAM	E	10S			7 9.00	3 8.50					19 3	19 0	892
33	4 U101	BEAM	E	13S		3 8.50	4 6.25	3 8.50	4 6.25				17 3	16 11	373
12	4 U102	BEAM	E	10S			4 6.25	3 8.50					12 9	12 7	101
5	4 U103	BEAM	E	13S		3 8.50	4 3.00	3 8.50	4 3.00				16 8	16 5	55
4	4 U104	BEAM	E	10S			4 3.00	3 8.50					12 3	12 0	32
9	4 U105	BEAM	E	13S		3 8.50	3 10.00	3 8.50	3 10.00				15 10	15 7	94
4	4 U106	BEAM	E	13S		3 8.50	3 5.50	3 8.50	3 5.50				15 1	14 10	40
5	4 U107	BEAM	E	10S			3 5.50	3 8.50					10 8	10 5	35
9	4 U108	BEAM	E	13S		3 8.50	3 0.50	3 8.50	3 0.50				14 3	14 0	84
6	4 U109	BEAM	E	13S		3 8.50	2 8.00	3 8.50	2 8.00				13 6	13 3	53
3	4 U110	BEAM	E	10S			2 8.00	3 8.50					9 1	8 10	18
67	5 U111	DIAPHRAGM	E	10S			5 6.50	3 1.00					14 2	13 11	973
67	6 U112	DIAPHRAGM	E	19S		4 10.25	3 8.50						8 7	8 5	847
151	6 U113	DIAPHRAGM	E	19S		2 7.00	5 6.50						8 2	8 0	1814
92	5 U114	DIAPHRAGM	E	19S		2 0.00	15.00						3 3	3 2	304

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
44	5 V100	BEAM	E	20		7 9.00							7 9	7 9	356
70	6 V101	DIAPHRAGM	E	20		4 11.00							4 11	4 11	517
2	6 V102	WING	E	20		11 4.00							11 4	11 4	34
44	6 V103	WING	E	20	4	10 9.00							10 9	10 9	
		INCR. = 0.70"				11 4.00							11 4	11 4	730
2	6 V104	WING	E	20		9 5.00							9 5	9 5	28
44	6 V105	WING	E	20	4	8 9.00							8 9	8 9	
		INCR. = 0.70"				9 4.00							9 4	9 4	598
		End Bent 3													
12	6 F300	WING BRACE	E	15S		20.00	7 3.25	20.00	17.75	9.00	9.00	17.75	10 7	10 6	189
5	6 F301	DIAPHRAGM	E	21S			6 9.25	3 7.50			5 5.75	3 11.75	10 5	9 11	74
15	6 F302	WING BRACE	E	15S		20.00	3 10.00	20.00	17.75	9.00	9.00	17.75	7 2	7 1	160
5	6 F303	DIAPHRAGM	E	21S		3 7.50	4 11.75				4 0.25	2 11.25	8 7	8 7	64
12	8 H300	BEAM	E	20		42 5.00							42 5	42 5	1359
13	6 H301	BEAM	E	18		7 2.25							8 7	8 7	168
4	8 H302	BEAM	E	20	1	54 2.00							54 2	54 2	
		INCR. = 8.00"				56 2.00							56 2	56 2	589
16	8 H303	BEAM	E	20		18 5.00							18 5	18 5	787
4	8 H304	BEAM	E	20		20 4.00							20 4	20 4	217
8	6 H305	BEAM	E	20		59 11.00							59 11	59 11	720
4	6 H306	BEAM	E	20		47 6.00							47 6	47 6	285
4	6 H307	BEAM	E	20		35 7.00							35 7	35 7	214
12	6 H308	DIAPHRAGM	E	20		59 5.00							59 5	59 5	1071
2	6 H309	DIAPHRAGM	E	20		2 0.00							2 0	2 0	6
10	6 H310	DIAPHRAGM	E	20		3 6.00							3 6	3 6	53
9	6 H311	DIAPHRAGM	E	20		7 8.00							7 8	7 8	104
45	6 H312	DIAPHRAGM	E	20		10 7.00							10 7	10 7	715
12	8 H313	DIAPHRAGM	E	20		42 3.00							42 3	42 3	1354
10	5 H314	STRAND TIE	E	23S			15.00	3 2.50	15.00	8.75	12.25	8.75 12.25	5 9	5 8	59
16	8 H315	WING	E	20		20 2.00							20 2	20 2	862
54	6 H316	WING	E	20		19 1.00							19 1	19 1	1548
4	6 H317	WING	E	20		10 4.00							10 4	10 4	62
45	5 U300	BEAM	E	10S			7 9.00	3 8.50					19 3	19 0	892
33	4 U301	BEAM	E	13S		3 8.50	4 6.25	3 8.50	4 6.25				17 3	16 11	373
12	4 U302	BEAM	E	10S			4 6.25	3 8.50					12 9	12 7	101
5	4 U303	BEAM	E	13S		3 8.50	4 3.00	3 8.50	4 3.00				16 8	16 5	55
4	4 U304	BEAM	E	10S			4 3.00	3 8.50					12 3	12 0	32
9	4 U305	BEAM	E	13S		3 8.50	3 10.00	3 8.50	3 10.00				15 10	15 7	94
4	4 U306	BEAM	E	13S		3 8.50	3 5.50	3 8.50	3 5.50				15 1	14 10	40
5	4 U307	BEAM	E	10S			3 5.50	3 8.50					10 8	10 5	35
9	4 U308	BEAM	E	13S		3 8.50	3 0.50	3 8.50	3 0.50				14 3	14 0	84
6	4 U309	BEAM	E	13S		3 8.50	2 8.00	3 8.50	2 8.00				13 6	13 3	53
3	4 U310	BEAM	E	10S			2 8.00	3 8.50					9 1	8 10	18
67	5 U311	DIAPHRAGM	E	10S			5 7.25	3 1.00					14 4	14 1	984
67	6 U312	DIAPHRAGM	E	19S		4 10.75	3 8.50						8 7	8 5	847
151	6 U313	DIAPHRAGM	E	19S		2 7.00	5 6.50						8 2	8 0	1814
92	5 U314	DIAPHRAGM	E	19S		2 0.00	15.00						3 3	3 2	304
44	5 V300	BEAM	E	20		7 9.00							7 9	7 9	356
70	6 V301	DIAPHRAGM	E	20		4 11.00							4 11	4 11	517
2	6 V302	WING	E	20		8 2.00							8 2	8 2	25
36	6 V303	WING	E	20	6	8 2.00							8 2	8 2	
		INCR. = 1.20"				8 8.00							8 8	8 8	455
2	6 V304	WING	E	20		10 2.00							10 2	10 2	31
36	6 V305	WING	E	20	6	10 2.00							10 2	10 2	
		INCR. = 1.00"				10 7.00							10 7	10 7	561
		Int Diaphragm													
18	6 H50	DIAPHRAGM	E	20		7 8.00							7 8	7 8	207
18	6 H51	DIAPHRAGM	E	20		10 7.00							10 7	10 7	286
72	4 H52	DIAPHRAGM	E	20		11 0.00							11 0	11 0	529
4	5 H53	STRAND TIE	E	23S			3 5.00	15.00	8.75	12.25			4 8	4 8	19
16	5 H54	STRAND TIE	E	23S			15.00	3 3.00	15.00	8.75	12.25	8.75 12.25	5 9	5 9	96
108	4 U50	DIAPHRAGM	E	28S				4 7.00	5 6.50	15.00			11 5	11 2	806
36	6 U51	DIAPHRAGM	E	28S				4 7.00	5 6.75	22.00			12 0	11 8	631
36	6 U52	DIAPHRAGM	E	28S				4 7.00	5 0.00	22.00			11 5	11 1	599
8	6 U53	DIAPHRAGM	E	28S				22.00	4 11.50	2 2.00			9 0	8 8	104
4	5 U54	DIAPHRAGM	E	19S		4 5.00		12.00					5 5	5 4	22
20	5 U55	DIAPHRAGM	E	11S				4 10.00	12.00	17.50			7 4	7 1	148
8	5 V50	DIAPHRAGM	E	20		5 7.00							5 7	5 7	47

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams and steel reinforcing totals, see Sheet No. 26.

Detailed May 2025
Checked Aug. 2025

All bars shall be Grade 60.

BILL OF REINFORCING STEEL

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

Sheet No. 27 of 37

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.

SH = Required shape, see bending diagrams.

V = Sets of varied bars and number of bars of each length. Bar dimensions vary in equal increments between dimensions shown on this line and the following line and the actual length dimension shown on this line and the following line vary by the specified increment.

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED
9/25/2025

ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT BR | SHEET NO. 27
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION	DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		Slab													
308	5 S1	SLAB	E	20		57 9.00							60 0	60 0	36045
225	8 S2	SLAB	E	20		60 0.00							3 5	3 5	
66	6 S3	SLAB	E	20	1	3 5.00							48 2	48 2	2557
		INCR. = 8.26"				48 2.00							48 9	48 9	35659
487	6 S4	SLAB	E	20		48 9.00							2 4	2 4	
68	6 S5	SLAB	E	20	1	2 4.00							48 5	48 5	2592
		INCR. = 8.25"				48 5.00							2 4	2 4	
67	6 S6	SLAB	E	20	1	2 4.00							47 9	47 9	2520
		INCR. = 8.26"				47 9.00							47 4	47 4	34694
488	6 S7	SLAB	E	20		47 4.00							3 5	3 5	
64	6 S8	SLAB	E	20	1	3 5.00							46 10	46 10	2415
		INCR. = 8.27"				46 10.00							57 6	57 6	4198
70	5 S9	SLAB	E	20		57 6.00							30 0	30 0	1442
18	8 S10	SLAB	E	20		30 0.00							5 5	5 5	
54	5 S11	SLAB	E	20	1	5 5.00							48 0	48 0	1504
		INCR. = 9.64"				48 0.00							48 9	48 9	21203
417	5 S12	SLAB	E	20		48 9.00							2 3	2 3	
59	5 S13	SLAB	E	20	1	2 3.00							48 9	48 9	1569
		INCR. = 9.62"				48 9.00							2 3	2 3	
60	5 S14	SLAB	E	20	1	2 3.00							49 7	49 7	1622
		INCR. = 9.63"				49 7.00							48 10	48 10	21188
416	5 S15	SLAB	E	20		48 10.00							5 7	5 7	
54	5 S16	SLAB	E	20	1	5 7.00							48 1	48 1	1511
		INCR. = 9.62"				48 1.00									
		Parapet Wall													
208	5 K1	PARAPET WALL	E	10S			3 5.00	8.50					7 7	7 4	1591
8	5 K2	PARAPET WALL	E	10S			22.50	8.50	12.00				5 6	5 2	43
112	5 K3	PARAPET WALL	E	19S	8	2 4.50	8.00						3 1	2 11	
		INCR. = 0.50"				2 11.00	8.00						3 7	3 6	374
40	5 K4	PARAPET WALL	E	19S	8	2 11.75	8.00						3 8	3 6	
		INCR. = 0.75"				3 2.75	8.00						3 11	3 9	153
280	5 K5	PARAPET WALL	E	19S		3 3.00	8.00						3 11	3 10	1119
12	5 K6	PARAPET WALL	E	20		26 8.00							26 8	26 8	334
6	5 K7	PARAPET WALL	E	20	2	20 2.00							20 2	20 2	
		INCR. = 36.00"				26 2.00							26 2	26 2	145
12	5 K8	PARAPET WALL	E	20		21 6.00							21 6	21 6	269
6	5 K9	PARAPET WALL	E	20	2	14 11.00							14 11	14 11	
		INCR. = 36.00"				20 11.00							20 11	20 11	112
12	5 K10	PARAPET WALL	E	20		22 8.00							22 8	22 8	284
6	5 K11	PARAPET WALL	E	20	2	16 2.00							16 2	16 2	
		INCR. = 36.00"				22 2.00							22 2	22 2	120
12	5 K12	PARAPET WALL	E	20		25 6.00							25 6	25 6	319
6	5 K13	PARAPET WALL	E	20	2	18 11.00							18 11	18 11	
		INCR. = 36.00"				24 11.00							24 11	24 11	137
1098	5 R1	PARAPET WALL	E	10S			3 3.00	9.00					7 3	7 0	8016
1098	4 R2	PARAPET WALL	E	28S		20.50	9.00	20.00	12.00				5 2	4 10	3545
80	5 R3	PARAPET WALL	E	20		11 9.00							11 9	11 9	980
40	5 R4	PARAPET WALL	E	20		57 3.00							57 3	57 3	2388
40	5 R5	PARAPET WALL	E	20		56 10.00							56 10	56 10	2371
8	5 R6	PARAPET WALL	E	20		6 0.00							6 0	6 0	50
		Slip Form													
32	5 C1	SLIP FORM	E	20		12 0.00							12 0	12 0	401
16	5 C2	SLIP FORM	E	20		8 0.00							8 0	8 0	134

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams and steel reinforcing totals, see Sheet No. 26.

All bars shall be Grade 60.

BILL OF REINFORCING STEEL

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.

SH = Required shape, see bending diagrams.

V = Sets of varied bars and number of bars of each length. Bar dimensions vary in equal increments between dimensions shown on this line and the following line and the actual length dimension shown on this line and the following line vary by the specified increment.

