

ORDER OF SHEETS

- Section No. 1 Title
- Section No. 2 Typical Sections and Details
- Section No. 3 Estimate of Quantities
- Section No. 3 Miscellaneous Quantities
- ~~Section No. 4 Right of Way Plat~~
- ~~Section No. 5 Plan and Profile~~
- Section No. 6 Standard Detail Drawings
- ~~Section No. 7 Sign Plates~~
- Section No. 8 Structure Plans
- ~~Section No. 9 Computer Earthwork Data~~
- ~~Section No. 9 Cross Sections~~

TOTAL SHEETS = 64

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

## SUN PRAIRIE - BEAVER DAM

(STRUCTURES B-11-74 & 75, B-13-288)

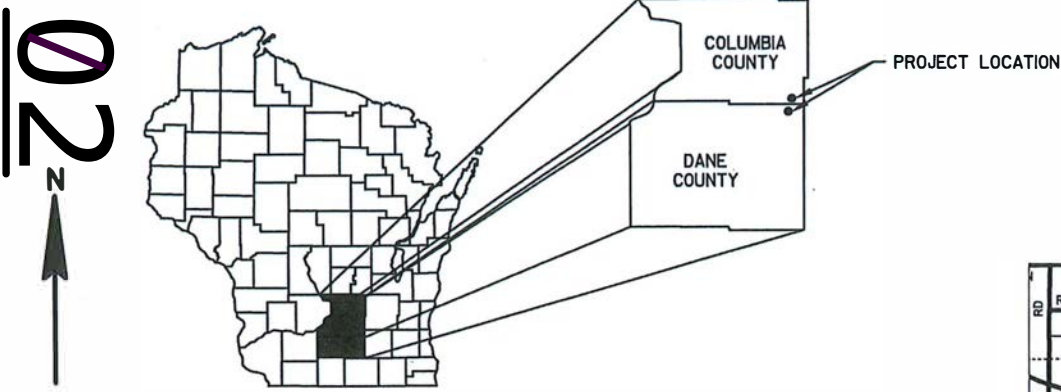
**USH 151**

**COLUMBIA & DANE COUNTIES**

STATE PROJECT NUMBER

1111-05-61

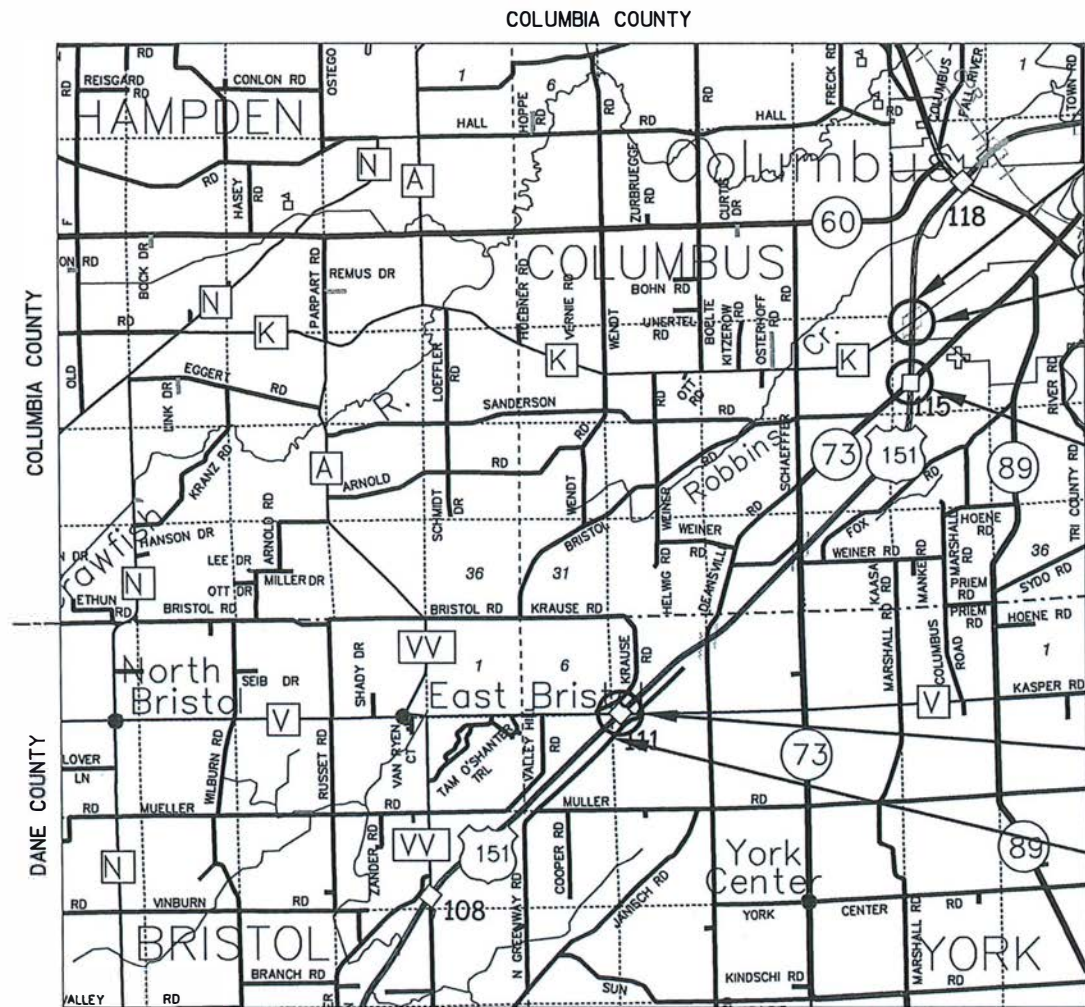
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1111-05-61	WISC 2020065	1



DESIGN DESIGNATION	CTH WV TO CTH V	CTH V TO STH 73	STH 73 TO STH 16
A.A.D.T. (2017)	24700	24400	21800
A.A.D.T. (2037)	31400	30800	27100
D.H.V.	2714	2691	2415
D.D.	60/40	60/40	60/40
T.	11%	11%	11%
DESIGN SPEED	70 MPH	70 MPH	70 MPH
ESALS	7,723,800	7,611,400	6,754,800

CONVENTIONAL SYMBOLS

- |                                |   |
|--------------------------------|---|
| PLAN                           | PROFILE                                     |
| CORPORATE LIMITS               | GRADE LINE                                  |
| PROPERTY LINE                  | ORIGINAL GROUND                             |
| LOT LINE                       | MARSH OR ROCK PROFILE (To be noted as such) |
| LIMITED HIGHWAY EASEMENT       | SPECIAL DITCH                               |
| EXISTING RIGHT OF WAY          | GRADE ELEVATION                             |
| PROPOSED OR NEW R/W LINE       | CULVERT (Profile View)                      |
| SLOPE INTERCEPT                | UTILITIES                                   |
| REFERENCE LINE                 | ELECTRIC                                    |
| EXISTING CULVERT               | FIBER OPTIC                                 |
| PROPOSED CULVERT (Box or Pipe) | GAS   |
| COMBUSTIBLE FLUIDS             | SANITARY SEWER                              |
|                                | STORM SEWER                                 |
|                                | TELEPHONE                                   |
| MARSH AREA                     | WATER                                       |
|                                | UTILITY PEDESTAL                            |
|                                | POWER POLE                                  |
| WOODED OR SHRUB AREA           | TELEPHONE POLE                              |



LAYOUT  
SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE = 0.000 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, COLUMBIA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

END PROJECT  
STA. 1373+75NB  
Y - 576 760.5056  
X - 911 518.5524

PROJECT LOCATION  
B-11-0075  
STA. 1354+28.90NB

PROJECT LOCATION  
B-11-0074  
STA. 1321+48.87NB

PROJECT LOCATION  
B-13-0288  
STA. 1070+10.86NB

BEGIN PROJECT  
STA. 1027+90NB  
Y - 550 518.9694  
X - 891 976.2918

ORIGINAL PLANS PREPARED BY

**WESTBROOK**  
Associated Engineers, Inc.

619 EAST HOXIE STREET  
P.O. BOX 429  
SPRING GREEN, WISCONSIN 53588  
PHONE (608) 588-7866  
FAX (608) 588-7954



10-09-2019  
(Date) (Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY  
Surveyor WESTBROOK ASSOCIATED ENGINEERS, INC.  
Designer WESTBROOK ASSOCIATED ENGINEERS, INC.  
Project Manager BRAD SCHULTZ, P.E.  
Regional Examiner SW REGION  
Regional Supervisor KARLA KNORR, P.E.  
C.O. Examiner

APPROVED FOR THE DEPARTMENT  
DATE: 10-15-19  
(Signature)

E

**GENERAL NOTES**

WORK CONSISTS OF TRAFFIC CONTROL, JOINT REPLACEMENT, CONTAINMENT ENCLOSURE ERECTION, ABRASIVE BLASTING SURFACE PREPARATION, AND APPLICATION OF NEW COATING SYSTEM FOR ALL STRUCTURAL STEEL OF PROJECT BRIDGES.

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ENCLOSURES AND MATERIALS SHALL BE MAINTAINED TAUT AND IN SUCH A MANNER THAT IT WILL NOT OBSTRUCT/DISTRACT THE VIEW OF OR SNAG ON ANY PASSING VEHICLES.

USH 151 SHALL BE KEPT OPEN TO ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES.

TRAFFIC CONTROL IS ON USH 151 AND CTH V DURING THE JOINT REPLACEMENT. THE TRAFFIC ON STH 73 AND CTH K IS UNINTERRUPTED.

THE BRIDGE PAINTING OF STRUCTURES B-13-0288, B-11-0074, B-11-0075, IS TO BE COMPLETED IN 2 STAGES AS SHOWN ON THE PLAN.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE ORANGE BACKGROUND.

SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE LATEST WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD).

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEERS.

ANY SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

BRIDGE B-11-0074 AND B-11-0075 ARE TO BE PAINTED AT THE SAME TIME. THE STAGING FOR BOTH BRIDGES ARE TO BE SYNCHRONIZED. THE SEQUENCE OF THE STAGING IS TO BE DETERMINED BY THE CONTRACTOR.

