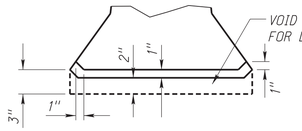
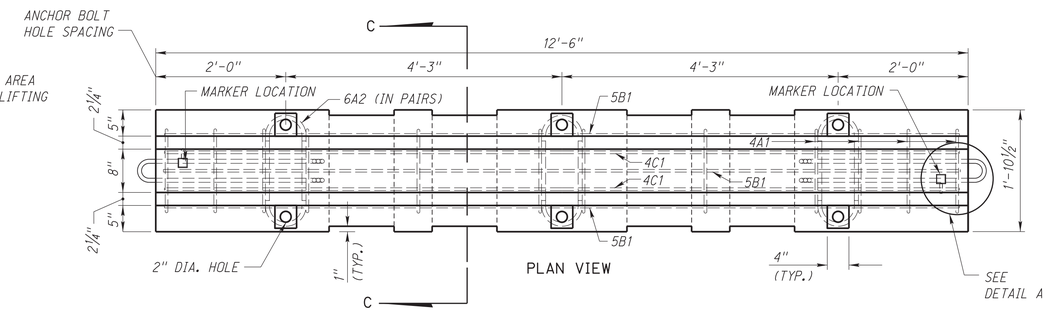


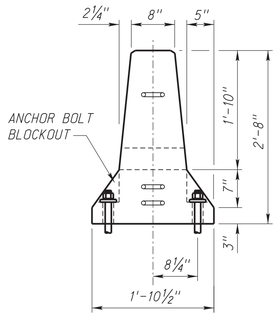
SECTION C-C

LIFTING SLOT DETAIL

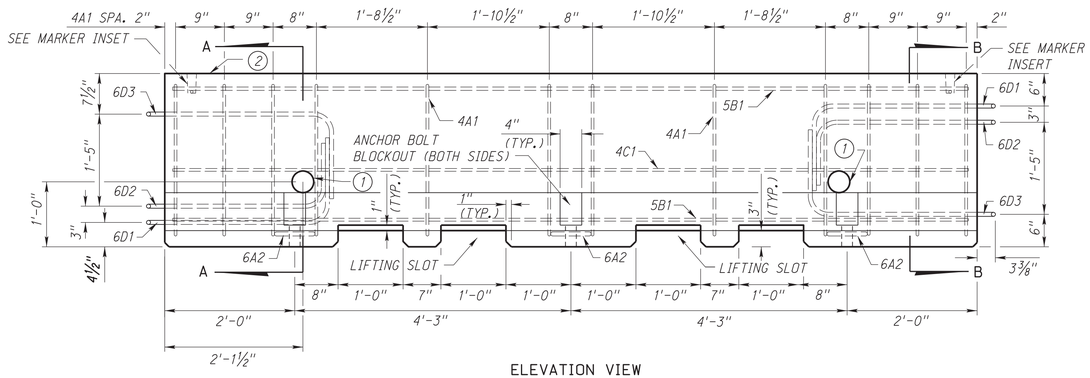
(1" CHAMFER TO PREVENT SPALLING)



PLAN VIEW

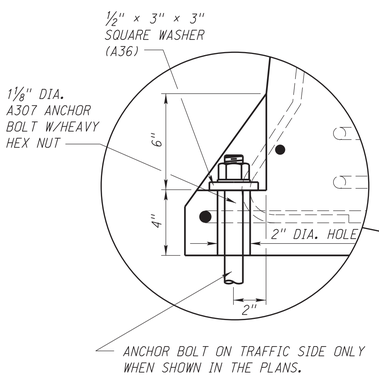


END VIEW

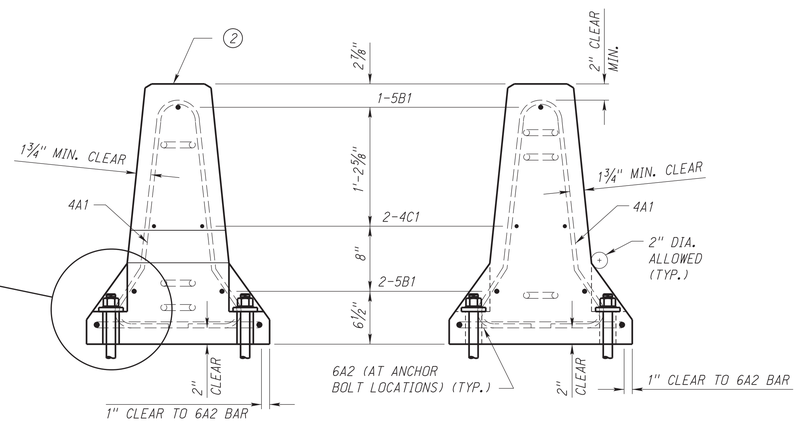


ELEVATION VIEW

* MARKED END

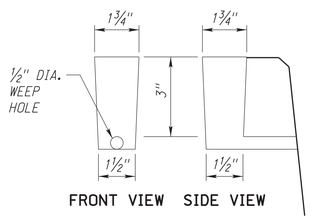


ANCHOR BOLT BLOCKOUT DETAIL



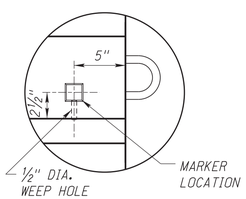
SECTION A-A
(STIRRUP PLACEMENT)

SECTION B-B
(STIRRUP PLACEMENT)



FRONT VIEW SIDE VIEW

MARKER INSERT



DETAIL A

NOTES:

THESE DETAILS ARE FOR THE FABRICATION AND INSTALLATION OF CONCRETE PROTECTION BARRIER. DETAILS SHOWN ARE TYPICAL.

CONCRETE PROTECTION BARRIERS SHALL BE MADE OF 5,000 psi CONCRETE AND BE PRECAST IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION 705 IN THE STANDARD SPECIFICATIONS. THE FORMS MAY BE REMOVED WHEN THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF 2,175 psi. THE BARRIERS MAY BE TRANSPORTED WITHIN THE PLANT ONCE THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF 3,000 psi. THE BARRIERS MAY BE SHIPPED WHEN THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF 5,000 psi.

REINFORCING STEEL USED WITHIN THE CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 615 GRADE 60.

THE LOOP REINFORCING STEEL (BARS 6D1, 6D2 & 6D3) SHALL BE SMOOTH, MEETING THE REQUIREMENTS OF ASTM A 706 GRADE 60 OR ASTM A 615 GRADE 60, MODIFIED TO MEET THE FOLLOWING PHYSICAL AND CHEMICAL REQUIREMENTS. THE LOOP SHALL PASS A 180° BEND TEST ON A 2¾" PIN.

TENSILE REQUIREMENTS	
YIELD STRENGTH, MINIMUM PSI	60,000
TENSILE STRENGTH, MINIMUM PSI	80,000
ELONGATION IN 8 INCH, MINIMUM	14%

CHEMICAL COMPOSITION	
ELEMENT	MAXIMUM%
CARBON	0.30
MANGANESE	1.50
PHOSPHORUS	0.035
SULFUR	0.045
SILICON	0.50

THE CONTRACTOR OR SUPPLIER SHALL FURNISH THE MATERIALS & RESEARCH DIVISION THE MANUFACTURERS CERTIFIED TEST REPORTS FOR THE ACTUAL HEAT OF STEEL BEING USED THAT SHOWS THE CHEMICAL AND PHYSICAL TEST RESULTS FOR THE LOOP REINFORCING STEEL BEFORE COATING OR FABRICATION BEGINS.

ALL STEEL SHALL BE ZINC-COATED (GALVANIZED) AS SPECIFIED BELOW OR EPOXY COATED TO NEBRASKA STANDARDS.

ZINC-COATED (GALVANIZED) STEEL BARS SHALL MEET THE REQUIREMENTS OF ASTM A 123, (COATING GRADE 100, MINIMUM COATING--2.30 OZ. PER SQUARE FOOT). THE BARS SHALL BE FABRICATED PRIOR TO GALVANIZING. THE PROCEDURES OF ASTM A 143 SHALL BE OBSERVED AS APPLICABLE. ALL ZINC COATING DAMAGE DUE TO FABRICATION OR HANDLING SHALL BE REPAIRED WITH A ZINC DUST (ZINC-RICH) FORMULATION IN ACCORDANCE WITH ASTM A 780.

THE COATING PLANT INTENDING TO SUPPLY THE LOOP REINFORCING STEEL SHALL NOTIFY THE MATERIALS AND RESEARCH DIVISION (402-479-4746 OR 402-479-3849) TWO TO THREE WEEKS BEFORE PROCESSING ANY MATERIAL TO ARRANGE FOR NDOT PERSONNEL TO INSPECT THE MATERIAL DURING THE COATING AND FABRICATION PROCESS.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER A LETTER CERTIFYING THE CONCRETE PROTECTION BARRIERS FOR USE ON THIS PROJECT ARE MADE IN ACCORDANCE WITH THESE PLANS.

CONCRETE PROTECTION BARRIERS ARE THE PROPERTY OF THE CONTRACTOR.

THE CONTRACTOR SHALL PROVIDE FOR AN APPROVED MONITORING SCHEDULE, WITH A PERSON ON CALL, AND AVAILABLE 24 HOURS A DAY, EACH DAY OF THE WEEK, TO REALIGN CONCRETE PROTECTION BARRIER WHICH HAS BEEN STRUCK. INITIATION OF SERVICE SHALL BE WITHIN ONE HOUR OF NOTIFICATION OF NEED.

(1) 4" DIAMETER PVC OR 11 GAUGE STEEL ROUND MECHANICAL TUBING SLEEVE.

(2) ONE END OF EACH BARRIER SHALL BE PERMANENTLY MARKED WITH THE FOLLOWING INFORMATION:

- *TYPE C*
- *MANUFACTURER*
- *DATE MANUFACTURED (MONTH AND YEAR)*

USE 1⅛" DIA. ASTM A 307 ANCHOR BOLTS WITH HEAVY HEX NUT & WASHER (A36). USE ASTM A36 NON COATED STEEL FOR THE CONNECTION PIN.

SURFACE PREPARATION: WHEN PLACED ON A PAVED SURFACE ALL LOOSE DIRT AND SAND SHALL BE REMOVED FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

BARRIERS MUST BE PULLED TIGHT DURING INSTALLATION TO REMOVE SLACK.

AT NO TIME SHALL THE BARRIERS BE LIFTED BY USE OF THE LOOP BARS: 6D1, 6D2 OR 6D3.

REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 870

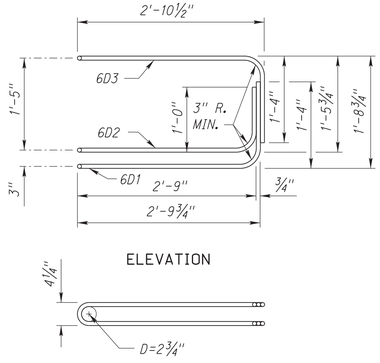
CONCRETE PROTECTION BARRIER

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER
MICHAEL H. OWEN
E-6515
STATE OF NEBRASKA

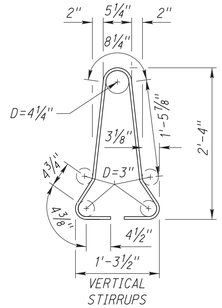
3/31/2020
DATE

ORIGINAL:
JULY 2020
DATE



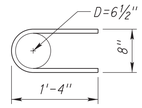
ELEVATION

PLAN



VERTICAL STIRRUPS

4A1



6A2

LOOP BAR ASSEMBLY

(MARKED END SHOWN, ROTATE FOR OTHER END)
(MATERIAL AS STATED IN GENERAL NOTES)
(DIMENSIONS ARE OUT TO OUT OF BARS UNLESS OTHERWISE NOTED)

REINFORCING STEEL A615 GRADE 60 PER 12'-6" BARRIER					
BAR	BAR SIZE	SHAPE	NO. OF BARS	LENGTH FT.	WEIGHT LBS.
4A1	4		12	6'-0"	48.1
6A2	6		6	2'-11"	26.3
5B1	5		3	12'-2"	38.1
4C1	4		2	12'-2"	16.3
LOOP STEEL (SEE NOTES)					
6D1	6		2	8'-5"	25.3
6D2	6		2	7'-7"	22.8
6D3	6		2	8'-6"	25.5

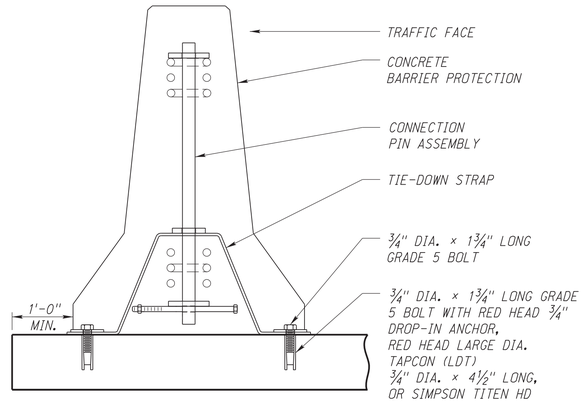
CONCRETE QUANTITY = 1.3 CU. YD.

TIE-DOWN NOTES:

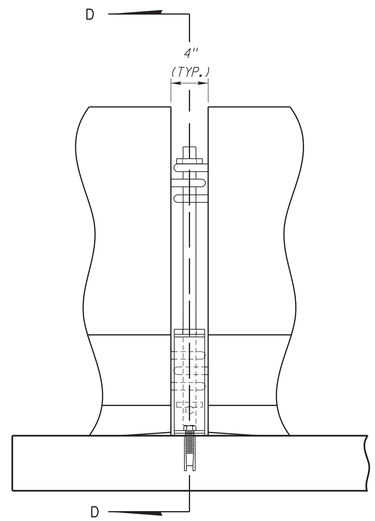
TIE DOWN STRAPS ARE REQUIRED ONLY WHERE THE CONCRETE PROTECTION BARRIER IS WITHIN 2 FEET OF A 3 FEET OR GREATER DROP-OFF. HOLES INTO THE PAVEMENT TO ANCHOR THE CONCRETE PROTECTION BARRIER MAY BE DRILLED AFTER POSITIONING THE CONCRETE PROTECTION BARRIER RAIL.

WHEN THE ANCHOR BOLTS ARE REMOVED, THE HOLES SHOULD BE FILLED WITH A NON-SHRINK GROUT FROM THE APPROVED PRODUCT LIST, MEETING THE REQUIREMENTS OF ASTM C 1107 FOR GRADE B OR C.

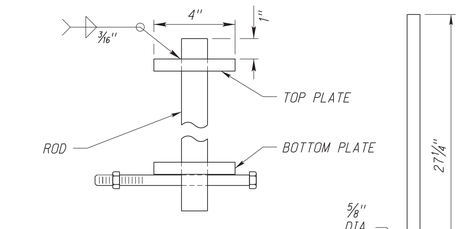
CONCRETE PROTECTION BARRIER TIE DOWNS ARE CONSIDERED SUBSIDIARY TO THE PAY ITEM "CONCRETE PROTECTION BARRIER".



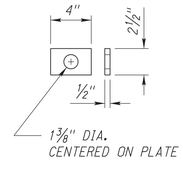
SECTION D-D



TIE DOWN DETAILS (STRAP)

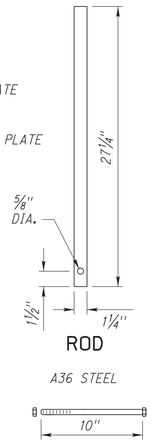


ENLARGED PIN DETAIL



TOP & BOTTOM PLATE

A36 STEEL



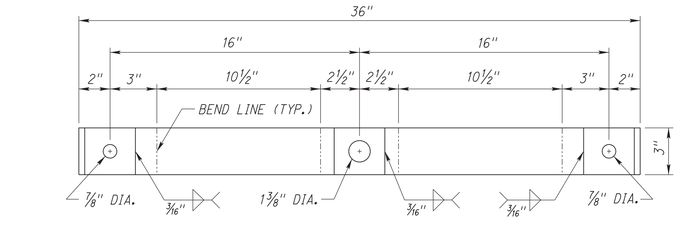
ROD

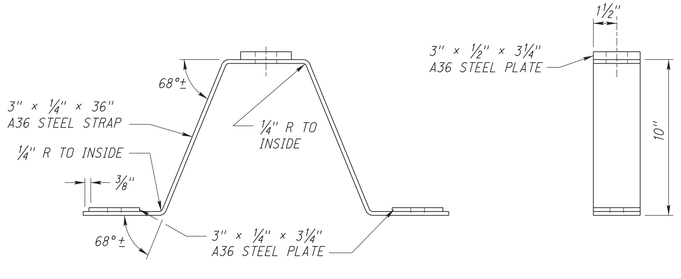
A36 STEEL

BOLT & NUT

½" DIA. × 10" BOLT & NUT (ASTM A 325)

CONNECTION PIN DETAILS





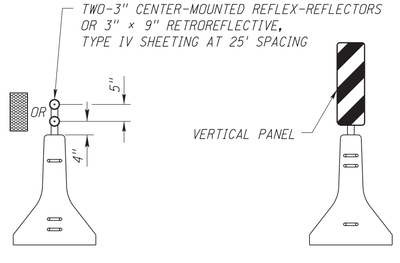
TIE-DOWN STRAP DETAILS

MARKER NOTES:

THE COLOR OF THE REFLECTORS SHALL MATCH THE COLOR OF THE ADJACENT EDGE LINE.

VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 2 × S =__(FT) SPACING ON TOP OF BARRIER, EVERY S(FT) SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.
(S = POSTED SPEED LIMIT IN MPH)

THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE CONCRETE PROTECTION BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF A MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE. THE CONTRACTOR SHALL MAINTAIN THE MARKERS AND PROMPTLY REPAIR OR REPLACE ANY DAMAGED OR MISSING UNITS. ALL COSTS FOR FURNISHING, INSTALLING AND MAINTAINING REFLECTORS SHALL BE INCLUDED IN THE PRICE BID FOR THE CONCRETE PROTECTION BARRIER.



MARKER PLACEMENT DETAIL

REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 870

CONCRETE PROTECTION BARRIER

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER
MICHAEL H. OWEN
E-6515
STATE OF NEBRASKA

3/31/2020
DATE

ORIGINAL: JULY 2020
DATE

2
2

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CHANNELIZATION DEVICES

THE FUNCTION OF CHANNELIZATION DEVICES IS TO WARN ROAD USERS OF CONDITIONS CREATED BY WORK ACTIVITIES IN OR NEAR THE TRAVELED WAY, TO PROTECT WORKERS IN THE TEMPORARY TRAFFIC CONTROL ZONE, AND TO GUIDE DRIVERS AND PEDESTRIANS SAFELY. CHANNELIZING DEVICES INCLUDE BUT ARE NOT LIMITED TO CONES, TUBULAR POSTS, VERTICAL PANELS, DRUMS, BARRICADES, TRAFFIC LANE DIVIDERS, TEMPORARY RAISED ISLANDS, AND BARRIERS.

DEVICES USED FOR CHANNELIZATION SHOULD PROVIDE FOR SMOOTH AND GRADUAL TRAFFIC MOVEMENT FROM ONE LANE TO ANOTHER, ONTO A BYPASS OR DETOUR, OR TO REDUCE THE WIDTH OF THE TRAVELED WAY. THEY MAY ALSO BE USED TO SEPARATE TRAFFIC FROM THE WORK SPACE, PAVEMENT DROP-OFFS, PEDESTRIAN PATHS, OR OPPOSING DIRECTIONS OF TRAFFIC.

CHANNELIZING DEVICES SHALL MEET THE CRASHWORTHY PERFORMANCE CRITERIA CONTAINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). THEY SHOULD BE CONSTRUCTED AND BALLASTED TO PERFORM IN A PREDICTABLE MANNER WHEN INADVERTENTLY STRUCK BY A VEHICLE. IF STRUCK, THE DEVICE SHOULD YIELD OR BREAK AWAY, FRAGMENTS OR OTHER DEBRIS FROM THE DEVICE SHOULD NOT PENETRATE THE PASSENGER COMPARTMENT OF THE VEHICLE OR BE A POTENTIAL HAZARD TO WORKERS OR PEDESTRIANS IN THE IMMEDIATE AREA.

SPACING OF CHANNELIZING DEVICES SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO THE SPEED WHEN USED FOR THE TAPER CHANNELIZATION, AND A DISTANCE IN FEET OF TWICE THE SPEED WHEN USED FOR TANGENT CHANNELIZATION.

SPACING OF CHANNELIZATION DEVICES		
SPEED (MPH) S	SPACING OF DEVICES (FEET)	
	TAPER	TANGENT
25	25	50
35	35	70
45	45	90
55	55	110
60	60	120
65	65	130
75	75	150

WARNING LIGHTS MAY BE ADDED TO CHANNELIZING DEVICES IN AREAS WITH FREQUENT FOG, SNOW, OR SEVERE ROADWAY CURVATURE, OR WHERE VISUAL DISTRACTIONS ARE PRESENT, EXCEPT FOR THE SEQUENTIAL FLASHING WARNING LIGHTS, WARNING LIGHTS PLACED ON CHANNELIZING DEVICES USED IN A SERIES TO CHANNELIZE ROAD USERS SHALL BE STEADY-BURN.

THE RETROREFLECTIVE MATERIAL USED ON CHANNELIZING DEVICES SHALL HAVE A SMOOTH, SEALED OUTER SURFACE, MEETING THE REQUIREMENTS OF THE ASTM SPECIFICATION D4956, FOR TYPE IV SHEETING OR TYPE V REBOUNDABLE SHEETING (OR GREATER).

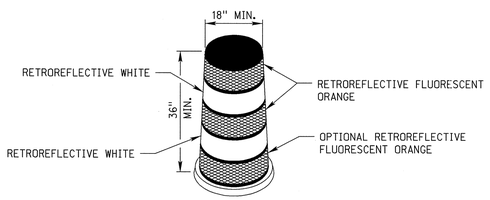
COEFFICIENT OF RETROREFLECTION ($CD/LUX/M^2$)			
WHITE	ORANGE	RED	YELLOW
250	100	45	170

THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) "QUALITY GUIDELINES FOR WORK ZONE TRAFFIC CONTROL DEVICES" SHALL BE USED AS A VISUAL GUIDE FOR DETERMINING IF A TRAFFIC CONTROL DEVICE/OR SIGN IS ACCEPTABLE, MARGINAL OR UNACCEPTABLE.

THE NAME AND TELEPHONE NUMBER OF THE AGENCY, CONTRACTOR, OR SUPPLIER MAY BE SHOWN ON THE CHANNELIZING DEVICE BACK OR SUPPORT, BUT NOT ON THE DEVICE FACE. THE LETTERS AND NUMBERS SHALL BE A NON-REFLECTIVE COLOR AND NOT OVER 15 SQUARE INCHES IN TOTAL AREA.

PARTICULAR ATTENTION SHOULD BE GIVEN TO MAINTAINING THE CHANNELIZING DEVICES TO KEEP THEM CLEAN, VISIBLE, AND PROPERLY POSITIONED. DEVICES SHALL BE REPLACED THAT ARE DAMAGED AND/OR HAVE LOST A SIGNIFICANT AMOUNT OF THEIR RETROREFLECTIVITY AND EFFECTIVENESS.

REFLECTORIZED PLASTIC DRUMS



DESIGN

REFLECTORIZED PLASTIC DRUMS USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE CONSTRUCTED OF LIGHTWEIGHT, FLEXIBLE, AND DEFORMABLE MATERIALS AND BE A MINIMUM OF 36 INCHES IN HEIGHT AND HAVE A MINIMUM WIDTH OF AT LEAST A 18 INCHES, REGARDLESS OF ORIENTATION. THE PREDOMINANT COLOR OF THE DRUM SHALL BE ORANGE. METAL DRUMS SHALL NOT BE USED. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, SHALL BE CIRCUMFERENTIAL, AND SHALL DISPLAY FOUR 6 INCH WIDE BANDS OF RETROREFLECTIVE SHEETING, ALTERNATING FLUORESCENT ORANGE-WHITE-FLUORESCENT ORANGE-WHITE. DRUMS SHALL HAVE CLOSED TOPS THAT WILL NOT ALLOW COLLECTION OF CONSTRUCTION OR OTHER DEBRIS.

APPLICATION

DRUMS ARE MOST COMMONLY USED TO CHANNELIZE OR DELINEATE TRAFFIC FLOW BUT MAY ALSO BE USED INDIVIDUALLY OR IN GROUPS TO MARK SPECIFIC LOCATIONS. DRUMS ARE HIGHLY VISIBLE AND HAVE GOOD TARGET VALUE; THEY GIVE THE APPEARANCE OF BEING FORMIDABLE OBSTACLES AND, THEREFORE, COMMAND THE RESPECT OF ROAD USERS.

BALLAST SHALL NOT BE PLACED ON TOP OF THE DRUM. DRUMS SHOULD NOT BE WEIGHTED WITH SAND, WATER, OR ANY MATERIAL.

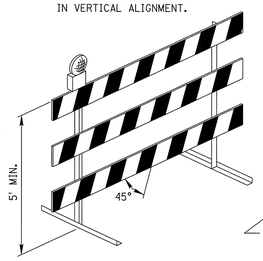
BARRICADES

BARRICADE TYPE	TYPE II	TYPE III
WIDTH OF RAIL ✳	8 INCHES MIN. - 12 INCHES MAX.	8 INCHES MIN. - 12 INCHES MAX.
LENGTH OF RAIL	36 INCHES	8 FEET ✳✳
WIDTH OF STRIPES	6 INCHES	6 INCHES
HEIGHT	36 INCHES	5 FEET
REFLECTIVE SHEETING	TYPE IV	TYPE IV
NUMBER OF REFLECTORIZED RAIL FACES	4 (TWO EACH DIRECTION)	6 (THREE EACH DIRECTION)

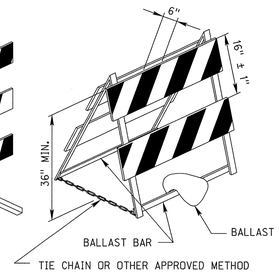
✳NOMINAL DIMENSIONS ARE PERMISSIBLE WHEN CONSTRUCTED FROM LUMBER.
✳✳WHEN LATERAL SPACE IS LIMITED, SOME TYPE III BARRICADES WITH A 4 FOOT LENGTH OF RAIL, MAY BE ALLOWED WHEN APPROVED BY THE ENGINEER.

TYPE III BARRICADE

TYPICAL MOUNTING OF FLASHING WARNING LIGHTS. LIGHTS SHALL ALWAYS BE IN VERTICAL ALIGNMENT.



TYPE II BARRICADE



BALLAST SHALL NOT BE PLACED OVER ANY REFLECTIVE DEVICE

DESIGN

A BARRICADE IS A PORTABLE OR FIXED DEVICE HAVING TWO OR THREE RAILS WITH APPROPRIATE MARKINGS. IT IS USED TO CONTROL ROAD USERS BY CLOSING, RESTRICTING, OR DELINEATING ALL OR A PORTION OF THE RIGHT-OF-WAY.

BARRICADES SHALL BE ONE OF TWO TYPES; TYPE II OR TYPE III.

STRIPES ON BARRICADE RAILS SHALL BE ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION ROAD USERS ARE TO PASS. THE STRIPES SHALL BE 6 INCHES WIDE. THE MINIMUM RAIL LENGTH FOR A TYPE II BARRICADE IS 36 INCHES.

WHERE BARRICADES EXTEND ENTIRELY ACROSS A ROADWAY, THE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH ROAD USERS MUST TURN. WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, THE STRIPES MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.

BARRICADE RAILS SHOULD BE SUPPORTED IN A MANNER THAT WILL ALLOW THEM TO BE SEEN BY THE ROAD USER, AND IN A MANNER THAT PROVIDES A STABLE SUPPORT THAT IS NOT EASILY BLOWN OVER OR DISPLACED.

ON HIGH-SPEED ROADWAYS OR IN OTHER SITUATIONS WHERE BARRICADES MAY BE SUSCEPTIBLE TO OVERTURNING IN THE WIND, SANDBAGS SHOULD BE USED FOR BALLASTING. SANDBAGS MAY BE PLACED ON LOWER PARTS OF THE FRAME OR STAYS TO PROVIDE THE REQUIRED BALLAST BUT SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY HEAVY OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE.

THE BARRICADE OWNERS NAME, NOT TO EXCEED 15 SQUARE INCHES SHALL BE SHOWN ON THE BARRICADE BACK OR SUPPORT BUT NOT ON ITS FACE.

✳✳WHEN LATERAL SPACE IS LIMITED, SOME TYPE III BARRICADES WITH A 4 FOOT LENGTH OF RAIL, MAY BE ALLOWED WHEN APPROVED BY THE ENGINEER.

APPLICATION

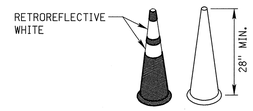
TYPE II BARRICADES ARE INTENDED FOR USE IN SITUATIONS WHERE TRAFFIC IS MAINTAINED THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE. THEY MAY BE USED INDIVIDUALLY OR IN GROUPS TO MARK A SPECIFIC CONDITION, OR THEY MAY BE USED IN A SERIES FOR CHANNELIZING TRAFFIC. ON THE INTERSTATE, FREEWAY AND EXPRESSWAY SYSTEM, TYPE II BARRICADES SHALL NOT BE USED FOR CHANNELIZATION.

TYPE III BARRICADES USED AT A ROAD CLOSURE MAY EXTEND COMPLETELY ACROSS A ROADWAY FROM CURB TO CURB. WHERE PROVISION IS MADE FOR ACCESS OF AUTHORIZED EQUIPMENT AND VEHICLES, THE RESPONSIBILITY FOR THE TYPE III BARRICADES SHOULD BE ASSIGNED TO A PERSON WHO SHALL PROVIDE PROPER CLOSURE AT THE END OF EACH WORK DAY.

WHEN A HIGHWAY IS LEGALLY CLOSED BUT ACCESS MUST STILL BE ALLOWED FOR LOCAL TRAFFIC, THE TYPE III BARRICADES MAY NOT BE EXTENDED COMPLETELY ACROSS A ROADWAY. A SIGN WITH THE APPROPRIATE LEGEND CONCERNING PERMISSIBLE USE BY LOCAL TRAFFIC SHALL BE MOUNTED.

NORMALLY PERMANENT SIGNS MOUNTED ON BARRICADES SHALL BE ERECTED ABOVE THE BARRICADE. THE SIGNS "ROAD CLOSED", OR "ROAD WORK AHEAD", FOR EXAMPLE CAN EFFECTIVELY BE MOUNTED ABOVE THE BARRICADE THAT CLOSES THE ROADWAY. TYPE III BARRICADES SHALL BE SUPPLEMENTED WITH A LIGHTING DEVICE UNLESS SPECIFICALLY OMITTED BY THE ENGINEER. DETOUR ARROW AND LARGE WARNING ARROW SIGNS SHOULD BE PLACED ON THE FACE OF BARRICADE.

CONES



DESIGN

CONES SHALL BE PREDOMINANTLY ORANGE, FLOURESCENT RED-ORANGE, OR FLOURESCENT YELLOW/ORANGE, NOT LESS THAN 28 INCHES IN HEIGHT, AND SHALL BE MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES ON IMPACT. CONES WHEN ALLOWED ON THE INTERSTATE, FREEWAY OR EXPRESSWAY SYSTEM SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.

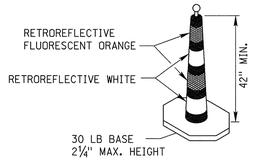
FOR NIGHTTIME USE, CONES SHALL BE RETROREFLECTIVE OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY. RETROREFLECTION OF 28 INCH OR 36 INCH CONES SHALL BE PROVIDED BY A WHITE BAND 6 INCHES WIDE, NO MORE THAN 4 INCHES FROM THE TOP OF THE CONE, AND AN ADDITIONAL 4 INCH WIDE WHITE BAND A MINIMUM OF 2 INCHES BELOW THE 6 INCH BAND.

APPLICATION

TRAFFIC CONES ARE USED TO CHANNELIZE TRAFFIC, DIVIDE OPPOSING TRAFFIC LANES, DIVIDE TRAFFIC LANES WHEN TWO OR MORE LANES ARE KEPT OPEN IN THE SAME DIRECTION, AND DELINEATE SHORT-DURATION MAINTENANCE AND UTILITY WORK. CONES SHALL NOT BE USED FOR LANE CLOSURE TAPERS OR SHIFTS, CONES SMALLER THAN 42 INCHES SHALL NOT BE USED AT NIGHT ON RURAL HIGHWAYS, UNLESS SHOWN ON THE PLANS OR AS APPROVED OR DIRECTED BY THE ENGINEER.

STEPS SHOULD BE TAKEN TO ENSURE THAT CONES WILL NOT BE BLOWN OVER OR DISPLACED BY WIND OR MOVING TRAFFIC. CONES CAN BE DOUBLED UP TO INCREASE THEIR WEIGHT. SOME CONES ARE CONSTRUCTED WITH BASES THAT CAN BE FILLED WITH BALLAST. OTHERS HAVE SPECIAL WEIGHTED BASES, OR WEIGHTS SUCH AS SANDBAG RINGS THAT CAN BE DROPPED OVER THE CONES AND ONTO THE BASE TO PROVIDE ADDED STABILITY. BALLAST, HOWEVER, SHOULD NOT PRESENT A HAZARD IF THE CONES ARE INADVERTENTLY STRUCK.

42 INCH CONES



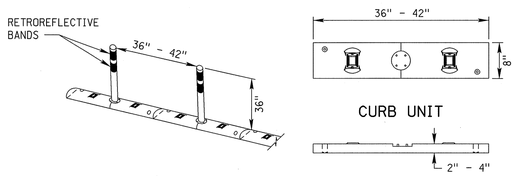
DESIGN

42 INCH CONES SHALL INCLUDE A 30 POUND RUBBER BASE AND DISPLAY FOUR 6 INCH WIDE BANDS OF RETROFEFLECTIVE SHEETING, ALTERNATING FLUORESCENT ORANGE-WHITE-FLOURESCENT ORANGE-WHITE.

APPLICATION

WHEN APPROVED BY THE ENGINEER OR SHOWN IN THE PLANS, 42 INCH REFLECTIVE CONES MAY BE USED IN LIEU OF TYPE II BARRICADES OR REFLECTORIZED DRUMS. 42 INCH CONES SHALL NOT BE USED FOR LANE-CLOSURE TAPERS OR SHIFTS. IF A RECTANGULAR BASE IS USED, THE LONG SIDE OF THE BASE SHOULD BE ORIENTED PARALLEL TO THE DIRECTION OF TRAFFIC.

TUBULAR POST AND CURB SYSTEM



DESIGN

TUBULAR POSTS USED IN THE SYSTEM SHALL BE 36 INCHES HIGH AND A MINIMUM OF 2 INCHES WIDE WHEN FACING TRAFFIC. THE TUBULAR POST AND CURB SYSTEM SHALL BE MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING IMPACTING VEHICLES. THE COLOR SHALL BE AS SHOWN IN THE PLANS.

THE TUBULAR POSTS SHALL BE RETROREFLECTIVE. RETROREFLECTION OF TUBULAR POSTS SHALL BE PROVIDED BY TWO 3-INCH WIDE RETROREFLECTIVE BANDS PLACED A MAXIMUM OF 2 INCHES FROM THE TOP WITH A MAXIMUM OF 6 INCHES BETWEEN THE BANDS. EACH CURB SECTION SHALL CONTAIN ONE RETROREFLECTIVE MARKER FACING EACH DIRECTION OF TRAFFIC. THE COLOR OF THE RETROREFLECTIVE BANDS AND MARKERS SHALL MATCH THE POST/CURB COLOR.

THE CURB SECTIONS SHALL BE CONFIGURED TO ALLOW FOR DRAINAGE FROM THE PAVEMENT SURFACE.

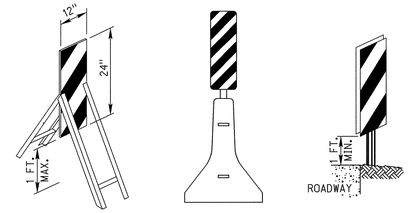
APPLICATION

TUBULAR POST AND CURB SYSTEMS MAY BE USED TO DIVIDE OPPOSING LANES OF TRAFFIC OR TO DIVIDE TRAFFIC LANES WHEN TWO OR MORE LANES ARE KEPT OPEN IN THE SAME DIRECTION.

FASTENING THE CURBS TO THE PAVEMENT WITH ANCHOR BOLTS OR OTHER SUITABLE METHODS AS DIRECTED BY THE MANUFACTURER IS REQUIRED TO MINIMIZE THE CHANCE OF BEING MOVED BY TRAFFIC.

TUBULAR POST AND CURB SYSTEMS SHALL BE INSTALLED IN THE LOCATIONS SHOWN IN THE PLANS OR DIRECTED BY THE ENGINEER.

VERTICAL PANELS



DESIGN

RETROREFLECTIVE MATERIAL ON VERTICAL PANELS SHALL BE 12 INCHES WIDE AND AT LEAST 24 INCHES HIGH. THEY SHALL HAVE ALTERNATING ORANGE AND WHITE STRIPES, WHERE THE HEIGHT OF THE RETROREFLECTIVE MATERIAL ON THE VERTICAL PANEL IS MORE THAN 36 INCHES, A PANEL STRIPE WIDTH OF 6 INCHES SHALL BE USED. WHERE THE HEIGHT OF THE RETROREFLECTIVE MATERIAL ON THE VERTICAL PANEL IS 36 INCHES OR LESS, A PANEL STRIPE WIDTH OF 4 INCHES SHALL BE USED. IF USED FOR TWO-WAY TRAFFIC, BACK-TO-BACK PANELS SHALL BE USED.

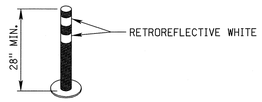
MARKINGS FOR VERTICAL PANELS SHALL BE ALTERNATING ORANGE AND WHITE RETROREFLECTORIZED STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS.

POST MOUNTED VERTICAL PANELS SHALL BE MOUNTED WITH THE BOTTOM A MINIMUM OF 1 FOOT ABOVE THE ROADWAY. VERTICAL PANELS ON A TEMPORARY STAND SHALL BE MOUNTED WITH THE BOTTOM A MAXIMUM OF 1 FOOT ABOVE THE ROADWAY.

APPLICATION

WHERE SPACE IS LIMITED VERTICAL PANELS MAY BE USED TO CHANNEL TRAFFIC, DIVIDE OPPOSING LANES OF TRAFFIC, DIVIDE TRAFFIC LANES OR REPLACE BARRICADES. WHEN APPROVED BY THE ENGINEER, VERTICAL PANELS MAY BE POST-MOUNTED ALONG THE SIDE OF THE ROADWAY.

TUBULAR POSTS



DESIGN

TUBULAR POSTS SHALL BE PREDOMINANTLY ORANGE, NOT LESS THAN 28 INCHES HIGH. BE A MINIMUM OF 2 INCHES WIDE WHEN FACING TRAFFIC, AND MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING IMPACTING VEHICLES.

TUBULAR POSTS SHALL BE RETROREFLECTIVE. RETROREFLECTION OF TUBULAR POSTS SHALL BE PROVIDED BY TWO 3 INCHES WIDE WHITE BANDS PLACED A MAXIMUM OF 2 INCHES FROM THE TOP, WITH A MAXIMUM OF 6 INCHES BETWEEN THE BANDS. THE BASE SHALL NOT BE WIDER THAN 12 INCHES OR HIGHER THAN 2 INCHES.

APPLICATION

TUBULAR POSTS HAVE LESS VISIBLE AREA THAN OTHER DEVICES AND SHOULD BE USED ONLY WHERE SPACE RESTRICTIONS DO NOT ALLOW FOR THE USE OF OTHER MORE VISIBLE DEVICES. THEY MAY BE USED EFFECTIVELY TO DIVIDE OPPOSING LANES OF TRAFFIC OR TO DIVIDE TRAFFIC LANES WHEN TWO OR MORE LANES ARE KEPT OPEN IN THE SAME DIRECTION.

STEPS SHOULD BE TAKEN TO ASSURE THAT TUBULAR POSTS WILL NOT BE BLOWN OVER OR DISPLACED BY TRAFFIC BY EITHER AFFIXING THEM TO THE PAVEMENT WITH ANCHOR BOLTS OR ADHESIVE. IF A NONCYLINDRICAL DEVICE IS USED, IT SHALL BE ATTACHED TO THE PAVEMENT TO ENSURE THAT THE WIDTH FACING TRAFFIC MEETS THE MINIMUM REQUIREMENTS.

TUBULAR POSTS SHOULD NOT BE USED FOR PEDESTRIAN CHANNELIZATION OR A PEDESTRIAN BARRIERS IN TEMPORARY TRAFFIC CONTROL ZONES ON OR ALONG SIDEWALKS.

REV. NO.	DATE	DESCRIPTION OF REVISION
R7	JAN 18	NDOR BORDER TO NDOT BORDER
R6	JUN 14	2009 MUTCD UPDATE
R5	OCT 98	REVISE CHANNELIZATION DEVICES, TAPER

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 920-R7

TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

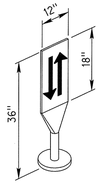
PROFESSIONAL CIVIL ENGINEER ★ DANIEL J. WADDLE E-6289 STATE OF NEBRASKA

David Wadd

9-1-2017
DATE

ORIGINAL:
OCTOBER 1998
DATE

OPPOSING TRAFFIC LANE DIVIDERS



DESIGN

OPPOSING TRAFFIC LANE DIVIDERS SHALL BE A TWO SIDED UPRIGHT RETROREFLECTORIZED ORANGE PANEL, WITH A WIDTH OF 12 INCHES AND A HEIGHT OF 18 INCHES. THE TOP OF THE PANEL SHALL BE 36 INCHES ABOVE THE PAVEMENT. THE SYMBOL ON EACH SIDE SHALL BE TWO OPPOSING BLACK ARROWS. THE LANE DIVIDER SHALL BE MADE OF LIGHTWEIGHT MATERIAL THAT WILL YIELD UPON IMPACT BY A VEHICLE. THE LANE DIVIDER BASE SHALL NOT BE WIDER THAN 12 INCHES OR HIGHER THAN 4 INCHES. THE BASE SHALL BE ATTACHED TO THE EXISTING SURFACE BY EPOXY OR OTHER SUITABLE ADHESIVE, TO ENSURE THAT THE PANEL REMAINS FACING TRAFFIC.

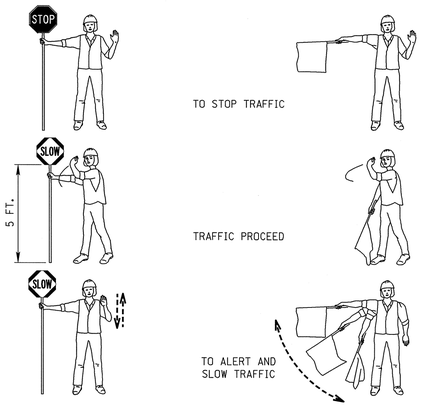
APPLICATION

OPPOSING TRAFFIC LANE DIVIDERS ARE DELINEATION DEVICES USED AS CENTER LANE DIVIDERS TO SEPARATE OPPOSING TRAFFIC ON A TWO-LANE, TWO-WAY OPERATION.

FLAGGERS

REQUIRED METHOD

EMERGENCY USE ONLY



FLAGGER PADDLE

THE STOP/SLOW PADDLE SHALL HAVE AN OCTAGONAL SHAPE ON A RIGID HANDLE. STOP/SLOW PADDLES SHALL BE AT LEAST 18 INCHES WIDE WITH LETTERS AT LEAST 6 INCHES HIGH. IF THE STOP/SLOW PADDLE IS PLACED ON A RIGID STAFF, THE MINIMUM LENGTH OF THE STAFF, MEASURED FROM THE BOTTOM OF THE SIGN TO THE END OF THIS STAFF THAT RESTS ON THE GROUND, SHOULD BE 5 FEET. THE STOP/SLOW PADDLE SHOULD BE THE PRIMARY AND PREFERRED HAND-SIGNALING DEVICE BECAUSE THE STOP/SLOW PADDLE GIVES ROAD USERS MORE POSITIVE GUIDANCE THAN RED FLAGS. USE OF FLAGS SHOULD BE LIMITED TO EMERGENCY SITUATIONS.

FLAGGERS

A FLAGGER MUST BE DRESSED FOR SAFETY. IN ADDITION TO THE REQUIREMENTS OF THE "WORKER VISIBILITY" SECTION LISTED BELOW, FLAGGERS SHALL WEAR:

1. AN ORANGE OR YELLOW/GREEN CAP OR HARD HAT.
2. A SHIRT WITH SLEEVES, PANTS AND SHOES (TANK TOPS, SHORTS OR SANDALS SHALL NOT BE WORN).

FLAGGERS SHALL BE INSTRUCTED IN THE PROPER LOCATION, DUTIES AND PROCEDURES FOR FLAGGING AS OUTLINED IN THE CURRENT MUTCD AND THE DEPARTMENT OF ROADS FLAGGER'S HANDBOOK. AS REQUIRED BY THE DEPARTMENT OF ROADS, THE FLAGGER SHALL BE CERTIFIED, AND HAVE IN THEIR POSSESSION, A VALID FLAGGER CERTIFICATION CARD.

WORKER VISIBILITY

ALL WORKERS WITHIN THE RIGHT-OF-WAY WHO ARE EXPOSED EITHER TO TRAFFIC (VEHICLES USING THE HIGHWAY FOR PURPOSES OF TRAVEL) OR TO CONSTRUCTION EQUIPMENT WITHIN THE WORK AREA SHALL WEAR HIGH-VISIBILITY SAFETY APPAREL. HIGH-VISIBILITY SAFETY APPAREL IS DEFINED TO MEAN PERSONAL PROTECTIVE SAFETY CLOTHING THAT;

1. IS INTENDED TO PROVIDE CONSPICUITY DURING BOTH DAYTIME AND NIGHTTIME USAGE, AND
2. MEETS THE PERFORMANCE CLASS 2 OR CLASS 3 REQUIREMENTS OF THE ANSI/ISEA 107-2004 PUBLICATION ENTITLED "AMERICAN NATIONAL STANDARDS FOR HIGH-VISIBILITY SAFETY APPAREL AND HEADWEAR"

LIGHTING DEVICES

FUNCTION

CONSTRUCTION AND MAINTENANCE ACTIVITIES OFTEN CREATE CONDITIONS ON OR NEAR THE TRAVELED WAY THAT ARE PARTICULARLY HAZARDOUS AT NIGHT. IT IS OFTEN DESIRABLE AND NECESSARY TO SUPPLEMENT THE REFLECTORIZED SIGNS, BARRIERS, AND CHANNELIZING DEVICES WITH LIGHTING DEVICES. STROBE TYPE LIGHTS ARE NOT PERMITTED.

BARRICADE WARNING LIGHTS DESIGN (BATTERY OPERATED)

TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS ARE MOST COMMONLY MOUNTED ON BARRICADES, OR WITH SIGNS AND ARE INTENDED TO WARN THE DRIVER THAT THEY ARE PROCEEDING IN A HAZARDOUS AREA. THESE LIGHTS SHALL NOT BE USED FOR DELINEATION, AS A SERIES OF FLASHING LIGHTS IN A ROW WOULD TEND TO OBSCURE THE DESIRED PATH.

TYPE "A" HIGH INTENSITY FLASHING WARNING LIGHTS ARE NORMALLY MOUNTED ON THE TYPE III BARRICADE THAT ACCOMPANIES THE ADVANCE WARNING SIGNS.

TYPE "C" STEADY BURN LIGHTS AS USED HEREIN, SHALL MEAN A SERIES OF LOW WATTAGE YELLOW ELECTRIC LIGHTS. WHERE LIGHTS ARE NEEDED TO DELINEATE OR MARK THE TRAVELED WAY THROUGH AND AROUND OBSTRUCTIONS IN A CONSTRUCTION MAINTENANCE AREA, THE DELINEATION SHALL BE ACCOMPLISHED BY USE OF STEADY BURNING LIGHTS. WHEN USED TO SUPPLEMENT CHANNELIZATION, THE MAXIMUM SPACING FOR WARNING LIGHTS SHOULD BE IDENTICAL TO THE CHANNELIZING DEVICE SPACING REQUIREMENTS. WHEN USED TO DELINEATE A CURVE, TYPE "C" WARNING LIGHTS SHOULD ONLY BE USED ON DEVICES ON THE OUTSIDE OF THE CURVE, AND NOT ON THE INSIDE OF THE CURVE.

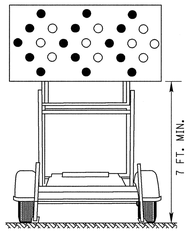
FLASHING ARROW PANEL (DISPLAY)

AN ARROW PANEL IS A SIGN WITH A MATRIX OF ELEMENTS, CAPABLE OF EITHER FLASHING OR SEQUENTIAL DISPLAYS. THIS SIGN SHALL PROVIDE ADDITIONAL WARNING AND DIRECTIONAL INFORMATION TO ASSIST IN MERGING AND CONTROLLING ROAD USERS THROUGH OR AROUND A TEMPORARY TRAFFIC CONTROL ZONE. AN ARROW PANEL SHOULD BE USED IN COMBINATION WITH APPROPRIATE SIGNS, CHANNELIZING DEVICES OR OTHER TRAFFIC CONTROL DEVICES.

DESIGN

ARROW PANELS SHALL MEET THE SIZE AND SPECIFICATIONS OF THE MUTCD FOR TYPE "C" ARROW DISPLAYS.

FLASHING ARROW PANEL SHALL BE RECTANGULAR, OF SOLID APPEARANCE AND FINISHED IN NON-REFLECTIVE BLACK. THE PANEL SHALL BE MOUNTED ON A VEHICLE, TRAILER OR OTHER SUITABLE SUPPORT. MINIMUM MOUNTING HEIGHT MEASURED VERTICALLY FROM THE BOTTOM OF THE PANEL TO THE ROADWAY BELOW IT OR TO THE ELEVATION OF THE NEAR EDGE OF THE ROADWAY. SHALL BE 7 FEET EXCEPT ON VEHICLE-MOUNTED PANELS, WHICH SHOULD BE AS HIGH AS PRACTICAL.



THE FOLLOWING SELECTIONS SHALL BE PROVIDED ON THE ARROW PANEL	
OPERATING MODE	PANEL DISPLAY
FLASHING ARROW	RIGHT SHOWN; LEFT OPPOSITE
SEQUENTIAL ARROW	RIGHT SHOWN; LEFT OPPOSITE
SEQUENTIAL CHEVRON	RIGHT SHOWN; LEFT OPPOSITE
FLASHING DOUBLE ARROW	
FLASHING OR ALTERNATING CAUTION	FLASHING LINE OR FLASHING CORNERS OR ALTERNATING DIAMOND CAUTION

THE ARROW PANEL SHALL HAVE A MINIMUM SIZE OF 96 INCHES WIDE AND 48 INCHES HIGH. THE MINIMUM LEGIBILITY DISTANCE SHALL BE 1 MILE. THE PANEL SHALL CONTAIN 25 LAMP ELEMENTS. ARROW PANEL ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING, AUTOMATICALLY WHEN AMBIENT LIGHT FALLS BELOW 50 LUX.

THE MINIMUM ELEMENT "ON TIME" SHALL BE 50 PERCENT FOR THE FLASHING MODE AND EQUAL INTERVALS OF 25 PERCENT FOR EACH SEQUENTIAL CHEVRON PHASE. THE FLASHING RATE SHALL BE NO FEWER THAN 25 NOR MORE THAN 40 FLASHES PER MINUTE.

APPLICATION

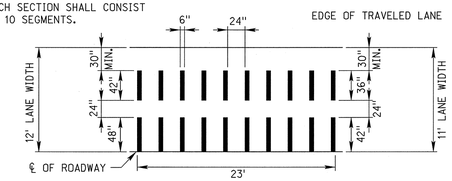
A FLASHING ARROW OR SEQUENTIAL CHEVRON MODE SHALL ONLY BE USED FOR STATIONARY OR MOVING LANE CLOSURES.

FOR SHOULDER WORK BLOCKING THE SHOULDER, FOR ROADSIDE WORK NEAR THE SHOULDER, OR FOR TEMPORARILY CLOSING ONE LANE ON A TWO-LANE, TWO-WAY ROADWAY, AN ARROW PANEL SHALL BE USED ONLY IN THE CAUTION MODE.

AN ARROW DISPLAY MODE SHALL NOT BE USED ON A TWO-LANE TWO-WAY ROADWAY FOR TEMPORARY ONE-LANE OPERATION OR LANE SHIFTS. AN ARROW DISPLAY SHALL NOT BE USED TO LATERALLY SHIFT TRAFFIC.

TEMPORARY RUMBLE STRIPS

EACH SECTION SHALL CONSIST OF 10 SEGMENTS.



DESIGN

TEMPORARY RUMBLE STRIPS MAY BE MADE OF ASPHALT PAVING MATERIAL, EPOXY AND AGGREGATE OR OTHER SUITABLE MATERIAL WHICH WILL MAINTAIN A DESIRABLE RUMBLE EFFECT. THE TEMPORARY RUMBLE STRIP SHOULD HAVE AN INSTALLED HEIGHT OF ⅝". PREFORMED RUMBLE STRIPS MAY BE USED PROVIDED THEY HAVE A MINIMUM ½" HEIGHT.

TRAFFIC SIGNALS

TRAFFIC SIGNALS MAY BE ALLOWED AT CERTAIN EQUIPMENT CROSSINGS WHERE THE VOLUME OF FILL MATERIAL AND THE NUMBER OF EQUIPMENT CROSSINGS PER HOUR IS HIGH. TRAFFIC SIGNALS MAY BE ALLOWED AT CERTAIN BRIDGE CONSTRUCTION SITES WHERE A COMBINATION OF ONE-WAY TRAFFIC AND HIGH TRAFFIC VOLUMES WOULD BE BEST SERVED WITH THIS TYPE OF TRAFFIC CONTROL.

ALL TRAFFIC SIGNAL REQUESTS AND METHOD OF INSTALLATION ON THE STATE HIGHWAY SYSTEM SHALL BE IN COMPLIANCE WITH THE MUTCD AND MUST BE APPROVED BY THE STATE TRAFFIC ENGINEER.

IF, AFTER THE SIGNAL ASSEMBLIES ARE ERECTED AND THE ROAD IS OPEN TO PUBLIC TRAVEL, THE SIGNAL SYSTEM IS NOT PUT IMMEDIATELY INTO OPERATION, THE SIGNAL FACES SHALL BE COVERED WITH BURLAP OR OTHER OPAQUE MATERIAL SUBJECT TO THE APPROVAL OF THE ENGINEER, INOPERATIVE SIGNALS ON ROADS OPEN TO THE PUBLIC SHALL ALWAYS BE COVERED. TILTING THE SIGNALS UPWARD IS NOT AN ACCEPTABLE ALTERNATIVE TO COVERING THE HEADS.

FLOODLIGHTS

WHEN NIGHTTIME WORK IS REQUIRED, FLOODLIGHTS SHALL BE USED TO ILLUMINATE FLAGGER STATIONS. FLOODLIGHTS SHOULD BE USED TO ILLUMINATE EQUIPMENT CROSSINGS, AND OTHER AREAS WHERE EXISTING LIGHT IS NOT ADEQUATE FOR THE WORK TO BE PERFORMED SAFELY.

IN NO CASE SHALL FLOODLIGHTING BE PERMITTED TO CREATE A DISABLING GLARE FOR DRIVERS. THE ADEQUACY OF THE FLOODLIGHT PLACEMENT AND ELIMINATION OF POTENTIAL GLARE SHOULD BE CHECKED BY DRIVING THROUGH THE PROJECT.

PAVEMENT MARKING

IT IS INTENDED TO THE EXTENT POSSIBLE, THAT MOTORISTS BE PROVIDED MARKINGS WITHIN A WORK AREA COMPARABLE TO THE MARKINGS NORMALLY MAINTAINED ALONG ADJACENT ROADWAYS, PARTICULARLY AT EITHER END OF THE WORK AREA.

ALL MARKINGS AND DEVICES USED TO DELINEATE VEHICLE AND PEDESTRIAN PATHS SHALL BE CAREFULLY REVIEWED DURING DAYTIME AND NIGHTTIME PERIODS TO AVOID INADVERTENTLY LEADING DRIVERS OR PEDESTRIANS FROM THE INTENDED PATH.

PAVEMENT MARKINGS NO LONGER APPLICABLE SHALL BE REMOVED UNLESS OTHERWISE APPROVED BY THE ENGINEER.

TAPERS

TAPERS ARE CREATED USING A SERIES OF CHANNELIZING DEVICES OR PAVEMENT MARKINGS TO MOVE TRAFFIC OUT OF OR INTO ITS NORMAL PATH.

MERGING TAPER

A MERGING TAPER REQUIRES THE LONGEST DISTANCE BECAUSE DRIVERS ARE REQUIRED TO MERGE INTO COMMON ROAD SPACE. THE TAPER SHOULD BE LONG ENOUGH TO ENABLE MERGING DRIVERS TO HAVE ADEQUATE ADVANCE WARNING AND SUFFICIENT LENGTH TO ADJUST THEIR SPEEDS AND MERGE INTO A SINGLE LANE BEFORE THE DOWNSTREAM END OF THE TRANSITION.

SHIFTING TAPER

A SHIFTING TAPER IS USED WHEN MERGING IS NOT REQUIRED, BUT A LATERAL SHIFT IS NEEDED. APPROXIMATELY ONE-HALF "L" HAS BEEN FOUND TO BE ADEQUATE. WHERE MORE SPACE IS AVAILABLE, IT MAY BE BENEFICIAL TO USE LONGER TAPERS. GUIDANCE FOR CHANGES IN ALIGNMENT MAY ALSO BE ACCOMPLISHED BY USING HORIZONTAL CURVES DESIGNED FOR NORMAL HIGHWAY SPEEDS.

SHOULDER TAPERS

A SHOULDER TAPER MAY BE BENEFICIAL ON HIGH-SPEED ROADWAYS WHERE SHOULDERS ARE PART OF THE ACTIVITY AREA AND ARE CLOSED, OR WHEN IMPROVED SHOULDERS MIGHT BE MISTAKEN AS A DRIVING LANE IN THESE INSTANCES, THE SAME TYPE, BUT ABBREVIATED, CLOSURE PROCEDURES USED ON A NORMAL PORTION OF THE ROADWAY CAN BE USED. IF USED, SHOULDER TAPERS APPROACHING THE ACTIVITY AREA SHOULD HAVE A LENGTH OF ABOUT ONE-THIRD "L".

DOWNSTREAM TAPERS

THE DOWNSTREAM TAPER MAY BE USEFUL IN TERMINATION AREAS TO PROVIDE A VISUAL CUE TO THE DRIVER THAT ACCESS IS AVAILABLE TO THE ORIGINAL LANE OR PATH THAT WAS CLOSED. WHEN USED, IT SHOULD HAVE A MINIMUM LENGTH OF ABOUT 100 FEET PER LANE, WITH DEVICES SPACED ABOUT 20 FEET APART.

ONE LANE, TWO WAY TAPER

THE ONE-LANE, TWO-WAY TAPER IS USED IN ADVANCE OF AN ACTIVITY AREA THAT OCCUPIES PART OF A TWO-WAY ROADWAY IN SUCH A WAY THAT A PORTION OF THE ROAD IS USED ALTERNATELY BY TRAFFIC IN EACH DIRECTION. A SHORT TAPER HAVING A MINIMUM LENGTH OF 50 FEET AND A MAXIMUM LENGTH OF 100 FEET WITH CHANNELZING DEVICES AT APPROXIMATELY 20 FOOT SPACINGS SHOULD BE USED TO GUIDE TRAFFIC INTO THE ONE-LANE-SECTION AND A DOWNSTREAM TAPER WITH A LENGTH OF APPROXIMATELY 100 FEET SHOULD BE USED TO GUIDE TRAFFIC BACK INTO THEIR ORIGINAL LANE.

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES	
TYPE OF TAPER	TAPER LENGTH (FEET)
MERGING TAPER	L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/3 L MINIMUM
TWO-WAY TAPER	100 FEET MAXIMUM

FORMULAS FOR L	
SPEED	FORMULA
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR GREATER	L = WS

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED LIMIT PRIOR TO WORK IN MPH

TAPER LENGTH L (FEET)			
SPEED (MPH)	LANE WIDTH		
S	10 FT.	11 FT.	12 FT.
25	105	115	125
30	150	165	180
35	205	225	245
40	270	295	320
45	450	495	540
50	500	550	600
55	550	605	660
60	600	660	720
65	650	715	780
75	750	825	900

REV. NO.	DATE	DESCRIPTION OF REVISION
R7	JAN 18	NDOR BORDER TO NDOT BORDER
R6	JUN 14	2009 MUTCD UPDATE
R5	OCT 98	REVISE CHANNELIZATION DEVICES, TAPER

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 920-R7

TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

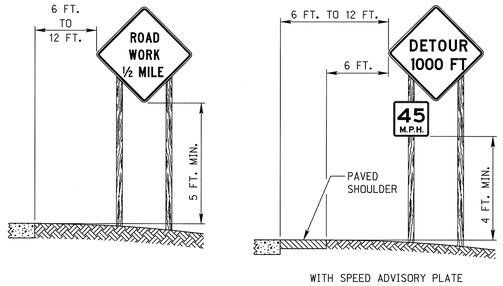
David Waddle
9-1-2017
DATE

ORIGINAL:
OCTOBER 1998
DATE

ROADWAY DESIGN DIVISION
Computer: DRDESIGN147
User: dor13017
Date: 17-AUG-2017 15:56
File: 92000e07.dgn
Scale: 1:100
SHEET 3 OF 3

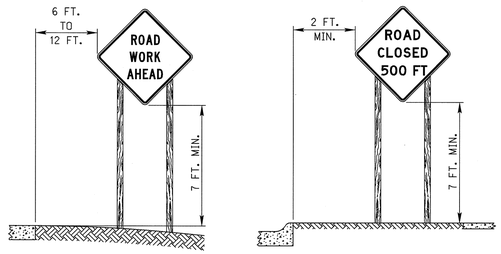
ROADSIDE SIGNS

HEIGHT AND LATERAL LOCATION OF SIGNS
RURAL AREA



WITH SPEED ADVISORY PLATE

URBAN AREA



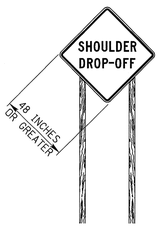
TYPICAL FIRST SIGN AT CONSTRUCTION SITE

WITH TYPE "A" FLASHING WARNING LIGHT MOUNTED ABOVE TYPE III BARRICADE

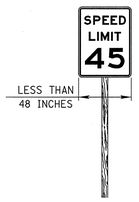
PORTABLE AND TEMPORARY MOUNTING

TYPICAL SIGN MOUNTINGS

POST MOUNTED



SIGNS 48 INCHES OR WIDER REQUIRE TWO POSTS



SIGN WIDTHS LESS THAN 48 INCHES MAY BE MOUNTED WITH ONE POST

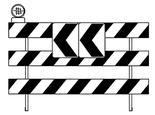
TYPICAL SIGN MOUNTINGS

OTHER THAN POST MOUNTED

TYPE III BARRICADE WITH SIGN

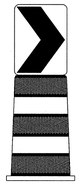
PORTABLE AND TEMPORARY MOUNTING

TYPE III BARRICADE WITH SIGN AND DETOUR ARROW



TYPE III BARRICADE WITH CHEVRONS

TYPE II BARRICADE WITH DETOUR ARROW OR SIGN



PLASTIC DRUM WITH CHEVRON OR SIGN

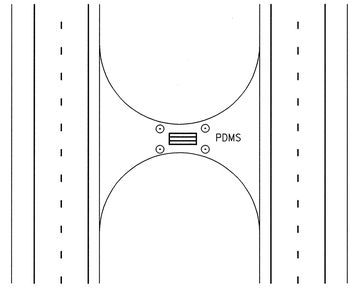
TEMPORARY SIGN SUPPORTS

ALL "TEMPORARY SIGN" SUPPORTS (BASES) SHALL BE NCHRP 350 OR MASH (TL-3) APPROVED.

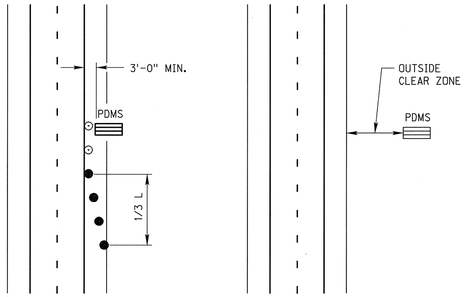
"TEMPORARY SIGNS" ARE ALL TEMPORARILY MOUNTED WORK ZONE SIGNS THAT ARE NOT POST MOUNTED IN THE GROUND AT THE TYPICAL 5 FOOT MOUNTING HEIGHT. TEMPORARY SIGNS ARE CONSIDERED NCHRP 350 OR MASH CATEGORY 2 DEVICES AND ARE MOUNTED ON TEMPORARY SIGN STANDS. TEMPORARY SIGNS SHALL BE MOUNTED A MINIMUM OF 1 FOOT ABOVE THE GROUND, UNLESS OTHERWISE REQUIRED TO BE MOUNTED AT A HIGHER HEIGHT.

TEMPORARY SIGNS AND THEIR SUPPORTS SHALL NOT BE IN PLACE LONGER THAN 3 DAYS. ANY SIGN THAT IS TO BE IN PLACE LONGER THAN 3 DAYS SHALL BE POST MOUNTED OR MOUNTED TO A DRUM, BARRICADE, OR BARRIER, AS REQUIRED BY THE PLANS OR SPECIFICATIONS.

PORTABLE DYNAMIC MESSAGE SIGN DELINEATION



IN MEDIAN



ON SHOULDER OFF SHOULDER

PORTABLE DYNAMIC MESSAGE SIGNS (PDMS)

THE PLACEMENT OF PDMS SHOULD BE IN THE FOLLOWING ORDER:

WHENEVER POSSIBLE, PDMS SHOULD BE PLACED OFF OF ANY USABLE PORTION OF THE ROADWAY ON THE RIGHT SIDE OF THE ROADWAY. WHEN PLACED OUTSIDE THE CLEAR ZONE OR BEHIND GUARDRAIL OR CONCRETE PROTECTION BARRIERS, DELINEATION IS NOT REQUIRED.

WHERE FIELD CONDITIONS DO NOT ALLOW FOR THIS PLACEMENT, THE SIGNS MAY BE LOCATED ON THE OUTSIDE SHOULDER OF THE ROADWAY OR WITHIN THE MEDIAN.

A. A MINIMUM CLEARANCE OF 3 FEET MEASURED HORIZONTALLY FROM THE EDGE OF THE SIGN TO THE EDGE OF THE TRAVELED WAY IS RECOMMENDED.
B. THE PDMS SHOULD HAVE A MINIMUM MOUNTED HEIGHT OF 7 FEET ON FREEWAYS, EXPRESSWAYS AND IN URBAN AREAS.
C. ALL OTHER RURAL APPLICATIONS SHOULD HAVE A MINIMUM HEIGHT OF 5 FEET.

THESE HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF THE PAVEMENT.

REFLECTORIZED PLASTIC DRUMS SHOULD BE USED TO DELINEATE EACH SIGN USING A 1/3 L TAPER. THESE DRUMS SHOULD BE POSITIONED ON THE UPSTREAM END OF THE SIGN TO FORM A TAPER LEADING UP TO THE TRAFFIC SIDE OF THE SIGN. FOR A SIGN LOCATED IN THE MEDIAN, THE SIGN SHOULD BE DELINEATED WITH A 42 INCH CONE ON ALL FOUR CORNERS.

WHEN DEPLOYED, THE SIGN SHALL BE SIGHTED AND ALIGNED WITH APPROACHING TRAFFIC TO ENSURE VISIBILITY OF THE MESSAGE. IF MULTIPLE SIGNS ARE USED, THE SIGNS SHOULD BE LOCATED ON THE SAME SIDE OF THE ROAD AND SEPARATED ACCORDING TO PROPER SIGN SPACING.

WHEN PRACTICAL, PDMS SHOULD NOT BE USED TO REPLACE STATIC SIGNS FOR LONG TERM USAGE (OVER 10 DAYS).

WHEN PDMS ARE TO BE DEPLOYED FOR LONG PERIODS, SUCH AS INCIDENT MANAGEMENT ROLES, CONCRETE PADS WITH APPROPRIATE TIE DOWNS SHOULD BE CONSTRUCTED FOR THEIR PLACEMENT.

PDMS NOT ACTIVELY BEING USED IN A CONSTRUCTION OR INCIDENT MANAGEMENT ROLE SHOULD BE REMOVED.

REFER TO NDOR "DMS GUIDELINES" FOR PROPER PDMS MESSAGE INFORMATION.

NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE APPLICABLE STANDARDS AND SPECIFICATIONS PRESCRIBED IN PART 6 OF THE LATEST ADOPTED EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD)" AND THE STATE OF NEBRASKA SUPPLEMENT TO THE MUTCD. ALL TRAFFIC CONTROL DEVICES SHALL BE CRASHWORTHY AND QUALIFY AS SUCH ACCORDING TO THE TESTING AND ACCEPTANCE GUIDELINES OF THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. TRAFFIC CONTROL PLANS AND DEVICES SHOULD FOLLOW THE PRINCIPLES SET FORTH, BUT MAY DEVIATE FROM THE TYPICAL DRAWINGS TO ALLOW FOR CONDITIONS AND REQUIREMENTS OF THE PROJECT.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SO AS NOT TO OBSTRUCT THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
4. THE ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE THE USE, AND APPROVE THE LOCATION OF ANY OF THE DEVICES SHOWN IN THESE PLANS.

WORK ZONE SPEED LIMIT NOTES

A. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT.

B. REDUCED SPEED LIMITS SHOULD BE USED ONLY IN THE SPECIFIC PORTION OF THE WORK ZONE WHERE CONDITIONS OR RESTRICTIVE FEATURES ARE PRESENT. HOWEVER, FREQUENT CHANGES IN THE SPEED LIMIT SHOULD BE AVOIDED. THE REDUCTION OF SPEED SHOULD BE DESIGNED SO VEHICLES CAN SAFELY TRAVEL THROUGH THE WORK ZONE WITH A SPEED LIMIT REDUCTION OF NO MORE THAN 10 MPH UNLESS OTHERWISE NOTED IN THE PLANS.

C. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS REQUIRED FOR THE WORK.

D. EXISTING SPEED LIMIT SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.

E. WORK ZONE SPEED LIMIT SIGNS SHALL BE INSTALLED EVERY MILE THROUGH THE WORK AREA WHEN SPEED ZONE IS REDUCED.

F. A SPEED LIMIT SIGN ENDING THE REDUCED SPEED ZONE SHALL BE INSTALLED AT THE END OF EACH ZONE.

G. DOUBLE FINES AND REDUCED SPEED ZONE SIGNING ARE NOT REQUIRED FOR SHORT-DURATION WORK LESS THAN 12 HOURS.

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- PORTABLE DYNAMIC MESSAGE SIGN

REV. NO.	DATE	DESCRIPTION OF REVISION
R7	JAN 18	NDOR BORDER TO NDOT BORDER
R6	JUN 14	2009 MUTCD UPDATE
R5	OCT 98	REVISE CHANNELIZATION DEVICES, TAPER

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 920-R7

TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

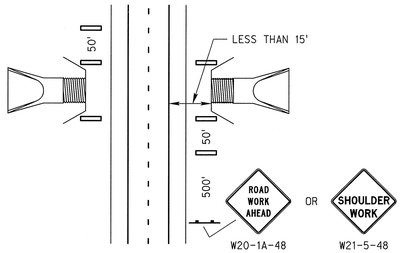
David Mueg

9-1-2017
DATE

PROFESSIONAL CIVIL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

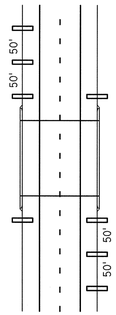
ORIGINAL:
OCTOBER 1998
DATE

3
3



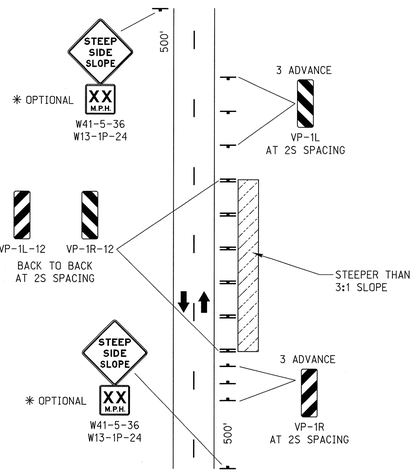
CULVERT DELINEATION

WHEN GUARDRAIL IS REMOVED AND/OR EXCAVATION IS LESS THAN 15 FEET FROM EDGE OF TRAVELED WAY

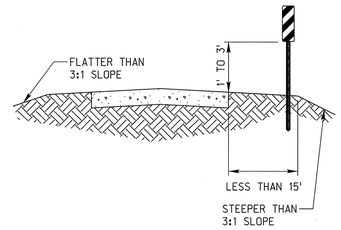


BRIDGE RAIL END DELINEATION

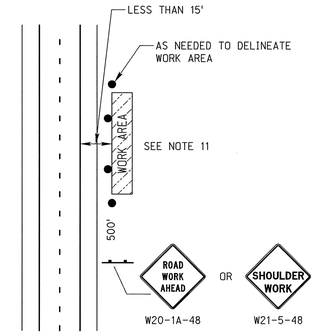
WHEN GUARDRAIL IS REMOVED



VERTICAL PANELS SHOULD BE USED FOR AREAS WHERE GUARDRAIL IS REMOVED, OR PROJECT GRADING HAS CREATED A FORESLOPE STEEPER THAN 3:1, AND WITHIN 15 FEET OF THE TRAVELED WAY. NOT USED FOR CULVERT OR BRIDGE END DELINEATION. VERTICAL PANEL SPACING MAY BE REDUCED FOR HORIZONTAL CURVES. CONES/DRUMS MAY BE USED AS A SUBSTITUTE WHEN APPROVED BY THE ENGINEER.



STEEP SLOPE DELINEATION



WORK BEYOND THE SHOULDER

TA-1

LEGEND

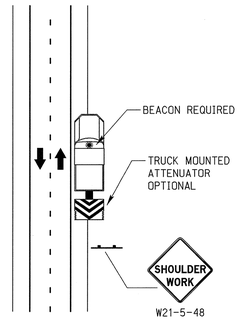
- FLAGGER
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- TYPE III BARRICADE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- TRAFFIC SIGNAL

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

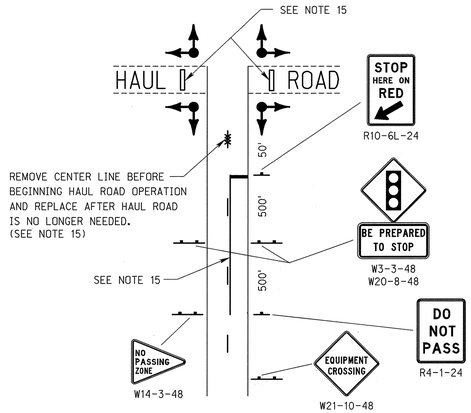
$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

WHERE:
L = MINIMUM LENGTH OF TAPER.
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.
W = WIDTH OF OFFSET (LANE WIDTH).



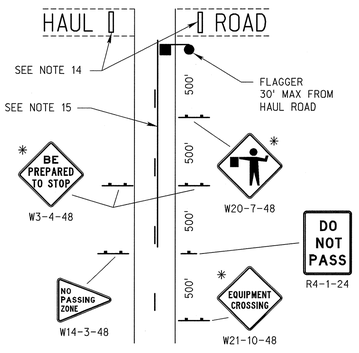
MOBILE OPERATION ON SHOULDER

NO ENCROACHMENT ON TRAVEL LANE
TA-4



HAUL ROAD CROSSING IN CONSTRUCTION AREA USING TEMPORARY TRAFFIC SIGNAL

TA-14



HAUL ROAD CROSSING IN CONSTRUCTION AREA USING FLAGGERS

TA-14
✳ SIGNS ARE SUBSIDIARY TO THE FLAGGING OPERATION.

