

DESIGN DESIGNATION

A.A.D.T. - 2025 = 34593
A.A.D.T. - 2035 = 37643
D.H.V. = 7.51%
T = 19.56%
V = 70 M.P.H.
D = 49.7% / 50.3%

FUNCTIONAL CLASSIFICATION - INTERSTATE

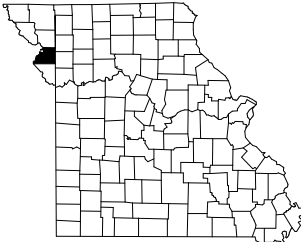
NO NEW RIGHT OF WAY ACQUISITION

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		
FIRE HYDRANT		
WATER VALVE		
WATER METER		
DROP INLET		
DITCH BLOCK		
GROUND MOUNTED SIGN		
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL		
FENCE		
CHAIN LINK		
WOVEN WIRE		
GATE POST		
BENCHMARK		

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

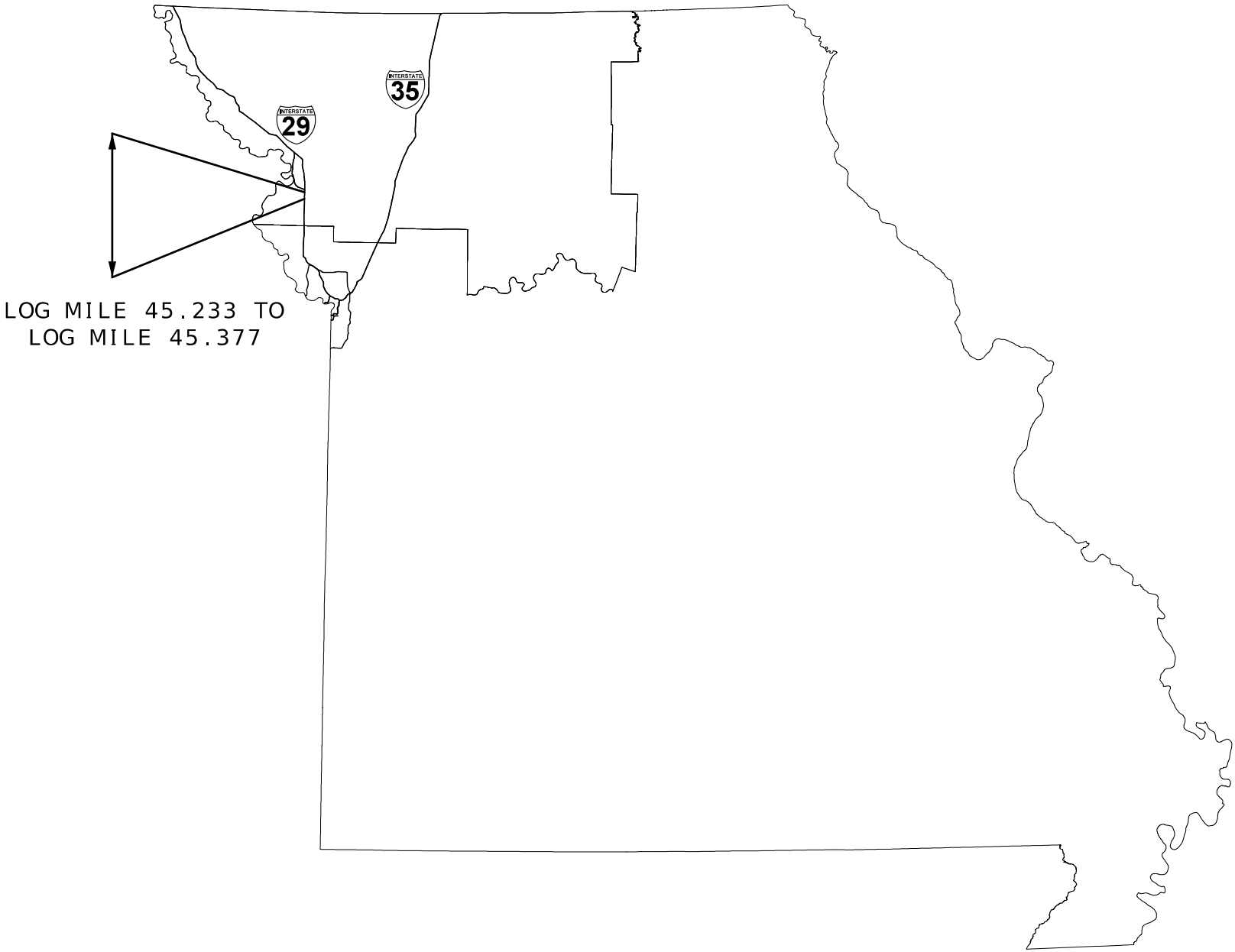
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
PLANS FOR PROPOSED
STATE HIGHWAY



KEY MAP
LOCATION OF BUCHANAN COUNTY

BUCHANAN COUNTY

UPGRADE DYNAMIC MESSAGE SIGN 0.7 MILES
SOUTH OF RTE. 0 ON NORTHBOUND LANES



LOG MILE 45.233 TO
LOG MILE 45.377

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

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
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DATE PREPARED
3/4/2025

ROUTE	STATE
1 - 29	MO
DISTRICT	SHEET NO.
NW	1

COUNTY
BUCHANAN
JOB NO.
JNW0152
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE

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



LENGTH OF PROJECT

BEGINNING OF PROJECT	LOG 45.233
END OF PROJECT	LOG 45.377
APPARENT LENGTH	760.32 FEET

NET LENGTH OF PROJECT	760.32 FEET
STATE LENGTH	00.144 MILES

FOR INFORMATION ONLY
ESTIMATED DISTURBED ACRES 0 ACRES





































GENERAL NOTES

- 1
- FOR SYSTEM COMMUNICATION REQUIREMENTS, SEE COMMUNICATION PLANS AND SPECIAL PROVISIONS.
- 2
- ALL BRIDGE CONDUIT RUNS SHALL NOT EXCEED 270 OF BENDS. CONDUITS OR OTHER ENTERABLE FITTINGS SHALL BE INCLUDED IN COST OF CONDUIT.
- 3
- CONTRACTOR SHALL MAINTAIN 2' CONDUIT CLEARANCE FROM ALL LANDSCAPED FEATURES EXISTING WITHIN THE RIGHT OF WAY. ANY LANDSCAPING DISTURBED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR.
- 4
- CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH OTHER CONTRACTORS IN THE AREA.
- 5
- THE MAINTAINING AGENCY IS THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION (MHTC).
- 6
- ALL UTILITIES SHALL BE LOCATED AND MARKED PRIOR TO INITIATION OFCONSTRUCTION PER SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING UTILITIES AND LOCATOR SERVICES AND SCHEDULING THE LOCATION OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL ALSO CONTACT ANY AND ALL UTILITIES AND LOCAL GOVERNMENT AGENCIES NOT PARTICIPATING IN LOCATION SERVICES.
- 7
- PROPOSED ITS EQUIPMENT LOCATIONS ARE APPROXIMATE AND MAY BE MODIFIED TO AVOID CONFLICTS WITH UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS. THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE ENGINEER PRIOR TO REVISING THE LOCATION OF ANY OF THE ITS EQUIPMENT.
- 8
- LOCATION OF ITS EQUIPMENT ON THE PLANS BY THE ENGINEER HAS BEEN PERFORMED WITHOUT FULL CONSIDERATION OF EXISTING UNDERGROUND UTILITIES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ANY CONFLICTS WITH EXISTING UTILITIES AT SITES IN THE FIELD PRIOR TO INITIATION OF CONSTRUCTION PER SITE. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE ENGINEER UPON DETERMINATION OF ANY UTILITY CONFLICTS.
- 9
- ALL ITS EQUIPMENT CALLED OUT BY PLANS AND SPECIFICATIONS AS "INSTALL" EQUIPMENT, INCLUDING DETECTOR ASSEMBLIES, CCTV ASSEMBLIES, AND DMS ASSEMBLIES, SHALL INCLUDE ALL TRANSPORTATION, INSTALLATION AND TESTING OF MISSOURI DEPARTMENT OF TRANSPORTATION FURNISHED EQUIPMENT IN ACCORDANCE WITH THE SPECIFICATIONS.
- 10
- ALL TRAFFIC CONTROL PLANS AND LANE CLOSURES SHALL BE PRE-APPROVED BY THE ENGINEER.
- 11
- ALL WORK SHALL INCLUDE THE RESTORATION OF ANY DISTURBED AREAS AS DIRECTED BY THE ENGINEER. ALL GRADING WORK SHALL PROVIDE POSITIVE DRAINAGE.
- 12
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR ANY EXISTING CONDUIT, CONDUCTORS OR OTHER FACILITIES DAMAGED DURING CONSTRUCTION. ALL EXISTING IMPROVEMENTS NOT SPECIFICALLY IDENTIFIED AS BEING REMOVED OR RELOCATED IN THE PLANS THAT ARE DISTURBED OR OTHERWISE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED IN KIND BY THE CONTRACTOR, WITH NO ADDITIONAL COMPENSATION.
- 13
- THE PLANS DEPICT CONDUIT ROUTING IN SCHEMATIC FORM ONLY. THE CONTRACTOR SHALL DETERMINE FINAL ROUTING BASED ON ACTUAL FIELD CONDITIONS PRIOR TO CONSTRUCTION AT EACH SITE, INCLUDING UTILITY LOCATOR SERVICE MARKINGS, TO PREVENT CONFLICTS WITH EXISTING UTILITIES.

14.
- ALL CONDUITS SHALL BE NEW. SINGLE CELL CONDUITS ON BRIDGES SHALL BE RIGID GALVANIZED STEEL.
15.
- PULL ROPES ARE REQUIRED IN ALL EMPTY CONDUIT CELLS. PULL ROPES SHALL BE POLYPROPYLENE WITH A MINIMUM TENSILE STRENGTH OF 600 POUNDS.
16.
- THE CONTRACTOR SHALL FIELD REVIEW NECESSARY ROUTING, MOUNTING HARDWARE, INCLUDING BRIDGE HANGERS, FITTINGS, EXPANSION JOINTS AND JUNCTION BOXES FOR ALL EXTERNALLY MOUNTED CONDUITS PRIOR TO SUBMITTAL OF BID TO DETERMINE THE TYPES AND EXTENT OF INCIDENTAL ITEMS TO BE INCLUDED IN THE UNIT PRICE OF CONDUIT.
17.
- THE CONTRACTOR SHALL FIELD REVIEW NECESSARY ROUTING OF CONDUIT AND LOCATION OF PULL BOXES PRIOR TO SUBMITTAL OF BID TO DETERMINE THE TYPES AND EXTENT OF INCIDENTAL REMOVAL, RELOCATION AND REPLACEMENT ITEMS TO BE INCLUDED IN THE UNIT PRICE OF CONDUIT AND PULL BOXES.
18.
- WARNING TAPE IS REQUIRED IN ALL TRENCHES CONTAINING CONDUIT.
19.
- JACKETED 0.10" THHN SOLID BLUE LOCATOR WIRE SHALL BE PLACED IN ALL UNDERGROUND NON-METALLIC CONDUITS BONDED TO GROUNDING RODS WITHIN A PULL BOX. APPROVED LOCATOR WIRE SHALL BE MOUNTED TO THE SIDE WALL OF EACH PULL BOX.
20.
- CONTRACTOR MAY BORE OR HORIZONTALLY DRILL WHEREVER TRENCHING IS SHOWN AT THE CONTRACTOR'S EXPENSE.
21.
- GROUND CONDUCTOR SHALL BE 1/C #6 UNLESS OTHERWISE NOTED ON THE PLANS.
22.
- EXPANSION FITTING SHALL BE PROVIDED WHEN CONDUIT PASSES ACROSS EXISTING EXPANSION DEVICES AND FILLED JOINTS ON BRIDGES INCLUDING FILLED JOINTS IN SAFETY BARRIER CURBS. THE DISTANCE BETWEEN EXPANSION FITTINGS SHALL NOT BE GREATER THAN 150 FEET. EXPANSION FITTINGS ON CONDUIT SHALL PROVIDE A MINIMUM MOVEMENT IN EITHER DIRECTION OF 4" AT OPEN JOINTS, BETWEEN ABUTMENT AND SUPER- STRUCTURES ENCOUNTERED AFTER RISING OUT OF THE GROUND AND 2" AT FILLED JOINTS. EXPANSION FITTINGS SHALL BE PROVIDED WITH A 2' BONDING JUMPER AROUND FITTING. BONDING JUMPER SHALL BE COMPATIBLE WITH CONDUIT MATERIAL. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED IN LOCATIONS WHERE CONDUIT CROSSES OVER BRIDGE SUPERSTRUCTURE, SUBSTRUCTURE OR SIGN STRUCTURES, OR AS OTHERWISE SHOWN IN THE PLANS.
23.
- THE GALVANIZED CONE EXPANSION ANCHOR SYSTEM SHALL BE USED FOR ATTACHING CONDUIT SUPPORTS AND JUNCTION BOXES TO STRUCTURAL CONCRETE.
24.
- ALL GROUNDING SYSTEMS SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
25.
- SLACK FIBER OPTIC CABLE SHALL BE STORED ACCORDING TO THE SPECIAL PROVISIONS. 20' OF SLACK FIBER OPTIC CABLE SHALL BE STORED IN EVERY PULL BOX. FOR EACH FIBER OPTIC CABLE THAT ENTERS A PULL BOX ADJACENT TO A CABINET, 60' OF SLACK CABLE SHALL BE STORED.
26.
- THE LOG MILE SYSTEM USED FOR THE NAMING CONVENTION OF THE DEVICES REFLECTS THE WEST TO EAST AND NORTH TO SOUTH CONTINUOUS LOG CONVENTION USED FOR THE INTERSTATE SYSTEM, BEGINNING WITH 0 AT THE WEST AND SOUTH ENDS OF A ROUTE.

27.
- THE CONTRACTOR SHALL MAINTAIN POWER AND COMMUNICATIONS TO EXISTING ITS DEVICES. THE ONLY EXCEPTION SHALL BE WHEN THE CONTRACTOR IS REPLACING A DMS, MODIFYING ELECTRICAL CIRCUITS OR MODIFYING FIBER OPTIC NETWORK CONNECTIONS. NOTIFY THE ENGINEER AT LEAST 7 DAYS BEFORE EXISTING DMS ARE TAKEN OUT OF SERVICE.
28.
- TRENCH EXCAVATION AND DIRECTIONAL DRILLING REQUIRED FOR THE INSTALLATION OF CONDUITS SHALL INCLUDE THE RESTORATION OF THE AREA IN ACCORDANCE WITH THE SPECIFICATIONS. THE RESTORATION SHALL INCLUDE FENCE REMOVAL AND REPLACEMENT, SIGN RELOCATION, UNDERDRAINS, AND RIPRAP OR OTHER EXISTING SLOPE PROTECTION APPURTENANCE.
29.
- TREES AND SHRUBS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE, AS DIRECTED BY THE ENGINEER.
30.
- ALL ELECTRICAL CABLES IN PULL BOXES AND EQUIPMENT CABINETS SHALL BE PROVIDED WITH INDIVIDUAL BRASS TAGS, DIE STAMPED WITH PHASE AND CIRCUIT IDENTIFICATIONS.