CONFLICTING PAVEMENT MARKINGS ARE TO BE REMOVED.

A MINIMUM OF 16-FOOT AVAILABLE WIDTH MUST BE PROVIDED AT ALL TIMES IN THE SOUTHBOUND DIRECTION FOR OVERSIZED OVERWEIGHT (OSOW) LOADS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, DRUM SPACING SPACING MAY BE DECREASED TO 50 FEET.

**CONTACTS**

CONSULTANT LIAISON  
WESTBROOK ASSOCIATED ENGINEERS, INC.  
619 E. HOXIE STREET  
SPRING GREEN, WI 53588

ATTN: AARON PALMER, P.E.  
(608) 588-7866  
opalmer@westbrookeng.com

WisDNR LIAISON  
DNR SOUTH CENTRAL REGION HQ  
3911 FISH HATCHERY ROAD  
FITCHBURG, WI 53711

ATTN: ERIC HEGGELUND  
(608) 275-3301  
eric.heggelund@wisconsin.gov

WisDOT LIAISON  
WisDOT SW REGION OFFICE  
2101 WRIGHT STREET  
MADISON, WI 5374

ATTN: BRAD SCHULTZ  
(608) 242-8038  
brad.schultz@dot.wi.gov

**ORDER OF SECTION 2 SHEETS**

- General Notes
- Project Overview
- Typical Sections
- Traffic Control and Construction Staging
- Detour Signing

**UTILITIES**

COLUMBUS WATER AND LIGHT  
DEPT - ELECTRICITY  
ATTN: JOE HAMMER  
950 MAPLE AVE  
P.O. BOX 228  
COLUMBUS, WI 53925  
(920) 623-5912  
jhammer@columbuswaterandlight.com

FRONTIER COMMUNICATIONS OF WI,  
LLC - COMMUNICATIONS  
ATTN: DAVE TEDDY  
240 HARTFORD ROAD  
SLINGER, WI 53086  
(920) 892-7240  
Dave.Teddy@ftr.com

**CONVENTIONAL ABBREVIATIONS**

ACCESS RIGHTS	AR	POINT OF INTERSECTION	PI
ACRES	AC	PROPERTY LINE	PL
AHEAD	AH	RECORDED AS	(100' )
ALUMINUM	ALUM	REEL / IMAGE	R/I
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RESTRICTIVE DEVELOPMENT	RDE
CENTERLINE	C/L	EASEMENT	
CERTIFIED SURVEY MAP	CSM	RIGHT	RT
CONCRETE	CONC	RIGHT OF WAY	R/W
COUNTY	CO	SECTION	SEC
COUNTY TRUNK HIGHWAY	CTH	SEPTIC VENT	SEPV
DISTANCE	DIST	SQUARE FEET	SF
CORNER	COR	STATE TRUNK HIGHWAY	STH
DOCUMENT NUMBER	DOC	STATION	STA
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED	TLE
GAS VALVE	GV	EASEMENT	
GRID NORTH	GN	TRANSPORTATION PROJECT	TPP
HIGHWAY EASEMENT	HE	PLAT	
IDENTIFICATION	ID	UNITED STATES HIGHWAY	USH
LAND CONTRACT	LC	VOLUME	V
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED	PLE		
EASEMENT			
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		
POINT OF COMPOUND CURVE	PCC		

**CURVE DATA**

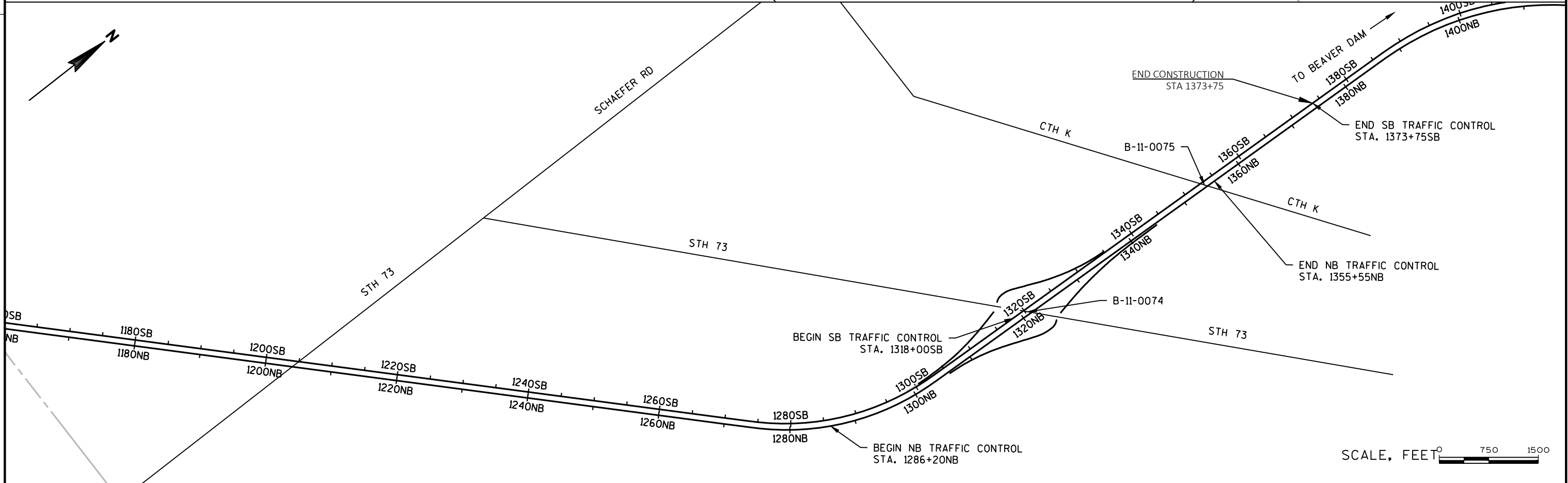
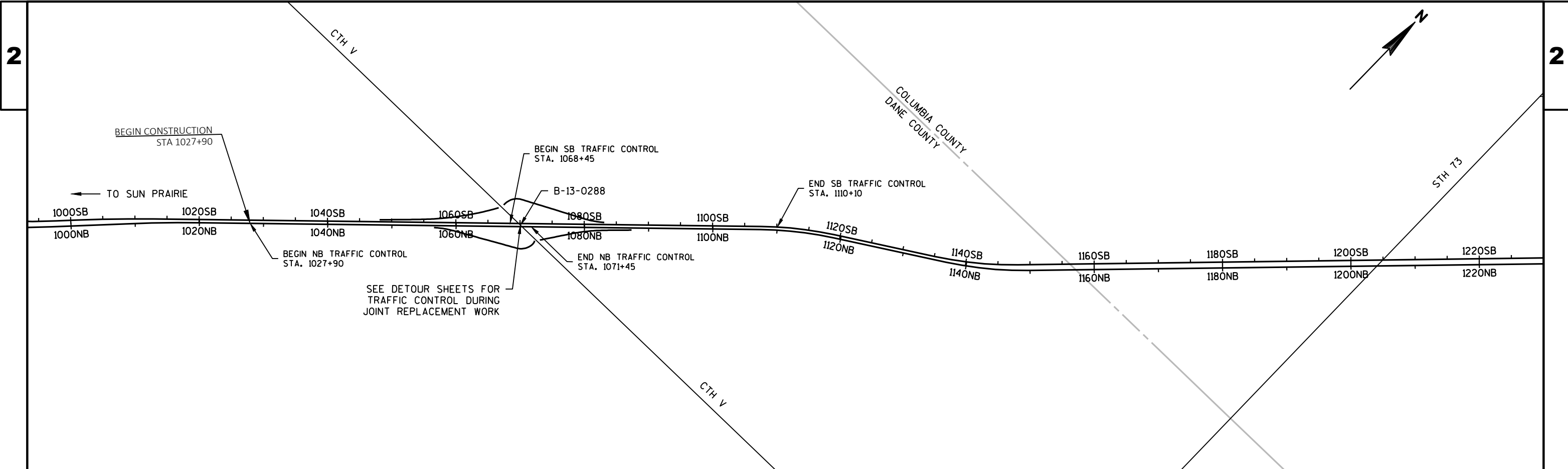
LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

**DIGGERS HOTLINE**



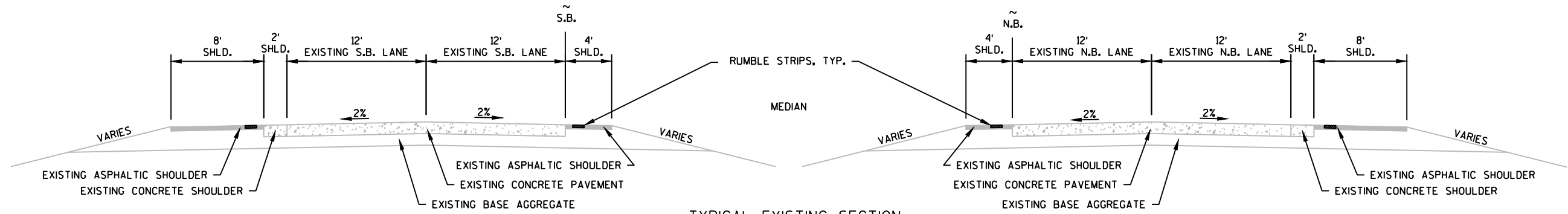
Dial **811** or (800)242-8511

[www.DiggersHotline.com](http://www.DiggersHotline.com)