NOTES

1. SIGNS SHOWN ARE USUALLY FOR ONE DIRECTION OF TRAVEL ONLY.
2. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS (W13-1P) SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.
3. "FLAGGER AHEAD SYMBOL" SIGN (W20-7) SHALL BE USED WHEN A FLAGGER IS PRESENT, AND REMOVED WHEN NOT APPLICABLE.
4. THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE ALL SIGNS IN ACCORDANCE WITH THE DETAILS OF AND AT THE LOCATIONS SHOWN IN THE PLANS. SIGNS INSTALLED BY THE DEPARTMENT OF ROADS OR OTHER GOVERNMENT AGENCY SHALL BE MAINTAINED AND REMOVED BY THEIR FORCES.
5. G20-1 "ROAD WORK NEXT X MILES" SHALL BE USED ON ANY CONSTRUCTION OR MAINTENANCE PROJECT LONGER THAN 2 MILES.
6. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE IS NOT PERMITTED ON THE FACE OF THE SIGN.
7. VEHICLES OR EQUIPMENT SHALL NOT BE PARKED SO AS TO OBSCURE OR DISTRACT FROM TRAFFIC CONTROL DEVICES.
8. ORANGE FLAGS MAY BE USED TO CALL ATTENTION TO WARNING SIGNS.
9. CULVERT, BRIDGE AND STEEP SLOPE DELINEATION. EXISTING GUARDRAIL SHOULD REMAIN IN PLACE AS LONG AS PRACTICAL FOR THE PROTECTION IT PROVIDES, AND REINSTALLED AS SOON AS PRACTICAL.
10. TA-1 AND TA-3
FOR SHORT-DURATION OPERATIONS 60 MINUTES OR LESS, ALL SIGNS AND CHANNELIZING DEVICES MAY BE ELIMINATED IF A VEHICLE WITH AN ACTIVATED HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING OR AMBER STROBE LIGHTS ARE USED, AND THE WORK DOES NOT ENCROACH INTO THE OPEN TRAVEL LANE.
11. TA-1 AND TA-3
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.
12. TA-4
VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING OR AMBER STROBE LIGHTS.
13. TA-10
IF THE QUEUING OF VEHICLES ACROSS ACTIVE RAILROAD TRACKS CANNOT BE AVOIDED, A FLAGGER SHALL BE PROVIDED AT THE RAILROAD CROSSING TO PREVENT VEHICLES FROM STOPPING WITHIN THE RAILROAD CROSSING EVEN IF AUTOMATIC WARNING DEVICES ARE IN PLACE.
14. TA-14
WHEN THE HAUL ROAD IS NOT IN USE, TYPE III BARRICADES SHALL BE IN PLACE. THE "FLAGGER", "SIGNAL AHEAD", AND "BE PREPARED TO STOP" SIGNS SHALL BE COVERED OR REMOVED, AND THE TRAFFIC SIGNAL SHALL BE PUT INTO FLASH YELLOW ON THE HIGHWAY, RED ON THE HAUL ROAD.
15. TA-14
THE "NO PASSING" SIGNS (R4-1-24 AND W14-3-48) AND PAVEMENT MARKINGS ARE NOT REQUIRED IF HAULING OPERATION IS IN EFFECT ONLY DURING DAYLIGHT HOURS.
16. APPLICATIONS SHOWN ARE FOR LOCAL SITUATIONS IN PROPERLY MARKED CONSTRUCTION ZONES AND DO NOT INCLUDE LEAD SIGNS WHICH ARE INSTALLED AT THE BEGINNING OF THE PROJECT.
17. THE LEAD SIGNS ARE NOT NEEDED IF TWO PROJECTS ARE LESS THAN 1 MILE APART. THE "END CONSTRUCTION" SIGN (G20-2B-48) SHOULD NOT BE INSTALLED BETWEEN THE PROJECTS.
18. REFER TO STANDARD PLAN 920 FOR GENERAL INFORMATION NOT SHOWN.
19. A MINIMUM OF 7-36" OR 42" CONES SHALL BE PLACED ON THE CENTERLINE IN ADVANCE OF THE FLAGGER. THE CONES SHOULD BE SPACED AT 250 FEET.
20. THE SPEED IN FLAGGING/PILOT CAR OPERATIONS IS GENERALLY CONTROLLED BY THE PILOT CAR, A SPEED REDUCTION MAY NOT BE NECESSARY IF THE WORK ZONE CONDITIONS WILL NOT EXIST UPON COMPLETION OF EACH DAYS WORK. W3-5 SIGN IS NOT NEEDED IF SPEED LIMIT IS NOT REDUCED.

REV. NO.	DATE	DESCRIPTION OF REVISION
R8	JAN 18	NDOR BORDER TO NDOT BORDER
R7	JAN 17	ADD CONES ON CENTERLINE
R6	JUN 14	2009 MUTCD UPDATE

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 921-R8

TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE

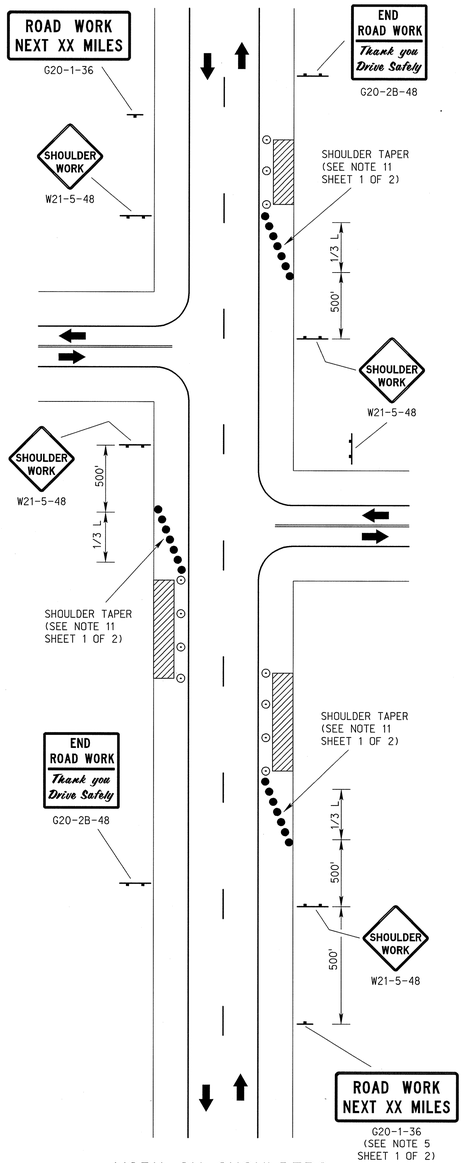
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

David Murphy
9-1-2017
DATE

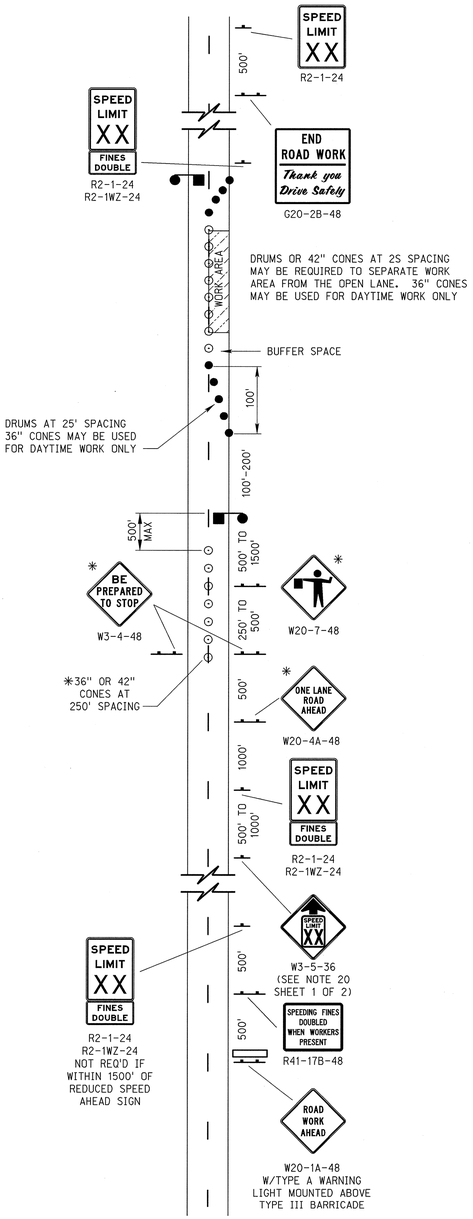
PROFESSIONAL CIVIL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

ORIGINAL:
JUNE 3, 1980
DATE

1/2

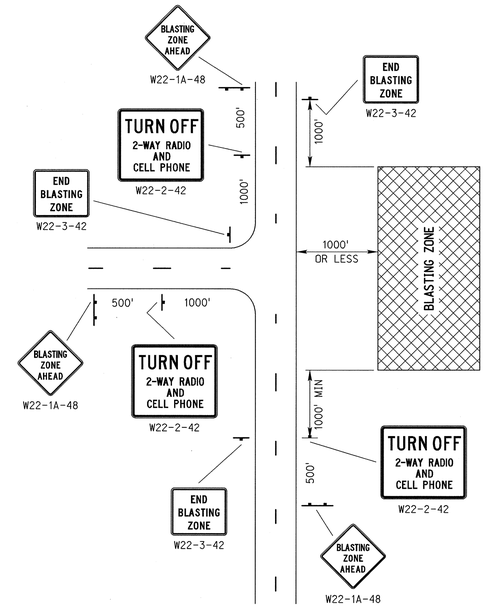


WORK ON SHOULDERS
TA-3



LANE CLOSURE
TA-10

* SIGNS AND CONES ARE SUBSIDIARY TO THE FLAGGING OPERATION.



BLASTING ZONE
TA-2

LEGEND

- FLAGGER
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- TYPE III BARRICADE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- TRAFFIC SIGNAL

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

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REV. NO.	DATE	DESCRIPTION OF REVISION
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NEBRASKA DEPARTMENT OF TRANSPORTATION

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PROFESSIONAL CIVIL ENGINEER
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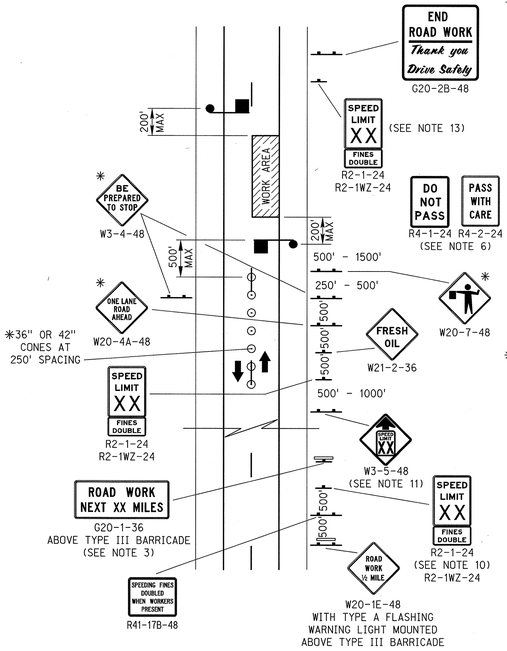
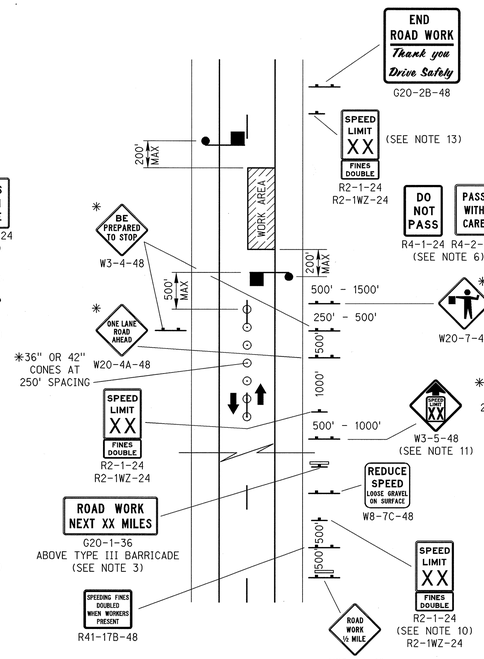
E-6289
STATE OF NEBRASKA

9-1-2017
DATE

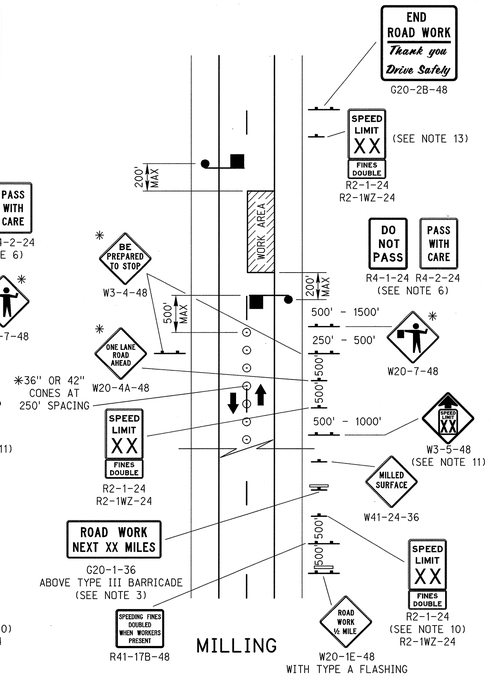
ORIGINAL:
JUNE 3, 1980
DATE



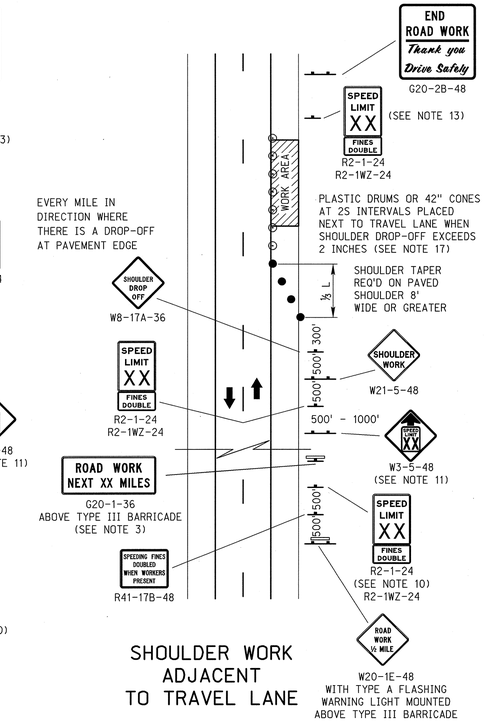
ASPHALT SURFACING OR FOG SEAL



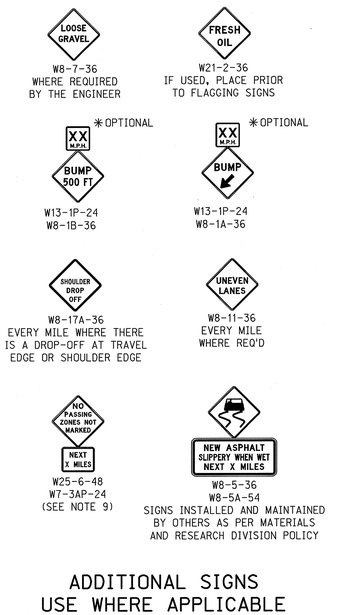
ARMOR COAT SURFACING



MILLING



SHOULDER WORK ADJACENT TO TRAVEL LANE



ADDITIONAL SIGNS USE WHERE APPLICABLE

*SIGNS AND CONES ARE SUBSIDIARY TO THE FLAGGING OPERATION.

GENERAL NOTES

1. SIGNS SHOWN ARE USUALLY FOR ONE DIRECTION OF TRAVEL ONLY.
2. "FLAGGERS AHEAD SYMBOL" SIGN (W20-7-48) SHALL BE USED WHEN A FLAGGER IS PRESENT, AND REMOVED WHEN NOT APPLICABLE.
3. G20-1 "ROAD WORK NEXT XX MILES" SHALL BE USED ON ANY CONSTRUCTION OR MAINTENANCE PROJECT LONGER THAN 2 MILES.
4. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE WILL NOT BE PERMITTED ON THE FACE OF THE SIGN.
5. ORANGE FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE WARNING SIGNS.
6. "DO NOT PASS" AND "PASS WITH CARE" SIGNS WILL BE INSTALLED AT THE BEGINNING AND ENDING OF EACH "NO PASSING" ZONE WHERE PAVEMENT HAS NOT BEEN MARKED. FOR ROADWAYS WITH ADTs OF 2,000 VEHICLES PER DAY OR LESS, THE TIME PERIOD BETWEEN COMPLETION OF THE WORK AND PLACEMENT OF THE PAVEMENT MARKINGS SHALL NOT EXCEED TWO WEEKS. FOR ROADWAYS WITH ADTs GREATER THAN 2,000 VEHICLES PER DAY, THE TIME PERIOD SHALL NOT EXCEED THREE CALENDAR DAYS, CONDITIONS PERMITTING.
7. WHERE TRAFFIC QUEUES ARE LONG AND FLAGGER VISIBILITY IS LIMITED, THE ENGINEER MAY REQUIRE AN ADDITIONAL FLAGGER.
8. "MILLED SURFACE" SIGN (W41-24) IS NOT REQUIRED FOR MILLED SURFACES LESS THAN 1000 FEET IN LENGTH OR FOR MILLED SURFACES THAT ARE NOT BEING OVERLAID WITH THE PROJECT.
9. "NO PASSING ZONES NOT MARKED" SIGN (W25-6-48) SHOULD BE INSTALLED AT EACH END OF THE PROJECT WHENEVER THE EXISTING NO PASSING ZONE PAVEMENT MARKINGS HAVE BEEN REMOVED OR COVERED AND NO PASSING ZONE PAVEMENT MARKINGS ARE NOT INCLUDED IN THE PROJECT.
10. SPEED LIMIT SIGN IS NOT REQUIRED IF WITHIN 1500 FT OF A REDUCED SPEED AHEAD SIGN.
11. THE SPEED IN FLAGGING/PILOT CAR OPERATIONS IS GENERALLY CONTROLLED BY THE PILOT CAR. A SPEED REDUCTION MAY NOT BE NECESSARY IF THE WORK ZONE CONDITIONS WILL NOT EXIST UPON COMPLETION OF EACH DAYS' WORK. W3-5 SIGN IS NOT NEEDED IF SPEED LIMIT IS NOT REDUCED.
12. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. THE WORK ZONE SPEED LIMIT SHALL BE ESTABLISHED ACCORDING TO DOR-OI 60-18. SEE WORK ZONE SPEED LIMIT NOTES ON STANDARD PLAN 920.
13. A SPEED LIMIT SIGN ENDING THE REDUCED SPEED ZONE SHALL BE INSTALLED AT THE END OF EACH ZONE.
14. IF THE QUEUING OF VEHICLES ACROSS ACTIVE RAILROAD TRACKS CANNOT BE AVOIDED, A FLAGGER SHALL BE PROVIDED AT THE RAILROAD CROSSING TO PREVENT VEHICLES FROM STOPPING WITHIN THE RAILROAD CROSSING EVEN IF AUTOMATIC WARNING DEVICES ARE IN PLACE. AT NO TIME, WILL THE QUEUE FROM A FLAGGING OPERATION EXTEND ACROSS A RAILROAD CROSSING.
15. EARLY COORDINATION WITH THE RAILROAD COMPANY SHOULD OCCUR BEFORE WORK STARTS.
16. THE "DO NOT STOP ON TRACKS" SIGN SHOULD BE USED ON ALL APPROACHES TO A HIGHWAY-RAIL GRADE CROSSING WITHIN THE LIMITS OF A TEMPORARY TRAFFIC CONTROL ZONE.
17. PLACE TYPE II BARRICADES, REFLECTORIZED PLASTIC DRUMS, OR 42" CONES ON THE TRAFFIC SIDE OF THE DROP-OFF WHERE SUFFICIENT LATERAL DISTANCE EXISTS BETWEEN THE TRAVEL LANE AND THE DROP-OFF (DROP-OFF DETAIL ON SHEET 2).
18. THE LEAD SIGNS ARE NOT NEEDED IF TWO PROJECTS ARE LESS THAN 1 MILE APART. THE "END CONSTRUCTION" SIGN (G20-2B-48) SHOULD NOT BE INSTALLED BETWEEN THE PROJECTS.
19. ON ARMOR COAT SURFACING, A "LOOSE GRAVEL" SIGN (W8-7-36) IS REQUIRED AT THE BEGINNING OF THE DAYS WORK AND SHALL REMAIN IN PLACE UNTIL THE LOOSE GRAVEL HAS BEEN SWEPT OFF.
20. SIGN SIZES SHOWN ARE FOR TYPICAL SITUATIONS- REFER TO NEBRASKA SUPPLEMENT TO THE MUTCD FOR FURTHER SIZE INFORMATION.
21. REFER TO STANDARD PLAN 920 FOR GENERAL INFORMATION NOT SHOWN.
22. A MINIMUM OF 7-36" OR 42" CONES SHALL BE PLACED ON CENTERLINE IN ADVANCE OF THE FLAGGER. THE CONES SHOULD BE SPACED AT 250 FEET.

LEGEND

- FLAGGER
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- TYPE III BARRICADE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.
W = WIDTH OF OFFSET (LANE WIDTH).

REV. NO.	DATE	DESCRIPTION OF REVISION
R11	JAN 18	NDOR BORDER TO NDOT BORDER
R10	JAN 17	ADD CONES TO CENTERLINE
R9	JUN 14	2009 MUTCD UPDATES

NEBRASKA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN NO. 922-R11

TRAFFIC CONTROL FOR ASPHALT SURFACING

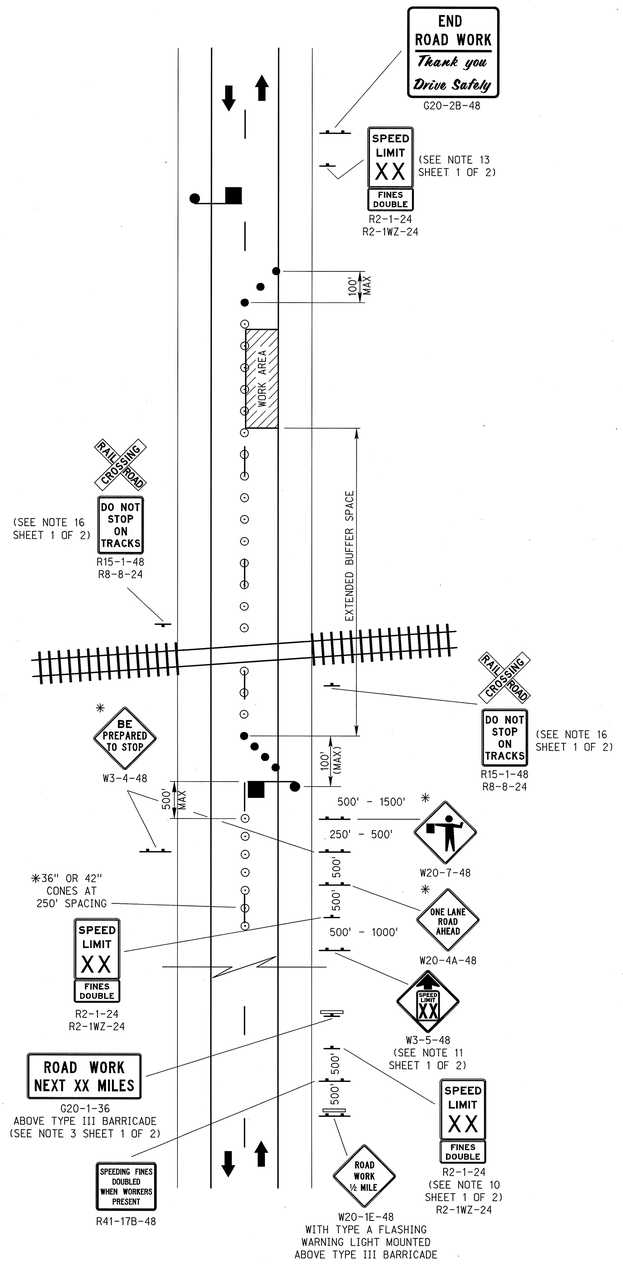
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

David Mroz
8-16-2017
DATE

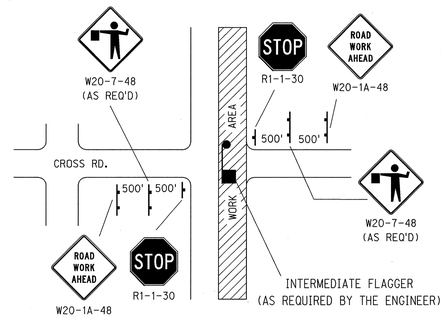
ORIGINAL:
JUNE 3, 1980
DATE

1/2

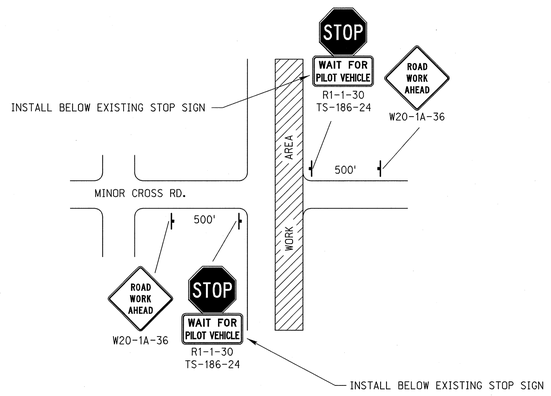


WORK IN VICINITY OF RAILROAD CROSSING

*SIGNS AND CONES ARE SUBSIDIARY TO THE FLAGGING OPERATION.



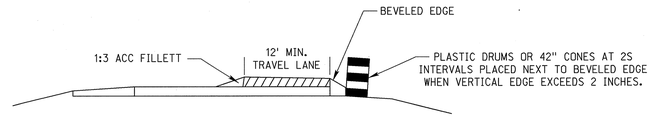
MINOR OR MAJOR CROSS ROAD WITH FLAGGER



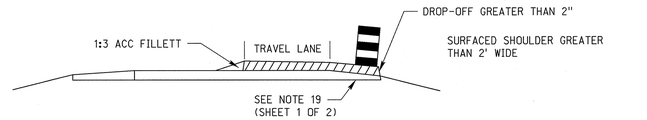
MINOR CROSS ROAD NO FLAGGER WITH PILOT CAR OPERATION

THE BOTTOM OF THE SIGN SHALL BE MOUNTED A MINIMUM OF 1 FOOT ABOVE THE VEHICLE'S ROOF. THE SIGN SHALL BE SECURELY COVERED OR REMOVED WHEN NOT IN USE.

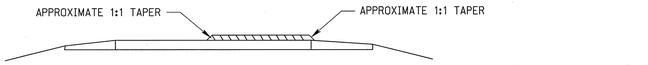
PILOT CAR SIGN



BEVELED EDGE



DROP-OFF GREATER THAN 2 INCHES



DROP-OFF 2 INCHES AND LESS

LEGEND

- FLAGGER
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- TYPE III BARRICADE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.
W = WIDTH OF OFFSET (LANE WIDTH).

REV. NO.	DATE	DESCRIPTION OF REVISION
R11	JAN 18	NDOR BORDER TO NDOT BORDER
R10	JAN 17	ADD CONES TO CENTERLINE
R9	JUN 14	2009 MUTCD UPDATES

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 922-R11

TRAFFIC CONTROL FOR ASPHALT SURFACING

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

David May
8-16-2017
DATE

ORIGINAL:
JUNE 3, 1980
DATE

2
2

ROADWAY DESIGN DIVISION
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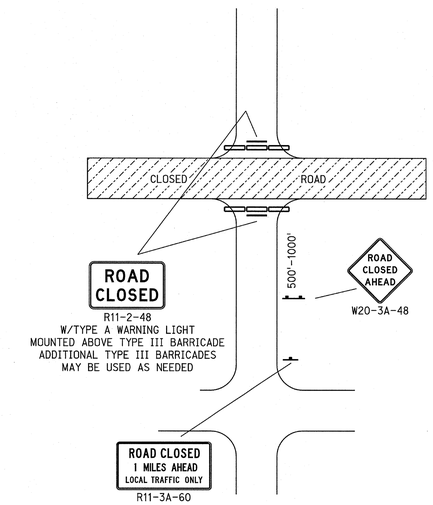
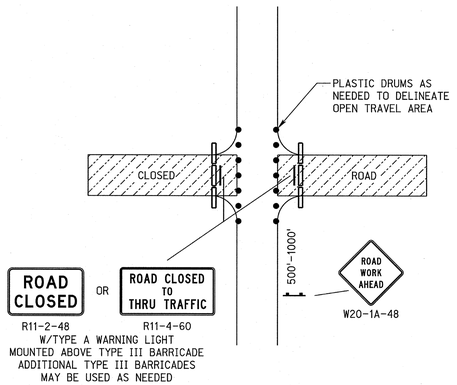
SHEET 1 OF 1

CROSS ROAD INTERSECTING CLOSED ROAD

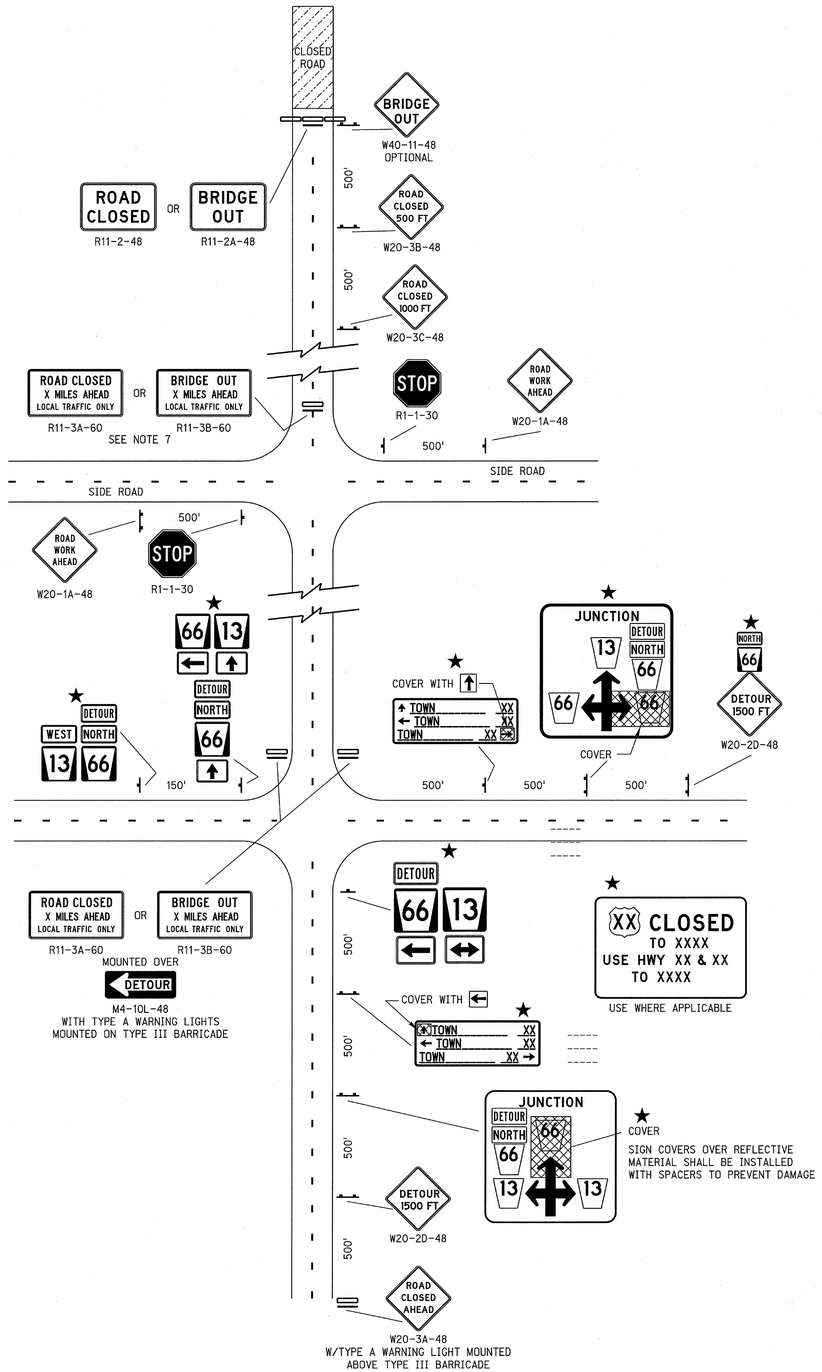


TRAFFIC NOT ALLOWED TO CROSS CLOSED ROAD



TRAFFIC ALLOWED TO CROSS CLOSED ROAD

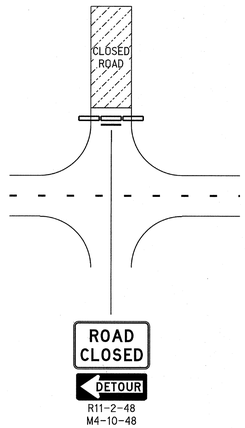
ROAD CLOSED BEYOND JUNCTION



NOTES

1. SIGNS SHOWN ARE USUALLY FOR ONE DIRECTION OF TRAVEL ONLY.
2. THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE ALL SIGNS IN ACCORDANCE WITH THE DETAILS OF AND AT THE LOCATIONS SHOWN IN THE PLANS. SIGNS INSTALLED BY THE DEPARTMENT OR OTHER GOVERNMENT AGENCY SHALL BE MAINTAINED AND REMOVED BY THEIR FORCES.
3. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE IS NOT PERMITTED ON THE FACE OF THE SIGN.
4. VEHICLES OR EQUIPMENT SHALL NOT BE PARKED SO AS TO OBSCURE OR DISTRACT FROM TRAFFIC CONTROL DEVICES.
5. FLAGS MAY BE USED TO CALL ATTENTION TO WARNING SIGNS.
6. WHEN APPROPRIATE THE SIGN R11-2B "BRIDGE OUT" MAY BE USED INSTEAD OF R11-2 "ROAD CLOSED".
7. BARRICADE AND SIGN MAY BE PLACED ALONG EDGE OF ROAD IF NEEDED FOR LOCAL TRAFFIC.
8. REFER TO STANDARD PLAN 920 FOR GENERAL INFORMATION NOT SHOWN.

ROAD CLOSED AT JUNCTION



LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- ★ INSTALLED BY OTHERS

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

REV. NO.	DATE	DESCRIPTION OF REVISION
R2	JAN 18	NDOR BORDER TO NDOT BORDER
R1	JUN 14	2009 MUTCD UPDATES

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 923-R2

TRAFFIC CONTROL ROAD CLOSURE

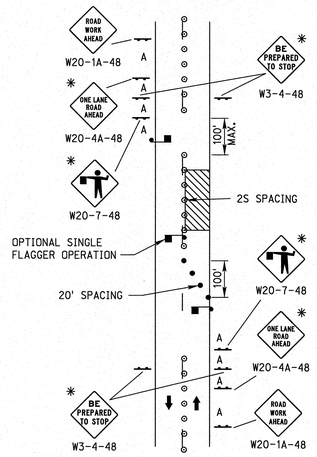
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

David Mroz
11-8-2017
DATE

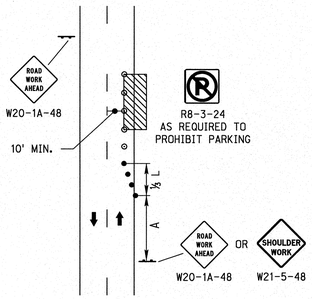
ORIGINAL:
AUGUST 1998
DATE

1
1

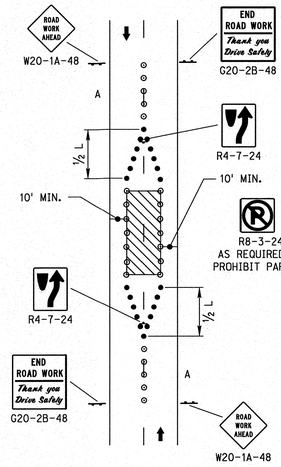


ONE LANE CLOSED WITH FLAGGER

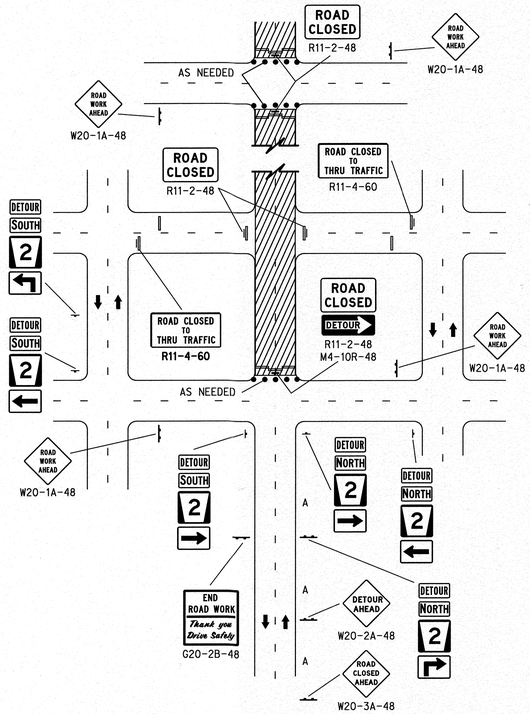
✳SIGNS AND CONES ARE SUBSIDIARY TO THE FLAGGING OPERATION.



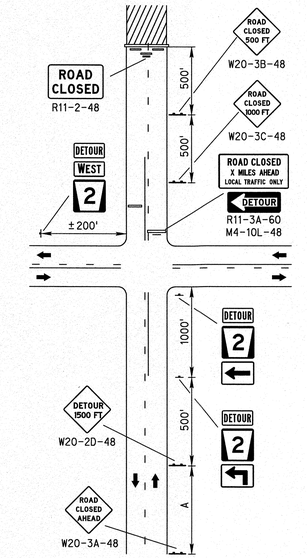
SHOULDER OR PARKING LANE CLOSED



WORK IN CENTER OF ROAD WITH LOW TRAFFIC VOLUMES



ROAD CLOSED AT DETOUR



ROAD CLOSED BEYOND DETOUR

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- TUBULAR POST
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- FLAGGER
- xxxx PAVEMENT MARKING REMOVAL

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.

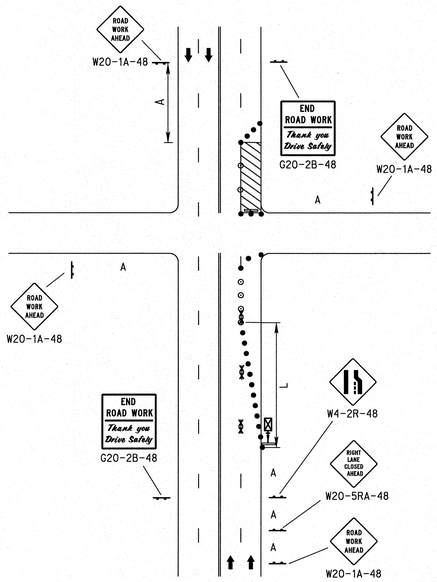
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

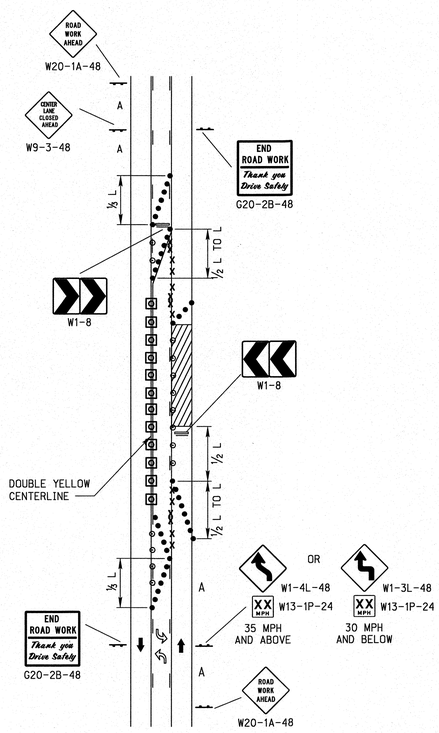
NOTES

1. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
2. MINIMUM WIDTH OF TRAVELLED LANE SHALL BE AS REQUIRED BY THE ENGINEER.
3. FLASHING ARROW PANEL REQUIRED ON ALL ROADWAYS WITH POSTED SPEED LIMIT 45 MPH OR HIGHER. THE USE OF A FLASHING ARROW PANEL IS OPTIONAL ON ROADWAYS WITH A POSTED SPEED OF 40 MPH OR LOWER.
4. LONG-TERM FLASHING ARROW PANELS IN URBAN RESIDENTIAL AREAS WHERE DIESEL ENGINE NOISE WILL BE DISRUPTIVE TO RESIDENTS, MAY BE REQUIRED TO OPERATE BY 120 VAC, OR IF SIGHT DISTANCE ALLOWS, A SOLAR POWERED ARROW PANEL MAY BE USED.
5. FOR SHORT-TERM WORK (LESS THAN 24 HOURS) SIGN G20-2B-48 (END ROAD WORK, THANK YOU, DRIVE SAFELY) MAY BE OMITTED.
6. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT (S). WHERE CHANNELIZING DEVICES ARE USED ALONG THE WORK AREA, THE SPACING MAY BE INCREASED TO THE DISTANCE IN FEET EQUAL TO THE SPEED LIMIT, DOUBLED (2 × S). SEE "TAPER FORMULA" TABLE FOR MORE INFORMATION.
7. FOR LANE CLOSURES OVER 72 HOURS, ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED. ON ASPHALT SURFACES, DURABLE PAVEMENT MARKINGS MAY BE COVERED WITH APPROVED BLACK TEMPORARY PAVEMENT MARKING TAPE.
8. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS W13-1P SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.

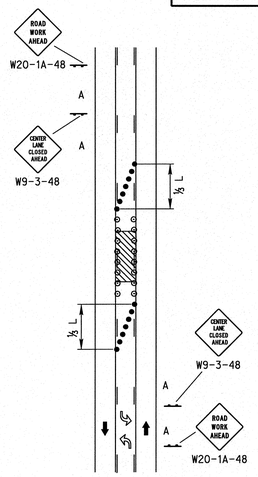
ROAD TYPE	MINIMUM DISTANCE BETWEEN SIGNS
	A
URBAN (LOW SPEED - 25 MPH TO 40 MPH)	100'
URBAN (HIGH SPEED - 45 MPH OR HIGHER)	350'



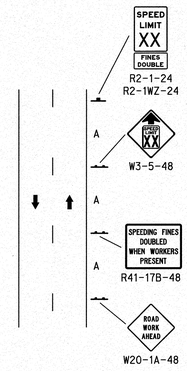
LANE CLOSED NEAR INTERSECTION (RIGHT LANE CLOSED)



3-LANE ROADWAY ONE LANE CLOSED



TWO-WAY LEFT TURN LANE CLOSED



TYPICAL ADVANCED SIGNING

REV. NO.	DATE	DESCRIPTION OF REVISION
R4	JUL 20	ADDED NOTE TO SHEET ONE
R3	JAN 19	TOOK OUT 1/2 L ON SHEET 2
R2	JAN 18	NDOR BORDER TO NDOT BORDER

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 924-R4

URBAN TRAFFIC CONTROL PLAN

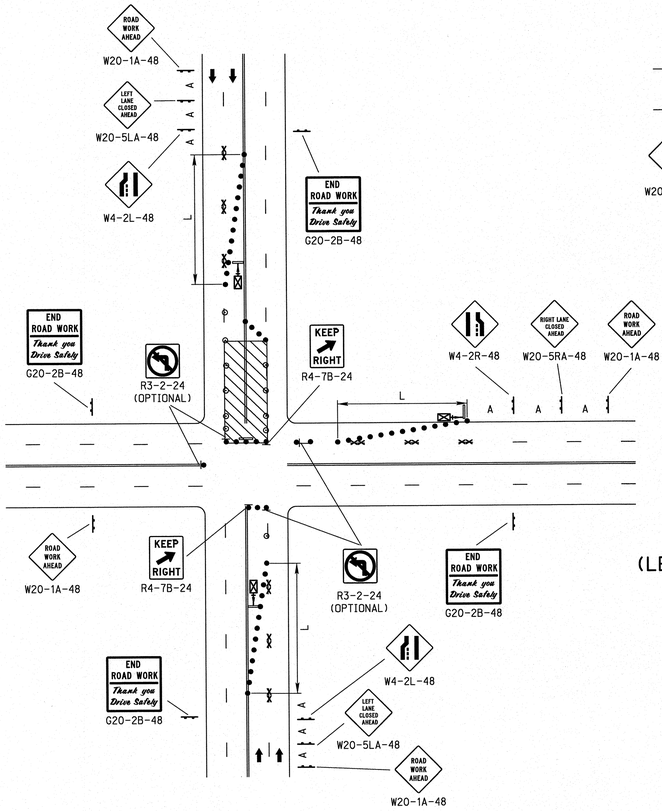
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

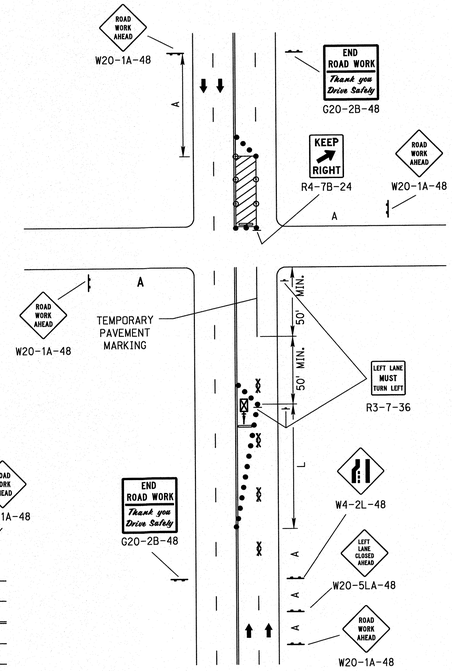
3/31/2020
DATE

ORIGINAL:
FEBRUARY 1, 2010
DATE

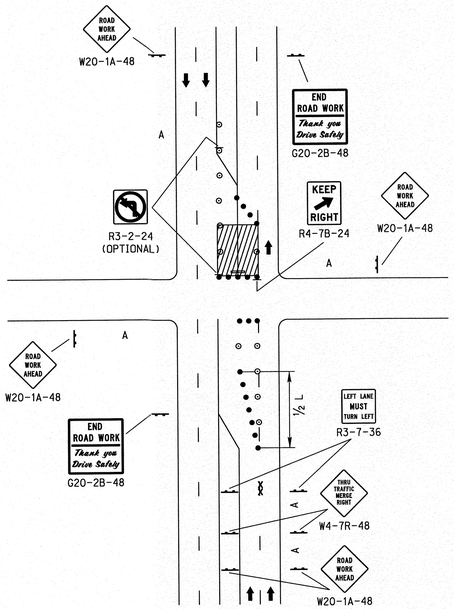
ROADWAY DESIGN DIVISION



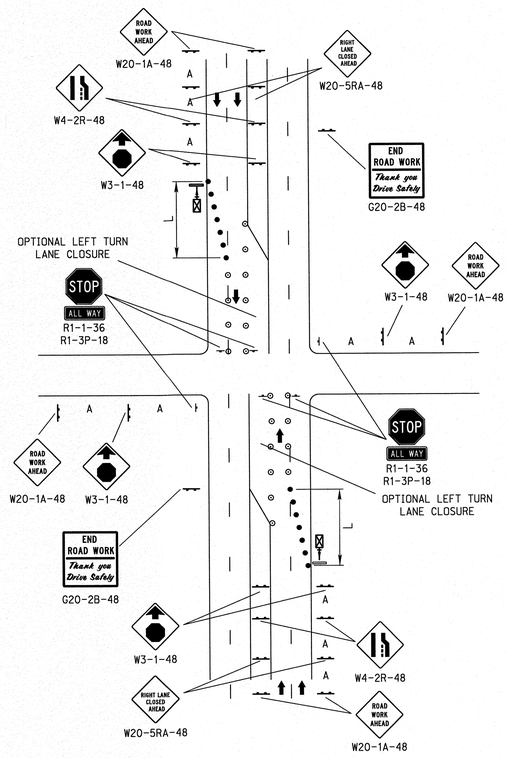
4 LANE UNDIVIDED ROADWAY
CENTER LANES CLOSED
NEAR INTERSECTION



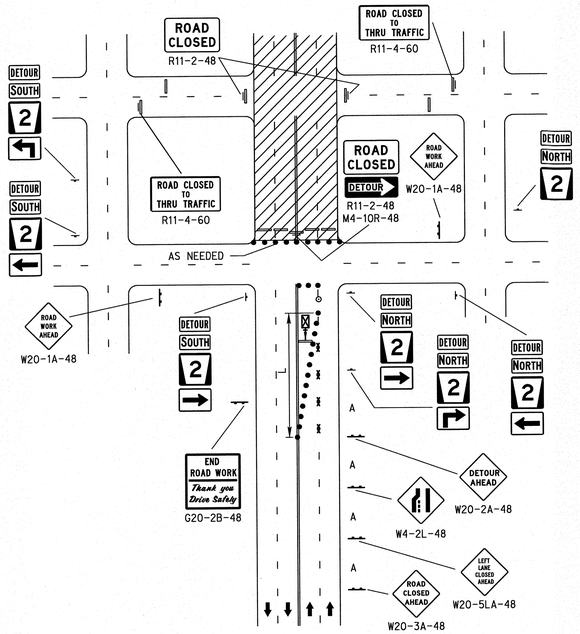
LANE CLOSED NEAR INTERSECTION
(LEFT LANE CLOSURE FORMING A TURNBAY)



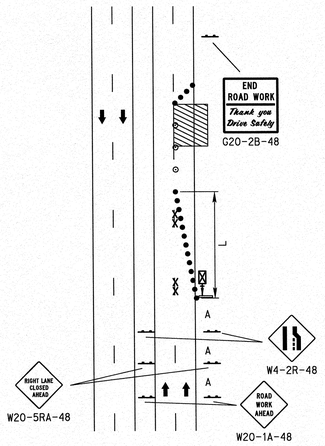
4 LANE DIVIDED ROADWAY
CENTER LANES CLOSED
NEAR INTERSECTION



TEMPORARY ALL-WAY STOP
FOR SIGNAL WORK



ROAD CLOSED AT DETOUR
(OPTIONAL LANE CLOSURE)



DIVIDED ROADWAY
ONE LANE CLOSED

ROAD TYPE	MINIMUM DISTANCE BETWEEN SIGNS
	A
URBAN (LOW SPEED - 25 MPH TO 40 MPH)	100'
URBAN (HIGH SPEED - 45 MPH OR HIGHER)	350'

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- TUBULAR POST
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- FLAGGER
- xxxx PAVEMENT MARKING REMOVAL

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

REV. NO.	DATE	DESCRIPTION OF REVISION
R4	JUL 20	ADDED NOTE TO SHEET ONE
R3	JAN 19	TOOK OUT 1/2 L ON SHEET 2
R2	JAN 18	NDOR BORDER TO NDOT BORDER

NEBRASKA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN NO. 924-R4

URBAN TRAFFIC CONTROL PLAN

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

DANIEL J. WADDLE E-6289 PROFESSIONAL CIVIL ENGINEER STATE OF NEBRASKA

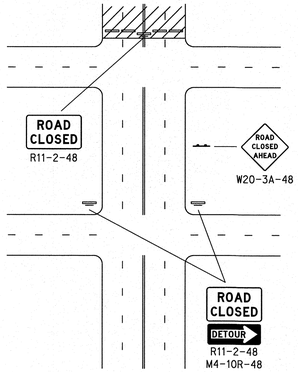
3/31/2020
DATE

ORIGINAL:
FEBRUARY 1, 2010
DATE

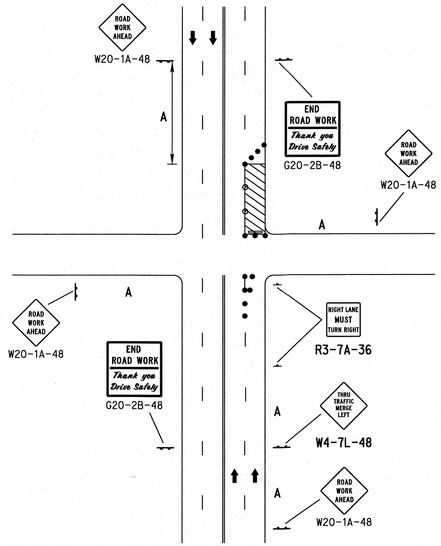
2
3

Computer: NDOTDESIGN134
Date: 16-MAR-2020 10:35
File: 9240Qe04.dgn

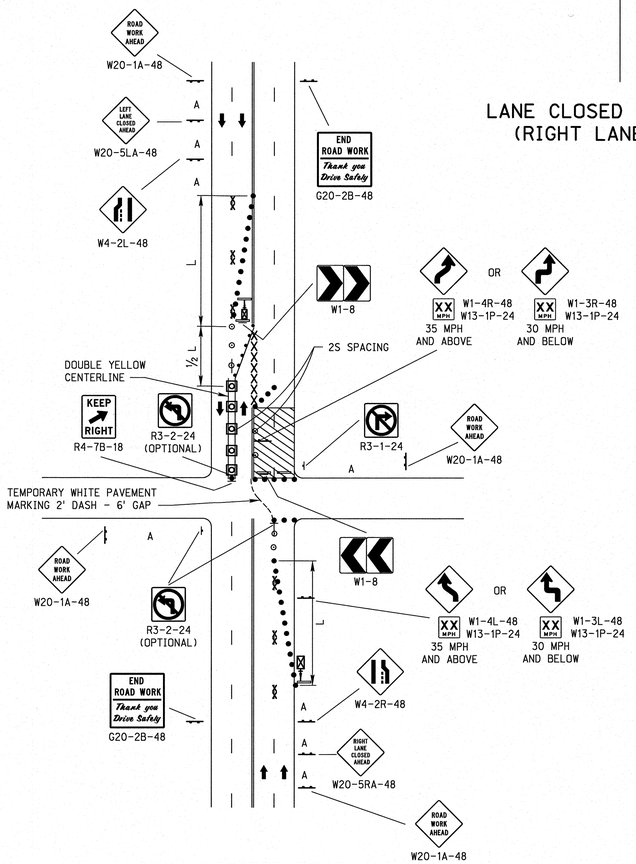
ROADWAY DESIGN DIVISION



ROAD CLOSED
BEYOND DETOUR



LANE CLOSED NEAR INTERSECTION
(RIGHT LANE REMAINS OPEN)



4 LANE UNDIVIDED ROADWAY
TWO LANES CLOSED NEAR INTERSECTION

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- TUBULAR POST
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- FLAGGER
- xxxx PAVEMENT MARKING REMOVAL

TAPER FORMULA

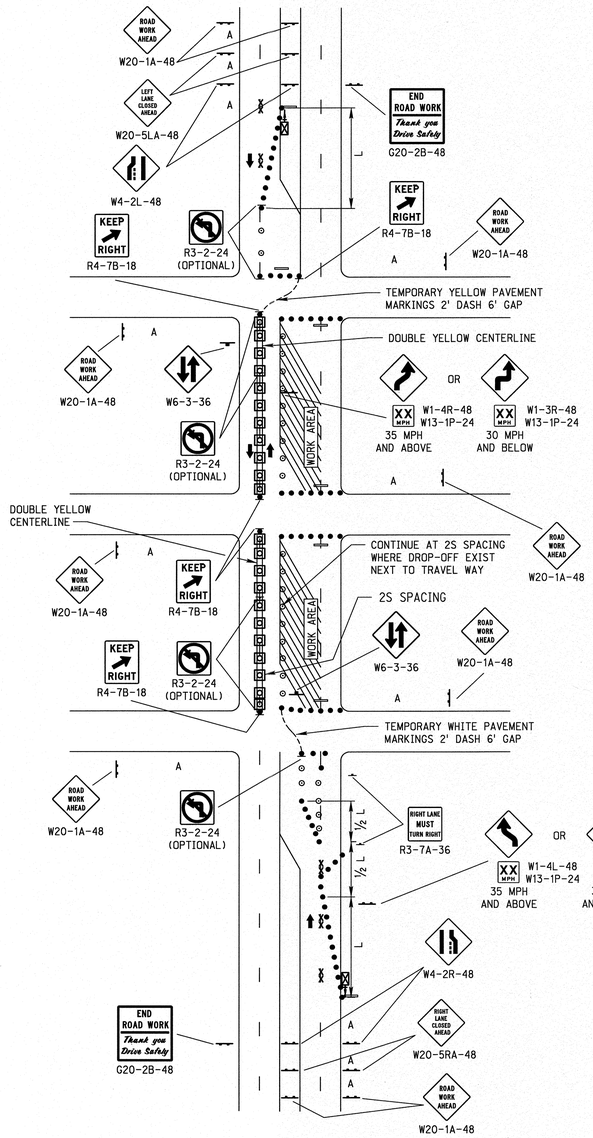
L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.

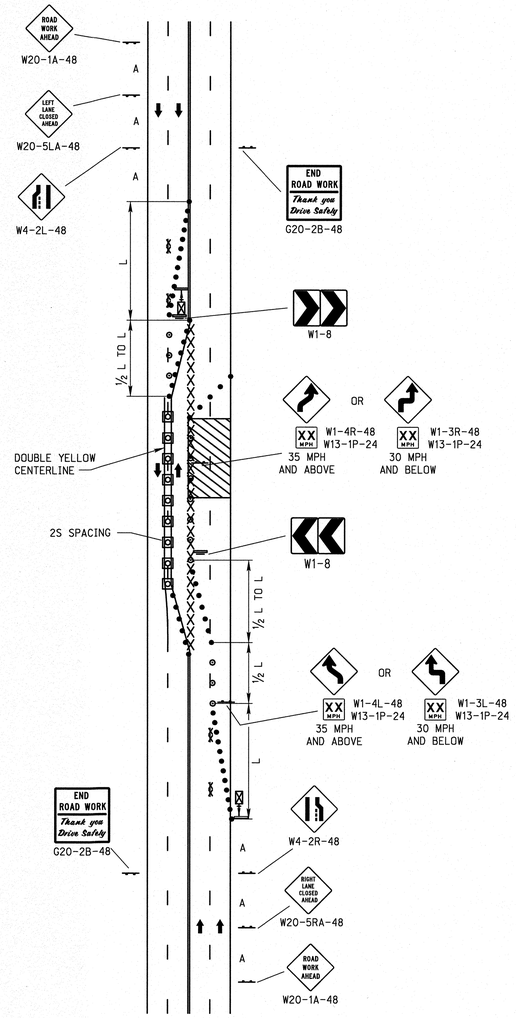
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).



4-LANE DIVIDED
HALF CLOSED

ROAD TYPE	MINIMUM DISTANCE BETWEEN SIGNS
	A
URBAN (LOW SPEED - 25 MPH TO 40 MPH)	100'
URBAN (HIGH SPEED - 45 MPH OR HIGHER)	350'



4-LANE UNDIVIDED
2 LANES CLOSED

REV. NO.	DATE	DESCRIPTION OF REVISION
R4	JUL 20	ADDED NOTE TO SHEET ONE
R3	JAN 19	TOOK OUT 1/2 L ON SHEET 2
R2	JAN 18	NDOR BORDER TO NDOT BORDER

NEBRASKA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN NO. 924-R4

URBAN TRAFFIC CONTROL PLAN

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

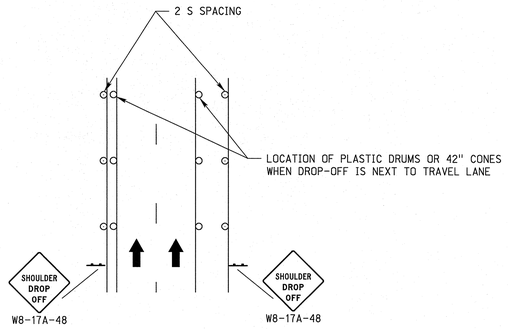
PROFESSIONAL CIVIL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

3/31/2020
DATE

ORIGINAL:
FEBRUARY 1, 2010
DATE

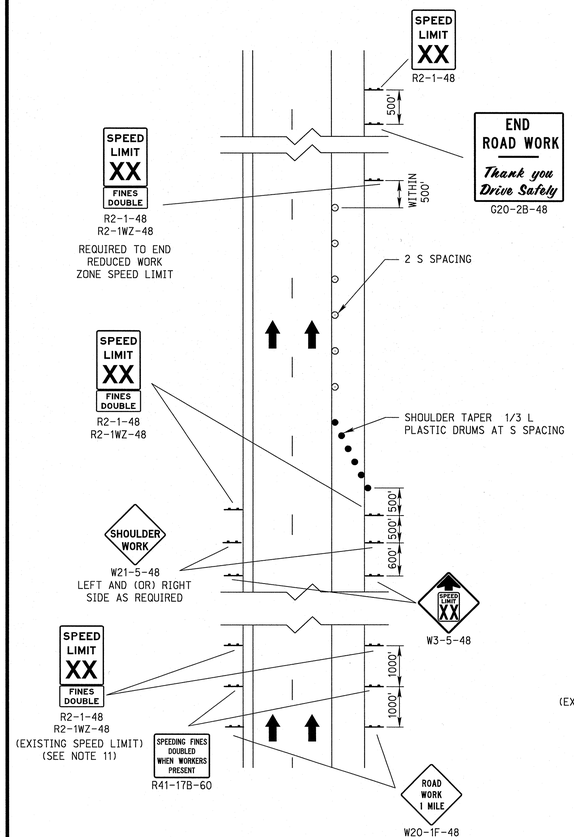
3
3

Computer: NDOTDESIGN134
Date: 16-MAR-2020 10:35
File: 92400e04.dgn



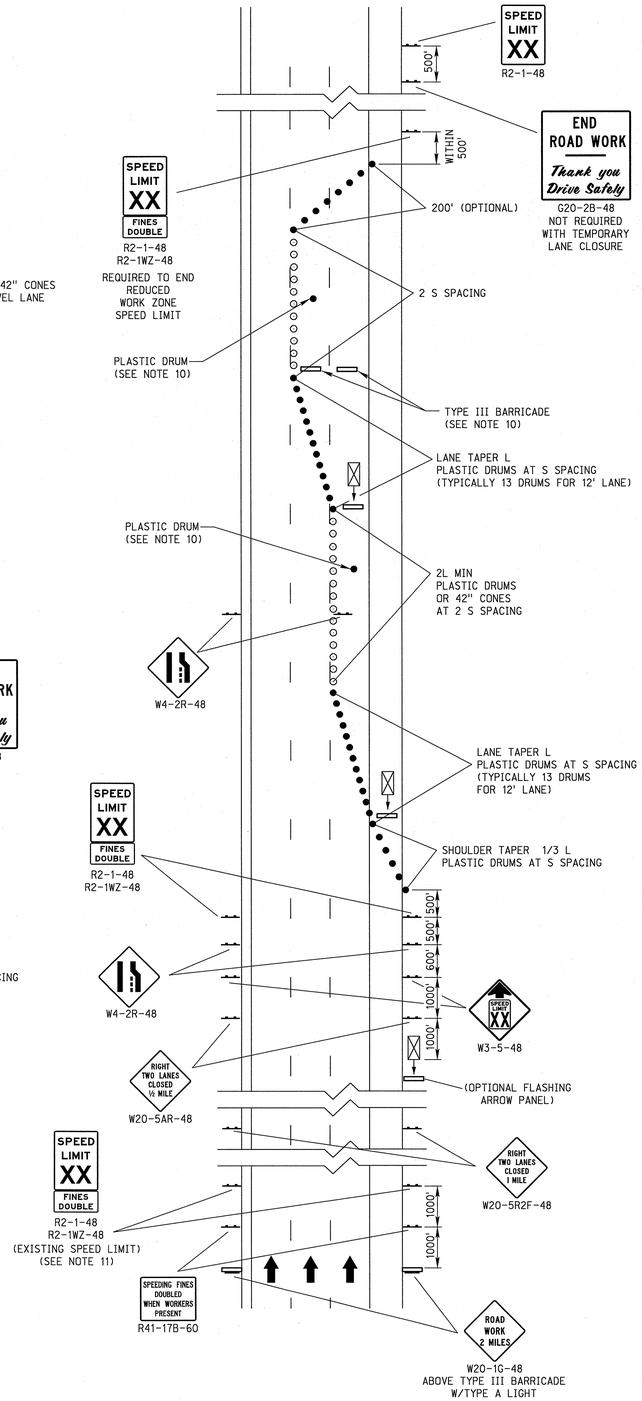
SHOULDER DROP-OFF

W8-17A-48 EVERY MILE WHERE THERE IS A DROP-OFF AT LEFT AND (OR) RIGHT PAVEMENT EDGE

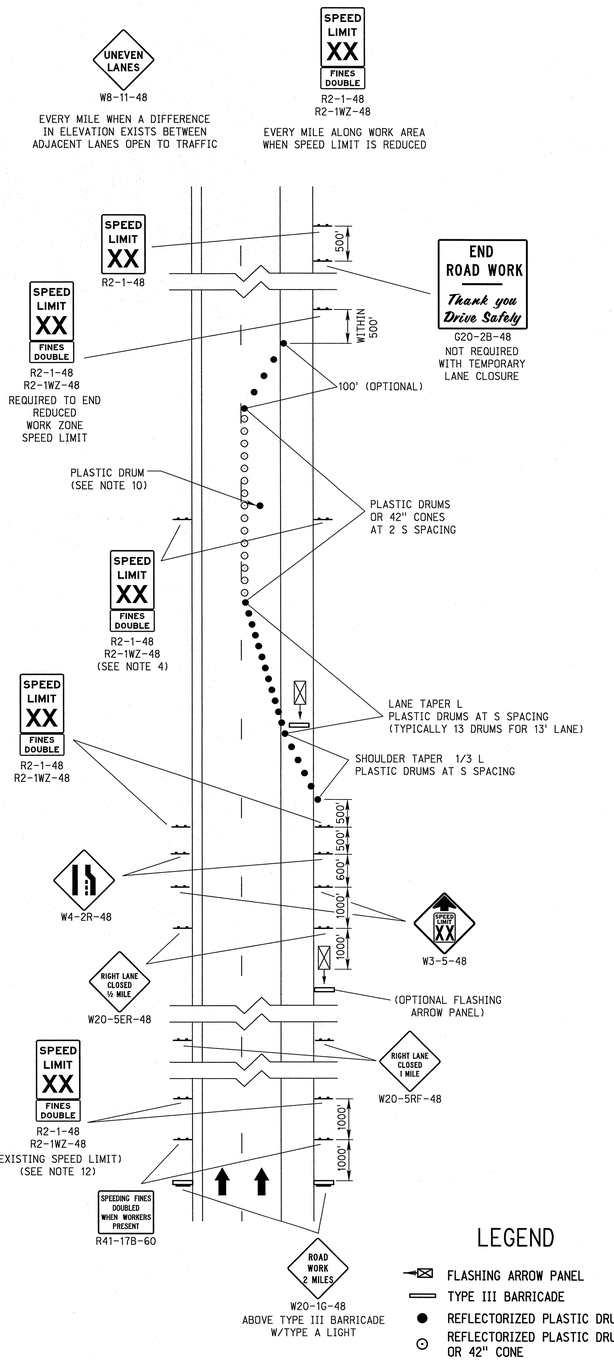


SHOULDER CLOSURE

FOR USE ON ROADWAYS WITH 8' AND WIDER PAVED SHOULDER



TWO LANE CLOSURE



SINGLE LANE CLOSURE

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN

NOTES:

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENCROACHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. WHEN A REDUCED SPEED LIMIT IS USED, IT SHALL COMPLY WITH THE REQUIREMENTS OF NDOT OPERATING INSTRUCTION 60-18, WORK ZONE SPEED LIMITS.
4. SPEED LIMIT SIGNS R2-1 SHALL BE 48" X 60" WHEN USED ON INTERSTATES OR FREEWAYS. 30" X 36" SIGNS MAY BE USED ON ALL OTHER ROADWAYS. SPEED LIMIT SIGNS (IF REQ'D FOR WORK) SHALL BE INSTALLED EVERY MILE THRU THE WORK AREA, WHEN THE SPEED LIMIT IS REDUCED.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. FOR FOG SEALS, SLURRY SEALS, ARMOR COATS, CRACK AND JOINT SEALING WHERE ALL LANES OF TRAFFIC WILL BE REOPENED BEFORE NIGHT, THE CONTRACTOR MAY USE 36" OR 42" CONES IN PLACE OF PLASTIC DRUMS ALONG THE WORK AREA. WHEN USED 36" CONES SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
7. PLASTIC DRUMS SHALL BE REQUIRED TO BE PLACED IN FRONT OF LANE EXCAVATIONS IN PAVEMENT AND SLAB REPAIR, AND OTHER WORK ACTIVITIES AS DIRECTED BY THE ENGINEER. PLASTIC DRUMS SHALL BE REQUIRED FOR ALL TAPERS AND LANE SHIFTS.
8. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. PLACE A PLASTIC DRUM OR TYPE III BARRICADE AS DIRECTED BY THE ENGINEER IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "SPEEDING FINES DOUBLED WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF W3-5 "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.
12. SIGNS W20-5E, W20-5RF AND W20-1G MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACING RESPECTIVELY IN LOW VOLUME AREA AT THE DIRECTION OF THE ENGINEER.

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 926

TYPICAL LANE CLOSURE PLAN FOR MULTILANE ROADWAYS

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER
DANIEL J. WADDLE
E-6289
STATE OF NEBRASKA

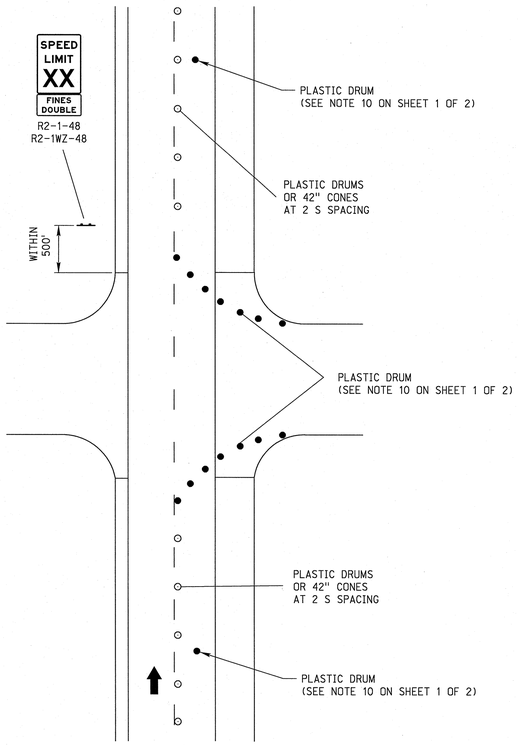
MARY BURROUGHS
10/23/18
DATE

ORIGINAL:
JANUARY 2019
DATE

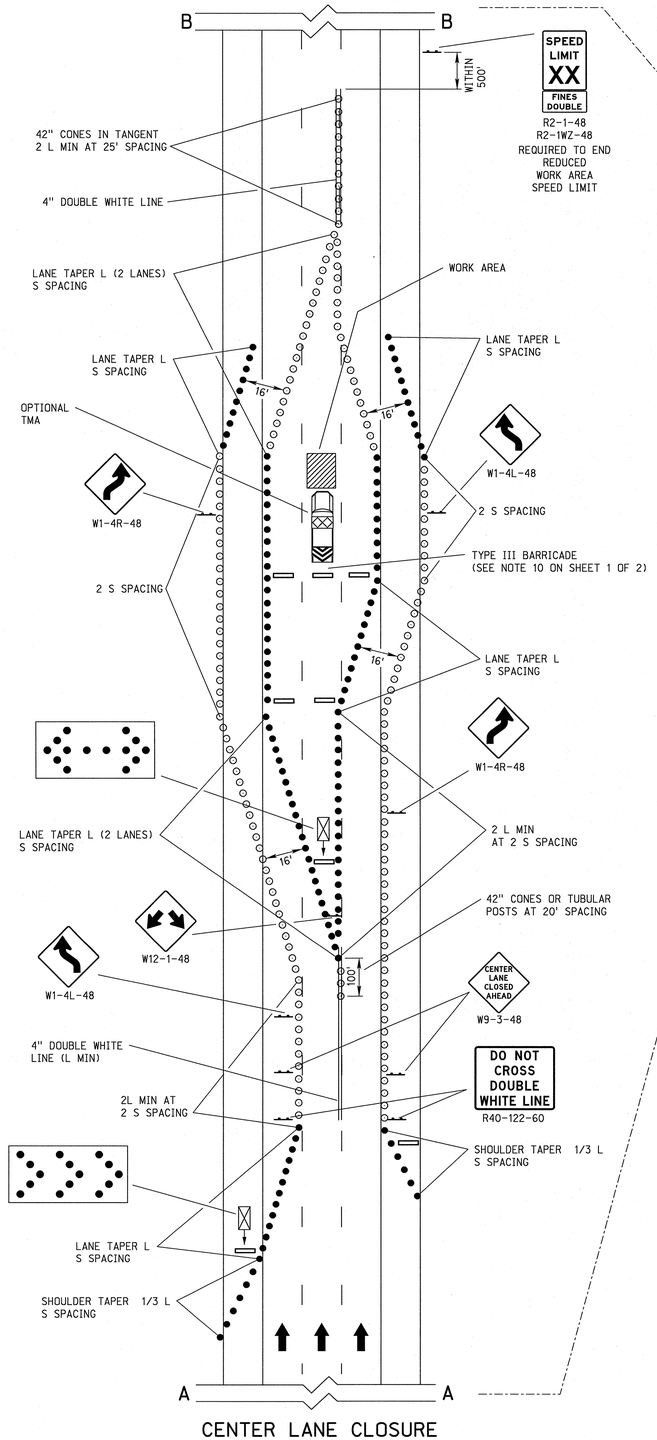
1
2

File: 92600e00.dgn
Scale: 1:100
Date: 13-SEP-2018 08:26
Computer: NDOTDESIGN134

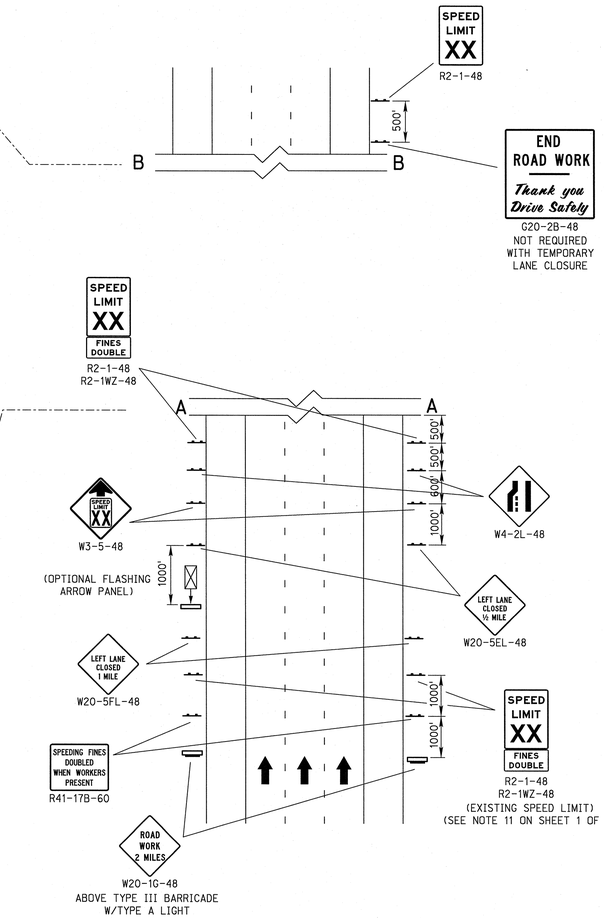
ROADWAY DESIGN DIVISION
Computer: NDOTDESIGN34
Date: 13-SEP-2018 08:26
File: 92600e00.dgn
Scale: 1:100



SIDE ROAD ENTRY WITHIN LANE CLOSURE



CENTER LANE CLOSURE



LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- TRUCK MOUNTED ATTENUATOR (TMA)

REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 926

TYPICAL LANE CLOSURE PLAN FOR MULTILANE ROADWAYS

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

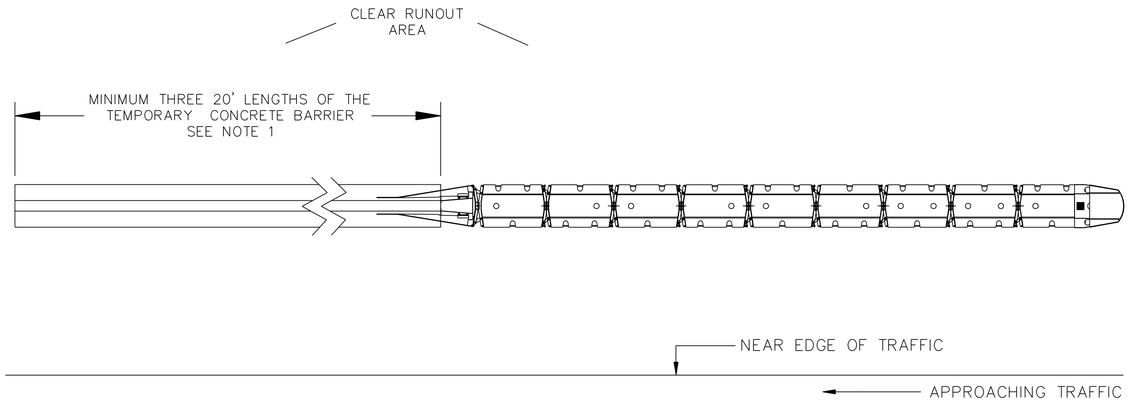
PROFESSIONAL CIVIL ENGINEER — DANIEL J. WADDLE E-6289 — STATE OF NEBRASKA

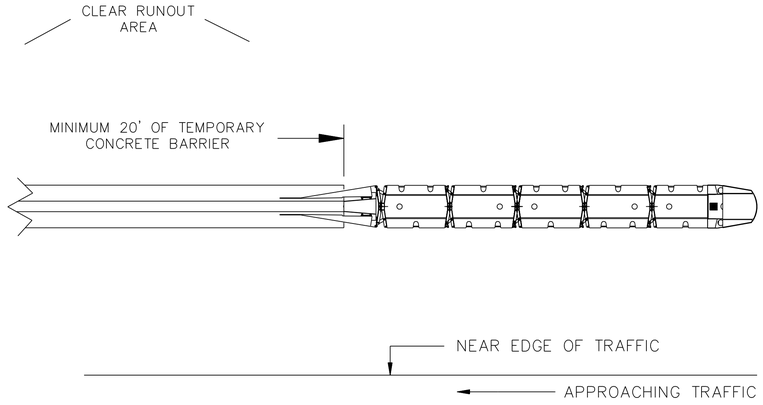
MARY BURROUGHS
10/23/18
DATE

ORIGINAL: JANUARY 2019
DATE

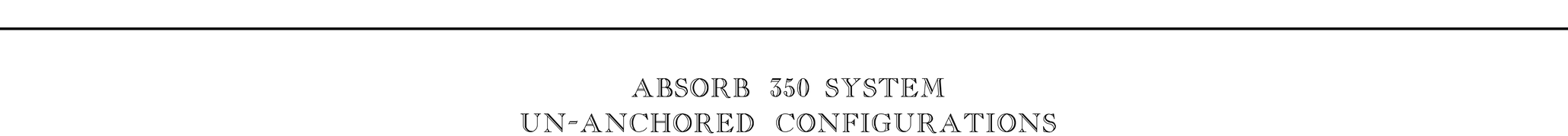
2/2

ABSORB 350 SYSTEM
UN-ANCHORED CONFIGURATIONS

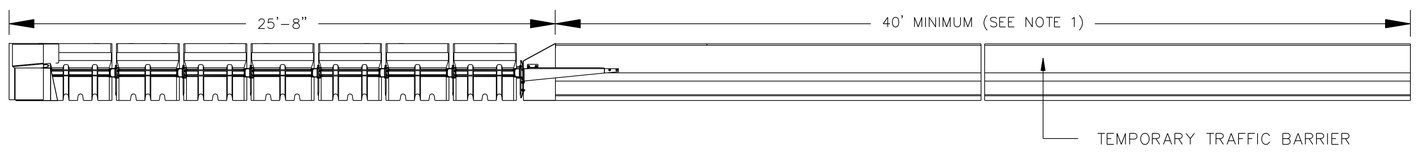




ABSORB 350 SYSTEM TL-3 (60 MPH)



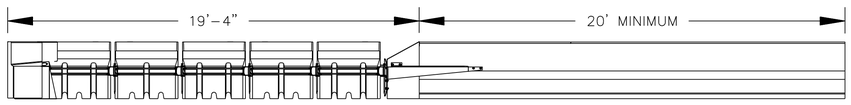
ABSORB 350 SYSTEM (55 MPH)



NOTES:

1. MINIMUM LENGTHS OF TEMPORARY CONCRETE PROTECTION BARRIER ARE BASED UPON THE TEMPORARY CONCRETE PROTECTION BARRIER BEING UN-ANCHORED.
2. THE ABSORB 350 SYSTEM IS TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.
3. THE ABSORB 350 SYSTEM DOES NOT REQUIRE ATTACHMENT TO A FOUNDATION; IT CAN BE INSTALLED ON FIRM SOIL, STABLE BASE, ASPHALT, OR CONCRETE SURFACES WITH A CROSS-SLOPE OR A GRADE OF 1:8 OR FLATTER.