Detailed May 2025
Checked Aug. 2025

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

LAUREN A. KITCHEN NUMBER PE-2025040501 PROFESSIONAL ENGINEER STATE OF MISSOURI
9/25/2025

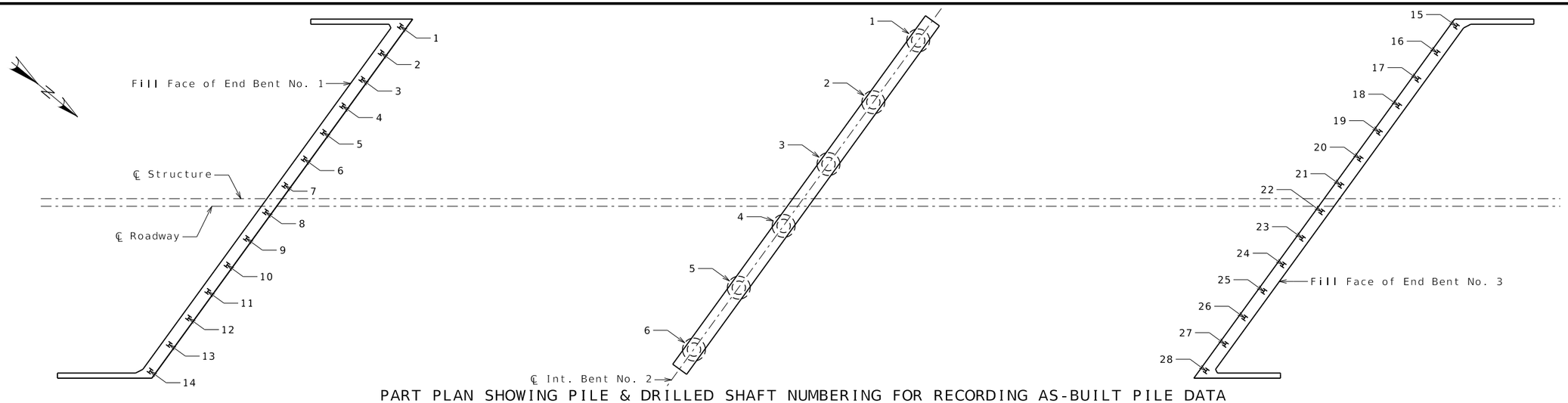
DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 28
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592



PART PLAN SHOWING PILE & DRILLED SHAFT NUMBERING FOR RECORDING AS-BUILT PILE DATA & AS-BUILT DRILLED SHAFT DATA

As-Built Pile Data

Pile No.	Length in Place (ft.)	Computed Nominal Axial Compresseive Resistance (kips)	Remarks
			End Bent No. 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
			End Bent No. 3
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			

As-Built Drilled Shaft Data

Shaft No.	Top of Sound Rock (Elev.)	Tip of Casing (Elev.)	Bottom of Rock Socket (Elev.)	Remarks
				Int. Bent No. 2
1				
2				
3				
4				
5				
6				

Note:
Indicate in remarks column:
A. Pile type and grade
B. Batter
C. Driven to practical refusal

This sheet to be completed by construction personnel.

AS-BUILT AND DRILLED SHAFT PILE DATA

Detailed May 2025
Checked Aug. 2025

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

Sheet No. 29 of 37

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 29
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING LOG NO. B-01

Sheet 1 of 2

PROJECT NAME	CLIENT
I-435 and Cookingham Drive – J4S3489	Missouri Department of Transportation
PROJECT NUMBER	**LOCATION**
022-03482	Kansas City, Missouri

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	APPROX. SURFACE ELEV. (ft): 994										
	FILL, dark brown with grayish brown clay, silt, gravel		1								
			2	ST-1	CH			26.2	97.7	63/40	
			3								3.0 ft: P.P. = 3.0
	4.3'		4	SPT-2		3-5-7 (12)		25.4			
989.0	LEAN TO FAT CLAY (CL/CH), firm to stiff, dark brown with brown, moist, silt		5								5.0 ft: Begin Wet Rotary Techniques
			6								
			7								
	8.5'		8								
	FAT CLAY (CH), firm, brownish gray with gray, moist, silt		9	SPT-3	CH	1-3-3 (6)		28.4		53/30	
984.0			10								
			11								
			12								
	13.0'		13								
	LEAN TO FAT CLAY (CL/CH), stiff to very stiff, light brownish gray with reddish brown, slightly moist to moist, silt, sand, gravel		14	ST-4				19.2	114.0		
979.0			15								15.0 ft: P.P. = 4.25
			16								
			17								
	18.5'		18								
	LEAN CLAY (CL), stiff to very stiff, brown to reddish brown, slightly moist to moist, sand, silt		19	SPT-5	CL	5-8-11 (19)			18.3	41/24	P-200 = 68.9%
974.0			20								
			21								
			22								
			23								
			24	SPT-6		3-5-5 (10)		23.6			
969.0			25								
			26								
			27								
			28								
	29.4'		29	SPT-7		6-12-19 (31)		15.9			
964.0	WEATHERED SANDSTONE, reddish brown, poorly cemented, clay		30								
			31								
	32.0'		32								
	LIMESTONE, gray to light gray		33	SPT-8		50/1"					
			34								

CONTINUED ON NEXT PAGE

WATER LEVEL OBSERVATIONS		STARTED: Apr 28 2025	FINISHED: Apr 28 2025
WD	Not Performed	DRILL CO.: RC Drilling	EQUIPMENT: CME 550X
IAD	Not Performed	DRILLER: Ron C.	LOGGED BY: Zach D.
AD	Not Performed	METHOD: Continuous Flight Auger / Rotary Wash,NQ	

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BORING LOG NO. B-01

Sheet 2 of 2

PROJECT NAME	CLIENT
I-435 and Cookingham Drive – J4S3489	Missouri Department of Transportation
PROJECT NUMBER	**LOCATION**
022-03482	Kansas City, Missouri

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	APPROX. SURFACE ELEV. (ft): 994										
	LIMESTONE, gray to light gray		36								
			37								
	38.6'		38	RC-9							Recovery 87% RQD 43%
	SANDSTONE, reddish brown to dark reddish brown, fine grained, cemented		39								
954.0			40								
			41								Recovery 98% RQD 46%
			42	RC-10							
			43								
			44								
949.0			45								Recovery 100% RQD 48%
	46.5'		46	RC-11							
	BASE OF BORING AT 46.5 FEET		47								
			48								
			49								
944.0			50								
			51								
			52								
			53								
			54								
939.0			55								
			56								
			57								
			58								
			59								
934.0			60								
			61								
			62								
			63								
			64								
929.0			65								
			66								
			67								
			68								
			69								

WATER LEVEL OBSERVATIONS		STARTED: Apr 28 2025	FINISHED: Apr 28 2025
WD	Not Performed	DRILL CO.: RC Drilling	EQUIPMENT: CME 550X
IAD	Not Performed	DRILLER: Ron C.	LOGGED BY: Zach D.
AD	Not Performed	METHOD: Continuous Flight Auger / Rotary Wash,NQ	

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LAUREN A. KITCHEN NUMBER PE-2025040501 PROFESSIONAL ENGINEER STATE OF MISSOURI
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT BR | SHEET NO. 30
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

F:\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_030_J4S3489_BORING DATA (1 OF 8).dgn 3:12:26 PM 9/25/2025

BORING LOG NO. B-02

Sheet 1 of 2

PROJECT NAME	CLIENT
I-435 and Cookingham Drive – J4S3489	Missouri Department of Transportation
PROJECT NUMBER	**LOCATION**
022-03482	Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 995

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, dark brown with grayish brown clay, moist, silt, gravel		1								
	2.5'		2	SPT-1		2-4-5 (9)		22.3			
	FAT CLAY (CH), firm, grayish brown and reddish brown, moist to very moist, silt		3								
990.0			4	SPT-2	CH	2-2-4 (6)		27.8		79/54	
			5								5.0 ft: Begin Wet Rotary Techniques
			6								
			7								
	8.0'		8								
	FAT CLAY (CH), firm to stiff, light brown and gray, moist, silt		9	ST-3	CH					57/38	
985.0			10								10.0 ft: P.P. = 1.5
			11								
			12								
			13								
			14	SPT-4	CH	4-5-8 (13)		21.6		52/34	
980.0			15								
			16								
			17								
	18.5'		18								
	LEAN TO FAT CLAY (CL/CH), very stiff, brown with reddish brown, moist, silt, sand, gravel		19	SPT-5		4-10-13 (23)		14.0			
975.0			20								
			21								
			22								
			23								
			24	SPT-6		12-9-13 (22)		19.3			P-200 = 55.3%
970.0			25								
			26								
			27								
	28.5'		28								
	LEAN TO FAT CLAY (CL/CH), hard, reddish brown, slightly moist, sand, silt		29	SPT-7		26-50/5"		22.2			
965.0			30								
			31								
			32								
			33								
			34	SPT-8		20-26-46 (72)		14.9			P-200 = 70.9%

CONTINUED ON NEXT PAGE

WATER LEVEL OBSERVATIONS			STARTED:	Apr 25 2025	FINISHED:	Apr 25 2025
WD	▽	Not Performed	DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
IAD	▼	Not Performed	DRILLER:	Ron C.	LOGGED BY:	Zach D.
AD	▽	Not Performed	METHOD:	Continuous Flight Auger / Rotary Wash,NQ		

BORING LOG NO. B-02

Sheet 2 of 2

PROJECT NAME	CLIENT
I-435 and Cookingham Drive – J4S3489	Missouri Department of Transportation
PROJECT NUMBER	**LOCATION**
022-03482	Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 995

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	LEAN TO FAT CLAY (CL/CH), hard, reddish brown, slightly moist, sand, silt		36								
	37.5'		37								
	LIMESTONE, gray to light gray, medium bedded		38								
	39.5'		39	SPT-9		50/1"					
955.0	SANDSTONE, light brown with gary and dark reddish brown, fine grained, cemented		40								
			41	RC-10							Recovery 88% RQD 26%
			42								
			43								
			44								
950.0			45								
			46	RC-11							Recovery 96% RQD 72%
			47								
			48								
	49.0'		49								
	BASE OF BORING AT 49.0 FEET		50								
945.0			51								
			52								
			53								
			54								
			55								
940.0			56								
			57								
			58								
			59								
			60								
935.0			61								
			62								
			63								
			64								
			65								
930.0			66								
			67								
			68								
			69								

WATER LEVEL OBSERVATIONS			STARTED:	Apr 25 2025	FINISHED:	Apr 25 2025
WD	▽	Not Performed	DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
IAD	▼	Not Performed	DRILLER:	Ron C.	LOGGED BY:	Zach D.
AD	▽	Not Performed	METHOD:	Continuous Flight Auger / Rotary Wash,NQ		

LAUREN A. KITCHEN NUMBER PE-2025040501 PROFESSIONAL ENGINEER STATE OF MISSOURI
3/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT BR | SHEET NO. 31
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

BORING LOG NO. B-04

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 967

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
967.0	FILL, dark brown with brown and gray clay, slightly moist, silt, sand, gravel		1	SPT-1		1-4-6 (10)		17.6			
	3.5'		2								
962.0	LEAN TO FAT CLAY (CL/CH), stiff, brown to reddish brown, slightly moist, silt, trace gravel		3	SPT-2		2-3-11 (14)		16.1			
	8.5'		4								
	WEATHERED SANDSTONE 9.0'		5	SPT-3		21-50/1"		12.5			
957.0	LIMESTONE 9.8'		6								
	REFUSAL AT 9.8 FEET		7								
			8								
			9								
			10								
952.0			11								
			12								
			13								
			14								
			15								
947.0			16								
			17								
			18								
			19								
			20								
942.0			21								
			22								
			23								
			24								
			25								
937.0			26								
			27								
			28								
			29								
			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	⧩	Not Performed

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STARTED: May 05 2025 FINISHED: May 05 2025
DRILL CO.: RC Drilling EQUIPMENT: CME 550X
DRILLER: Ron C. LOGGED BY: Zach D.
METHOD: Continuous Flight Auger

BORING LOG NO. B-05

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 968

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
968.0	FILL, dark brown with brown clay, slightly moist, silt, sand, gravel		1	SPT-1		2-2-4 (6)		18.3			3.8 ft: P.P. = 1.25
	1.3'		2								
	LEAN TO FAT CLAY (CL/CH), firm, grayish brown with reddish brown, slightly moist, silt, sand		3	ST-2				16.5	114.6		
963.0			4								
			5								
	6.0'		6								
	WEATHERED SANDSTONE		7								
			8								
958.0			9	SPT-3		15-27-48 (75)		16.3			
			10								
			11								
	11.7'		12								
	LIMESTONE 12.0'		13								
	REFUSAL AT 12.0 FEET		14								
953.0			15								
			16								
			17								
			18								
			19								
948.0			20								
			21								
			22								
			23								
			24								
943.0			25								
			26								
			27								
			28								
			29								
938.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	3.5 ft
IAD	▼	6.0 ft
AD	⧩	Not Performed

olsson

STARTED: May 05 2025 FINISHED: May 05 2025
DRILL CO.: RC Drilling EQUIPMENT: CME 550X
DRILLER: Ron C. LOGGED BY: Zach D.
METHOD: Continuous Flight Auger