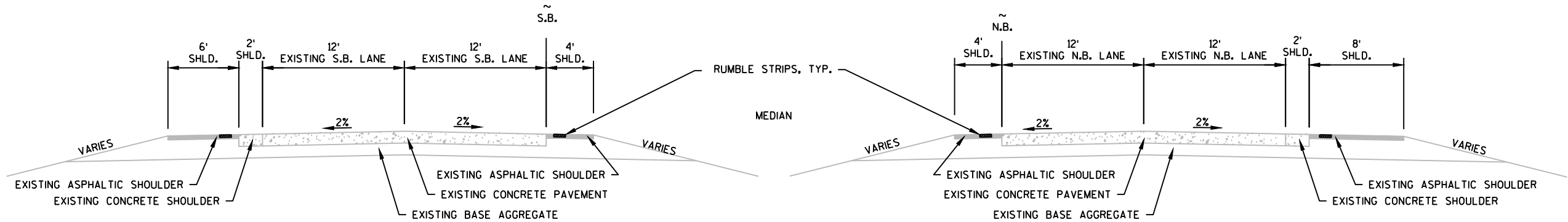


SCALE, FEET 0 750 1500

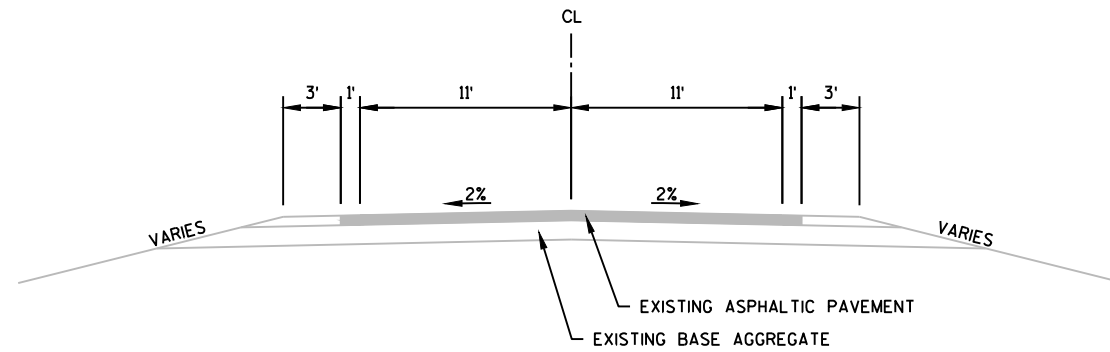
PROJECT NO: 1111-05-61	HWY: USH 151	COUNTY: DANE/COLUMBIA	PROJECT OVERVIEW	SHEET	<b>E</b>
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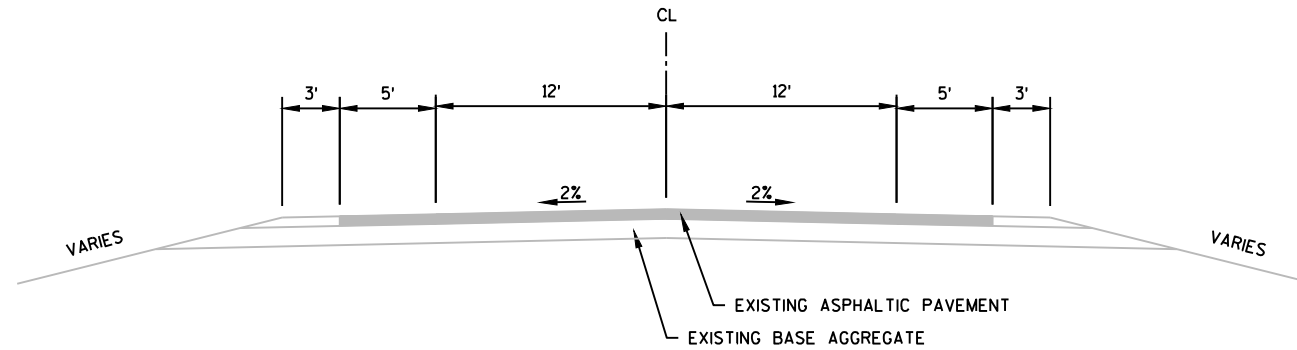
TYPICAL EXISTING SECTION  
USH 151 AT B-13-288 & B-11-74



TYPICAL EXISTING SECTION  
USH 151 AT B-11-75



TYPICAL EXISTING SECTION  
CTH V & CTH K

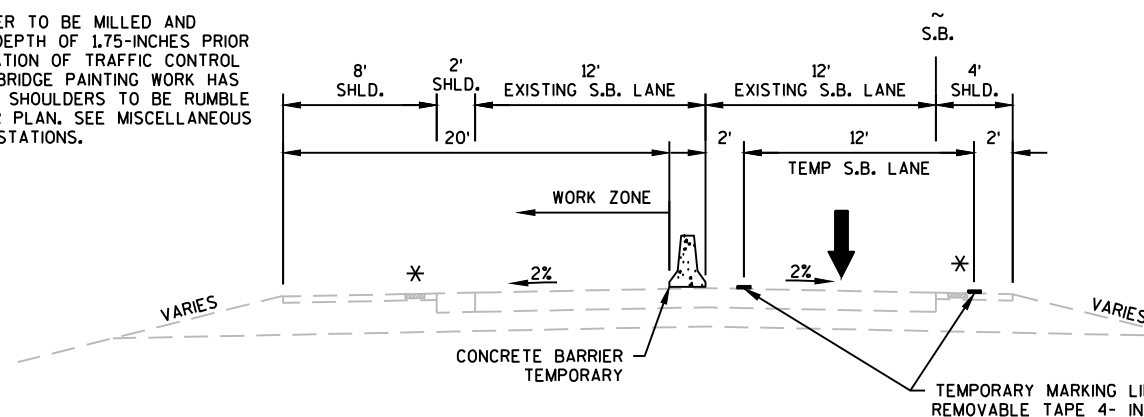


TYPICAL EXISTING SECTION  
STH 73

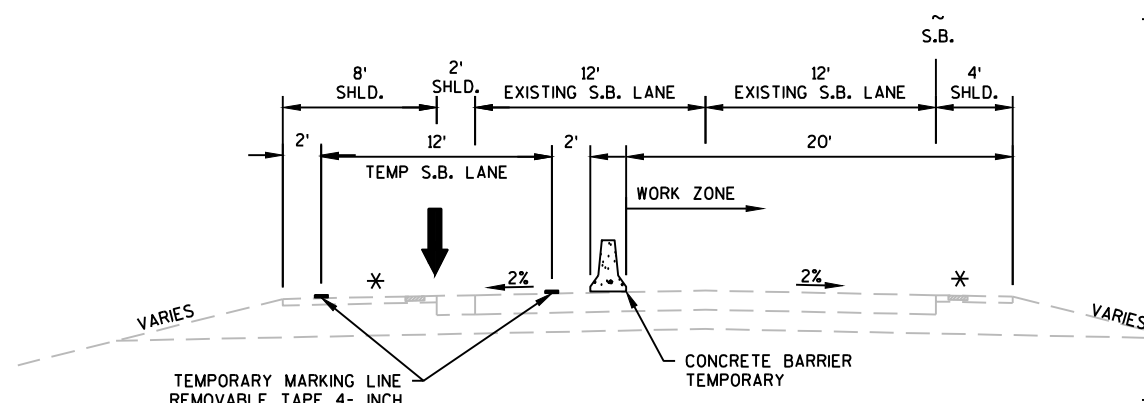
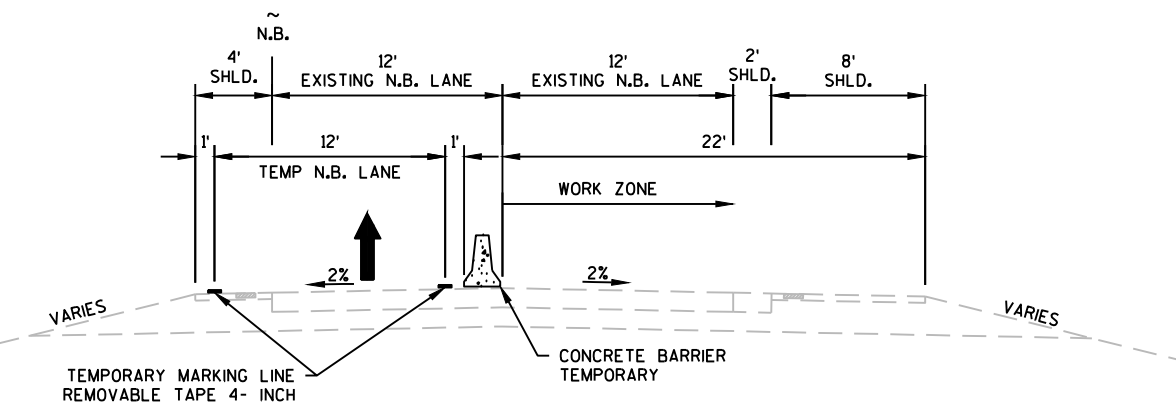
NOTE: TYPICALS REFLECT PROPOSED IMPROVEMENTS FROM DESIGN ID# 1111-03-02.