ABSORB 350 SYSTEM TL-2 (45 MPH)



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Project Number
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C.N. #####

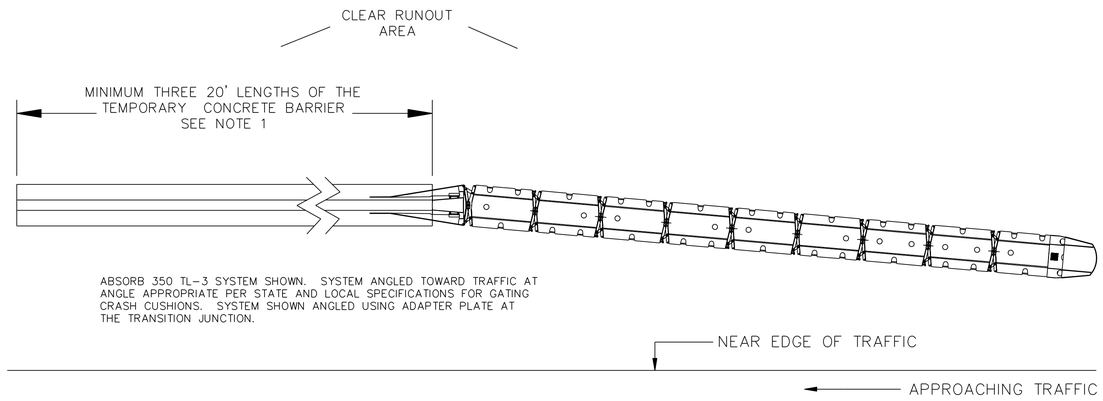
ABSORB® 350 SYSTEM
INSTALLATION CONFIGURATIONS
UN-ANCHORED BARRIER

DESIGNED BY AJM
DATE 08/23

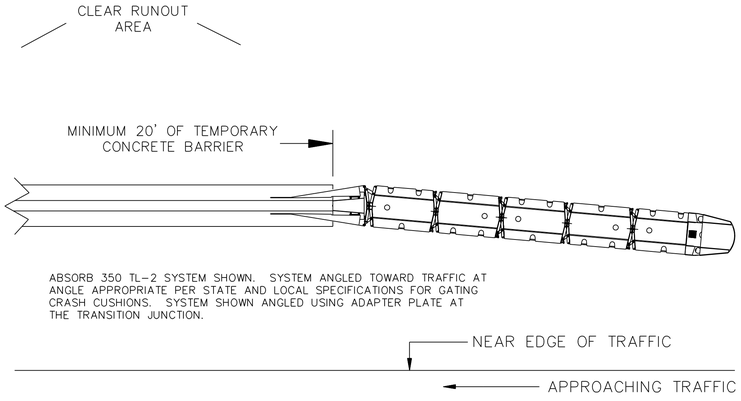
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/4

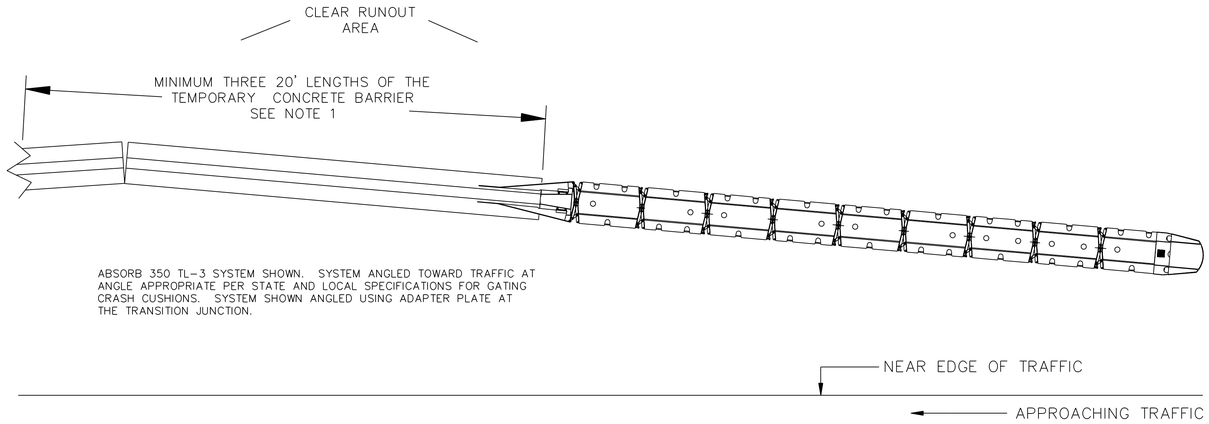
ABSORB 350 SYSTEM
UN-ANCHORED & ANGLED CONFIGURATIONS



ABSORB 350 TL-3 SYSTEM SHOWN. SYSTEM ANGLED TOWARD TRAFFIC AT ANGLE APPROPRIATE PER STATE AND LOCAL SPECIFICATIONS FOR GATING CRASH CUSHIONS. SYSTEM SHOWN ANGLED USING ADAPTER PLATE AT THE TRANSITION JUNCTION.

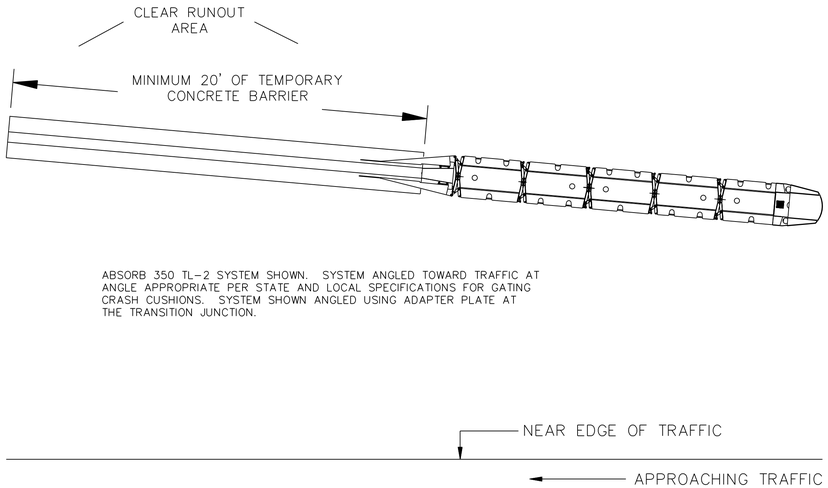


ABSORB 350 TL-2 SYSTEM SHOWN. SYSTEM ANGLED TOWARD TRAFFIC AT ANGLE APPROPRIATE PER STATE AND LOCAL SPECIFICATIONS FOR GATING CRASH CUSHIONS. SYSTEM SHOWN ANGLED USING ADAPTER PLATE AT THE TRANSITION JUNCTION.



ABSORB 350 TL-3 SYSTEM SHOWN. SYSTEM ANGLED TOWARD TRAFFIC AT ANGLE APPROPRIATE PER STATE AND LOCAL SPECIFICATIONS FOR GATING CRASH CUSHIONS. SYSTEM SHOWN ANGLED USING ADAPTER PLATE AT THE TRANSITION JUNCTION.

NCHRP REPORT 350 TL-3 (60 MPH)



ABSORB 350 TL-2 SYSTEM SHOWN. SYSTEM ANGLED TOWARD TRAFFIC AT ANGLE APPROPRIATE PER STATE AND LOCAL SPECIFICATIONS FOR GATING CRASH CUSHIONS. SYSTEM SHOWN ANGLED USING ADAPTER PLATE AT THE TRANSITION JUNCTION.

NCHRP REPORT 350 TL-2 (45 MPH)

NOTES:

1. MINIMUM LENGTHS OF TEMPORARY CONCRETE PROTECTION BARRIER ARE BASED UPON THE TEMPORARY CONCRETE PROTECTION BARRIER BEING UN-ANCHORED.
2. THE ABSORB 350 SYSTEM IS TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.
3. THE ABSORB 350 SYSTEM DOES NOT REQUIRE ATTACHMENT TO A FOUNDATION; IT CAN BE INSTALLED ON FIRM SOIL, STABLE BASE, ASPHALT, OR CONCRETE SURFACES WITH A CROSS-SLOPE OR A GRADE OF 1:8 OR FLATTER.

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:05
FILE: Absorb350.dgn

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Project Number
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C.N. #####

ABSORB® 350 SYSTEM
INSTALLATION CONFIGURATIONS
UN-ANCHORED & ANGLED BARRIER

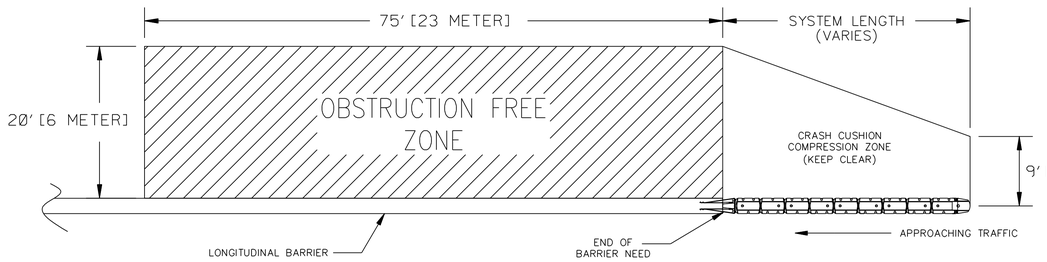
DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 2/4

ABSORB 350 SYSTEM
ROADSIDE & BRIDGE TYPICALS

ROADSIDE INSTALLATION - GENERAL

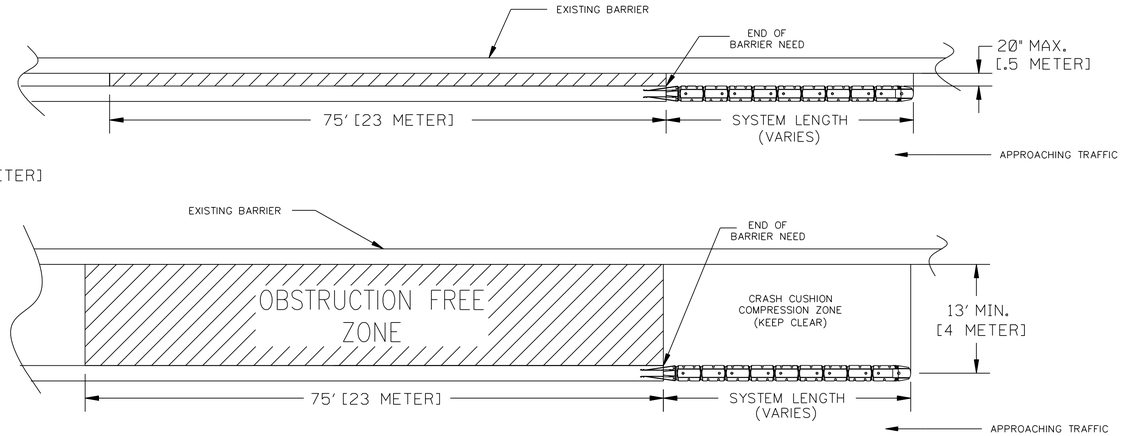


NOTE: ABSORB 350 SYSTEM TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.

AN APPROPRIATE OBSTRUCTION-FREE ZONE MUST BE ESTABLISHED ADJACENT OT THE ABSORB 350 SYSTEM. THE OBSTRUCTION-FREE ZONE DEPICTED ON THIS SHEET REPRESENTS THE MINIMUM RECOMMENDED RECOVERY AREA OF APPROXIMATELY 75 FT LONG BY 20 FT WIDE.

IN ADDITION TO THE RECOMMENDED OBSTRUCTION-FREE ZONE, AN AREA DIRECTLY ADJACENT TO THE CRASH CUSHION (CRASH CUSHION COMPRESSION ZONE) MUST BE KEPT CLEAR.

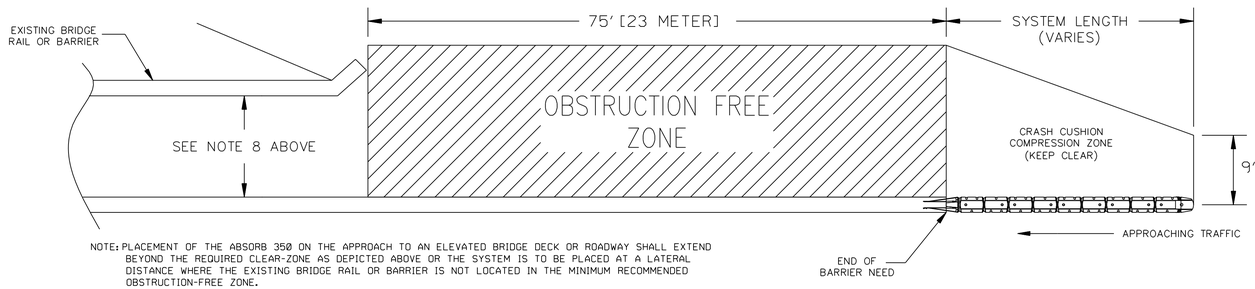
ROADSIDE INSTALLATION - ADJACENT TO EXISTING BARRIER



NOTE: PLACEMENT OF THE ABSORB 350 DIRECTLY ADJACENT TO AN EXISTING PERMANENT OR TEMPORARY BARRIER SHALL BE WITHIN A MAXIMUM 20 INCHES (0.5 METER) OR MINIMUM 13FT (4 METER) AS SHOWN ABOVE.

THE AREA BETWEEN THE ABSORB 350, LONGITUDINAL BARRIER ATTACHED TO THE ABSORB 350, AND THE EXISTING BRIDGE RAIL OR BARRIER SHALL BE KEPT CLEAR FOR THE LENGTH OF THE REQUISITE OBSTRUCTION-FREE ZONE IN ADDITION TO AN AREA DIRECTLY ADJACENT TO THE CRASH CUSHION (CRASH CUSHION COMPRESSION ZONE).

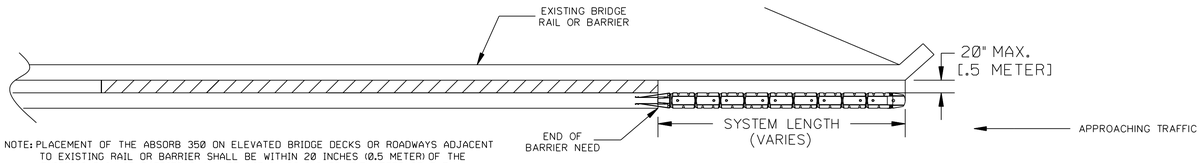
ROADSIDE INSTALLATION - APPPROACH OF ELEVATED BRIDGES OR ROADWAYS



NOTE: PLACEMENT OF THE ABSORB 350 ON THE APPROACH TO AN ELEVATED BRIDGE DECK OR ROADWAY SHALL EXTEND BEYOND THE REQUIRED CLEAR-ZONE AS DEPICTED ABOVE OR THE SYSTEM IS TO BE PLACED AT A LATERAL DISTANCE WHERE THE EXISTING BRIDGE RAIL OR BARRIER IS NOT LOCATED IN THE MINIMUM RECOMMENDED OBSTRUCTION-FREE ZONE.

IN ADDITION TO THE RECOMMENDED OBSTRUCTION-FREE ZONE, AN AREA DIRECTLY ADJACENT TO THE CRASH CUSHION (CRASH CUSHION COMPRESSION ZONE) MUST BE KEPT CLEAR.

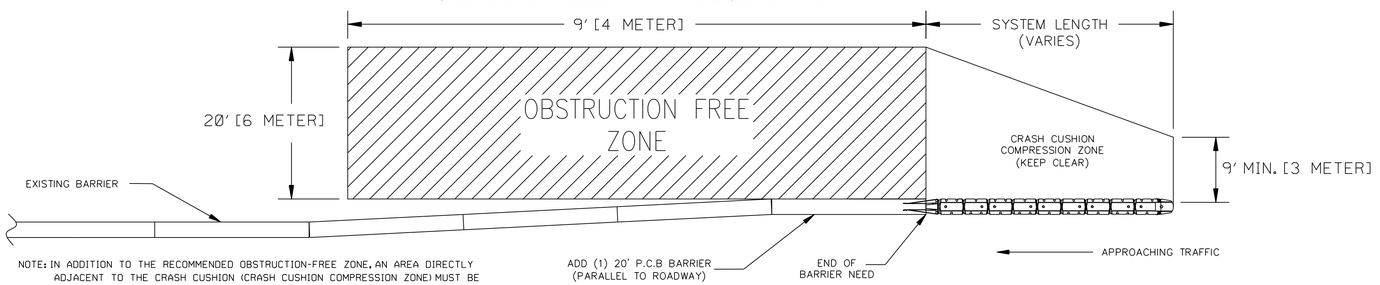
ROADSIDE INSTALLATION - ELEVATED BRIDGES OR ROADWAYS



NOTE: PLACEMENT OF THE ABSORB 350 ON ELEVATED BRIDGE DECKS OR ROADWAYS ADJACENT TO EXISTING RAIL OR BARRIER SHALL BE WITHIN 20 INCHES (0.5 METER) OF THE EXISTING RAIL OR BARRIER SHALL BE WITHIN 20 INCHES (0.5 METER) OF THE EXISTING RAIL OR BARRIER.

THE AREA BETWEEN THE ABSORB 350, LONGITUDINAL BARRIER ATTACHED TO THE ABSORB 350, AND THE EXISTING BRIDGE RAIL OR BARRIER SHALL BE KEPT CLEAR FOR THE LENGTH OF THE REQUISITE OBSTRUCTION-FREE ZONE IN ADDITION TO AN AREA DIRECTLY ADJACENT TO THE CRASH CUSHION (CRASH CUSHION COMPRESSION ZONE).

ROADSIDE INSTALLATION - TAPERED END SECTIONS



NOTE: IN ADDITION TO THE RECOMMENDED OBSTRUCTION-FREE ZONE, AN AREA DIRECTLY ADJACENT TO THE CRASH CUSHION (CRASH CUSHION COMPRESSION ZONE) MUST BE KEPT CLEAR

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FILE: Absorb350.dgn

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Project Number
###-#(###)

C.N. #####

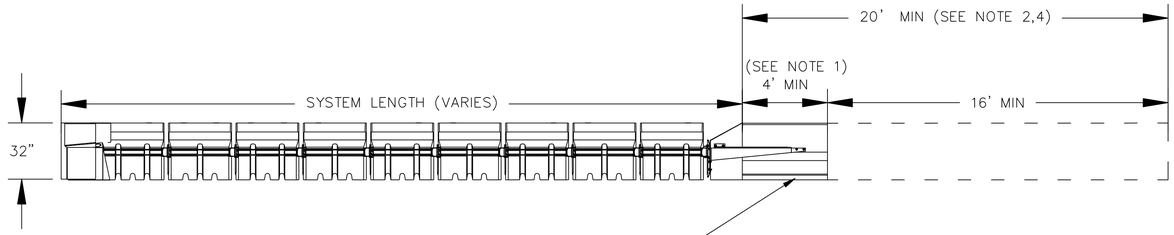
ABSORB® 350 SYSTEM
INSTALLATION CONFIGURATIONS
ROADSIDE & BRIDGE TYPICALS

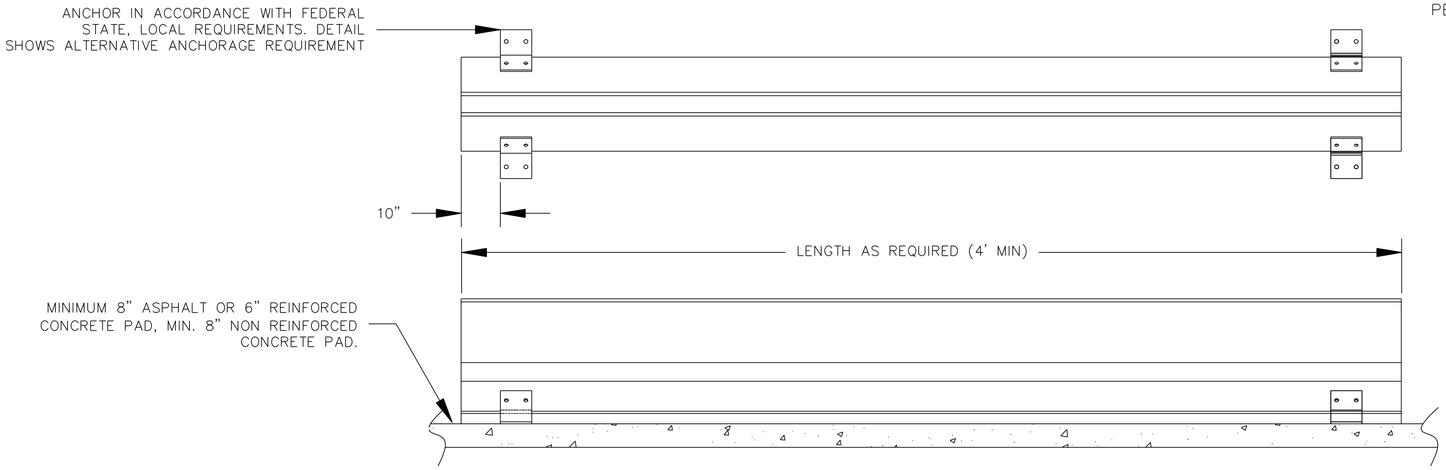
DESIGNED BY AJM
DATE 08/23

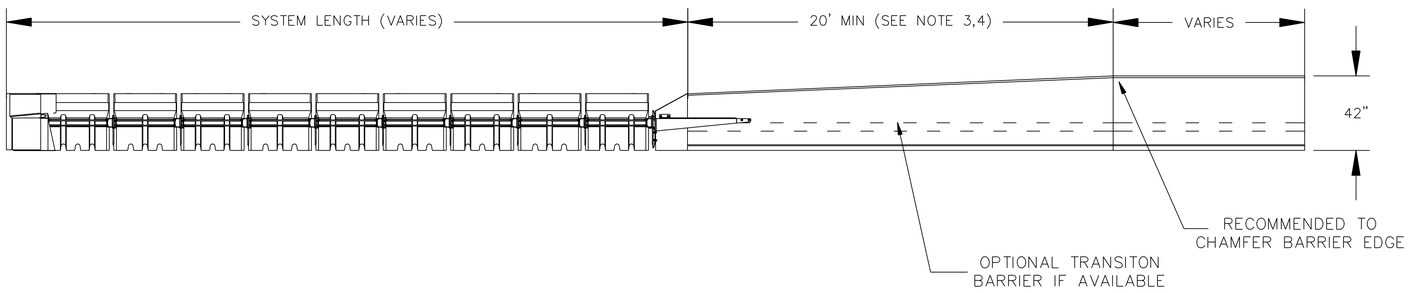
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

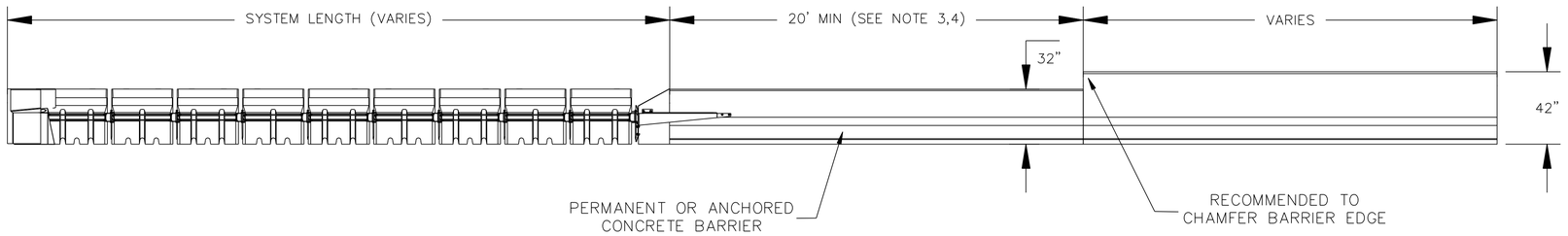
PLAN SHEET NUMBER 3/4

ABSORB 350 SYSTEM
ANCHORED OR PERMANENT CONCRETE BARRIER









NOTES:

1. IF TEMPORARY CONCRETE PROTECTION BARRIER IS ANCHORED TO THE ROADWAY, MINIMUM CONCRETE PROTECTION BARRIER LENGTH SHALL BE 4 FT. ANCHORS SHOULD BE ABLE TO RESIST A MOMENT ABOUT THE NEUTRAL AXIS OF THE BARRIER OF 62,000 FT-LBS.
2. CONCRETE PROTECTION BARRIER FOLLOWING THE ABSORB 350 SYSTEM SHOULD BE A MAXIMUM OF 32 INCHES IN HEIGHT FOR A MINIMUM OF 20 FT.
3. WHEN TRANSITIONING TO 42 INCH HEIGHT OR GREATER BARRIER, A MINIMUM TRANSITION OF 20 FT, USING 32 INCH HEIGHT BARRIER, SHALL BE USED.
4. THE AREA ABOVE THE CONCRETE PROTECTION BARRIER SHALL BE CLEAR OF ANY OBSTRUCTIONS FOR A MINIMUM OF 20FT FOLLOWING THE ABSORB 350 SYSTEM.
5. THE ABSORB 350 SYSTEM IS TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.
6. THE ABSORB 350 SYSTEM DOES NOT REQUIRE AN ATTACHMENT TO A FOUNDATION; IT CAN BE LOCATED ON FIRM SOIL, STABLE BASE, ASPHALT, OR CONCRETE SURFACES WITH A CROSS-SLOPE OR A GRADE OF 1:8 OR FLATTER.

XX

Project Number
###-#(###)

C.N. #####

ABSORB® 350 SYSTEM
INSTALLATION CONFIGURATIONS
ANCHORED BARRIER

DESIGNED BY AJM

DATE 08/23

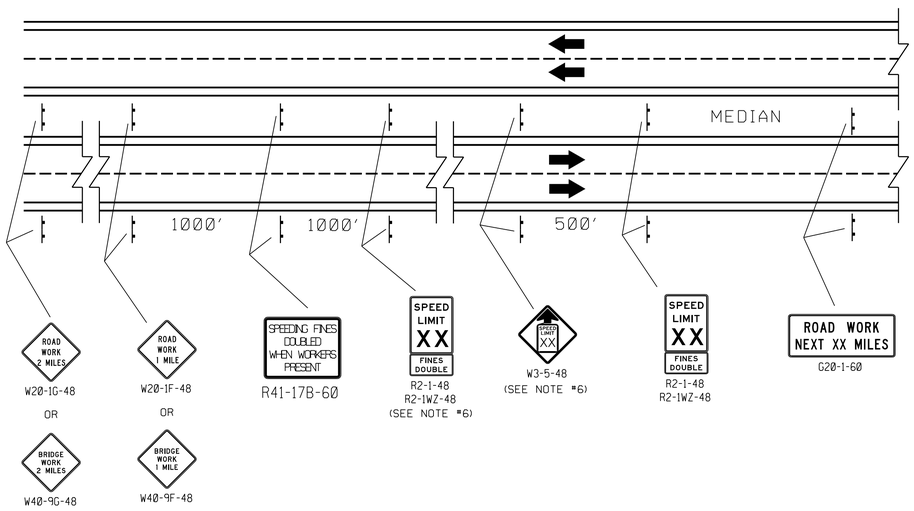
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

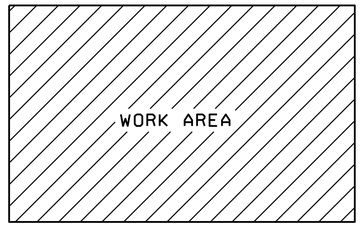
PLAN SHEET NUMBER 4/4

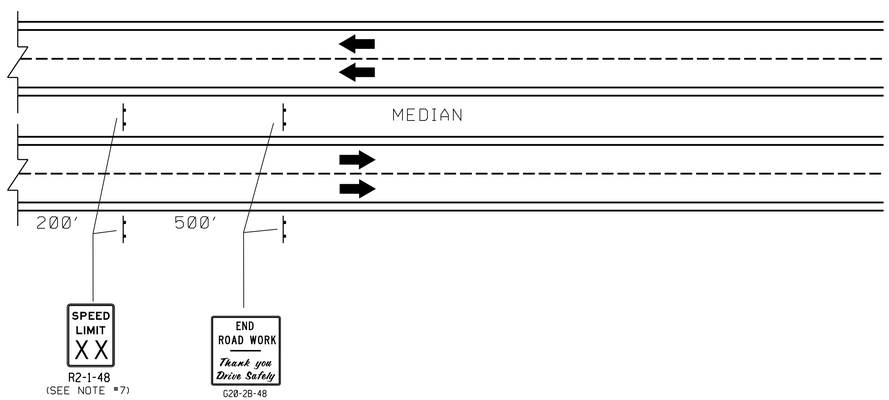
COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:05

FILE: Absorb350.dgn







GENERAL NOTES

1. G20-1 "ROAD WORK NEXT XX MILES" SHOULD BE USED ON ANY CONSTRUCTION PROJECT LONGER THAN 2 MILES.
2. ALL SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
3. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND MAY NOT BE THE SAME AS THE SPEED LIMITS FOR THE ROADWAY OR THE PROJECT. SPEED LIMIT AND DOUBLE FINE SIGNS SHALL BE INSTALLED EVERY MILE THROUGH THE WORK AREA WHEN THE SPEED LIMIT IS REDUCED.
4. FLAGS MAY BE USED TO CALL ATTENTION TO ADVANCE WARNING SIGNS.
5. LANE CLOSURE NOT SHOWN, BUT IS REQUIRED FOR WORK IN DRIVING LANES.
6. WHEN REQUIRED FOR WORK ACTIVITY, THE SPEED LIMIT SHOULD NOT BE REDUCED MORE THAN 10 MPH. REDUCED SPEED LIMIT SIGNS SHALL BE INSTALLED EVERY MILE WHEN SPEED HAS BEEN REDUCED.
7. THIS SIGN NOT REQUIRED IF THE SPEED LIMIT HAS NOT BEEN REDUCED.
8. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
TYPICAL ADVANCE SIGNING TO CONSTRUCTION ZONE

DESIGNED BY AJM
DATE 08/23

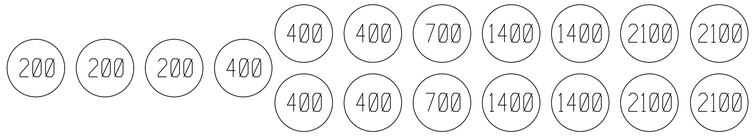
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:02
FILE: Advanced Signing.dgn

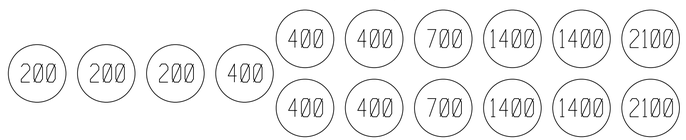
70 and 75 mph

APPROX. WT. 18,000 LBS, LENGTH 38 FT.



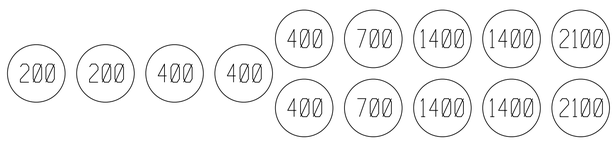
65 mph

APPROX. WT. 13,800 LBS, LENGTH 34.5 FT.



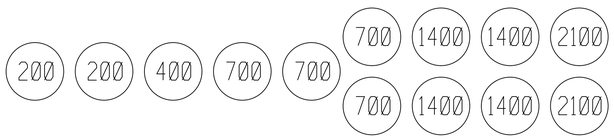
60 mph

APPROX. WT. 13,200 LBS, LENGTH 31 FT.



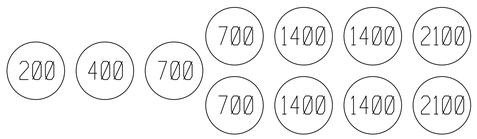
55 mph

APPROX. WT. 13,400 LBS, LENGTH 31 FT.



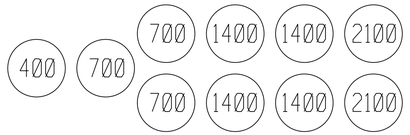
50 mph

APPROX. WT. 12,500 LBS, LENGTH 24 FT.



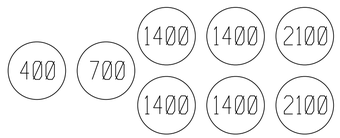
45 mph

APPROX. WT. 12,300 LBS
LENGTH 20.5 FT.



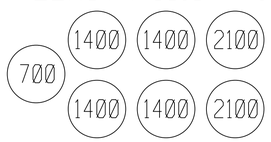
40 mph

APPROX. WT. 10,900 LBS
LENGTH 17 FT.



35 mph

APPROX. WT. 10,500 LBS
LENGTH 13.5 FT.

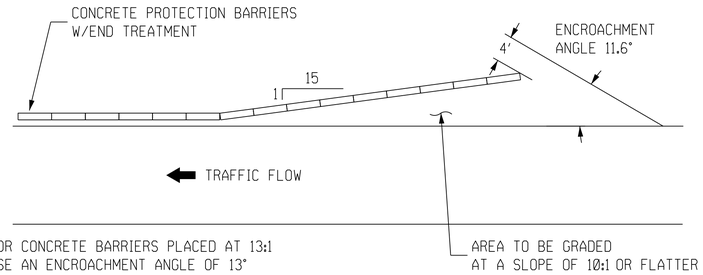


GENERAL NOTES

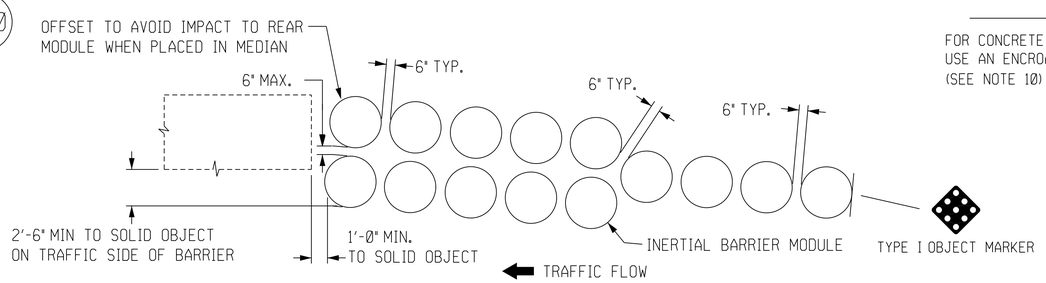
1. THE INERTIAL BARRIER SYSTEM SHALL BE NCHRP 350 OR MASH APPROVED.
2. THE INERTIAL BARRIER SYSTEM SHALL CONSIST OF THE UNITS AS SHOWN FOR THE SPECIFIED ROADWAY SPEED AND ALL HARDWARE AND ATTACHMENTS.
3. ALL MATERIAL FOR THE MODULES AND THE METHOD OF INSTALLATION SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS.
4. THE BARRIER SYSTEM SHALL BE INSTALLED ON A FLAT, STABLE BASE WITH CROSS SLOPE NO STEEPER THAN 10:1.
5. NO PORTION OF THE SYSTEM SHALL ENCROACH INTO THE APPROACH TRAFFIC LANE.
6. THE MIXTURE FOR THE MODULES SHALL MEET THE REQUIREMENTS OF THE NDOT STANDARD SPECIFICATIONS.
7. A 6 INCH SPACING BETWEEN MODULES AND 12 INCH SPACING BETWEEN THE MODULES AND THE END OF CONCRETE BARRIER OR OTHER RIGID OBJECT SHALL BE PROVIDED.
8. THE NUMBER IN EACH MODULE REPRESENTS THE REQUIRED WEIGHT OF FILLER MATERIAL, SHOWN IN POUNDS.
9. WHERE SUFFICIENT SPACE IS AVAILABLE, THE INERTIAL BARRIER SYSTEM SHOULD BE ALIGNED AT AN ANGLE, NOT TO EXCEED 10°, IN THE DIRECTION OF APPROACH TRAFFIC.
10. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE LOCATIONS.

GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN
IT MAY REQUIRE GRADING FROM BOTH
DIRECTIONS



TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
INERTIAL BARRIER SYSTEM

DESIGNED BY NRL
DATE 05/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:05
FILE: Barrier r1.dgn

GENERAL NOTES

1. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY.
2. ALL BARRICADE AND SIGN LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND THEIR PLACEMENT MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNING SHOWN SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
3. MINIMUM WIDTH OF TRAVELLED LANE SHALL BE AS SHOWN, UNLESS APPROVED OTHERWISE BY THE ENGINEER.
4. INSTALL WHEN LANE WIDTH IS LESS THAN APPROACH LANE WIDTH.

LEGEND

- FLAGGER
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

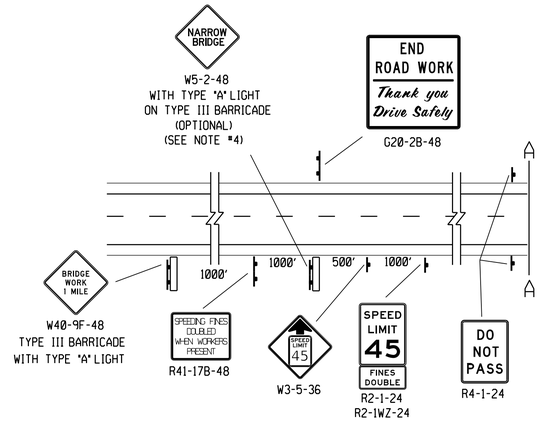
$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

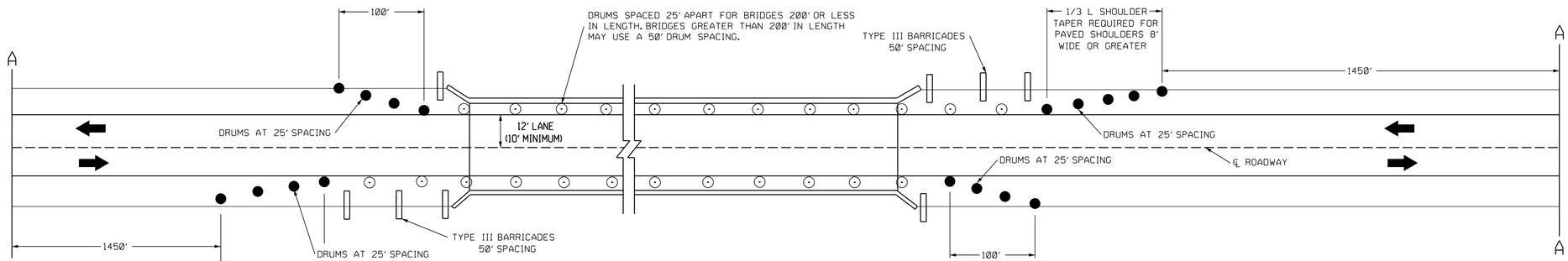
WHERE:

L = MINIMUM LENGTH OF TAPER.

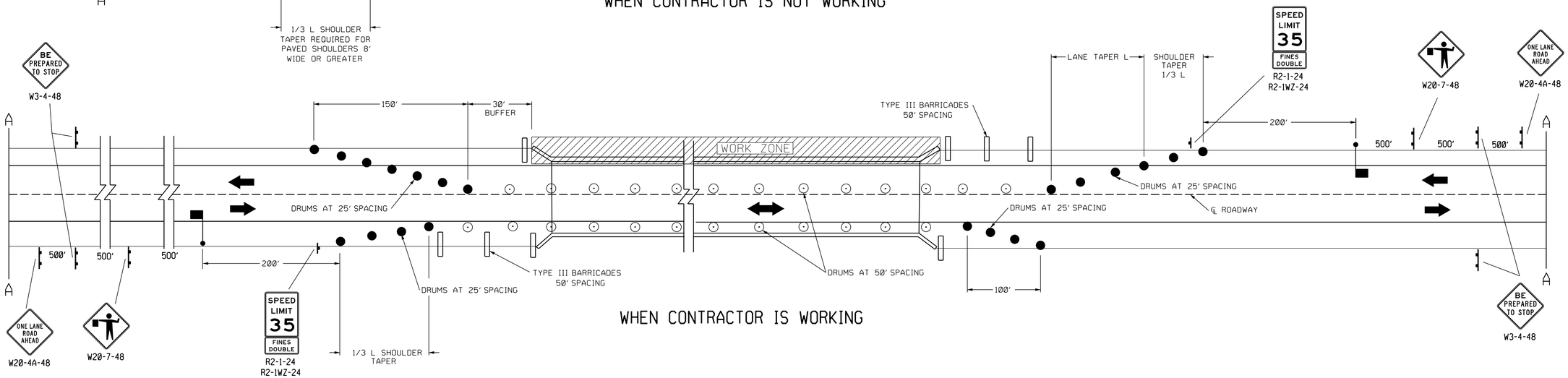
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).





WHEN CONTRACTOR IS NOT WORKING



WHEN CONTRACTOR IS WORKING

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
BRIDGE CURB / RAIL REPAIR

DESIGNED BY AJM

DATE 08/23

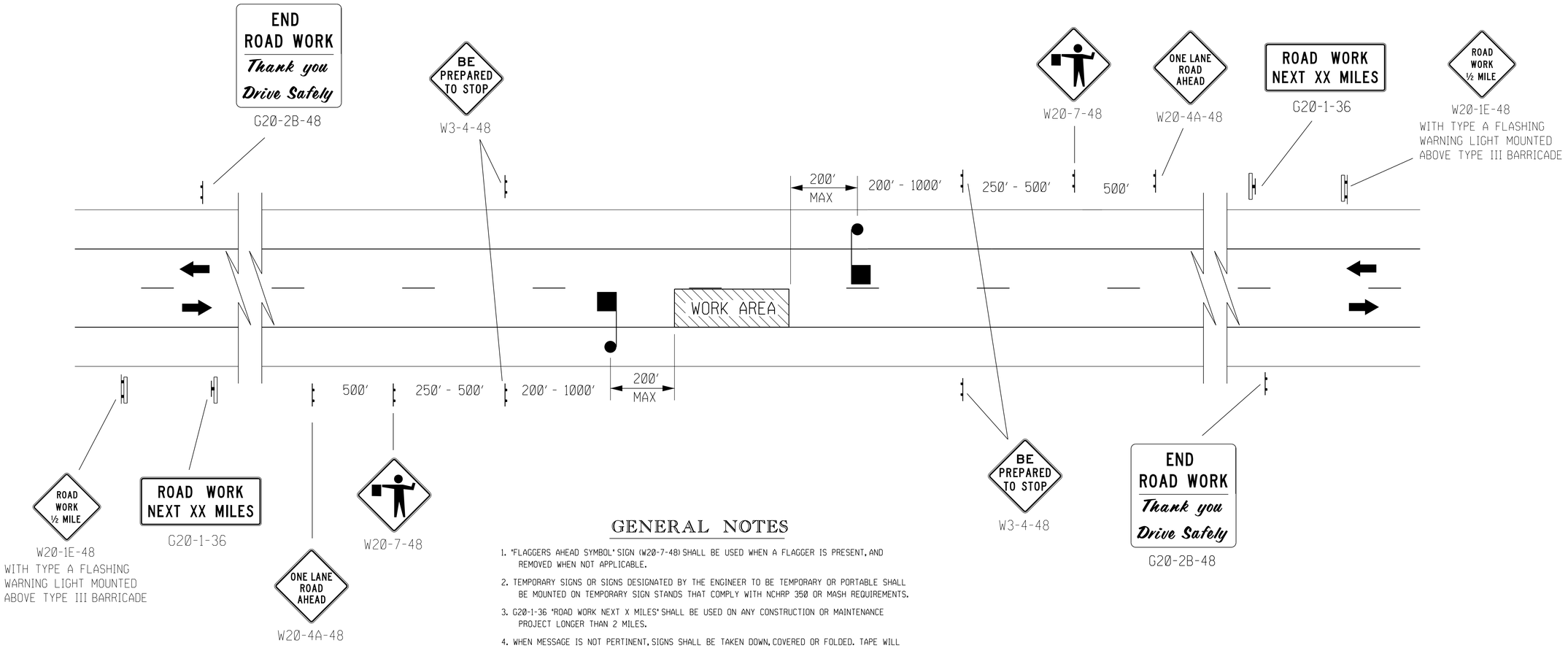
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:07

FILE: Bridge Curb Repair R2.dgn



TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

GENERAL NOTES

1. 'FLAGGERS AHEAD SYMBOL' SIGN (W20-7-48) SHALL BE USED WHEN A FLAGGER IS PRESENT, AND REMOVED WHEN NOT APPLICABLE.
2. TEMPORARY SIGNS OR SIGNS DESIGNATED BY THE ENGINEER TO BE TEMPORARY OR PORTABLE SHALL BE MOUNTED ON TEMPORARY SIGN STANDS THAT COMPLY WITH NCHRP 350 OR MASH REQUIREMENTS.
3. G20-1-36 'ROAD WORK NEXT X MILES' SHALL BE USED ON ANY CONSTRUCTION OR MAINTENANCE PROJECT LONGER THAN 2 MILES.
4. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE WILL NOT BE PERMITTED ON THE FACE OF THE SIGN.
5. ORANGE FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE WARNING SIGNS.
6. WHERE TRAFFIC QUEUES ARE LONG AND FLAGGER VISIBILITY IS LIMITED, THE ENGINEER MAY REQUIRE AN ADDITIONAL FLAGGER.
7. WHENEVER FEASIBLE WORK ZONE TRAFFIC CONTROL PLANS SHOULD BE DEVELOPED TO ACCOMMODATE SPEED LIMIT REDUCTIONS NO GREATER THAN 10 MPH BELOW NORMAL CONDITIONS.
8. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT.
9. A SPEED LIMIT SIGN ENDING THE REDUCED SPEED ZONE SHALL BE INSTALLED AT THE END OF EACH ZONE.
10. IF THE QUEUING OF VEHICLES ACROSS ACTIVE RAILROAD TRACKS CANNOT BE AVOIDED, A FLAGGER SHALL BE PROVIDED AT THE RAILROAD CROSSING TO PREVENT VEHICLES FROM STOPPING WITHIN THE RAILROAD CROSSING EVEN IF AUTOMATIC WARNING DEVICES ARE IN PLACE.
11. EARLY COORDINATION WITH THE RAILROAD COMPANY SHOULD OCCUR BEFORE WORK STARTS.
12. AT NO TIME, WILL THE QUEUE FROM A FLAGGING OPERATION EXTEND ACROSS A RAILROAD CROSSING.
13. REFER TO STANDARD PLAN NO. 920 FOR GENERAL INFORMATION NOT SHOWN.
14. THE CONTRACTOR SHALL NOTIFY EACH NDOR DISTRICT CONSTRUCTION ENGINEER OF COMPLETION OF WORK PERFORMED ON EACH HIGHWAY WITHIN THAT DISTRICT. THE NDOR DISTRICT CONSTRUCTION ENGINEER WILL THEN INFORM THE DISTRICT PAINTING CREW OF LOCATION TO SCHEDULE PERMANENT PAVEMENT MARKING, TYPE PAINT.
15. WORK TO BE PERFORMED SHALL SKIP ALL BRIDGES, APPROACH SLABS AND RAILROAD RIGHT OF WAY.
16. SECTION CORNERS (BRASS CAPS IN LOCATED IN PAVEMENT) ARE TO BE MARKED BY STATE PERSONNEL PRIOR TO GRINDING OPERATION. GRINDING OPERATION IS TO LEAVE A 3 FT BUFFER ZONE PRIOR TO AND AFTER EACH SECTION CORNER.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SINGLE POST SIGN
- DOUBLE POST SIGN
- FLAGGER
- TRAFFIC FLOW

XX

Project Number
###-#(###)

C.N. #####

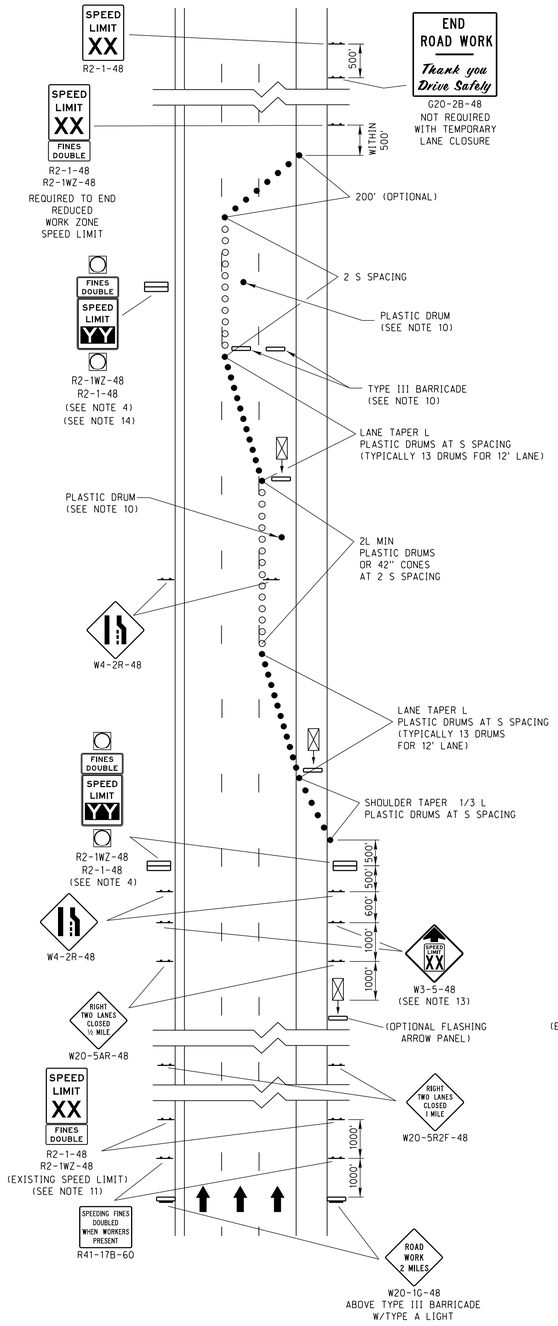
TYPICAL TRAFFIC CONTROL PLAN
ADVANCE SIGNING FOR INSTALLATION OF CENTERLINE RUMBLE STRIPS

DESIGNED BY AJM
DATE 08/23

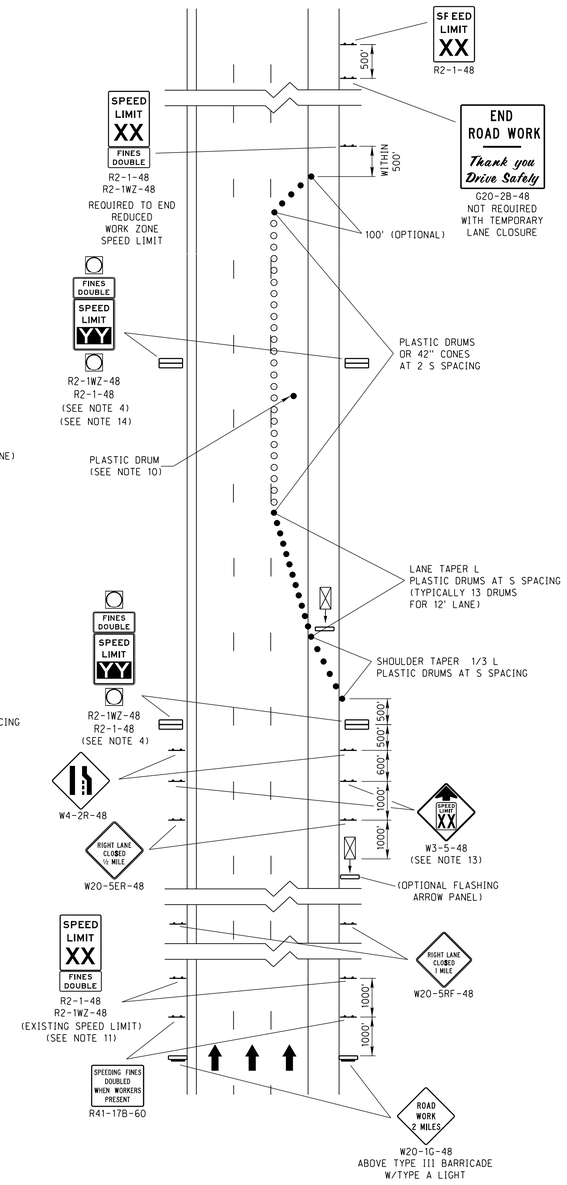
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

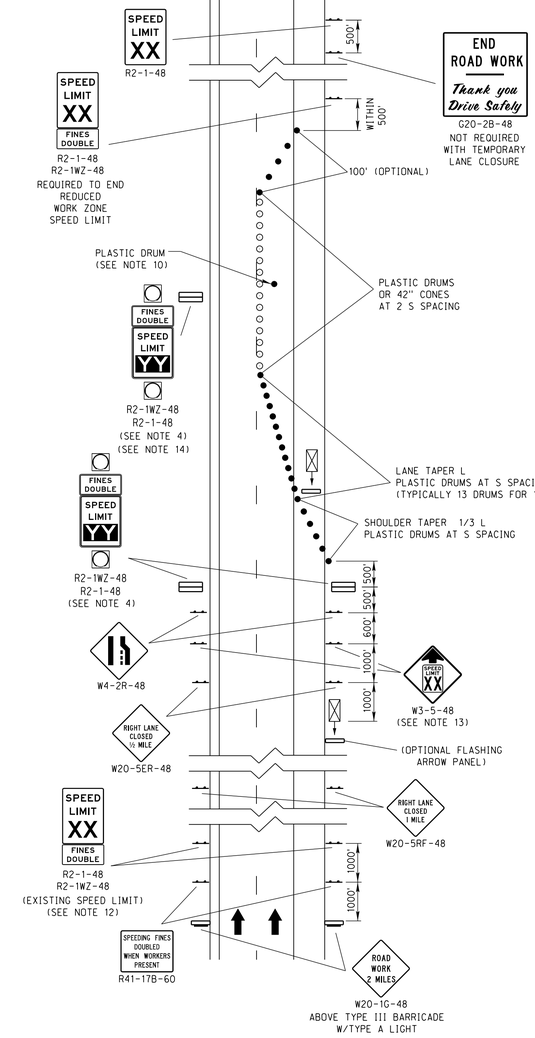
COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:09
FILE: Centerline Rumble Strips.dgn



TWO LANE CLOSURE
(3+ LANES)



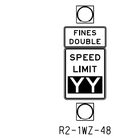
SINGLE LANE CLOSURE
(3+ LANES)



SINGLE LANE CLOSURE
(2 LANES)

NOTES:

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENCROACHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. WHEN A REDUCED SPEED LIMIT IS USED, IT SHALL COMPLY WITH THE REQUIREMENTS OF NDOT OPERATING INSTRUCTION 60-18, WORK ZONE SPEED LIMITS.
4. DIGITAL SPEED LIMIT (DSL) SIGNS (R2-1) SHALL BE 48" X 60" WITH FINES DOUBLE PLAQUE (R2-1WZ) AS SHOWN. THE FLASHING BEACONS SHALL BE ACTIVE ONLY WHILE SPEED LIMIT REDUCTION IS DISPLAYED. THE ORIGINGAL SPEED LIMIT SHALL BE REESTABLISHED DAILY WHEN REDUCTION IS NO LONGER NECESSARY.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. FOR FOG SEALS, SLURRY SEALS, ARMOR COATS, CRACK AND JOINT SEALING WHERE ALL LANES OF TRAFFIC WILL BE REOPENED BEFORE NIGHT, THE CONTRACTOR MAY USE 36" OR 42" CONES IN PLACE OF PLASTIC DRUMS ALONG THE WORK AREA. WHEN USED 36" CONES SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
7. PLASTIC DRUMS SHALL BE REQUIRED TO BE PLACED IN FRONT OF LANE EXCAVATIONS IN PAVEMENT AND SLAB REPAIR, AND OTHER WORK ACTIVITIES AS DIRECTED BY THE ENGINEER. PLASTIC DRUMS SHALL BE REQUIRED FOR ALL TAPERS AND LANE SHIFTS.
8. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. PLACE A PLASTIC DRUM OR TYPE III BARRICADE AS DIRECTED BY THE ENGINEER IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "SPEEDING FINES DOUBLED WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF W3-5 "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.
12. SIGNS W20-5E, W20-5RF AND W20-1G MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACING RESPECTIVELY IN LOW VOLUME AREA AT THE DIRECTION OF THE ENGINEER.
13. SPEED ZONE AHEAD SIGNS (W3-5) SHALL BE COVERED OR REMOVED WHEN DIGITAL SPEED LIMIT SIGNS ARE DISABLED OR THE ORIGINAL SPEED LIMIT IS REESTABLISHED.
14. DIGITAL SPEED LIMIT SIGNS SHALL BE INSTALLED EVERY MILE THRU THE WORK ZONE WHERE THE SPEED LIMIT IS REDUCED. IF A SINGLE DRIVING LANE IS AVAILABLE THRU THE WORK ZONE, ONE DSL SIGN SHALL BE INSTALLED AND SHALL BE PLACED ON THE SIDE OPPOSITE THE WORK ZONE, UNLESS SHOULDER CONDITIONS PREVENT PLACEMENT.



EVERY MILE ALONG WORK AREA
WHEN SPEED LIMIT IS REDUCED

EVERY MILE WHEN A DIFFERENCE
IN ELEVATION EXISTS BETWEEN
ADJACENT LANES OPEN TO TRAFFIC

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- TRUCK MOUNTED ATTENUATOR (TMA)
- DIGITAL SPEED LIMIT SIGN

XX

Project Number
###-#(###)

C.N. #####

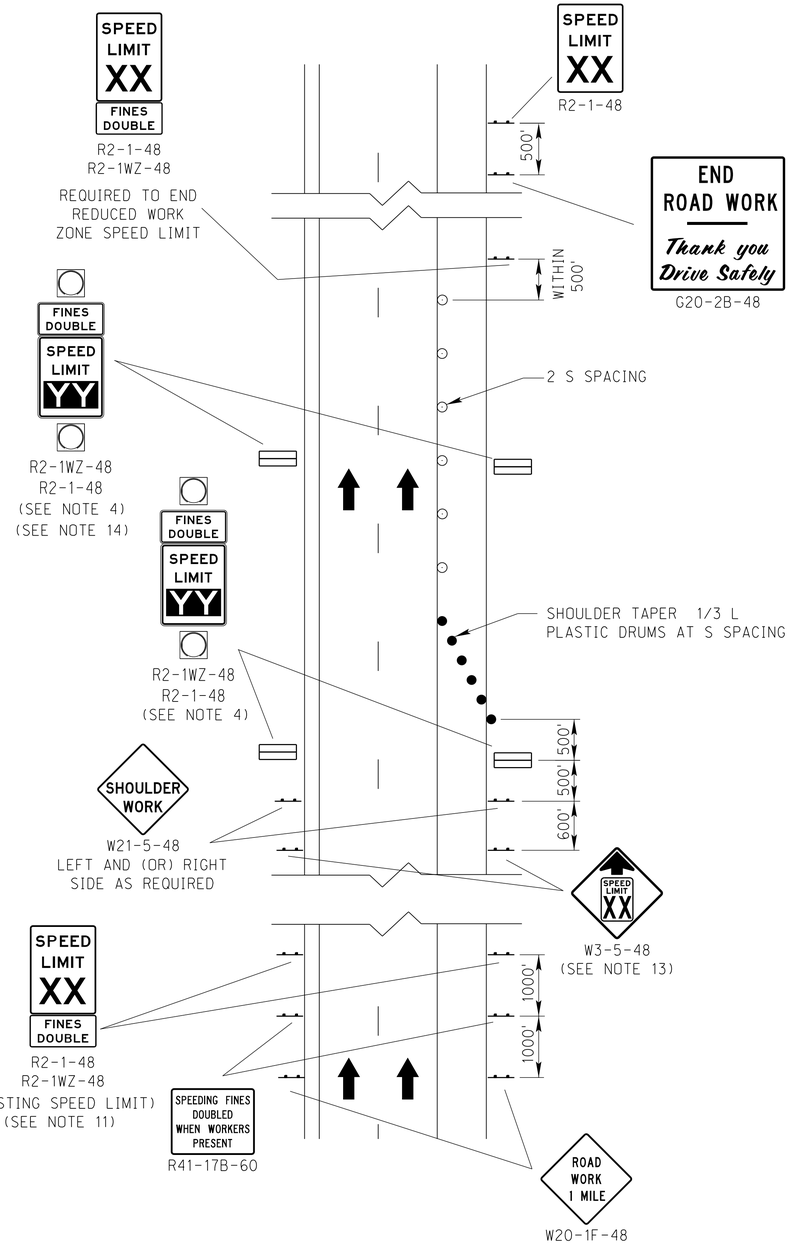
TYPICAL TRAFFIC CONTROL PLAN
LANE CLOSURE PLAN FOR MULTILANE ROADWAYS (DIGITAL SPEED LIMIT SIGNS)

DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

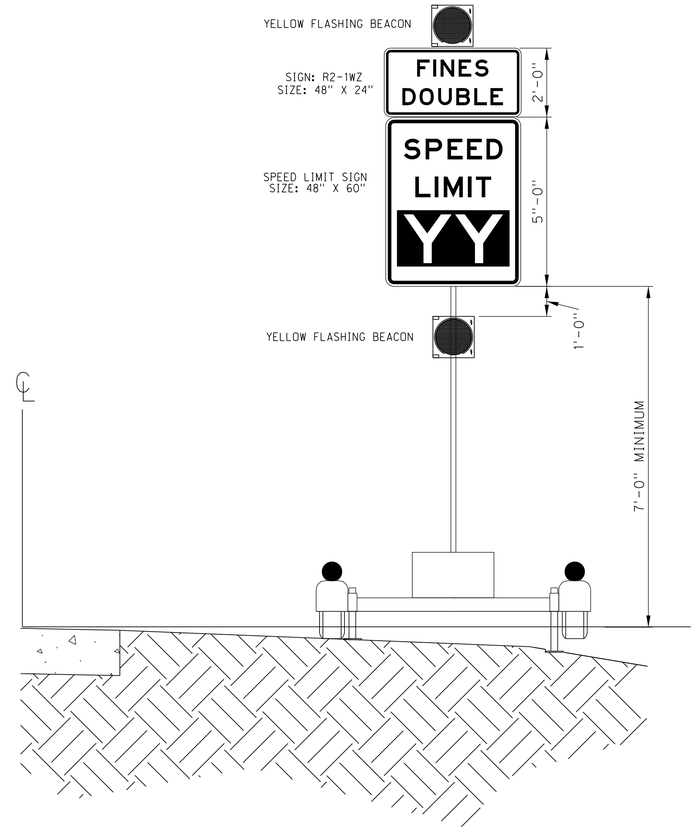
PLAN SHEET NUMBER 1/2

COMPUTER: BG0419M498
DATE: 30-OCT-2024 14:34
FILE: Digital Speed Limit Sign Lane Closure Plan.dgn

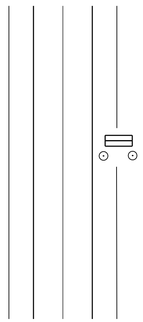


SHOULDER CLOSURE

FOR USE ON ROADWAYS WITH
8' AND WIDER PAVED SHOULDER



DIGITAL SPEED LIMIT SIGN DETAIL



DIGITAL SPEED LIMIT SIGN DELINEATION

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- TRUCK MOUNTED ATTENUATOR (TMA)
- DIGITAL SPEED LIMIT SIGN
- DIGITAL SPEED LIMIT SIGN

XX

Project Number
###-#(###)

C.N. #####

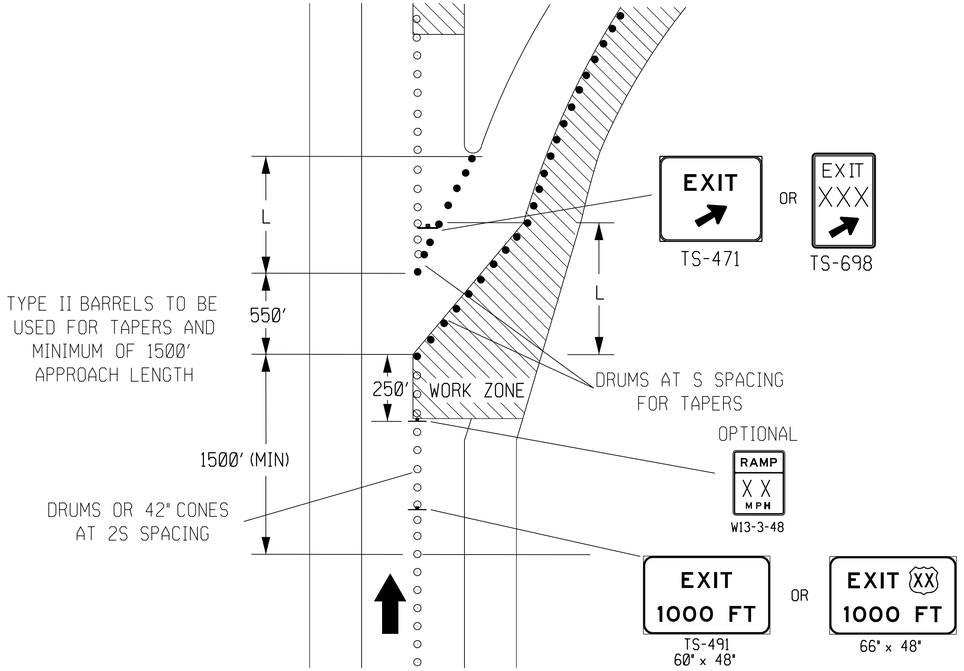
TYPICAL TRAFFIC CONTROL PLAN
LANE CLOSURE PLAN FOR MULTILANE ROADWAYS (DIGITAL SPEED LIMIT SIGNS)

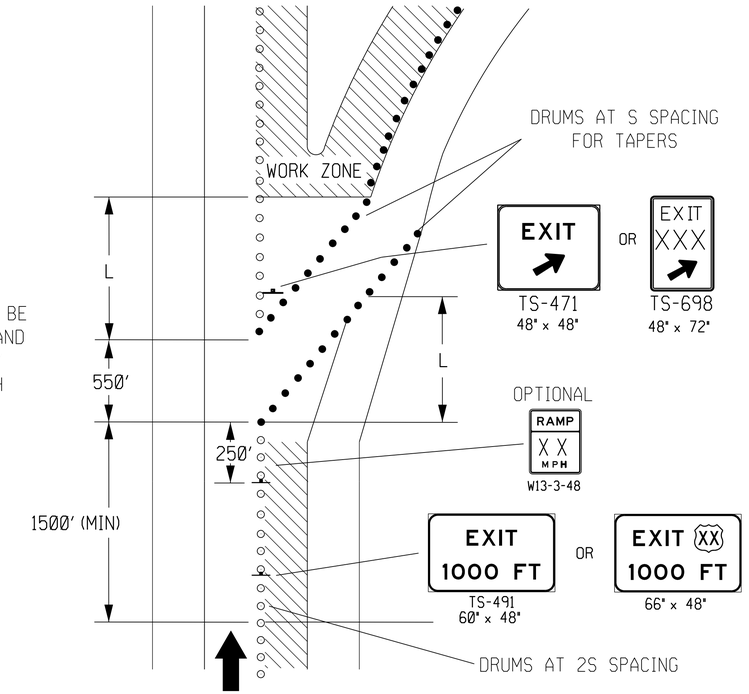
DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

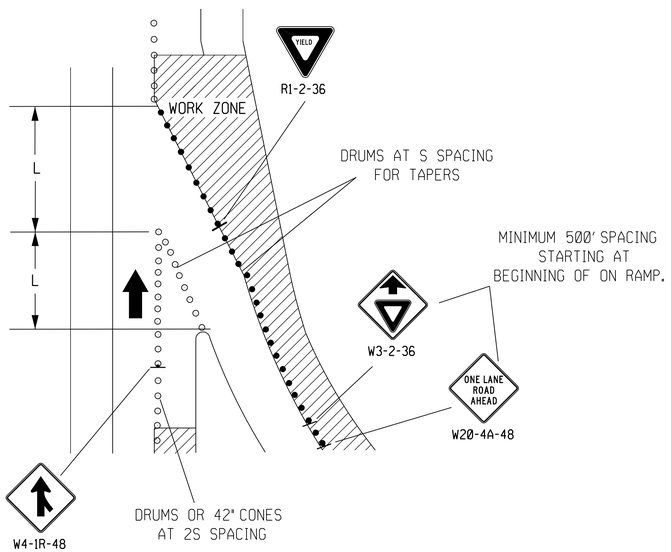
PLAN SHEET NUMBER 2/2

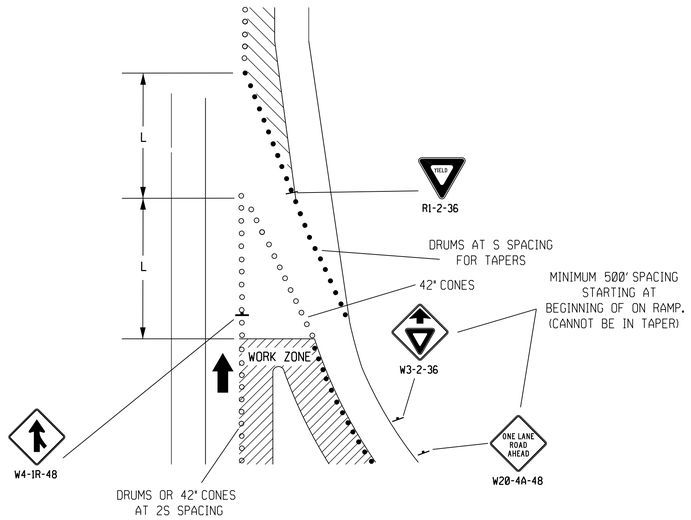
Work in Vicinity of Exit Ramp





Work in Vicinity of On Ramp





NOTES

L = WS

L = TAPER LENGTH IN FEET

W = WIDTH OF OFFSET IN FEET

S = POSTED SPEED (MPH) LIMIT PRIOR TO WORK STARTING

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SIGN
- FLASHING ARROW PANEL
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE

XX

Project Number
###-#(###)

C.N. #####

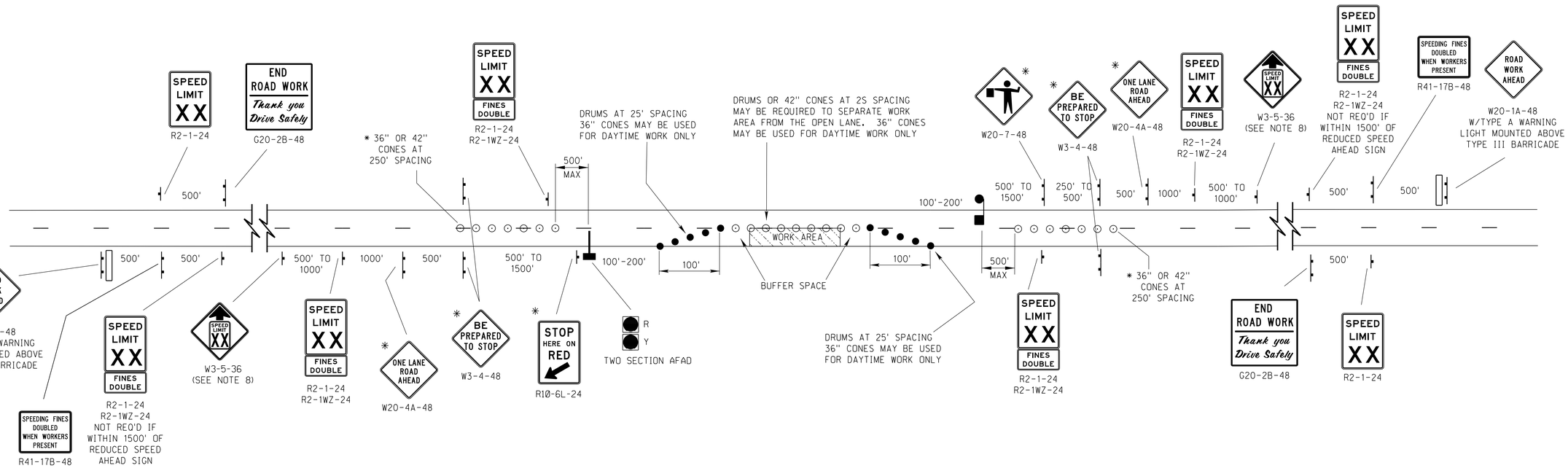
TYPICAL TRAFFIC CONTROL PLAN
WORK IN VICINITY OF EXIT / ON RAMP
INTERSTATE / EXPRESSWAY

DESIGNED BY NRL
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:06
FILE: Exit Ramp Construction r2.dgn



LEGEND

- FLAGGER
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- TYPE III BARRICADE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- AFAD

LANE CLOSURE

✳ SIGNS AND CONES ARE SUBSIDIARY TO THE FLAGGING/AFAD OPERATION.