LEGEND

	EXISTING /	PROPOSED
DYNAMIC MESSAGE SIGN		
DETECTOR, MICROWAVE		
CCTV CAMERA		
POLE-MOUNTED FIELD TERMINAL CABINET		
BASE-MOUNTED FIELD TERMINAL CABINET		
DETECTION ZONE		
CONDUIT, TRENCH		
CONDUIT, DIRECTIONAL DRILL		
CONDUIT, EXTERNAL ON STRUCTURE		
CONDUIT, ABANDON		
PULLBOX, CLASS 1 PREFORMED		
CLASS 2 ITS PULLBOX		
CLASS 5 ITS PULLBOX		
POLE		
POWER SUPPLY PEDESTAL		
WIRELESS ACCESS POINT		
FIBER DELINEATOR		
UNINTERRUPTIBLE POWER SUPPLY (UPS)		
ACRONYMS: (R)-REMOVAL & (UIP)-USE IN PLACE		

GENERAL NOTES
AND LEGEND

STATE OF MISSOURI

TIMOTHY K. MINER

NUMBER

PE-2021010008

PROFESSIONAL ENGINEER

03/04/2025 10:07:54 AM

TIMOTHY K. MINER - CIVIL

MO-PE-20211010008

DATE PREPARED

3/4/2025

ROUTE

I - 29

STATE

MO

DISTRICT

NW

SHEET NO.

2

COUNTY

BUCHANAN

JOB NO.

JNW0152

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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

DYNAMIC MESSAGE SIGN (DMS)				
DEVICE ID	ROUTE	MILE MARKER	3-LINE ROADSIDE DYNAMIC MESSAGE SIGN REPLACEMENT (EA)	REMARKS
IS029NBS	I-29	40.65	1	MOUNT ON EXISTING ROADSIDE SUPPORT POSTS
PAY TOTAL			1	

POWER						
FROM	TO	CTR TO CTR DISTANCE (FT)	CABLE 8 AWG 1 CONDUCTOR POWER (LF)	CABLE 2 AWG 1 CONDUCTOR POWER (LF)	WIRE 8 AWG 1 CONDUCTOR BARE NEUTRAL (LF)	WIRE 2 AWG 1 CONDUCTOR BARE NEUTRAL (LF)
POWER SUPPLY	IS029NBPB1	9		34		17
IS029NBPB1	IS029NBPB2	179		370		185
IS029NBPB2	IS029NBCA	6	42	28	14	14
IS029NBPB2	IS029NBS	15	104		35	
TOTAL			146	432	49	216
PAY TOTAL			150	440	50	220

DMS COMMUNICATION CABLING			
FROM	TO	CTR TO CTR DISTANCE	DMS COMMUNICATION CABLE (LF)
IS029NBCA	IS029NBPB2	6	66
IS029NBPB2	IS029NBS	8	68
PAY TOTAL			134

UPS CABLING				
FROM	TO	CTR TO CTR DISTANCE	CAT 5 CABLE IN CONDUIT (LF)	CABLE 12 AWG 1 CONDUCTOR POWER (LF)
UPS001	IS029NBPB2	8	16	150
IS029NBPB2	IS029NBCA	6	12	140
TOTAL			28	290
PAY TOTAL			30	290

CONDUIT			
FROM	TO	CTR TO CTR DISTANCE (FT)	CONDUIT RIGID IN TRENCH (LF) 2 IN.
UPS001	EPB001	8	12
PAY TOTAL			12

UNINTERRUPTIBLE POWER SUPPLY				
DEVICE ID	ROUTE	MILE MARKER	PAD-MOUNTED 120/240V UPS (EA)	BASE, CONCRETE (CU. YD.)
UPS001	I-29	40.65	1	1.00
PAY TOTAL			1	1.00

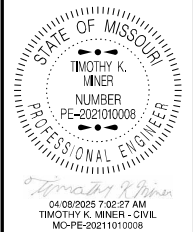
POWER ADJUSTMENTS			
DEVICE ID	ROUTE	MILE MARKER	POWER SUPPLY PEDESTAL & DMS CONTROLLER CABINET REWIRING (EA)
IS029NBS	I-29	40.65	1
PAY TOTAL			1

REMOVAL OF IMPROVEMENTS				
ROUTE	MILE MARKER	DESCRIPTION	QUANTITY	UNITS
I-29	40.65	DMS AND CONTROLLER	1	L.S.
PAY TOTAL			1	

PULL BOX			
PULL BOX ID	ROUTE	MILE MARKER	INSTALL CONDUIT INTO EXISTING PULL BOX (EA)
IS029NBPB2	I-29	40.65	2
PAY TOTAL			2