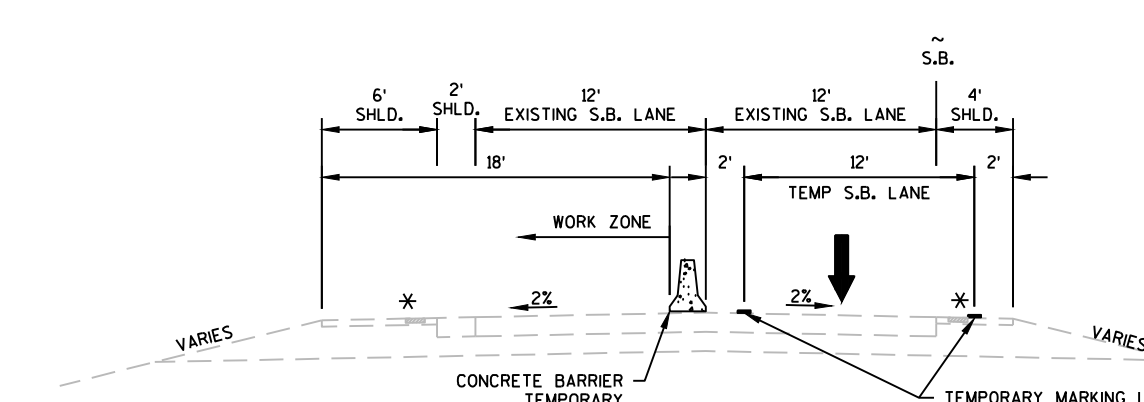
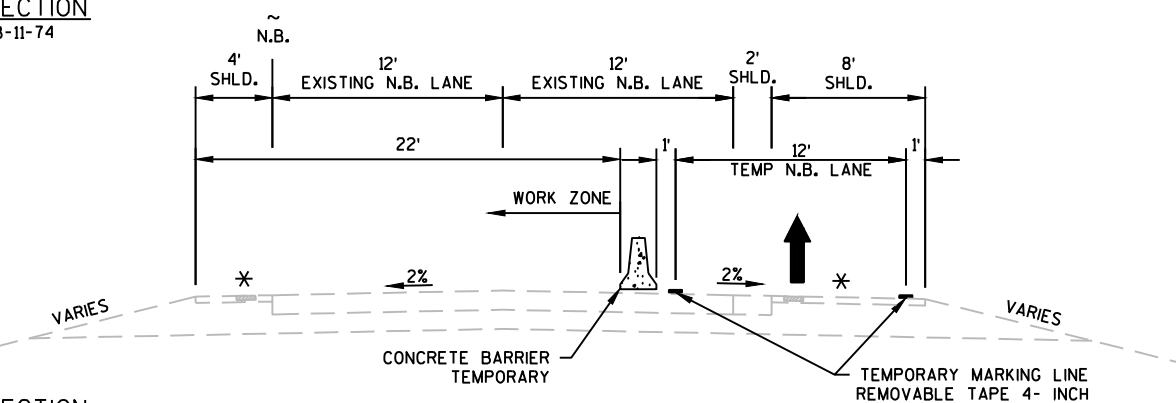
\* EXISTING SHOULDER TO BE MILLED AND OVERLAID TO A DEPTH OF 1.75-INCHES PRIOR TO THE INSTALLATION OF TRAFFIC CONTROL DEVICES. AFTER BRIDGE PAINTING WORK HAS BEEN COMPLETED SHOULDERS TO BE RUMBLE STRIPPED AS PER PLAN. SEE MISCELLANEOUS QUANTITIES FOR STATIONS.



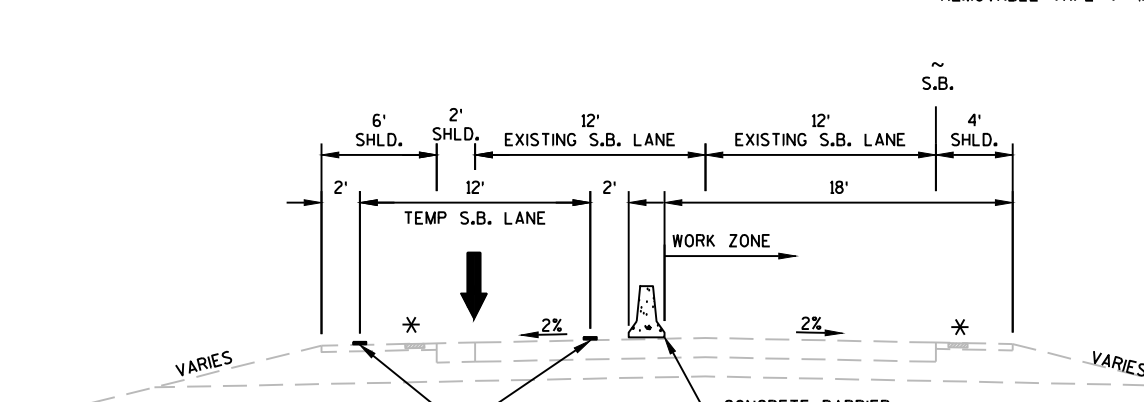
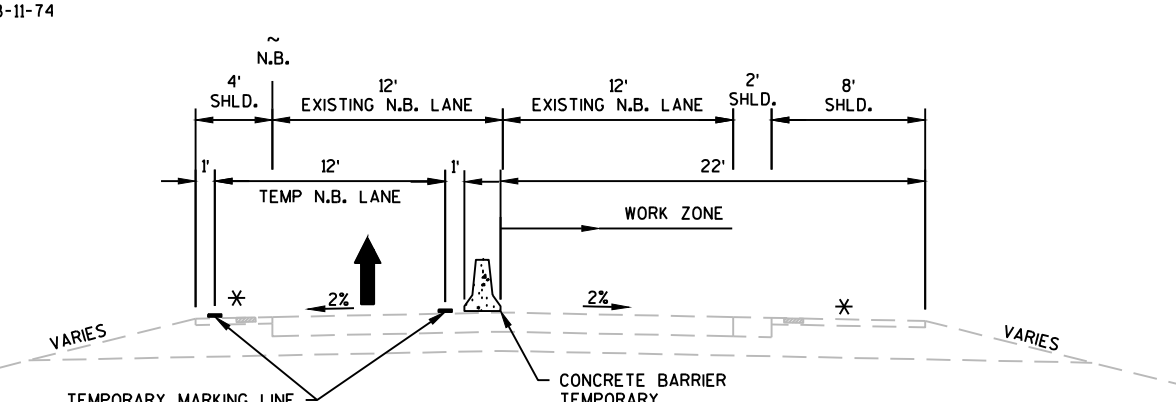
TYPICAL EXISTING SECTION  
USH 151 AT B-13-288 & B-11-74  
STAGE 1



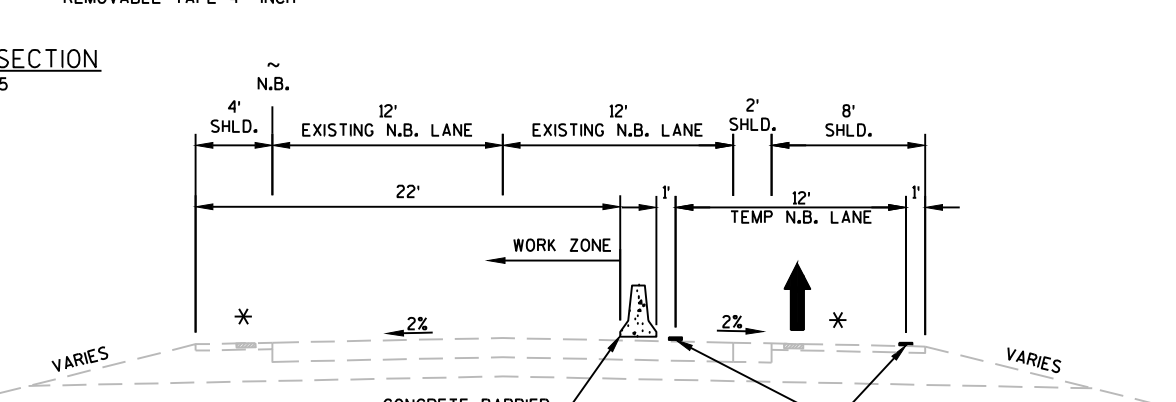
TYPICAL EXISTING SECTION  
USH 151 AT B-13-288 & B-11-74  
STAGE 2



TYPICAL EXISTING SECTION  
USH 151 AT B-11-75  
STAGE 1



TYPICAL EXISTING SECTION  
USH 151 AT B-11-75  
STAGE 2



NOTE: TYPICALS REFLECT PROPOSED IMPROVEMENTS FROM DESIGN ID# 1111-03-02.

TRAFFIC CONTROL NOTES

SEE ALL OTHER TRAFFIC CONTROL SHEETS FOR MORE INFORMATION.

PLACE SIGNS AS SHOWN ON THE PLANS, (ON BOTH SIDES OF NORTHBOUND LANES), OR AS DIRECTED BY THE ENGINEER. ROUND "X" MILE TO THE NEAREST QUARTER MILE.

\* PLACE (B) 200-FT FROM RAMP.

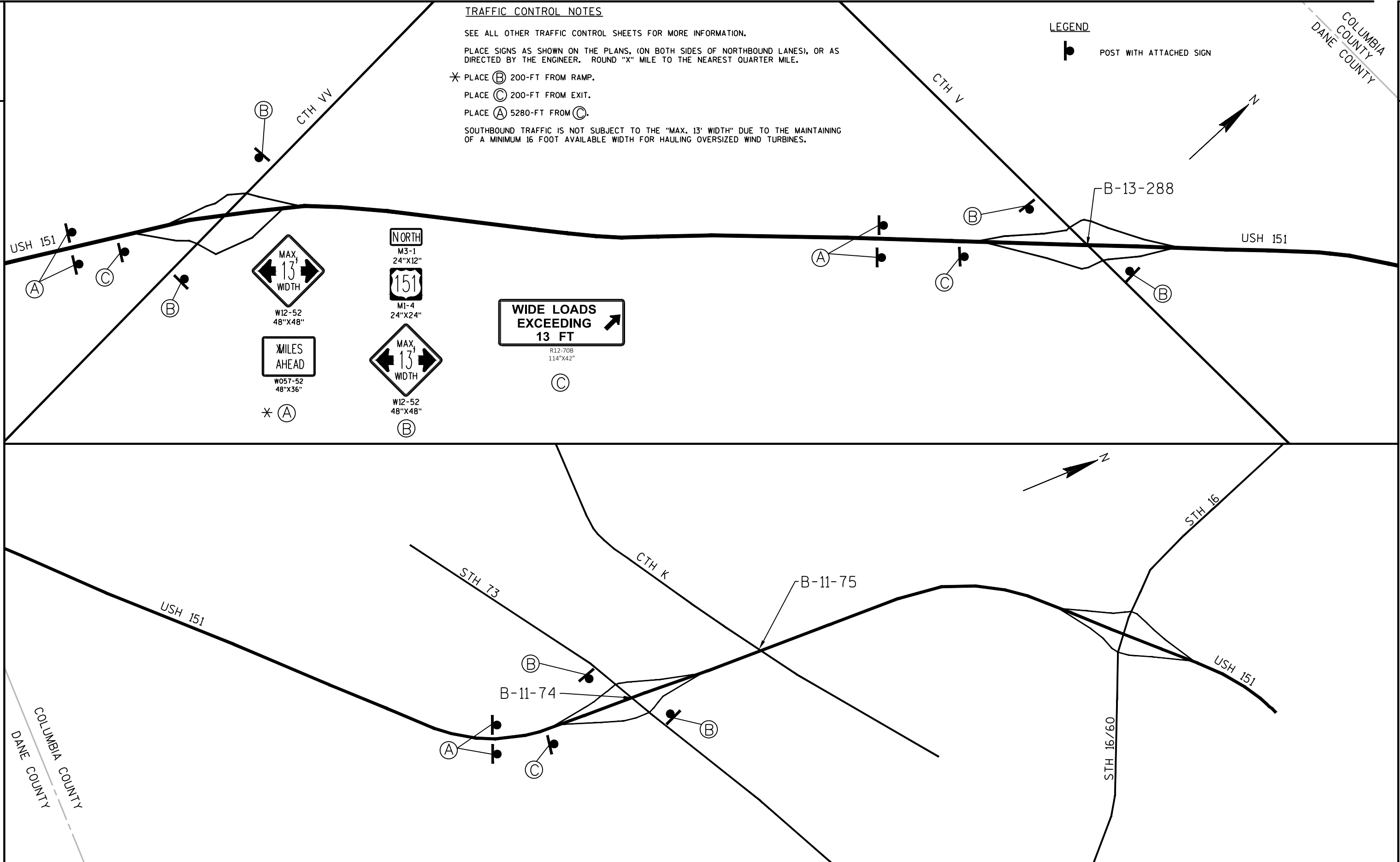
PLACE (C) 200-FT FROM EXIT.