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE STATE MO
DISTRICT BR SHEET NO. 32
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

DESCRIPTION | DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING LOG NO. B-07

Sheet 1 of 2

PROJECT NAME: I-435 and Cookingham Drive – J4S3489

CLIENT: Missouri Department of Transportation

PROJECT NUMBER: 022-03482

LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 965

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, brown with reddish brown and gray clay, slightly moist, silt, sand, gravel		1	SPT-1		2-4-4 (8)		17.2			
	3.0'		2								
	LEAN TO FAT CLAY (CL/CH), very stiff, gray with brownish gray, slightly moist, silt, sand, gravel		3	ST-2				14.1	115.8		4.5 ft: P.P. = 4.5+ 5.0 ft: Begin Wet Rotary Techniques
960.0			4								
	7.5'		5								
	SANDSTONE, light reddish brown, poorly cemented		6								
			7								
			8	SPT-3		50/1"					
955.0			9								
			10								
			11								
			12								
			13	SPT-4		50/2"					
950.0			14								
			15								
			16								
			17								
	18.6'		18								
	SANDSTONE, light brown with reddish brown, fine grained, cemented		19	SPT-5		50/1"					
945.0			20								
			21	RC-6							Recovery 98% RQD 64%
			22								
			23								
			24								
940.0			25								
			26	RC-7							Recovery 100% RQD 78%
			27								
			28								
			29								
935.0			30								
			31	RC-8							Recovery 100% RQD 68%
			32								
	33.0'		33								
	SANDSTONE, dark reddish brown, fine to medium grained, cemented		34								

CONTINUED ON NEXT PAGE

WATER LEVEL OBSERVATIONS		
WD	▽	Not Performed
IAD	▼	Not Performed
AD	⧩	Not Performed

olsson

STARTED:	Apr 24 2025	FINISHED:	Apr 24 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger / Rotary Wash,NQ		

BORING LOG NO. B-07

Sheet 2 of 2

PROJECT NAME: I-435 and Cookingham Drive – J4S3489

CLIENT: Missouri Department of Transportation

PROJECT NUMBER: 022-03482

LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 965

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	SANDSTONE, dark reddish brown, fine to medium grained, cemented		36	RC-9							Recovery 100% RQD 78%
	37.8'		37								
	SANDSTONE, reddish brown, fine grained, cemented		38								
			39								
925.0			40								
	41.7'		41	RC-10							Recovery 100% RQD 58%
	LIMESTONE, light gray to gray, wavey bedded		42								
			43								
	44.8'		44								
920.0	SHALE, dark gray with gray, wavey bedded		45								
			46	RC-11							Recovery 100% RQD 25%
	48.6'		47								
	BASE OF BORING AT 48.6 FEET		48								
915.0			49								
			50								
			51								
			52								
			53								
910.0			54								
			55								
			56								
			57								
			58								
905.0			59								
			60								
			61								
			62								
			63								
900.0			64								
			65								
			66								
			67								
			68								
			69								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Performed
IAD	▼	Not Performed
AD	⧩	Not Performed

olsson

STARTED:	Apr 24 2025	FINISHED:	Apr 24 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger / Rotary Wash,NQ		

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED: 9/25/2025

ROUTE: COOKINGHAM DRIVE | STATE: MO

DISTRICT: BR | SHEET NO.: 33

COUNTY: PLATTE

JOB NO.: J4S3489

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A9700

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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1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

F:\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_033_J4S3489_BORING DATA (4 OF 8).dgn 3:12:38 PM 9/25/2025

BORING LOG NO. B-08

Sheet 1 of 2

PROJECT NAME	CLIENT
I-435 and Cookingham Drive – J4S3489	Missouri Department of Transportation
PROJECT NUMBER	**LOCATION**
022-03482	Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 966

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, brown with reddish brown clay, dry, silt, sand, gravel		1								
	2.3'		2	SPT-1		3-5-37 (42)		7.9			
	LEAN TO FAT CLAY (CL/CH), very stiff to hard, grayish brown and gray, slightly moist, silt, sand, gravel		3								
	5.0'		4	SPT-2		9-17-50/5"		14.1			4.0 ft: Begin Wet Rotary Techniques
961.0	SANDSTONE, brown with reddish brown, poorly cemented, clay seams		5								
			6								
			7								
			8								
			9	SPT-3		23-50/5"		17.9			
956.0			10								
			11								
			12								
			13	SPT-4		50/1"					
951.0			14								
			15								
			16								
			17								
			18								
			19	SPT-5		50/3"					
946.0			20								
			21								
			22								
	23.5'		23								
	SANDSTONE, light brown, fine grained, cemented		24	SPT-6 RC-7		50/1"					Recovery 100% RQD 65%
941.0			25								
			26								Recovery 100% RQD 82%
			27	RC-8							
			28								
			29								
936.0			30								Recovery 100% RQD 100%
			31	RC-9							
			32								
			33								
	34.5'		34								
	SANDSTONE, reddish brown with dark reddish brown, fine to medium grained, cemented										

CONTINUED ON NEXT PAGE

WATER LEVEL OBSERVATIONS		
WD	▽	Not Performed
IAD	▼	Not Performed
AD	⧖	Not Performed

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STARTED:	Apr 23 2025	FINISHED:	Apr 23 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger / Rotary Wash,NQ		

BORING LOG NO. B-08

Sheet 2 of 2

PROJECT NAME	CLIENT
I-435 and Cookingham Drive – J4S3489	Missouri Department of Transportation
PROJECT NUMBER	**LOCATION**
022-03482	Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 966

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	SANDSTONE, reddish brown with dark reddish brown, fine to medium grained, cemented		36	RC-10							Recovery 100% RQD 72%
	38.2'		37								
	LIMESTONE, gray to dark gray, wavey bedded, interbedded shale seams		38								
926.0			39								
			40								Recovery 100% RQD 64%
			41	RC-11							
			42								
			43								
921.0			44								Recovery 100% RQD 70%
			45	RC-12							
	47.0'		46								
	SHALE, dark gray with gray, thickly bedded		47								
916.0			48								
			49								Recovery 100% RQD 0%
			50	RC-13							
			51								
	53.5'		52								
	BASE OF BORING AT 53.5 FEET		53								
911.0			54								
			55								
			56								
906.0			57								
			58								
			59								
			60								
901.0			61								
			62								
			63								
			64								
			65								
			66								
			67								
			68								
			69								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Performed
IAD	▼	Not Performed
AD	⧖	Not Performed

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STARTED:	Apr 23 2025	FINISHED:	Apr 23 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger / Rotary Wash,NQ		

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 34
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

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)

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1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

F:\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_034_J4S3489_BORING DATA (5 OF 8).dgn 3:12:42 PM 9/25/2025

BORING LOG NO. B-11

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 962

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, brown with dark brown clay, silt, asphalt, organics — 1.2'		1								
	LEAN TO FAT CLAY (CL/CH), firm, grayish brown to reddish brown, slightly moist, silt — 3.5'		2	SPT-1		2-2-4 (6)		17.2			
957.0	LEAN TO FAT CLAY (CL/CH), very stiff, grayish brown with brown, slightly moist, silt, sand, trace gravel — 6.0'		3								
	WEATHERED SANDSTONE, brown with reddish brown, poorly cemented — 8.2'		4	SPT-2		3-11-18 (29)		17.4			
	LIMESTONE — 8.5'		5								
	REFUSAL AT 8.5 FEET		6								
952.0			7								
			8								
			9								
			10								
			11								
			12								
			13								
			14								
947.0			15								
			16								
			17								
			18								
			19								
			20								
942.0			21								
			22								
			23								
			24								
			25								
937.0			26								
			27								
			28								
			29								
			30								
932.0			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	⧩	Not Performed

olsson

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-12

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 963

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, dark brown with gray and brown clay, slightly moist, silt, sand — 1.9'		1	ST-1			1.3	18.3	112.0		
	LEAN TO FAT CLAY (CL/CH), stiff to very stiff, grayish brown and reddish brown, slightly moist, silt, sand — 3.5'		2								
958.0	WEATHERED SANDSTONE, brown with reddish brown and gray, poorly cemented, clayey — 8.5'		3								
			4	SPT-2		27-30-17 (47)		8.1			
			5								
			6								
			7								
			8								
	WEATHERED SANDSTONE, brown with reddish brown, poorly cemented — 11.0'		9	ST-3		36-50/5"		10.3			
953.0	LIMESTONE — 11.5'		10								
	REFUSAL AT 11.5 FEET		11								
			12								
			13								
			14								
948.0			15								
			16								
			17								
			18								
			19								
			20								
943.0			21								
			22								
			23								
			24								
			25								
938.0			26								
			27								
			28								
			29								
			30								
933.0			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	3.6 ft
IAD	▼	10.7 ft
AD	⧩	Not Performed

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STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 35
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

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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1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING LOG NO. B-13

Sheet 1 of 2

PROJECT NAME	CLIENT
I-435 and Cookingham Drive – J4S3489	Missouri Department of Transportation
PROJECT NUMBER	**LOCATION**
022-03482	Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 982

ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, brown with dark brown clay, silt, gravel, organics (1.0')	1								
	LEAN TO FAT CLAY (CL/CH), soft, brownish gray with reddish brown, moist, silt (3.0')	2	SPT-1		1-1-3 (4)		22.3			
977.0	FAT CLAY (CH), stiff, grayish brown with reddish brown, moist, silt (8.5')	3 4 5 6 7 8	ST-2	CH			25.3	102.8	51/32	4.2 ft: P.P. =2.5 5.0 ft: Begin Wet Rotary Techniques
972.0	LEAN TO FAT CLAY (CL/CH), stiff, grayish brown with reddish brown, slightly moist, silt (13.5')	9 10 11 12 13	SPT-3		4-5-8 (13)		19.7			
967.0	LEAN TO FAT CLAY (CL/CH), very stiff, reddish brown with brownish gray, slightly moist, silt, sand (18.5')	14 15 16 17 18	SPT-4		3-9-8 (17)		18.6			P-200 = 67.5%
962.0	LEAN TO FAT CLAY (CL/CH), very stiff, reddish brown, slightly moist, silt, sand (23.5')	19 20 21 22 23	SPT-5		7-11-15 (26)		17.8			
957.0	LEAN TO FAT CLAY (CL/CH), very stiff to hard, brown and gray, slightly moist, sand, silt (28.5')	24 25 26 27 28	SPT-6	CL	9-22-33 (55)		19.4		33/16	P-200 = 58.8%
952.0	SANDSTONE, light brown with reddish brown, fine grained, cemented	29 30 31 32 33 34	SPT-7 SPT-8		18-50/5" 50/1"					

CONTINUED ON NEXT PAGE

WATER LEVEL OBSERVATIONS		STARTED: Apr 28 2025	FINISHED: Apr 28 2025
WD	Not Performed	DRILL CO.: RC Drilling	EQUIPMENT: CME 550X
IAD	Not Performed	DRILLER: Ron C.	LOGGED BY: Zach D.
AD	Not Performed	METHOD: Continuous Flight Auger / Rotary Wash,NQ	

BORING LOG NO. B-13

Sheet 2 of 2

PROJECT NAME	CLIENT
I-435 and Cookingham Drive – J4S3489	Missouri Department of Transportation
PROJECT NUMBER	**LOCATION**
022-03482	Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 982

ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
942.0	SANDSTONE, light brown with reddish brown, fine grained, cemented	36 37 38 39 40 41 42 43	SPT-9 RC-10		50/2"					Recovery 100% RQD 68%
937.0	(48.6')	44 45 46 47 48	RC-11							Recovery 96% RQD 32%
932.0	**BASE OF BORING AT 48.7 FEET**	49 50 51 52 53 54								
927.0		55 56 57 58 59 60								
922.0		61 62 63 64 65 66								
917.0		67 68 69								

WATER LEVEL OBSERVATIONS		STARTED: Apr 28 2025	FINISHED: Apr 28 2025
WD	Not Performed	DRILL CO.: RC Drilling	EQUIPMENT: CME 550X
IAD	Not Performed	DRILLER: Ron C.	LOGGED BY: Zach D.
AD	Not Performed	METHOD: Continuous Flight Auger / Rotary Wash,NQ	

LAUREN A. KITCHEN NUMBER PE-2025040501 PROFESSIONAL ENGINEER STATE OF MISSOURI
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT BR | SHEET NO. 36
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9700

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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NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

BORING LOG NO. B-14

Sheet 1 of 2

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 984

ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
984.0	FILL, brown with grayish brown clay, silt, sand, organics	1.7'								
	LEAN TO FAT CLAY (CL/CH), firm to stiff, grayish brown with reddish brown, moist, silt, sand	1	SPT-1		1-3-2 (5)		18.5			
		2								
		3								
		4	ST-2			1.3	25.4	101.1		4.5 ft: P.P. = 1.75
979.0		5								5.0 ft: Begin wet rotary techniques
		6								
		7								
		8								
		9	SPT-3		2-3-5 (8)		23.9			
974.0		10								
		11								
		12								
		13								
	LEAN CLAY (CL), stiff, brown to reddish brown, moist, sand, silt	13.0'	ST-4	CL			19.3	108.6	36/20	
969.0		14								15.0 ft: P.P. = 2.0
		15								
		16								
		17								
		18								
		19	SPT-5		8-44-50/3"		11.0			P-200 = 35.1%
964.0	POORLY GRADED SAND (SP), dense to very dense, reddish brown, slightly moist, clay, silt, gravel, fine	19.1								
		20								
		21								
		22								
		23								
		24	SPT-6		46-50/4"		8.2			P-200 = 25.4%
959.0	SANDSTONE, reddish brown to light reddish brown, poorly cemented	25.0'								
		29	SPT-7		38-50/4"		16.7			
954.0		30								
		31								
		32								
		33								
		34	SPT-8		26-50/2"					