MOBILIZATION
MOBILIZATION = 1.0 LUMP SUM

DMS TRAINING
DMS TRAINING = 1.0 LUMP SUM



DATE PREPARED
4/7/2025

ROUTE
I-29

STATE
MO

DISTRICT
NW

SHEET NO.
3

COUNTY
BUCHANAN

JOB NO.
JNW0152

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

SIGN	SIZE IN.	AREA SQ. FT.	QTY EACH	TOTAL AREA SQ. FT.	RELOC EACH	TOTAL RELOC SQ. FT.	SIGN NUM.	DESCRIPTION	SIGN	SIZE IN.	AREA SQ. FT.	QTY EACH	TOTAL SQ. FT.	RELOC EACH	TOTAL RELOC SQ. FT.	SIGN NUM.	DESCRIPTION	ITEM NUMBER	TOTAL QTY	EFFECTIVE: 07-01-2024		
																				DESCRIPTION	DESCRIPTION	
WARNING SIGNS									GUIDE SIGNS									6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)		
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)	E05-1	36X48	12.00							GORE EXIT	6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)	
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)	E05-2	48X36	12.00							EXIT OPEN	6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)	
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)	E05-2a	48X36	12.00							EXIT CLOSED	6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)	
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)	GO20-1	60X24	10.00							ROAD WORK NEXT XX MILES	6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)	
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)	GO20-2	48X24	8.00	1	8					END ROAD WORK	6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)	
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)	GO20-4	36X18	4.50							PILOT CAR FOLLOW ME	6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)	
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)	GO20-4a	42X30	8.75							PILOT CAR IN USE WAIT & FOLLOW	6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)	
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)	GO20-4a	18X12	1.50							PILOT CAR IN USE WAIT & FOLLOW	6122020		REPLACEMENT SAND BARREL	
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)	GO20-5aP	36X24	6.00	2	12					WORK ZONE (PLAQUE) 5A	6122030		IMPACT ATTENUATOR (RELOCATION)	
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4-8a	24X18	3.00							END DETOUR	6123001		TRUCK MOUNTED ATTENUATOR (TMA)	
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)	MO4-9L	48X36	12.00							DETOUR (LEFT)	6161008		ADVANCED WARNING RAIL SYSTEM	
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4-9R	48X36	12.00							DETOUR (RIGHT)	6161012		BUOYS (BOATS KEEP OUT)	
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)	MO4-9P	48X12	4.00							STREET NAME (PLAQUE)	6161013		BUOYS (NO WAKE)	
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)	MO4-10L	48X18	6.00							DETOUR ARROW (LEFT)	6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)	
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)	MO4-10L	48X18	6.00							DETOUR ARROW (RIGHT)	6161025	21*	CHANNELIZER (TRIM LINE)	
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)	MO4-10R	48X18	6.00								6161030		TYPE III MOVEABLE BARRICADE	
WO1-8	18X24	3.00						CHEVRON (SYMBOL)	REGULATORY SIGNS									6161033	14*	DIRECTION INDICATOR BARRICADE		
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	R1-1	48X48	13.25							STOP	6161040		FLASHING ARROW PANEL	
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)	R1-2	48TRI.	6.93							YIELD	6161047		TYPE III OBJECT MARKER	
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)	R1-2a	36X36	9.00							TO ONCOMING TRAFFIC (PLAQUE)	6161055		SEQUENTIAL FLASHING WARNING LIGHT	
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)	R1-3P	30X12	2.50							ALL WAY (PLAQUE)	6161070		TUBULAR MARKER	
WO3-4	48X48	16.00						BE PREPARED TO STOP	R2-1	36X48	12.00	4	48					SPEED LIMIT 2 25 2 (4)	6161095		RADAR SPEED ADVISORY SYSTEM	
WO3-5	48X48	16.00						SPEED LIMIT AHEAD	R3-1	48X48	16.00							NO RIGHT TURN (SYMBOL)	6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED	
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)	R3-2	48X48	16.00							NO LEFT TURN (SYMBOL)			CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE- CONTRACTOR FURNISHED/RETAINED	
WO4-2R	48X48	16.00	2	32				RIGHT LANE ENDS 6A	R3-3	36X36	9.00							NO U-TURN (SYMBOL)			CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE- CONTRACTOR FURNISHED/RETAINED	
WO4-1aL	48X48	16.00						MERGE (LEFT)	R3-4	48X48	16.00							LEFT LANE MUST TURN LEFT	6161098A	1	CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE- CONTRACTOR FURNISHED/RETAINED	
WO4-1aR	48X48	16.00						MERGE (RIGHT)	R3-7L	30X30	6.25							RIGHT LANE MUST TURN RIGHT			CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE- CONTRACTOR FURNISHED/RETAINED	
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS	R3-7R	30X30	6.25							DO NOT PASS			WORK ZONE TRAFFIC SIGNAL SYSTEM	
WO5-3	48X48	16.00						ONE LANE BRIDGE	R4-1	36X48	12.00							PASS WITH CARE	6162000A		TEMPORARY LONG-TERM RUMBLE STRIPS	
WO5-5	48X48	16.00						NARROW LANES	R4-2	36X48	12.00							KEEP RIGHT (HORIZONTAL ARROW)	6162002		TEMPORARY TRAFFIC BARRIER	
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)	R4-7a	36X48	12.00							KEEP LEFT (HORIZONTAL ARROW)	6173600D		CONTRACTOR FURNISHED/RETAINED	
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)	R4-8a	36X48	12.00							DO NOT ENTER			TEMPORARY TRAFFIC BARRIER	
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)	R5-1	30X30	6.25							WRONG WAY			CONTRACTOR FURNISHED/COMMISSION RETAINED	
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)	R5-1a	36X24	6.00							ONE WAY ARROW (LEFT)	6173602B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION	
WO8-1	48X48	16.00						BUMP	R6-1L	54X18	6.75							ONE WAY ARROW (RIGHT)	6174000A		RELOCATING TEMPORARY TRAFFIC BARRIER	
WO8-2	48X48	16.00						DIP	R6-1R	54X18	6.75							ONE WAY (LEFT)	6175010A		TEMPORARY TRAFFIC BARRIER	
WO8-3	48X48	16.00						PAVEMENT ENDS	R6-2L	24X30	5.00							ONE WAY (RIGHT)	6176000B		COMMISSION FURNISHED/RETAINED	
WO8-4	48X48	16.00						SOFT SHOULDER	R6-2R	24X30	5.00							SIDEWALK CLOSED			TEMP. TRAFFIC BARRIER HEIGHT TRANSITION	
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)	R9-9	24X12	2.00							SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE			COMMISSION FURNISHED/RETAINED	
WO8-6	48X48	16.00						TRUCK CROSSING	R9-11L	24X18	3.00							SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE	6177000B		TEMPORARY RAISED PAVEMENT MARKER	
WO8-6c	48X48	16.00						TRUCK ENTRANCE	R9-11R	24X18	3.00							STOP HERE ON RED (45° ARROW)	6208064A		TEMPORARY TRAFFIC SIGNALS	
WO8-7	36X36	9.00						LOOSE GRAVEL	R10-6	24X36	6.00							ROAD CLOSED	9029400		TEMPORARY TRAFFIC SIGNALS AND LIGHTING	
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL	R11-2	48X30	10.00							ROAD CLOSED XX MILES AHEAD				
WO8-9	48X48	16.00						LOW SHOULDER	R11-3a	60X30	12.50							LOCAL TRAFFIC ONLY				
WO8-11	48X48	16.00						UNEVEN LANES	R11-4	60X30	12.50							ROAD CLOSED TO THRU TRAFFIC				
WO8-12	48X48	16.00						NO CENTER LINE	CONST-3A	60X48	20.00							FINE SIGN				
WO8-15	48X48	16.00						GROOVED PAVEMENT	CONST-3X	56X12	4.67							SPEEDING/PASSING (PLATE)				
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)	MISCELLANEOUS SIGNS													
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)	CONST-5	48X36	12.00							POINT OF PRESENCE				
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)	CONST-5	96X48	32.00							POINT OF PRESENCE				
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)	CONST-8	48X36	12.00							WORK ZONE NO PHONE ZONE				
W10-1	42RND.	9.62						RAILROAD CROSSING														
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	1	16				ROAD/BRIDGE/RAMP WORK 1 MILE ②														
WO20-2	48X48	16.00						DETOUR AHEAD														
WO20-3	48X48	16.00						ROAD CLOSED AHEAD														
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD	616-10.05	CONSTRUCTION SIGNS				TOTAL								
WO20-5R	48X48	16.00	1	16				RIGHT/CENTER/LEFT LANE CLOSED 0.5 ⑤	616-10.10	RELOCATED SIGNS				TOTAL	0							
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD														
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED														
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)														
WO21-2	36X36	9.00						FRESH OIL														
WO21-5	48X48	16.00	2	32				SHOULDER WORK / SHOULDER WORK AHEAD ②①														
WO22-1	48X48	16.00						BLASTING ZONE AHEAD														
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE														
WO22-3	42X36	10.50						END BLASTING ZONE														
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)														

STATE OF MISSOURI
TIMOTHY K. MINER
NUMBER
PE-2021010008
PROFESSIONAL ENGINEER
09/21/2025 3:10:47 PM
TIMOTHY K. MINER-CIVIL
MO-PE-2021010008
DATE PREPARED
3/21/2025

ROUTE
1 - 29
STATE
MO

DISTRICT
NW
SHEET NO.
3

COUNTY
BUCHANAN

JOB NO.
JNW0152

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

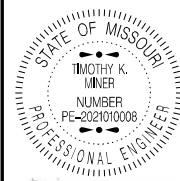
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

*ALL ITEMS NOTED TO BE PAID FOR
BY THE FOLLOWING:

ITEM NO	UNIT	DESCRIPTION
616-99.01	LUMP SUM = 1	MISC. LUMP SUM TEMPORARY TRAFFIC CONTROL

SUMMARY OF QUANTITIES

SHEET 2 OF 2



DATE PREPARED
4/7/2025

ROUTE
1-29

STATE
MO

DISTRICT
NW

SHEET NO.
4

COUNTY
BUCHANAN

JOB NO.
JNW0152

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

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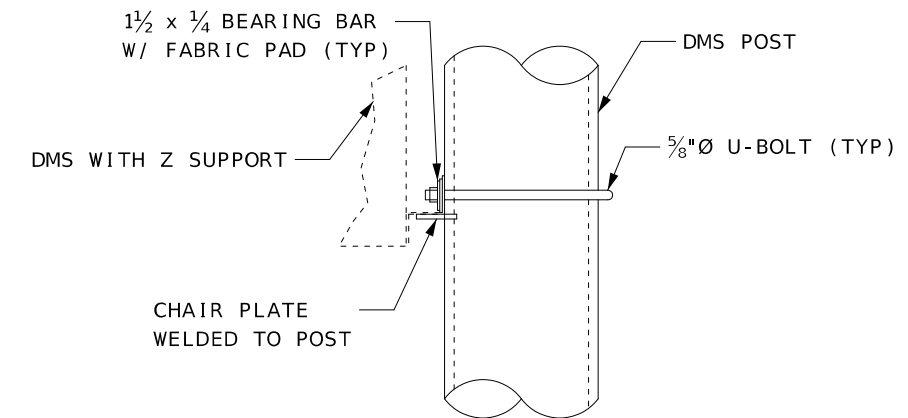
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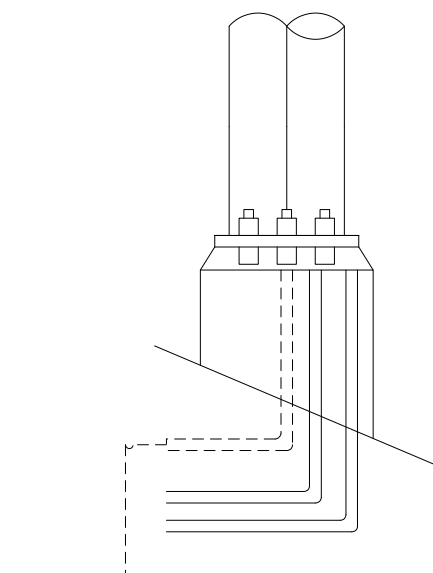
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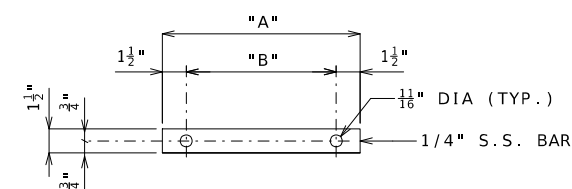


DETAIL A
BOTTOM CONNECTION SHOWN
(TOP CONNECTION SIMILAR BUT WITHOUT CHAIR PLATE)

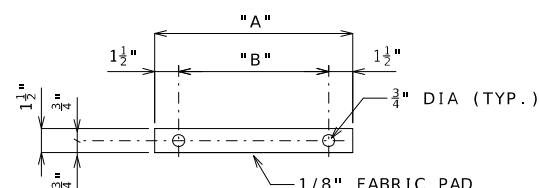
DEVICE ID	ROUTE	MILE MARKER	POST OUTER DIAMETER
ISO29NB	1-29	40.65	1'-0 3/4"



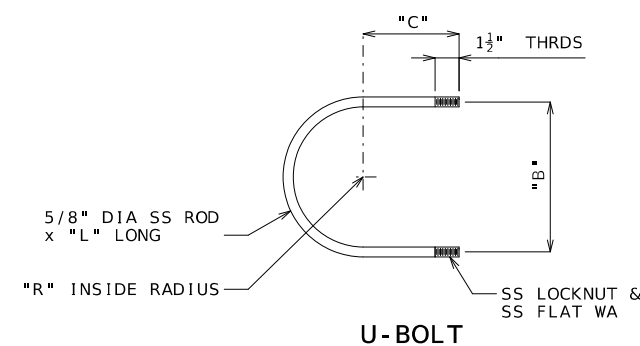
GROUNDING & CONDUIT DETAIL



U-BOLT BEARING BAR



FABRIC PAD



U - BOLT

DMS MOUNTING HARDWARE					
PLOT SIZE	A	B	C*	L*	R
8" STD PIPE	1' - 0 $\frac{3}{8}$ "	9 $\frac{3}{8}$ "	6"	2' - 2 $\frac{3}{4}$ "	4 $\frac{3}{8}$ "
10" STD PIPE	1' - 2 $\frac{1}{8}$ "	11 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "	2' - 8 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "

* CONFIRM U-BOLT LENGTHS ARE COMPATIBLE WITH SELECTED DMS

- NOTES:
1. IN GENERAL DETAILS ON THIS SHEET ARE MEANT TO PRESENT THE NEW STRUCTURAL ELEMENTS REQUIRED TO MOUNT THE NEW DMS TO THE EXISTING POSTS.
 2. POSTS, FOUNDATIONS, AND POST ELECTRICAL ELEMENTS (I.E. UNDERGROUND CONDUIT UP INTO FOUNDATIONS, WIRE OUTLETS, HANDHOLES, ETC.) ARE ALL EXISTING AND SHALL BE USED IN PLACE UNLESS OTHERWISE NOTED. CALLOUTS FOR THESE ITEMS ARE MEANT TO INDICATE THE EXISTING CONDITION AND ARE BASED ON AS-BUILT DRAWINGS.
 3. PROVIDE NEW DMS MOUNTING HARDWARE. FABRIC PADS SHALL BE NEOPRENE ELASTOMETRIC TYPE.

ITS DETAIL

TYPICAL DMS STRUCTURE

SHEET 1 OF 4



03/04/2025 10:09:00 AM
TIMOTHY K. MINER - CIVIL
MD DE 20251210000

DATE PREPARED
3/4/2025

ROUTE I - 29	STATE MO
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DISTRICT NW	SHEET NO. 5
COUNTY	

COUNTY
BUCHANAN

JNW0152

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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