PLACE (A) 5280-FT FROM (C).

SOUTHBOUND TRAFFIC IS NOT SUBJECT TO THE "MAX. 13' WIDTH" DUE TO THE MAINTAINING OF A MINIMUM 16 FOOT AVAILABLE WIDTH FOR HAULING OVERSIZED WIND TURBINES.

LEGEND

POST WITH ATTACHED SIGN



TRAFFIC CONTROL NOTES

SEE "TRAFFIC CONTROL: B-11-74" AND "TRAFFIC CONTROL: B-11-75" SHEETS FOR MORE INFORMATION.

\* CHANGEABLE MESSAGE SIGN LOCATION TO BE DETERMINED BY THE PROJECT ENGINEER.

\* \* SIGNS ARE TO BE PLACED 500' AFTER THE "ROAD WORK 1 MILE" SIGN AS SHOWN IN THE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER".

PCMS MESSAGES:

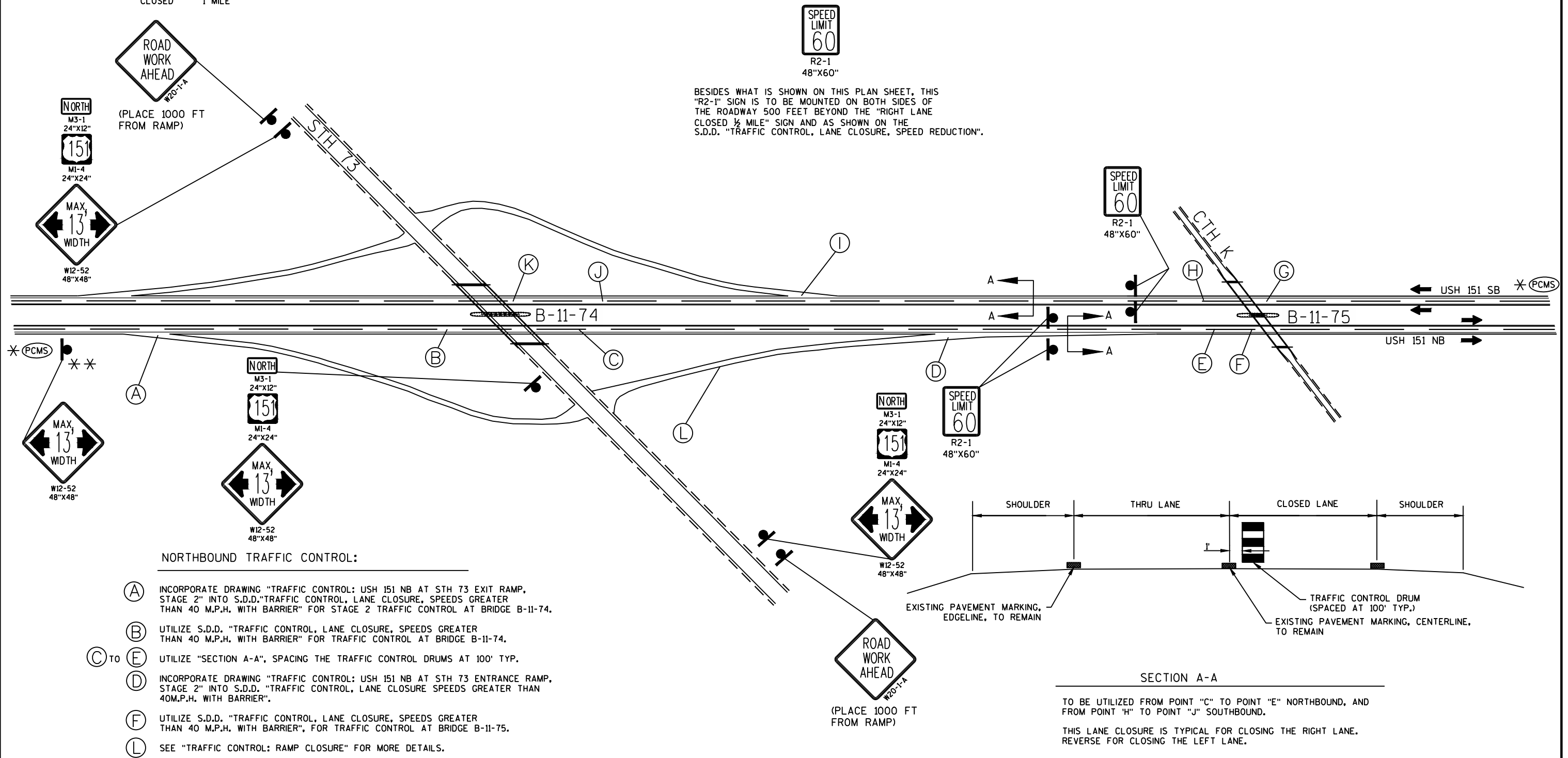
STAGE 1 -	PHASE 1 RIGHT LANE CLOSED	PHASE 2 MERGE LEFT 1 MILE
STAGE 2 -	PHASE 1 LEFT LANE CLOSED	PHASE 2 MERGE RIGHT 1 MILE

SOUTHBOUND TRAFFIC CONTROL:

- (G) UTILIZE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR TRAFFIC CONTROL AT BRIDGE B-11-75.
- (H) TO (J) UTILIZE "SECTION A-A", SPACING THE TRAFFIC CONTROL DRUMS AT 100' TYP.
- (I) INCORPORATE S.D.D. "TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE" INTO THE "SECTION A-A" TRAFFIC CONTROL.
- (K) UTILIZE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER", FOR TRAFFIC CONTROL AT BRIDGE B-11-74.

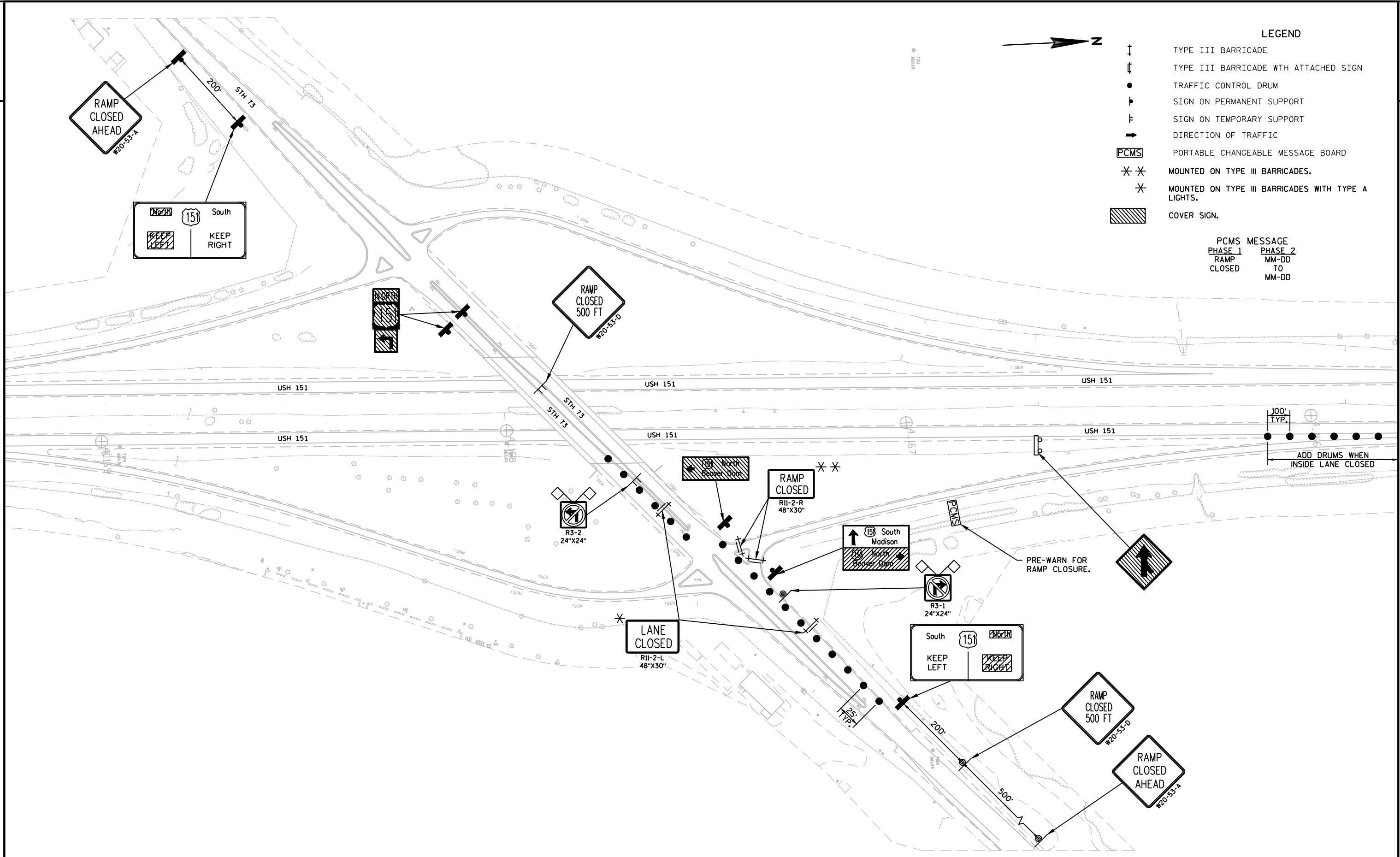
LEGEND

- (PCMS) PORTABLE CHANGEABLE MESSAGE SIGN
- ➔ DIRECTION OF TRAFFIC FLOW
- ⊙ POST W/ ATTACHED SIGN
- ⊡ EXISTING SIGN AND POST