NOTES

1. "FLAGGER AHEAD SYMBOL" SIGN (W20-7) SHALL BE USED WHEN A FLAGGER IS PRESENT, AND REMOVED WHEN NOT APPLICABLE.
2. THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE ALL SIGNS IN ACCORDANCE WITH THE DETAILS OF AND AT THE LOCATIONS SHOWN IN THE PLANS. SIGNS INSTALLED BY THE DEPARTMENT OF TRANSPORTATION OR OTHER GOVERNMENT AGENCY SHALL BE MAINTAINED AND REMOVED BY THEIR FORCES.
3. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE IS NOT PERMITTED ON THE FACE OF THE SIGN.
4. VEHICLES OR EQUIPMENT SHALL NOT BE PARKED SO AS TO OBSCURE OR DISTRACT FROM TRAFFIC CONTROL DEVICES.
5. ORANGE FLAGS MAY BE USED TO CALL ATTENTION TO WARNING SIGNS.
6. REFER TO STANDARD PLAN 920 FOR GENERAL INFORMATION NOT SHOWN.
7. A MINIMUM ØF 7-36" OR 42" CONES SHALL BE PLACED ON THE CENTERLINE IN ADVANCE OF THE FLAGGER. THE CONES SHOULD BE SPACED AT 250 FEET.
8. THE SPEED IN FLAGGING/PILOT CAR OPERATIONS IS GENERALLY CONTROLLED BY THE PILOT CAR, A SPEED REDUCTION MAY NOT BE NECESSARY IF THE WORK ZONE CONDITIONS WILL NOT EXIST UPON COMPLETION OF EACH DAYS WORK. W3-5 SIGN IS NOT NEEDED IF SPEED LIMIT IS NOT REDUCED.

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
LANE CLOSURE USING AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

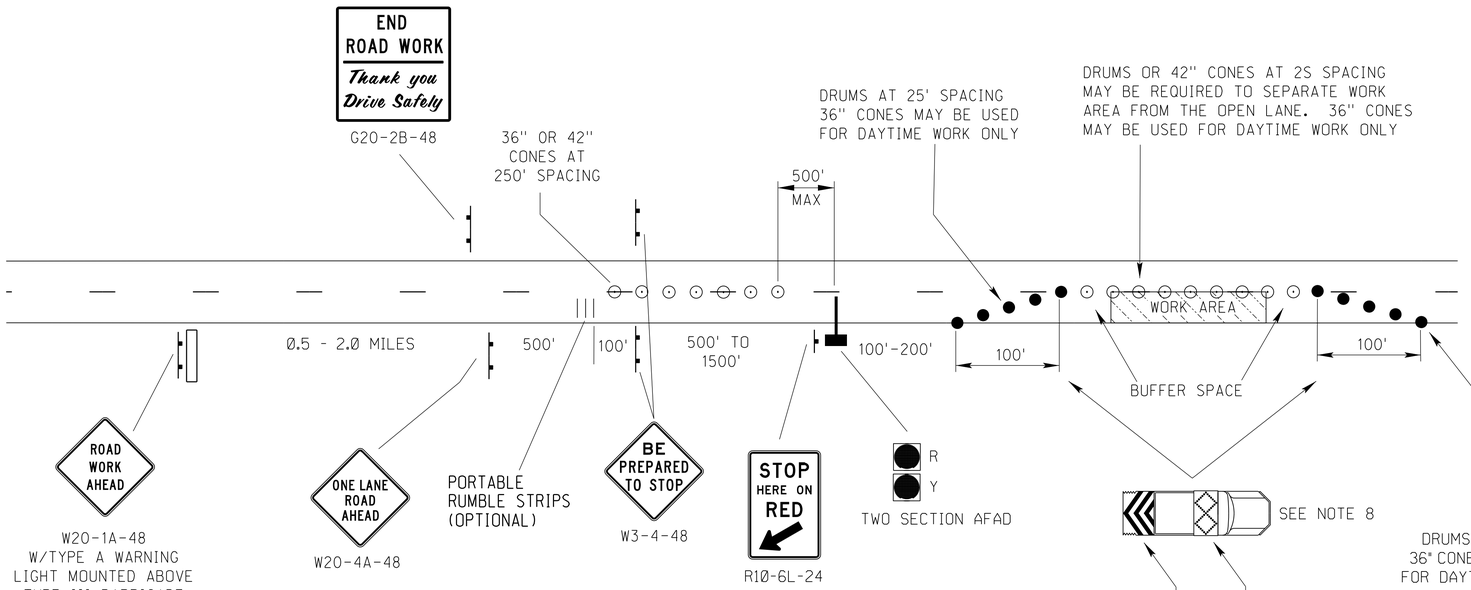
DESIGNED BY NRL
DATE 05/22

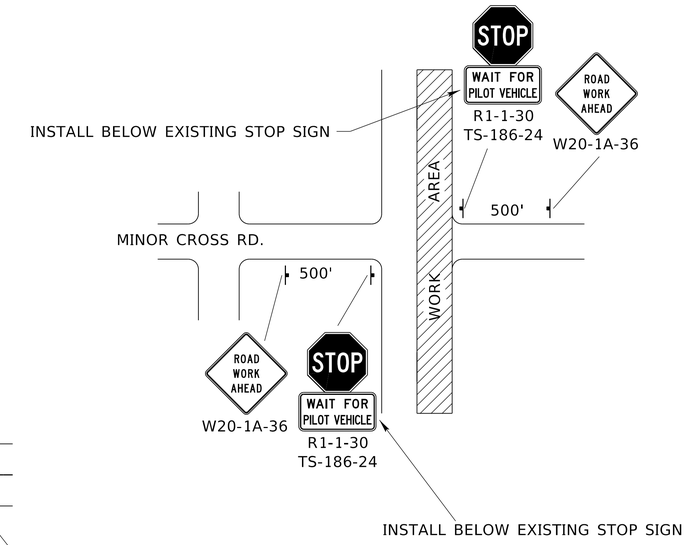
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 30-OCT-2024 15:21
FILE: Flagger Assistance Device (AFAD).dgn

LANE CLOSURE WITH PILOT CAR AND AUTOMATED FLAGGER ASSISTANCE DEVICE

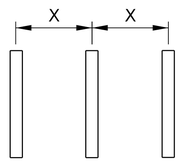




MINOR CROSS ROAD NO FLAGGER WITH PILOT CAR OPERATION

PORTABLE RUMBLE STRIPS SPACING	
SPEED (MPH)	SPACING (X)
40 or less	10 FT
45-55	15 FT
60-70	20 FT

PORTABLE RUMBLE STRIPS DETAIL

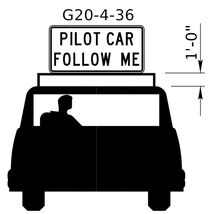


LEGEND

- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- TYPE III BARRICADE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- AFAD

NOTES

1. *SIGNS SHOWN ARE FOR ONE DIRECTION ONLY.*
2. *THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE ALL SIGNS IN ACCORDANCE WITH THE DETAILS OF AND AT THE LOCATIONS SHOWN IN THE PLANS. SIGNS INSTALLED BY THE DEPARTMENT OF TRANSPORTATION OR OTHER GOVERNMENT AGENCY SHALL BE MAINTAINED AND REMOVED BY THEIR FORCES.*
3. *WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE IS NOT PERMITTED ON THE FACE OF THE SIGN.*
4. *VEHICLES OR EQUIPMENT SHALL NOT BE PARKED SO AS TO OBSCURE OR DISTRACT FROM TRAFFIC CONTROL DEVICES.*
5. *ORANGE FLAGS MAY BE USED TO CALL ATTENTION TO WARNING SIGNS.*
6. *REFER TO STANDARD PLAN 920 FOR GENERAL INFORMATION NOT SHOWN.*
7. *A MINIMUM 0F 7-36" OR 42" CONES MAY BE PLACED ON THE CENTERLINE IN ADVANCE OF THE FLAGGER. THE CONES SHOULD BE SPACED AT 250 FEET.*
8. *A WORK VEHICLE EQUIPED WITH BEACONS AND AN OPTIONAL TRUCK MOUNTED ATTENUATOR MAY BE USED IN PLACE OF THE TAPER.*



THE BOTTOM OF THE SIGN SHALL BE MOUNTED A MINIMUM OF 1 FOOT ABOVE THE VEHICLE'S ROOF. THE SIGN SHALL BE SECURELY COVERED OR REMOVED WHEN NOT IN USE.

PILOT CAR SIGN

AFAD NOTES

AFADS SHALL BE USED WHERE FLAGGING IS ANTICIPATED TO BE USED FOR FOUR HOURS OR MORE. AFADS MAY BE USED WHERE FLAGGING IS ANTICIPATED TO BE USED LESS THAN FOUR HOURS. THE AFADS SHALL:

1. *BE OPERATED BY A FLAGGER WHO:*
   - A. *IS AVAILABLE TO STEP IN AS A FLAGGER IN CASE OF AFAD MALFUNCTION.*
   - B. *CAN PHYSICALLY SEE AND CONTROL THE AFAD FROM THE FLAGGER'S LOCATION. THE USE OF A REMOTE DEVICE TO MONITOR THE AFAD AND APPROACHING TRAFFIC IS NOT PERMITTED IN LIEU OF A FLAGGER.*
   - C. *IS TRAINED IN THE OPERATION OF THE AFAD USED ON THE PROJECT.*
   - D. *HAS AN UNOBSTRUCTED VIEW OF THE APPROACHING TRAFFIC.*
   - E. *SHALL NOT PERFORM OTHER DUTIES DURING OPERATION OF THE AFAD.*
   - F. *SHALL NOT LEAVE THE AFAD UNATTENDED AT ANY TIME WHILE IN USE.*
   - G. *WILL BE PERMITTED TO OPERATE TWO AFADS IF THE ABOVE REQUIREMENTS ARE MET.*
2. *BE PLACED WHERE A FLAGGER STATION IS SHOWN WITH AN UNOBSCURED VIEW FROM THE OPERATOR.*
3. *BE CLEARLY VISIBLE TO APPROACHING TRAFFIC, AND IF USED AT NIGHT, ILLUMINATED AS A FLAGGER STATION*
4. *BE IMMEDIATELY REPLACED WITH FLAGGERS IN THE EVENT OF MALFUNCTION. AN EQUAL NUMBER OF FLAGGERS SHALL BE PRESENT TO OPERATE THE NUMBER OF AFADS IN USE.*
5. *NOT BE OPERATED BY A PILOT CAR DRIVER. A PILOT CAR DRIVER WILL NOT BE CONSIDERED AS ONE OF THE FLAGGERS PRESENT ON-SITE AVAILABLE TO OPERATE AN AFAD.*

XX

Project Number
###-#(###)

C.N. #####

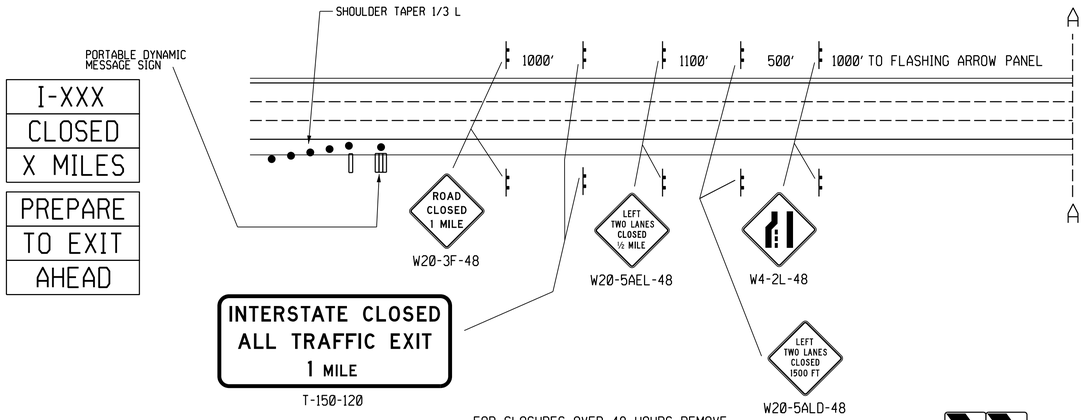
TYPICAL TRAFFIC CONTROL PLAN
LANE CLOSURE USING AUTOMATED FLAGGER ASSISTANCE DEVICE AND PILOT CAR (AFADWPC)

DESIGNED BY NRL
DATE 05/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

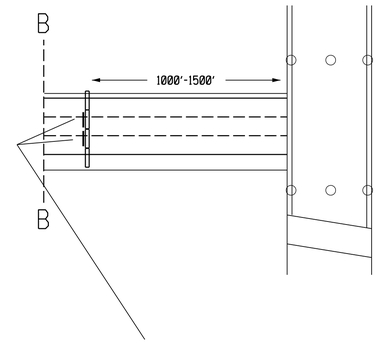
PLAN SHEET NUMBER 1/1

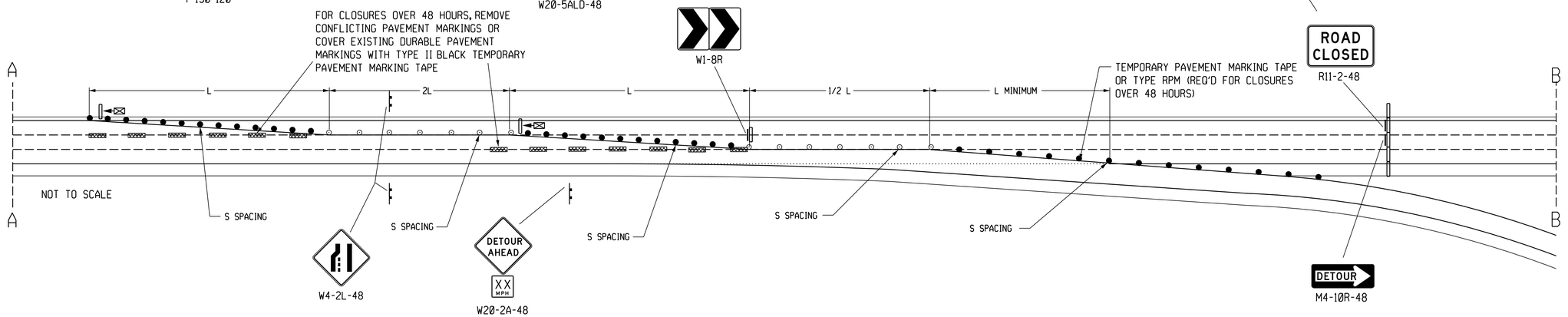
FILE: Flagger Assistance Device with Pilot Car (AFADWPC).dgn DATE: 30-OCT-2024 14:34 COMPUTER: BG04199M498

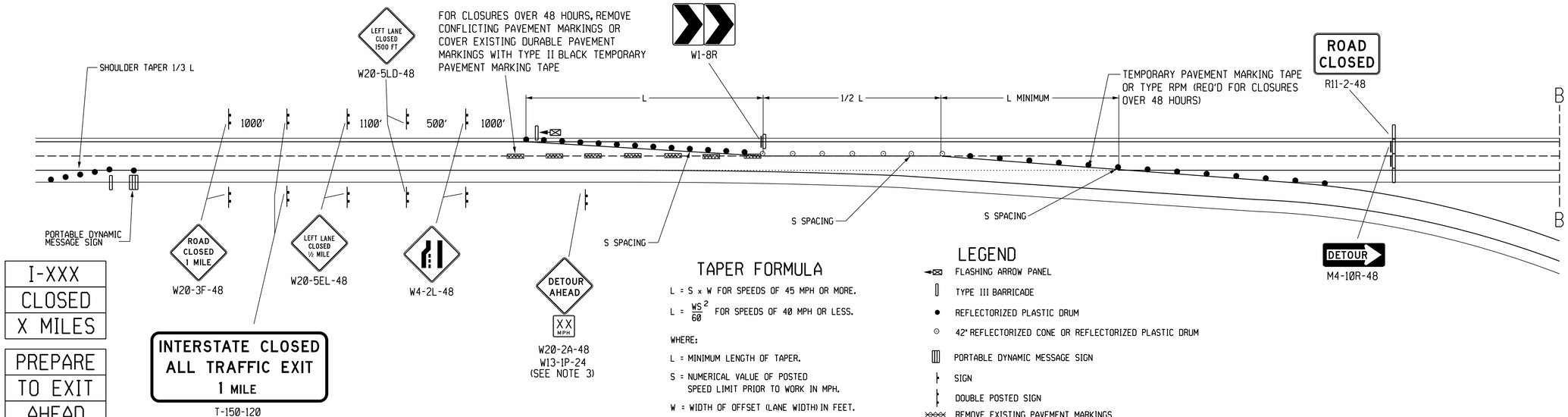


NOTES

1. EXISTING SIGNS THAT ARE NOT APPLICABLE SHALL BE COVERED DURING CLOSURE.
2. IF SIGN T-150-120 WILL NOT FIT ALONG THE SHOULDER, DUE TO THE MEDIAN BARRIER, DO NOT INSTALL SIGN ALONG THE LEFT SHOULDER.
3. USE OF THE ADVISORY PLAQUE (W13-1P-24) IS OPTIONAL. IF USED THE SPEED SHALL BE DETERMINED BY THE ENGINEER.







TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- 42" REFLECTORIZED CONE OR REFLECTORIZED PLASTIC DRUM
- PORTABLE DYNAMIC MESSAGE SIGN
- SIGN
- DOUBLE POSTED SIGN
- REMOVE EXISTING PAVEMENT MARKINGS

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
FREEWAY CLOSURE

DESIGNED BY AJM

DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

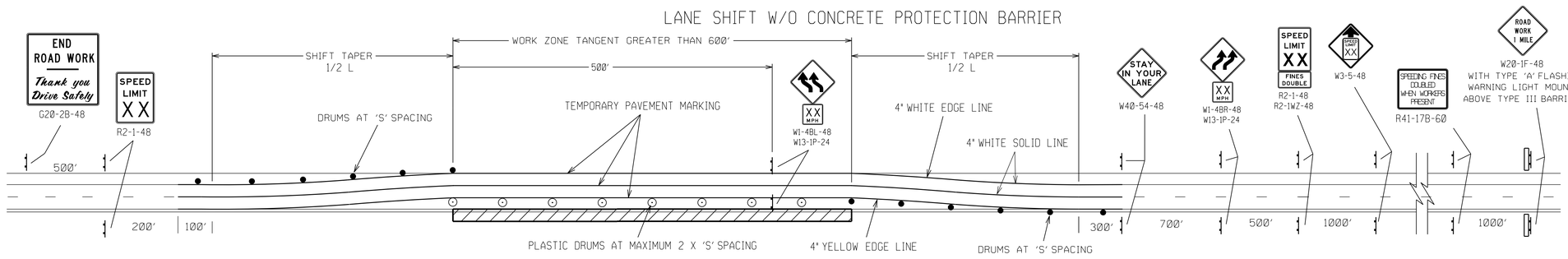
PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:06

FILE: Freeway Closure R2.dgn

LANE SHIFT W/O CONCRETE PROTECTION BARRIER



TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

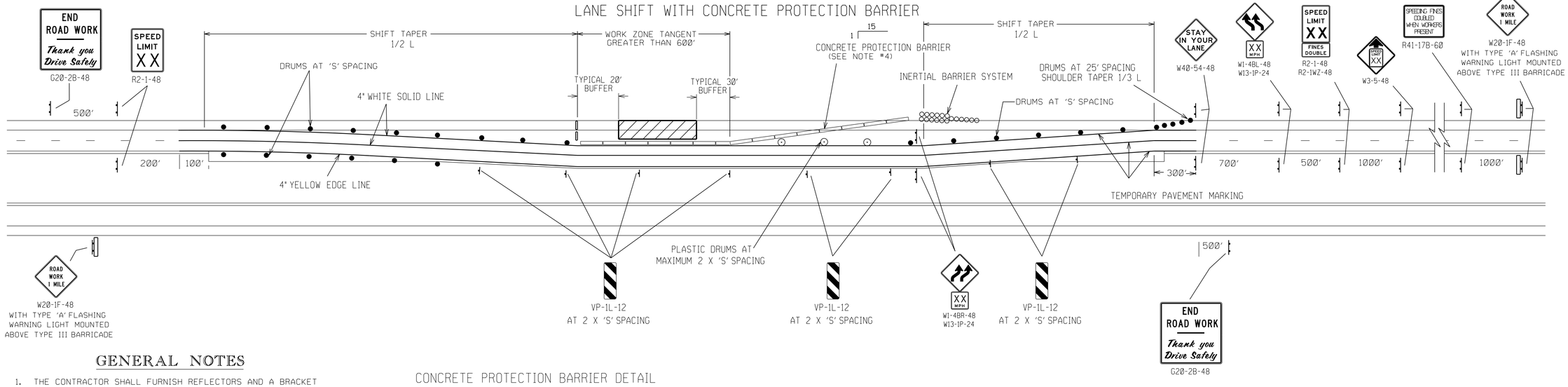
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW
- INERTIAL BARRIER SYSTEM

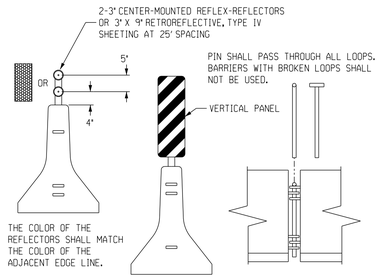
LANE SHIFT WITH CONCRETE PROTECTION BARRIER



GENERAL NOTES

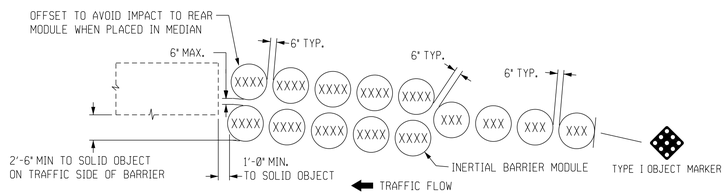
1. THE CONTRACTOR SHALL FURNISH REFLECTORS AND A BRACKET TO SUPPORT THE REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
4. OMAHA URBAN INTERSTATE LOCATIONS MAY USE A 13:1 TAPER FOR CONCRETE PROTECTION BARRIERS.
5. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10°.
6. TEMPORARY PAVEMENT MARKING SHALL BE 4" LINES.
7. ALL TEMPORARY AND/OR PERMANENT PAVEMENT MARKINGS SHALL BE INSTALLED W/ SMOOTH AND GRADUAL TRANSITIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PREMARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
8. REFER TO "TYPICAL BARRIER PLACEMENT WHEN GUARDRAIL IS REMOVED".
9. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY.

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 2S SPACING ON TOP OF BARRIER. EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

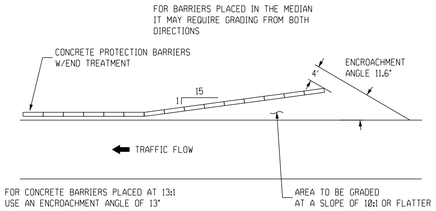
TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4' OF TOP.

- SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

GRADING FOR CONCRETE BARRIER PLACEMENT



XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN

FREEWAY LANE SHIFT TANGENT SECTION GREATER THAN 600 FT

DESIGNED BY AJM

DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

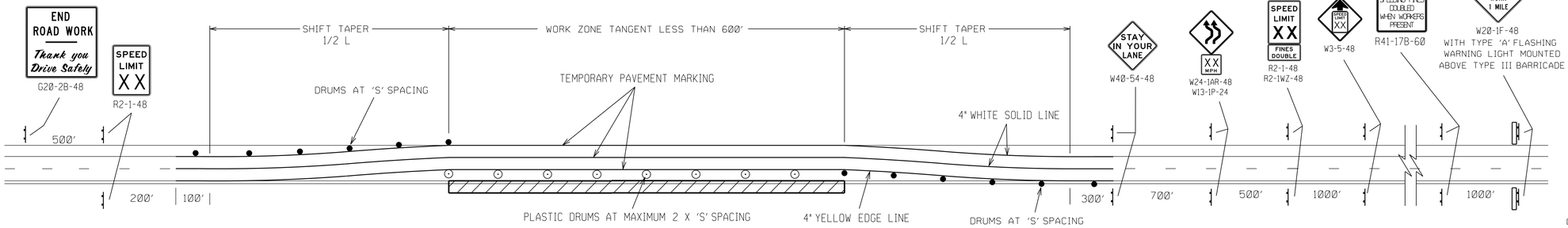
PLAN SHEET NUMBER 1/1

COMPUTER: BG04191M687

DATE: 11-SEP-2023 13:04

FILE: Freeway Lane Shift Over 600FT R3.dgn

LANE SHIFT W/O CONCRETE PROTECTION BARRIER



TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

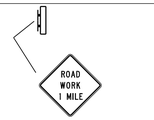
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

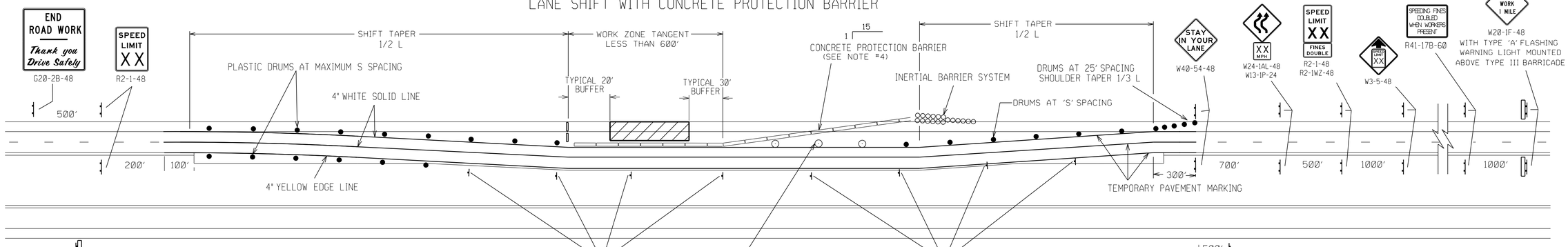
W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

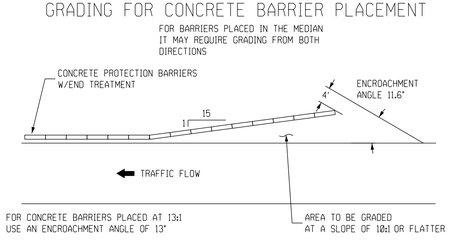
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW
- INERTIAL BARRIER SYSTEM



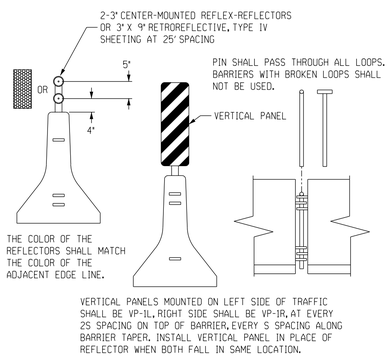
LANE SHIFT WITH CONCRETE PROTECTION BARRIER



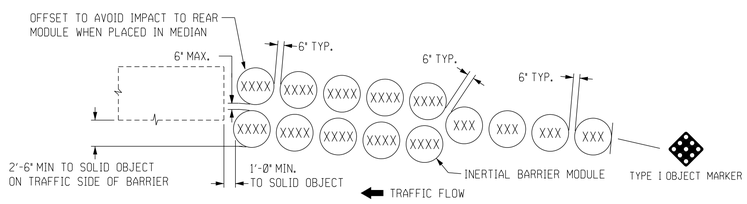
GRADING FOR CONCRETE BARRIER PLACEMENT



CONCRETE PROTECTION BARRIER DETAIL



TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

• SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH REFLECTORS AND A BRACKET TO SUPPORT THE REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
4. OMAHA URBAN INTERSTATE LOCATIONS MAY USE A 13:1 TAPER FOR CONCRETE PROTECTION BARRIERS.
5. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10°.
6. TEMPORARY PAVEMENT MARKING SHALL BE 4" LINES.
7. ALL TEMPORARY AND/OR PERMANENT PAVEMENT MARKINGS SHALL BE INSTALLED W/ SMOOTH AND GRADUAL TRANSITIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PREMARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
8. REFER TO "TYPICAL BARRIER PLACEMENT" WHEN GUARDRAIL IS REMOVED.
9. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY.

XX

Project Number

###-#(###)

C.N. #####

FREEWAY LANE SHIFT
TANGENT SECTION LESS THAN 600 FT

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

DESIGNED BY NRL

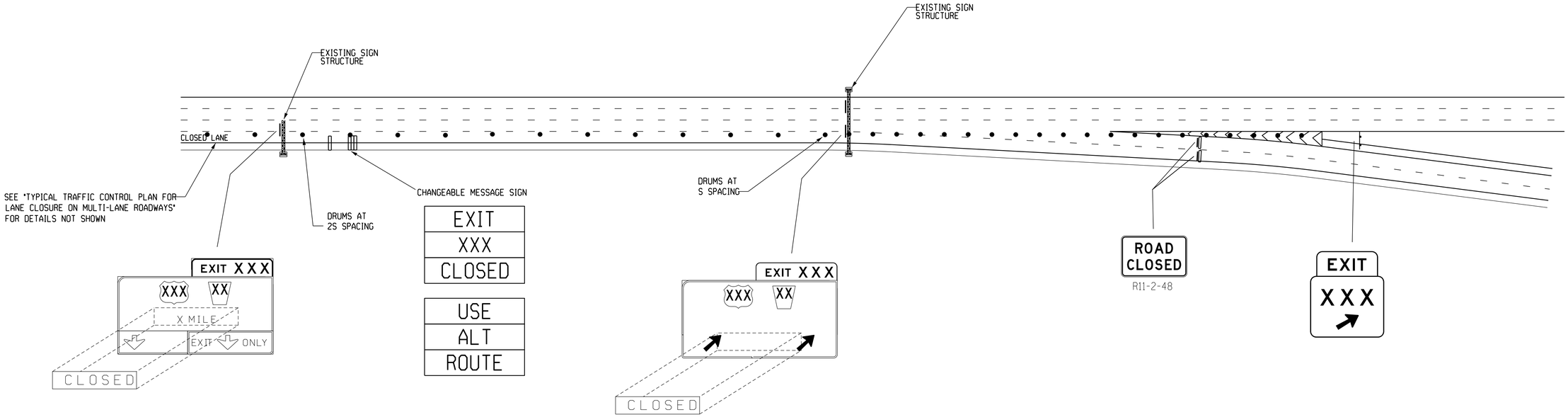
DATE 12/22

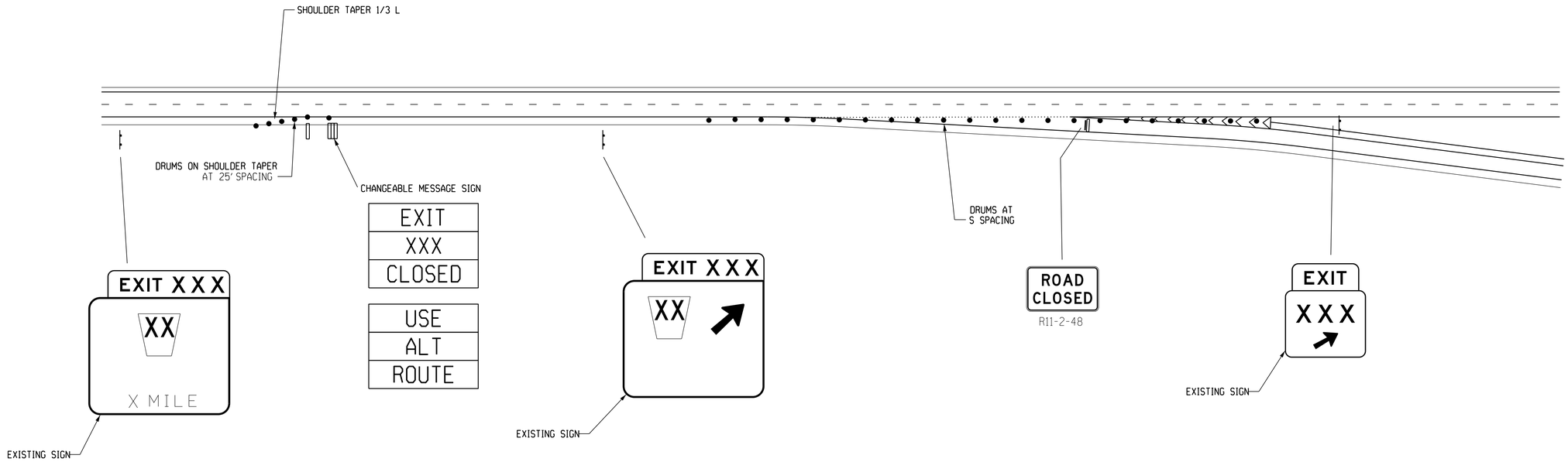
PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:04

FILE: Freeway Lane Shift Under 600FT R3.dgn





NOTES

1. EXISTING SIGNS DO NOT NEED TO BE COVERED OR OVERLAYED FOR SHORT DURATION (48 HOURS OR LESS) RAMP CLOSURES.
2. TEMPORARY GUIDE SIGNS MAY NEED TO BE UTILIZED FOR LONG TERM RAMP CLOSURES.

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- CHANGEABLE MESSAGE SIGN
- SIGN

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
FREEWAY OFF-RAMP CLOSURE

DESIGNED BY LCD

DATE 1/23

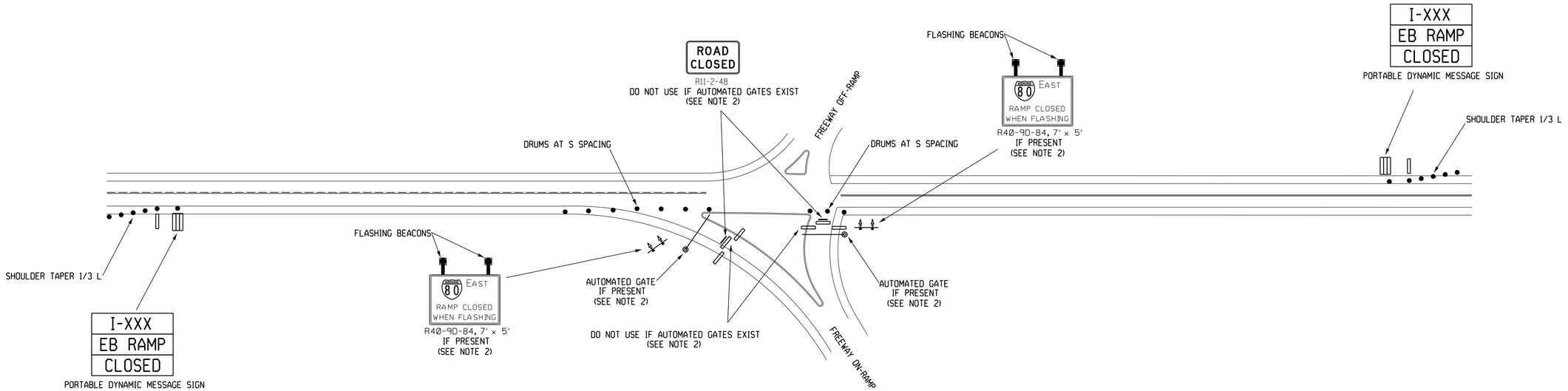
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

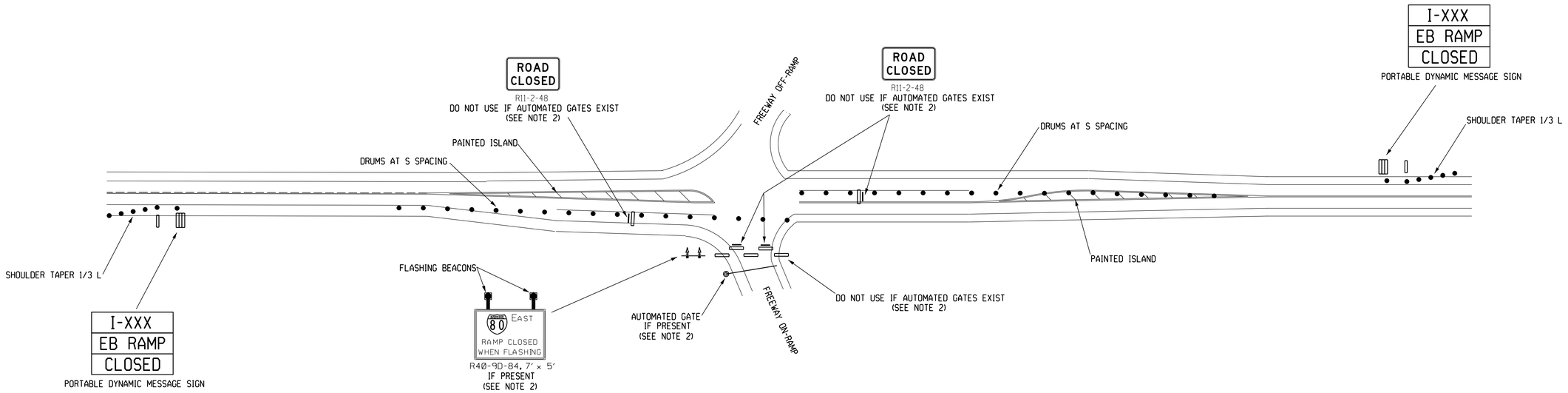
PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:06

FILE: freeway off-ramp closure.dgn





GENERAL NOTES

1. EXISTING SIGNS THAT ARE NOT APPLICABLE SHALL BE COVERED DURING THE CLOSURE.
2. IF AUTOMATED GATES AND "I-80 EAST/WEST RAMP CLOSED WHEN FLASHING" SIGNS (R40-9D-84) WITH FLASHING BEACONS ARE PRESENT, THE "ROAD CLOSED" SIGNS (R11-2-48) AND TYPE III BARRICADES ARE NOT NECESSARY.

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

LEGEND

- SIGN
- DOUBLE POST SIGN WITH FLASHING BEACONS
- AUTOMATED GATE
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- PORTABLE DYNAMIC MESSAGE SIGN (PDMS)

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
FREEWAY ON-RAMP CLOSURE

DESIGNED BY AJM

DATE 08/23

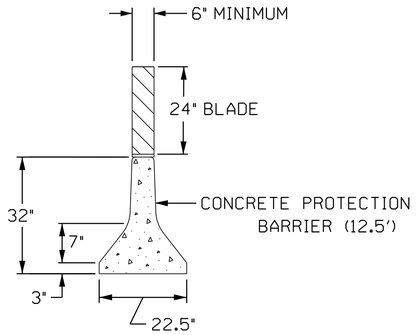
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

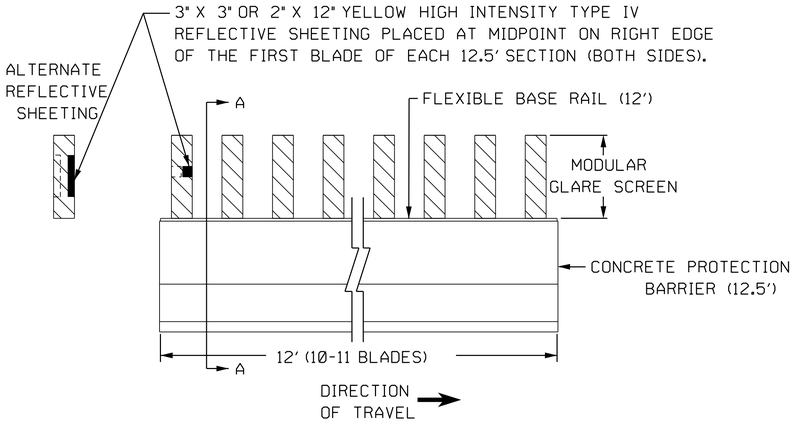
COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:06

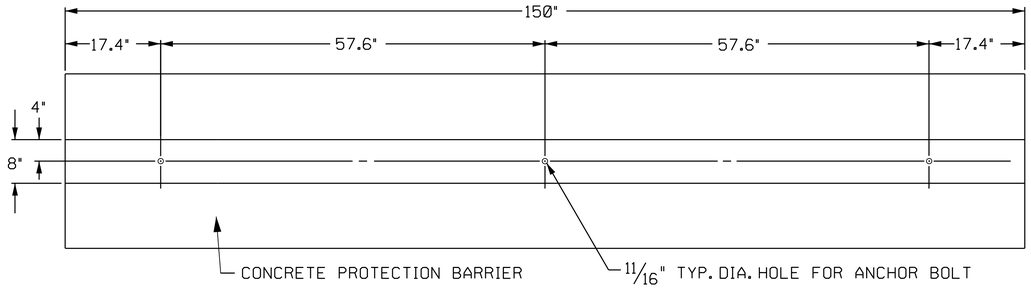
FILE: Freeway On-Ramp Closure R2.dgn



SECTION A-A



FRONT VIEW

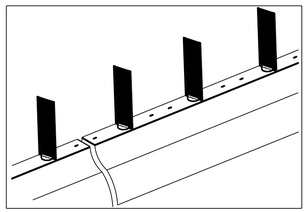


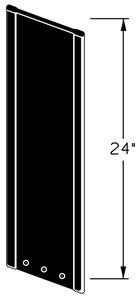
TOP VIEW

REQUIRED HOLE LAYOUT FOR SLEEVE INSTALLATION (12.5' CONCRETE PROTECTION BARRIER)

GENERAL NOTES

1. REFLECTIVE SHEETING ON THE TEMPORARY GLARE SCREEN BLADES SHALL BE ALL 3" X 3", OR ALL 2" X 12". MIXING OF THE TWO TYPES WILL NOT BE ALLOWED.
2. THE CONTRACTOR SHALL INSTALL THE 2½" X ½" INTERNALLY-THREADED SLEEVE INTO THE CONCRETE PROTECTION BARRIERS. TOP OF THE SLEEVE SHALL BE FLUSH WITH THE TOP OF THE CONCRETE PROTECTION BARRIER.
3. THE ADHESIVE USED TO INSTALL THE SLEEVE SHOULD BE IN A SELF-CONTAINED CARTRIDGE WHICH MIXES THE TWO COMPONENTS AS THEY ARE DISPURSED. THE ADHESIVE SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

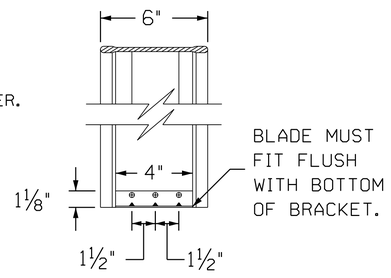


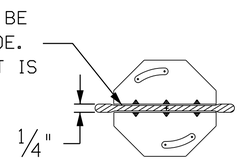


BLADE
6" X 24" OR 30" 0.14 HIGH IMPACT POLYMER WITH RADIUS CORNERS.
(OPTIONAL COLORS: GREEN OR GRAY)
WEIGHT: 0.82 lb/ft

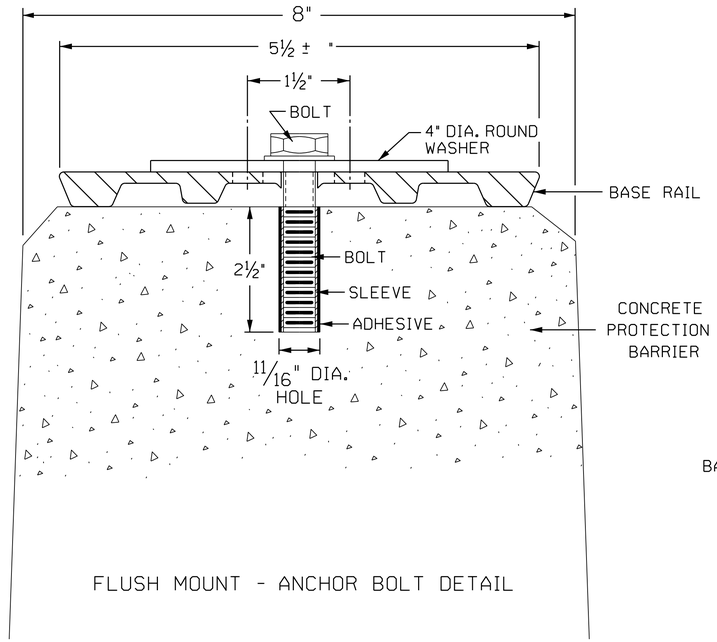
BLADE BASE
4¾" X 1⅞" BLACK HIGH IMPACT POLYMER.
WEIGHT: 0.6 lb/ft

BASE RAIL SECTION
5½ ± " WIDE WHITE HIGH IMPACT POLYMER.
WEIGHT: 7.50 lbs. EACH.

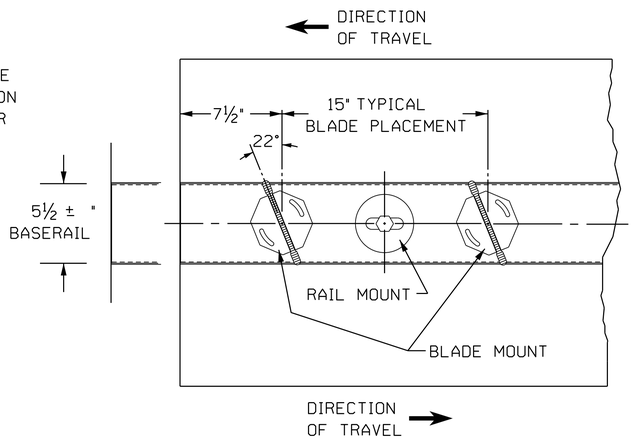




BLADE ASSEMBLY



FLUSH MOUNT - ANCHOR BOLT DETAIL



TYPICAL BLADE SPACING

XX

Project Number
###-#(###)

C.N. #####

TEMPORARY GLARE SCREEN
INSTALLATION DETAILS

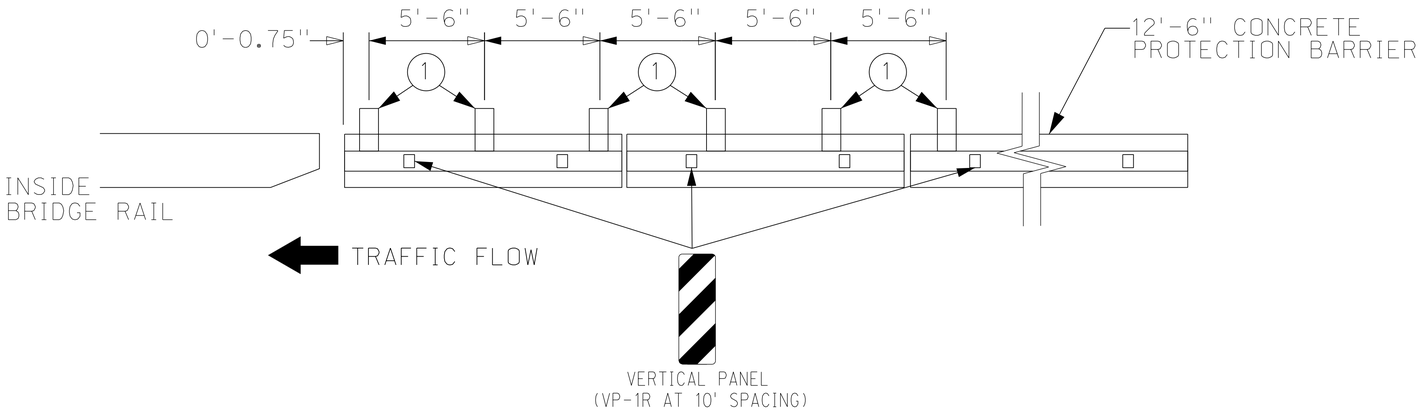
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

DESIGNED BY NRL
DATE 12/22

PLAN SHEET NUMBER 1/1

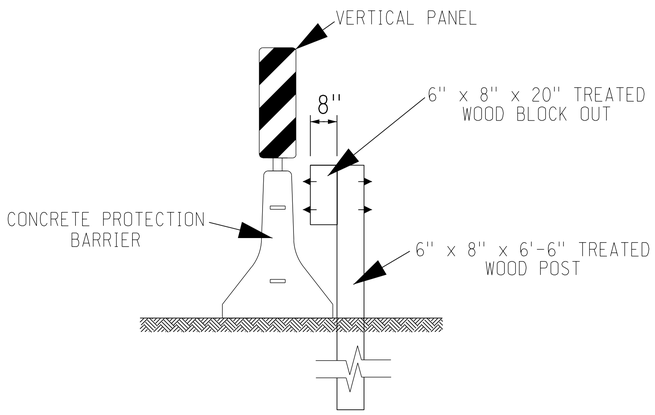
COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:10
FILE: Glare Screen.dgn

CONCRETE PROTECTION BARRIER LATERAL SUPPORT AT BRIDGE APPROACH

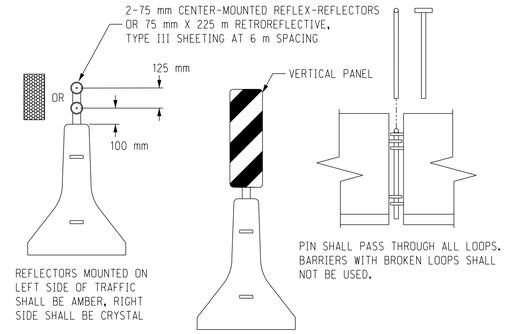


(1) 6" x 8" x 6'-6" TREATED WOOD POST
W/6" x 8" x 20" TREATED WOOD BLOCKOUT

PLAN VIEW



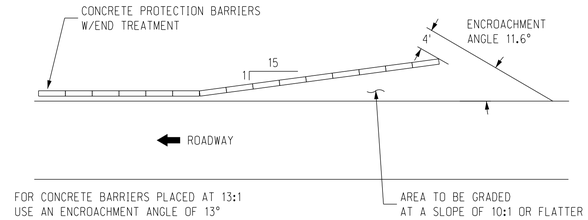
FRONT VIEW



CONCRETE PROTECTION BARRIER DETAIL

GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN
IT MAY REQUIRE GRADING FROM BOTH
DIRECTIONS



XX

Project Number
###-#(###)

C.N. #####

BRIDGE RAIL - CONCRETE PROTECTION BARRIER DETAIL
LATERAL SUPPORT AT BRIDGE APPROACH

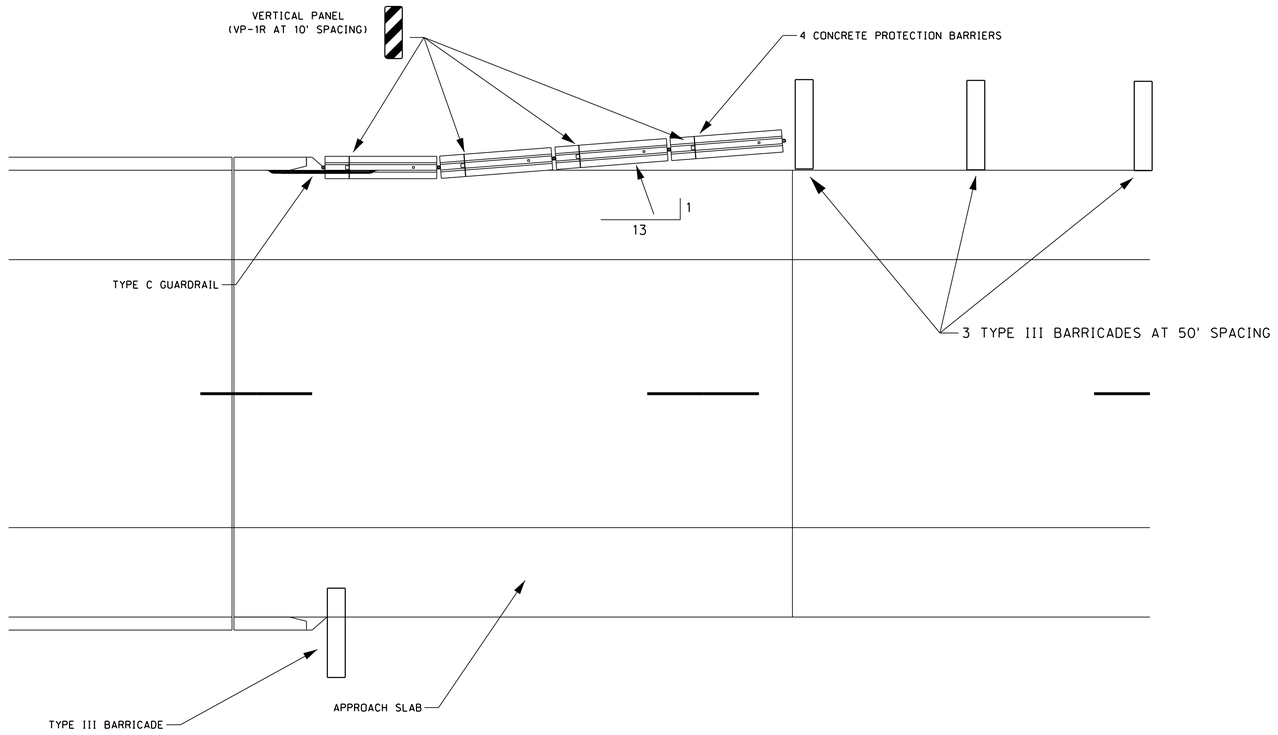
DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

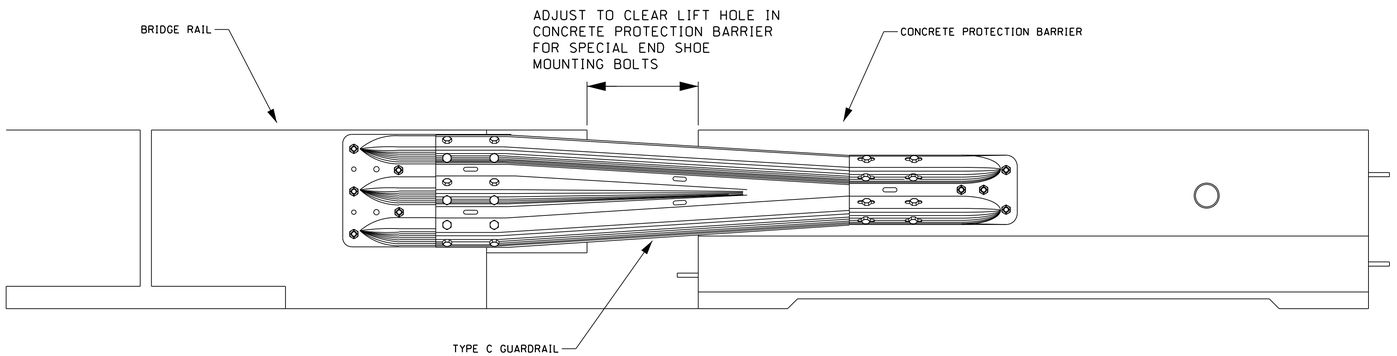
PLAN SHEET NUMBER 1/2

COMPUTER: BG04191M498
DATE: 30-OCT-2024 14:34
FILE: Guardrail Attach.dgn

BRIDGE RAIL TO CONCRETE PROTECTION BARRIER DETAIL



PLAN VIEW



SIDE VIEW

XX

Project Number
###-#(###)

C.N. #####

BRIDGE RAIL - CONCRETE PROTECTION BARRIER DETAIL
BRIDGE RAIL TO CONCRETE PROTECTION BARRIER DETAIL (TYPE III BARRICADES)

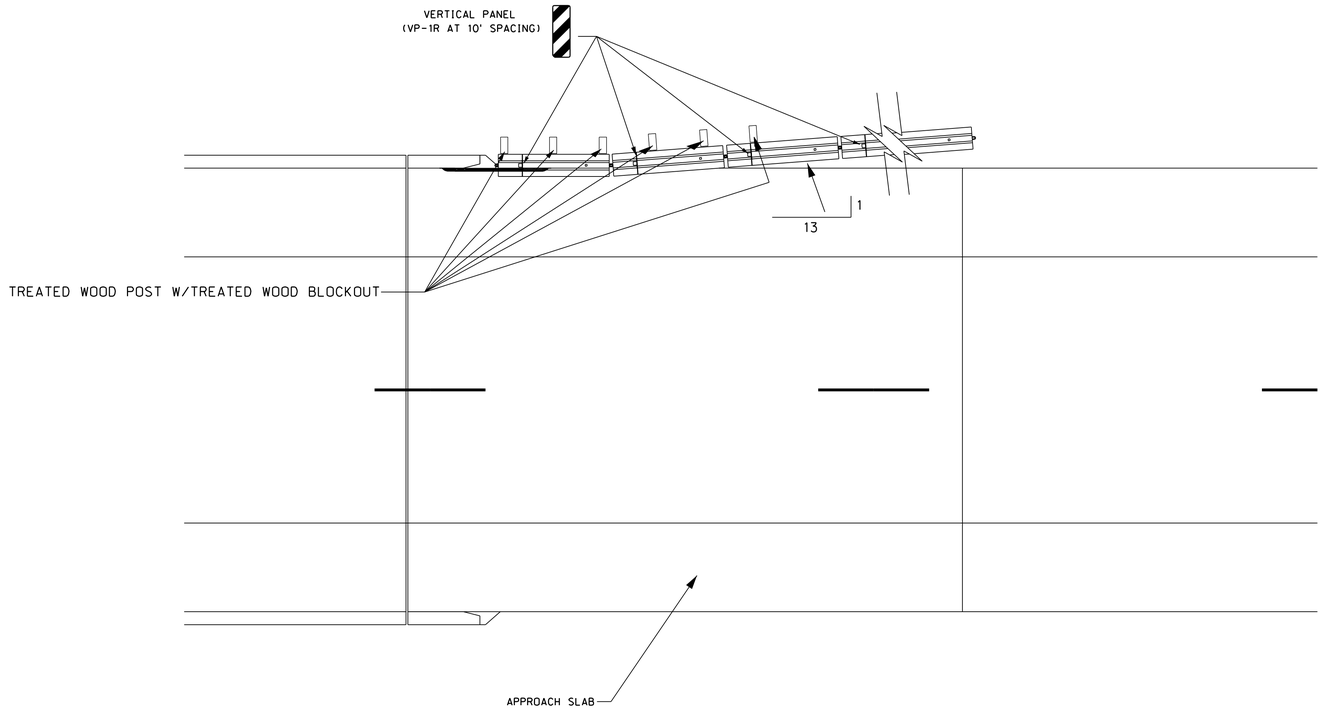
DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

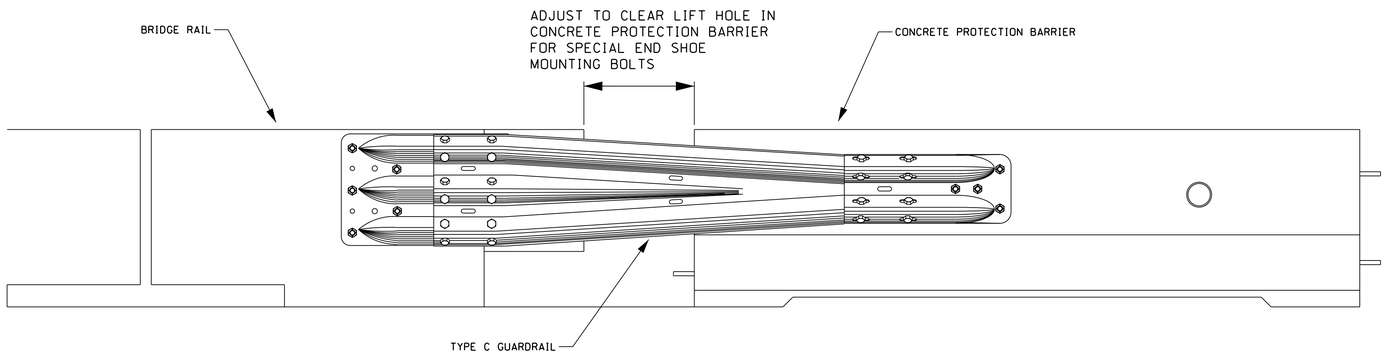
PLAN SHEET NUMBER 2/2

COMPUTER: BG04191M498
DATE: 30-OCT-2024 14:34
FILE: Guardrail Attach.dgn

BRIDGE RAIL TO CONCRETE PROTECTION BARRIER DETAIL



PLAN VIEW



SIDE VIEW

XX

Project Number
###-#(###)

C.N. #####

BRIDGE RAIL - CONCRETE PROTECTION BARRIER DETAIL
BRIDGE RAIL TO CONCRETE PROTECTION BARRIER DETAIL (W/O TYPE III BARRICADES)

DESIGNED BY AJM

DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 2 / 2

FILE: Guardrail Attach.dgn
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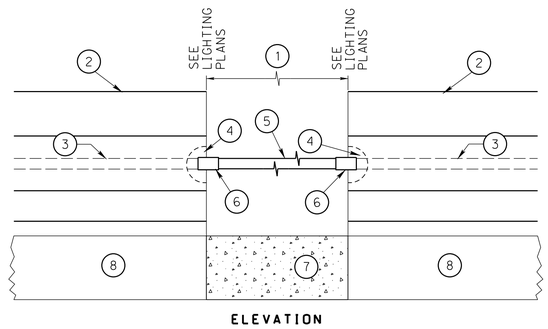
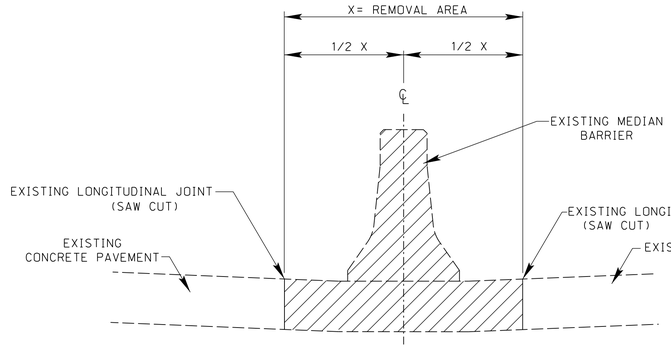


ELEVATION

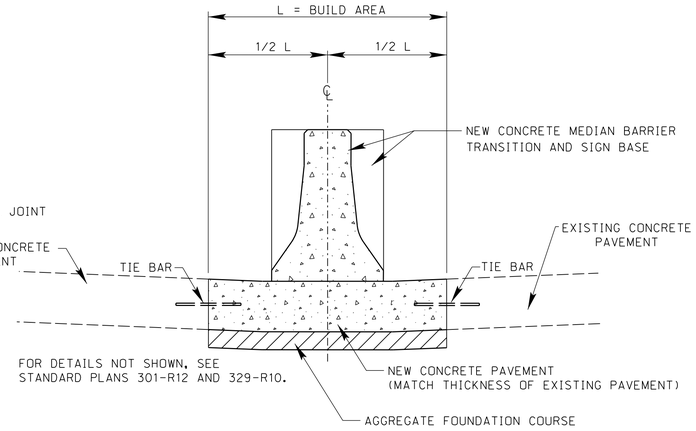
1. LENGTH OF EXISTING CONCRETE MEDIAN BARRIER TO BE REPLACED
2. EXISTING MEDIAN BARRIER
3. EXISTING 1½" PVC CONDUIT IN MEDIAN BARRIER
4. REMOVED CONCRETE TO ACCESS EXISTING CONDUIT END
5. 1½" PVC CONDUIT REPAIR SECTION AS NEEDED
6. 1½" PVC CONDUIT REPAIR COUPLING
7. NEW CONCRETE PAVEMENT
8. EXISTING CONCRETE PAVEMENT

THE 1½" CONDUIT IN THE CONCRETE MEDIAN BARRIER SHALL REMAIN CONTINIOUS THROUGHOUT THE BARRIER. CONTRACTOR SHALL REPLACE THE SECTION OF 1½" PVC CONDUIT DESTROYED DURING MEDIAN BARRIER REMOVAL BY COUPLING A NEW SECTION OF CONDUIT TO THE TWO EXISTING CONDUIT ENDS AS SHOWN.

TYPICAL DETAIL
INSTALLATION OF REPAIR CONDUIT SECTION

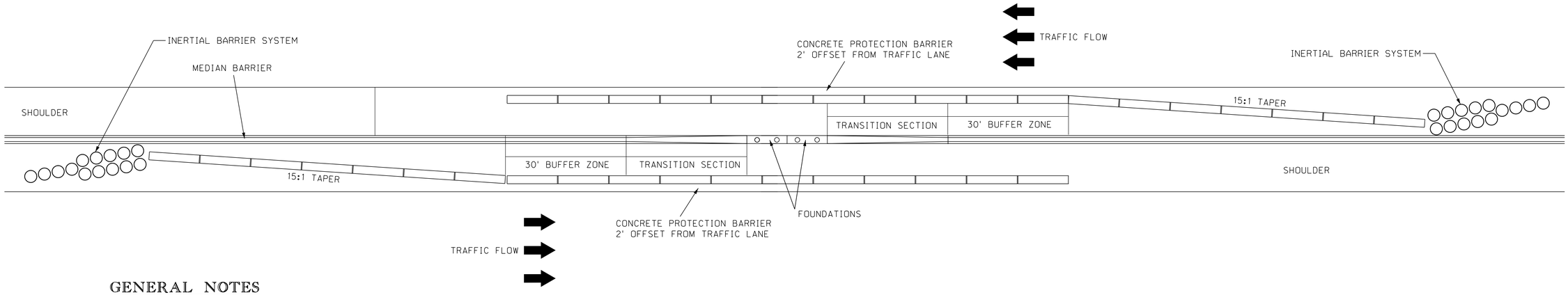


SECTION - REMOVAL



SECTION - BUILD

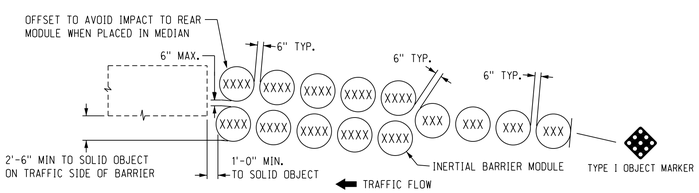
TYPICAL DETAILS - MEDIAN BARRIER
REMOVALS & CONSTRUCTION OF OVERHEAD SIGN STRUCTURE
(SEE ROADWAY PLANS FOR MORE DETAILS)



GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF A MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. FOR INERTIAL BARRIER SYSTEM DETAILS NOT SHOWN, SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM".
4. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE LOCATIONS.
5. CONCRETE PROTECTION BARRIER TAPER SHALL EXTEND TO A LENGTH, AS DETERMINED BY THE ENGINEER, THAT ALLOWS FOR WORK ZONE, WORKERS, AND CONSTRUCTION EQUIPMENT TO BE PROTECTED.
6. SEE "LANE CLOSURE PLAN FOR MULTILANE ROADWAYS" TYPICAL TRAFFIC CONTROL PLAN FOR DETAILS NOT SHOWN.
7. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
8. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
9. CONCRETE PROTECTION BARRIERS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION WORK OF THE DMS FOUNDATION.
10. 36-HOUR PROVISION SHALL APPLY IF CONCRETE PROTECTION BARRIERS ARE REMOVED BEFORE NEW GUARDRAIL INSTALLATION IS COMPLETED.

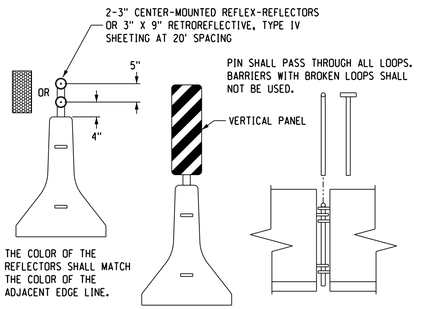
TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

* SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE W14-7L, RIGHT SIDE SHALL BE W14-7R, AT EVERY 25 SPACING ON TOP OF BARRIER, EVERY 5 SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

LEGEND

- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW
- INERTIAL BARRIER SYSTEM
- CONCRETE PROTECTION BARRIER

XX

Project Number
###-#(###)

C.N. #####

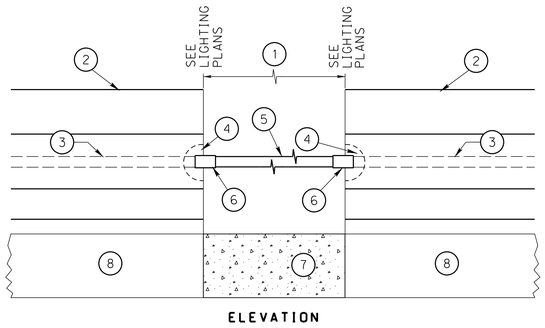
TYPICAL TRAFFIC CONTROL PLAN
OVERHEAD SIGN STRUCTURE FOUNDATION CONSTRUCTION & REMOVALS
WITHIN MEDIAN BARRIER (2 STRUCTURES)

DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M498
DATE: 30-OCT-2024 14:34
FILE: Median Construction for Overhead Structure (Barrier).dgn

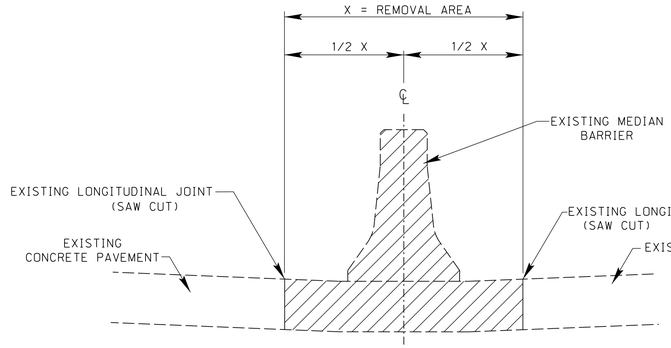


ELEVATION

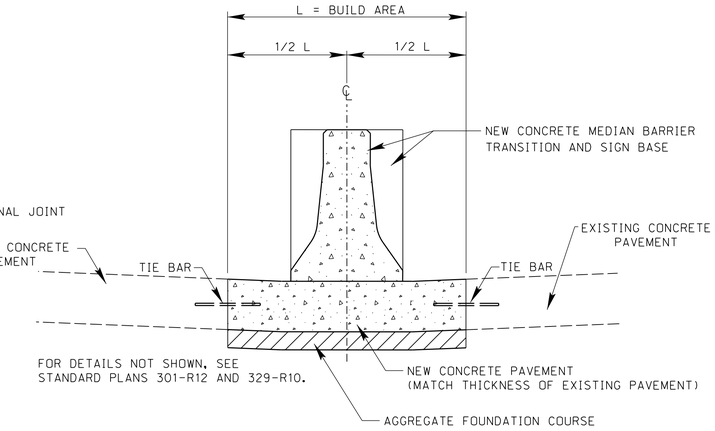
1. LENGTH OF EXISTING CONCRETE MEDIAN BARRIER TO BE REPLACED
2. EXISTING MEDIAN BARRIER
3. EXISTING 1½" PVC CONDUIT IN MEDIAN BARRIER
4. REMOVED CONCRETE TO ACCESS EXISTING CONDUIT END
5. 1½" PVC CONDUIT REPAIR SECTION AS NEEDED
6. 1½" PVC CONDUIT REPAIR COUPLING
7. NEW CONCRETE PAVEMENT
8. EXISTING CONCRETE PAVEMENT

THE 1½" CONDUIT IN THE CONCRETE MEDIAN BARRIER SHALL REMAIN CONTINIOUS THROUGHOUT THE BARRIER. CONTRACTOR SHALL REPLACE THE SECTION OF 1½" PVC CONDUIT DESTROYED DURING MEDIAN BARRIER REMOVAL BY COUPLING A NEW SECTION OF CONDUIT TO THE TWO EXISTING CONDUIT ENDS AS SHOWN.

TYPICAL DETAIL
INSTALLATION OF REPAIR CONDUIT SECTION

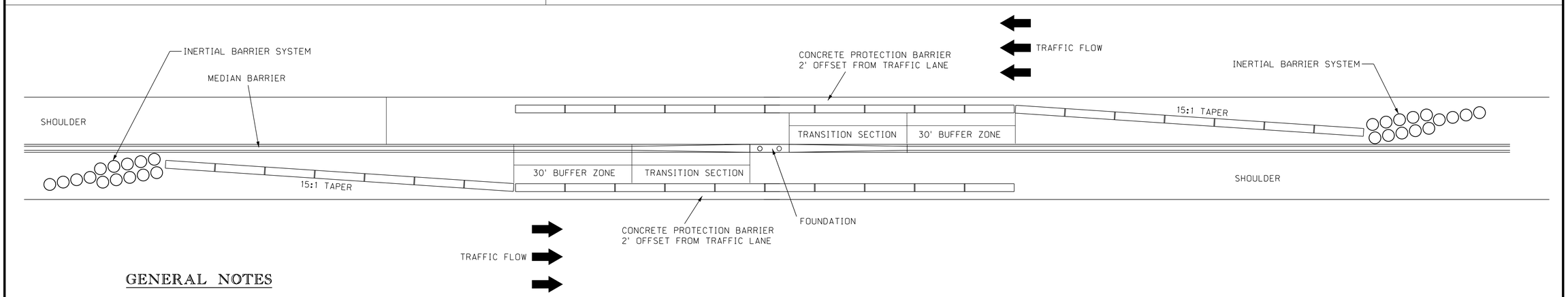


SECTION - REMOVAL



SECTION - BUILD

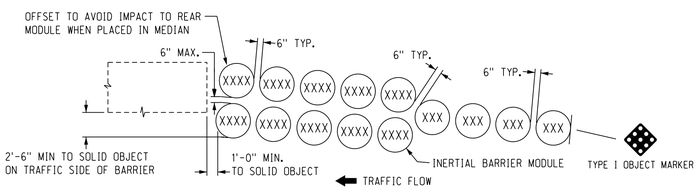
TYPICAL DETAILS - MEDIAN BARRIER
REMOVALS & CONSTRUCTION OF OVERHEAD SIGN STRUCTURE
(SEE ROADWAY PLANS FOR MORE DETAILS)



GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF A MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. FOR INERTIAL BARRIER SYSTEM DETAILS NOT SHOWN, SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM".
4. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE LOCATIONS.
5. CONCRETE PROTECTION BARRIER TAPER SHALL EXTEND TO A LENGTH, AS DETERMINED BY THE ENGINEER, THAT ALLOWS FOR WORK ZONE, WORKERS, AND CONSTRUCTION EQUIPMENT TO BE PROTECTED.
6. SEE "LANE CLOSURE PLAN FOR MULTILANE ROADWAYS" TYPICAL TRAFFIC CONTROL PLAN FOR DETAILS NOT SHOWN.
7. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
8. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
9. CONCRETE PROTECTION BARRIERS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION WORK OF THE DMS FOUNDATION.
10. 36-HOUR PROVISION SHALL APPLY IF CONCRETE PROTECTION BARRIERS ARE REMOVED BEFORE NEW GUARDRAIL INSTALLATION IS COMPLETED.

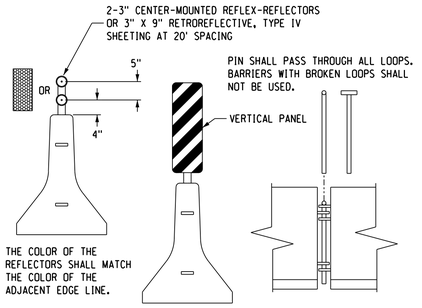
TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

* SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE W14-7L, RIGHT SIDE SHALL BE W14-7R, AT EVERY 2S SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

LEGEND

- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW
- INERTIAL BARRIER SYSTEM
- CONCRETE PROTECTION BARRIER

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
OVERHEAD SIGN STRUCTURE FOUNDATION CONSTRUCTION & REMOVALS
WITHIN MEDIAN BARRIER

DESIGNED BY AJM
DATE 08/23

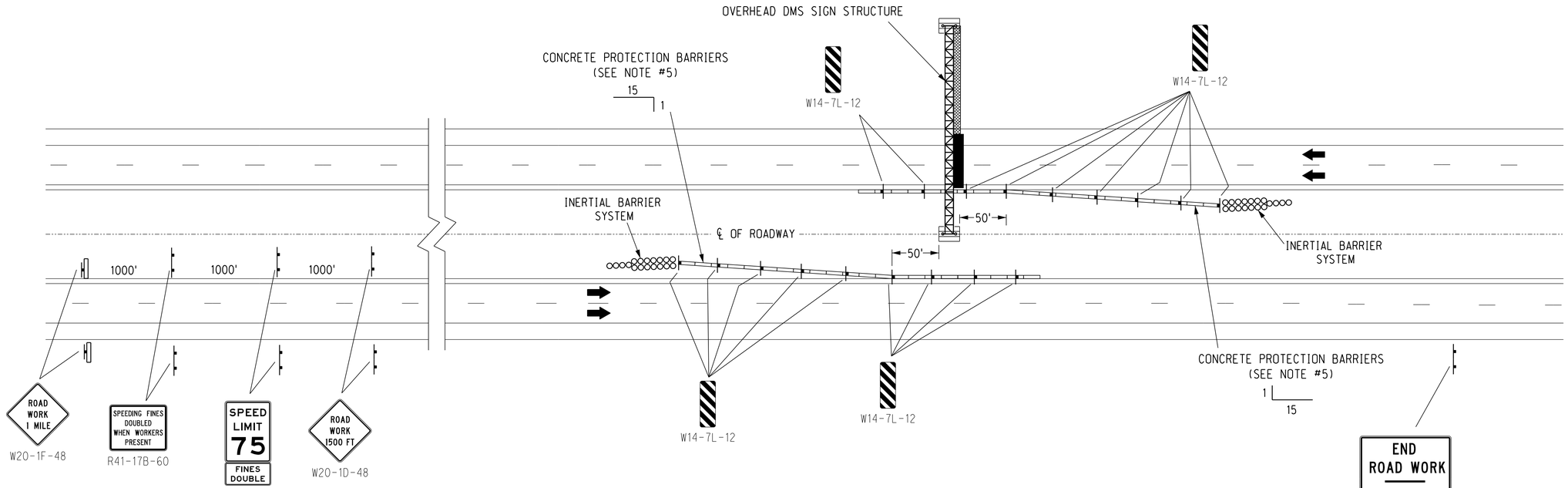
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG04190M498
DATE: 30-OCT-2024 14:34
FILE: Median Construction for Overhead Structure (Barrier).dgn

OVERHEAD DMS STRUCTURE FOUNDATION PROTECTION DURING REMOVALS & CONSTRUCTION WITHIN MEDIAN

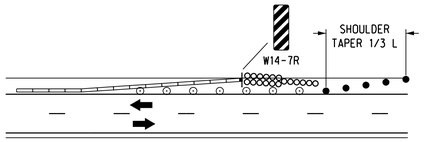
SIGNING IS TYPICAL FOR BOTH DIRECTIONS



GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF A MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. FOR INERTIAL BARRIER SYSTEM DETAILS NOT SHOWN, SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM".
4. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE LOCATIONS.
5. CONCRETE PROTECTION BARRIER TAPER SHALL EXTEND TO A LENGTH, AS DETERMINED BY THE ENGINEER, THAT ALLOWS FOR WORK ZONE, WORKERS, AND CONSTRUCTION EQUIPMENT TO BE PROTECTED.
6. SEE "LANE CLOSURE PLAN FOR MULTILANE ROADWAYS" TYPICAL TRAFFIC CONTROL PLAN FOR DETAILS NOT SHOWN.
7. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
8. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
9. CONCRETE PROTECTION BARRIERS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION WORK OF THE DMS FOUNDATION.
10. 36-HOUR PROVISION SHALL APPLY IF CONCRETE PROTECTION BARRIERS ARE REMOVED BEFORE NEW GUARDRAIL INSTALLATION IS COMPLETED.