CONTINUED ON NEXT PAGE

WATER LEVEL OBSERVATIONS		
WD	▽	Not Performed
IAD	▼	Not Performed
AD	⧩	Not Performed

STARTED:	Apr 29 2025	FINISHED:	Apr 29 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger / Rotary Wash,NQ		

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BORING LOG NO. B-14

Sheet 2 of 2

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 984

ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	SANDSTONE, reddish brown to light reddish brown, poorly cemented	37.8'								
	SANDSTONE, dark reddish brown to light brown with reddish brown, fine to medium grained, cemented	36								
		37								
		38	RC-9							Recovery 73% RQD 55%
944.0		39								
		40								
		41								
		42	RC-10							Recovery 96% RQD 46%
939.0		43								
		44								
		45								
		46	RC-11							Recovery 100% RQD 52%
		47								
		47.8'								
	BASE OF BORING AT 47.8 FEET									
934.0		48								
		49								
		50								
		51								
		52								
		53								
		54								
929.0		55								
		56								
		57								
		58								
		59								
		60								
924.0		61								
		62								
		63								
		64								
		65								
		66								
919.0		67								
		68								
		69								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Performed
IAD	▼	Not Performed
AD	⧩	Not Performed

STARTED:	Apr 29 2025	FINISHED:	Apr 29 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger / Rotary Wash,NQ		

olsson

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 37
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9700

DESCRIPTION | DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

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

BORING DATA

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

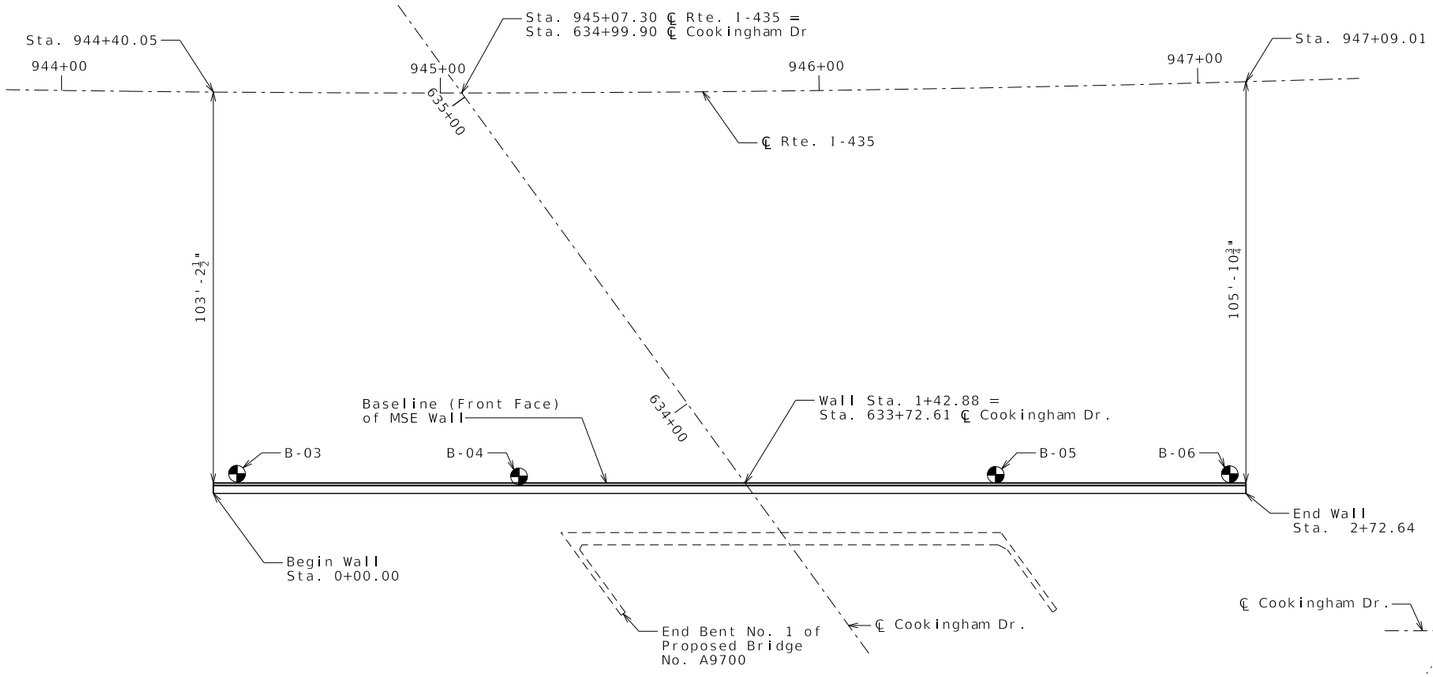
Detailed May 2025
Checked Aug. 2025

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

F:\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\16 Bridge Sheets\B_A9700_037_J4S3489_BORING DATA (8 OF 8).dgn 3:12:54 PM 9/25/2025

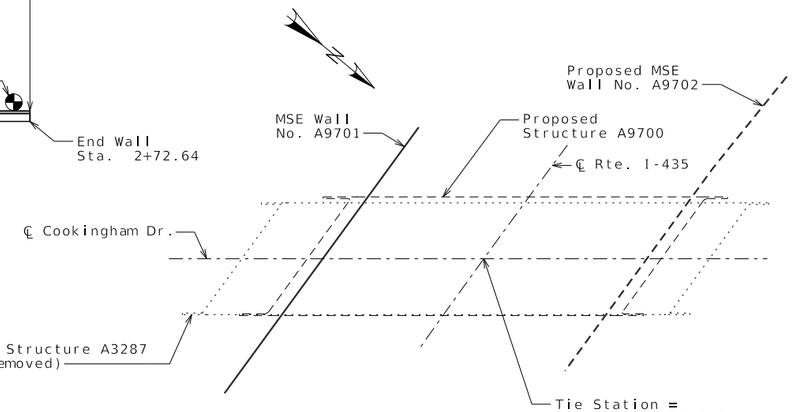
SEC/SUR 21/22 TWP 52N RGE 33W

273' MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL SYSTEM

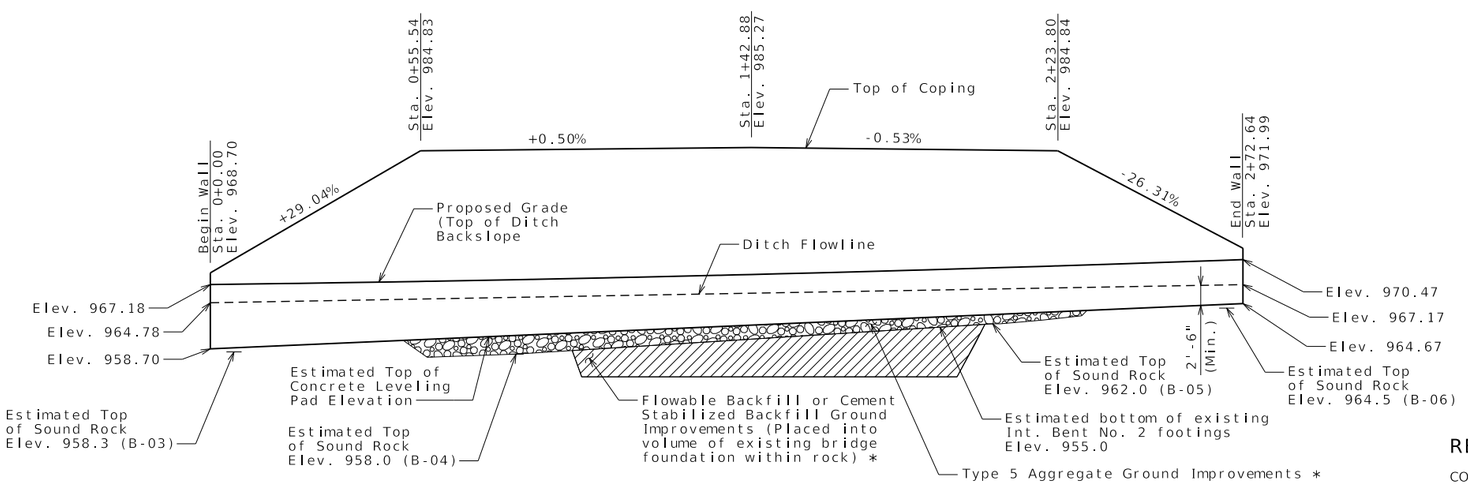


PLAN

Concrete Leveling pad and Coping not shown for clarity.



LOCATION SKETCH



DEVELOPED ELEVATION

Concrete Leveling pad and Coping not shown for clarity.

● 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 Sheet(s) No. 4 & 5 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.

* Top of sandstone bedrock varies in elevation. This location will have been disturbed by removal of foundations. Contractor and MSE wall engineer to assess need for potential ground improvements or increasing the thickness of or lowering the leveling pad after initial excavation for the purpose of facilitating installation of the wall and reinforced backfill. This work may consist of overexcavation to the top of sound rock, increasing the thickness of or lowering the concrete leveling pad, providing Type 5 Aggregate, or providing flowable backfill or an approved cement stabilized backfill. All labor and materials necessary to create a uniform leveling pad for the wall to be constructed upon will be considered completely covered by the contract unit prices for Type 5 Aggregate and Flowable Backfill. Contractor's preferred solution(s) shall be conceptually addressed in MSE wall design and included within the preconstruction submittals for review and approval by the Engineer. See Sheet No. 2 for Details of Ground Improvements.

Wall contractor shall show the following items on the design drawings and/or on the fabricator shop drawings.

1. Leveling pad horizontal.
2. Leveling pad length and step elevations shall be based on wall manufacturer's recommendation. Top of leveling pad elevations shall not be higher than theoretical top of leveling pad elevations shown on these plans. Bottom of leveling pad shall bear on weathered sandstone.

RETAINING WALL ALONG RIGHT SIDE OF ROUTE I-435

COOKINGHAM DRIVE FROM ROUTE 169 TO ROUTE I-435
ABOUT 1.1 MILES WEST OF ROUTE 169
TIE STATION 633+72.61

Detailed May 2025
Checked Aug. 2025

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

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\17 Retaining Wall Sheets\A9701 EB1\B_A9701_001_J4S3489_PLAN AND ELEV.dgn 3:13:00 PM 9/25/2025

LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
STATE OF MISSOURI
9/25/2025

DATE PREPARED
9/25/2025

ROUTE	STATE
COOKINGHAM DRIVE	MO
DISTRICT	SHEET NO.
BR	1

COUNTY
PLATTE

JOB NO.
J4S3489

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9701

DESCRIPTION	DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

General Notes:

Design Specifications:

2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Ed.)
Seismic Design Category = A (Seismic Zone - 1)
Design earthquake response spectral acceleration coefficient at 1.0 second period, S_{D1} = 0.07
Acceleration Coefficient (effective peak ground acceleration coefficient), A_s = 0.046

Design Loading:

For strength limit state and extreme event limit state, the wall designer to confirm that the minimum Capacity to Demand Ratio (CDR) for bearing, sliding, overturning, eccentricity, and internal stability is greater than or equal to 1.0. MSE wall designer shall include this note on shop drawings.

Φ_b = 24° and Unit weight, γ_b = 120 pcf for retained backfill material to be retained by the mechanically stabilized earth wall system.

Φ_f = 32° for unimproved sound rock where wall is to bear.

For unimproved sound rock or ground improvements, factored bearing resistance is 5 ksf for strength limit state.

The maximum applied factored bearing stress for the strength limit state at the foundation level shall be shown on the shop drawings and shall be less than the factored bearing resistance.

Factored bearing resistance shall be used as shown on the plans. No adjustments are allowed.

Contractor shall include design Φ_f (actual $\Phi_f \geq 34°$) and the total unit weight, γ_f, for the select granular backfill (reinforced backfill and wedge area backfill) for structural systems on shop drawings. Contractor shall identify source of select granular backfill material, submit proctor in accordance with AASHTO T 99 (ASTM D698) and gradation with the shop drawings. When backfill material is too coarse to develop a proctor curve the contractor shall determine the maximum dry density (relative density) in accordance with ASTM D4253 and ASTM D4254 and assume percent passing the 200 sieve for optimum water content.

Total unit weight, γ_f = (95% compaction) x (maximum dry density) x (1 + optimum water content)

Design Φ_f = 34°for the select granular backfill (reinforced backfill) for structural systems.

Use default values for the pullout friction factor, F^*, in accordance with LRFD figure 11.10.6.3.2-2 and default value for scale effect correction factor, α, in accordance with LRFD table 11.10.6.3.2-1. For approved steel strips not shown in LRFD figure 11.10.6.3.2-2, use $F^* \leq 2.0$ at zero depth and $F^* \leq \text{Tan } \Phi_f$ at 20 feet depth and Φ_f design = 34°. F^* and α values shall be shown on the shop drawings.