NORTHBOUND TRAFFIC CONTROL:

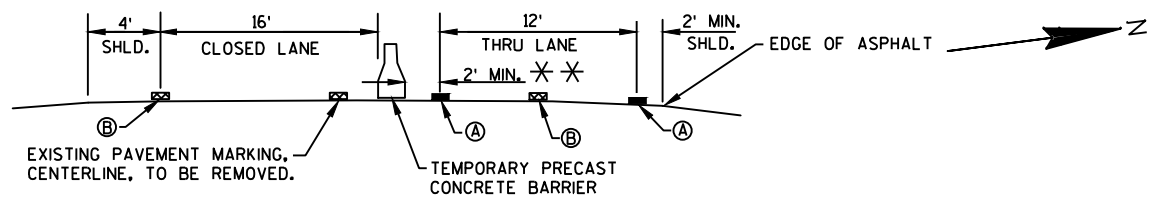
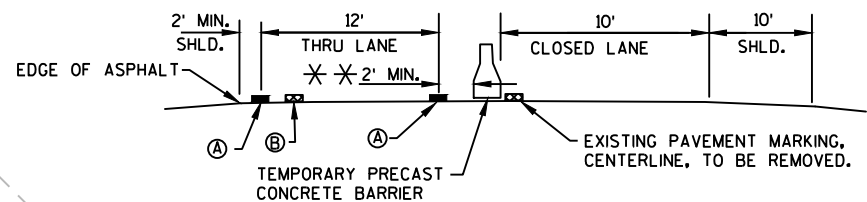
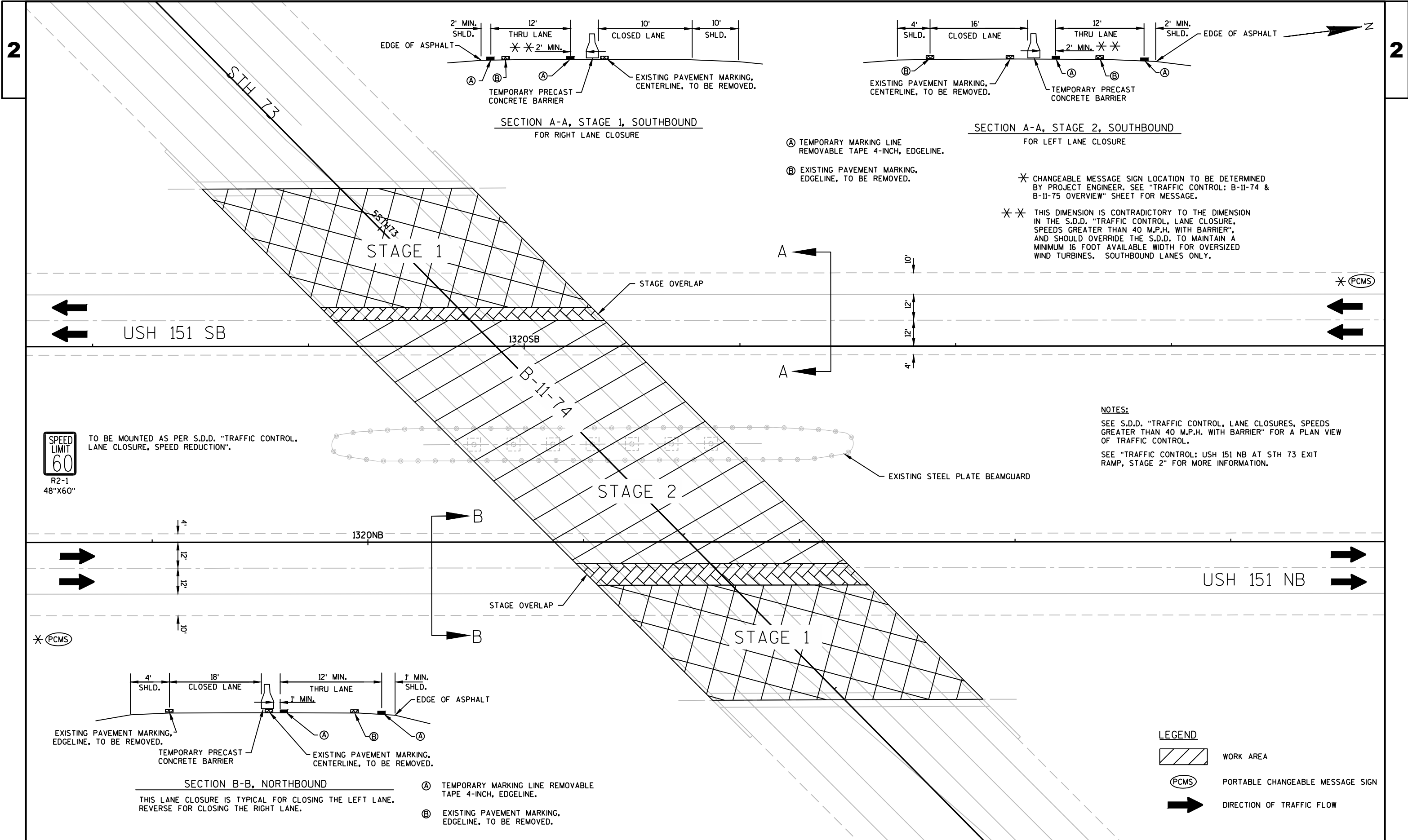
- (A) INCORPORATE DRAWING "TRAFFIC CONTROL: USH 151 NB AT STH 73 EXIT RAMP, STAGE 2" INTO S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR STAGE 2 TRAFFIC CONTROL AT BRIDGE B-11-74.
- (B) UTILIZE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR TRAFFIC CONTROL AT BRIDGE B-11-74.
- (C) TO (E) UTILIZE "SECTION A-A", SPACING THE TRAFFIC CONTROL DRUMS AT 100' TYP.
- (D) INCORPORATE DRAWING "TRAFFIC CONTROL: USH 151 NB AT STH 73 ENTRANCE RAMP, STAGE 2" INTO S.D.D. "TRAFFIC CONTROL, LANE CLOSURE SPEEDS GREATER THAN 40M.P.H. WITH BARRIER".
- (F) UTILIZE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER", FOR TRAFFIC CONTROL AT BRIDGE B-11-75.
- (L) SEE "TRAFFIC CONTROL: RAMP CLOSURE" FOR MORE DETAILS.



- LEGEND**
- ↑ TYPE III BARRICADE
  - ↑↓ TYPE III BARRICADE WITH ATTACHED SIGN
  - TRAFFIC CONTROL DRUM
  - ⊥ SIGN ON PERMANENT SUPPORT
  - ⊥ SIGN ON TEMPORARY SUPPORT
  - DIRECTION OF TRAFFIC
  - PCMS PORTABLE CHANGEABLE MESSAGE BOARD
  - \* \* MOUNTED ON TYPE III BARRICADES.
  - \* MOUNTED ON TYPE III BARRICADES WITH TYPE A LIGHTS.
  - ▨ COVER SIGN.

PCMS MESSAGE  
 PHASE 1 PHASE 2  
 RAMP MM-DD  
 CLOSED TO  
 MM-DD





Ⓐ TEMPORARY MARKING LINE  
REMOVABLE TAPE 4-INCH, EDGELINE.

Ⓑ EXISTING PAVEMENT MARKING,  
EDGELINE, TO BE REMOVED.

\* CHANGEABLE MESSAGE SIGN LOCATION TO BE DETERMINED  
BY PROJECT ENGINEER. SEE "TRAFFIC CONTROL: B-11-74 &  
B-11-75 OVERVIEW" SHEET FOR MESSAGE.

\* \* THIS DIMENSION IS CONTRADICTIONARY TO THE DIMENSION  
IN THE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE,  
SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER",  
AND SHOULD OVERRIDE THE S.D.D. TO MAINTAIN A  
MINIMUM 16 FOOT AVAILABLE WIDTH FOR OVERSIZED  
WIND TURBINES. SOUTHBOUND LANES ONLY.

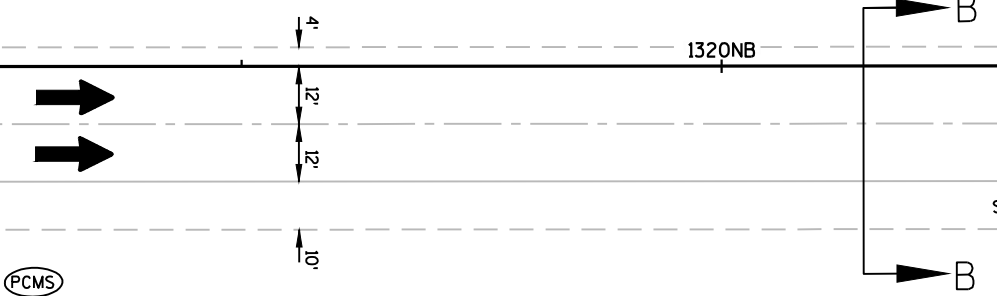
NOTES:

SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURES, SPEEDS  
GREATER THAN 40 M.P.H. WITH BARRIER" FOR A PLAN VIEW  
OF TRAFFIC CONTROL.