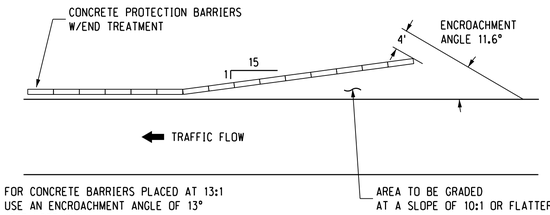
TYPICAL SHOULDER TAPER



SHOULDER TAPER WHEN EXISTING 8' OR GREATER PAVED SHOULDER IS RESTRICTED TO LESS THAN 8'

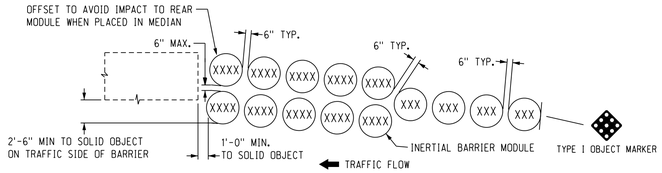
GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN IT MAY REQUIRE GRADING FROM BOTH DIRECTIONS



FOR CONCRETE BARRIERS PLACED AT 13:1 USE AN ENCROACHMENT ANGLE OF 13° (SEE NOTE #4)

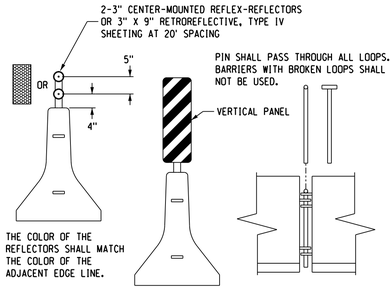
TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

* SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE W14-7L, RIGHT SIDE SHALL BE W14-7R, AT EVERY 2S SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

LEGEND

- SINGLE POST SIGN
- DOUBLE POST SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- TRAFFIC FLOW
- INERTIAL BARRIER SYSTEM
- CONCRETE PROTECTION BARRIER

XX

Project Number ###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
OVERHEAD DMS SIGN STRUCTURE FOUNDATION CONSTRUCTION & REMOVALS IN MEDIAN

DESIGNED BY AJM DATE 08/23

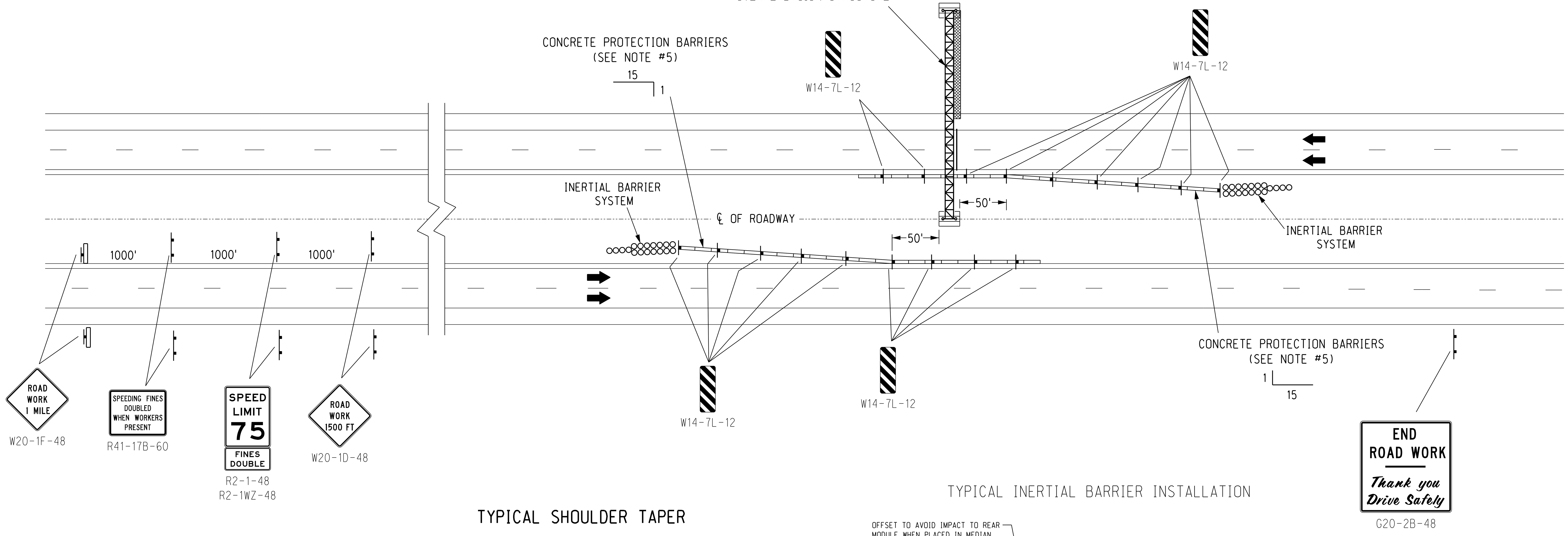
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

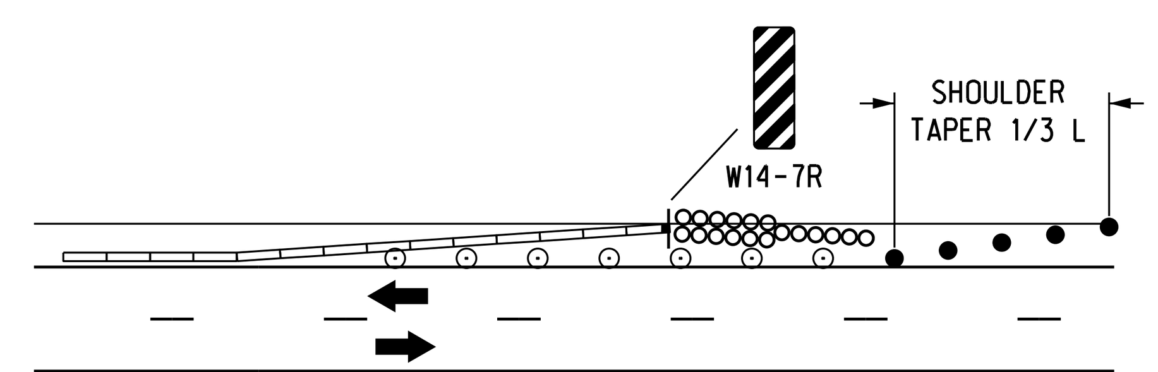
COMPUTER: BG0419M498
DATE: 30-OCT-2024 14:34
FILE: Median Construction for Overhead Structure.dgn

OVERHEAD SIGN STRUCTURE FOUNDATION PROTECTION DURING REMOVALS & CONSTRUCTION WITHIN MEDIAN

SIGNING IS TYPICAL FOR BOTH DIRECTIONS

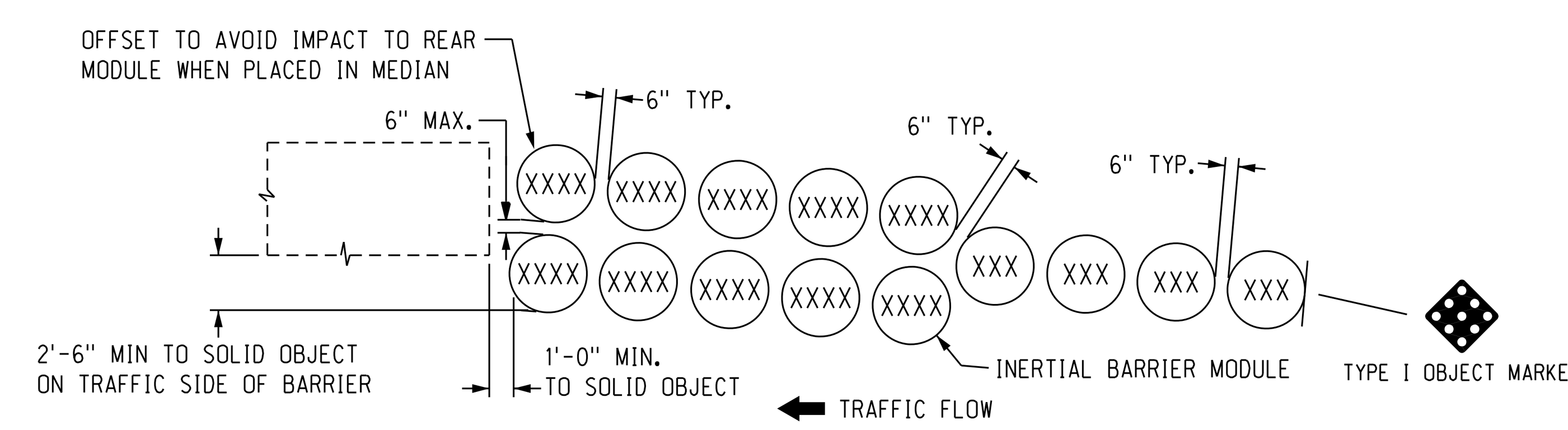


TYPICAL SHOULDER TAPER



SHOULDER TAPER WHEN EXISTING 8' OR GREATER PAVED SHOULDER IS RESTRICTED TO LESS THAN 8'

TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

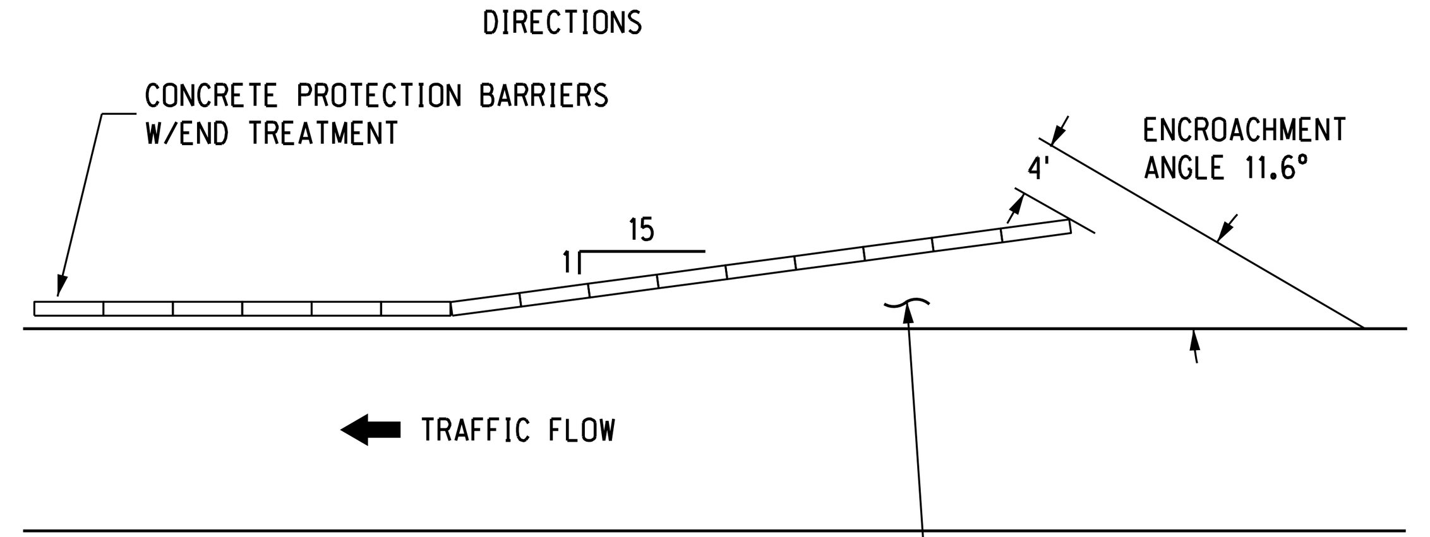
* SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF A MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. FOR INERTIAL BARRIER SYSTEM DETAILS NOT SHOWN, SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM".
4. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE LOCATIONS.
5. CONCRETE PROTECTION BARRIER TAPER SHALL EXTEND TO A LENGTH, AS DETERMINED BY THE ENGINEER, THAT ALLOWS FOR WORK ZONE, WORKERS, AND CONSTRUCTION EQUIPMENT TO BE PROTECTED.
6. SEE "LANE CLOSURE PLAN FOR MULTILANE ROADWAYS" TYPICAL TRAFFIC CONTROL PLAN FOR DETAILS NOT SHOWN.
7. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
8. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
9. CONCRETE PROTECTION BARRIERS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION WORK OF THE DMS FOUNDATION.
10. 36-HOUR PROVISION SHALL APPLY IF CONCRETE PROTECTION BARRIERS ARE REMOVED BEFORE NEW GUARDRAIL INSTALLATION IS COMPLETED.

GRADING FOR CONCRETE BARRIER PLACEMENT

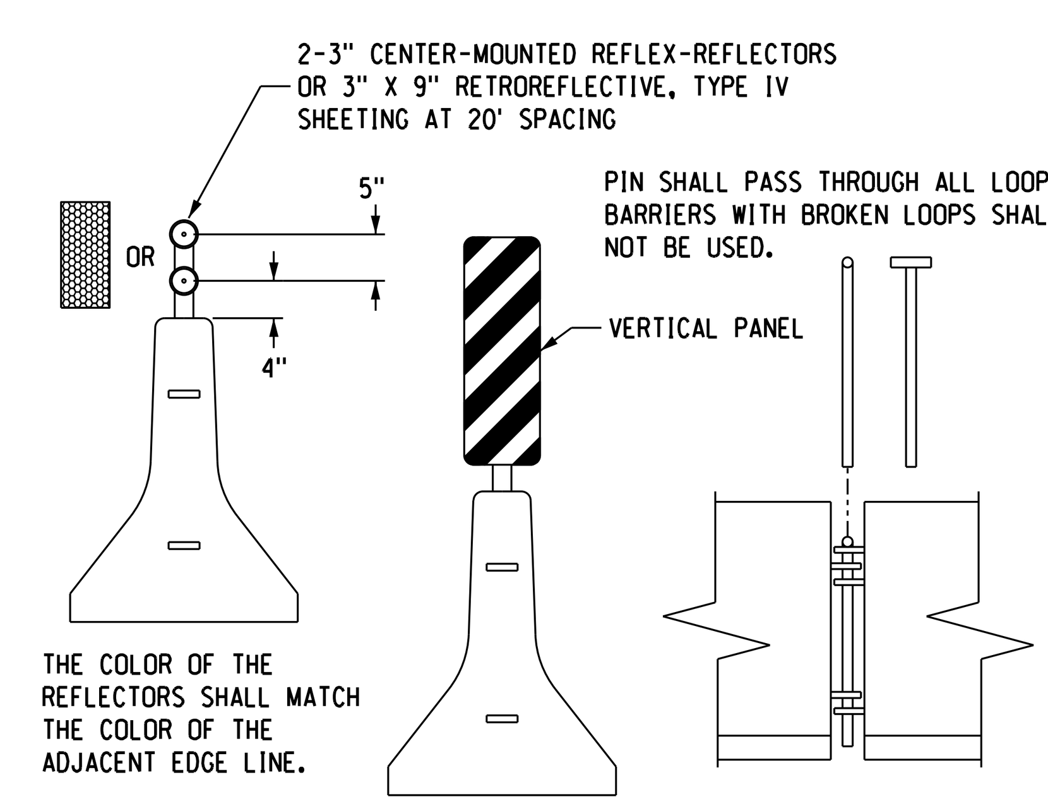
FOR BARRIERS PLACED IN THE MEDIAN IT MAY REQUIRE GRADING FROM BOTH DIRECTIONS



FOR CONCRETE BARRIERS PLACED AT 13:1 USE AN ENCROACHMENT ANGLE OF 13° (SEE NOTE #4)

AREA TO BE GRADED AT A SLOPE OF 10:1 OR FLATTER

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE W14-7L, RIGHT SIDE SHALL BE W14-7R, AT EVERY 2S SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

LEGEND

- SINGLE POST SIGN
- DOUBLE POST SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- TRAFFIC FLOW
- INERTIAL BARRIER SYSTEM
- CONCRETE PROTECTION BARRIER

XX

Project Number ###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN

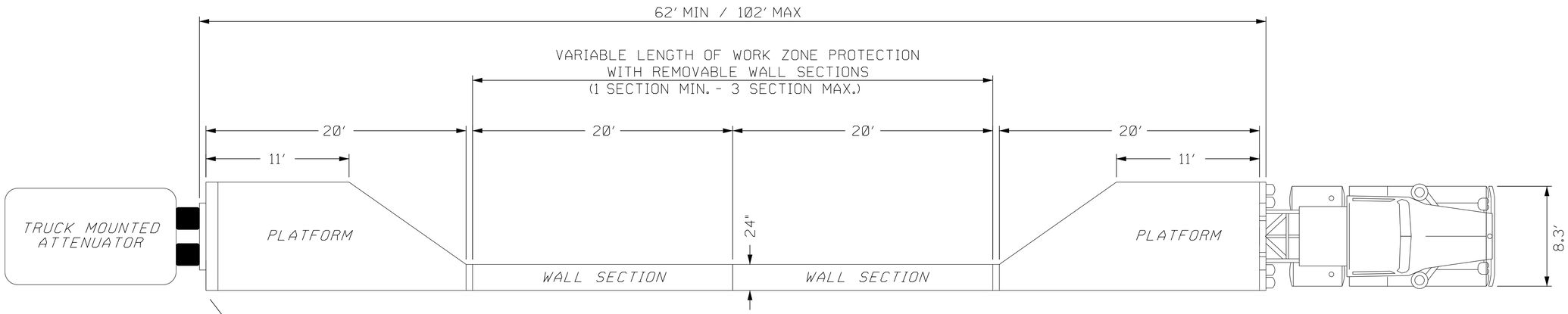
OVERHEAD SIGN STRUCTURE FOUNDATION CONSTRUCTION & REMOVALS IN MEDIAN

DESIGNED BY AJM

DATE 08/23

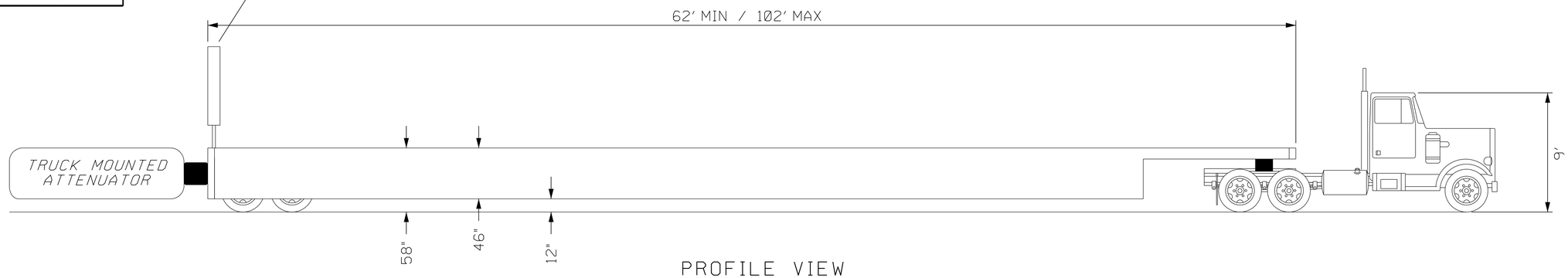
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1 / 1



PLAN VIEW

PORTABLE DYNAMIC
MESSAGE SIGN (PDMS)
ON MOBILE BARRIER



PROFILE VIEW

GENERAL NOTES

1. ASSEMBLE AND INSTALL PER THE MANUFACTURER'S RECOMMENDATIONS

XX

Project Number
###-#(###)

C.N. #####

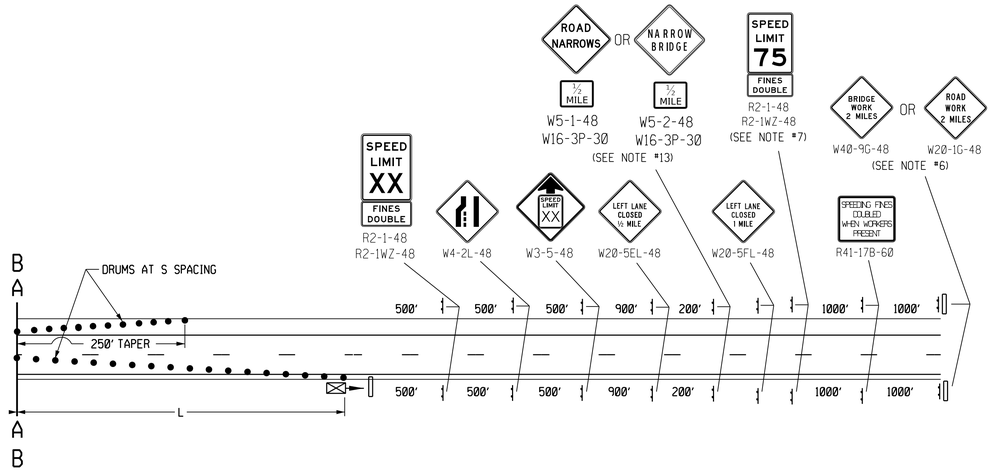
TYPICAL TRAFFIC CONTROL PLAN
LANE CLOSURE AND LANE SHIFT W/ MOBILE BARRIER SYSTEM

DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/2

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:05
FILE: Mobile Barrier System.dgn



TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

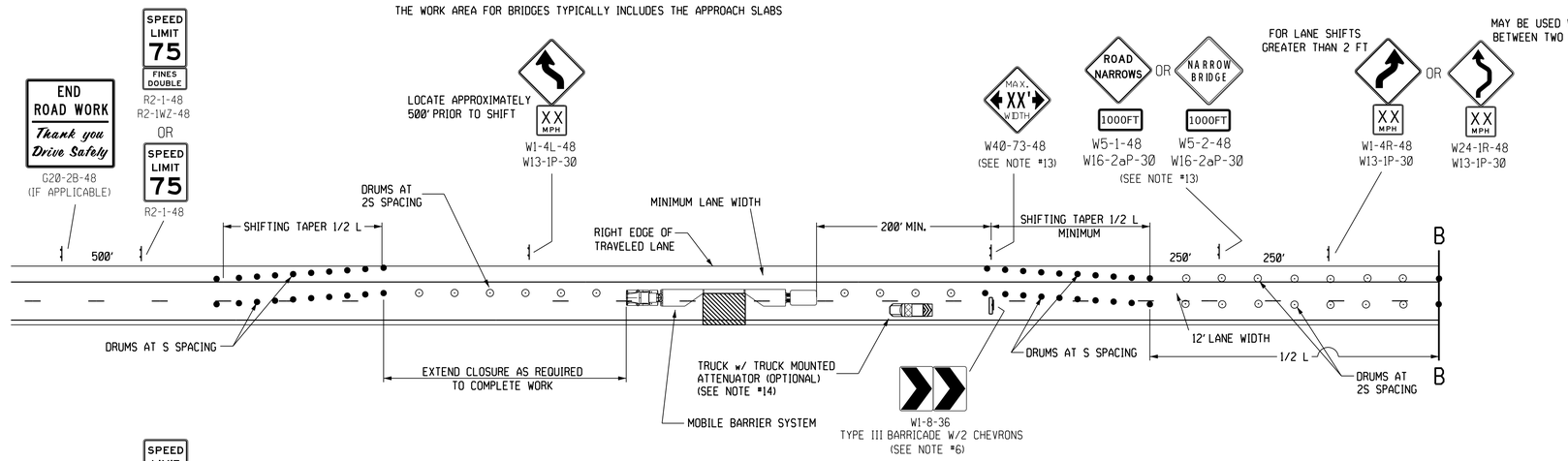
W = WIDTH OF OFFSET (LANE WIDTH).

TRUCK MOUNTED ATTENUATOR SYSTEM:

1. THE CONTACTOR SHALL FURNISH A FEDERALLY APPROVED TRUCK MOUNTED ATTENUATOR SYSTEM, MOUNTED ON A MINIMUM 16,000 POUND TRUCK. THE TRUCK SHALL BE EQUIPPED WITH 96" X 48" FLASHING ARROW PANEL, SECURLY MOUNTED ON THE TRUCK. THE TMA SYSTEM SHALL BE LOCATED IN THE FIELD AS REQUIRED BY THE MANUFACTURER. A COMPLETE SET OF REPLACEMENT MODULES SHALL BE AVAILABLE NEAR THE PROJECT SITE IN THE EVENT OF DAMAGE TO THE INSTALLED TMA. DAMAGED TMA'S SHALL BE REMOVED FROM THE ROADWAY AND PROJECT WORK STOPPED UNTIL REPAIRS TO THE UNIT HAVE BEEN COMPLETED.
2. THE TRUCK MOUNTED ATTENUATOR SHALL BE AN NCHRP 350 OR MASH TEST LEVEL 3 APPROVED TMA FOR 65 MILES PER HOUR.
3. THE TRUCK SHALL BE A 16,000 TO 35,000 POUND (GVW) VEHICLE AS REQUIRED BY THE TMA MANUFACTURER.

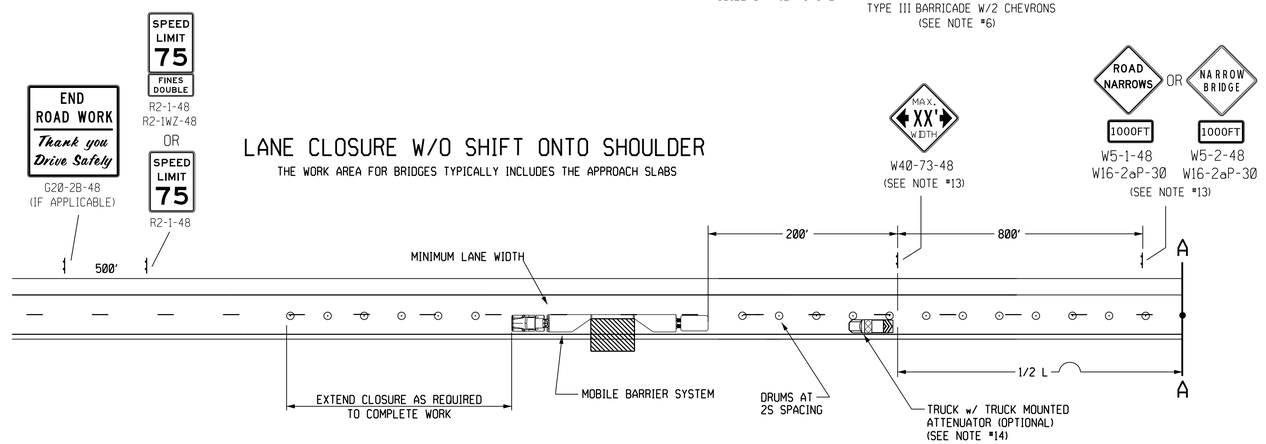
LANE CLOSURE W/SHIFT ONTO SHOULDER

THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



LANE CLOSURE W/O SHIFT ONTO SHOULDER

THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- FLASHING ARROW PANEL
- WORK ZONE
- TRUCK w/ TRUCK MOUNTED ATTENUATOR

GENERAL NOTES

1. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
2. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
3. THE FLASHING ARROW PANEL SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
4. FOR BRIDGE WORK ON CONSECUTIVE BRIDGES LESS THAN 1/2 MILE APART, USE PLACE PLASTIC DRUMS AT 2S INTERVALS BETWEEN THE BRIDGES.
5. ALL TEMPORARY PAVEMENT MARKING SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSITIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PRE-MARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
6. TYPE "A" LIGHTS SHALL BE USED WHEN OTHER ADVANCE WARNING CONSTRUCTION SIGNS ARE INSTALLED ON THE PROJECT.
7. NOT REQ'D IF WITHIN 1500FT OF REDUCED SPEED AHEAD SIGN (W3-5-48).
8. SHOULDER TAPER 1/3 L REQ'D FOR FLASHING ARROW PLANEL PLACED ON 8' WIDE SHOULDER.
9. SIGNS W20-5LE, W20-5LF AND W20-1G (W8-10B) MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACINGS RESPECTIVELY IN LOW VOLUME AREAS, AT THE DIRECTION OF THE ENGINEER.
10. FINES DOUBLE SIGN (R2-1WZ) REQ'D WITH SPEED LIMIT WITHIN THE DOUBLE FINE WORK ZONE.
11. EXISTING SPEED LIMIT SIGNS AND MINIMUM 40 MPH SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.
12. SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS FOR THE WORK ZONE.
13. INSTALL WHEN LANE WIDTH ACROSS IS LESS THAN APPROACH LANE WIDTH.
14. ADVANCED PLACEMENT OF TRUCK w/ TRUCK MOUNTED ATTENUATOR SHALL BE BASED ON MANUFACTURER'S RECOMMENDATIONS FOR DISPLACEMENT.

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
LANE CLOSURE AND LANE SHIFT W/ MOBILE BARRIER SYSTEM

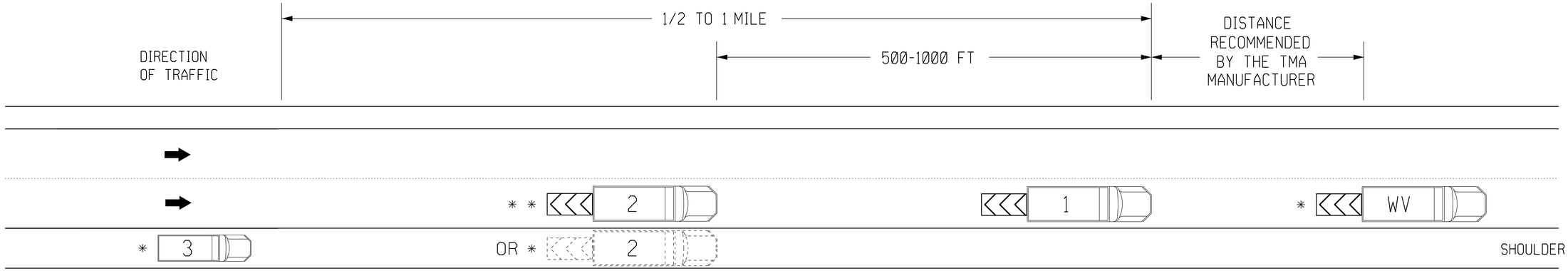
DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

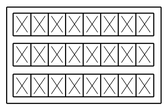
PLAN SHEET NUMBER 2/2

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:05
FILE: Mobile Barrier System.dgn

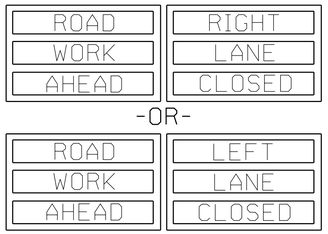
MOBILE OPERATIONS ON RURAL MULTI-LANE ROADWAY



SHADOW VEHICLE 3
& PORTABLE DYNAMIC MESSAGE SIGN
WITH 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT
* TMA OPTIONAL

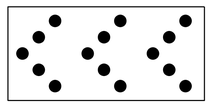


PORTABLE DYNAMIC MESSAGE SIGN



TWO MESSAGES (1.6 - 2.0 SECONDS PER MESSAGE)

OPTIONAL SHADOW VEHICLE 2
& FLASHING ARROW PANEL ON REAR
WITH 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT
* TMA OPTIONAL IF COMPLETELY ON SHOULDER AND NOT STRADDLING EDGE LINE.
* * TMA REQUIRED IF STRADDLING EDGE LINE OR IN CLOSED LANE.



FLASHING ARROW PANEL ON REAR

TRUCK MOUNTED ATTENUATOR SYSTEM:

1. THE CONTACTOR SHALL FURNISH A FEDERALLY APPROVED TRUCK MOUNTED ATTENUATOR SYSTEM, MOUNTED ON A MINIMUM 16,000 POUND TRUCK. THE TRUCK SHALL BE EQUIPPED WITH 60" X 30" FLASHING ARROW PANEL, SECURLY MOUNTED ON THE TRUCK. THE TMA SYSTEM SHALL BE LOCATED IN THE FIELD AS REQUIRED BY THE MANUFACTURER. A COMPLETE SET OF REPLACEMENT MODULES SHALL BE AVAILABLE NEAR THE PROJECT SITE IN THE EVENT OF DAMAGE TO THE INSTALLED TMA. DAMAGED TMA'S SHALL BE REMOVED FROM THE ROADWAY AND PROJECT WORK STOPPED UNTIL REPAIRS TO THE UNIT HAVE BEEN COMPLETED.
2. THE TRUCK MOUNTED ATTENUATOR SHALL BE AN NCHRP 350 TEST LEVEL 3 (OR MASH EQUIVALENT) APPROVED TMA FOR 100 km PER HOUR (60 MPH).
3. THE TRUCK SHALL BE A 16,000 TO 35,000 POUND (GVW) VEHICLE AS REQUIRED BY THE TMA MANUFACTURER.
4. THE FLASHING ARROW PANEL SHALL BE SECURLY MOUNTED AS HIGH AS PRACTICABLE ON THE VEHICLE. THE ARROW PANEL SHALL NOT COME LOOSE UPON IMPACT TO THE TMA.

SHADOW VEHICLE 1 WITH TMA
& FLASHING ARROW PANEL ON REAR
WITH 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT

FLASHING ARROW PANEL ON REAR

WORKING VEHICLE(S)
WITH 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT
* TMA OPTIONAL

NOTES:

1. SHADOW VEHICLE 1 SHALL HAVE A TRUCK MOUNTED ATTENUATOR. SHADOW VEHICLE 2 IS OPTIONAL AND SHALL HAVE A TRUCK-MOUNTED ATTENUATOR IF IN THE CLOSED LANE OR STRADDLING THE EDGE LINE. SHADOW VEHICLE 3 MAY HAVE A TMA.
2. SHADOW VEHICLE 1 AND WHEN USED, SHADOW VEHICLE 2 SHALL HAVE A FLASHING ARROW PANEL.
3. SHADOW VEHICLE NUMBER 3 SHALL HAVE A PORTABLE DYNAMIC MESSAGE SIGN.
4. WHEN USED, SHADOW VEHICLE 2 SHALL BE PLACED IN ADVANCE OF HORIZONTAL OR VERTICAL CURVES TO PROVIDE ADVANCE WARNING FOR WORK OPERATIONS HIDDEN BY CURVES.
5. FOR LEFT LANE CLOSURES, SHADOW VEHICLE 3 WILL REMAIN ON RIGHT SHOULDER WHEN AN 8' OR WIDER PAVED INSIDE (LEFT) SHOULDER DOES NOT EXIST.
6. IN URBAN AREAS THE DISTANCE MAINTAINED BETWEEN VEHICLES MAY BE DECREASED AS NEEDED.
7. VEHICLE HAZARD LIGHT WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING OSCILLATING, OR STROBE LIGHTS.
8. DETAIL MAY BE USED FOR LEFT OR RIGHT LANE/SHOULDER WORK.

XX
Project Number
###-#(###)
C.N. #####

TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
TWO-LANE AND MULTI-LANE

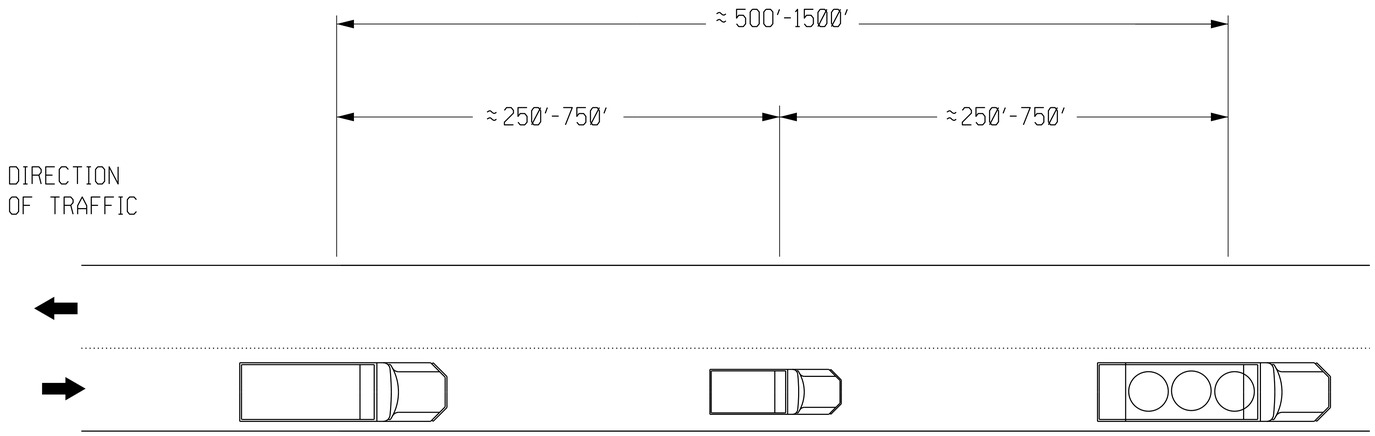
DESIGNED BY NRL
DATE 12/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/2

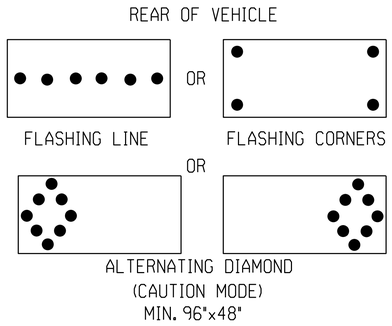
COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:00
FILE: Mobile Operations.dgn

MOBILE OPERATIONS RURAL TWO-LANE TWO-WAY ROADS



REAR VEHICLE

WITH 2 HIGH INTENSITY FLASHING LIGHTS MOUNTED ON THE REAR AND 2-360° BEACONS OR APPROVED MINI-BAR LIGHT (TMA OPTIONAL)



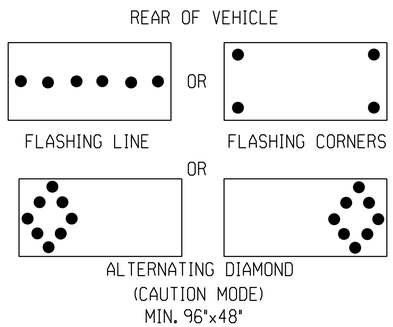
OPTIONAL VEHICLE

WITH 2-360° BEACONS OR APPROVED MINI-BAR LIGHT

WORK VEHICLE

WITH 4 HIGH INTENSITY FLASHING LIGHTS MOUNTED ON REAR AND 2-360° BEACONS OR APPROVED MINI-BAR LIGHT

SINGLE STROBE LIGHT ON FRONT OF VEHICLE



NOTES:

1. CAUTION MODE ON WORK VEHICLE AND REAR VEHICLE SHALL BE ALTERNATING DIAMOND OR THE FLASHING 4 CORNER LIGHTS IF THE DIAMOND MODE IS NOT AVAILABLE.

2. REAR VEHICLE SHALL BE PLACED IN ADVANCE OF HORIZONTAL OR VERTICAL CURVES TO PROVIDE ADVANCE WARNING FOR WORK OPERATIONS HIDDEN BY CURVES.

XX

Project Number
###-#(###)

C.N. #####

TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
TWO-LANE AND MULTI-LANE

DESIGNED BY NRL

DATE 12/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 2/2

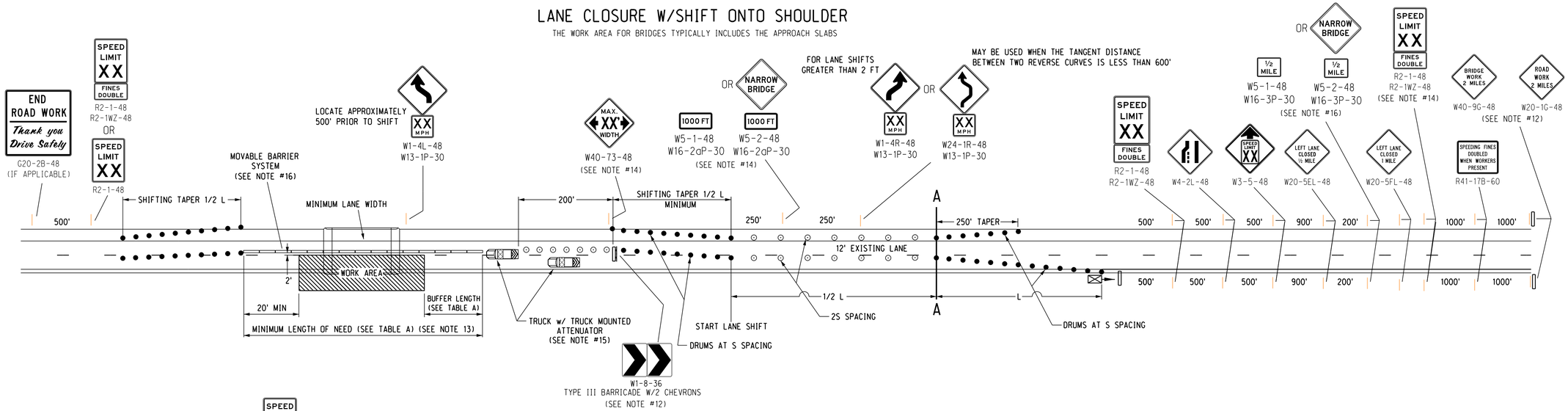
COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:00

FILE: Mobile Operations.dgn

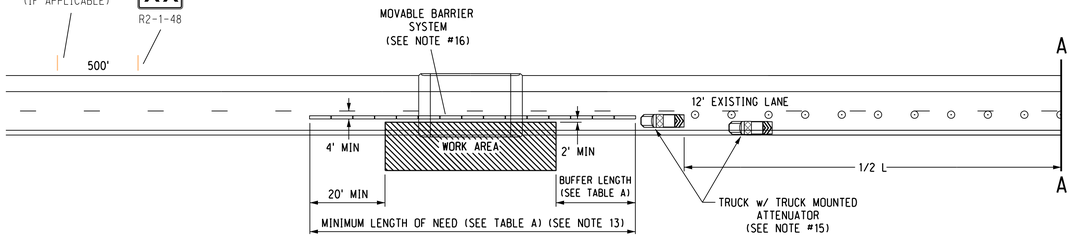
LANE CLOSURE W/SHIFT ONTO SHOULDER

THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



LANE CLOSURE W/O SHIFT ONTO SHOULDER

THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



TRUCK MOUNTED ATTENUATOR SYSTEM:

1. THE CONTRACTOR SHALL FURNISH A TRUCK MOUNTED ATTENUATOR SYSTEM, MOUNTED ON A MINIMUM 16,000 POUND TRUCK. THE TRUCK SHALL BE EQUIPPED WITH 96" X 48" FLASHING ARROW PANEL, SECURLY MOUNTED ON THE TRUCK. THE TMA SYSTEM SHALL BE LOCATED IN THE FIELD AS REQUIRED BY THE MANUFACTURER. A COMPLETE SET OF REPLACEMENT MODULES SHALL BE AVAILABLE NEAR THE PROJECT SITE IN THE EVENT OF DAMAGE TO THE INSTALLED TMA. DAMAGED TMA'S SHALL BE REMOVED FROM THE ROADWAY AND PROJECT WORK STOPPED UNTIL REPAIRS TO THE UNIT HAVE BEEN MADE.
2. THE TRUCK MOUNTED ATTENUATOR SHALL BE AN NCHRP 350 OR MASH TEST LEVEL 3 APPROVED TMA FOR 65 MILES PER HOUR.
3. THE TRUCK SHALL BE A 16,000 TO 35,000 POUND (GVW) VEHICLE AS REQUIRED BY THE TMA MANUFACTURER.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- FLASHING ARROW PANEL
- WORK ZONE
- TRUCK w/ TRUCK MOUNTED ATTENUATOR

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE MOVABLE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF A MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
4. THE FLASHING ARROW PANEL SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
5. FOR BRIDGE WORK ON CONSECUTIVE BRIDGES LESS THAN 1/2 MILE APART, PLACE PLASTIC DRUMS AT 2S INTERVALS BETWEEN THE BRIDGES.
6. SHOULDER TAPER 1/3 L REQ'D FOR FLASHING ARROW PANEL PLACED ON 8' WIDE SHOULDER.
7. SIGNS W20-5LE, W20-5LF AND W20-1G (W8-10B) MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACINGS RESPECTIVELY IN LOW VOLUME AREAS AT THE DIRECTION OF THE ENGINEER.
8. FINES DOUBLE SIGN (R2-1WZ) REQ'D WITH SPEED LIMIT WITHIN THE DOUBLE FINE WORK ZONE.
9. EXISTING SPEED LIMIT SIGNS AND MINIMUM 40 MPH SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.
10. TYPE "A" LIGHTS SHALL BE USED WHEN OTHER ADVANCE WARNING CONSTRUCTION SIGNS ARE INSTALLED ON THE PROJECT.
11. SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS FOR THE WORK ZONE.
12. NOT REQ'D IF WITHIN 1500 FT OF REDUCED SPEED AHEAD SIGN.
13. LENGTH OF MOVABLE BARRIER SHALL BE BASED ON MANUFACTURER'S RECOMMENDATIONS AND SHALL BE NCHRP 350 OR MASH TL-3 APPROVED.
14. INSTALL WHEN LANE WIDTH IS LESS THAN APPROACH LANE WIDTH.
15. ADVANCED PLACEMENT OF TRUCK w/ TRUCK MOUNTED ATTENUATOR SHALL BE BASED ON MANUFACTURER'S RECOMMENDATIONS FOR DISPLACEMENT.
16. MOVABLE BARRIER SYSTEM SHALL BE IN PLACE AS REQUIRED BY CONSTRUCTION ACTIVITIES. UPON COMPLETION OF DAILY ACTIVITIES, BARRIER SHALL BE REMOVED FROM THE DRIVING LANES. DAILY RELOCATION OF BARRIER TO A PREVIOUSLY INSTALLED LOCATION SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM "MOVABLE BARRIER SYSTEM".

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Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN

SINGLE LANE CLOSURE W/ SINGLE LANE SHIFT ON MULTILANE ROADWAY (MOVABLE BARRIER)

DESIGNED BY AJM

DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

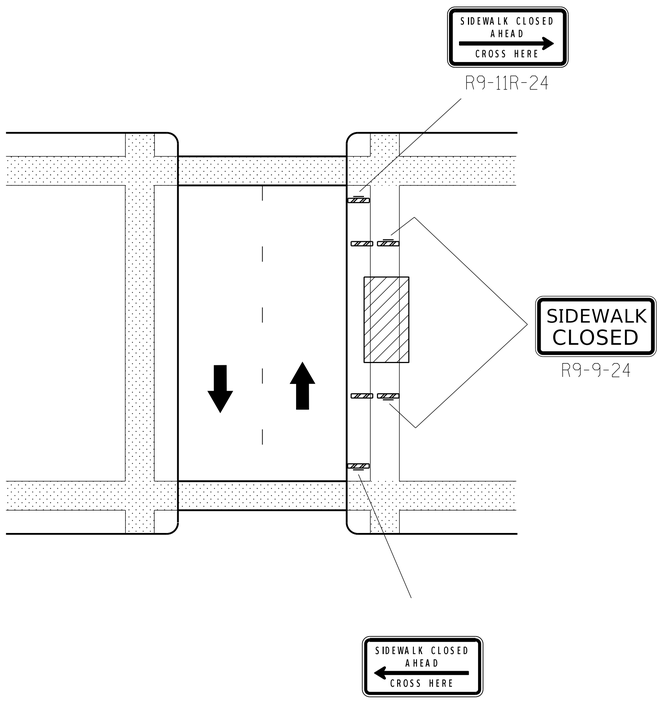
PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M498

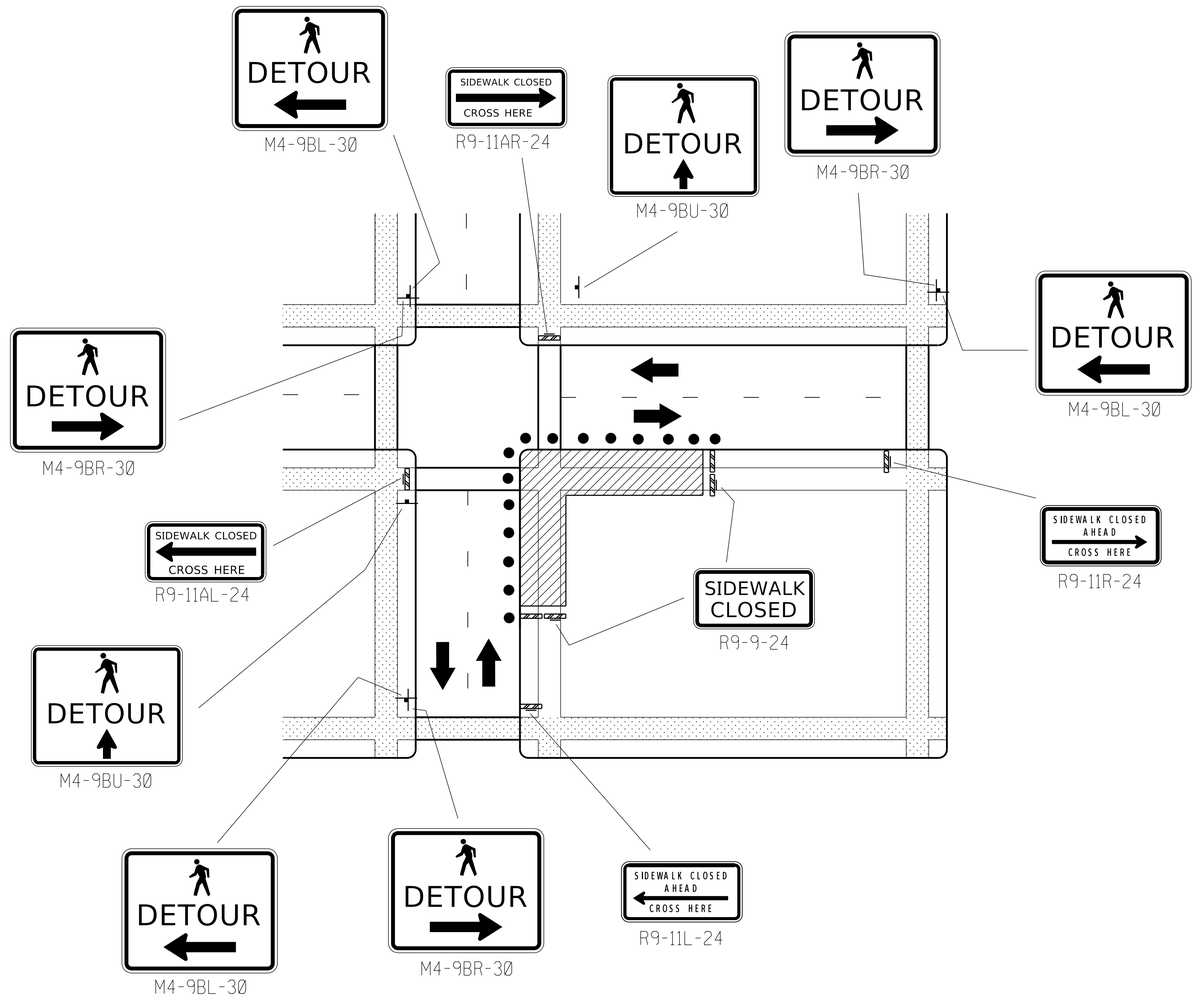
DATE: 30-OCT-2024 14:34

FILE: Moveable Barrier System.dgn

MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE



GENERAL NOTES

1. WHEN CROSSWALKS, SIDEWALKS, OR OTHER PEDESTRIAN FACILITIES ARE BLOCKED, CLOSED, OR RELOCATED, TEMPORARY FACILITIES SHALL INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
2. ONLY TRAFFIC CONTROL DEVICES CONTROLLING PEDESTRIAN TRAFFIC ARE SHOWN. OTHER TRAFFIC CONTROL DEVICES MAY BE NECESSARY TO CONTROL TRAFFIC ON THE ROADWAY.
3. PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING A CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.
4. PEDESTRIAN DETOUR TRAILBLAZING SIGNS SHOULD BE USED IF THE PEDESTRIAN DETOUR IS LOCATED SOME PLACE OTHER THAN ACROSS THE STREET FROM THE SIDEWALK CLOSURE.
5. IF REPAIR OR RECONSTRUCTION WORK INVOLVES SIDEWALKS ON BOTH SIDES OF THE STREET, THE WORK SHALL BE STAGED SO THAT ONE SIDE IS REBUILT BEFORE THE OTHER IS DISRUPTED. LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE THE IMPACT ON PEDESTRIAN TRAFFIC.

LEGEND

- TYPE II BARRICADE
- SINGLE POST SIGN
- REFLECTORIZED PLASTIC DRUM
- TRAFFIC FLOW
- WORK AREA
- PEDESTRIAN TRAFFIC

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
TEMPORARY PEDESTRIAN DETOUR

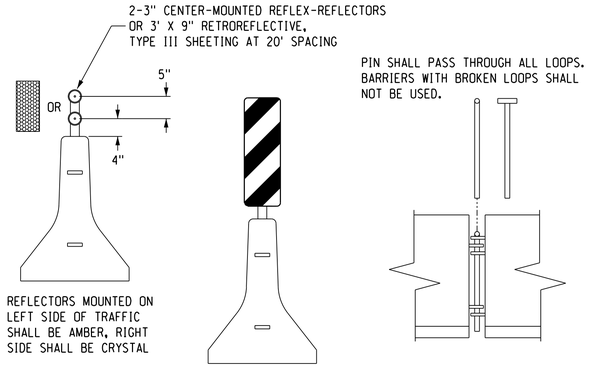
DESIGNED BY NRL
DATE 05/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG04139M687
DATE: 11-SEP-2023 13:02
FILE: Pedestrian Detour.dgn

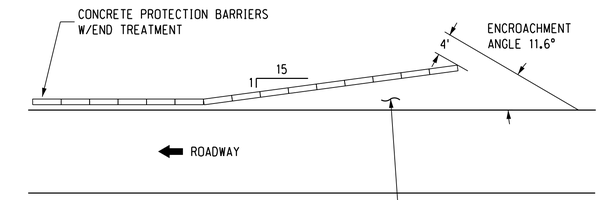
CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 2S SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN
IT MAY REQUIRE GRADING FROM BOTH
DIRECTIONS



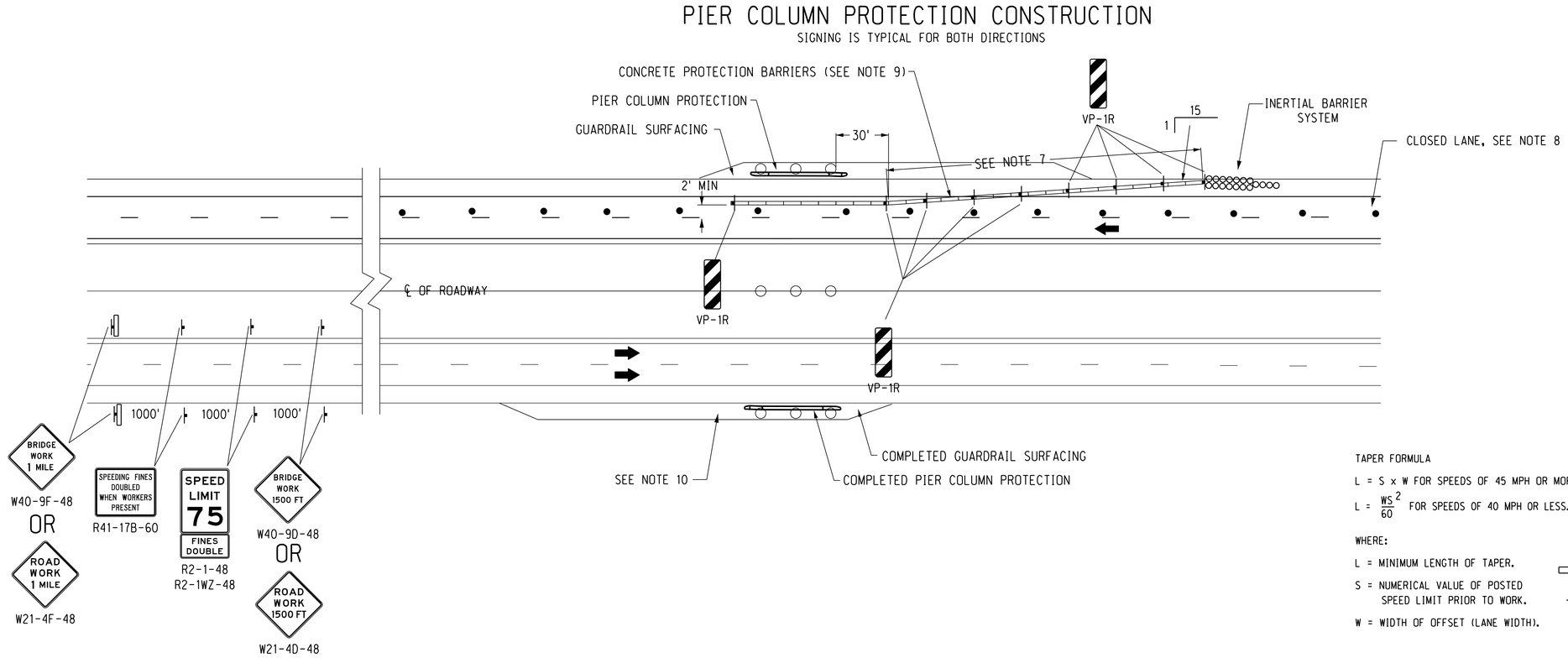
FOR CONCRETE BARRIERS PLACED AT 13:1
USE AN ENCROACHMENT ANGLE OF 13°

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH REFLECTORS AND A BRACKET TO SUPPORT THE REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
4. MINIMUM WIDTH OF TRAVELLED LANE SHALL BE AS SHOWN, UNLESS APPROVED OTHERWISE BY THE ENGINEER.
5. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
6. FOR FIXED OBSTACLES WITHIN 35' OF THE THROUGH TRAVEL LANE, PLACE CONCRETE PROTECTION BARRIERS AS SHOWN.
7. TAPER SHALL EXTEND TO OUTSIDE EDGE OF SHOULDER. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE AND FOR 55 MPH ROADWAYS.
8. SEE INTERSTATE LANE CLOSURE TYPICAL FOR ADDITIONAL SIGNING.
9. CONCRETE PROTECTION BARRIERS SHALL BE INSTALLED AFTER FINAL LIFT AND PRIOR TO EXISTING GUARDRAIL IS REMOVED FOR PIER COLUMN PROTECTION CONSTRUCTION.
10. 36 HOUR PROVISION SHALL APPLY IF CONCRETE PROTECTION BARRIERS ARE REMOVED BEFORE NEW GUARDRAIL INSTALLATION IS COMPLETED.

PIER COLUMN PROTECTION CONSTRUCTION

SIGNING IS TYPICAL FOR BOTH DIRECTIONS



TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SIGN

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
PIER COLUMN PROTECTION CONCRETE BARRIER PLACEMENT

DESIGNED BY AJM

DATE 08/23

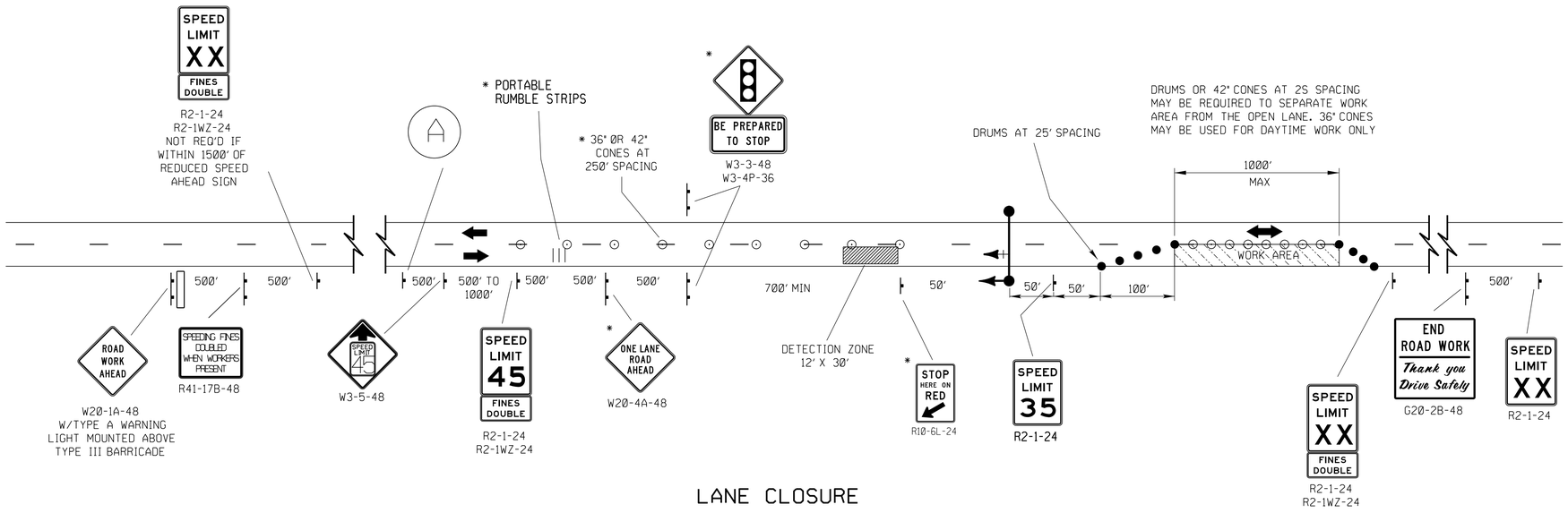
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M498

DATE: 30-OCT-2024 14:34

FILE: Pier Column Protection.dgn



LANE CLOSURE

* SIGNS, CONES, AND PORTABLE RUMBLE STRIPS ARE SUBSIDIARY TO THE SIGNAL OPERATION.

GENERAL NOTES

1. SIGNS SHOWN ARE USUALLY FOR ONE DIRECTION OF TRAVEL ONLY.
2. THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE ALL SIGNS IN ACCORDANCE WITH THE DETAILS OF AND AT THE LOCATIONS SHOWN IN THE PLANS. SIGNS INSTALLED BY THE DEPARTMENT OF TRANSPORTATION OR OTHER GOVERNMENT AGENCIES SHALL BE MAINTAINED AND REMOVED BY THEIR FORCES.
3. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE WILL NOT BE PERMITTED ON THE FACE OF THE SIGN.
4. ALL BARRICADE AND SIGN LOCATIONS ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES FROM MOTORISTS.
5. VEHICLES OR EQUIPMENT SHALL NOT BE PARKED AS TO OBSCURE OR DISTRACT FROM TRAFFIC CONTROL DEVICES.
6. "NO PASSING ZONES NOT MARKED" SIGN (W25-6-48) SHOULD BE INSTALLED AT EACH END OF THE PROJECT WHENEVER THE EXISTING NO PASSING ZONE PAVEMENT MARKINGS HAVE BEEN REMOVED OR COVERED AND NO PASSING ZONE PAVEMENT MARKINGS ARE NOT INCLUDED IN THE PROJECT.
7. SPEED LIMIT SIGN IS NOT REQUIRED IF WITHIN 1500 FT OF A REDUCED SPEED AHEAD SIGN.
8. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. THE WORK ZONE SPEED LIMIT SHALL BE ESTABLISHED ACCORDING TO DOT-OI 60-18. SEE WORK ZONE SPEED LIMIT NOTES ON STANDARD PLAN 920.
9. A SPEED LIMIT SIGN ENDING THE REDUCED SPEED ZONE SHALL BE INSTALLED AT THE END OF EACH ZONE.
10. PLACE TYPE II BARRICADES, REFLECTORIZED PLASTIC DRUMS, OR 42" CONES ON THE TRAFFIC SIDE OF THE DROP-OFF WHERE SUFFICIENT LATERAL DISTANCE EXISTS BETWEEN THE TRAVEL LANE AND THE DROP-OFF (DROP-OFF DETAIL ON STANDARD PLAN 922).
11. THE LEAD SIGNS ARE NOT NEEDED IF TWO PROJECTS ARE LESS THAN 1 MILE APART. THE "END CONSTRUCTION" SIGN (G20-2B-48) SHOULD NOT BE INSTALLED BETWEEN THE PROJECTS.
12. ON ARMOR COAT SURFACING, A "LOOSE GRAVEL" SIGN (W8-7-36) IS REQUIRED AT THE BEGINNING OF THE DAYS WORK AND SHALL REMAIN IN PLACE UNTIL THE LOOSE GRAVEL HAS BEEN SWEPT OFF.
13. SIGN SIZES SHOWN ARE FOR TYPICAL SITUATIONS- REFER TO NEBRASKA SUPPLEMENT TO THE MUTCD FOR FURTHER SIZE INFORMATION.
14. REFER TO STANDARD PLAN 920 FOR GENERAL INFORMATION NOT SHOWN.
15. A MINIMUM OF 7-36" OR 42" CONES SHALL BE PLACED ON CENTERLINE IN ADVANCE OF THE TEMPORARY SIGNAL. THE CONES SHOULD BE SPACED AT 250 FEET.

LEGEND

- FLAGGER
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- TYPE III BARRICADE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- TRAFFIC SIGNAL

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.
W = WIDTH OF OFFSET (LANE WIDTH).

A — ASPHALT SURFACING OR FOG SEAL

FRESH OIL — W21-2-36

REDUCE SPEED LOOSE GRAVEL ON SURFACE — W8-7C-48 — ARMOR COAT SURFACING

MILLED SURFACE — W41-24-36 — MILLING

TABLE A: TEMPORARY TRAFFIC SIGNAL TIMING

RECOMMENDED SETTINGS (SEC.)
INITIAL GREEN - 15
EXTENSION - 2.5
MAX. GREEN - 45
YELLOW - 5

DISTANCE BETWEEN "STOP HERE ON RED" SIGN LOCATIONS (FT)	ALL RED (SEC.)
500' - 700'	19
700' - 850'	24
850' - 1,000'	28
1,000' - 1,250'	34
1,250' - 1,500'	41

LOOSE GRAVEL
W8-7-36
WHERE REQUIRED BY THE ENGINEER

ADDITIONAL SIGNS USE WHERE APPLICABLE

XX

Project Number
###-#(###)

C.N. #####

TEMPORARY TRAFFIC SIGNAL PLAN
SHORT TERM CLOSURE

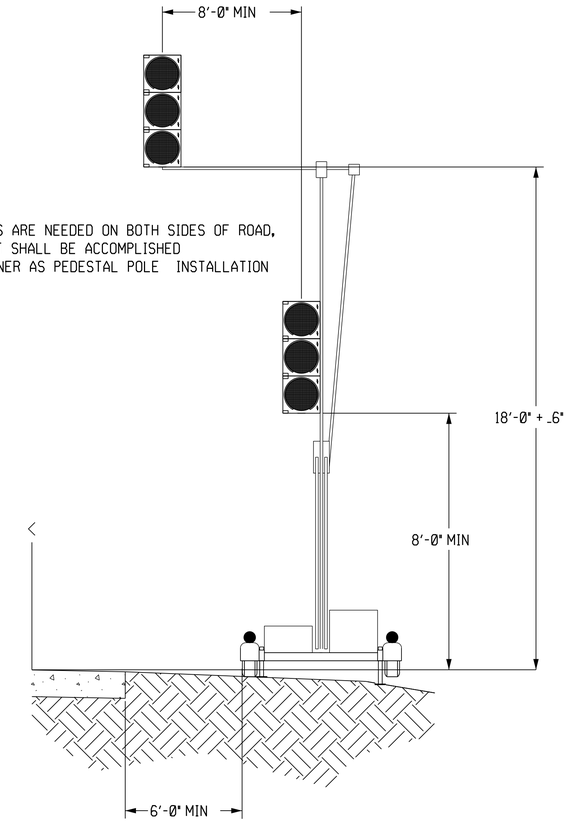
DESIGNED BY NRL
DATE 12/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

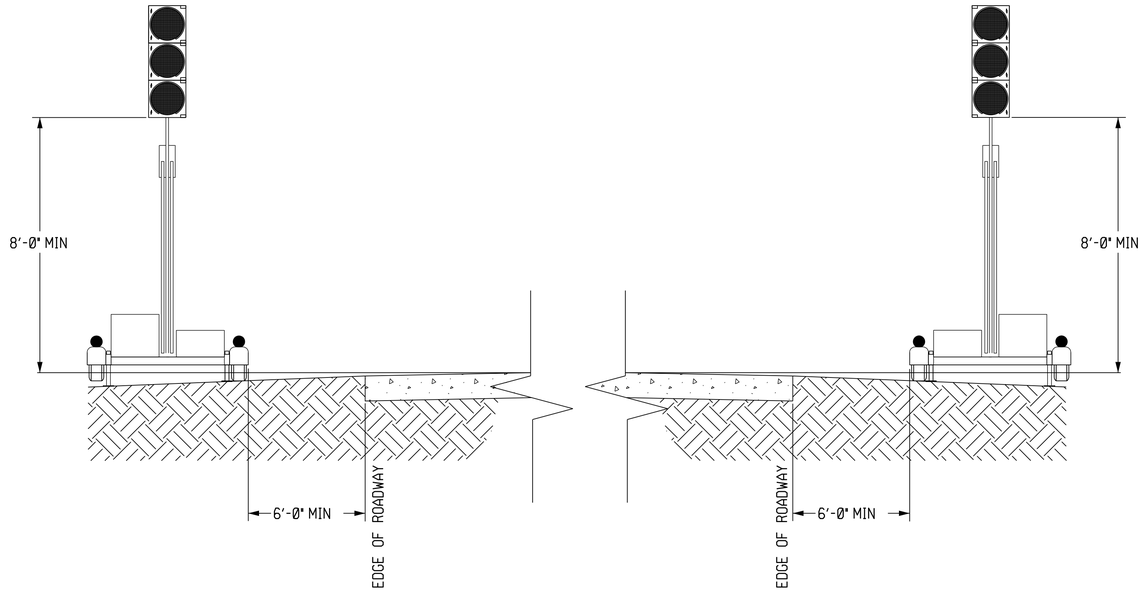
PLAN SHEET NUMBER 1/2

COMPUTER: BG0419M687
DATE: 11-SEP-2023 12:59
FILE: Short Term Temporary Signal Plan.dgn

PORTABLE SIGNAL TRAILER (MULTI SIGNAL UNIT) INSTALLATION



PORTABLE SIGNAL TRAILER (SINGLE SIGNAL UNIT) INSTALLATION



NOTES

1. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT AND MATERIAL REQUIRED FOR THE TEMPORARY SIGNAL UNLESS OTHERWISE SPECIFIED. ALL EQUIPMENT AND MATERIAL FURNISHED BY THE CONTRACTOR SHALL REMAIN HIS PROPERTY.
2. ANY STATE SUPPLIED EQUIPMENT OR MATERIAL SHALL REMAIN THE PROPERTY OF THE STATE OF NEBRASKA.
3. THE SIGNAL HEAD LENSES SHALL BE A MINIMUM OF 12 INCHES IN DIAMETER.
4. ALL SIGNAL LAMPS SHALL BE EXTENDED ANGLE LED.
5. MAINTENANCE OF THE TEMPORARY SIGNAL SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.
6. TRAFFIC SIGNALS POWERED BY MEANS OF A PORTABLE GENERATOR SHALL HAVE STANDBY BATTERY POWER CAPABLE OF OPERATING THE SIGNAL NOT LESS THAN 26 HOURS. PORTABLE TRAFFIC SIGNALS SHALL BE CHECKED EVERY 24 HOURS TO INSURE PROPER OPERATION.
7. THE SIGNAL SHALL BE PLACED INTO FLASHING AMBER OPERATION FOR BOTH DIRECTIONS DURING PERIODS WHEN THE LANE ARE OPEN TO TWO-WAY TRAFFIC. UNDER NO CIRCUMSTANCES SHALL AN INOPERATIVE TRAFFIC SIGNAL BE LEFT UNCOVERED ON AN OPEN ROAD TO THE PUBLIC.
8. INSTALLATION OF THE TEMPORARY SIGNAL SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE (LATEST EDITION), THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, ALL LOCAL ORDINANCES AND REGULATIONS, THE SPECIFICATIONS AND THE PROJECT PLANS.
9. SEE SIGNING STANDARD FOR REQUIRED SIGNING TO ACCOMPANY SIGNAL.
10. WHEN REQUIRED, THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT AND MATERIAL REQUIRED FOR VEHICLE DETECTION ON ALL APPROACHES.