Design Unit Stresses:

All concrete for leveling pad and coping shall be Class B or B-1 with f'c = 4000 psi.

The minimum compressive strength of concrete for precast modular panel shall be 4,000 psi in accordance with Sec 1052.

Excavation:

Excavation quantities and pay items are given on the roadway plans. Excavation quantities are based on a soil reinforcement length of 18 ft. The soil reinforcement length may vary based upon the wall design selected by the contractor. Plan excavation quantities will be paid regardless of any actual quantities removed based on the soil reinforcement length and design selected.

Miscellaneous:

Bottom of leveling pad shall bear on sound rock or ground improvements.

The MSE wall system shall be built vertical.

The MSE wall system shall be built in accordance with Sec 720.

The MSE wall system shall be a precast modular panel wall system.

Precast modular panel, drycast modular block, wetcast modular block and coping (or capstone) reinforcement shall be epoxy coated.

A filter cloth meeting the requirements for a Separation Geotextile material shall be placed between the select granular backfill for structural systems and the backfill being retained by the mechanically stabilized earth wall system.

Coping shall be required on this structure. When CIP coping sections extend beyond the limits of a single panel, bond breaker (roofing felt or other approved alternate) between wall panel and coping is required. Coping joints shall use 3/4-inch chamfers and shall be sealed with 3/4-inch joint filler. Coping reinforcement shall terminate 1 1/2-inch minimum from face of coping joint.

The contractor shall be solely responsible to coordinate construction of the wall with bridge and roadway construction and ensure that the bridge and roadway construction, resulting or existing obstructions, shall not impact the construction or performance of the wall. Soil reinforcement shall be designed and placed to avoid damage by pile driving, guardrail post installation, utility and sign foundations. (See Roadway and Bridge plans.)

Minimum 18" wide geotextile strips shall be centered at vertical and horizontal joints of panel. Geotextile material shall be adhered to back face of panel using an adhesive compound supplied by the manufacturer. All edges of each fabric strip shall provide a positive seal. A minimum 12" overlap shall be provided between spliced filter fabric.

Aluminized soil reinforcement shall have edges coated with coating material per manufacturer.

Soil reinforcement shall be spaced to avoid roadway drop inlet behind wall.

All steel soil reinforcements shall be separated from other metallic elements by at least 3 inches.

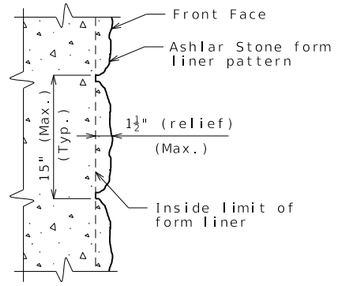
The splay angle should be less than 15° and tensile capacity of splayed reinforcement shall be reduced by the cosine of the splay angle. Soil reinforcement shall clear the obstruction by at least 3 inches.

No reinforcement shall be left unconnected to the wall face or arbitrarily cut/bent in the field to avoid the obstruction.

Where interference between the vertical obstruction and the soil reinforcement is unavoidable, the design of the wall near the obstruction may be modified using one of the alternatives in FHWA-NHI-10-024, Section 5.4.2. Show detail layout on the drawings. For wall designs with horizontal obstructions in reinforced soil mass, see FHWA-NHI-10-024, Section 5.4.3.

Concrete and masonry protective coating shall be applied on all exposed concrete areas in accordance with Sec 711.

Sacrificial graffiti protective coating shall be applied on all exposed concrete areas in accordance with Sec 711.



FORM LINER DETAIL
(PRECAST MODULAR PANEL WALL)

Notes for Form Liners:

The cost of form liners for MSE wall systems, complete in place, will be considered completely covered by the contract unit price for Mechanically Stabilized Earth Wall System.

Form liner shall be constructed in accordance with Special Provisions.

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 1/2". The height of any single 'stone' shall be 15" maximum.

- Scott System, Inc.: Form liner pattern #167 "Ashlar Stone"
- Fitzgerald Formliners: Form liner pattern #16986 "Ashlar Stone"
- Greenstreak: Form liner pattern #330 "Ashlar Stone"
- Spec Formliners: Form liner pattern #1515 "Ashlar Stone"
- Customrock: Form liner pattern #12020 "Tollway Ashlar"
- An approved equal

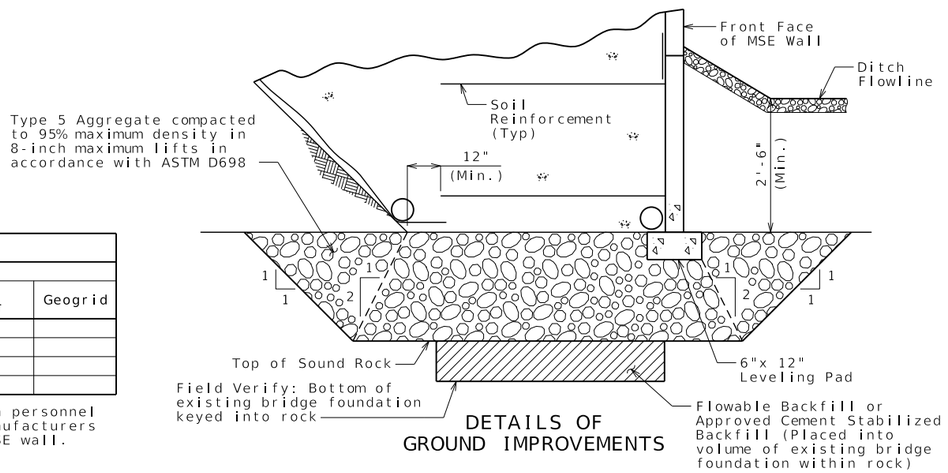
Estimated Quantities

Item		Total
Type 5 Aggregate	cu. yard	233
Flowable Backfill	cu. yard	240
Concrete and Masonry Protection System	lump sum	1
Sacrificial Graffiti Protection System	lump sum	1
Mechanically Stabilized Earth Wall Systems	sq. foot	5586

MSE Wall Systems Data Table

Proprietary Wall Systems		Combination Wall Systems			
Manufacturer	System	Facing Unit Manufacturer	Facing Unit	Geogrid Manufacturer	Geogrid

MSE Wall Systems Data Table is to be completed by MoDOT construction personnel to record the manufacturer of the proprietary wall system or the manufacturers of the combination wall system that was used for constructing the MSE wall.



DETAILS OF
GROUND IMPROVEMENTS

DETAILS FOR GENERIC MSE WALL

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
10/17/2025

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

DATE PREPARED: 10/17/2025
ROUTE: COOKINGHAM DRIVE | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9701

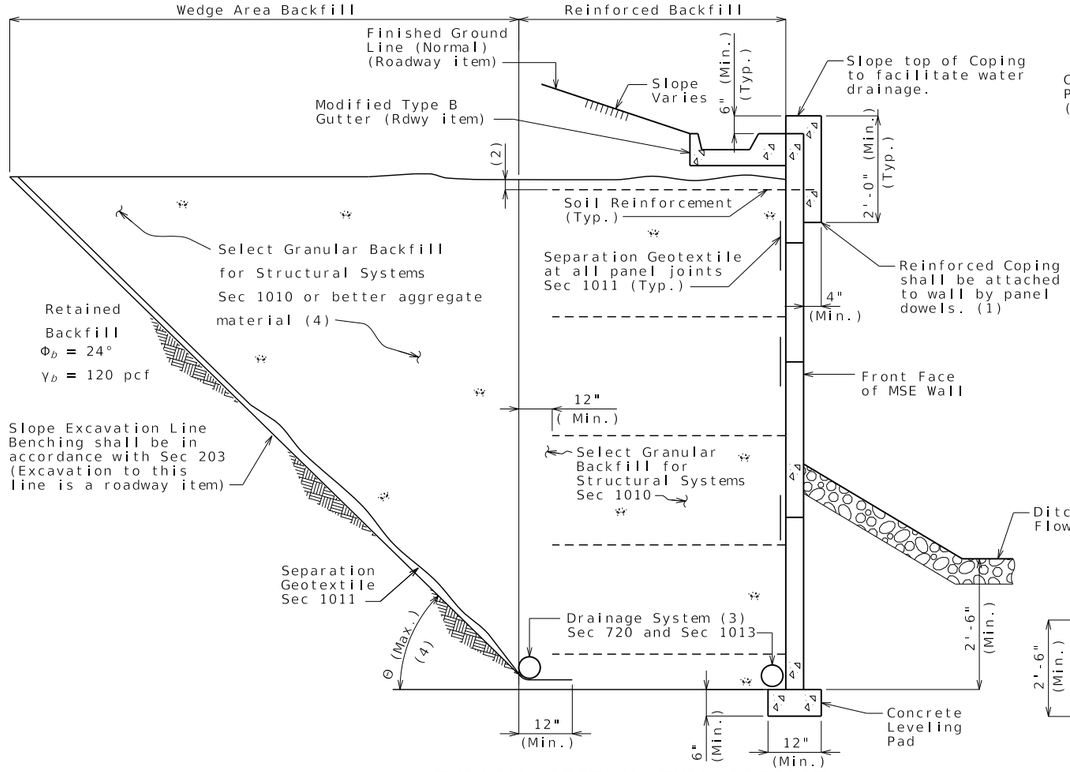
DESCRIPTION	DATE

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

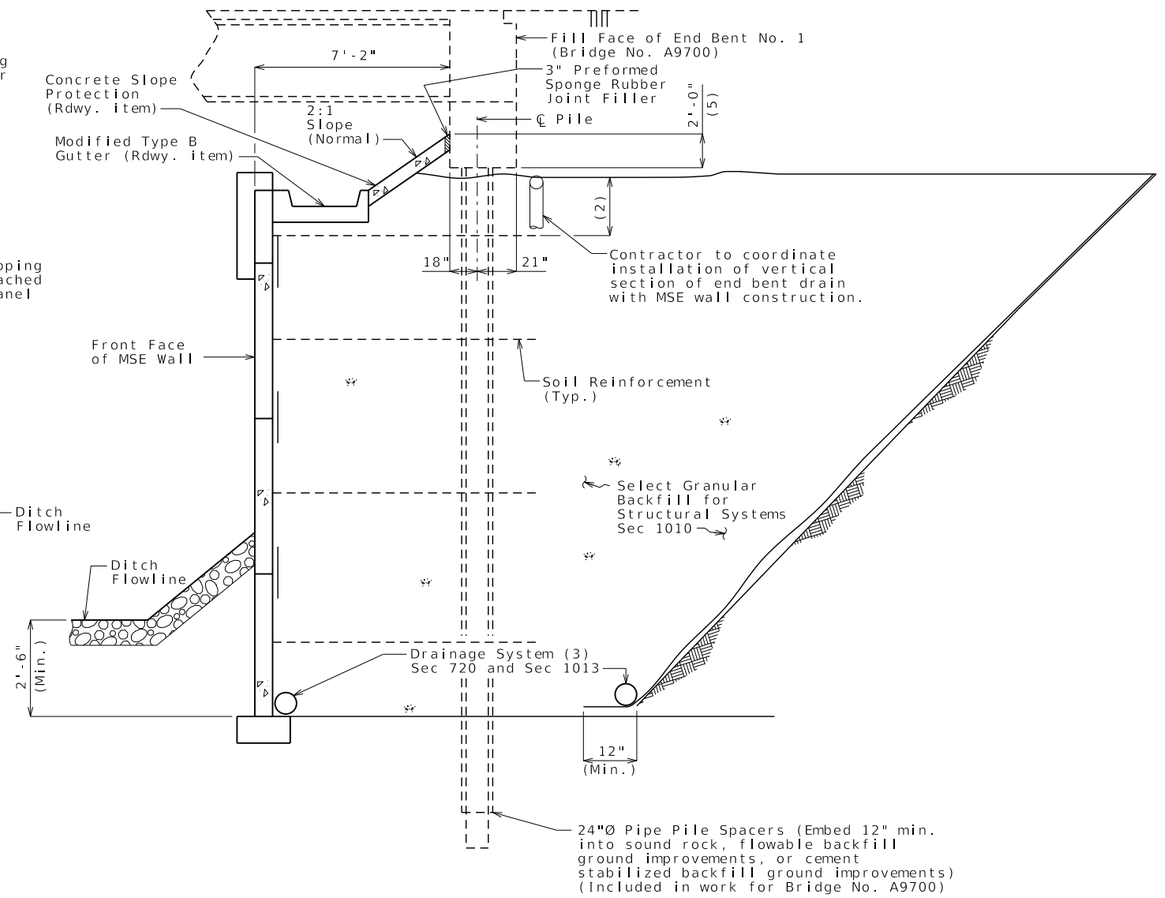
Detailed May 2025
Checked Aug. 2025

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

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\17 Retaining Wall Sheets\A9701 EB1\B_A9701_002_J4S3489_GEN NOTES.dgn 9:49:20 AM 10/17/2025



TYPICAL SECTION THRU PRECAST MODULAR PANEL WALL (GENERAL)



TYPICAL SECTION THRU PRECAST MODULAR PANEL WALL UNDER BRIDGE

Note: For additional information, see Typical Section Thru Precast Modular Panel Wall (General).