SEE "TRAFFIC CONTROL: USH 151 NB AT STH 73 EXIT  
RAMP, STAGE 2" FOR MORE INFORMATION.

**SPEED LIMIT 60**  
R2-1  
48"X60"

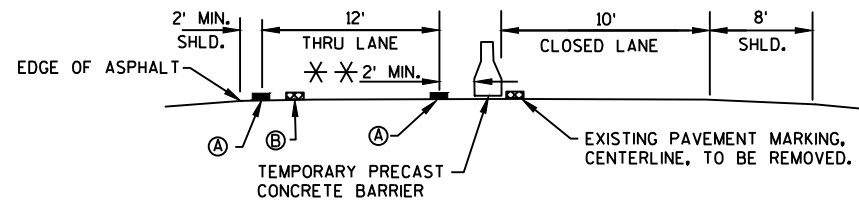
TO BE MOUNTED AS PER S.D.D. "TRAFFIC CONTROL,  
LANE CLOSURE, SPEED REDUCTION".



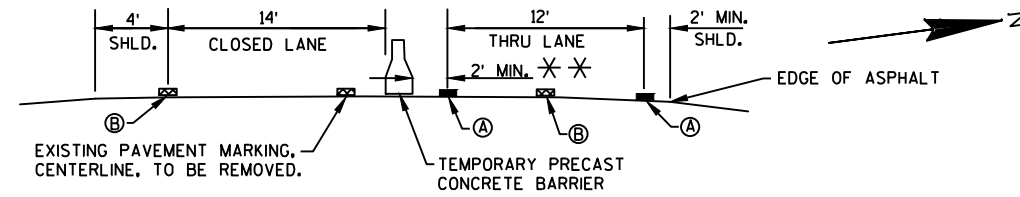
Ⓐ TEMPORARY MARKING LINE REMOVABLE  
TAPE 4-INCH, EDGELINE.

Ⓑ EXISTING PAVEMENT MARKING,  
EDGELINE, TO BE REMOVED.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING THE LEFT LANE.  
REVERSE FOR CLOSING THE RIGHT LANE.



SECTION A-A, STAGE 1, SOUTHBOUND  
FOR RIGHT LANE CLOSURE

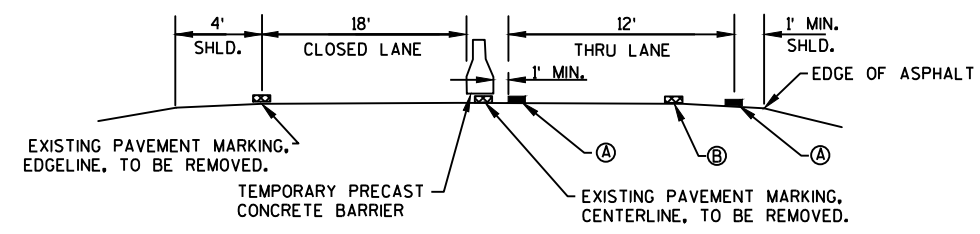
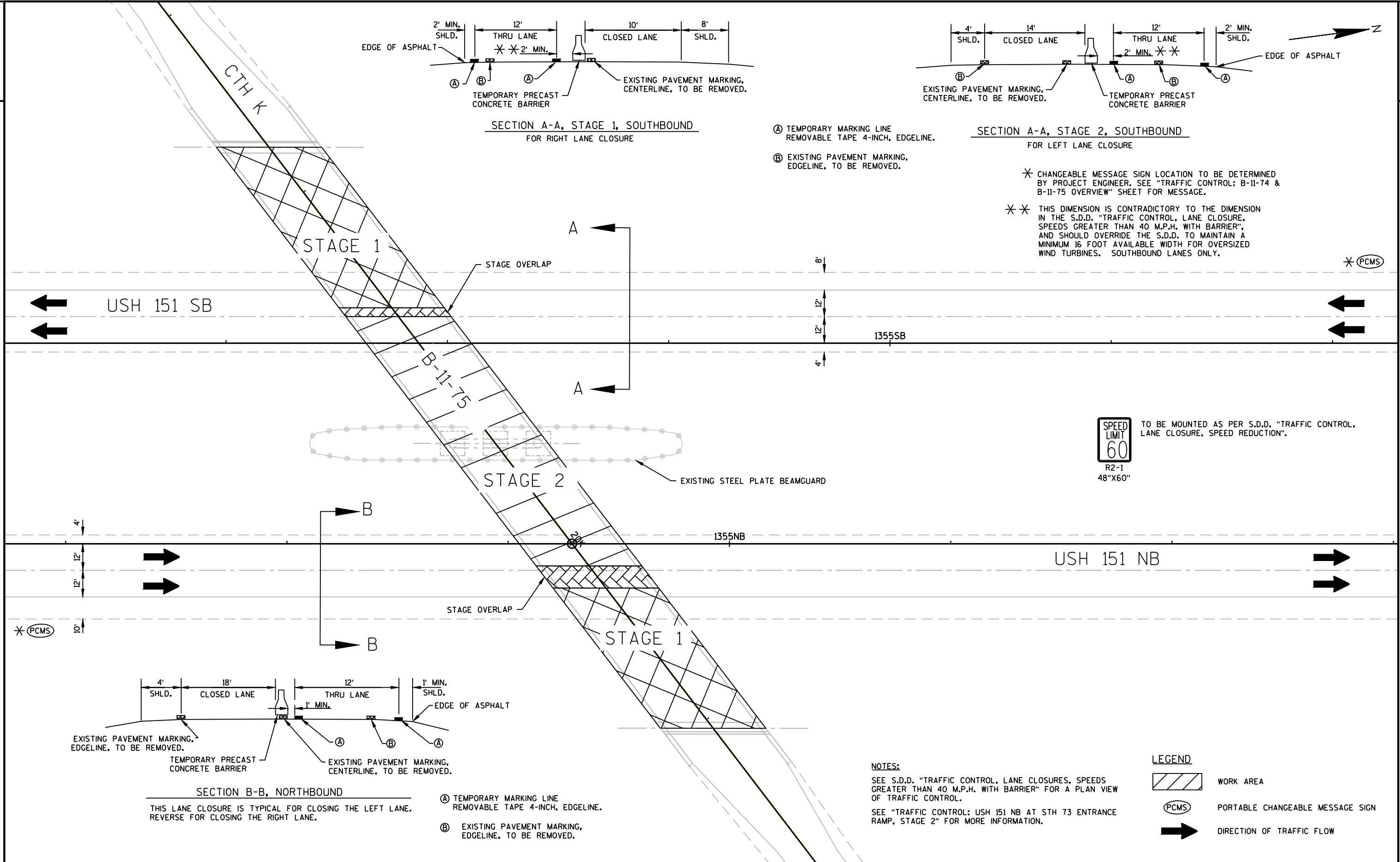


SECTION A-A, STAGE 2, SOUTHBOUND  
FOR LEFT LANE CLOSURE

- Ⓐ TEMPORARY MARKING LINE  
REMOVABLE TAPE 4-INCH, EDGELINE.
- Ⓑ EXISTING PAVEMENT MARKING,  
EDGELINE, TO BE REMOVED.

- \* CHANGEABLE MESSAGE SIGN LOCATION TO BE DETERMINED  
BY PROJECT ENGINEER. SEE "TRAFFIC CONTROL: B-11-74 &  
B-11-75 OVERVIEW" SHEET FOR MESSAGE.
- \* \* THIS DIMENSION IS CONTRADICTORY TO THE DIMENSION  
IN THE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE,  
SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER",  
AND SHOULD OVERRIDE THE S.D.D. TO MAINTAIN A  
MINIMUM 16 FOOT AVAILABLE WIDTH FOR OVERSIZED  
WIND TURBINES. SOUTHBOUND LANES ONLY.

\* (PCMS)



SECTION B-B, NORTHBOUND

THIS LANE CLOSURE IS TYPICAL FOR CLOSING THE LEFT LANE.  
REVERSE FOR CLOSING THE RIGHT LANE.

- Ⓐ TEMPORARY MARKING LINE  
REMOVABLE TAPE 4-INCH, EDGELINE.
- Ⓑ EXISTING PAVEMENT MARKING,  
EDGELINE, TO BE REMOVED.

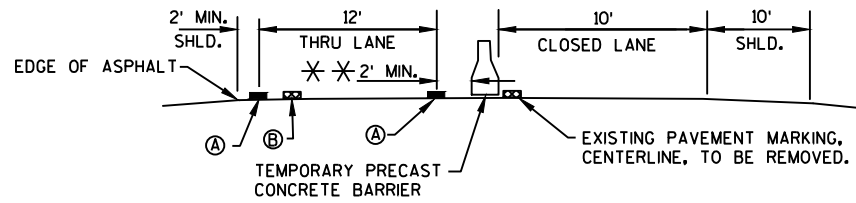
NOTES:

SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURES, SPEEDS  
GREATER THAN 40 M.P.H. WITH BARRIER" FOR A PLAN VIEW  
OF TRAFFIC CONTROL.

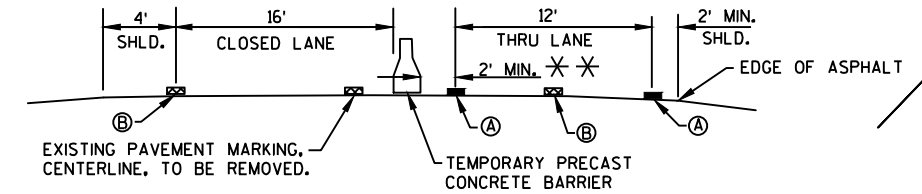
SEE "TRAFFIC CONTROL: USH 151 NB AT STH 73 ENTRANCE  
RAMP, STAGE 2" FOR MORE INFORMATION.