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Project Number
###-#(###)

C.N. #####

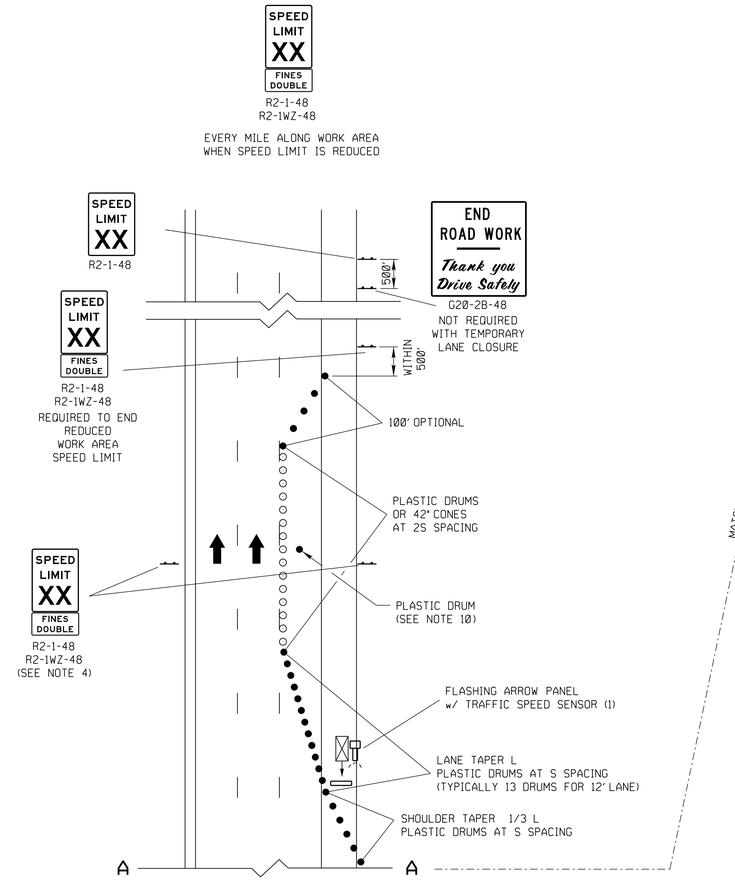
TEMPORARY TRAFFIC SIGNAL PLAN
SHORT TERM CLOSURE

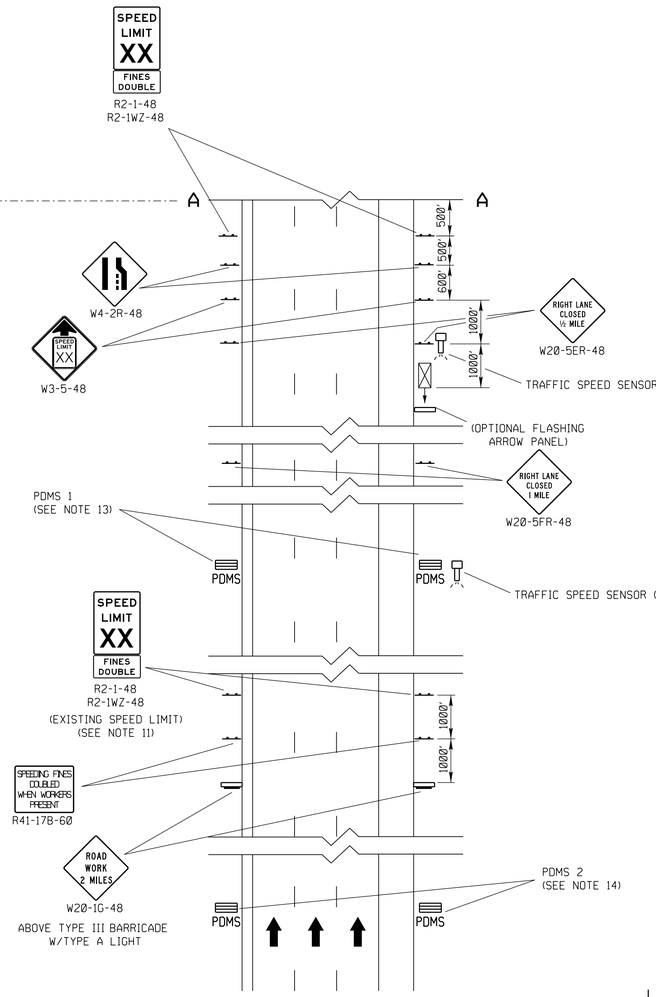
DESIGNED BY NRL
DATE 12/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 2/2

FILE: Short Term Temporary Signal Plan.dgn
DATE: 11-SEP-2023 12:59
COMPUTER: BG04191M687





NOTES:

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENCROACHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. WHEN A REDUCED SPEED LIMIT IS USED, IT SHALL COMPLY WITH THE REQUIREMENTS OF NDOT OPERATING INSTRUCTION 60-18, WORK ZONE SPEED LIMITS.
4. SPEED LIMIT SIGNS R2-1 SHALL BE 48" X 60" WHEN USED ON INTERSTATES OR FREEWAYS. 30" X 36" SIGNS MAY BE USED ON ALL OTHER ROADWAYS. SPEED LIMIT SIGNS (IF REQ'D FOR WORK) SHALL BE INSTALLED EVERY MILE THRU THE WORK AREA, WHEN THE SPEED LIMIT IS REDUCED.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. FOR FOG SEALS, SLURRY SEALS, ARMOR COATS, CRACK AND JOINT SEALING WHERE ALL LANES OF TRAFFIC WILL BE REOPENED BEFORE NIGHT, THE CONTRACTOR MAY USE 36" OR 42" CONES IN PLACE OF PLASTIC DRUMS ALONG THE WORK AREA. WHEN USED 36" CONES SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
7. PLASTIC DRUMS SHALL BE REQUIRED TO BE PLACED IN FRONT OF LANE EXCAVATIONS IN PAVEMENT AND SLAB REPAIR, AND OTHER WORK ACTIVITIES AS DIRECTED BY THE ENGINEER. PLASTIC DRUMS SHALL BE REQUIRED FOR ALL TAPERS AND LANE SHIFTS.
8. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. PLACE A PLASTIC DRUM OR TYPE III BARRICADE AS DIRECTED BY THE ENGINEER IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "SPEEDING FINES DOUBLED WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF W3-5 "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.
12. SIGNS W20-5E, W20-5RF AND W20-1G MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACING RESPECTIVELY IN LOW VOLUME AREA AT THE DIRECTION OF THE ENGINEER.
13. PORTABLE DYNAMIC MESSAGE SIGN AND TRAFFIC SPEED SENSOR SHOULD BE LOCATED 1.5 MILES FROM START OF LANE CLOSURE MERGING TAPER.
14. PORTABLE DYNAMIC MESSAGE SIGN SHOULD BE LOCATED 2.5 MILES FROM START OF LANE CLOSURE MERGING TAPER. AT THE DISCRETION OF THE ENGINEER, THE PDMS MAY BE RELOCATED TO FURTHEST IDENTIFIED LOCATION OF TRAFFIC BACKUP QUEUE.

PDMS 1 MESSAGE		PDMS 2 MESSAGE		LAST 5-MINUTE AVERAGE SPEED V (MPH)
■ ■ ■ ■ ■ ■		■ ■ ■ ■ ■ ■		V ≥ 45
SLOW	SLOW	SLOW	SLOW	25 < V < 45
TRAFFIC	DOWN	TRAFFIC	DOWN	
AHEAD		AHEAD		
STOPPED	PREPARE	STOPPED	PREPARE	V ≤ 25
TRAFFIC	TO	TRAFFIC	TO	
AHEAD	STOP	AHEAD	STOP	

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- PORTABLE NON-INTRUSIVE TRAFFIC SPEED SENSOR
- PDMS — PORTABLE DYNAMIC MESSAGE SIGN

XX

Project Number
###-#(###)

C.N. #####

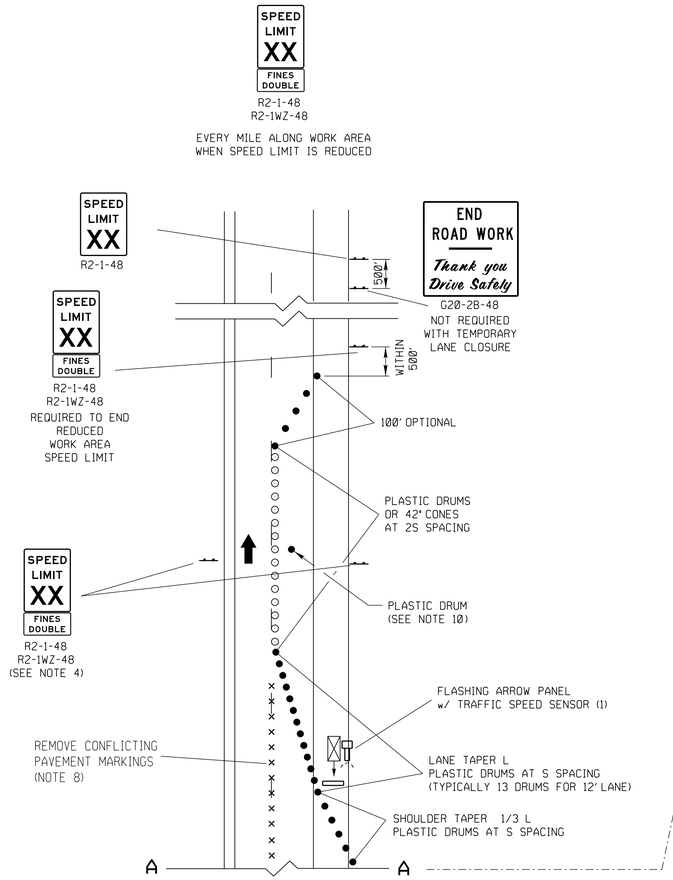
TYPICAL TRAFFIC CONTROL PLAN
SMART WORK ZONE SYSTEM INFORMATION PLAN

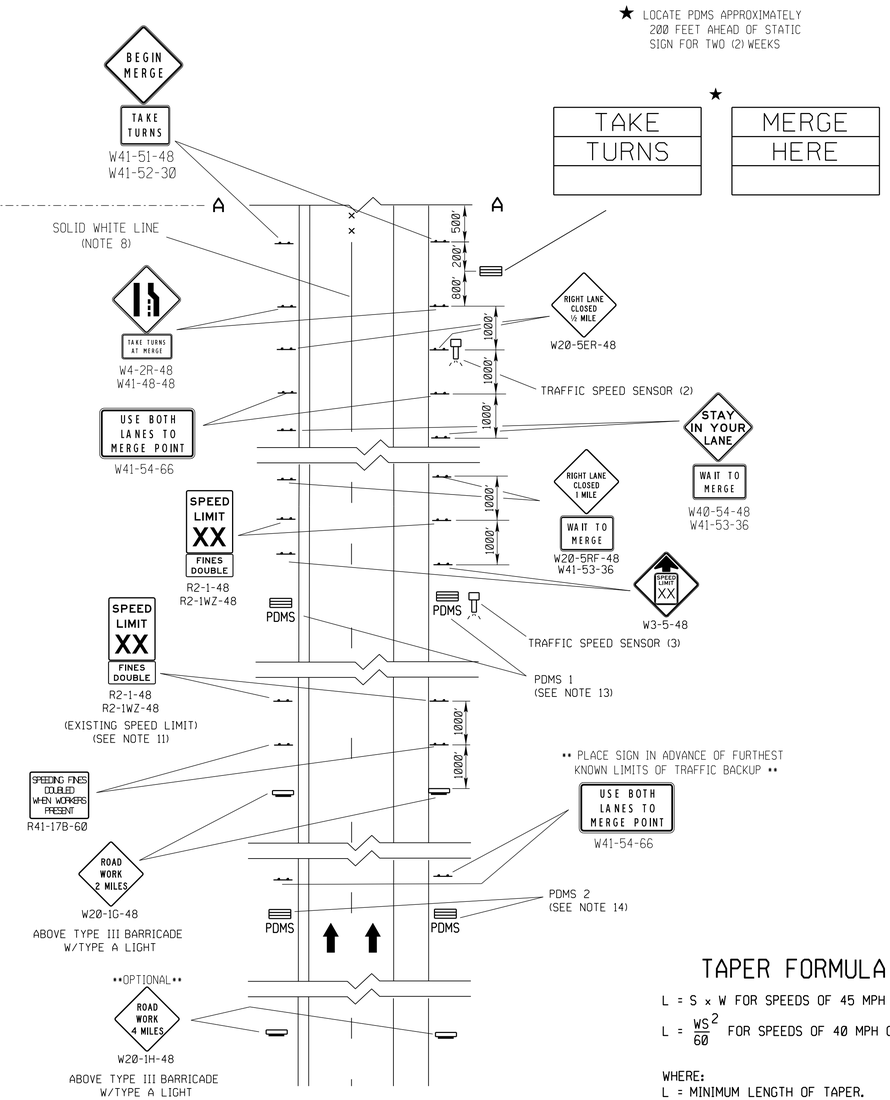
DESIGNED BY NRL
DATE 05/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:03
FILE: Smart Work Zone Typical.dgn





NOTES:

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENCROACHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. WHEN A REDUCED SPEED LIMIT IS USED, IT SHALL COMPLY WITH THE REQUIREMENTS OF NDOT OPERATING INSTRUCTION 60-18, WORK ZONE SPEED LIMITS.
4. SPEED LIMIT SIGNS R2-1 SHALL BE 48" X 60" WHEN USED ON INTERSTATES OR FREEWAYS. 30" X 36" SIGNS MAY BE USED ON ALL OTHER ROADWAYS. SPEED LIMIT SIGNS (IF REQ'D FOR WORK) SHALL BE INSTALLED EVERY MILE THRU THE WORK AREA, WHEN THE SPEED LIMIT IS REDUCED.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. FOR FOG SEALS, SLURRY SEALS, ARMOR COATS, CRACK AND JOINT SEALING WHERE ALL LANES OF TRAFFIC WILL BE REOPENED BEFORE NIGHT, THE CONTRACTOR MAY USE 36" OR 42" CONES IN PLACE OF PLASTIC DRUMS ALONG THE WORK AREA. WHEN USED 36" CONES SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
7. PLASTIC DRUMS SHALL BE REQUIRED TO BE PLACED IN FRONT OF LANE EXCAVATIONS IN PAVEMENT AND SLAB REPAIR, AND OTHER WORK ACTIVITIES AS DIRECTED BY THE ENGINEER. PLASTIC DRUMS SHALL BE REQUIRED FOR ALL TAPERS AND LANE SHIFTS.
8. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. PLACE A PLASTIC DRUM OR TYPE III BARRICADE AS DIRECTED BY THE ENGINEER IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "SPEEDING FINES DOUBLED WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF W3-5 "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.
12. SIGNS W20-5E, W20-5RF AND W20-1G MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACING RESPECTIVELY IN LOW VOLUME AREA AT THE DIRECTION OF THE ENGINEER.
13. PORTABLE DYNAMIC MESSAGE SIGN AND TRAFFIC SPEED SENSOR SHOULD BE LOCATED 1.5 MILES FROM START OF LANE CLOSURE MERGING TAPER.
14. PORTABLE DYNAMIC MESSAGE SIGN SHOULD BE LOCATED 2.5 MILES FROM START OF LANE CLOSURE MERGING TAPER. AT THE DISCRETION OF THE ENGINEER, THE PDMS MAY BE RELOCATED TO FURTHEST IDENTIFIED LOCATION OF TRAFFIC BACKUP QUEUE.

PDMS 1 MESSAGE		PDMS 2 MESSAGE		LAST 5-MINUTE AVERAGE SPEED V (MPH)
■ ■ ■ ■ ■		■ ■ ■ ■ ■		V ≥ 45
SLOW TRAFFIC AHEAD	SLOW DOWN	SLOW TRAFFIC AHEAD	SLOW DOWN	25 < V < 45
STOPPED TRAFFIC AHEAD	PREPARE TO STOP	STOPPED TRAFFIC AHEAD	PREPARE TO STOP	V ≤ 25

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- PORTABLE NON-INTRUSIVE TRAFFIC SPEED SENSOR
- PDMS — PORTABLE DYNAMIC MESSAGE SIGN

XX

Project Number ###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
SMART WORK ZONE SYSTEM INFORMATION PLAN
WITH ZIPPER MERGE

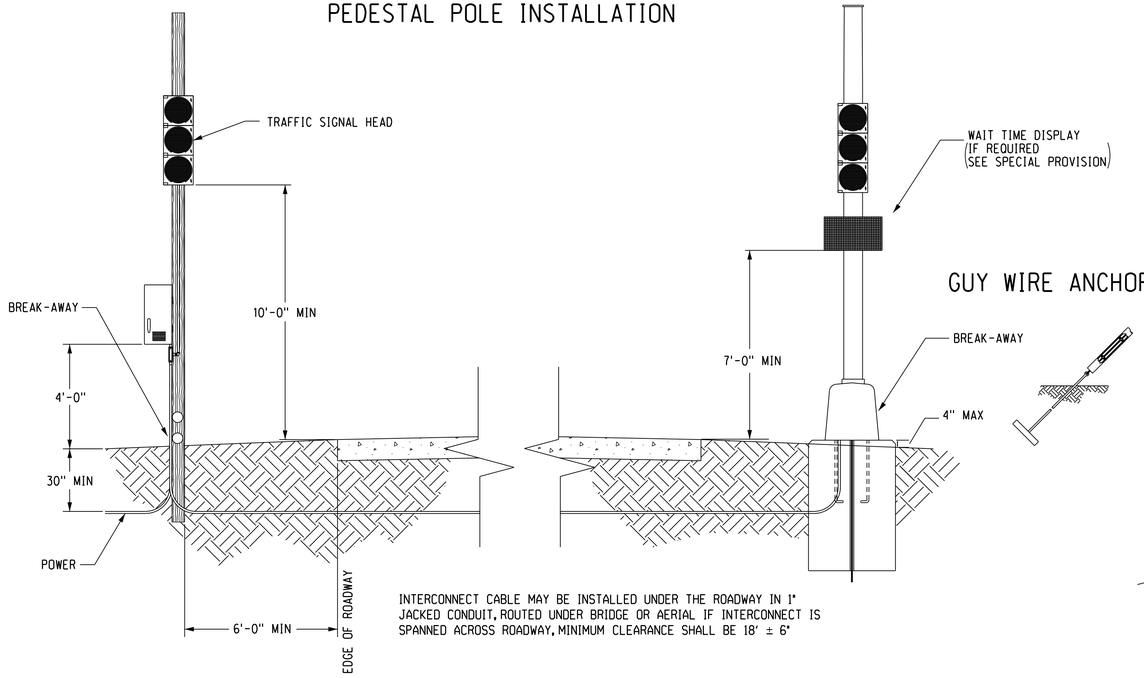
DESIGNED BY NRL — DATE 06/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

FILE: Smart Work Zone W Zipper Merge.dgn
DATE: 11-SEP-2023 13:04
COMPUTER: BG0419M687

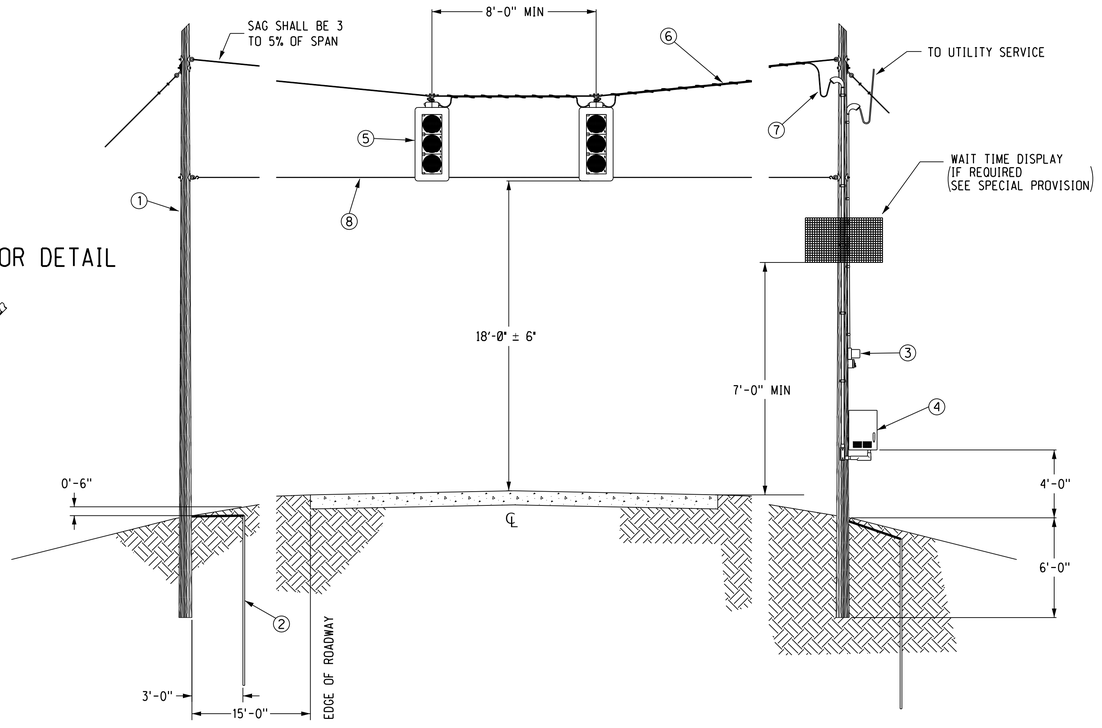
PEDESTAL POLE INSTALLATION



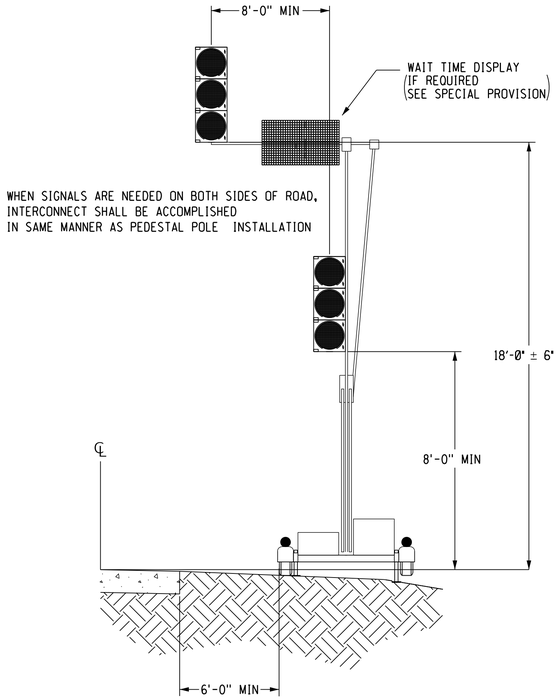
GUY WIRE ANCHOR DETAIL

INTERCONNECT CABLE MAY BE INSTALLED UNDER THE ROADWAY IN 1" JACKED CONDUIT, ROUTED UNDER BRIDGE OR AERIAL IF INTERCONNECT IS SPANNED ACROSS ROADWAY, MINIMUM CLEARANCE SHALL BE 18' ± 6"

SPAN WIRE INSTALLATION



PORTABLE SIGNAL



NOTES

1. THE LOCATIONS OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED IN THESE PLANS. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT WILL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR. NO EXCAVATION WILL BE PERMITTED IN THE AREA OF UNDERGROUND UTILITY FACILITIES UNTIL ALL SUCH FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. THE EXCAVATION MUST BE ACCOMPLISHED WITH EXTREME CARE IN ORDER TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL AERIAL AND UNDERGROUND UTILITIES AND CONSTRUCTIONS.
2. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT AND MATERIAL REQUIRED FOR THE TEMPORARY SIGNAL UNLESS OTHERWISE SPECIFIED. ALL EQUIPMENT AND MATERIAL FURNISHED BY THE CONTRACTOR SHALL REMAIN HIS PROPERTY.
3. ANY STATE SUPPLIED EQUIPMENT OR MATERIAL SHALL REMAIN THE PROPERTY OF THE STATE OF NEBRASKA.
4. THE SIGNAL HEAD LENSES SHALL BE A MINIMUM OF 12 INCHES IN DIAMETER.
5. ALL SIGNAL LAMPS SHALL BE EXTENDED ANGLE LED.
6. MAINTENANCE OF THE TEMPORARY SIGNAL SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.
7. TRAFFIC SIGNALS POWERED BY MEANS OF A PORTABLE GENERATOR SHALL HAVE STANDBY BATTERY POWER CAPABLE OF OPERATING THE SIGNAL NOT LESS THAN 26 HOURS. PORTABLE TRAFFIC SIGNALS SHALL BE CHECKED EVERY 24 HOURS TO INSURE PROPER OPERATION.
8. SIGNAL POLE LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEEER UNLESS THE EXACT PLACEMENT IS NOTED IN THE PLANS.
9. THE TIMING OF THE SIGNAL CYCLE SHALL BE DETERMINED BY THE NDOT TRAFFIC ENGINEERING DIVISION. FOR THE SPECIFIC INSTALLATION, CALL TRAFFIC ENGINEERING DIVISION AT 402-479-4594. HAVE THE FOLLOWING INFORMATION READY WHEN YOU CALL. PROJECT NAME, CONTROL NUMBER, DISTANCE BETWEEN STOP BARS, NUMBER OF SIDE STREET SIGNALS AND ADT FOR HIGHWAYS. TIMING SHOULD BE REQUESTED ONE WEEK PRIOR TO INSTALLATION TO AVOID UNEXPECTED PROJECT DELAYS.
10. THE SIGNAL SHALL BE PLACED INTO FLASHING AMBER OPERATON FOR BOTH DIRECTIONS DURING PERIODS WHEN THE BRIDGE IS OPEN TO TWO-WAY TRAFFIC. UNDER NO CIRCUMSTANCES SHALL AN INOPERATIVE TRAFFIC SIGNAL BE LEFT UNCOVERED ON AN OPEN ROAD TO THE PUBLIC.
11. INSTALLATION OF THE TEMPORARY SIGNAL SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE (LATEST EDITION), THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, ALL LOCAL ORDINANCES AND REGULATIONS, THE SPECIFICATIONS AND THE PROJECT PLANS.
12. THE TRAFFIC SIGNAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE ITEM "TEMPORARY TRAFFIC SIGNAL" OR "TEMPORARY TRAFFIC SIGNAL WITH WAIT TIME DISPLAY". THIS PRICE SHALL BE FULL COMPENSATION FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE COMPLETE TEMPORARY SIGNAL.
13. SEE SIGNING STANDARD FOR REQUIRED SIGNING TO ACCOMPANY SIGNAL.
14. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT AND MATERIAL REQUIRED FOR VEHICLE DETECTION ON ALL APPROACHES.

ITEM NO.	DESCRIPTION
1	CLASS IV BUTT TREATED WOOD POLE W/DOWN GUYS
2	5/8" X 10' COPPERWELD GROUND ROD
3	METER SOCKET (IF REQ'D BY UTILITY)
4	CONTROLLER CABINET *
5	TRAFFIC SIGNAL W/BACKPLATE
6	3/8" HIGH STRENGTH 7 STRAND WIRE ROPE
7	600 VOLT NO. 12 AWG 5/C TRAFFIC SIGNAL CABLE
8	1/4" SIEMANS MARTIN 7 STRAND WIRE ROPE

* CONTRACTOR SHALL FURNISH A SOLID STATE DIGITAL CONTROLLER WITH A PROGRAMMING MANUAL.

SIGNAL	APPROXIMATE LOCATION OF TEMP TRAFFIC SIGNAL
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

XX

Project Number
###-#(###)

C.N. #####

TYPICAL SIGNAL CONTROL PLAN
TEMPORARY TRAFFIC SIGNAL DETAILS

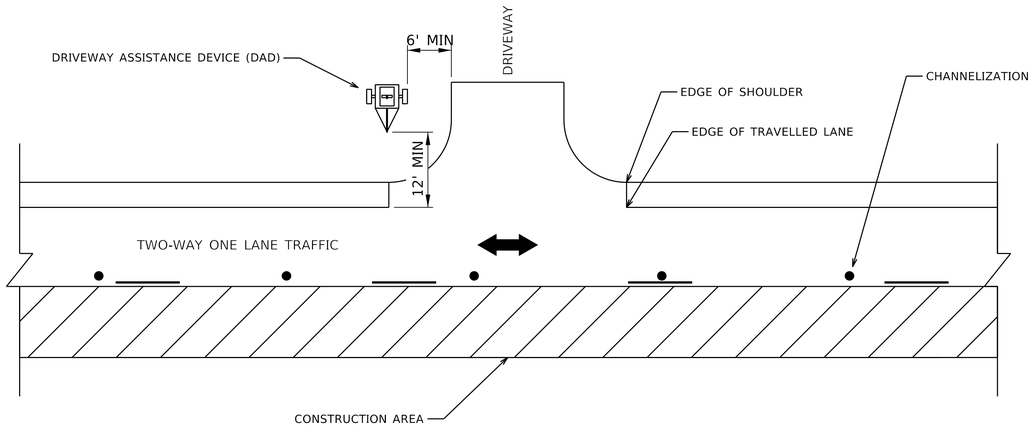
DESIGNED BY NRL
DATE 12/22

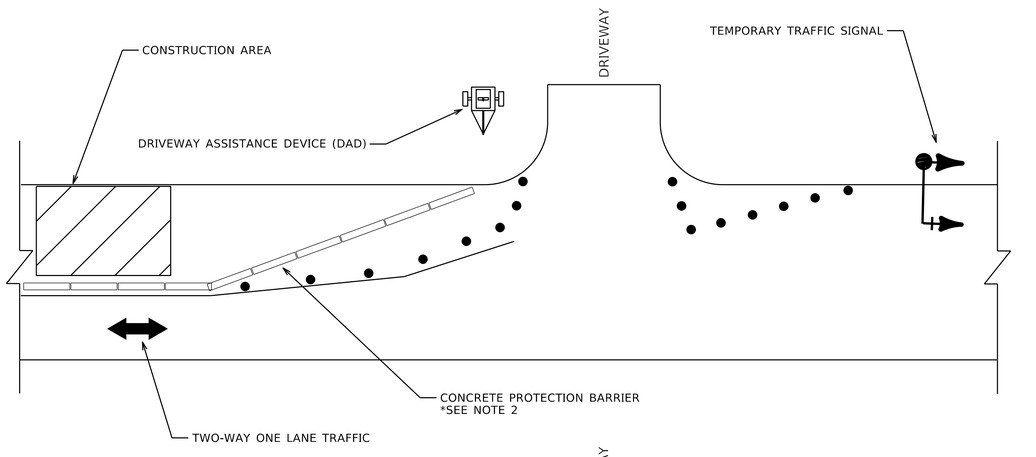
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

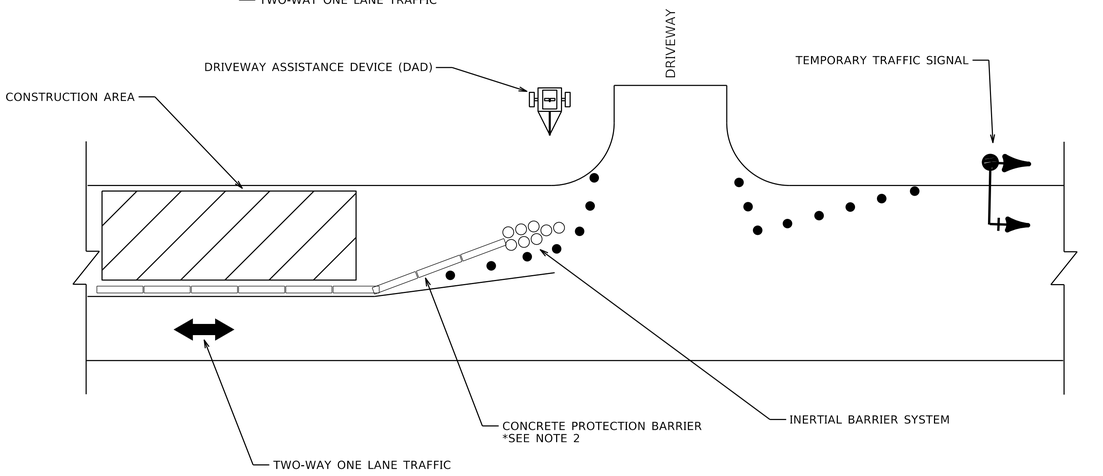
PLAN SHEET NUMBER 1/2

COMPUTER: BG0419M687
DATE: 31-OCT-2024 08:33
FILE: Spts_r5.dgn

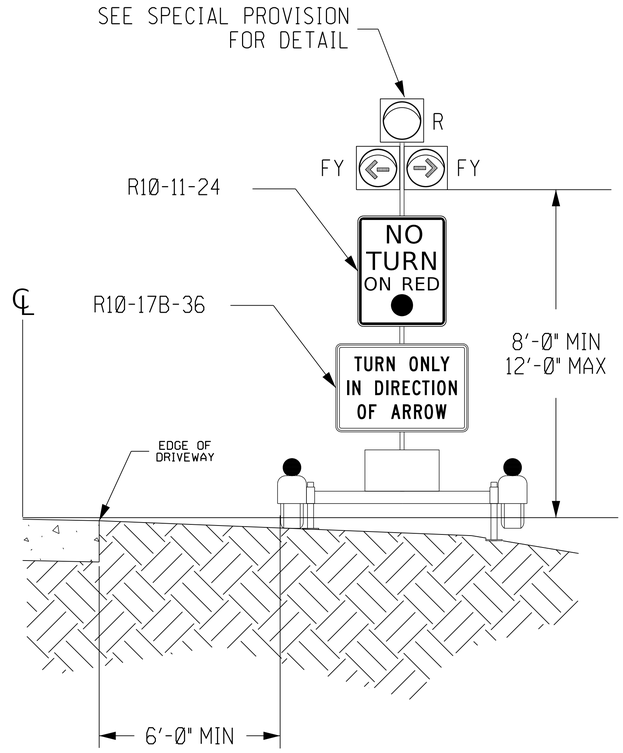
TYPICAL LAYOUTS







DRIVEWAY ASSISTANCE DEVICE



GENERAL NOTES

1 EACH DRIVEWAY ASSISTANCE DEVICE (DAD) SHALL HAVE THREE SIGNAL HEADS CONTAINING THE FOLLOWING INDICATIONS: ONE 12 INCH DIAMETER STEADY RED BALL INDICATION CENTERED OVER ONE 12 INCH DIAMETER YELLOW FLASHING LEFT ARROW AND ONE 12 INCH DIAMETER YELLOW FLASHING RIGHT ARROW.

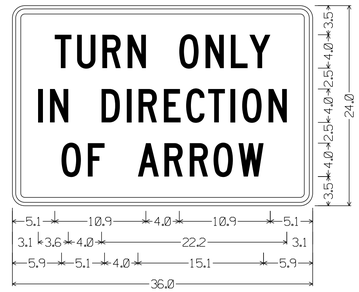
2 CONCRETE PROTECTON BARRIER SHALL BE AT MINIMUM OF 6 TO 1 TAPER. IF 6 TO 1 TAPER ENCROACHES ONTO THE DRIVEWAY AN INERTIAL BARRRIER SYSTEM SHALL BE USED TO PROTECT THE END OF THE CONCRETE BARRIER.

LEGEND

➡ TRAFFIC FLOW

● CHANNELIZING DEVICE

SIGN DETAILS



1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;
"TURN ONLY", C; "IN DIRECTION", C;
"OF ARROW", C;
Table of distances between letter and object lefts

	T	U	R	N	O	N	L	Y	
5.1	2.7	3.0	3.0	6.2	3.2	3.0	2.2	2.5	5.1

	I	N	D	I	R	E	C	T	I	O	N	
3.1	1.4	6.2	3.0	1.4	3.1	2.6	2.7	2.7	1.4	3.1	2.2	3.1

	O	F	A	R	R	O	W	
5.9	3.1	6.0	3.2	3.1	2.8	3.0	3.0	5.9

XX

Project Number
###-#(###)

C.N. #####

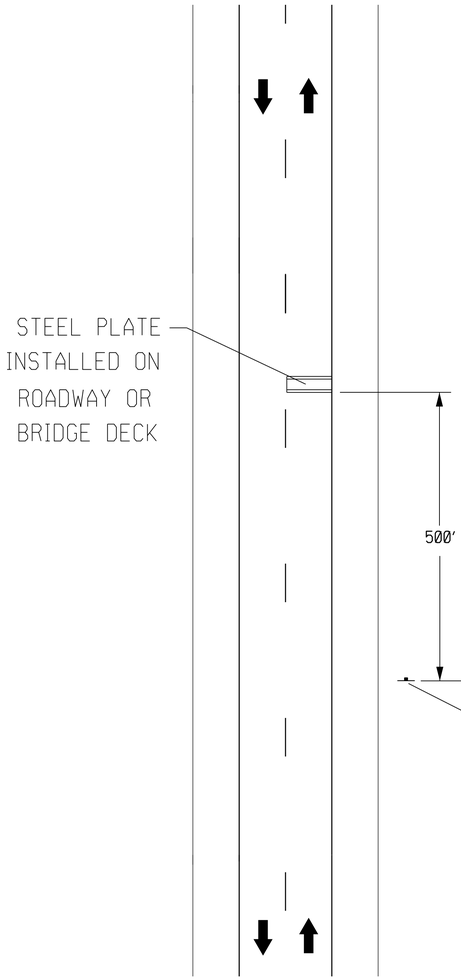
TYPICAL SIGNAL CONTROL PLAN
TEMPORARY TRAFFIC SIGNAL DETAILS

DESIGNED BY AJM
DATE 05/24

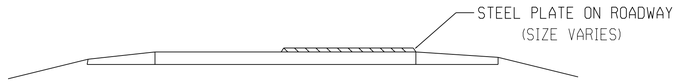
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 2/2

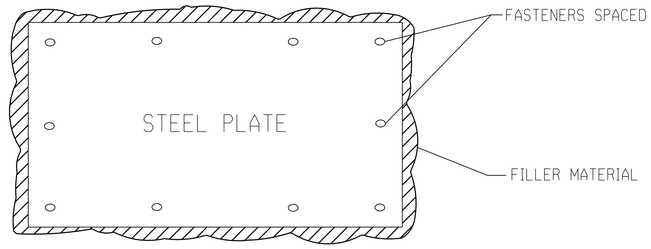
COMPUTER: BG0419M687
DATE: 31-OCT-2024 08:33
FILE: Sptts_r5.dgn



WORK INVOLVING THE TEMPORARY USE OF STEEL PLATE INSTALLED ACROSS ROADWAY OR BRIDGE DECK



TYPICAL STEEL PLATE LOCATED ON ROADWAY



TYPICAL STEEL PLATE

GENERAL NOTES

1. SIGNS SHOWN ARE USUALLY FOR ONE DIRECTION OF TRAVEL ONLY.
2. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE WILL NOT BE PERMITTED ON THE FACE OF THE SIGN.
3. ORANGE FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE WARNING SIGNS.
4. REFER TO STANDARD PLAN 920 FOR GENERAL INFORMATION NOT SHOWN.
5. STEEL PLATE IS TO BE SECURED TO PAVEMENT WITH FASTENERS APPROPRIATE FOR THE SIZE OF THE PLATE AND THE PAVEMENT CONDITION. COAT VISIBLE PORTION OF BRIGHT FASTENERS WITH DARK PAINT.

XX

Project Number
###-#(###)

C.N. #####

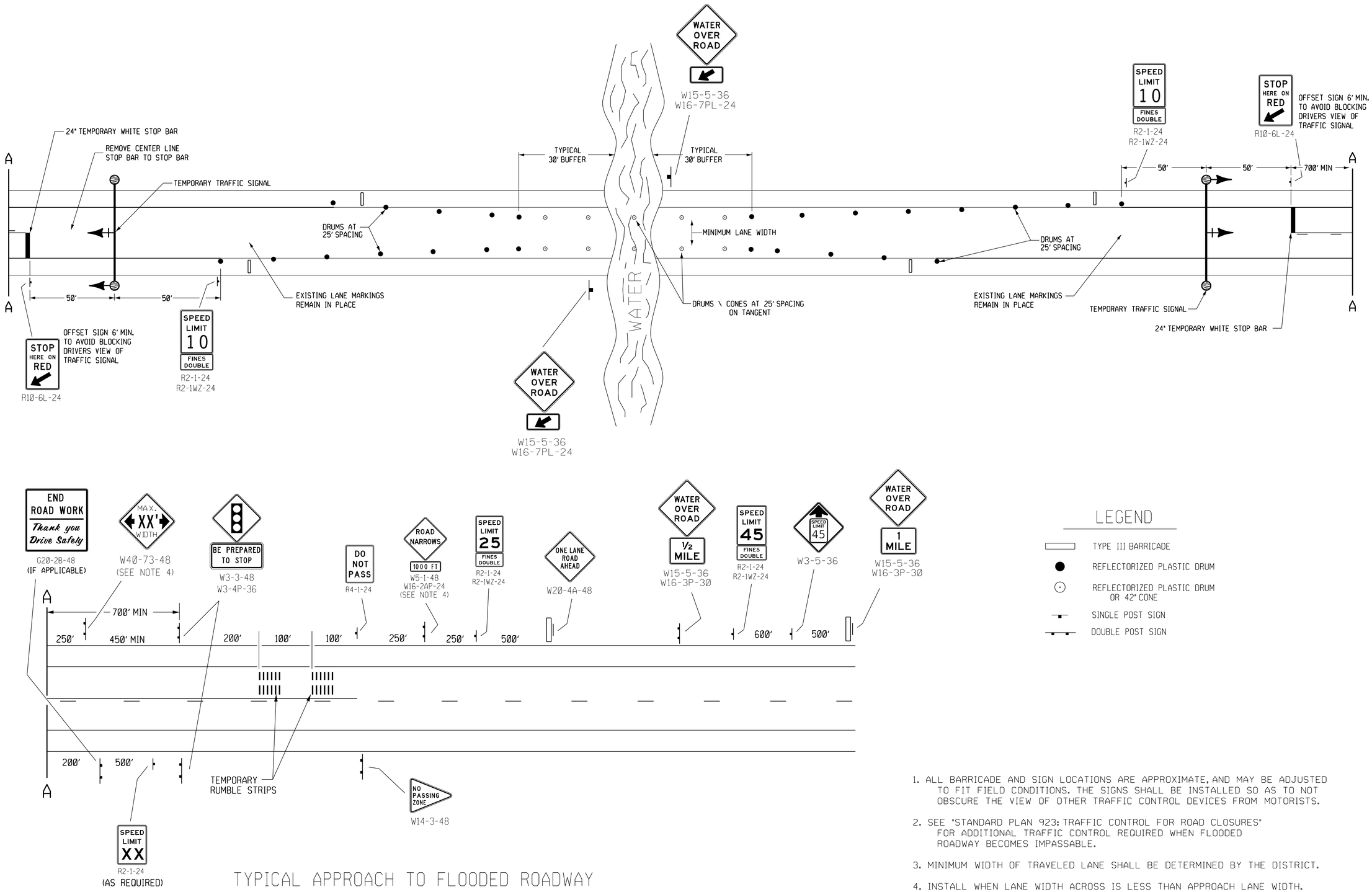
TYPICAL STEEL PLATE LOCATION PLAN
TEMPORARY STEEL PLATE INSTALLED
ACROSS ROADWAY OR BRIDGE DECK

DESIGNED BY AJM DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:10
FILE: steelplate r2.dgn



TYPICAL APPROACH TO FLOODED ROADWAY

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN

1. ALL BARRICADE AND SIGN LOCATIONS ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES FROM MOTORISTS.
2. SEE "STANDARD PLAN 923: TRAFFIC CONTROL FOR ROAD CLOSURES" FOR ADDITIONAL TRAFFIC CONTROL REQUIRED WHEN FLOODED ROADWAY BECOMES IMPASSABLE.
3. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE DISTRICT.
4. INSTALL WHEN LANE WIDTH ACROSS IS LESS THAN APPROACH LANE WIDTH.

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
TYPICAL ADVANCE SIGNING
WATER OVER ROADWAY

DESIGNED BY AJM
DATE 08/23

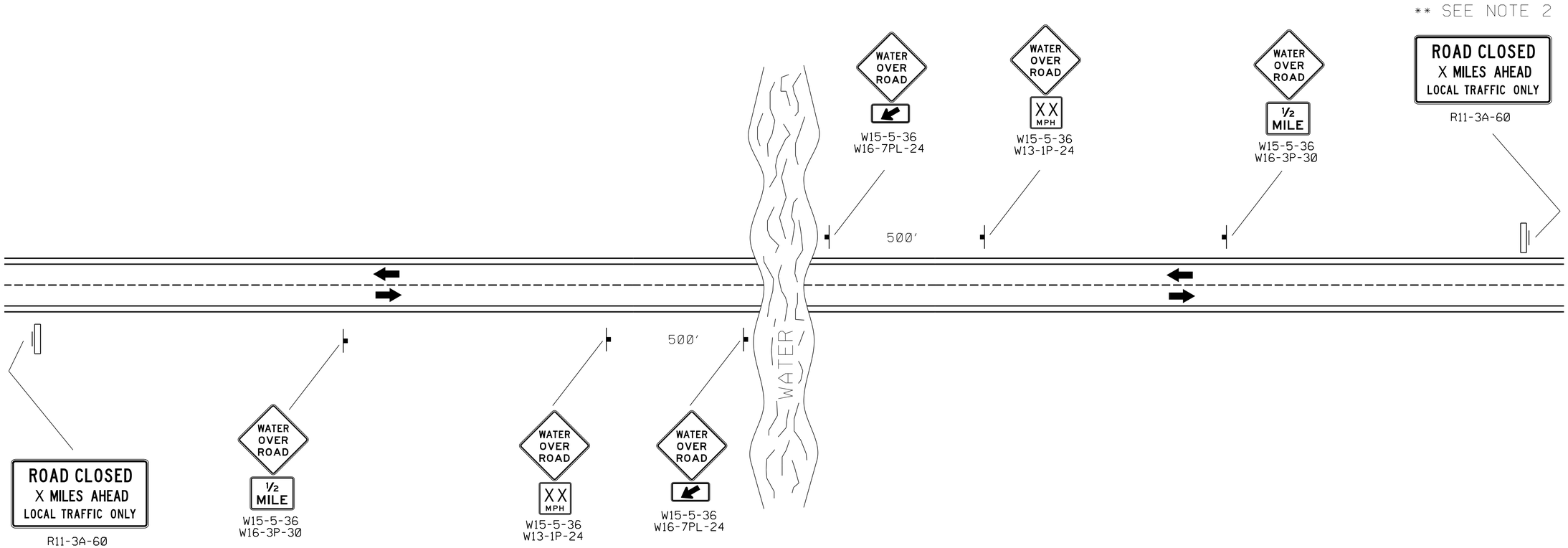
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:03
FILE: wateroverroadway.dgn

GENERAL NOTES

1. ALL SIGNS LOCATIONS ON THIS PLAN ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
2. PLACE "ROAD CLOSED 'X' MILES AHEAD" SIGN (R11-3A) AT MAJOR INTERSECTION OR LAST INTERSECTION BEFORE WATER.
3. SEE "STANDARD PLAN 923: TRAFFIC CONTROL FOR ROAD CLOSURES" FOR ADDITIONAL TRAFFIC CONTROL REQUIRED WHEN FLOODED ROADWAY BECOMES IMPASSABLE.



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Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
TYPICAL ADVANCE SIGNING
WATER OVER ROADWAY

DESIGNED BY AJM
DATE 08/23

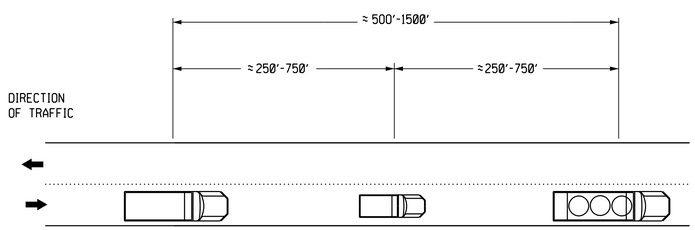
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:03
FILE: wateroverroadway.dgn

SIGNING PLAN

STRIPING ON RURAL TWO-LANE TWO-WAY ROADS

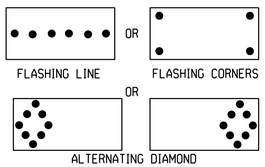


REAR VEHICLE
WITH 2 HIGH INTENSITY FLASHING LIGHTS MOUNTED ON THE REAR AND 2-360° BEACONS OR APPROVED MINI-BAR LIGHT (TMA OPTIONAL)

OPTIONAL VEHICLE
WITH 2-360° BEACONS OR APPROVED MINI-BAR LIGHT

STRIPING VEHICLE
WITH 4 HIGH INTENSITY FLASHING LIGHTS MOUNTED ON REAR AND 2-360° BEACONS OR APPROVED MINI-BAR LIGHT

REAR OF VEHICLE



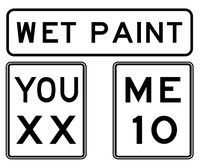
FLASHING LINE FLASHING CORNERS

OR

ALTERNATING DIAMOND
(CAUTION MODE)
MIN. 96"x48"

W41-8-54
54" X 34"

OR



OPTIONAL
SPEED DISPLAY UNITS

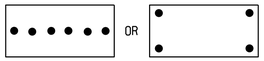
FRONT OF STRIPER

T-723
72" X 36"

SINGLE STROBE LIGHT
ON FRONT OF STRIPER

REAR OF STRIPER
ARROW PANEL

REAR OF VEHICLE



FLASHING LINE FLASHING CORNERS

OR

ALTERNATING DIAMOND
(CAUTION MODE)
MIN. 96"x48"

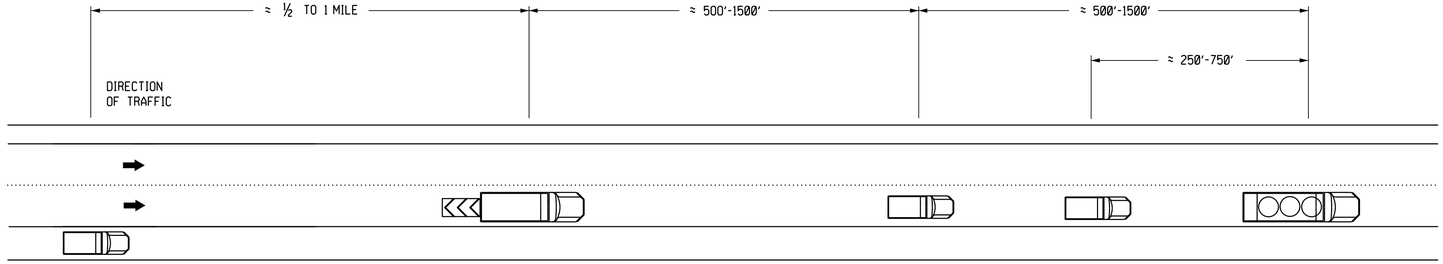
W41-8

SIZE OF SIGN TO BE DETERMINED
BY CONSTRAINTS OF STRIPER

RURAL TWO-LANE NOTES:

1. CAUTION MODE ON STRIPING UNIT AND REAR VEHICLE SHALL BE ALTERNATING DIAMOND OR THE FLASHING 4 CORNER LIGHTS IF THE DIAMOND MODE IS NOT AVAILABLE.

STRIPING ON RURAL MULTI-LANE ROADWAY



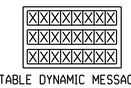
WARNING VEHICLE
WITH 2 HIGH INTENSITY FLASHING LIGHTS MOUNTED ON REAR AND 2-360° BEACONS OR APPROVED MINI-BAR LIGHT

REAR VEHICLE W/TMA
WITH 2 HIGH INTENSITY FLASHING LIGHTS MOUNTED ON THE REAR AND 2-360° BEACONS OR APPROVED MINI-BAR LIGHT

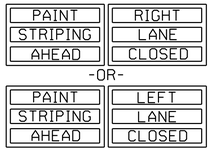
TRAILING VEHICLE
WITH 2-360° BEACONS OR APPROVED MINI-BAR LIGHT AND OPTIONAL DRONE RADAR OR CB ALERT WARNING RADIO

OPTIONAL VEHICLE
WITH 2-360° BEACONS OR APPROVED MINI-BAR LIGHT

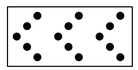
STRIPING VEHICLE
WITH 4 HIGH INTENSITY FLASHING LIGHTS MOUNTED ON REAR AND 2-360° BEACONS OR APPROVED MINI-BAR LIGHT



PORTABLE DYNAMIC MESSAGE SIGNS

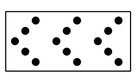


TWO MESSAGES (1.6 - 2.0 SECONDS PER MESSAGE)

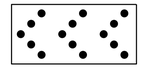


FLASHING ARROW PANEL ON REAR

W41-8-54
54" X 34"



OPTIONAL
FLASHING ARROW PANEL



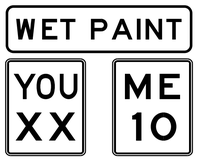
FLASHING ARROW PANEL ON REAR

W41-8

SIZE OF SIGN TO BE DETERMINED
BY CONSTRAINTS OF STRIPER

W41-8-54
54" X 34"

OR



OPTIONAL
SPEED DISPLAY UNITS

TRUCK MOUNTED ATTENUATOR SYSTEM:

1. THE CONTACTOR SHALL FURNISH A FEDERALLY APPROVED TRUCK MOUNTED ATTENUATOR SYSTEM, MOUNTED ON A MINIMUM 16,000 POUND TRUCK. THE TRUCK SHALL BE EQUIPPED WITH 60" X 30" FLASHING ARROW PANEL, SECURELY MOUNTED ON THE TRUCK. THE TMA SYSTEM SHALL BE LOCATED IN THE FIELD AS REQUIRED BY THE MANUFACTURER. A COMPLETE SET OF REPLACEMENT MODULES SHALL BE AVAILABLE NEAR THE PROJECT SITE IN THE EVENT OF DAMAGE TO THE INSTALLED TMA. DAMAGED TMA'S SHALL BE REMOVED FROM THE ROADWAY AND PROJECT WORK STOPPED UNTIL REPAIRS TO THE UNIT HAVE BEEN COMPLETED.
2. THE TRUCK MOUNTED ATTENUATOR SHALL BE AN NCHRP 350 OR MASH TEST LEVEL 3 APPROVED TMA FOR 100 km PER HOUR (60 MPH).
3. THE TRUCK SHALL BE A 16,000 TO 35,000 POUND (GVW) VEHICLE AS REQUIRED BY THE TMA MANUFACTURER.
4. THE FLASHING ARROW PANEL SHALL BE SECURLY MOUNTED AS HIGH AS PRACTICABLE ON THE VEHICLE. THE ARROW PANEL SHALL NOT COME LOOSE UPON IMPACT TO THE TMA.

RURAL MULTI-LANE NOTES:

1. WHEN WORKING ON INSIDE (LEFT) LANES VEHICLES SHALL MOVE TO SIMILAR POSITIONS IN THAT LANE.
2. WARNING VEHICLE WILL REMAIN ON RIGHT SHOULDER WHEN AN 8' OR WIDER PAVED INSIDE (LEFT) SHOULDER DOES NOT EXIST.
3. REAR VEHICLE WITH TMA SHALL NOT BE SUPPLY VEHICLE UNLESS PAINT IS UNLOADED.

GENERAL NOTES:

REAR VEHICLE SHALL BE PLACED IN ADVANCE OF HORIZONTAL OR VERTICAL CURVES TO PROVIDE ADVANCE WARNING FOR WORK OPERATIONS HIDDEN BY CURVES.

VEHICLE SPACING MAY VARY DEPENDING ON RATE OF APPLICATION, SPEED, AND DRYING TIME.

WHEN OPTIONAL CB ALERT WARNING RADIOS ARE USED THE TRANSMITTER MUST REMAIN WITH ONE OF THE VEHICLES IN THE STRIPING TRAIN.

XX

Project Number
###-#(###)

C.N. #####

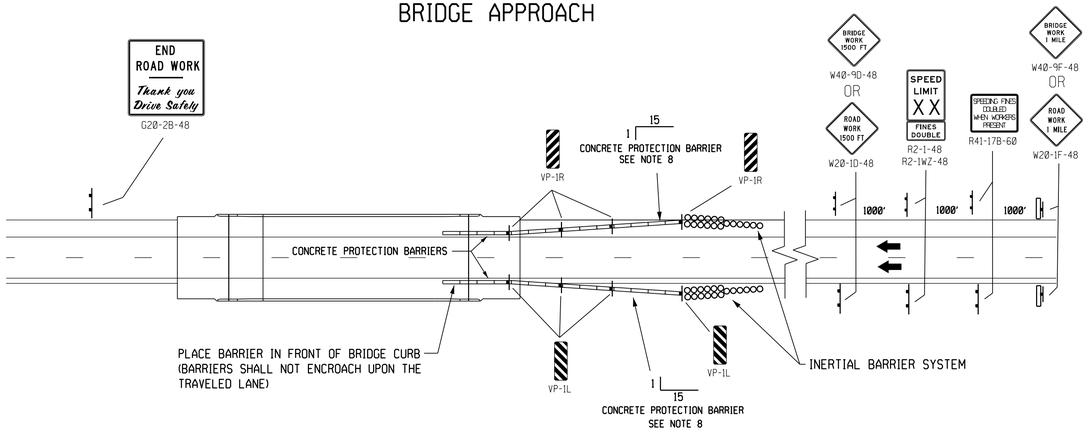
TRAFFIC CONTROL PLAN
VEHICLE SIGNING FOR PAINT STRIPING

DESIGNED BY NRL DATE 12/22

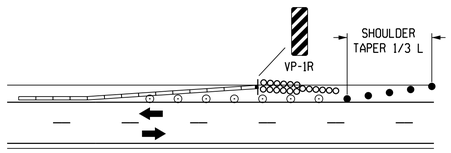
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

BRIDGE APPROACH



TYPICAL SHOULDER TAPER



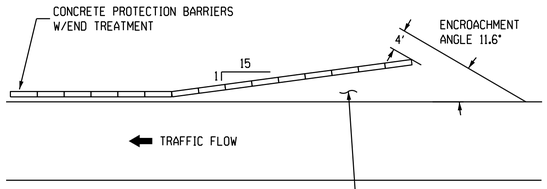
SHOULDER TAPER WHEN EXISTING 8' OR GREATER
PAVED SHOULDER IS RESTRICTED TO LESS THAN 8'

NOTES

1. THE CONTRACTOR SHALL FURNISH REFLECTORS AND A BRACKET TO SUPPORT THE REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
4. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
5. THE CONTRACTOR SHALL PROVIDE A MEANS OF ANCHORING THE 12.5' SECTION OF CONCRETE BARRIER ADJACENT TO THE ABUTMENT, OR PIER IN SUCH A WAY AS TO PREVENT LATERAL DISPLACEMENT UPON VEHICLE IMPACT.
6. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
7. FOR FIXED OBSTACLES WITHIN 35' OF THE THROUGH TRAVEL LANE ON THE FREEWAY AND WITHIN 30' FOR OTHER ROADWAYS, PLACE CONCRETE PROTECTION BARRIERS AS SHOWN.
8. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE LOCATIONS.
9. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY.

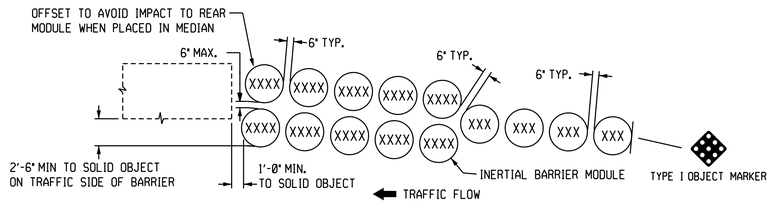
GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN
IT MAY REQUIRE GRADING FROM BOTH
DIRECTIONS



FOR CONCRETE BARRIERS PLACED AT 13:1
USE AN ENCROACHMENT ANGLE OF 13°
(SEE NOTE 8)

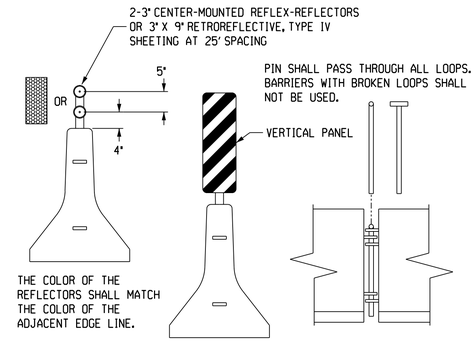
TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

- SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

CONCRETE PROTECTION BARRIER DETAIL

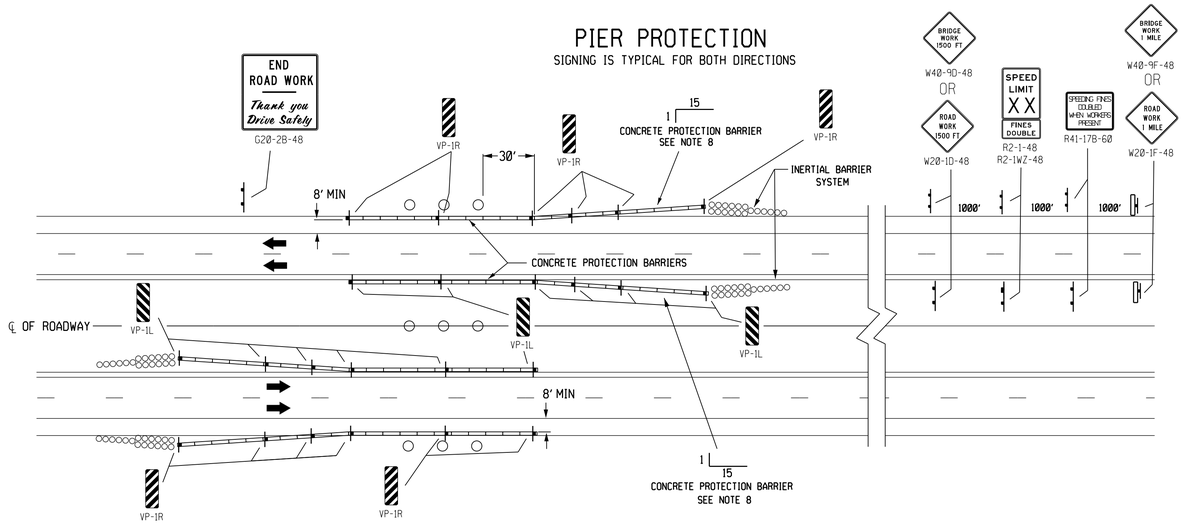


THE COLOR OF THE
REFLECTORS SHALL MATCH
THE COLOR OF THE
ADJACENT EDGE LINE.

VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 25 SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

PIER PROTECTION

SIGNING IS TYPICAL FOR BOTH DIRECTIONS



TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
CONCRETE BARRIER PLACEMENT
WHEN GUARDRAIL IS REMOVED

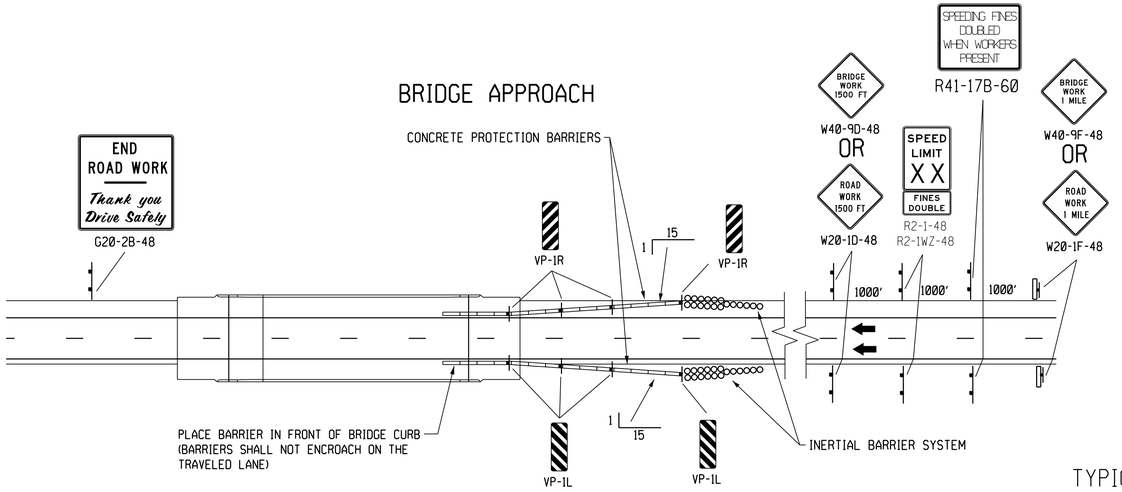
DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

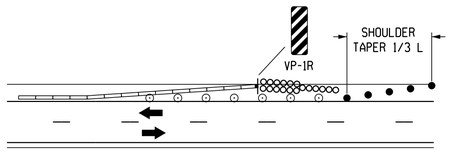
PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:03
FILE: wg360-1 r2.dgn

BRIDGE APPROACH



TYPICAL SHOULDER TAPER



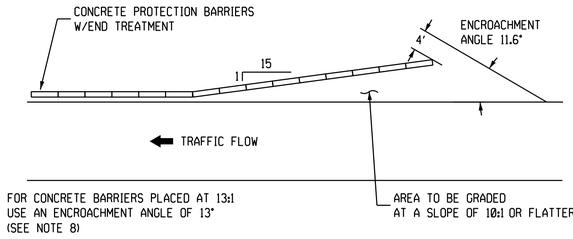
SHOULDER TAPER WHEN EXISTING 8' OR GREATER
PAVED SHOULDER IS RESTRICTED TO LESS THAN 8'

NOTES

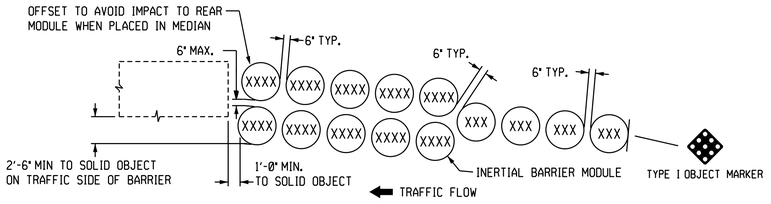
1. THE CONTRACTOR SHALL FURNISH REFLECTORS AND A BRACKET TO SUPPORT THE REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
4. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
5. THE CONTRACTOR SHALL PROVIDE A MEANS OF ANCHORING THE 12.5' SECTION OF CONCRETE BARRIER ADJACENT TO THE ABUTMENT, OR PIER IN SUCH A WAY AS TO PREVENT LATERAL DISPLACEMENT UPON VEHICLE IMPACT.
6. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
7. FOR FIXED OBSTACLES WITHIN 35' OF THE THROUGH TRAVEL LANE ON THE FREEWAY AND WITHIN 30' FOR OTHER ROADWAYS, PLACE CONCRETE PROTECTION BARRIERS AS SHOWN.
8. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE LOCATIONS.
9. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY.

GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN
IT MAY REQUIRE GRADING FROM BOTH
DIRECTIONS



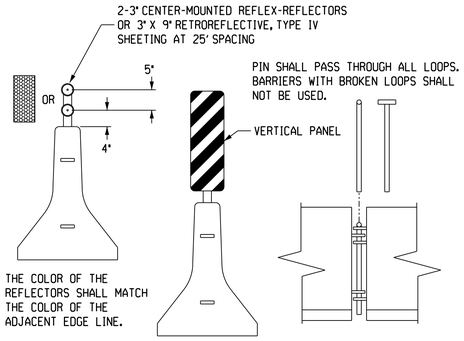
TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

- SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

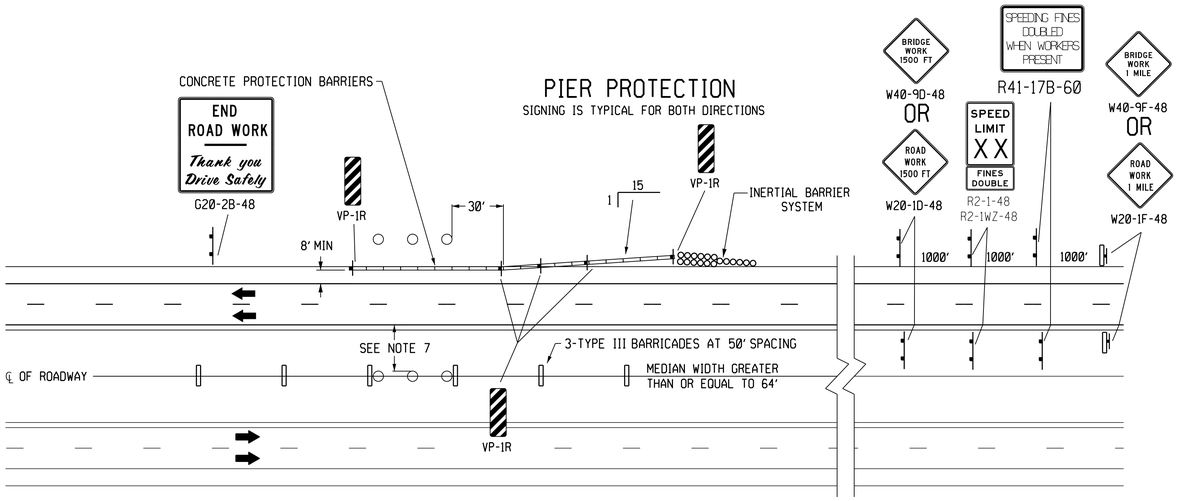
CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 2S SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

PIER PROTECTION

SIGNING IS TYPICAL FOR BOTH DIRECTIONS



TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN

XX

Project Number
###-#(###)

C.N. #####

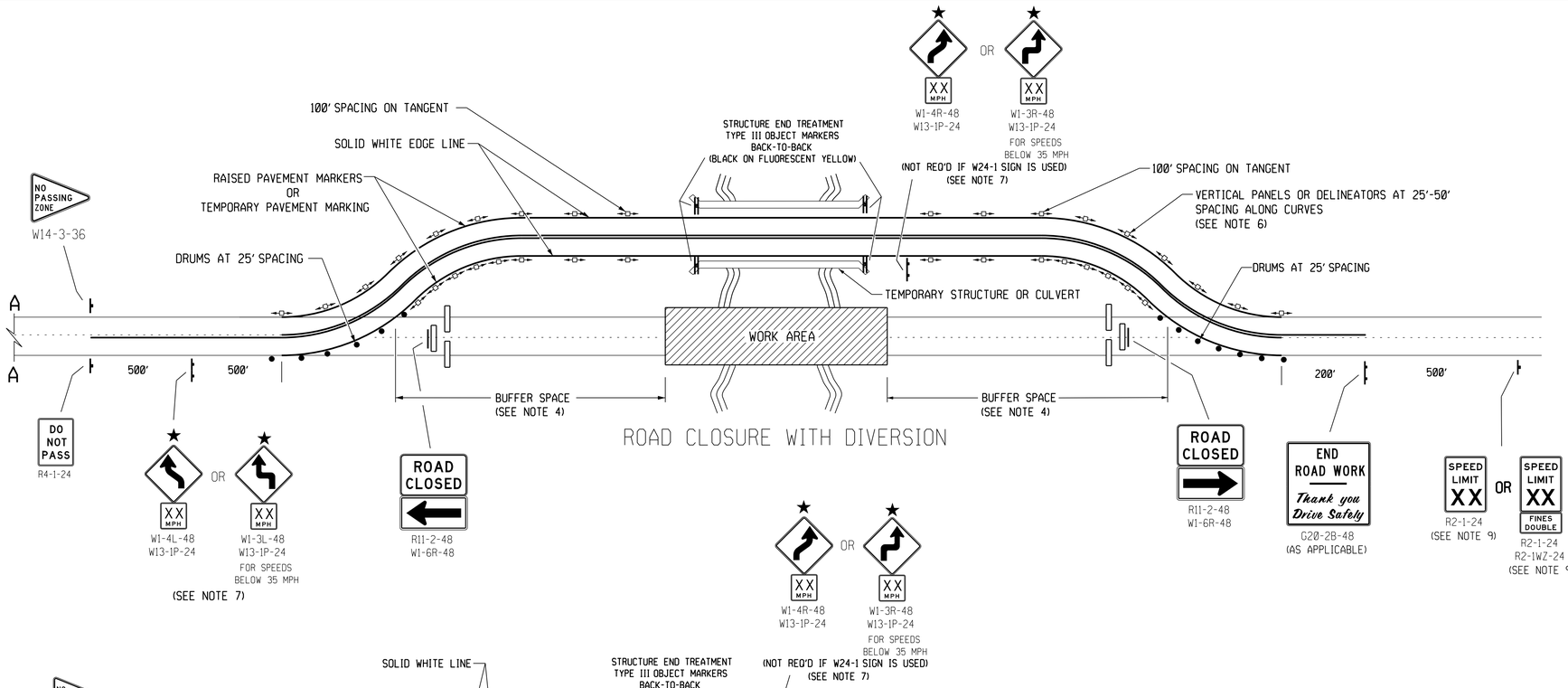
TYPICAL TRAFFIC CONTROL PLAN
TYPE III BARRICADE PLACEMENT
WHEN GUARDRAIL IS REMOVED

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

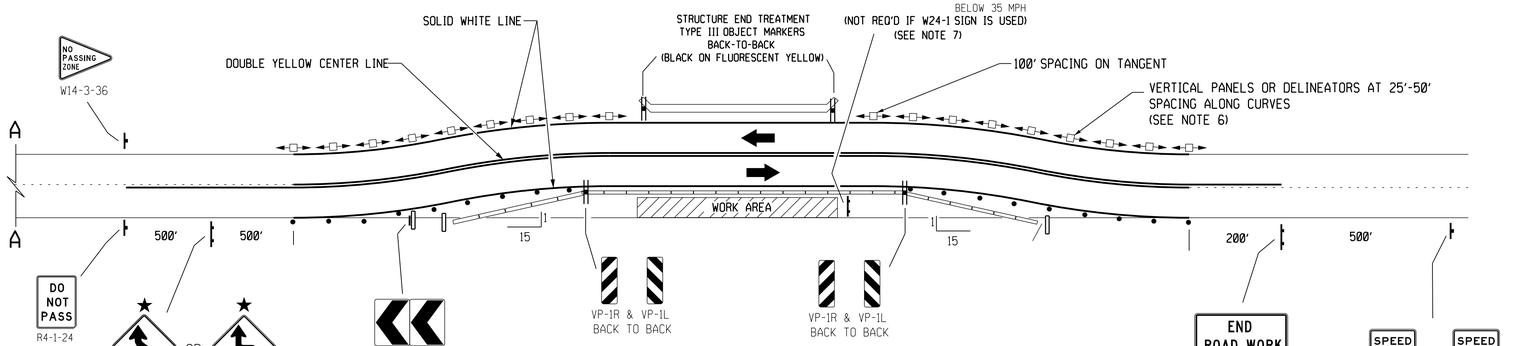
DESIGNED BY AJM DATE 08/23

PLAN SHEET NUMBER 1/1

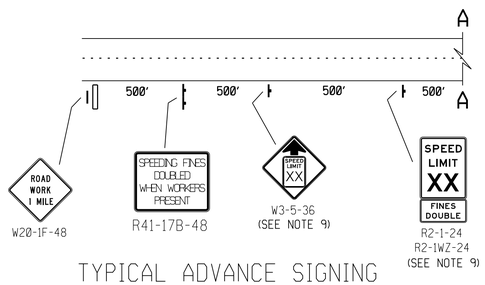
COMPUTER: BG04191M687
DATE: 11-SEP-2023 13:03
FILE: wg360-2 r2.dgn



ROAD CLOSURE WITH DIVERSION

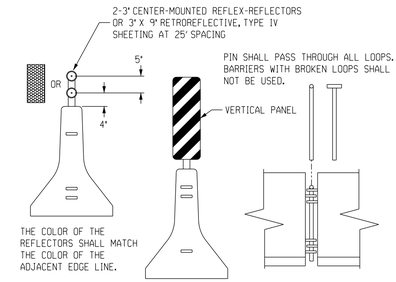


PARTIAL CLOSURE WITH DIVERSION



TYPICAL ADVANCE SIGNING FOR WORK ZONE

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 25 SPACING ON TOP OF BARRIER, EVERY 5 SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

LEGEND

- CONCRETE PROTECTION BARRIER
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SINGLE POST SIGN
- DOUBLE POST SIGN
- DELINEATOR

NOTES

1. SIGNS SHOWN ARE FOR ONE DIRECTION OF TRAVEL ONLY.
2. RAISED PAVEMENT MARKERS (IF USED) SHALL BE SPACED AT 5' INTERVALS
3. THE WORK AREA SHALL INCLUDE THE AREA USED BY THE WORK ACTIVITY, EQUIPMENT, VEHICLES AND MATERIALS.
4. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIAL SHALL BE PLACED WITHIN THE BUFFER SPACE OR IN FRONT OF THE WORK AREA.
5. REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
6. DELINEATORS SHALL BE REPLACED BY VERTICAL PANELS, PLACED BACK-TO-BACK, AT 25' TO 50' SPACING ALONG THE SHOOFLY WHEN THE FILL SLOPE IS STEEPER THAN 3:1.
7. A DOUBLE REVERSE CURVE SIGN (W24-1) MAY BE USED WHEN THE TANGENT DISTANCE BETWEEN TWO REVERSE CURVES IS LESS THAN 600'.
8. ★ DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS (W13-1P) SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.
9. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. THE WORK ZONE SPEED LIMIT SHALL BE ESTABLISHED ACCORDING TO DOR-01 60-18. SEE WORK ZONE SPEED LIMIT NOTES ON STANDARD PLAN 920.

XX

Project Number
###-#(###)

C.N. #####

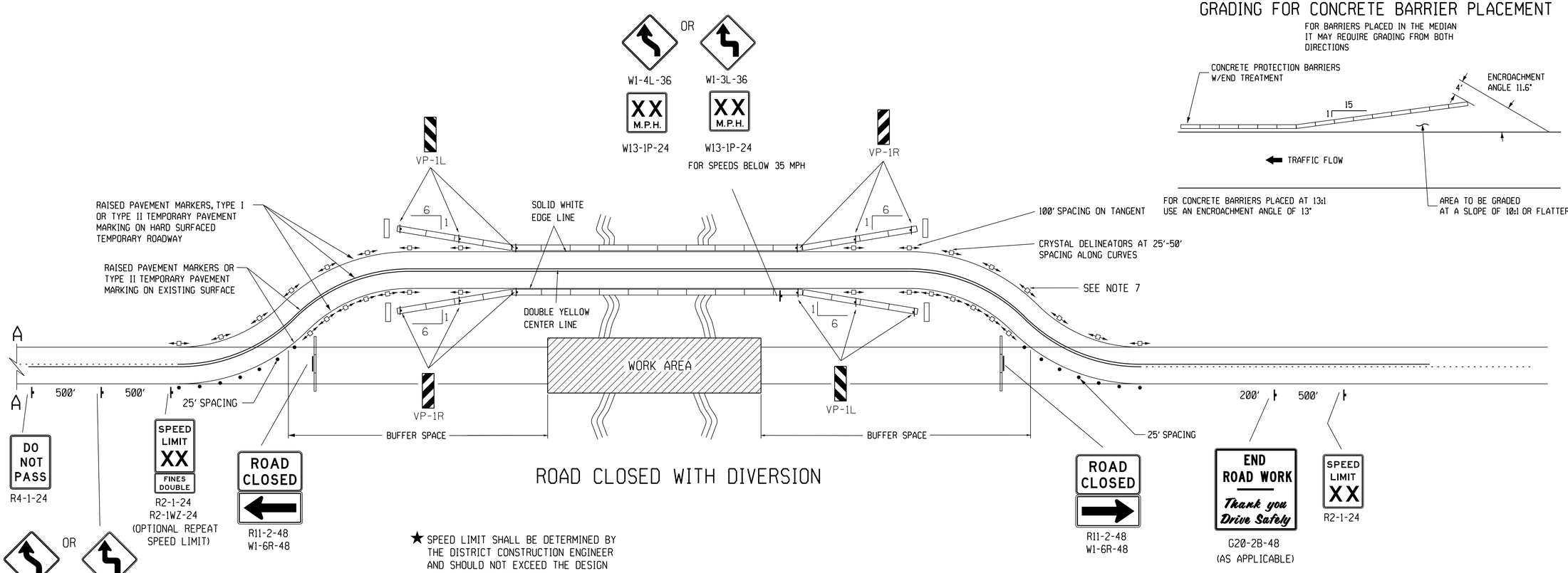
TRAFFIC CONTROL PLAN
PAVED SHOO-FLY DETOUR

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

DESIGNED BY AJM
DATE 07/23

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:08
FILE: wshoofly-1 r3.dgn



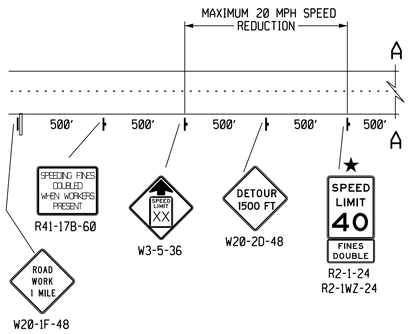
ROAD CLOSED WITH DIVERSION

★ SPEED LIMIT SHALL BE DETERMINED BY THE DISTRICT CONSTRUCTION ENGINEER AND SHOULD NOT EXCEED THE DESIGN SPEED OF THE SHOO-FLY.