(4) Select granular backfill shall extend a minimum of 12" beyond the end of all soil reinforcement. Where the angle, Θ, between the retained backfill excavation/fill line and the horizontal is less than 90°, the wedge area backfill between Θ and 90° shall be filled with select granular backfill for structural systems meeting the requirements of Section 1010.

- For 45° < Θ ≤ 90°, properties for retained backfill shall be used for active force computations.

- For Θ ≤ 45°, contractor shall have the option to use select granular backfill, Φ_r, or better aggregate material for active force computations in the wedge area backfill. For active force computations, the angle of internal friction for wedge area backfill material, Φ_r, shall be limited to 34° unless determined otherwise in accordance with Section 1010. If $\Phi_r > 34°$ is desired for wedge area backfill then test report shall be submitted with manufacturer's design plans. Φ_r shall not be greater than 40°. Final configuration of this option shall be sent to Geotechnical Section for a new overall global stability analysis. Design $\Phi_r°$ shall be shown on manufacturer's plans if used.

The slope excavation line shall be benched and separation geotextile shall be placed between the retained backfill and either select granular backfill or better aggregate material, and between the select granular backfill and better aggregate material.

Show range of acceptable theta (Θ) angle on shop drawings which must be consistent with design computations and proposed construction of wall. Show active force computation properties ($\Phi° = \Phi_r°$ and $\gamma = \gamma_r$ or $\Phi° = \Phi_b°$ and $\gamma = \gamma_b$) on shop drawings and in design computations. Coordination between wall designer (manufacturer) and contractor is required before shop drawing submittal.

Material Properties Used in Design						
Reinf. Fill/Select Granular Backfill			Active Force Computations			Foundation
$\Phi_r°$	γ_r (pcf)		$\Phi°$	γ (pcf)		$\Phi_f°$

MSE Wall designer shall include table on shop drawings and provide values used in the design computations. Effects of cohesion shall be ignored unless approved by the engineer.

(1) Inverted U-shape reinforced capstone may be used in lieu of coping. Panel dowels for level-up concrete shall be required, and provided by manufacturer. The dowels shall be field trimmed to clear the capstone by a minumum of 1 1/2 inches and a maximum of 2 1/2 inches.

(2) Topmost layer of reinforcement shall be fully covered with select granular backfill for structural systems, as approved by the wall manufacturer, before placement of the Separation Geotextile.

(3) Minimum 6" diameter perforated PVC or PE pipe.

Manufacturer shall show drain details on design plans to be submitted as shown on MoDOT MSE wall plans and/or roadway plans.

Contractor shall modify the drain details as shown if it will improve flow as may be the case for stepped leveling pad, and for an uneven ground line (approval of the engineer required).

(5) See bridge plans.

DETAILS FOR GENERIC MSE WALL

Detailed May 2025
Checked Aug. 2025

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

Sheet No. 3 of 5

STATE OF MISSOURI
LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
9/25/2025

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 3
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9701

DESCRIPTION	DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING LOG NO. B-03

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 966

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, dark brown clay, slightly moist to moist, silt, sand, gravel (1.2')		1								
			2	SPT-1		1-2-3 (5)		17.4			
	LEAN TO FAT CLAY (CL/CH), firm, brown, slightly moist to moist, silt (3.9')		3								
			4	SPT-2		2-4-14 (18)		12.5			
961.0	LEAN TO FAT CLAY (CL/CH), very stiff, brown to reddish brown, slightly moist to dry, silt, sand (5.5')		5								
	WEATHERED SANDSTONE (7.7')		6								
			7								
	LIMESTONE (8.5')		8								
	REFUSAL AT 8.5 FEET		9								
956.0			10								
			11								
			12								
			13								
			14								
951.0			15								
			16								
			17								
			18								
			19								
946.0			20								
			21								
			22								
			23								
			24								
941.0			25								
			26								
			27								
			28								
			29								
936.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	⧩	Not Performed

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-04

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 967

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, dark brown with brown and gray clay, slightly moist, silt, sand, gravel (3.5')		1								
			2	SPT-1		1-4-6 (10)		17.6			
			3								
	LEAN TO FAT CLAY (CL/CH), stiff, brown to reddish brown, slightly moist, silt, trace gravel (8.5')		4	SPT-2		2-3-11 (14)		16.1			
962.0			5								
			6								
			7								
			8								
	WEATHERED SANDSTONE (9.0')		9	SPT-3		21-50/1"		12.5			
	LIMESTONE (9.8')		10								
957.0	**REFUSAL AT 9.8 FEET**		11								
			12								
			13								
			14								
			15								
952.0			16								
			17								
			18								
			19								
			20								
947.0			21								
			22								
			23								
			24								
			25								
942.0			26								
			27								
			28								
			29								
			30								
937.0			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	⧩	Not Performed

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 4
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9701

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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CERTIFICATE OF AUTHORITY NO. 001592

BORING LOG NO. B-05

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 968

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
968.0	FILL, dark brown with brown clay, slightly moist, silt, sand, gravel — 1.3'		1								
	LEAN TO FAT CLAY (CL/CH), firm, grayish brown with reddish brown, slightly moist, silt, sand		2	SPT-1		2-2-4 (6)		18.3			
			3	ST-2				16.5	114.6		3.8 ft: P.P. = 1.25
963.0			4								
			5								
			6								
			7								
			8								
			9	SPT-3		15-27-48 (75)		16.3			
958.0			10								
			11								
	WEATHERED SANDSTONE — 6.0'		12								
	— 11.7'		13								
	LIMESTONE — 12.0'		14								
	REFUSAL AT 12.0 FEET		15								
953.0			16								
			17								
			18								
			19								
948.0			20								
			21								
			22								
			23								
			24								
943.0			25								
			26								
			27								
			28								
			29								
938.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	3.5 ft
IAD	▼	6.0 ft
AD	⧩	Not Performed

olsson

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-06

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 968

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
968.0	FILL, dark brown with brow clay, silt, gravel, asphalt — 1.0'		1								
	LEAN TO FAT CLAY (CL/CH), firm to stiff, grayish brown with reddish brown, slightly moist, silt, sand		2	SPT-1		3-4-5 (9)		16.6			
	— 3.5'		3								
	WEATHERED SANDSTONE, reddish brown, poorly cemented, clayey		4	SPT-2		44-50/4"		19.0			
963.0			5								
			6								
			7								
			8								
	— 9.3'		9	SPT-3		17-24-27 (51)					
958.0	WEATHERED SHALE, gray, clayey		10								
	— 12.0'		11								
	WEATHERED SANDSTONE, brown with reddish brown, poorly cemented		12								
	— 15.2'		13								
953.0	LIMESTONE		14	SPT-4		50/3"					
	— 17.0'		15								
	REFUSAL AT 17.0 FEET		16								
			17								
			18								
948.0			19								
			20								
			21								
			22								
			23								
943.0			24								
			25								
			26								
			27								
			28								
938.0			29								
			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	3.7 ft
IAD	▼	12.2 ft
AD	⧩	Not Performed

olsson

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 5
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9701

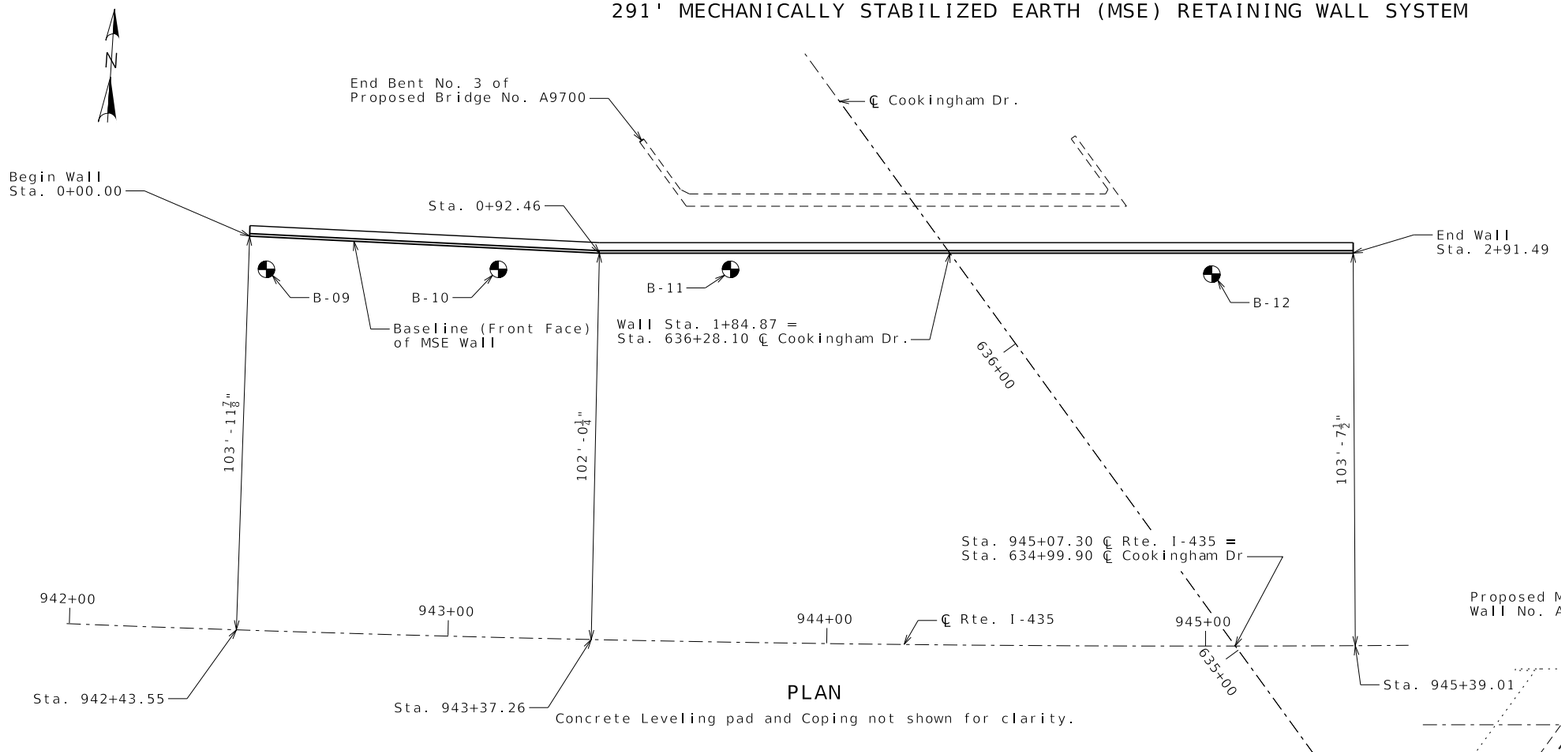
DESCRIPTION | DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

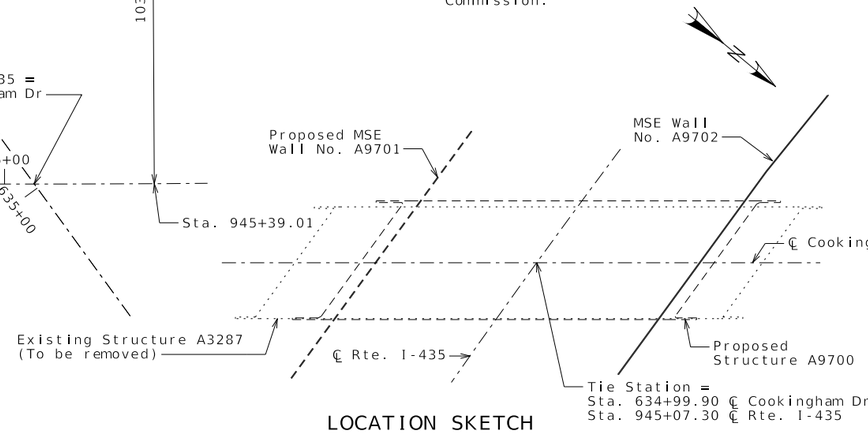
SEC/SUR 21/22 TWP 52N RGE 33W

291' MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL SYSTEM

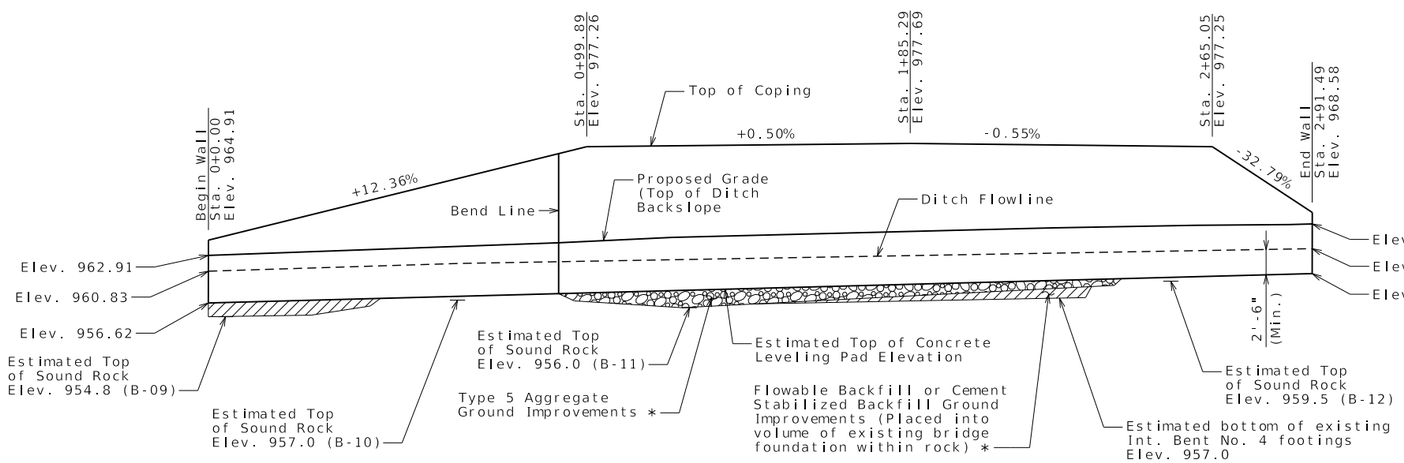


PLAN

Concrete Leveling pad and Coping not shown for clarity.