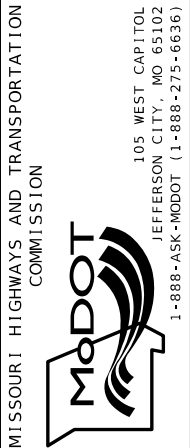


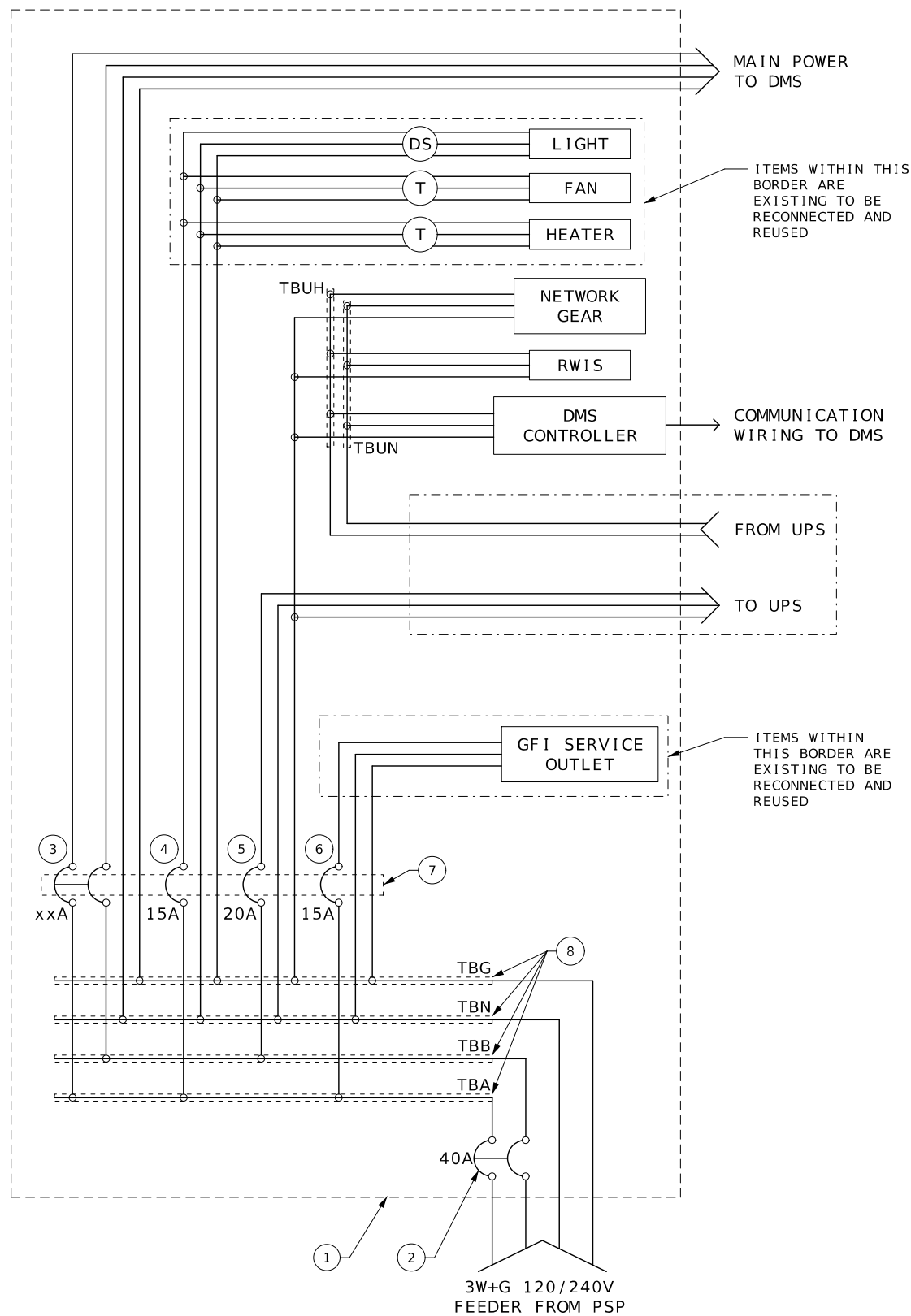
(#) TYPICAL ITEM CALLOUT SYMBOL

NOTES

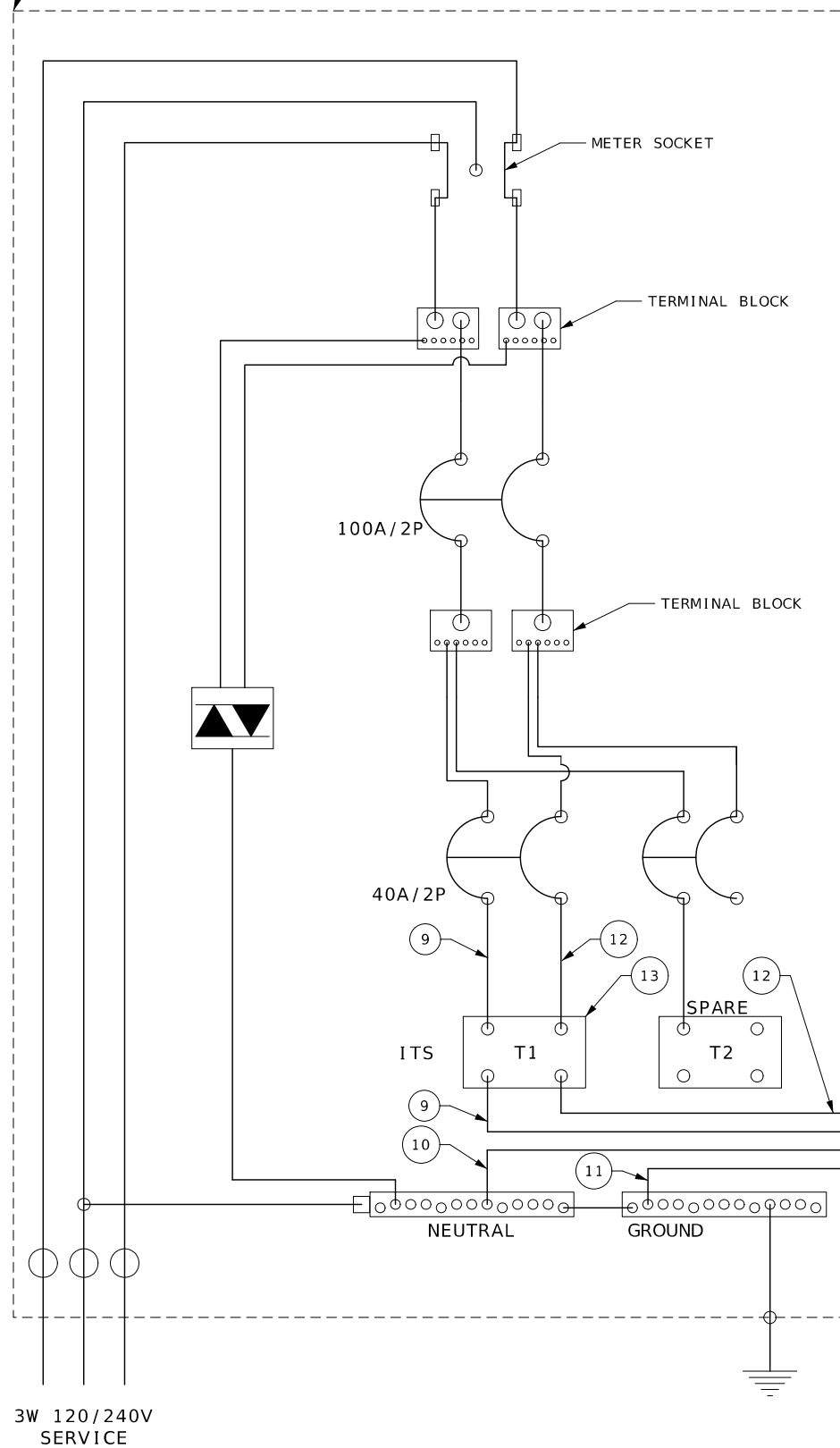
1. THE UPS IS INTENDED TO OPERATE AS FOLLOWS:
 - A. POWER IS AVAILABLE FROM THE FOLLOWING SOURCES:
NORMAL POWER FROM THE UTILITY, PORTABLE GENERATOR POWER FROM THE GENERATOR PLUG, AND BATTERY POWER FROM THE 48VDC BATTERY STRING.
 - B. DURING NORMAL CONDITIONS, POWER SHALL FLOW THROUGH THE TRANSFER EQUIPMENT AND UPS AND BACK TO THE TERMINAL BLOCK IN THE NETWORK GEAR CABINET.
 - C. UPON LOSS OF UTILITY POWER, THE UATS SHALL AUTOMATICALLY TRANSFER POWER FROM THE UTILITY SUPPLY TO THE BATTERY-BACKED UPS.
 - D. THE UGTS SHALL ALLOW THE USER TO SWITCH THE POWER INPUT FROM THE UTILITY SUPPLY/UPS TO BE FROM A PORTABLE PLUG-IN GENERATOR.
2. THE BATTERY HEATER MATS SHALL PLUG INTO THE UATS AUXILIARY RECEPTACLE, WITH ONE MAT PLUGGING DIRECTLY INTO THE RECEPTACLE AND THE SECOND MAT PLUGGING INTO THE FEMALE SIDE OF THE FIRST MAT'S PLUG.
3. REFER TO SITE PLANS FOR SPECIFIC WIRING QTY AND SIZES BETWEEN THE DMS CONTROLLER CABINET AND THE UPS CABINET.
4. ALL WIRING BETWEEN UPS-RELATED EQUIPMENT (I.E. ALL EQUIPMENT WITHIN THE UPS CABINET) SHALL BE SIZED AND RATED ACCORDING TO MANUFACTURER INSTRUCTIONS.
5. REFER TO SPECIAL PROVISION FOR HEATER AND FAN SETPOINTS. FAN NOT SHOWN.