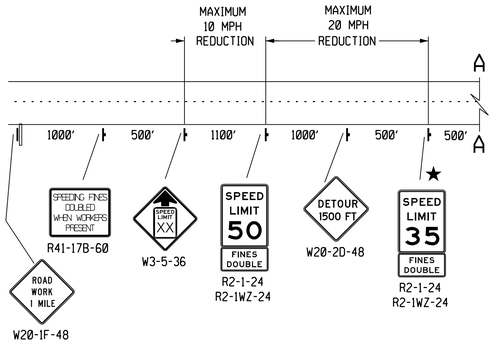
GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN IT MAY REQUIRE GRADING FROM BOTH DIRECTIONS

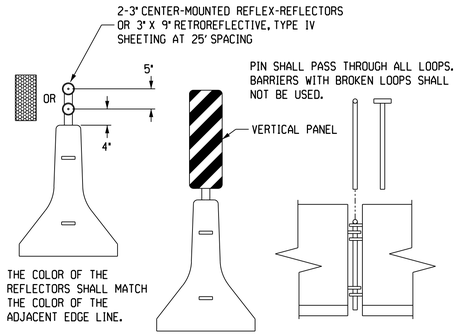
1-STEP SPEED REDUCTION



2-STEP SPEED REDUCTION



CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 25 SPACING ON TOP OF BARRIER, EVERY 5 SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

NOTES

1. SIGNS SHOWN ARE FOR ONE DIRECTION OF TRAVEL ONLY.
2. RAISED PAVEMENT MARKERS IF USED SHALL BE SPACED AT 5' INTERVALS
3. THE WORK AREA SHALL INCLUDE THE AREA USED BY THE WORK ACTIVITY, EQUIPMENT, VEHICLES AND MATERIALS.
4. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIAL SHALL BE PLACED WITHIN THE BUFFER SPACE OR IN FRONT OF THE WORK AREA.
5. REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
6. PLACE BACK TO BACK VERTICAL PANELS AT 25' TO 50' SPACING ALONG THE SHOOFLY WHEN THE FILL SLOPE IS STEEPER THAN 3:1.
7. DELINEATORS SHALL BE REPLACED BY VERTICAL PANELS WHERE SIDE SLOPE IS STEEPER THAN 3:1, OR AS DIRECTED BY THE ENGINEER. DELINEATORS USED FOR WORK ZONE TRAFFIC CONTROL SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL DEVICES.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SIGN
- CMS — CHANGEABLE MESSAGE SIGN
- TYPE III DELINEATOR

XX

Project Number ###-#(###)

C.N. #####

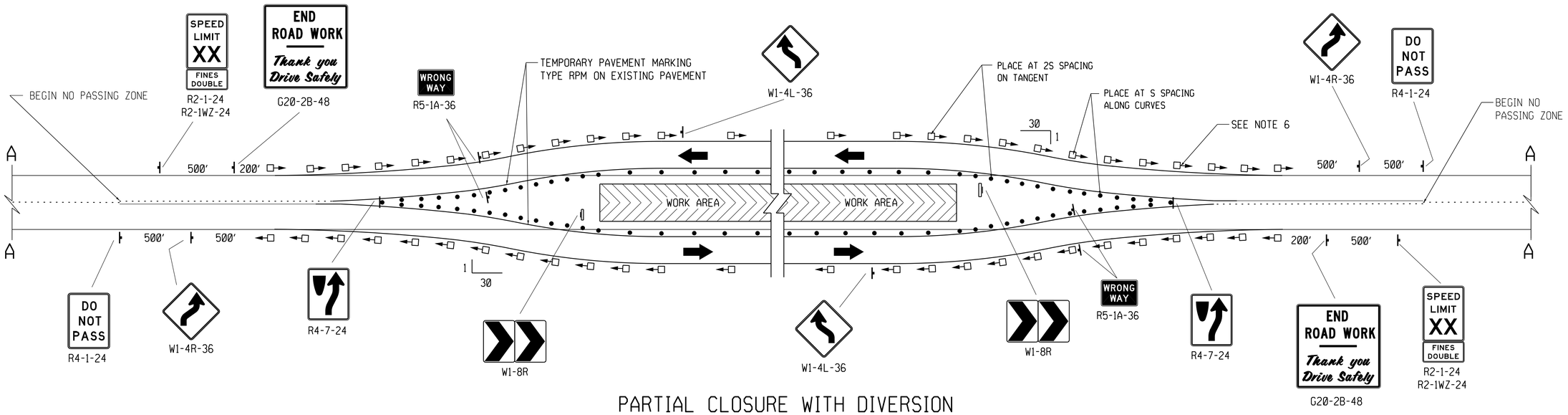
TYPICAL TRAFFIC CONTROL PLAN
SHOO-FLY DETOUR
WITH CONCRETE BARRIERS

DESIGNED BY AJM DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

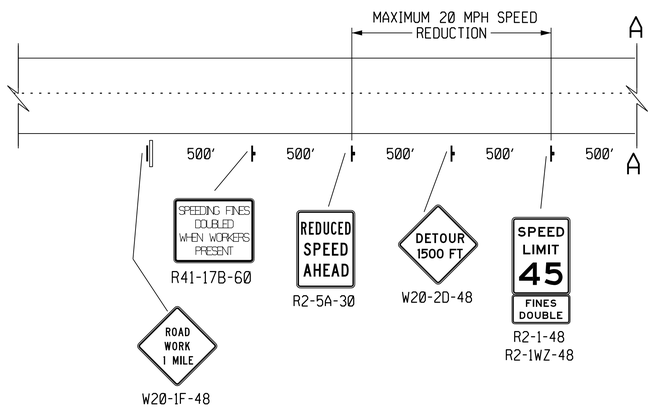
PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:09
FILE: wshoofly-2 r1.dgn



PARTIAL CLOSURE WITH DIVERSION

1-STEP SPEED REDUCTION



NOTES

1. RAISED PAVEMENT MARKERS SHALL BE SPACED AT 5′ INTERVALS
2. THE WORK AREA SHALL INCLUDE THE AREA USED BY THE WORK ACTIVITY, EQUIPMENT, VEHICLES AND MATERIALS.
3. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIAL SHALL BE PLACED WITHIN THE BUFFER SPACE OR IN FRONT OF THE WORK AREA.
4. REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
5. PLACE BACK TO BACK VERTICAL PANELS AT 25′ TO 50′ SPACING ALONG THE SHOOFLY WHEN THE FILL SLOPE IS STEEPER THAN 3:1.
6. DELINEATORS SHALL BE REPLACED BY VERTICAL PANELS WHERE SIDE SLOPE IS STEEPER THAN 1:3, OR AS DIRECTED BY THE ENGINEER. DELINEATORS USED FOR WORK ZONE TRAFFIC CONTROL SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL DEVICES.
7. WHEN DETERMINED BY THE CONSTRUCTION ENGINEER THE SPEED LIMITS WITHIN THE SHOO-FLY MAY BE INCREASED WHERE DESIGN SPEED AND LENGTH ALLOWS IT.

LEGEND

- REFLECTORIZED PLASTIC DRUM
- SIGN
- TYPE III BARRICADE
- CRYSTAL DELINEATOR

XX

Project Number
###-#(###)

C.N. #####

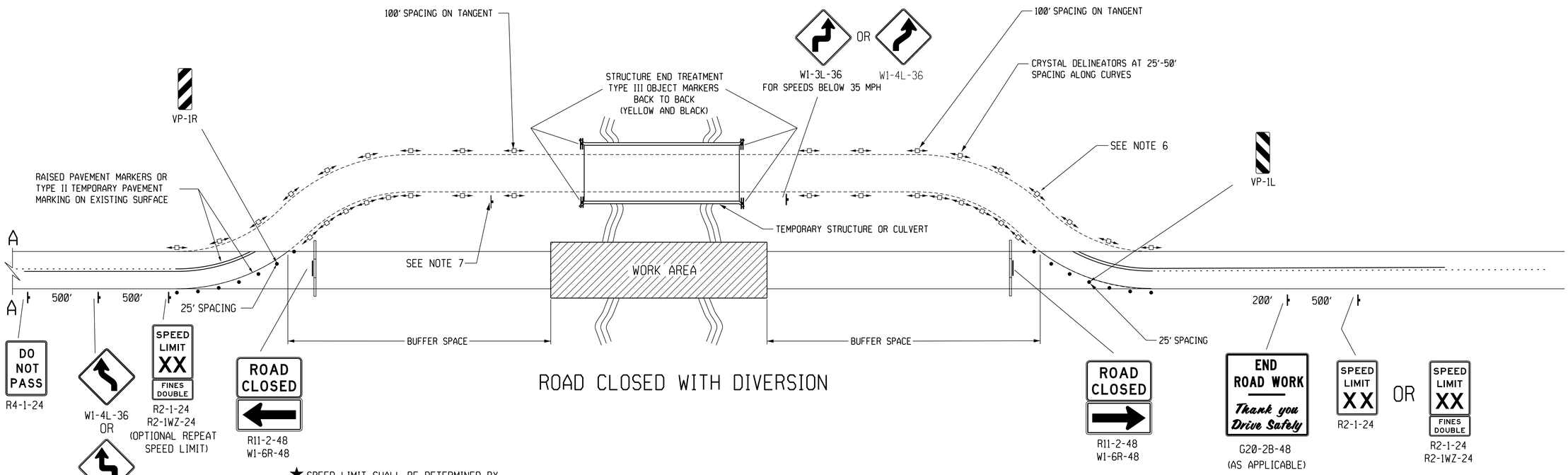
TYPICAL TRAFFIC CONTROL PLAN
TWO WAY DIVIDED
SHOO-FLY DETOUR

DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

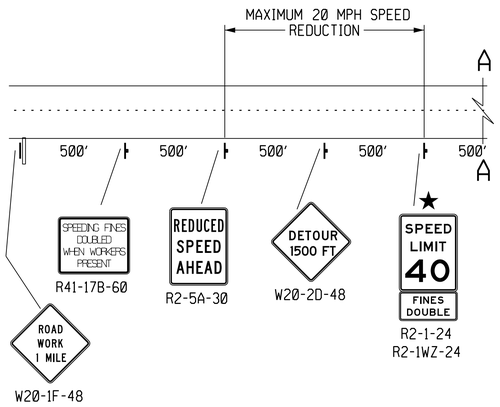
COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:09
FILE: wshoofly-3 r1.dgn



ROAD CLOSED WITH DIVERSION

★ SPEED LIMIT SHALL BE DETERMINED BY THE DISTRICT CONSTRUCTION ENGINEER AND SHOULD NOT EXCEED THE DESIGN SPEED OF THE SHOO-FLY.

1-STEP SPEED REDUCTION



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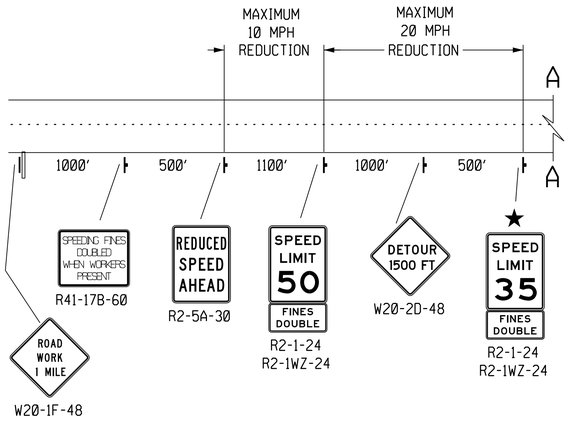


NOTES

1. SIGNS SHOWN ARE FOR ONE DIRECTION OF TRAVEL ONLY.
2. THE WORK AREA SHALL INCLUDE THE AREA USED BY THE WORK ACTIVITY, EQUIPMENT, VEHICLES AND MATERIALS.
3. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIAL SHALL BE PLACED WITHIN THE BUFFER SPACE OR IN FRONT OF THE WORK AREA.
4. REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
5. PLACE BACK TO BACK VERTICAL PANELS AT 25' TO 50' SPACING ALONG THE TEMPORARY ROAD WHEN THE FILL SLOPE IS STEEPER THAN 3:1.
6. DELINEATORS SHALL BE REPLACED BY VERTICAL PANELS WHERE SIDE SLOPE IS STEEPER THAN 3:1, OR AS DIRECTED BY THE ENGINEER. DELINEATORS USED FOR WORK ZONE TRAFFIC CONTROL SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL DEVICES.
7. WHEN DETERMINED BY THE CONSTRUCTION ENGINEER THE SPEED LIMITS WITHIN THE SHOO-FLY MAY BE INCREASED WHERE DESIGN SPEED AND LENGTH ALLOWS IT.

LEGEND

- TYPE III BARRICADE
- VERTICAL PANEL
- SIGN

XX

Project Number
###-#(###)

C.N. #####

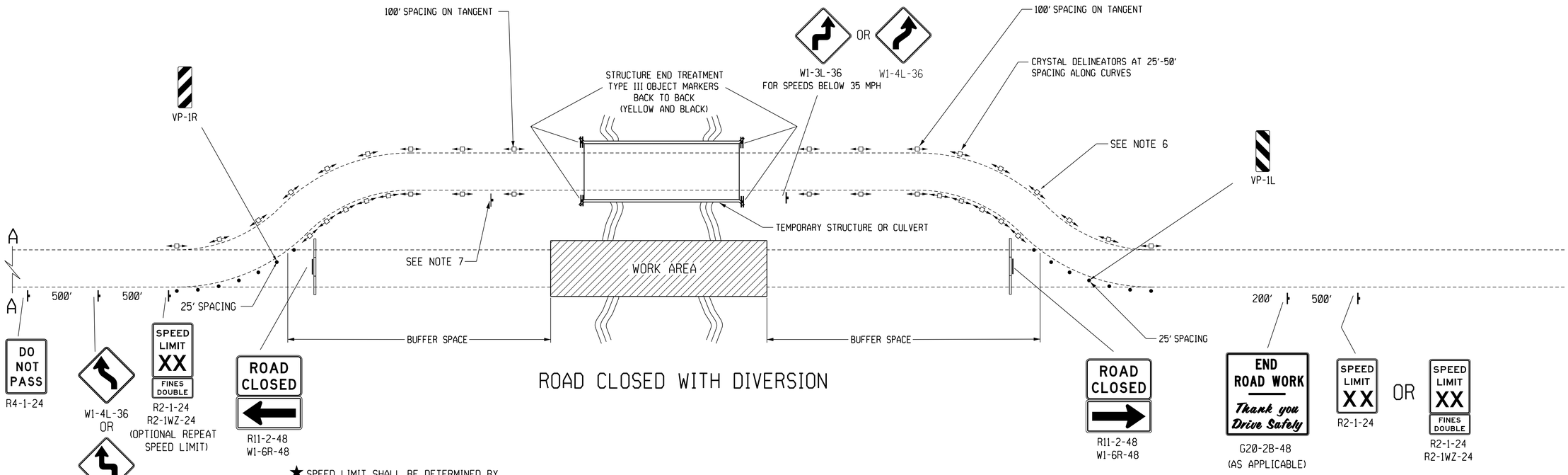
TYPICAL TRAFFIC CONTROL PLAN
PAVED ROAD
GRAVEL SHOO-FLY DETOUR

DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

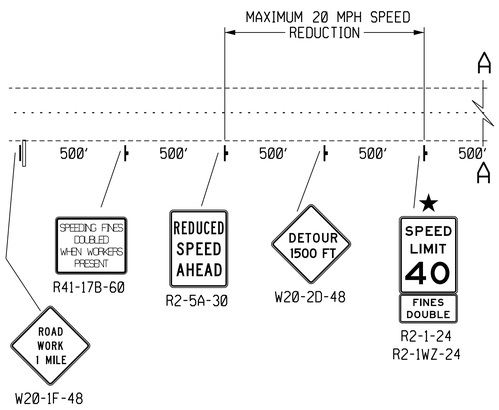
COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:09
FILE: wshoofly-4 r1.dgn



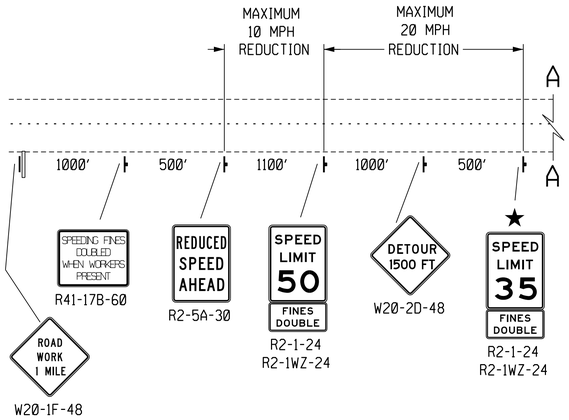
ROAD CLOSED WITH DIVERSION

★ SPEED LIMIT SHALL BE DETERMINED BY THE DISTRICT CONSTRUCTION ENGINEER AND SHOULD NOT EXCEED THE DESIGN SPEED OF THE SHOO-FLY.

1-STEP SPEED REDUCTION



2-STEP SPEED REDUCTION



NOTES

1. SIGNS SHOWN ARE FOR ONE DIRECTION OF TRAVEL ONLY.
2. THE WORK AREA SHALL INCLUDE THE AREA USED BY THE WORK ACTIVITY, EQUIPMENT, VEHICLES AND MATERIALS.
3. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIAL SHALL BE PLACED WITHIN THE BUFFER SPACE OR IN FRONT OF THE WORK AREA.
4. REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
5. PLACE BACK TO BACK VERTICAL PANELS AT 25' TO 50' SPACING ALONG THE TEMPORARY ROAD WHEN THE FILL SLOPE IS STEEPER THAN 3:1.
6. DELINEATORS SHALL BE REPLACED BY VERTICAL PANELS WHERE SIDE SLOPE IS STEEPER THAN 3:1, OR AS DIRECTED BY THE ENGINEER. DELINEATORS USED FOR WORK ZONE TRAFFIC CONTROL SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL DEVICES.
7. WHEN DETERMINED BY THE CONSTRUCTION ENGINEER THE SPEED LIMITS WITHIN THE SHOO-FLY MAY BE INCREASED WHERE DESIGN SPEED AND LENGTH ALLOWS IT.

LEGEND

- TYPE III BARRICADE
- VERTICAL PANEL
- SIGN

XX

Project Number
###-#(###)

C.N. #####

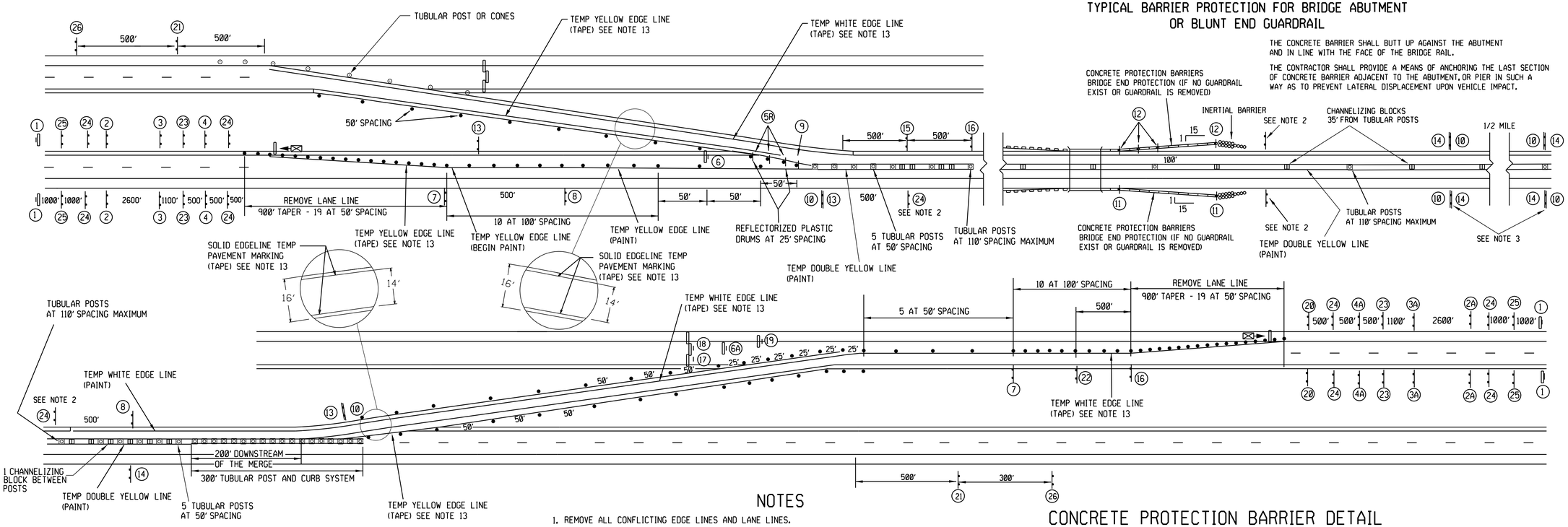
TYPICAL TRAFFIC CONTROL PLAN
GRAVEL ROAD
GRAVEL SHOO-FLY DETOUR

DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:09
FILE: wshoofly-5 r1.dgn

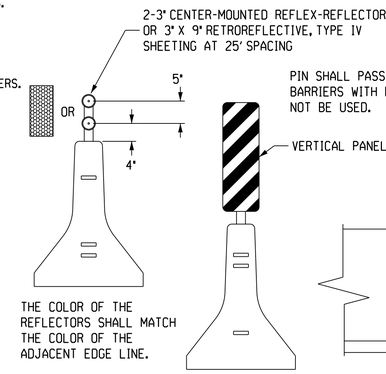


TYPICAL BARRIER PROTECTION FOR BRIDGE ABUTMENT OR BLUNT END GUARDRAIL

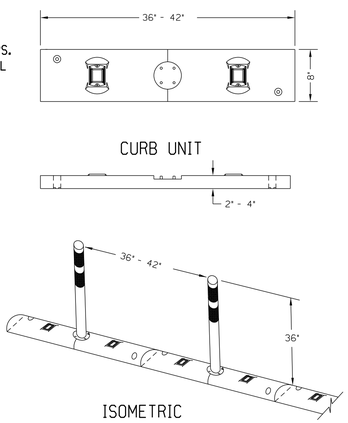
NOTES

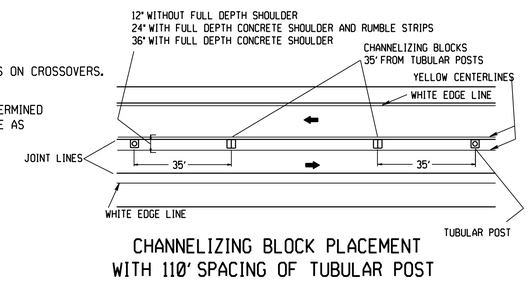
1. REMOVE ALL CONFLICTING EDGE LINES AND LANE LINES.
2. SPEED LIMIT SIGNS R2-1-48 AND R2-1WZ-48 SHALL BE INSTALLED EVERY MILE BETWEEN THE CROSSOVERS.
3. SIGNS NUMBER 10 AND 14 SHALL BE ALTERNATED EVERY 1/2 MILE. THE W7-3AP-36 WARNING PLAQUE MAY BE OMITTED WHEN THE W6-3-48 SIGN IS LOCATED ON THE LEFT SIDE OF THE TRAVELLED WAY.
4. TUBULAR POSTS SHALL BE INSTALLED AT A MAXIMUM 110 FEET ALONG THE CENTERLINE BETWEEN CROSSOVERS.
5. THE CONTRACTOR SHALL FURNISH A BRACKET TO SUPPORT THE REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
6. THE FLASHING ARROW PANELS FOR THE TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
7. SIGNS W6-3-48 AND W7-3AP-36 SHALL BE INSTALLED AT THE BEGINNING OF TWO-WAY TRAVEL AT EACH END OF THE PROJECT CROSSOVER LOCATIONS AND AT ANY INTERCHANGE ON-RAMP MERGING CONDITION WITHIN THE LIMITS OF THE TWO-WAY TRAFFIC CROSSOVER LANE CONFIGURATION.
8. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
9. ADVISORY SPEED PLAQUE IS NOT REQUIRED IF DESIGNATED SPEED IS THE SAME AS THE POSTED SPEED.
10. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE CONCRETE PROTECTION BARRIERS AT ANY TIME.
11. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
12. LATERAL SUPPORTS WHEN REQUIRED FOR DROP-OFFS SHALL BE CONSIDERED SUBSIDIARY TO THE CONCRETE PROTECTION BARRIER.
13. 4" REMOVEABLE WET RELFECTIVE TAPE SHALL BE USED FOR EDGELINE MARKINGS ON CROSSOVERS.
14. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED PLAQUE W13-1P SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.
15. A 13:1 BARRIER TAPER IS ALLOWED ON OMAHA URBAN INTERSTATE LOCATIONS.

CONCRETE PROTECTION BARRIER DETAIL



TUBULAR POST & CURB SYSTEM

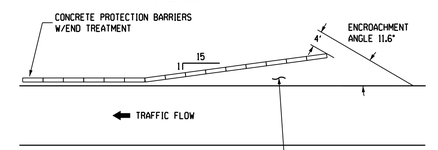




CHANNELIZING BLOCK PLACEMENT WITH 110' SPACING OF TUBULAR POST

GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN IT MAY REQUIRE GRADING FROM BOTH DIRECTIONS



FOR CONCRETE BARRIERS PLACED AT 13:1 USE AN ENCROACHMENT ANGLE OF 13° (SEE NOTE 15)

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- TUBULAR POST
- CHANNELIZING BLOCK

(1) ROAD WORK 2 MILES — W20-1G-48
(2) LEFT LANE CLOSED 1 MILE — W20-5FL-48
(2A) RIGHT LANE CLOSED 1 MILE — W20-5FR-48
(3) LEFT LANE CLOSED ½ MILE — W20-5EL-48
(3A) RIGHT LANE CLOSED ½ MILE — W20-5ER-48
(4) W4-2L-48
(4A) W4-2R-48
(5R) W1-8R
(6) W1-6R-48
(6A) W1-6L-48
(7) TWO WAY TRAFFIC AHEAD / FREEWAY ENDS — W6-8-48 W6-2D-48
(8) PASSING PROHIBITED NEXT X MILES — R4-1A-84
(9) KEEP RIGHT — R4-7B-24
(10) NEXT X MILES — W6-3-48 W7-3AP-36
(11) VP-1L-12
(12) VP-1R-12
(13) DO NOT ENTER — R5-1-48
(14) DO NOT PASS — R4-1-48
(15) XX MPH — W1-4R-48 W13-1P-30
(16) CROSSOVER 1000 FT / XX MPH — W40-8D-48 W13-1P-30
(17) 2 W1-8L-24 AND 1 TYPE A FLASHING LIGHT ON TYPE III BARRICADE
(18) ROAD CLOSED — R11-2-48 ABOVE TYPE III BARRICADE
(19) DETOUR — M4-10L-48 ON TYPE III BARRICADE
(20) DETOUR AHEAD — W20-2A-48
(21) END ROAD WORK / Thank you Drive Safely / FREEWAY RESUMES — G20-2B-48 W6-2E-48
(22) XX MPH — W1-4L-48 W13-1P-30
(23) SPEED LIMIT XX — W3-5-48
(24) SPEED LIMIT XX / FINES DOUBLE — R2-1-48 R2-1WZ-48
(25) SPEEDING FINES DOUBLED WHEN WORKERS PRESENT — R41-17B-60
(26) SPEED LIMIT XX — R2-1-48

XX

Project Number ###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
FREEWAY CONSTRUCTION CROSSOVER

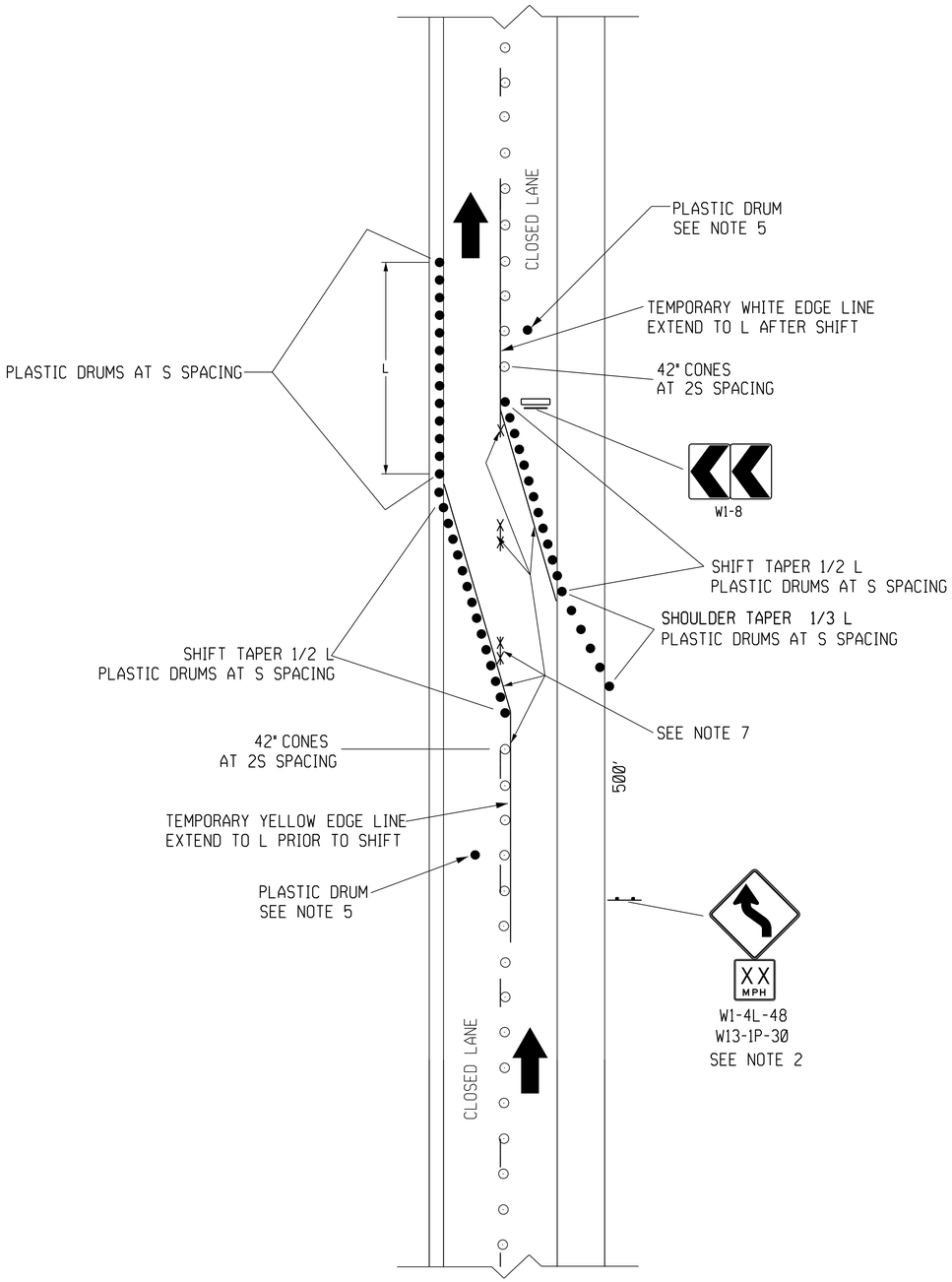
DESIGNED BY DJS DATE 04/19

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:05
FILE: wx395 r5.dgn

SINGLE LANE SHIFT



NOTES

1. THIS PLAN DEFINES TRAFFIC CONTROL REQUIREMENTS WHEN A LANE SHIFT IS REQUIRED BETWEEN TWO CONSECUTIVE WORK ZONES IN WHICH OPPOSITE LANE CLOSURES JOIN.
2. USE OF THE ADVISORY PLAQUE (W13-1P-30) IS OPTIONAL. IF USED, THE SPEED SHALL BE DETERMINED BY THE ENGINEER.
3. LAYOUT SHOWS SHIFT FROM RIGHT LANE TO LEFT LANE. REVERSE THE LAYOUT FOR LEFT LANE SHIFTING TO RIGHT LANE.
4. AVOID INSTALLING A LEFT TO RIGHT SHIFT IN THE VICINITY OF A RIGHT SIDE OFF-RAMP, AND VICE VERSA.
5. PLACE A PLASTIC DRUM OR TYPE III BARRICADE IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE AND/OR AS NEEDED FOR SLAB REPAIR, ETC.
6. UNEVEN LANE PROFILES SHALL NOT CONTINUE ACROSS THE CROSS-OVER PART OF THE LANE SHIFT SECTION.
7. IF LANE SHIFT DURATION IS OVER 72 HOURS, THE DASHED PAVEMENT MARKING LINES SHALL BE REMOVED AND TEMPORARY SOLID EDGE LINES SHALL BE INSTALLED WITHIN THE AREA OF THE SHIFT.
8. TEMPORARY PAVEMENT MARKING SHALL BE 4" LINES.
9. EXISTING SIGNS THAT ARE NOT APPLICABLE SHALL BE COVERED DURING LANE SHIFT.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- PAVEMENT MARKING REMOVAL

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

XX

Project Number
###-#(###)

C.N. #####

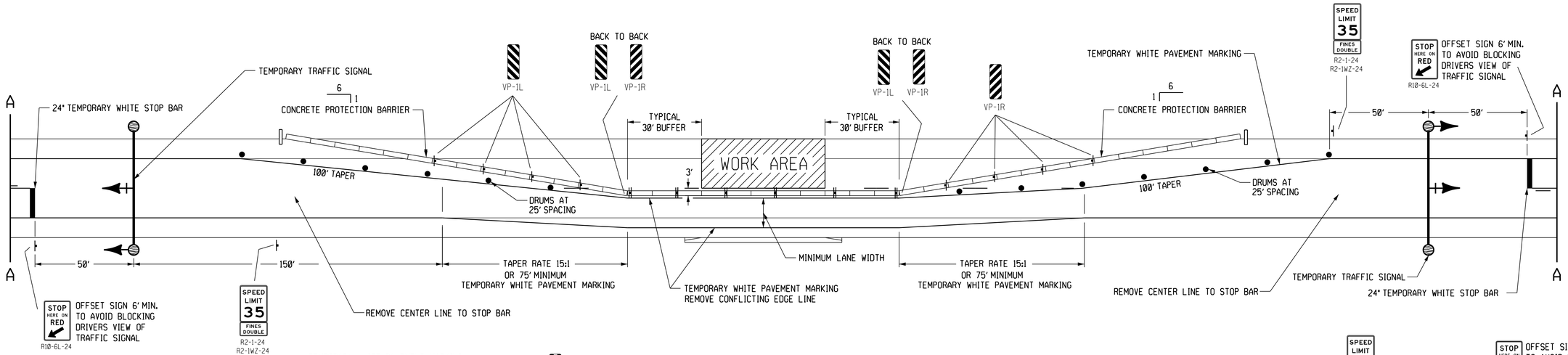
TYPICAL TRAFFIC CONTROL PLAN
LANE SHIFT
FREEWAY - INTERSTATE

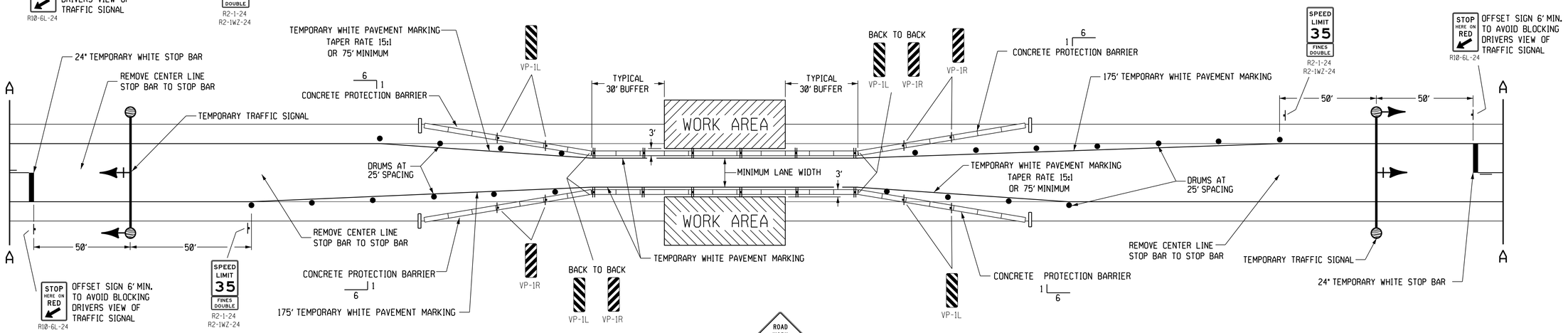
DESIGNED BY AJM
DATE 08/23

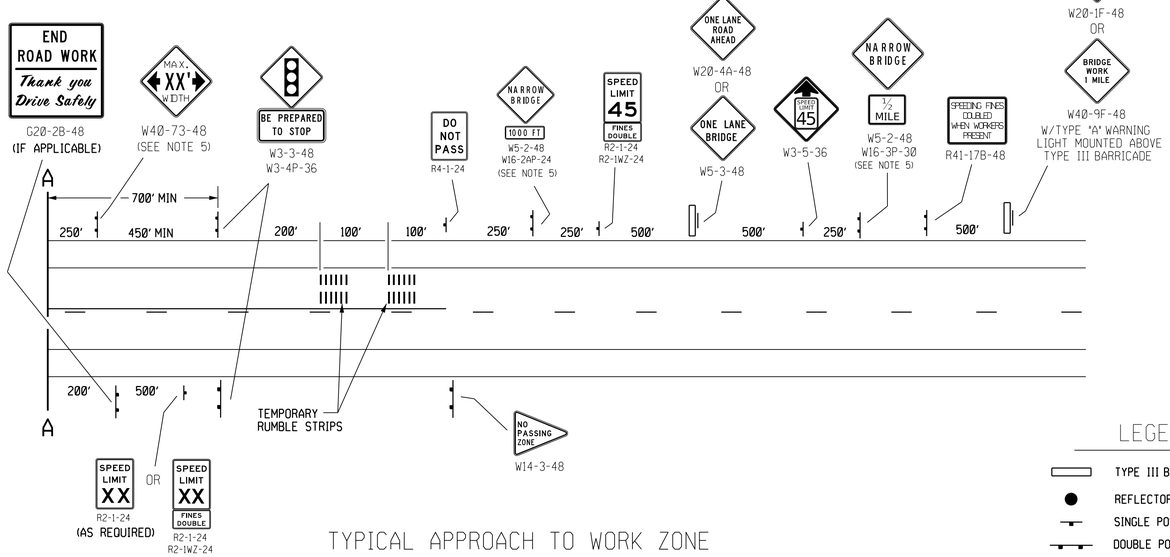
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:03
FILE: wz interstate shift r1.dgn





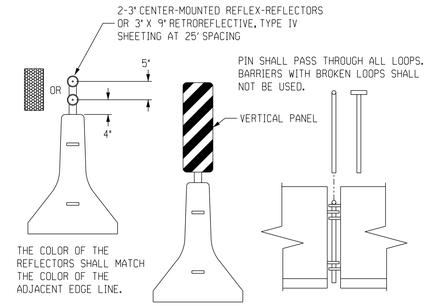


TYPICAL APPROACH TO WORK ZONE

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SINGLE POST SIGN
- DOUBLE POST SIGN

CONCRETE PROTECTION BARRIER DETAIL



NOTES

1. THE CONTRACTOR SHALL FURNISH REFLECTORS, VERTICAL PANELS AND A BRACKET TO SUPPORT THEM IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. CONCRETE PROTECTION BARRIERS SHOULD EXTEND TO EDGE OF PAVEMENT. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME. IF BARRIERS ARE REQUIRED TO BE MOVED FOR WORK ACCESS THEY SHALL BE REPOSITIONED BACK EACH NIGHT. AT NO TIME WILL A BLUNT END OF THE BARRIER BE ALLOWED IN THE TRAVEL LANE OF APPROACHING TRAFFIC.
3. REFLECTORS USED FOR WORK ZONE TRAFFIC CONTROL SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL DEVICES.
4. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
5. INSTALL WHEN LANE WIDTH ACROSS IS LESS THAN APPROACH LANE WIDTH.
6. SIGNS R41-17B-48, W20-1F-48 AND W40-9F-48 ARE NOT REQUIRED IF INSTALLED ON THE PROJECT IN ADVANCE OF THIS WORK SITE.

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
ONE LANE, TWO WAY OPERATION WITH BARRIERS

DESIGNED BY NRL

DATE 12/22

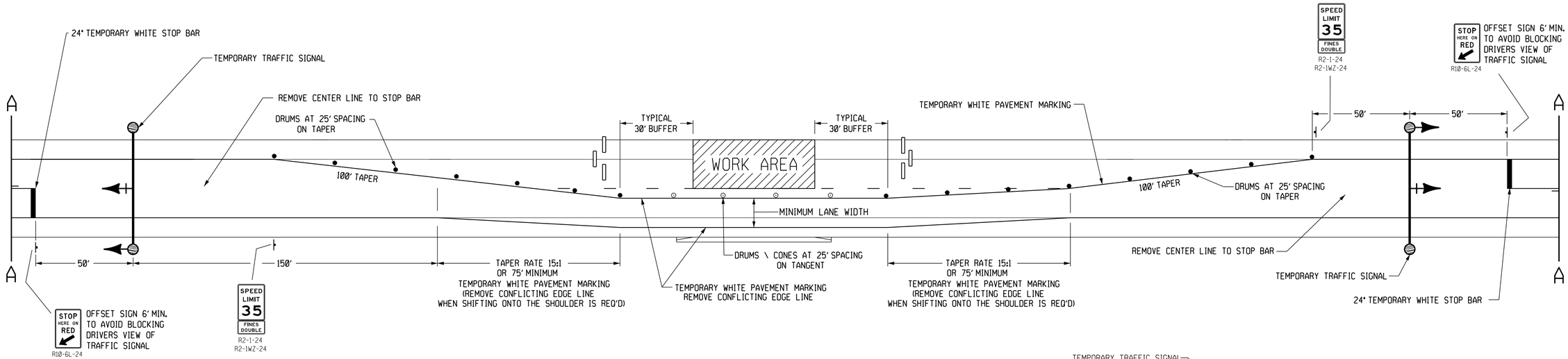
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

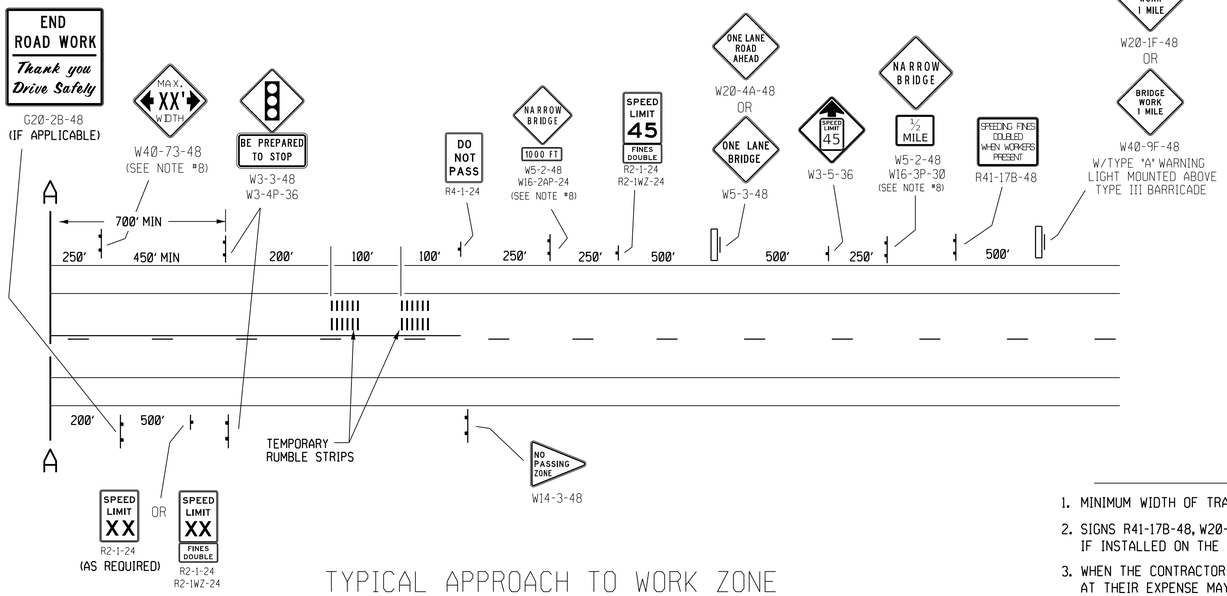
PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

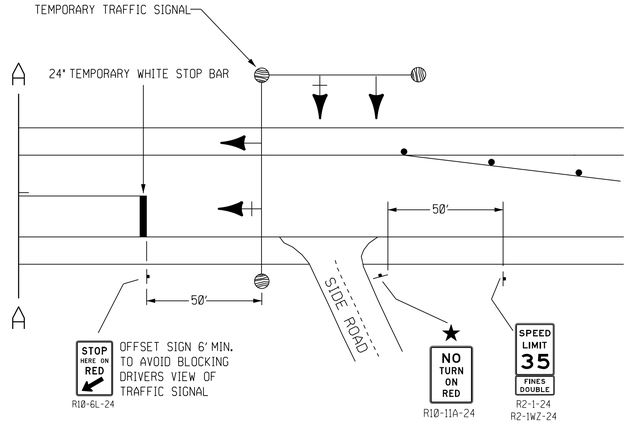
DATE: 11-SEP-2023 13:07

FILE: wz111e-1 r9.dgn





TYPICAL APPROACH TO WORK ZONE



TYPICAL APPROACH TO WORK ZONE FROM SIDE ROAD

NOTES

1. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
2. SIGNS R41-17B-48, W20-1F-48 AND W40-9F-48 ARE NOT REQUIRED IF INSTALLED ON THE PROJECT IN ADVANCE OF THIS WORK SITE.
3. WHEN THE CONTRACTOR IS ACTIVELY WORKING ON THE BRIDGE, THE CONTRACTOR AT THEIR EXPENSE MAY TURN THE TRAFFIC SIGNAL TO RED FLASH AND PROVIDE FLAGGERS TO CONTROL TRAFFIC. ADVANCE FLAGGER SIGN (W20-7-48) SHALL BE INSTALLED OVER THE SIGNAL AHEAD SIGN.
- ★ 4. MINIMUM 7' MOUNTING HEIGHT.
5. MIRROR PAVEMENT MARKINGS, REFLECTORIZED PLASTIC DRUM, AND SIGN PLACEMENTS WHEN WORK AREA IS ON THE OPPOSITE SIDE OF THE ROAD/BRIDGE.
6. ALL BARRICADE AND SIGN LOCATIONS ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES FROM MOTORISTS.
7. ALL TEMPORARY AND/OR PERMANENT PAVEMENT MARKINGS SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSISTIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PREMARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
8. INSTALL WHEN LANE WIDTH ACROSS IS LESS THAN APPROACH LANE WIDTH.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
ONE LANE, TWO WAY OPERATION WITH BARRELS

DESIGNED BY NRL

DATE 05/22

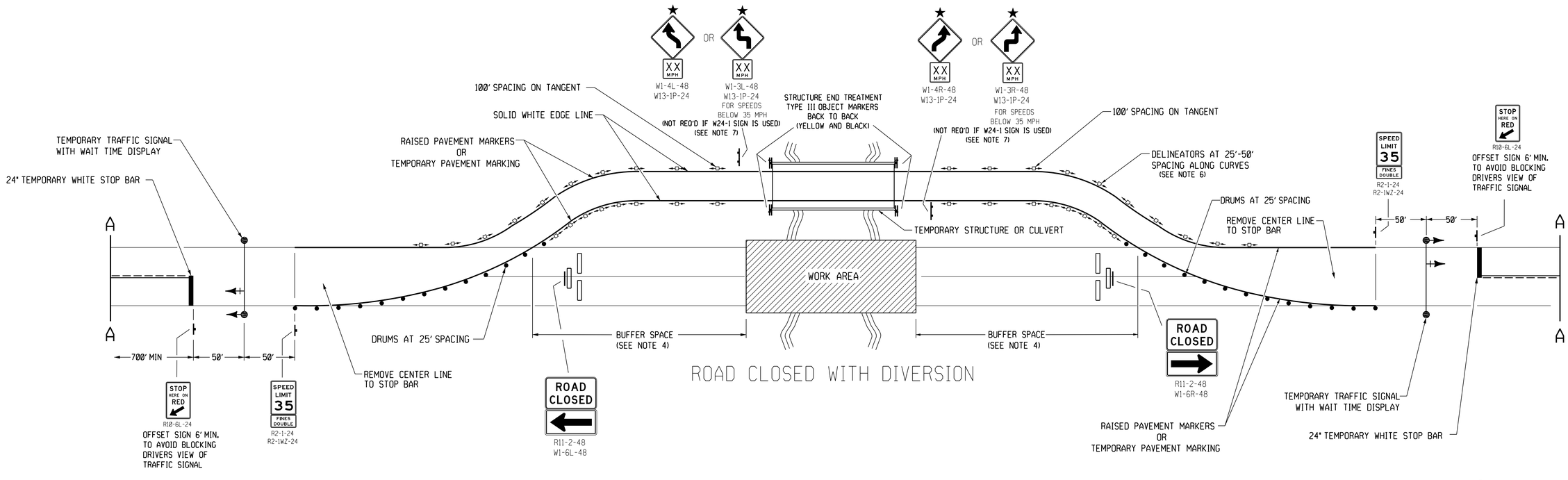
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

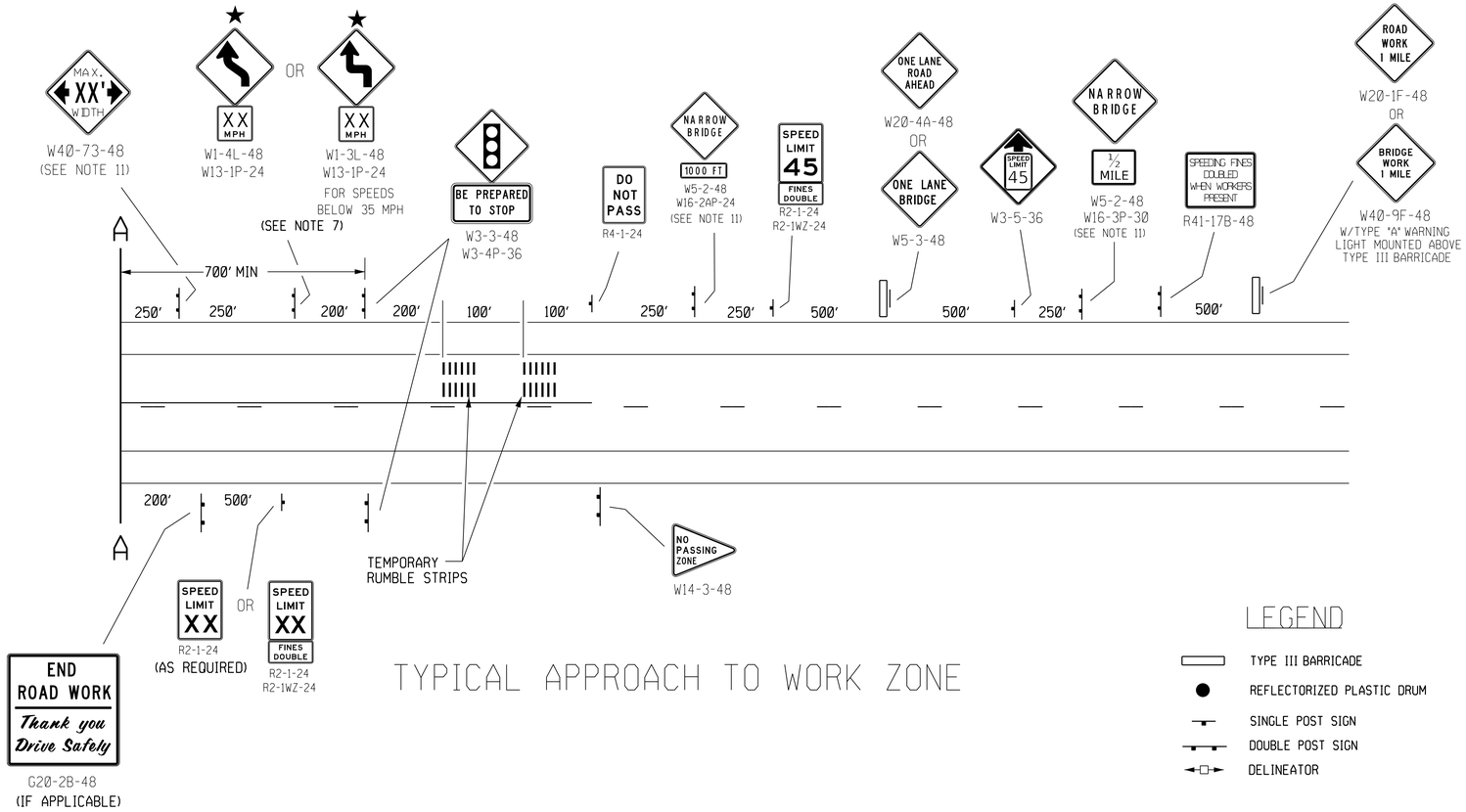
DATE: 11-SEP-2023 13:07

FILE: wz111e-2_r9.dgn



NOTES

1. SIGNS SHOWN ARE FOR ONE DIRECTION OF TRAVEL ONLY.
2. RAISED PAVEMENT MARKERS (IF USED) SHALL BE SPACED AT 5' INTERVALS.
3. THE WORK AREA SHALL INCLUDE THE AREA USED BY THE WORK ACTIVITY, EQUIPMENT, VEHICLES AND MATERIALS.
4. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIAL SHALL BE PLACED WITHIN THE BUFFER SPACE OR IN FRONT OF THE WORK AREA.
5. REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
6. DELINEATORS SHALL BE REPLACED BY VERTICAL PANELS, PLACED BACK-TO-BACK, AT 25' TO 50' SPACING ALONG THE SHOOFLY WHEN THE FILL SLOPE IS STEEPER THAN 3:1. SEE STANDARD PLAN 921 FOR VERTICAL PANEL INSTALLATION DETAILS.
7. A DOUBLE REVERSE CURVE SIGN (W24-1) MAY BE USED WHEN THE TANGENT DISTANCE BETWEEN TWO REVERSE CURVES IS LESS THAN 600'.
8. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSISTIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PREMARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
9. ★ DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS (W13-1P) SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.
10. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. THE WORK ZONE SPEED LIMIT SHALL BE ESTABLISHED ACCORDING TO DOR-01 60-18. SEE WORK ZONE SPEED LIMIT NOTES ON STANDARD PLAN 920.
11. INSTALL WHEN LANE WIDTH ACROSS DIVERSION IS LESS THAN THE APPROACH LANE WIDTH OF THE ROADWAY.
12. SIGNS R41-17B-48, W20-1F-48 AND W40-9F-48 ARE NOT REQUIRED IF INSTALLED ON THE PROJECT IN ADVANCE OF THIS WORK SITE.
13. WHEN THE CONTRACTOR IS ACTIVELY WORKING ON THE SHOO-FLY, THE CONTRACTOR, AT THEIR EXPENSE, MAY TURN THE TRAFFIC SIGNAL TO RED FLASH AND PROVIDE FLAGGERS TO CONTROL TRAFFIC. ADVANCE FLAGGER SIGN (W20-7-48) SHALL BE INSTALLED OVER THE SIGNAL AHEAD SIGN.
14. ALL BARRICADE AND SIGN LOCATIONS ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES FROM MOTORISTS.



XX

Project Number
###-#(###)

C.N. #####

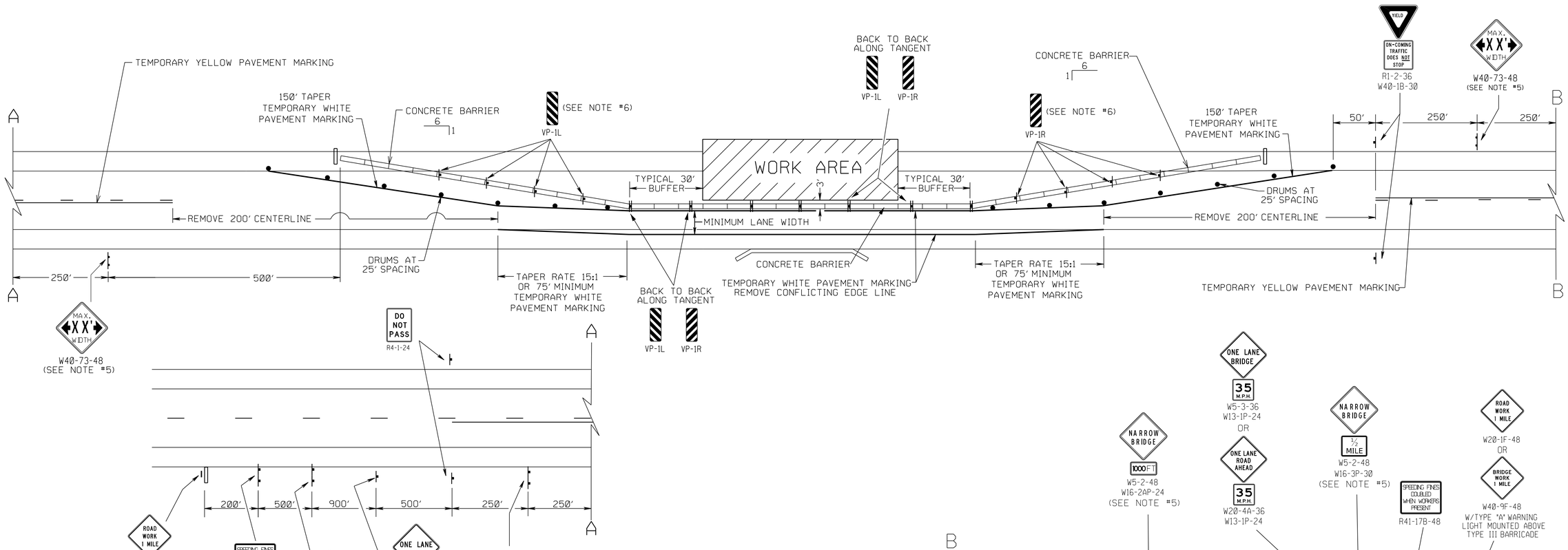
TYPICAL TRAFFIC SIGNAL CONTROL PLAN
TEMPORARY TRAFFIC SIGNAL WITH WAIT TIME DISPLAY
FOR PAVED SHOO-FLY DETOUR

DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

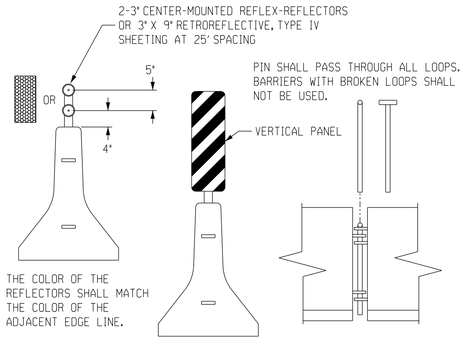
COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:07
FILE: wz111e-3.dgn



GENERAL NOTES

1. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
2. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
3. THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
4. CONCRETE PROTECTION BARRIERS SHOULD EXTEND TO EDGE OF PAVEMENT. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME. IF BARRIERS ARE REQUIRED TO BE MOVED FOR WORK ACCESS, THEY SHALL BE REPOSITIONED BACK EACH NIGHT. AT NO TIME WILL A BLUNT END OF THE BARRIER BE ALLOWED IN THE TRAVEL LANE OF APPROACHING TRAFFIC.
5. INSTALL WHEN LANE WIDTH IS LESS THAN APPROACH LANE WIDTH.
6. VERTICAL PANELS IN TAPER MAY BE OMITTED IF THEY CAUSE A SIGHT RESTRICTION.
7. SIGNS R41-17B-48, W20-1E-48, AND W40-9E-48 ARE NOT REQUIRED IF INSTALLED ON THE PROJECT IN ADVANCE OF THIS WORK SITE.

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 2S SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN

XX

Project Number ###-#(###)

C.N. #####

TYPICAL YIELD CONTROL PLAN
TYPICAL TRAFFIC CONTROL PLAN TWO WAY TRAFFIC CONTROL FOR LOW VOLUME ONE LANE, TWO WAY TRAFFIC (CONCRETE PROTECTION BARRIERS)

DESIGNED BY AJM

DATE 08/23

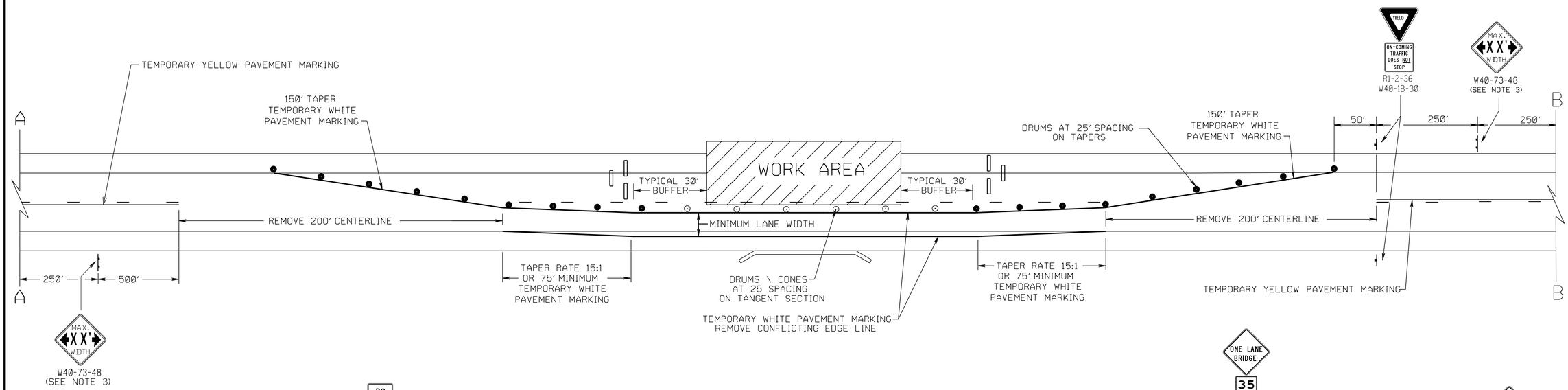
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

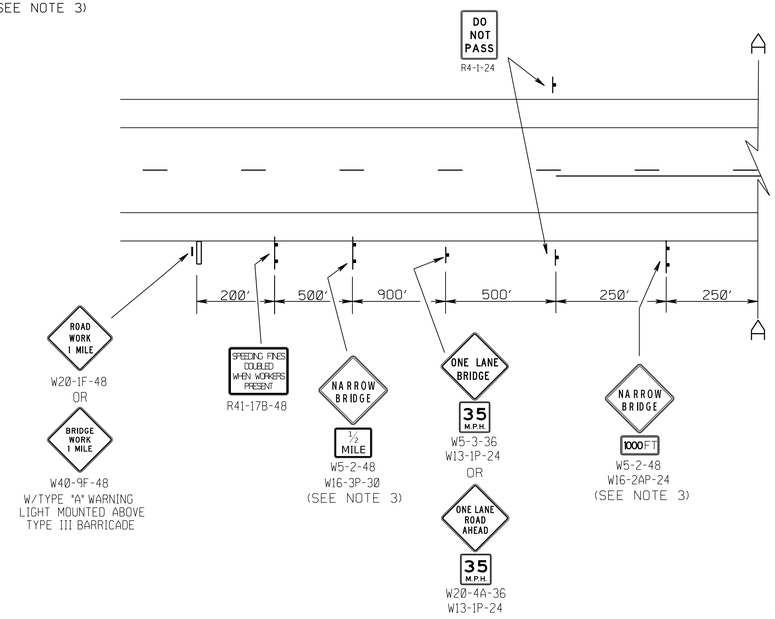
PLAN SHEET NUMBER 1 / 1

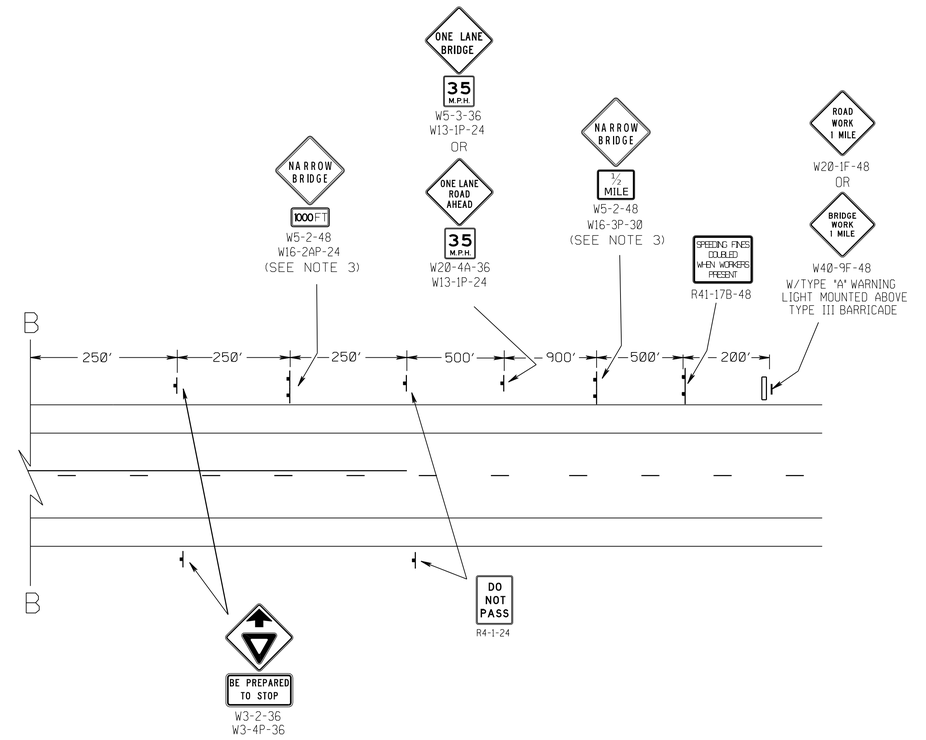
COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:07

FILE: wz112-1 r5.dgn







GENERAL NOTES

1. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
2. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
3. INSTALL WHEN LANE WIDTH IS LESS THAN APPROACH LANE WIDTH.
4. SIGNS R41-17B-48, W20-1E-48, AND W40-9E-48 ARE NOT REQUIRED IF INSTALLED ON THE PROJECT IN ADVANCE OF THIS WORK SITE.

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
TYPICAL YIELD CONTROL FOR LOW VOLUME ONE LANE, TWO WAY TRAFFIC (BARRELS ONLY)

DESIGNED BY AJM DATE 08/23

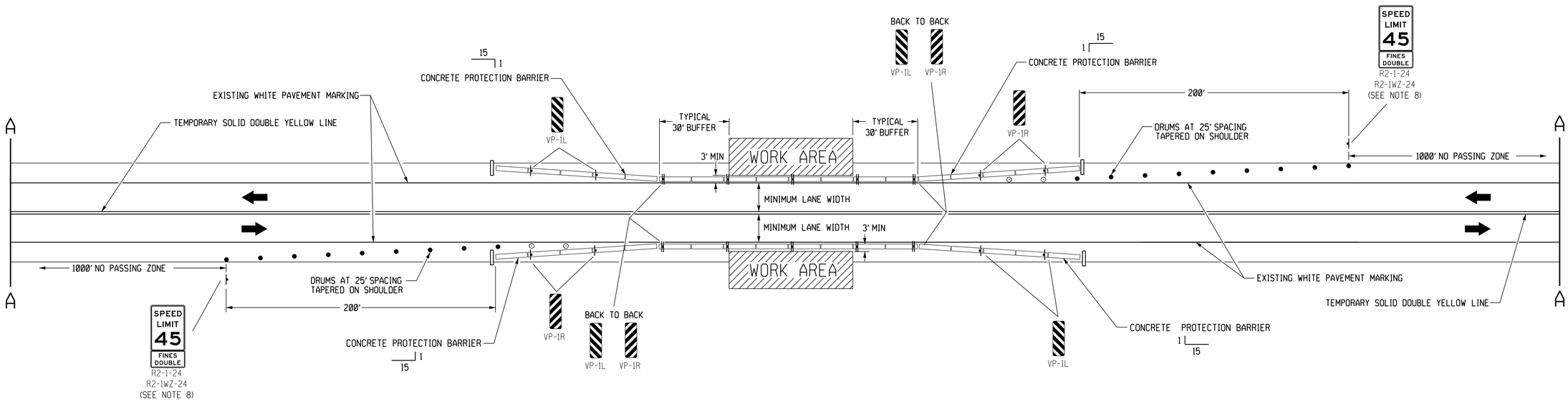
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

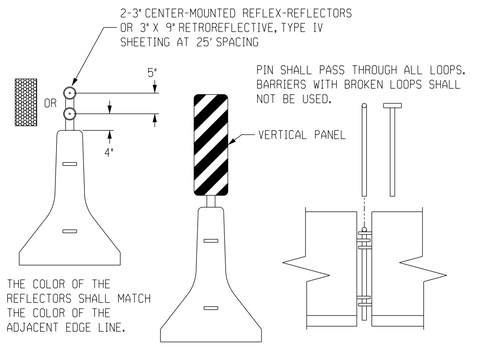
COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:07

FILE: wz112-2 r4.dgn



CONCRETE PROTECTION BARRIER DETAIL

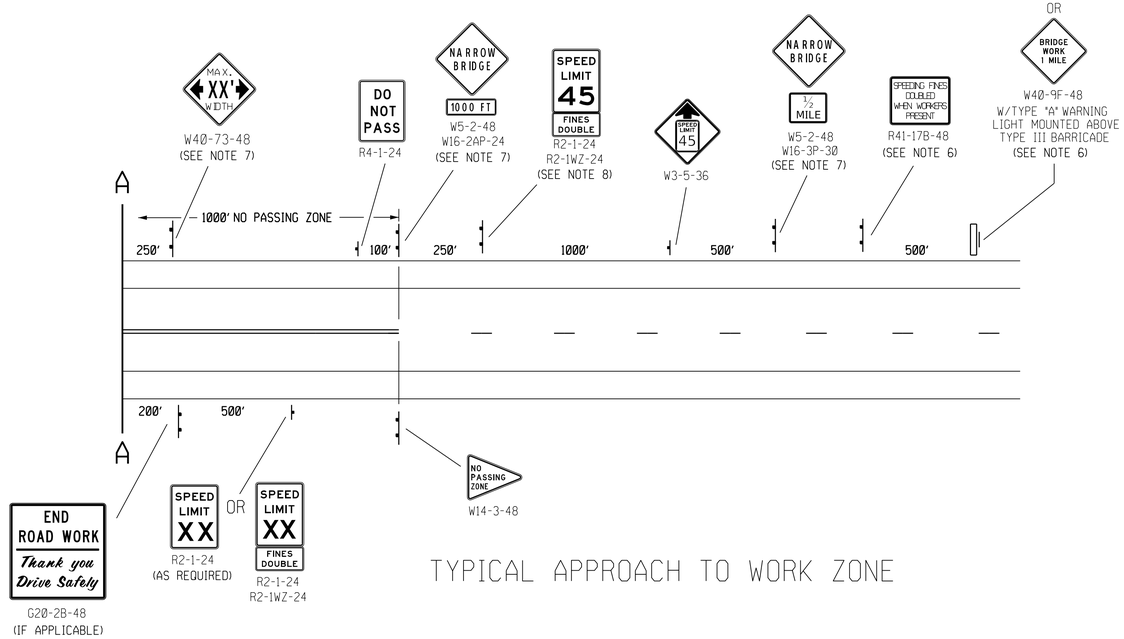


GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH REFLECTORS AND A BRACKET TO SUPPORT THE REFLECTORS IN A STABLE POSITION ON THE CONCRETE PROTECTION BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE CONCRETE PROTECTION BARRIERS AT ANY TIME. AT NO TIME SHALL THE BLUNT END OF THE CONCRETE PROTECTION BARRIER BE ALLOWED IN THE TRAVEL LANE OF APPROACHING TRAFFIC.
3. ALL BARRICADE AND SIGN LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND THEIR PLACEMENT MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNING SHOWN SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
4. REFLECTORS USED FOR WORK ZONE TRAFFIC CONTROL SHALL BE CONSIDERED SUBSIDIARY TO OTHER TRAFFIC CONTROL DEVICES.
5. MINIMUM WIDTH OF TRAVELLED LANE SHALL BE 12', UNLESS APPROVED OTHERWISE BY THE ENGINEER.
6. SIGNS R41-17B-48, W20-1F-48, AND W40-9F-48 ARE NOT REQUIRED IF INSTALLED ON THE PROJECT IN ADVANCE OF THIS WORK SITE.
7. INSTALL WHEN LANE WIDTH THRU THE WORK ZONE IS LESS THAN THE APPROACH LANE WIDTH.
8. SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS FOR THE WORK ZONE.
9. ALL TEMPORARY AND/OR PERMANENT PAVEMENT MARKINGS SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSISTIONS AND ALIGNMENTS. WHEN NECESSARY THE CONTRACTOR SHALL PREMARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
10. TEMPORARY PAVEMENT MARKING SHALL BE 4" OR 12" PAINTED LINES WITH RAISED PAVEMENT MARKERS AS REQUIRED PER SPECIFICATIONS.
11. LATERAL SUPPORTS WHEN REQUIRED FOR DROP-OFFS SHALL BE CONSIDERED SUBSIDIARY TO THE CONCRETE PROTECTION BARRIER.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW



TYPICAL APPROACH TO WORK ZONE

XX

Project Number
###-#(###)

C.N. #####

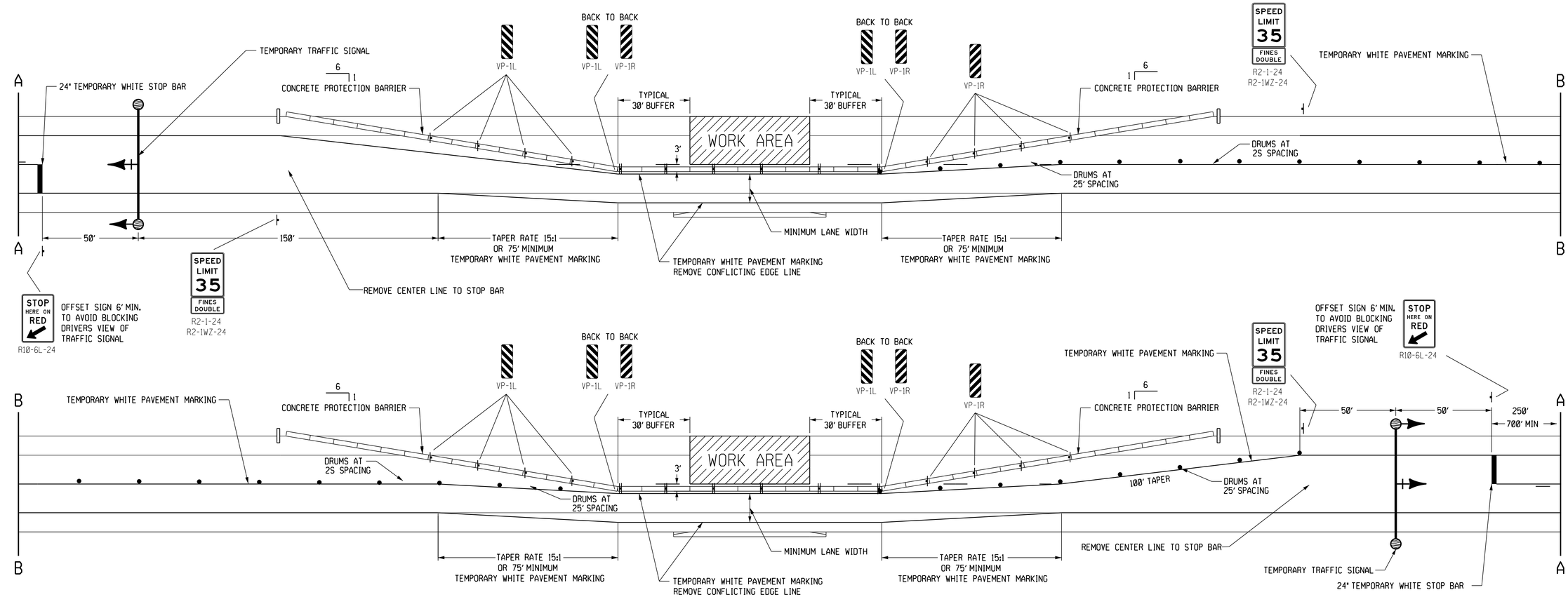
TYPICAL TRAFFIC CONTROL PLAN
TWO LANE, TWO WAY TRAFFIC WITH BARRIERS

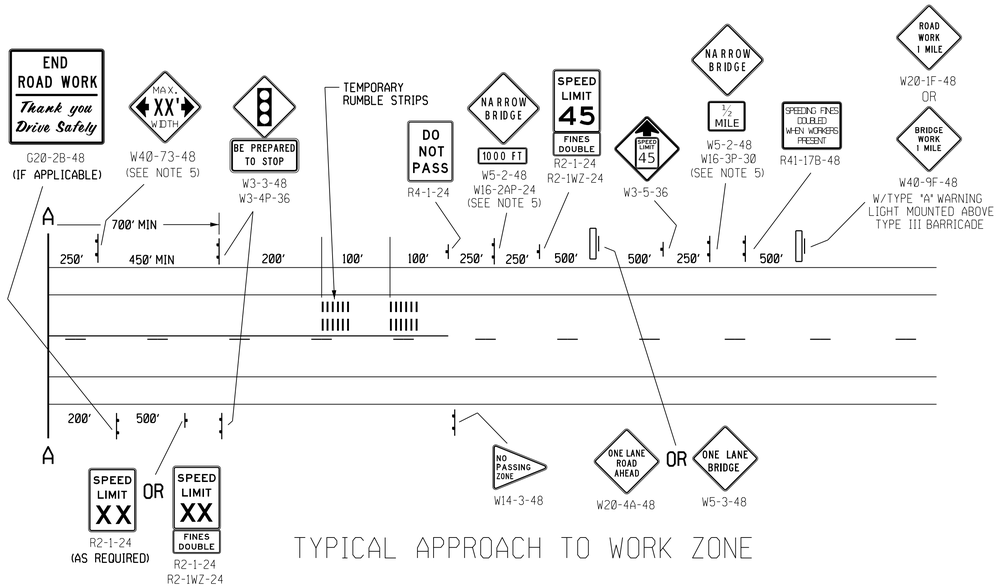
DESIGNED BY NRL
DATE 05/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:08
FILE: wz113.dgn



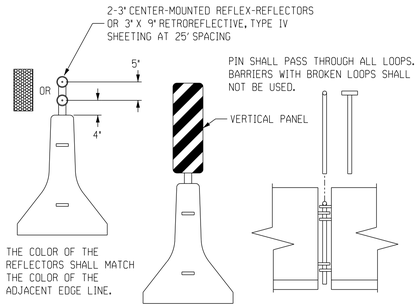


TYPICAL APPROACH TO WORK ZONE

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SINGLE POST SIGN
- DOUBLE POST SIGN

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 25' SPACING ON TOP OF BARRIER, EVERY 5 SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

NOTES

1. THE CONTRACTOR SHALL FURNISH REFLECTORS, VERTICAL PANELS AND A BRACKET TO SUPPORT THEM IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. CONCRETE PROTECTION BARRIERS SHOULD EXTEND TO EDGE OF PAVEMENT. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME. IF BARRIERS ARE REQUIRED TO BE MOVED FOR WORK ACCESS THEY SHALL BE REPOSITIONED BACK EACH NIGHT. AT NO TIME WILL A BLUNT END OF THE BARRIER BE ALLOWED IN THE TRAVEL LANE OF APPROACHING TRAFFIC.
3. REFLECTORS USED FOR WORK ZONE TRAFFIC CONTROL SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL DEVICES.
4. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
5. INSTALL WHEN LANE WIDTH ACROSS IS LESS THAN APPROACH LANE WIDTH.
6. SIGNS R41-17B-48, W20-1F-48 AND W40-9F-48 ARE NOT REQUIRED IF INSTALLED ON THE PROJECT IN ADVANCE OF THIS WORK SITE.