LOCATION SKETCH



DEVELOPED ELEVATION

Concrete Leveling pad and Coping not shown for clarity.

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 Sheet(s) No. 4-5 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.

* Top of sandstone bedrock varies in elevation. This location will have been disturbed by removal of foundations. Contractor and MSE wall engineer to assess need for potential ground improvements or increasing the thickness of or lowering the leveling pad after initial excavation for the purpose of facilitating installation of the wall and reinforced backfill. This work may consist of overexcavation to the top of sound rock, increasing the thickness of or lowering the concrete leveling pad, providing Type 5 Aggregate, or providing flowable backfill or an approved cement stabilized backfill. All labor and materials necessary to create a uniform leveling pad for the wall to be constructed upon will be considered completely covered by the contract unit prices for Type 5 Aggregate and Flowable Backfill. Contractor's preferred solution(s) shall be conceptually addressed in MSE wall design and included within the preconstruction submittals for review and approval by the Engineer. See Sheet No. 2 for Details of Ground Improvements.

Wall contractor shall show the following items on the design drawings and/or on the fabricator shop drawings.

1. Leveling pad horizontal.
2. Leveling pad length and step elevations shall be based on wall manufacturer's recommendation. Top of leveling pad elevations shall not be higher than theoretical top of leveling pad elevations shown on these plans. Bottom of leveling pad shall bear on weathered sandstone.

RETAINING WALL ALONG LEFT SIDE OF ROUTE I-435

COOKINGHAM DRIVE FROM ROUTE 169 TO ROUTE I-435
ABOUT 1.1 MILES WEST OF ROUTE 169
TIE STATION 636+28.10

LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
STATE OF MISSOURI
9/25/2025

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9702

DESCRIPTION	DATE

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

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

Detailed May 2025
Checked Aug. 2025

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

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2022\03001-03500\022-03482\40-Design\Microstation\J4S3489\plan_sheets\17 Retaining Wall Sheets\A9702 EB2\B_A9702_001_J4S3489_PLAN AND ELEV.dgn 3:13:17 PM 9/25/2025

General Notes:

Design Specifications:

2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Ed.)
Seismic Design Category = A (Seismic Zone - 1)
Design earthquake response spectral acceleration coefficient at 1.0 second period, S_{D1} = 0.07
Acceleration Coefficient (effective peak ground acceleration coefficient), A_s = 0.046

Design Loading:

For strength limit state and extreme event limit state, the wall designer to confirm that the minimum Capacity to Demand Ratio (CDR) for bearing, sliding, overturning, eccentricity, and internal stability is greater than or equal to 1.0. MSE wall designer shall include this note on shop drawings.

Φ_b = 24° and Unit weight, γ_b = 120 pcf for retained backfill material to be retained by the mechanically stabilized earth wall system.

Φ_f = 32° for unimproved sound rock where wall is to bear.

For unimproved sound rock or ground improvements, factored bearing resistance is 5 ksf for strength limit state.

The maximum applied factored bearing stress for the strength limit state at the foundation level shall be shown on the shop drawings and shall be less than the factored bearing resistance.

Factored bearing resistance shall be used as shown on the plans. No adjustments are allowed.

Contractor shall include design Φ_f (actual $\Phi_f \geq 34°$) and the total unit weight, γ_f, for the select granular backfill (reinforced backfill and wedge area backfill) for structural systems on shop drawings. Contractor shall identify source of select granular backfill material, submit proctor in accordance with AASHTO T 99 (ASTM D698) and gradation with the shop drawings. When backfill material is too coarse to develop a proctor curve the contractor shall determine the maximum dry density (relative density) in accordance with ASTM D4253 and ASTM D4254 and assume percent passing the 200 sieve for optimum water content.

Total unit weight, γ_f = (95% compaction) x (maximum dry density) x (1 + optimum water content)

Design Φ_f = 34°for the select granular backfill (reinforced backfill) for structural systems.

Use default values for the pullout friction factor, F^*, in accordance with LRFD figure 11.10.6.3.2-2 and default value for scale effect correction factor, α, in accordance with LRFD table 11.10.6.3.2-1. For approved steel strips not shown in LRFD figure 11.10.6.3.2-2, use $F^* \leq 2.0$ at zero depth and $F^* \leq \text{Tan } \Phi_f$ at 20 feet depth and Φ_f design = 34°. F^* and α values shall be shown on the shop drawings.

Design Unit Stresses:

All concrete for leveling pad and coping shall be Class B or B-1 with f'c = 4000 psi.

The minimum compressive strength of concrete for precast modular panel shall be 4,000 psi in accordance with Sec 1052.

Excavation:

Excavation quantities and pay items are given on the roadway plans. Excavation quantities are based on a soil reinforcement length of 14 ft. The soil reinforcement length may vary based upon the wall design selected by the contractor. Plan excavation quantities will be paid regardless of any actual quantities removed based on the soil reinforcement length and design selected.

Miscellaneous:

Bottom of leveling pad shall bear on sound rock or ground improvements.

The MSE wall system shall be built vertical.

The MSE wall system shall be built in accordance with Sec 720.

The MSE wall system shall be a precast modular panel wall system.

Precast modular panel, drycast modular block, wetcast modular block and coping (or capstone) reinforcement shall be epoxy coated.

A filter cloth meeting the requirements for a Separation Geotextile material shall be placed between the select granular backfill for structural systems and the backfill being retained by the mechanically stabilized earth wall system.

Coping shall be required on this structure. When CIP coping sections extend beyond the limits of a single panel, bond breaker (roofing felt or other approved alternate) between wall panel and coping is required. Coping joints shall use 3/4-inch chamfers and shall be sealed with 3/4-inch joint filler. Coping reinforcement shall terminate 1 1/2-inch minimum from face of coping joint.

The contractor shall be solely responsible to coordinate construction of the wall with bridge and roadway construction and ensure that the bridge and roadway construction, resulting or existing obstructions, shall not impact the construction or performance of the wall. Soil reinforcement shall be designed and placed to avoid damage by pile driving, guardrail post installation, utility and sign foundations. (See Roadway and Bridge plans.)

Minimum 18" wide geotextile strips shall be centered at vertical and horizontal joints of panel. Geotextile material shall be adhered to back face of panel using an adhesive compound supplied by the manufacturer. All edges of each fabric strip shall provide a positive seal. A minimum 12" overlap shall be provided between spliced filter fabric.

Aluminized soil reinforcement shall have edges coated with coating material per manufacturer.

Soil reinforcement shall be spaced to avoid roadway drop inlet behind wall.

All steel soil reinforcements shall be separated from other metallic elements by at least 3 inches.

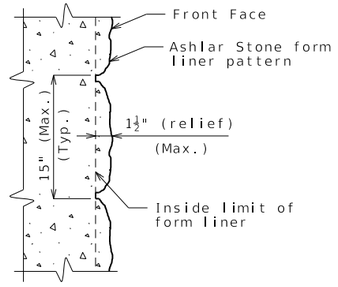
The splay angle should be less than 15° and tensile capacity of splayed reinforcement shall be reduced by the cosine of the splay angle. Soil reinforcement shall clear the obstruction by at least 3 inches.

No reinforcement shall be left unconnected to the wall face or arbitrarily cut/bent in the field to avoid the obstruction.

Where interference between the vertical obstruction and the soil reinforcement is unavoidable, the design of the wall near the obstruction may be modified using one of the alternatives in FHWA-NHI-10-024, Section 5.4.2. Show detail layout on the drawings. For wall designs with horizontal obstructions in reinforced soil mass, see FHWA-NHI-10-024, Section 5.4.3.

Concrete and masonry protective coating shall be applied on all exposed concrete areas in accordance with Sec 711.

Sacrificial graffiti protective coating shall be applied on all exposed concrete areas in accordance with Sec 711.



FORM LINER DETAIL
(PRECAST MODULAR PANEL WALL)

Notes for Form Liners:

The cost of form liners for MSE wall systems, complete in place, will be considered completely covered by the contract unit price for Mechanically Stabilized Earth Wall System.

Form liner shall be constructed in accordance with Special Provisions.

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 1/2". The height of any single 'stone' shall be 15" maximum.

- Scott System, Inc.: Form liner pattern #167 "Ashlar Stone"
- Fitzgerald Formliners: Form liner pattern #16986 "Ashlar Stone"
- Greenstreak: Form liner pattern #330 "Ashlar Stone"
- Spec Formliners: Form liner pattern #1515 "Ashlar Stone"
- Customrock: Form liner pattern #12020 "Tollway Ashlar"
- An approved equal

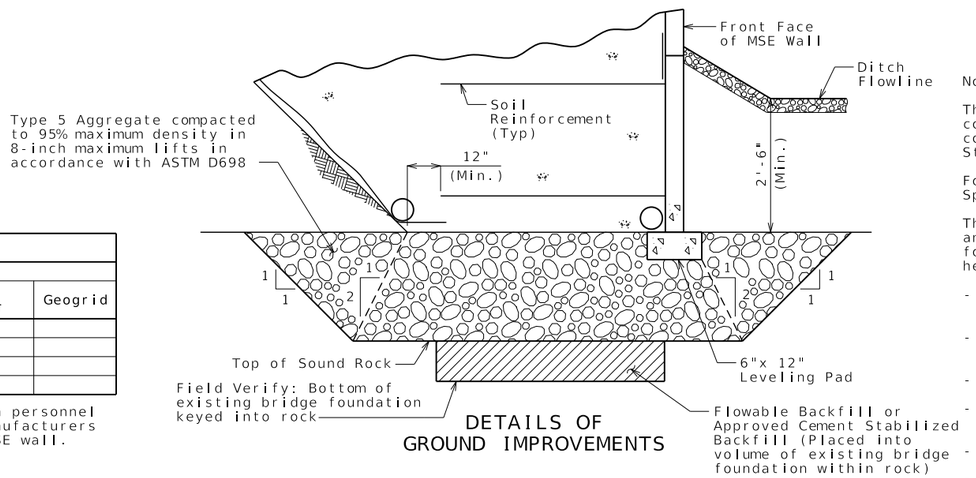
Estimated Quantities

Item		Total
Type 5 Aggregate	cu. yard	250
Flowable Backfill	cu. yard	28
Concrete and Masonry Protection System	lump sum	1
Sacrificial Graffiti Protection System	lump sum	1
Mechanically Stabilized Earth Wall Systems	sq. foot	4756

MSE Wall Systems Data Table

Proprietary Wall Systems		Combination Wall Systems			
Manufacturer	System	Facing Unit Manufacturer	Facing Unit	Geogrid Manufacturer	Geogrid

MSE Wall Systems Data Table is to be completed by MoDOT construction personnel to record the manufacturer of the proprietary wall system or the manufacturers of the combination wall system that was used for constructing the MSE wall.