ITS DETAIL
UNINTERRUPTIBLE POWER
SUPPLY (UPS)
CABINET WIRING
SHEET 3 OF 4





DMS CONTROLLER CABINET (DCC) WIRING
MULTI-LINE DIAGRAM



POWER SUPPLY PEDESTAL (PSP) WIRING
MULTI-LINE DIAGRAM

LIST OF MATERIALS	
ITEM	DESCRIPTION
1	DMS CONTROLLER CABINET (EXISTING TO BE REUSED)
2	MAIN BREAKER (NEW)
3	DMS CONTROLLER BREAKER (NEW). AMPERAGE PER MANUFACTURER. NOTE 2
4	LIGHT/FAN/HEATER BREAKER (MAY BE REUSED). NOTE 2
5	UPS BREAKER (NEW). NOTE 2
6	SERVICE OUTLET BREAKER (MAY BE REUSED). NOTE 2
7	DIN RAIL
8	TERMINAL BLOCK. NOTE 3
9	EXISTING HOT CONDUCTOR FROM BREAKER TO DCC. NOTE 5
10	EXISTING NEUTRAL CONDUCTOR FROM TERMINAL BLOCK TO DCC. NOTE 5
11	EXISTING GROUNDING CONDUCTOR FROM TERMINAL BLOCK TO DCC. NOTE 5
12	NEW HOT CONDUCTOR FROM BREAKER TO DCC.
13	TERMINAL BLOCK. NOTE 6

NOTES

1. WIRING FROM POWER SUPPLY PEDESTAL TO NETWORK GEAR CABINET VARIES FROM SITE TO SITE. EXISTING WIRING IS 2W+G FOR 120V SERVICE TO CABINET. NEW WIRING SHALL PROVIDE 3W+G FOR 240V SERVICE TO CABINET. SOME CABINETS ONLY REQUIRE PULLING ONE ADDITIONAL PHASE WIRE THAT MATCHES THE EXISTING WIRING. SOME CABINETS REQUIRE REPLACING ALL PHASE, NEUTRAL, AND GROUND WIRES DUE TO VOLTAGE DROP. REFER TO SITE LAYOUT PLANS FOR REQUIREMENTS.
2. BREAKER SHALL BE MOUNTED TO DIN RAIL. PROVIDE WITH NECESSARY MOUNTING PROVISIONS.
3. ORIENTATION AND LAYOUT OF TERMINAL BLOCKS SHOWN IS INTENDED TO INDICATE WIRING CONNECTIONS ONLY; EXACT LOCATION AND ORIENTATION SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. IT SHALL BE CONSISTENT ACROSS ALL SITES.
4. ALL ELEMENTS SHALL BE PROPERLY IDENTIFIED AND LABELLED, CONSISTENTLY ACROSS ALL SITES.
5. WIRE SHALL REMAIN AS-IS UNLESS CALLED FOR REPLACEMENT DUE TO VOLTAGE DROP. SEE SITE SPECIFIC LAYOUT PLANS. (1) NEW HOT CONDUCTOR IS ADDED IN ORDER TO PROVIDE A 3W+G FEEDER TO THE DCC IN LIEU OF THE EXISTING 2W+G 120V FEEDER.
6. REPLACE AS NECESSARY IN ORDER TO ACCOMMODATE INCREASED WIRE SIZES.

SYMBOLS

- # TYPICAL ITEM CALLOUT SYMBOL
- TWO-POLE BREAKER, AMPERAGE AS SHOWN
- SINGLE-POLE BREAKER, AMPERAGE AS SHOWN
- DS DOOR SWITCH
- T THERMOSTAT
- 3W+G 120/240V FEEDER TO DCC.
- LIGHTING ARRESTOR

UNLESS OTHERWISE NOTIFIED, ALL ITEMS ON THIS SHEET SHALL BE PAID FOR UNDER PAY ITEM 'POWER SUPPLY PEDESTAL AND DMS CONTROLLER CABINET REWIRING'.

ITS DETAIL
DMS CONTROLLER
CABINET AND POWER
SUPPLY PEDESTAL WIRING
SHEET 4 OF 4

STATE OF MISSOURI
TIMOTHY K. MINER
NUMBER
PE-2021010008
PROFESSIONAL ENGINEER

DATE PREPARED
3/4/2025

ROUTE
1-29

STATE
MO

DISTRICT
NW

SHEET NO.
8

COUNTY
BUCHANAN

JOB NO.
JNW0152

CONTRACT ID.

PROJECT NO.