XX

Project Number
###-#(###)

C.N. #####

TYPICAL TRAFFIC SIGNAL CONTROL PLAN
MULTIPLE WORZONES ONE LANE
TWO WAY WITH BARRIERS

DESIGNED BY AJM
DATE 08/23

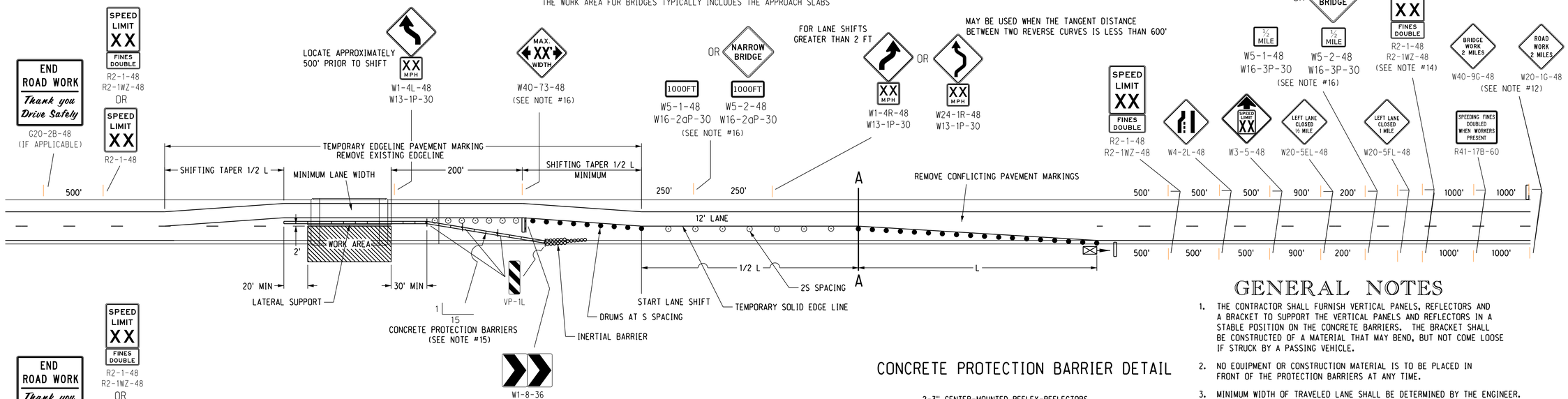
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG041914687
DATE: 11-SEP-2023 13:08
FILE: wz114-1 r1.dgn

LANE CLOSURE W/SHIFT ONTO SHOULDER

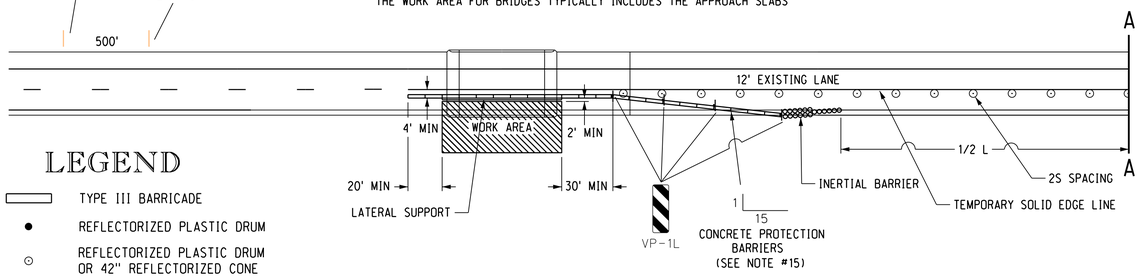
THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



W1-8-36
TYPE III BARRICADE W/2 CHEVRONS
(SEE NOTE #12)

LANE CLOSURE W/O SHIFT ONTO SHOULDER

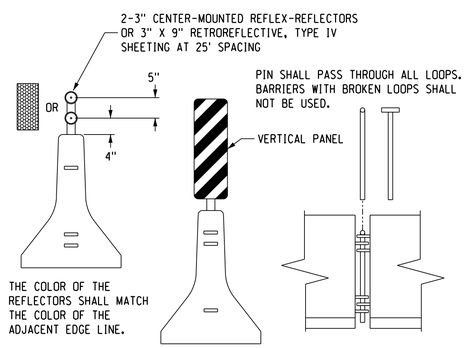
THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- FLASHING ARROW PANEL

CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 2S SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF A MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
4. THE FLASHING ARROW PANEL SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
5. FOR BRIDGE WORK ON CONSECUTIVE BRIDGES LESS THAN 1/2 MILE APART, PLACE PLASTIC DRUMS AT 2S INTERVALS BETWEEN THE BRIDGES.
6. ALL TEMPORARY PAVEMENT MARKING SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSITIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PRE-MARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
7. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
8. SHOULDER TAPER 1/3 L REQ'D FOR FLASHING ARROW PANEL PLACED ON 8' WIDE SHOULDER.
9. SIGNS W20-5LE, W20-5LF AND W20-1G (W8-10B) MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACINGS RESPECTIVELY IN LOW VOLUME AREAS AT THE DIRECTION OF THE ENGINEER.
10. FINES DOUBLE SIGN (R2-1WZ) REQ'D WITH SPEED LIMIT WITHIN THE DOUBLE FINE WORK ZONE.
11. EXISTING SPEED LIMIT SIGNS AND MINIMUM 40 MPH SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.
12. TYPE "A" LIGHTS SHALL BE USED WHEN OTHER ADVANCE WARNING CONSTRUCTION SIGNS ARE INSTALLED ON THE PROJECT.
13. SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS FOR THE WORK ZONE.
14. NOT REQ'D IF WITHIN 1500 FT OF REDUCED SPEED AHEAD SIGN.
15. FOR OMAHA URBAN INTERSTATE USE A 13:1 TAPER FOR CONCRETE PROTECTION BARRIERS. FOR 55MPH ROADWAYS USE A 13:1 TAPER OF THE CONCRETE PROTECTION BARRIER, WITH A TAPER LENGTH OF 80 FT.
16. INSTALL WHEN LANE WIDTH IS LESS THAN APPROACH LANE WIDTH.
17. STATE SUPPLIED CONCRETE PROTECTION BARRIER MAY BE RETURNED TO NEBRASKA DEPARTMENT OF TRANSPORTATION AT _____.

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

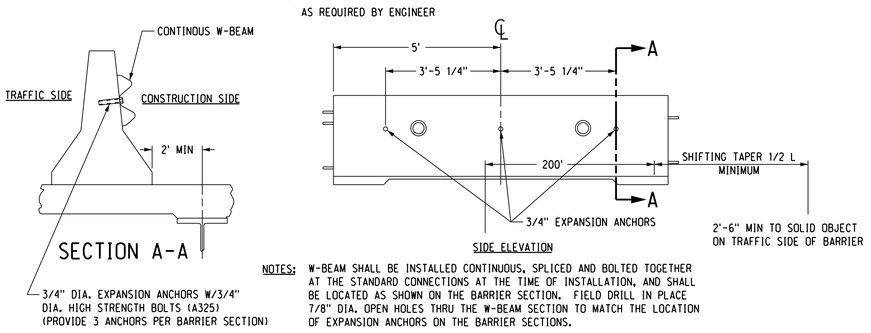
WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

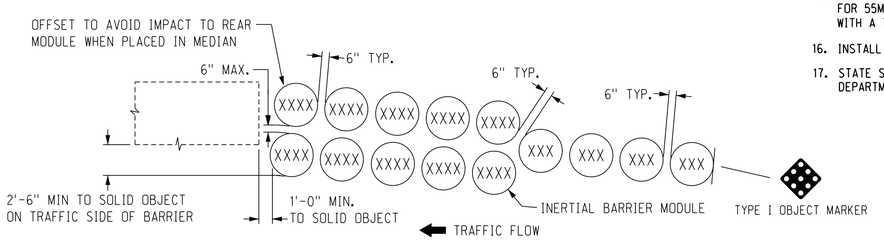
LATERAL SUPPORT FOR TEMPORARY BARRIERS



NOTES: W-BEAM SHALL BE INSTALLED CONTINUOUS, SPLICED AND BOLTED TOGETHER AT THE STANDARD CONNECTIONS AT THE TIME OF INSTALLATION, AND SHALL BE LOCATED AS SHOWN ON THE BARRIER SECTION. FIELD DRILL IN PLACE 7/8" DIA. OPEN HOLES THRU THE W-BEAM SECTION TO MATCH THE LOCATION OF EXPANSION ANCHORS ON THE BARRIER SECTIONS.

THE MINIMUM REQ'D PULL-OUT STRENGTH FOR ANCHORS SHALL BE 17,000 LBS. THE MINIMUM REQ'D SHEAR STRENGTH 13,000 LBS.

TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

* SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

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Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
SINGLE LANE CLOSURE W/ SINGLE LANE SHIFT
ON MULTILANE ROADWAY (NDOT BARRIERS)

DESIGNED BY AJM

DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

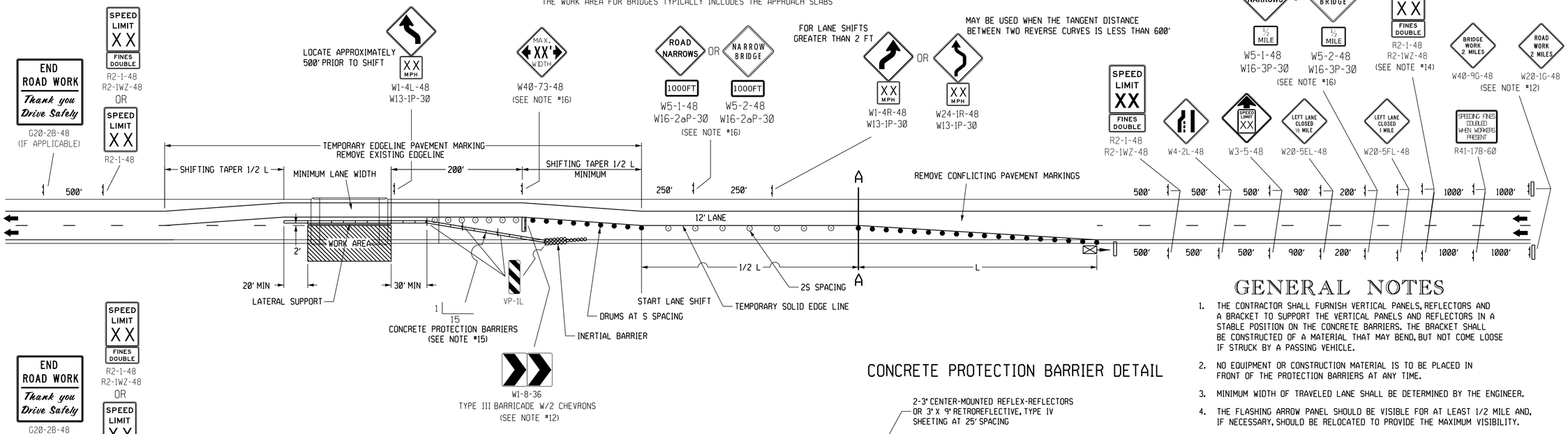
COMPUTER: BG0419M498

DATE: 30-OCT-2024 14:34

FILE: wz324-1 r2.dgn

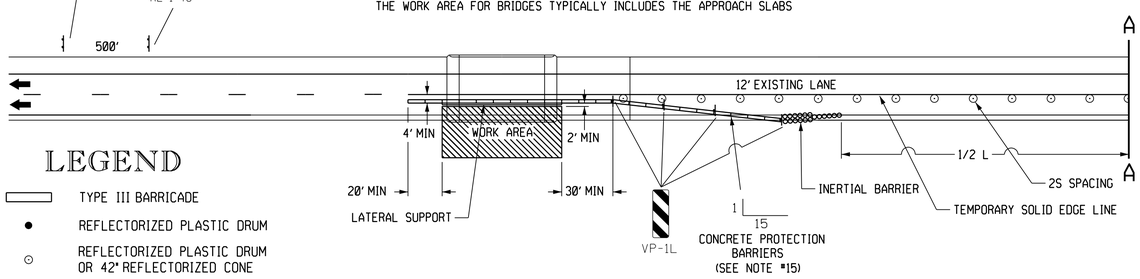
LANE CLOSURE W/SHIFT ONTO SHOULDER

THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



LANE CLOSURE W/O SHIFT ONTO SHOULDER

THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- FLASHING ARROW PANEL
- DIRECTION OF TRAFFIC FLOW

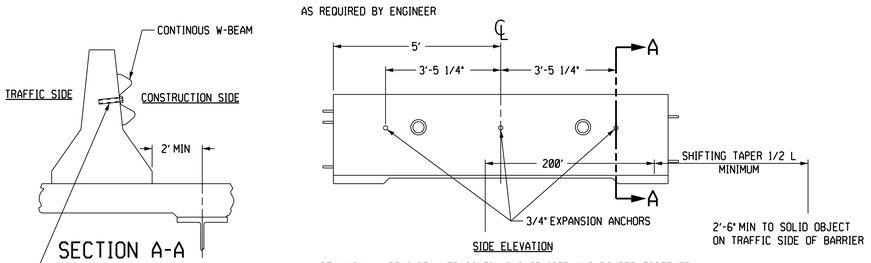
CONCRETE PROTECTION BARRIER DETAIL

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH VERTICAL PANELS, REFLECTORS AND A BRACKET TO SUPPORT THE VERTICAL PANELS AND REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF A MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
2. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
3. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
4. THE FLASHING ARROW PANEL SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
5. FOR BRIDGE WORK ON CONSECUTIVE BRIDGES LESS THAN 1/2 MILE APART, PLACE PLASTIC DRUMS AT 2S INTERVALS BETWEEN THE BRIDGES.
6. ALL TEMPORARY PAVEMENT MARKING SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSITIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PRE-MARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
7. THE INERTIAL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10° MAXIMUM.
8. SHOULDER TAPER 1/3 L REQ'D FOR FLASHING ARROW PANEL PLACED ON 8' WIDE SHOULDER.
9. SIGNS W20-5LE, W20-5LF AND W20-1G (W8-10B) MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACINGS RESPECTIVELY IN LOW VOLUME AREAS AT THE DIRECTION OF THE ENGINEER.
10. FINES DOUBLE SIGN (R2-1WZ) REQ'D WITH SPEED LIMIT WITHIN THE DOUBLE FINE WORK ZONE.
11. EXISTING SPEED LIMIT SIGNS AND MINIMUM 40 MPH SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.
12. TYPE "A" LIGHTS SHALL BE USED WHEN OTHER ADVANCE WARNING CONSTRUCTION SIGNS ARE INSTALLED ON THE PROJECT.
13. SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS FOR THE WORK ZONE.
14. NOT REQ'D IF WITHIN 1500 FT OF REDUCED SPEED AHEAD SIGN.
15. FOR OMAHA URBAN INTERSTATE USE A 13:1 TAPER FOR CONCRETE PROTECTION BARRIERS. FOR 55MPH ROADWAYS USE A 13:1 TAPER OF THE CONCRETE PROTECTION BARRIER, WITH A TAPER LENGTH OF 80 FT.
16. INSTALL WHEN LANE WIDTH IS LESS THAN APPROACH LANE WIDTH.

LATERAL SUPPORT FOR TEMPORARY BARRIERS

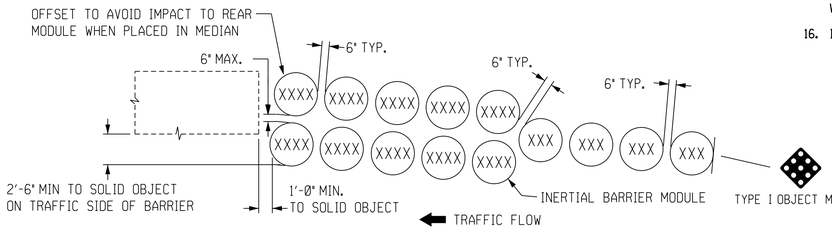
AS REQUIRED BY ENGINEER



NOTES: W-BEAM SHALL BE INSTALLED CONTINUOUS, SPLICED AND BOLTED TOGETHER AT THE STANDARD CONNECTIONS AT THE TIME OF INSTALLATION, AND SHALL BE LOCATED AS SHOWN ON THE BARRIER SECTION. FIELD DRILL IN PLACE 7/8" DIA. OPEN HOLES THRU THE W-BEAM SECTION TO MATCH THE LOCATION OF EXPANSION ANCHORS ON THE BARRIER SECTIONS.

THE MINIMUM REQ'D PULL-OUT STRENGTH FOR ANCHORS SHALL BE 17,000 LBS. THE MINIMUM REQ'D SHEAR STRENGTH 13,000 LBS.

TYPICAL INERTIAL BARRIER INSTALLATION



THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

• SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
SINGLE LANE CLOSURE W/ SINGLE LANE SHIFT
ON MULTILANE ROADWAY (BARRIERS)

DESIGNED BY AJM

DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

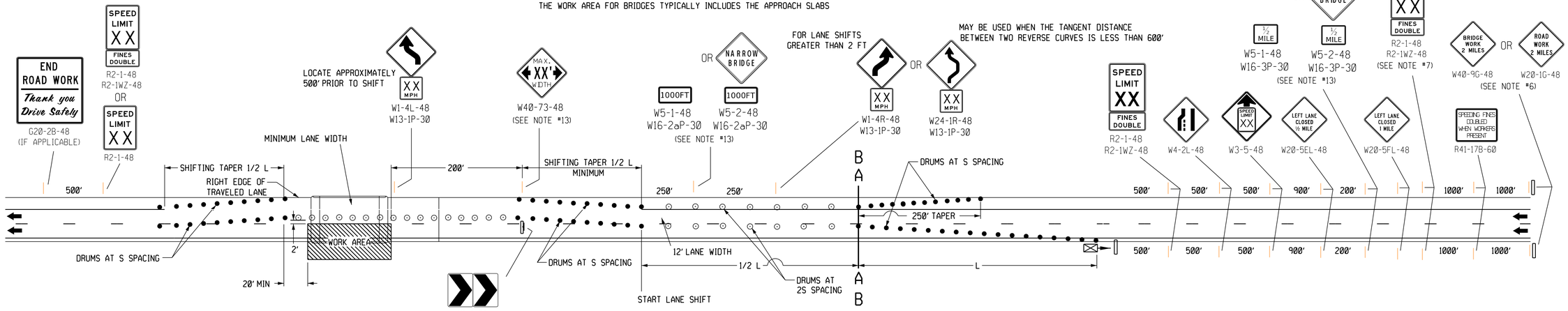
COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:04

FILE: wz324-2 r3.dgn

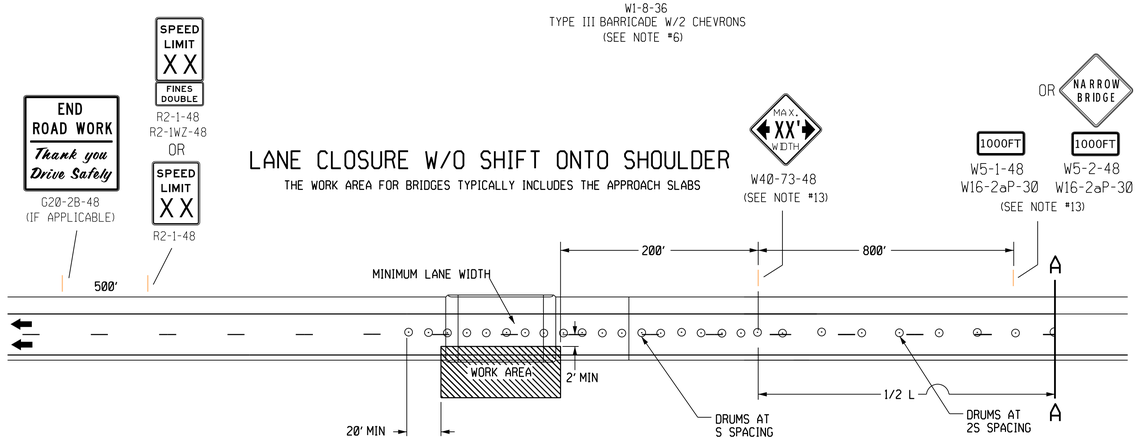
LANE CLOSURE W/SHIFT ONTO SHOULDER

THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



LANE CLOSURE W/O SHIFT ONTO SHOULDER

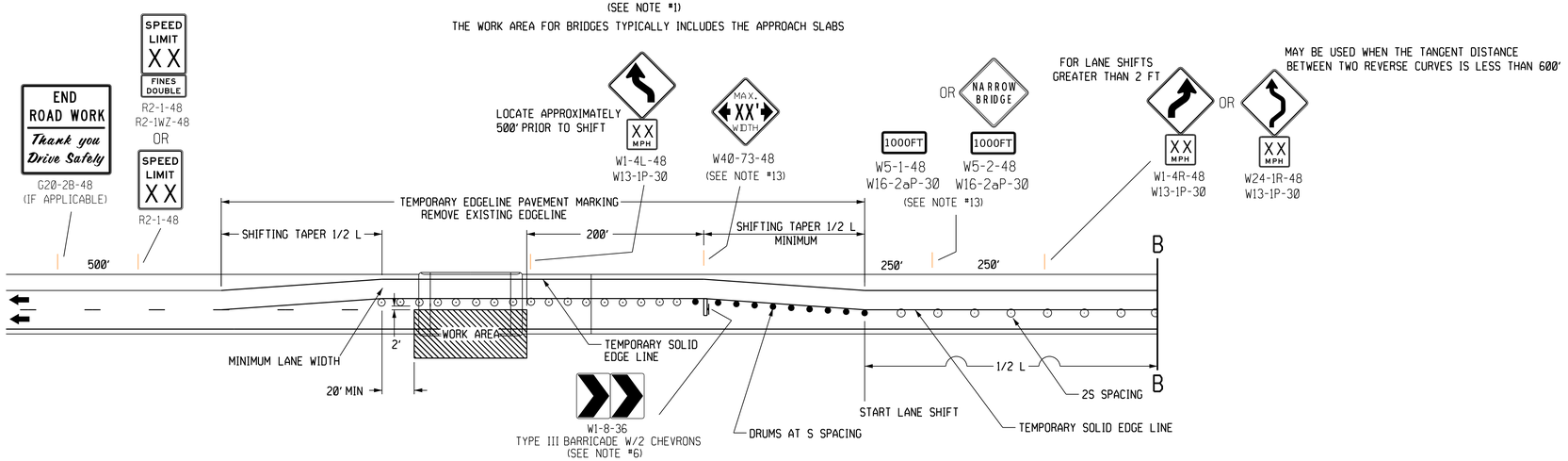
THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



LANE CLOSURE W/SHIFT ONTO SHOULDER USING TEMPORARY PAVEMENT MARKING LANE SHIFTS

(SEE NOTE *1)

THE WORK AREA FOR BRIDGES TYPICALLY INCLUDES THE APPROACH SLABS



TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

GENERAL NOTES

1. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
2. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
3. THE FLASHING ARROW PANEL SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
4. FOR BRIDGE WORK ON CONSECUTIVE BRIDGES LESS THAN 1/2 MILE APART, USE PLACE PLASTIC DRUMS AT 2S INTERVALS BETWEEN THE BRIDGES.
5. ALL TEMPORARY PAVEMENT MARKING SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSITIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PRE-MARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
6. TYPE 'A' LIGHTS SHALL BE USED WHEN OTHER ADVANCE WARNING CONSTRUCTION SIGNS ARE INSTALLED ON THE PROJECT.
7. NOT REQ'D IF WITHIN 1500FT OF REDUCED SPEED AHEAD SIGN (W3-5-48).
8. SHOULDER TAPER 1/3 L REQ'D FOR FLASHING ARROW PLANEL PLACED ON 8' WIDE SHOULDER.
9. SIGNS W20-5LE, W20-5LF AND W20-1G (W8-10B) MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACINGS RESPECTIVELY IN LOW VOLUME AREAS, AT THE DIRECTION OF THE ENGINEER.
10. FINES DOUBLE SIGN (R2-1WZ) REQ'D WITH SPEED LIMIT WITHIN THE DOUBLE FINE WORK ZONE.
11. EXISTING SPEED LIMIT SIGNS AND MINIMUM 40 MPH SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.
12. SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS FOR THE WORK ZONE.
13. INSTALL WHEN LANE WIDTH ACROSS IS LESS THAN APPROACH LANE WIDTH.

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- FLASHING ARROW PANEL
- DIRECTION OF TRAFFIC FLOW

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
SINGLE LANE CLOSURE W/ SINGLE LANE SHIFT
ON MULTILANE ROADWAY (BARRELS ONLY)

DESIGNED BY AJM

DATE 08/23

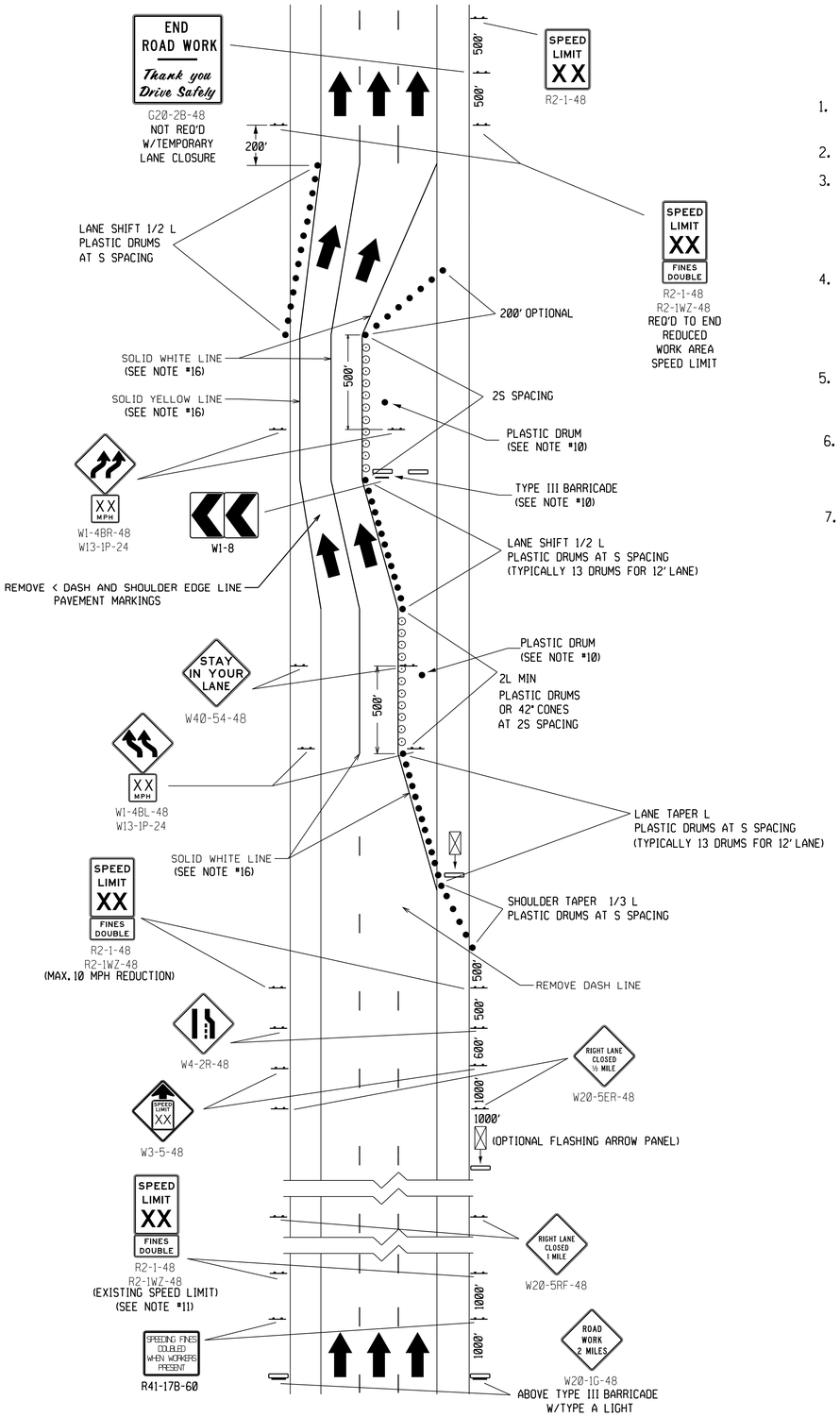
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

DATE: 11-SEP-2023 14:31

FILE: wz324-3 r3.dgn



GENERAL NOTES

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENCROACHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. REDUCED SPEED ZONING SHOULD BE KEPT TO A MINIMUM AS MUCH AS PRACTICABLE. WHEN USED THE SPEED SHALL NOT BE REDUCED MORE THAN 10 MPH FROM THE PRE-CONSTRUCTION SPEED LIMIT, UNLESS APPROVED BY THE TRAFFIC ENGINEER.
4. SPEED LIMIT SIGNS R2-1 SHALL BE 48" X 60" WHEN USED ON INTERSTATES OR FREEWAYS. 30" X 36" SIGNS MAY BE USED ON ALL OTHER ROADWAYS. SPEED LIMIT SIGNS (IF REQ'D FOR WORK) SHALL BE INSTALLED EVERY MILE THRU THE WORK AREA, WHEN THE SPEED LIMIT IS REDUCED.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. FOR FOG SEALS, SLURRY SEALS, ARMOR COATS, CRACK AND JOINT SEALING WHERE ALL LANES OF TRAFFIC WILL BE REOPENED BEFORE NIGHT, THE CONTRACTOR MAY USE 36" OR 42" CONES IN PLACE OF PLASTIC DRUMS ALONG THE WORK AREA. WHEN USED 36" CONES SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
7. PLASTIC DRUMS SHALL BE REQUIRED TO BE PLACED IN FRONT OF LANE EXCAVATIONS IN PAVEMENT AND SLAB REPAIR, AND OTHER WORK ACTIVITIES AS DIRECTED BY THE ENGINEER. PLASTIC DRUMS SHALL BE REQUIRED FOR ALL TAPERS AND LANE SHIFTS.
8. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. PLACE A PLASTIC DRUM OR TYPE III BARRICADE AS DIRECTED BY THE ENGINEER IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "FINES FOR SPEEDING DOUBLED IN WORK ZONES WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF A "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.
12. SIGNS W20-5E, W20-5RF AND W20-1G MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACING RESPECTIVELY IN LOW VOLUME AREA AT THE DIRECTION OF THE ENGINEER.
13. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
14. ALL TEMPORARY AND/OR PERMANENT PAVEMENT MARKINGS SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSITIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PREMARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
15. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY.
16. REMOVABLE WET REFLECTIVE TAPE SHALL BE USED ON EPOXY POLYMER SURFACES, AND ON ALL SHIFTING TAPERS IN ORDER TO AVOID SCARRING OF THE PAVEMENT. THIS IS TO INCLUDE THE CENTERLINE AND EDGE LINE PAVEMENT MARKINGS. RAISED PAVEMENT MARKERS SPACED 5' APART OR REMOVABLE WET REFLECTIVE TAPE SHALL BE USED ON ALL BRIDGE DECKS AND APPROACH SLABS.

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW
- INERTIAL BARRIER SYSTEM

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
SINGLE LANE CLOSURE W/ TWO-LANE SHIFT
ON MULTIPLE LANE ROADWAY (BARRELS ONLY)

DESIGNED BY AJM

DATE 08/23

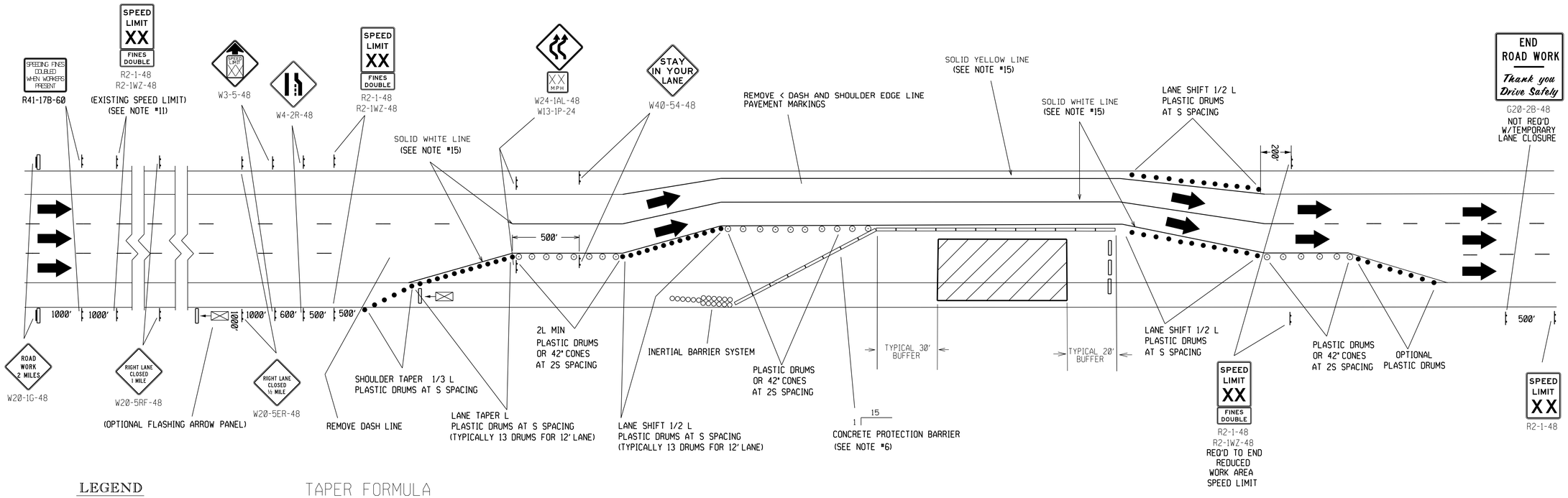
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:04

FILE: wz324-4 r2.dgn



LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW
- INERTIAL BARRIER SYSTEM

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

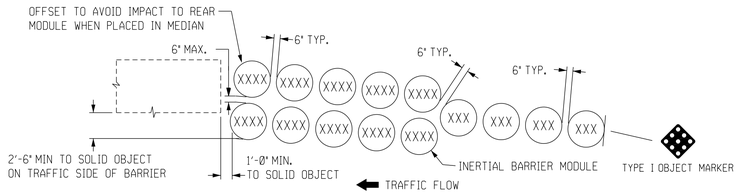
WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

TYPICAL INERTIAL BARRIER INSTALLATION

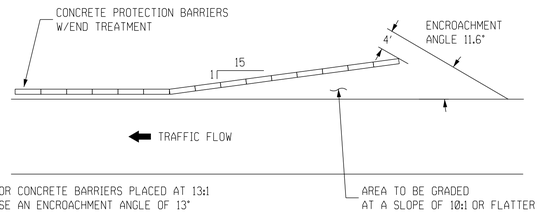


THE TYPE I OBJECT MARKER SHALL CONSIST OF 9 YELLOW PRISMATIC REFLECTORS, EACH WITH A MINIMUM DIMENSION OF 3 INCHES, MOUNTED SYMMETRICALLY ON AN 18" YELLOW OR BLACK DIAMOND PANEL; OR AN 18" ALL YELLOW DIAMOND PANEL OF ASTM TYPE IV REFLECTIVE SHEETING. PLACE ON THE FIRST MODULE WITHIN 4" OF TOP.

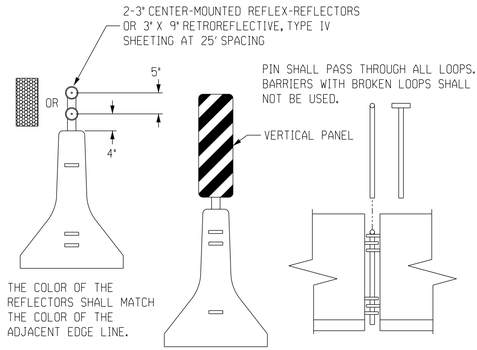
- SEE "TYPICAL TRAFFIC CONTROL PLAN FOR INERTIAL BARRIER SYSTEM" FOR DETAILS ON WEIGHTS.

GRADING FOR CONCRETE BARRIER PLACEMENT

FOR BARRIERS PLACED IN THE MEDIAN IT MAY REQUIRE GRADING FROM BOTH DIRECTIONS



CONCRETE PROTECTION BARRIER DETAIL



VERTICAL PANELS MOUNTED ON LEFT SIDE OF TRAFFIC SHALL BE VP-1L, RIGHT SIDE SHALL BE VP-1R, AT EVERY 2S SPACING ON TOP OF BARRIER, EVERY S SPACING ALONG BARRIER TAPER. INSTALL VERTICAL PANEL IN PLACE OF REFLECTOR WHEN BOTH FALL IN SAME LOCATION.

GENERAL NOTES

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENCROACHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. WHEN A REDUCED SPEED LIMIT IS USED, IT SHALL COMPLY WITH THE REQUIREMENTS OF NDOT OPERATING INSTRUCTION 60-18, WORK SPEED ZONE LIMITS.
4. SPEED LIMIT SIGNS R2-1 SHALL BE 48" X 60" WHEN USED ON INTERSTATES OR FREEWAYS. 30" X 36" SIGNS MAY BE USED ON ALL OTHER ROADWAYS. SPEED LIMIT SIGNS (IF REQ'D FOR WORK) SHALL BE INSTALLED EVERY MILE THRU THE WORK AREA, WHEN THE SPEED LIMIT IS REDUCED.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. OMAHA URBAN INTERSTATE LOCATIONS MAY USE A 13:1 TAPER FOR CONCRETE PROTECTION BARRIERS.
7. THE CONTRACTOR SHALL FURNISH REFLECTORS AND A BRACKET TO SUPPORT THE REFLECTORS IN A STABLE POSITION ON THE CONCRETE BARRIERS. THE BRACKET SHALL BE CONSTRUCTED OF MATERIAL THAT MAY BEND, BUT NOT COME LOOSE IF STRUCK BY A PASSING VEHICLE.
8. THE INERTAIL BARRIER SYSTEM SHOULD BE ANGLED TOWARDS APPROACHING TRAFFIC. THE ACTUAL ANGLE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, NOT TO EXCEED 10°.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. NO EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE PROTECTION BARRIERS AT ANY TIME.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "FINES FOR SPEEDING DOUBLED IN WORK ZONES WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF A "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.
12. SIGNS W20-5ER, W20-5RF AND W20-1G MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACING RESPECTIVELY IN LOW VOLUME AREA AT THE DIRECTION OF THE ENGINEER.
13. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
14. ALL TEMPORARY AND/OR PERMANENT PAVEMENT MARKINGS SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSITIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PREMARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
15. TEMPORARY PAVEMENT MARKING SHALL BE 4" LINES.

XX

Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
SINGLE LANE CLOSURE W/ TWO-LANE SHIFT
ON MULTIPLE LANE ROADWAY (BARRIER)

DESIGNED BY AJM

DATE 09/23

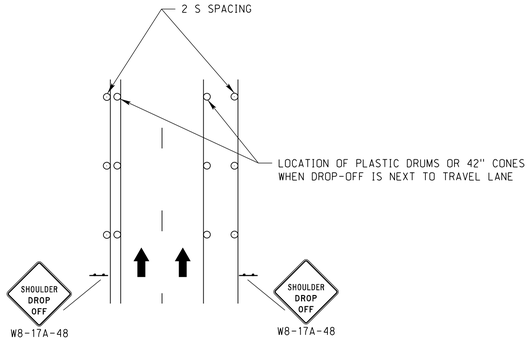
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

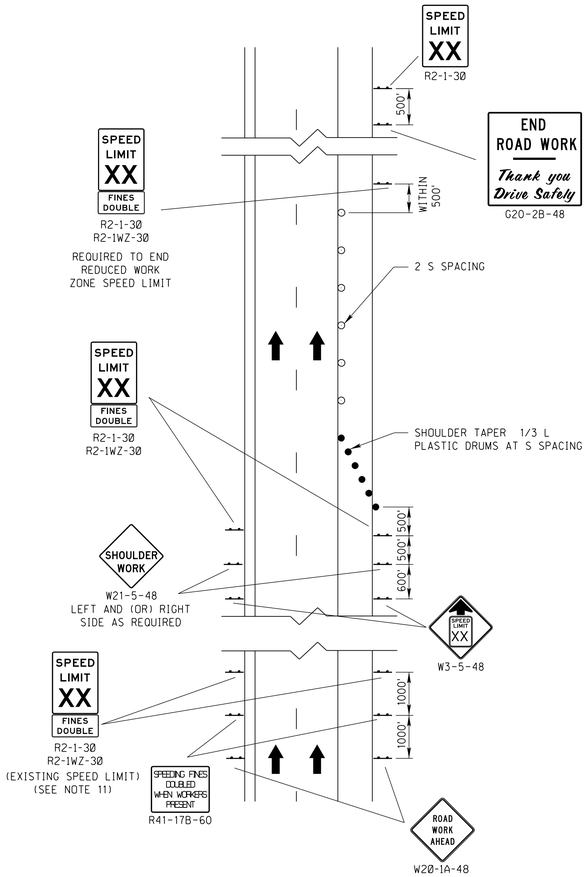
DATE: 11-SEP-2023 14:23

FILE: w2324-6.dgn



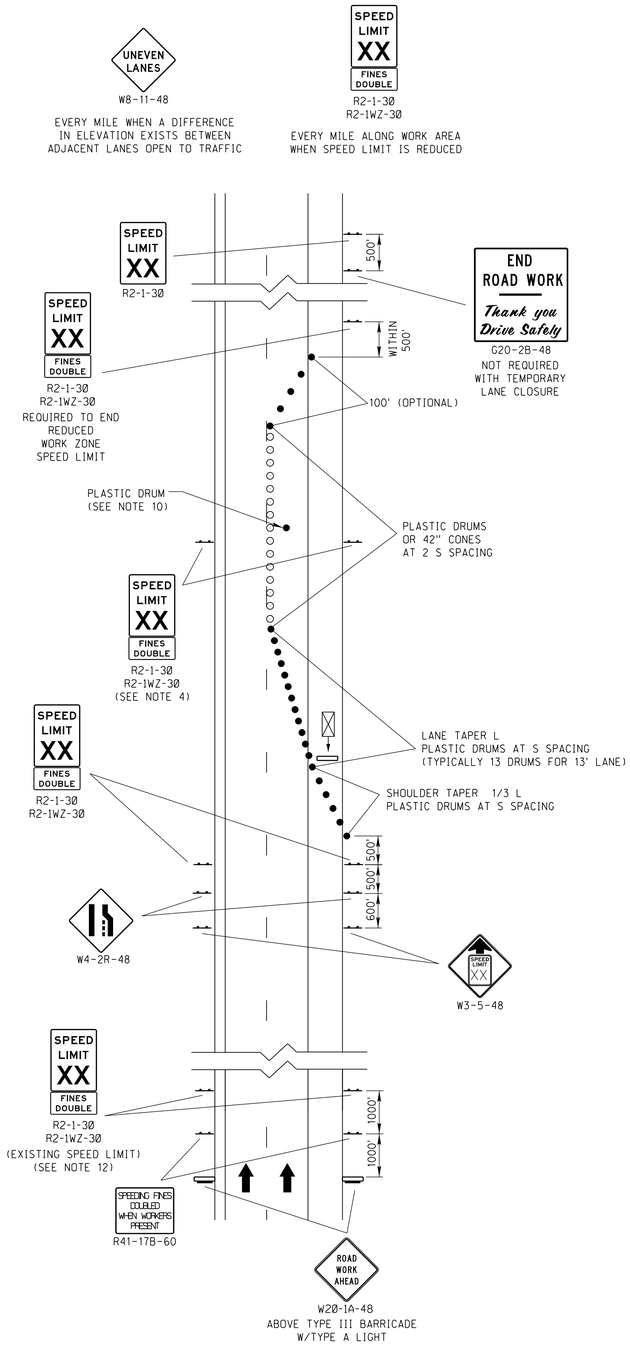
SHOULDER DROP-OFF

W8-17A-48 EVERY MILE WHERE THERE IS A DROP-OFF AT LEFT AND (OR) RIGHT PAVEMENT EDGE

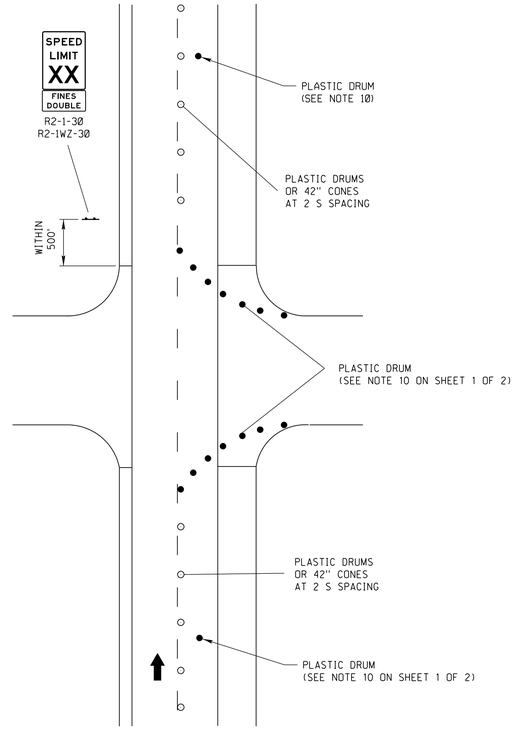


SHOULDER CLOSURE

FOR USE ON ROADWAYS WITH 8' AND WIDER PAVED SHOULDER



SINGLE LANE CLOSURE



SIDE ROAD ENTRY WITHIN LANE CLOSURE

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN

NOTES:

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENCROACHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. WHEN A REDUCED SPEED LIMIT IS USED, IT SHALL COMPLY WITH THE REQUIREMENTS OF NDOT OPERATING INSTRUCTION 60-18, WORK ZONE SPEED LIMITS.
4. SPEED LIMIT SIGNS R2-1 SHALL 30" X 36". SPEED LIMIT SIGNS (IF REQ'D FOR WORK) SHALL BE INSTALLED EVERY MILE THRU THE WORK AREA. WHEN THE SPEED LIMIT IS REDUCED.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. FOR FOG SEALS, SLURRY SEALS, ARMOR COATS, CRACK AND JOINT SEALING WHERE ALL LANES OF TRAFFIC WILL BE REOPENED BEFORE NIGHT, THE CONTRACTOR MAY USE 36" OR 42" CONES IN PLACE OF PLASTIC DRUMS ALONG THE WORK AREA. WHEN USED 36" CONES SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
7. PLASTIC DRUMS SHALL BE REQUIRED TO BE PLACED IN FRONT OF LANE EXCAVATIONS IN PAVEMENT AND SLAB REPAIR, AND OTHER WORK ACTIVITIES AS DIRECTED BY THE ENGINEER. PLASTIC DRUMS SHALL BE REQUIRED FOR ALL TAPERS AND LANE SHIFTS.
8. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. PLACE A PLASTIC DRUM OR TYPE III BARRICADE AS DIRECTED BY THE ENGINEER IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "SPEEDING FINES DOUBLED WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF W3-5 "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.
12. SIGNS W20-5E, W20-5RF AND W20-1G MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACING RESPECTIVELY IN LOW VOLUME AREA AT THE DIRECTION OF THE ENGINEER.

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Project Number

###-#(###)

C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
LANE CLOSURE PLAN FOR MULTILANE EXPRESSWAYS

DESIGNED BY AJM

DATE 11/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

FILE: wz334-1 r1.dgn
DATE: 30-OCT-2024 14:34
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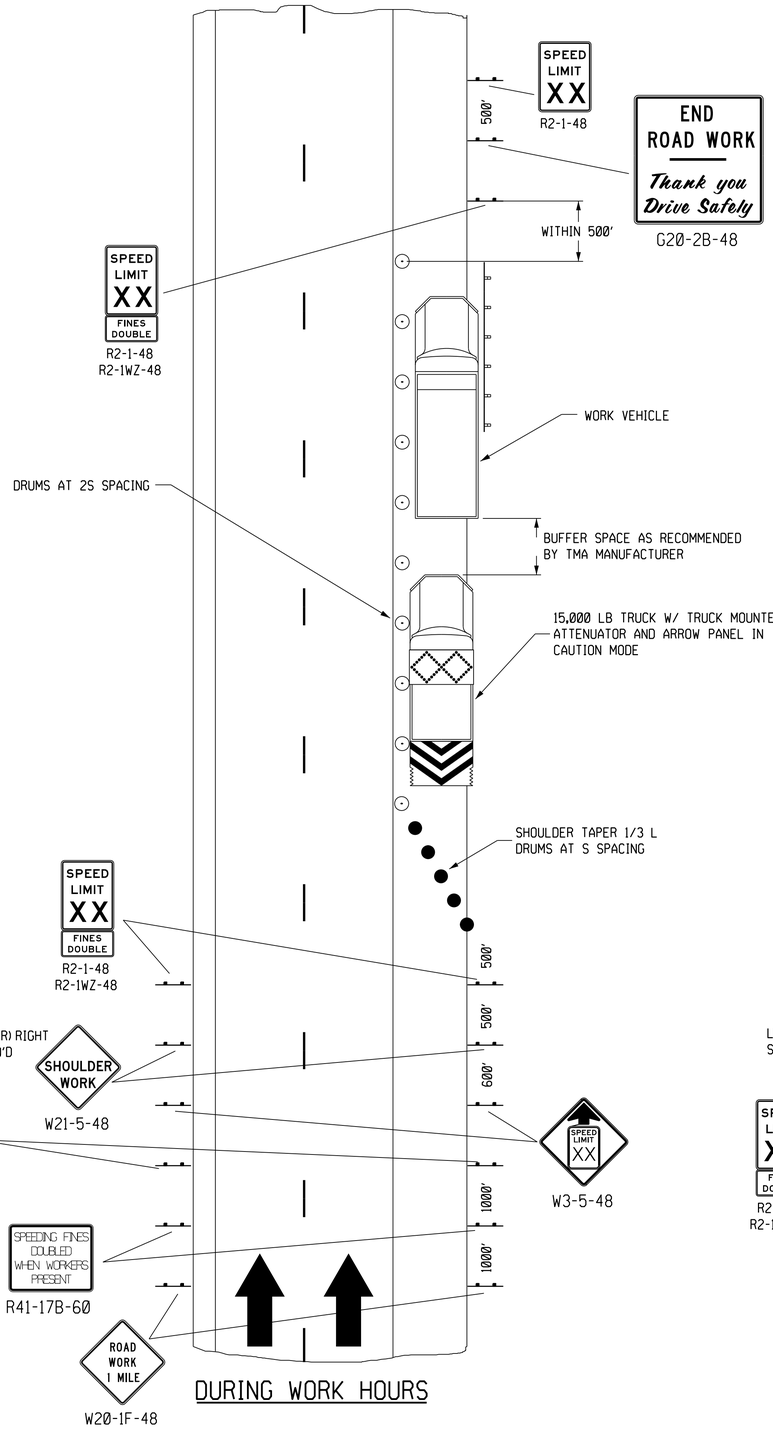
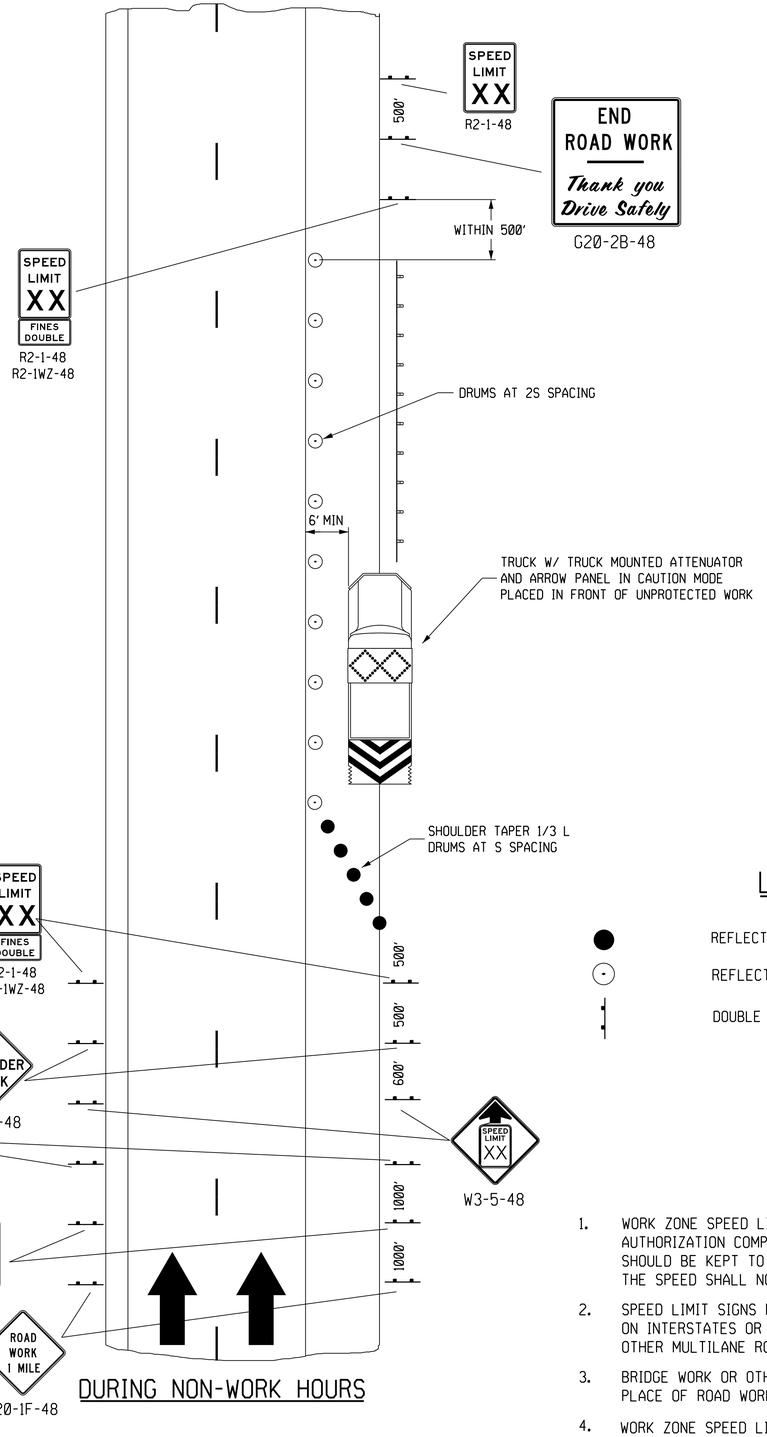


DURING WORK HOURS



DURING NON-WORK HOURS

LEGEND

- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- DOUBLE POST SIGN

NOTES

1. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. REDUCED SPEED ZONING SHOULD BE KEPT TO A MINIMUM AS MUCH AS PRACTICABLE. WHEN USED THE SPEED SHALL NOT BE REDUCED MORE THAN 10 MPH.
2. SPEED LIMIT SIGNS R2-1 SHALL BE 48" X 60" WHEN USED ON INTERSTATES OR FREEWAYS. 30" X 36" SIGNS SHALL BE USED ON ALL OTHER MULTILANE ROADWAYS. 24" X 30" FOR ALL TWO LANE ROADWAYS
3. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
4. WORK ZONE SPEED LIMIT SIGNS SHALL BE INSTALLED EVERY MILE THROUGH THE WORK AREA, WHEN THE SPEED LIMIT IS REDUCED.

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Project Number
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C.N. #####

TRAFFIC CONTROL PLAN
SHOULDER CLOSURE WITH
TRUCK MOUNTED ATTENUATOR

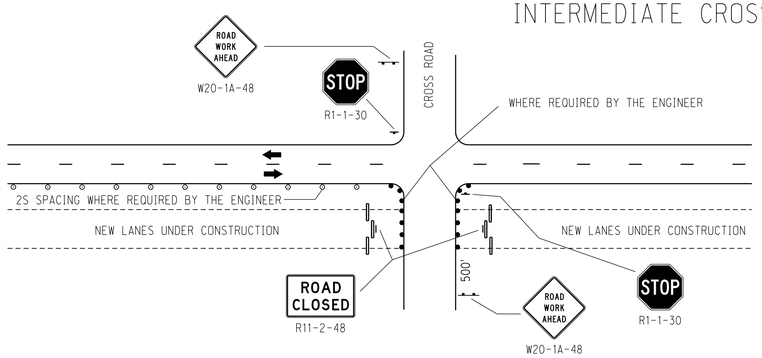
DESIGNED BY AJM
DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687
DATE: 11-SEP-2023 13:02
FILE: wz394-1 r3.dgn

INTERMEDIATE CROSSROAD



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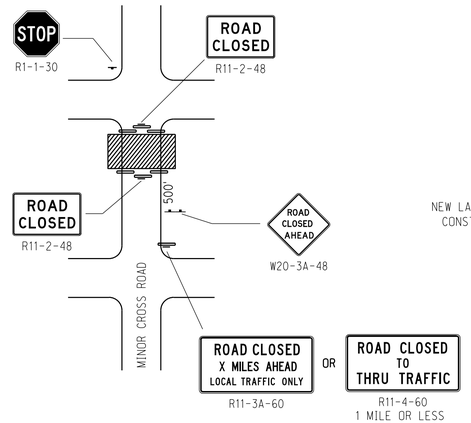
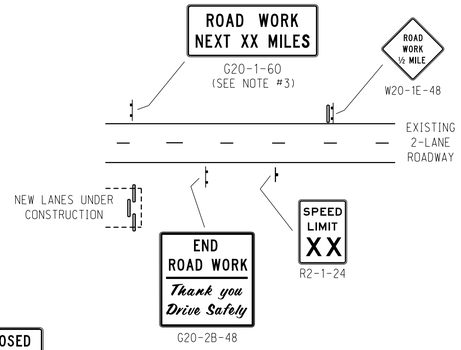
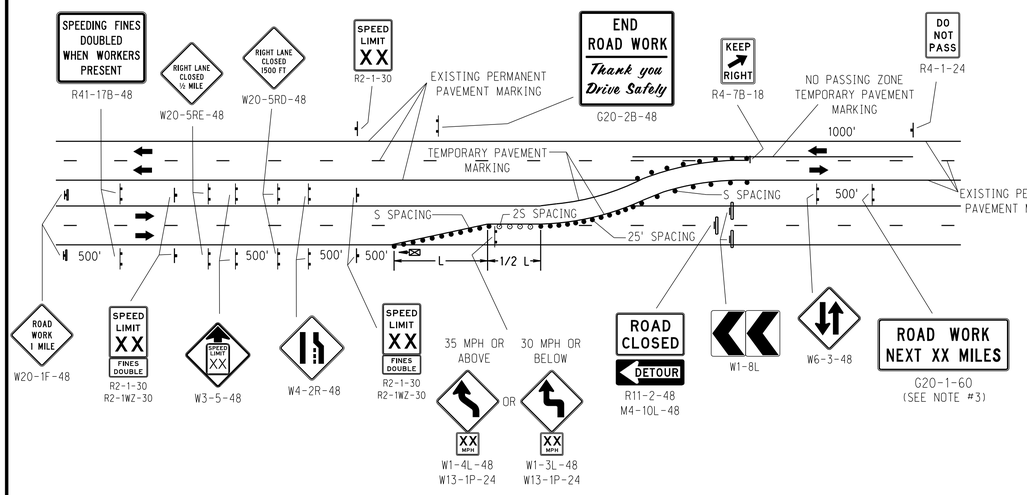


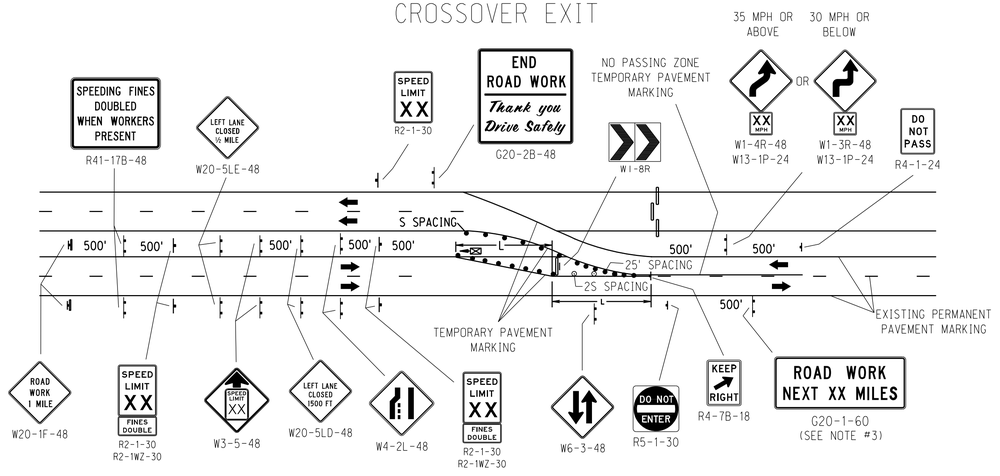
EXISTING 2-LANE W/TRAFFIC MAINTAINED



4-LANE TO 2-LANE CROSSOVER ENTRY



2-LANE TO 4-LANE CROSSOVER EXIT



LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- TRAFFIC FLOW

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

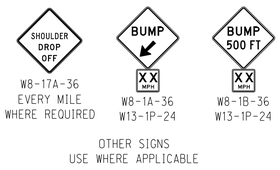
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

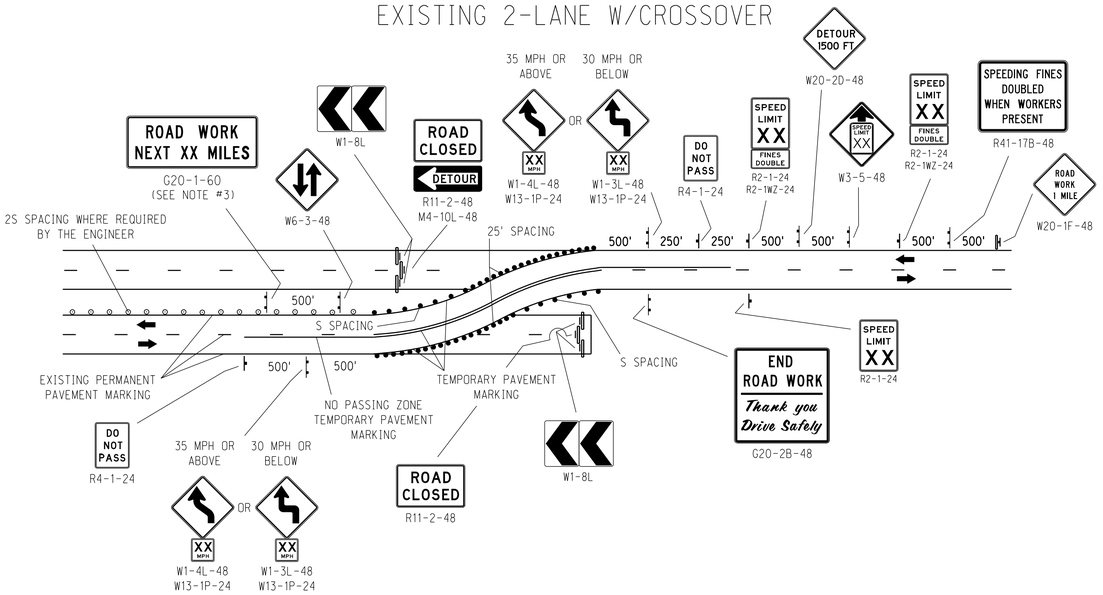
W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

NOTES

1. REMOVE ALL CONFLICTING PAVEMENT MARKING FROM ROADWAY.
2. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH THE MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.
3. G20-1 "ROAD WORK NEXT X MILES" SHOULD BE USED ON ANY CONSTRUCTION OR MAINTENANCE PROJECT LONGER THAN 2 MILES.
4. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE WILL NOT BE PERMITTED ON THE FACE OF THE SIGN.
5. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY, AND MAY NOT BE THE SAME AS THE SPEED LIMITS FOR THE ROADWAY OR THE PROJECT. SPEED LIMIT AND DOUBLE FINE SIGNS SHALL BE INSTALLED EVERY MILE THROUGH THE WORK AREA WHEN THE SPEED LIMIT IS REDUCED.
6. FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE WARNING SIGNS.
7. ALL BARRICADE AND SIGN LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND THEIR PLACEMENT MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNING SHOWN SHALL BE INSTALLED SO AS TO NOT OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
8. FOR HORIZONTAL CURVES THE SPACING OF PLASTIC DRUMS AND BARRICADES USED FOR CHANNELIZATION MAY BE REDUCED AS DIRECTED BY THE ENGINEER.
9. THE FLASHING ARROW PANEL SHOULD BE VISIVBLE FOR AT LEAST 1/2 MILE AND IF NECESSARY SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
10. MINIMUM WIDTH OF TRAVELED LANE SHALL BE DETERMINED BY THE ENGINEER.
11. WHILE TRAFFIC IS MAINTAINED ON THE EXISTING ROADWAY, THE EXISTING PAVEMENT MARKINGS SHOULD BE MAINTAINED. WHERE SHIFTING OF LANES IS REQUIRED, TEMPORARY PAVEMENT MARKING, PAINT SHALL BE USED. TEMPORARY PAVEMENT MARKING SHALL BE ALIGNED WITH EXISTING PAVEMENT MARKING WHERE NECESSARY.
12. ALL PAVEMENT MARKINGS SHALL BE INSTALLED WITH SMOOTH AND GRADUAL TRANSISTIONS AND ALIGNMENTS. WHEN NECESSARY, THE CONTRACTOR SHALL PREMARK THE PAVEMENT PRIOR TO PLACING THE MARKINGS.
13. ALL TEMPORARY PAVEMENT MARKING ON NEWLY CONSTRUCTED ROADWAY SHALL BE REMOVED USING A SELF-VACUUMING WATER BLASTER.



EXISTING 2-LANE W/CROSSOVER



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Project Number

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C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
RURAL CROSSOVER ON
4-LANE DIVIDED ROADWAY

DESIGNED BY AJM

DATE 08/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M498

DATE: 30-OCT-2024 14:34

FILE: wz480 r3.dgn

NOTES

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENCROACHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. REDUCED SPEED ZONING SHOULD BE KEPT TO A MINIMUM AS MUCH AS PRACTICABLE. WHEN USED THE SPEED SHALL NOT BE REDUCED MORE THAN 10 MPH FROM THE PRE-CONSTRUCTION SPEED LIMIT, UNLESS APPROVED BY THE TRAFFIC ENGINEER.
4. SPEED LIMIT SIGNS R2-1 SHALL BE 48" X 60" WHEN USED ON INTERSTATES OR FREEWAYS. 30" X 36" SIGNS MAY BE USED ON ALL OTHER ROADWAYS. SPEED LIMIT SIGNS (IF REQ'D FOR WORK) SHALL BE INSTALLED EVERY MILE THRU THE WORK AREA, WHEN THE SPEED LIMIT IS REDUCED.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. FOR FOG SEALS, SLURRY SEALS, ARMOR COATS, CRACK AND JOINT SEALING WHERE ALL LANES OF TRAFFIC WILL BE REOPENED BEFORE NIGHT, THE CONTRACTOR MAY USE 36" OR 42" CONES IN PLACE OF PLASTIC DRUMS ALONG THE WORK AREA. WHEN USED 36" CONES SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
7. PLASTIC DRUMS SHALL BE REQUIRED TO BE PLACED IN FRONT OF LANE EXCAVATIONS IN PAVEMENT AND SLAB REPAIR, AND OTHER WORK ACTIVITIES AS DIRECTED BY THE ENGINEER. PLASTIC DRUMS SHALL BE REQUIRED FOR ALL TAPERS AND LANE SHIFTS.
8. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. PLACE A PLASTIC DRUM OR TYPE III BARRICADE AS DIRECTED BY THE ENGINEER IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "FINES FOR SPEEDING DOUBLED IN WORK ZONES WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF A "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

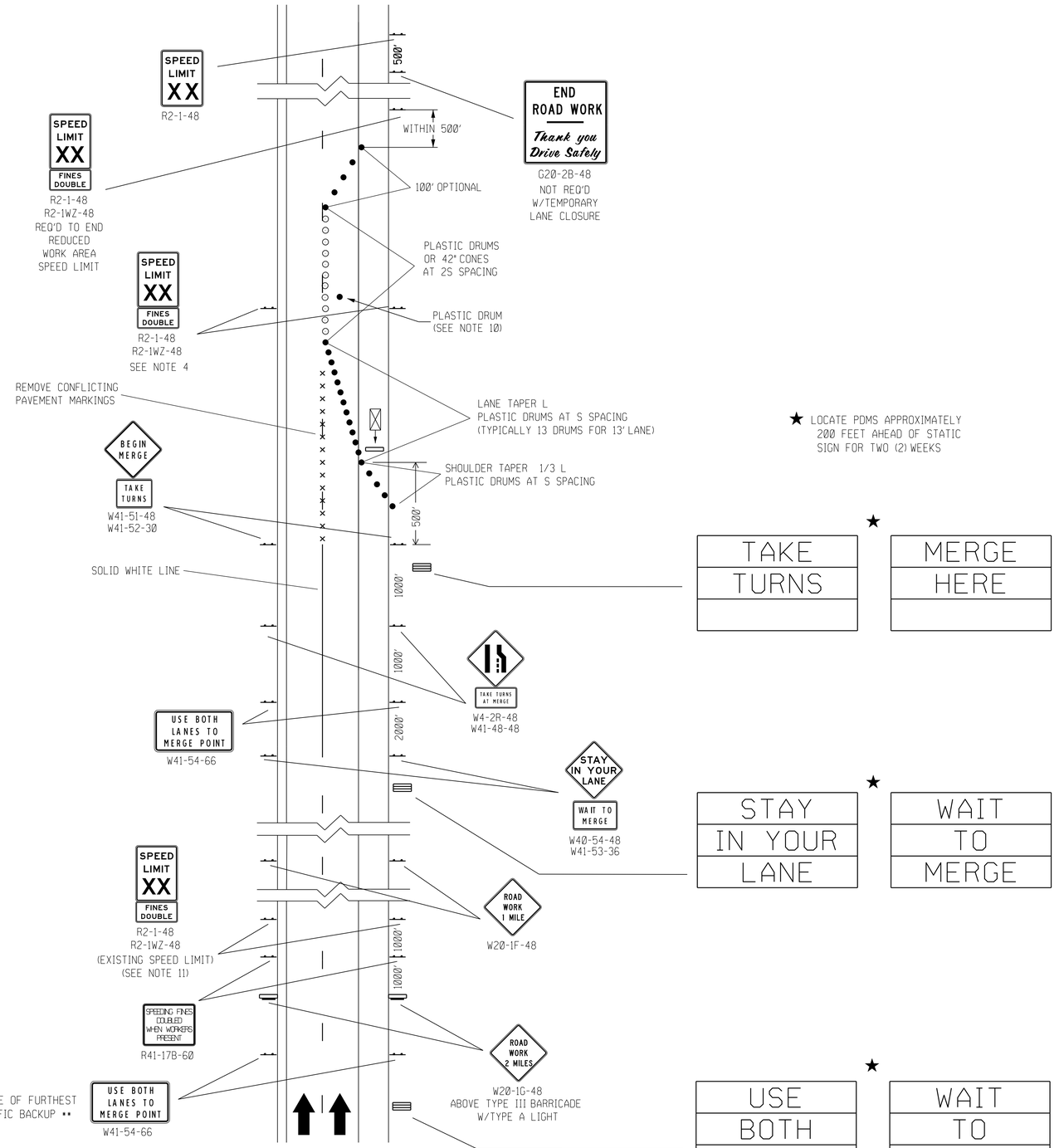
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE
- SINGLE POST SIGN
- DOUBLE POST SIGN
- PORTABLE DYNAMIC MESSAGE SIGN

SINGLE LANE CLOSURE



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Project Number

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C.N. #####

TYPICAL TRAFFIC CONTROL PLAN
ZIPPER MERGE SYSTEM (LONG TERM)
FOR MULTILANE ROADWAYS

DESIGNED BY AJM

DATE 07/23

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER 1/1

COMPUTER: BG0419M687

DATE: 11-SEP-2023 13:04

FILE: zipper merge.dgn