DETAILS OF
GROUND IMPROVEMENTS

DETAILS FOR GENERIC MSE WALL

Detailed May 2025
Checked Aug. 2025

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

LAUREN A. KITCHEN
NUMBER PE-2025040501
PROFESSIONAL ENGINEER
STATE OF MISSOURI
9/25/2025

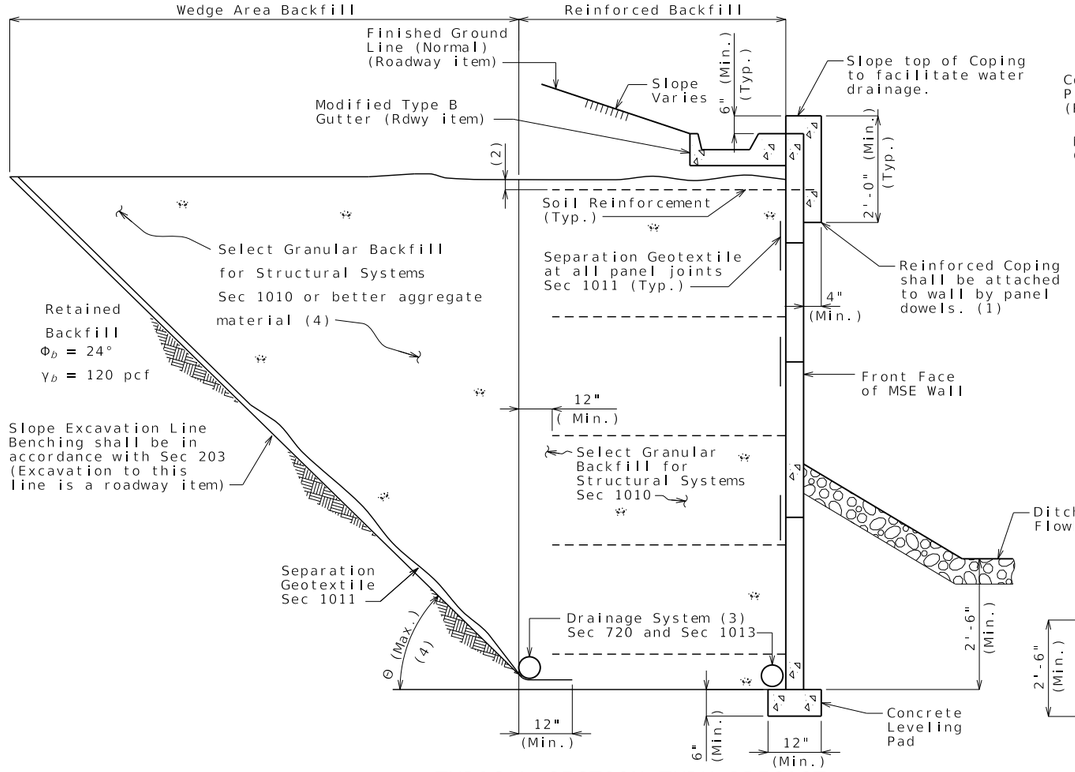
olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9702

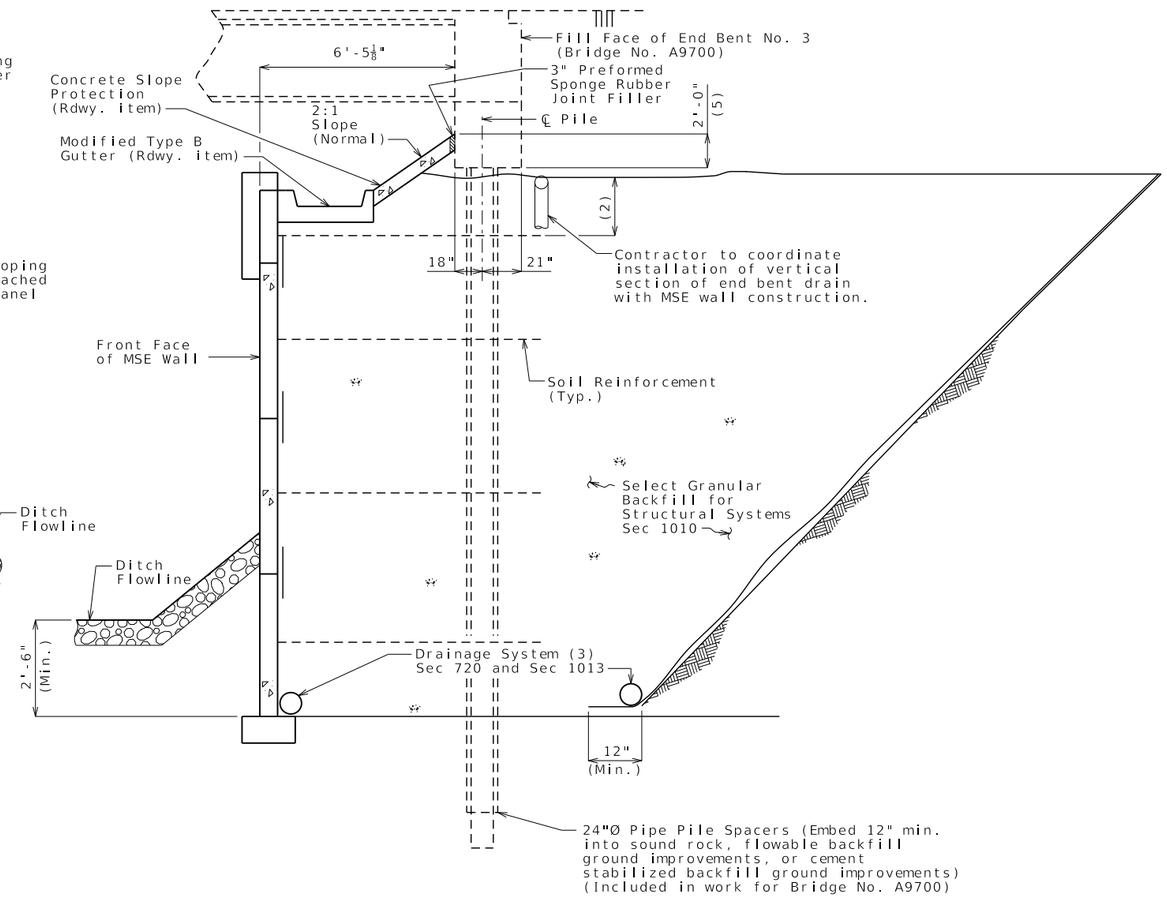
DESCRIPTION	DATE

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

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



TYPICAL SECTION THRU PRECAST MODULAR PANEL WALL (GENERAL)



TYPICAL SECTION THRU PRECAST MODULAR PANEL WALL UNDER BRIDGE

Note: For additional information, see Typical Section Thru Precast Modular Panel Wall (General).

(4) Select granular backfill shall extend a minimum of 12" beyond the end of all soil reinforcement. Where the angle, Θ, between the retained backfill excavation/fill line and the horizontal is less than 90°, the wedge area backfill between Θ and 90° shall be filled with select granular backfill for structural systems meeting the requirements of Section 1010.

- For 45° < Θ ≤ 90°, properties for retained backfill shall be used for active force computations.

- For Θ ≤ 45°, contractor shall have the option to use select granular backfill, Φ_r, or better aggregate material for active force computations in the wedge area backfill. For active force computations, the angle of internal friction for wedge area backfill material, Φ_r, shall be limited to 34° unless determined otherwise in accordance with Section 1010. If $\Phi_r > 34°$ is desired for wedge area backfill then test report shall be submitted with manufacturer's design plans. Φ_r shall not be greater than 40°. Final configuration of this option shall be sent to Geotechnical Section for a new overall global stability analysis. Design $\Phi_r°$ shall be shown on manufacturer's plans if used.

The slope excavation line shall be benched and separation geotextile shall be placed between the retained backfill and either select granular backfill or better aggregate material, and between the select granular backfill and better aggregate material.

Show range of acceptable theta (Θ) angle on shop drawings which must be consistent with design computations and proposed construction of wall. Show active force computation properties ($\Phi° = \Phi_r°$ and $\gamma = \gamma_r$ or $\Phi° = \Phi_b°$ and $\gamma = \gamma_b$) on shop drawings and in design computations. Coordination between wall designer (manufacturer) and contractor is required before shop drawing submittal.

Material Properties Used in Design						
Reinf. Fill/Select Granular Backfill			Active Force Computations			Foundation
$\Phi_r°$	γ_r (pcf)		$\Phi°$	γ (pcf)		$\Phi_f°$

MSE Wall designer shall include table on shop drawings and provide values used in the design computations. Effects of cohesion shall be ignored unless approved by the engineer.

(1) Inverted U-shape reinforced capstone may be used in lieu of coping. Panel dowels for level-up concrete shall be required, and provided by manufacturer. The dowels shall be field trimmed to clear the capstone by a minumum of 1 1/2 inches and a maximum of 2 1/2 inches.

(2) Topmost layer of reinforcement shall be fully covered with select granular backfill for structural systems, as approved by the wall manufacturer, before placement of the Separation Geotextile.

(3) Minimum 6" diameter perforated PVC or PE pipe.

Manufacturer shall show drain details on design plans to be submitted as shown on MoDOT MSE wall plans and/or roadway plans.

Contractor shall modify the drain details as shown if it will improve flow as may be the case for stepped leveling pad, and for an uneven ground line (approval of the engineer required).

(5) See bridge plans.

DETAILS FOR GENERIC MSE WALL

Detailed May 2025
Checked Aug. 2025

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

Sheet No. 3 of 5

DATE PREPARED 9/25/2025
ROUTE COOKINGHAM DRIVE
STATE MO
DISTRICT BR
SHEET NO. 3
COUNTY PLATTE
JOB NO. J4S3489
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9702

DESCRIPTION | DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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NORTH KANSAS CITY, MO 64116
PHONE: 816.361.1177
CERTIFICATE OF AUTHORITY NO. 001592

BORING LOG NO. B-09

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 961

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, dark brown with brown clay, slightly moist, silt, gravel, asphalt, organics		1	SPT-1		2-3-5 (8)		17.7			
	3.5'		2								
956.0	LEAN TO FAT CLAY (CL/CH), firm, grayish brown with reddish brown, slightly moist to moist, silt, sand		3								
	6.2'		4	SPT-2		2-2-3 (5)		19.8			
	WEATHERED SANDSTONE, light reddish brown with brown, poorly cemented		5								
	9.3'		6								
	9.4'		7								
951.0	LIMESTONE		8	SPT-3		50/1"		6.1			
	REFUSAL AT 9.4 FEET		9								
			10								
			11								
			12								
			13								
			14								
946.0			15								
			16								
			17								
			18								
			19								
941.0			20								
			21								
			22								
			23								
			24								
936.0			25								
			26								
			27								
			28								
			29								
931.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	⧩	Not Performed

olsson

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-10

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 962

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, dark brown with brown clay, silt, sand, gravel, asphalt		1	SPT-1		2-2-5 (7)		19.8			
	1.1'		2								
	LEAN TO FAT CLAY (CL/CH), stiff, grayish brown with reddish brown, slightly moist, silt, sand		3	ST-2			1.7	17.0	115.3		
	5.0'		4								
957.0	WEATHERED SANDSTONE, brown with light reddish brown, poorly cemented, interbedded limestone seams		5								
			6								
			7								
			8								
	10.2'		9	SPT-3		50/1"					
952.0	10.5'		10								
	LIMESTONE		11								
	REFUSAL AT 10.5 FEET		12								
			13								
			14								
947.0			15								
			16								
			17								
			18								
			19								
942.0			20								
			21								
			22								
			23								
			24								
937.0			25								
			26								
			27								
			28								
			29								
932.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	⧩	Not Performed

olsson

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

BORING LOG NO. B-11

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 962

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, brown with dark brown clay, silt, asphalt, organics 1.2'		1								
	LEAN TO FAT CLAY (CL/CH), firm, grayish brown to reddish brown, slightly moist, silt 3.5'		2	SPT-1		2-2-4 (6)		17.2			
957.0	LEAN TO FAT CLAY (CL/CH), very stiff, grayish brown with brown, slightly moist, silt, sand, trace gravel 6.0'		3								
	WEATHERED SANDSTONE, brown with reddish brown, poorly cemented 8.2'		4	SPT-2		3-11-18 (29)		17.4			
	LIMESTONE 8.5'		5								
	REFUSAL AT 8.5 FEET		6								
952.0			7								
			8								
			9								
			10								
			11								
			12								
			13								
			14								
947.0			15								
			16								
			17								
			18								
			19								
			20								
			21								
			22								
			23								
			24								
942.0			25								
			26								
			27								
			28								
			29								
			30								
			31								
			32								
937.0			33								
			34								
932.0											

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	⧩	Not Performed

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-12

Sheet 1 of 1

PROJECT NAME: I-435 and Cookingham Drive – J4S3489
CLIENT: Missouri Department of Transportation
PROJECT NUMBER: 022-03482
LOCATION: Kansas City, Missouri

APPROX. SURFACE ELEV. (ft): 963

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	FILL, dark brown with gray and brown clay, slightly moist, silt, sand 1.9'		1	ST-1			1.3	18.3	112.0		
	LEAN TO FAT CLAY (CL/CH), stiff to very stiff, grayish brown and reddish brown, slightly moist, silt, sand 3.5'		2								
958.0	WEATHERED SANDSTONE, brown with reddish brown and gray, poorly cemented, clayey		3								
			4	SPT-2		27-30-17 (47)		8.1			
			5								
			6								
			7								
			8								
	WEATHERED SANDSTONE, brown with reddish brown, poorly cemented 8.5'		9	ST-3		36-50/5"		10.3			
953.0	11.0' ▼		10								
	LIMESTONE 11.5'		11								
	REFUSAL AT 11.5 FEET		12								
			13								
			14								
948.0			15								
			16								
			17								
			18								
			19								
			20								
			21								
			22								
			23								
			24								
943.0			25								
			26								
			27								
			28								
			29								
			30								
			31								
			32								
938.0			33								
			34								
933.0											

WATER LEVEL OBSERVATIONS		
WD	▽	3.6 ft
IAD	▼	10.7 ft
AD	⧩	Not Performed

STARTED:	May 05 2025	FINISHED:	May 05 2025
DRILL CO.:	RC Drilling	EQUIPMENT:	CME 550X
DRILLER:	Ron C.	LOGGED BY:	Zach D.
METHOD:	Continuous Flight Auger		

BORING DATA

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

Detailed May 2025
Checked Aug. 2025

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

DATE PREPARED: 9/25/2025
ROUTE: COOKINGHAM DRIVE
STATE: MO
DISTRICT: BR
SHEET NO.: 5
COUNTY: PLATTE
JOB NO.: J4S3489
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9702

DESCRIPTION | DATE

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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
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CERTIFICATE OF AUTHORITY NO. 001592