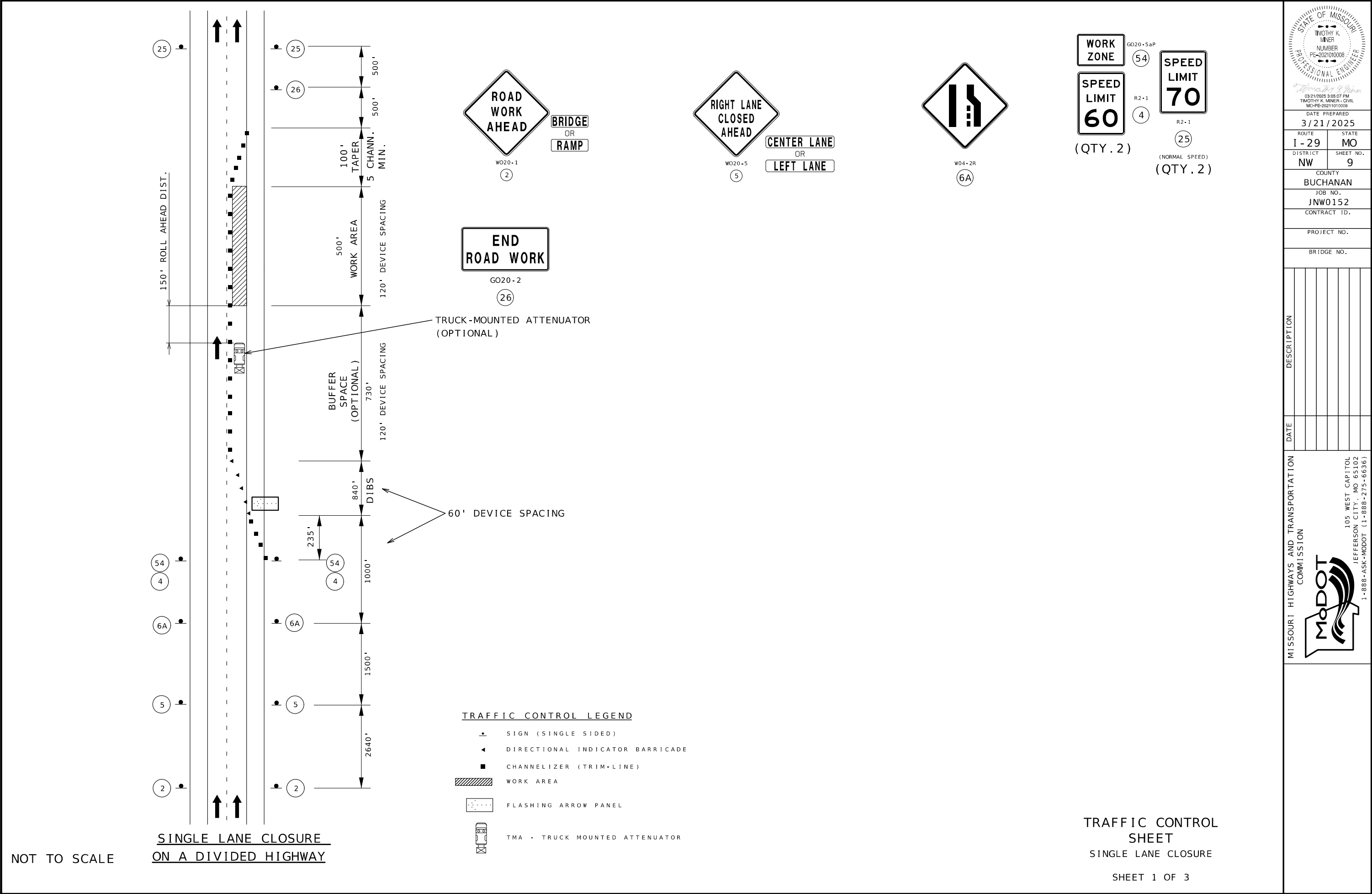
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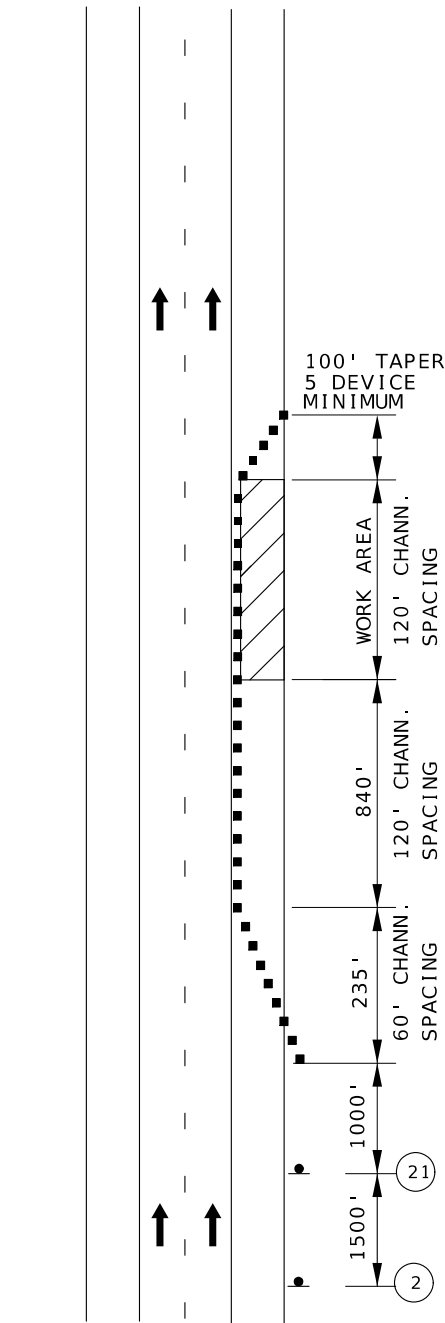
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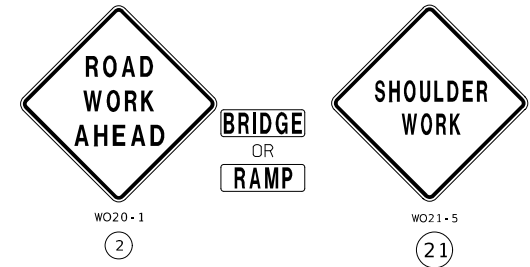
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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





WORK ON THE SHOULDER
ON DIVIDED HIGHWAYS



- TRAFFIC CONTROL LEGEND
- SIGN (SINGLE SIDED)
 - CHANNELIZER (TRIM-LINE)
 - WORK AREA

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.

VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S ROTATING LIGHTS OR STROBE LIGHTS.

WHEN PAVED SHOULDERS HAVING A WIDTH OF 8 FEET OR MORE ARE CLOSED, AT LEAST ONE ADVANCE WARNING SIGN SHALL BE USED. IN ADDITION, CHANNELIZING DEVICES SHALL BE USED TO CLOSE THE SHOULDER IN ADVANCE TO DELINEATE THE BEGINNING OF THE WORK SPACE AND DIRECT VEHICULAR TRAFFIC TO REMAIN WITHIN THE TRAVELED WAY.

NOT TO SCALE

STATE OF MISSOURI

TIMOTHY K. MINER

NUMBER

PE-2021010008

PROFESSIONAL ENGINEER

03/21/2025 3:11:38 PM

TIMOTHY K. MINER - CIVIL

MO-PE-2021010008

DATE PREPARED

3/21/2025

ROUTE

1 - 29

STATE

MO

DISTRICT

NW

SHEET NO.

10

COUNTY

BUCHANAN

JOB NO.

JNW0152

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

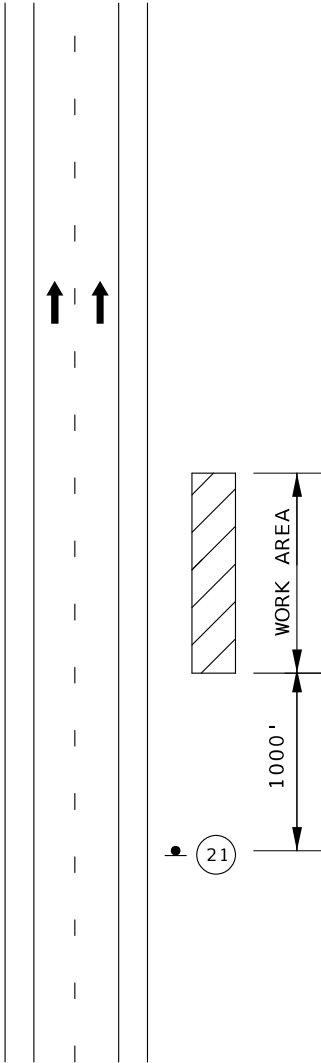
105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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

SHOULDER WORK
WORK BEYOND THE SHOULDER

NOT TO SCALE



TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
 WORK AREA



WO21 - 5
21



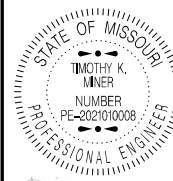
WO20 - 1
2

BRIDGE
OR
RAMP

NOTES:

- ONLY APPLICABLE WHEN WORK IS WITHIN THE CLEAR ZONE.
- ON MULTI-LANE, DIVIDED HIGHWAYS, SIGNS ADVISING OF THE SHOULDER WORK OR THE CONDITION OF THE SHOULDER BE PLACED ONLY ON THE SIDE OF THE AFFECTED SHOULDER.
- VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

TRAFFIC CONTROL
SHEET
WORK BEYOND
THE SHOULDER
SHEET 3 OF 3



DATE PREPARED
3/21/2025

ROUTE	STATE
1 - 29	MO
DISTRICT	SHEET NO.
NW	11

COUNTY
BUCHANAN
JOB NO.
JNW0152
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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