LEGEND

- WORK AREA
- PORTABLE CHANGEABLE MESSAGE SIGN
- DIRECTION OF TRAFFIC FLOW



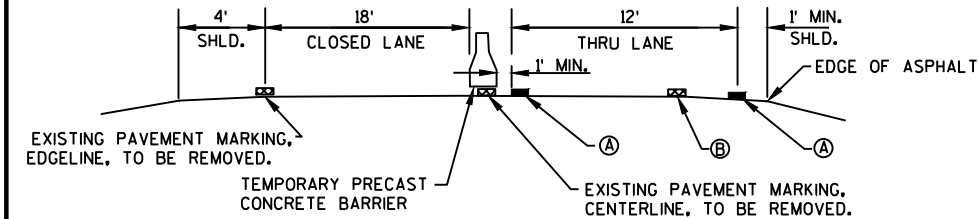
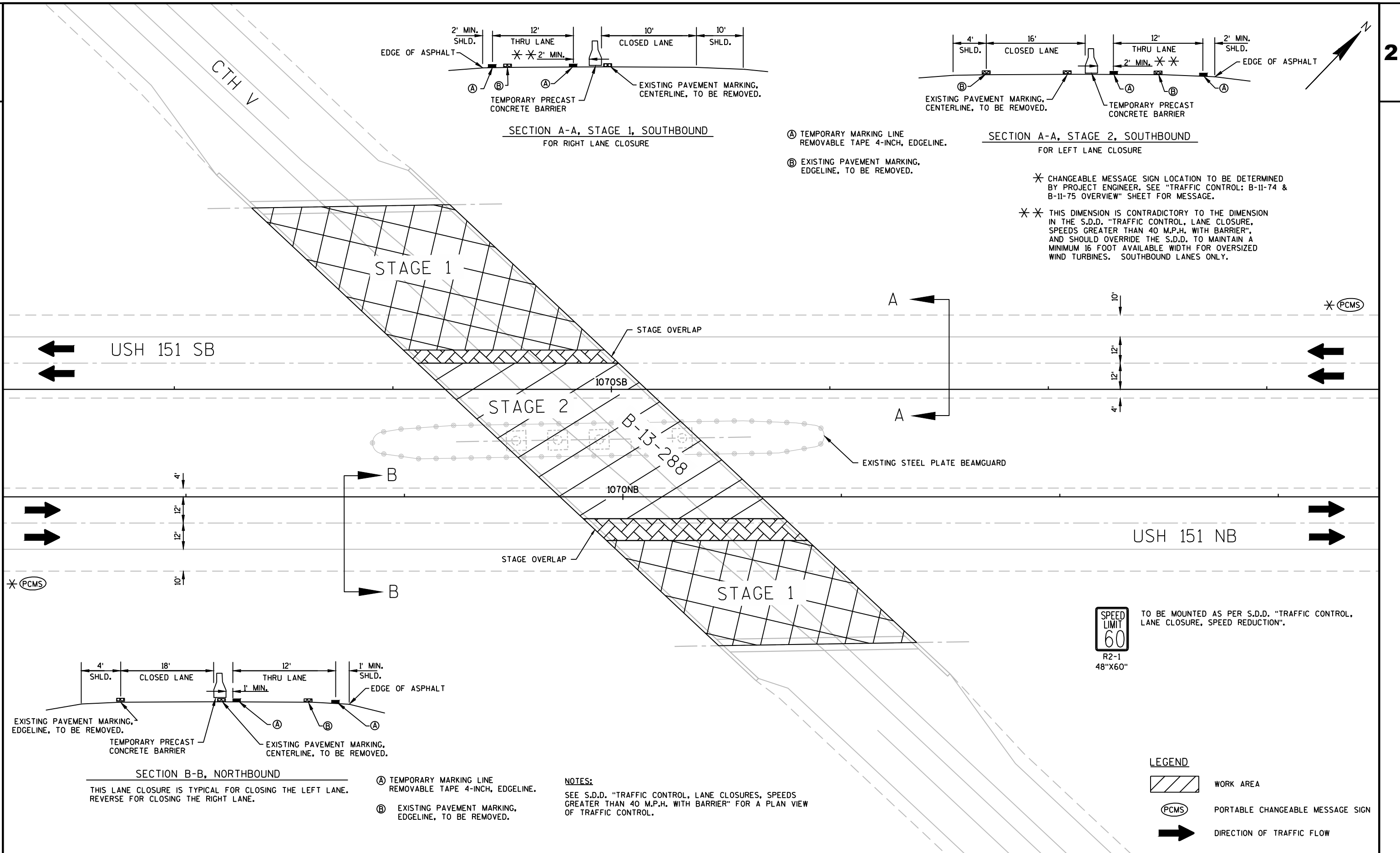
SECTION A-A, STAGE 1, SOUTHBOUND FOR RIGHT LANE CLOSURE



SECTION A-A, STAGE 2, SOUTHBOUND FOR LEFT LANE CLOSURE

- Ⓐ TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, EDGELINE.
- Ⓑ EXISTING PAVEMENT MARKING, EDGELINE, TO BE REMOVED.

- \* CHANGEABLE MESSAGE SIGN LOCATION TO BE DETERMINED BY PROJECT ENGINEER, SEE "TRAFFIC CONTROL: B-11-74 & B-11-75 OVERVIEW" SHEET FOR MESSAGE.
- \* \* THIS DIMENSION IS CONTRADICTORY TO THE DIMENSION IN THE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER", AND SHOULD OVERRIDE THE S.D.D. TO MAINTAIN A MINIMUM 16 FOOT AVAILABLE WIDTH FOR OVERSIZED WIND TURBINES. SOUTHBOUND LANES ONLY.



SECTION B-B, NORTHBOUND

THIS LANE CLOSURE IS TYPICAL FOR CLOSING THE LEFT LANE. REVERSE FOR CLOSING THE RIGHT LANE.

- Ⓐ TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, EDGELINE.
- Ⓑ EXISTING PAVEMENT MARKING, EDGELINE, TO BE REMOVED.

NOTES:  
SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURES, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR A PLAN VIEW OF TRAFFIC CONTROL.



TO BE MOUNTED AS PER S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION".

LEGEND

- WORK AREA
- PORTABLE CHANGEABLE MESSAGE SIGN
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL NOTES

SEE "TRAFFIC CONTROL: B-11-74", "TRAFFIC CONTROL: B-11-75" AND "TRAFFIC CONTROL: B-11-74 & B-11-75 OVERVIEW" SHEETS FOR MORE INFORMATION.

A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

INSTALL ALL SIGNS AND TRAFFIC CONTROL DEVICES AS PER S.D.D "TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LAN CLOSURE" AND S.D.D. "TRAFFIC CONTROL, LANE CLOSURES, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER"

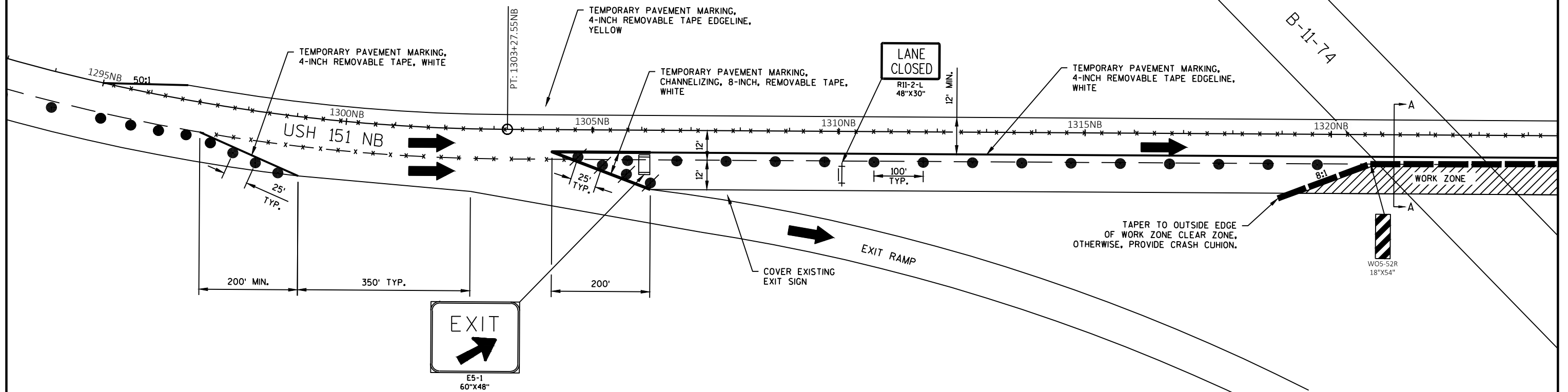
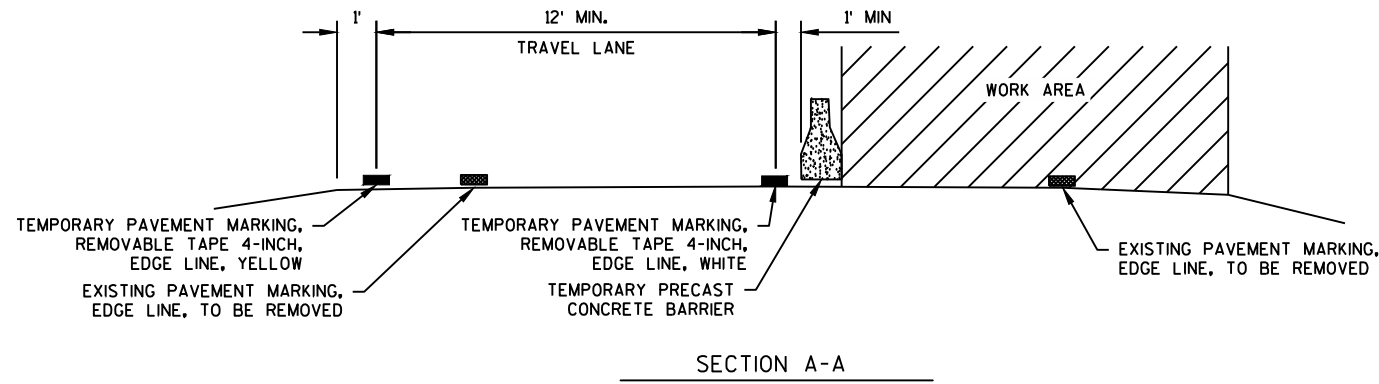


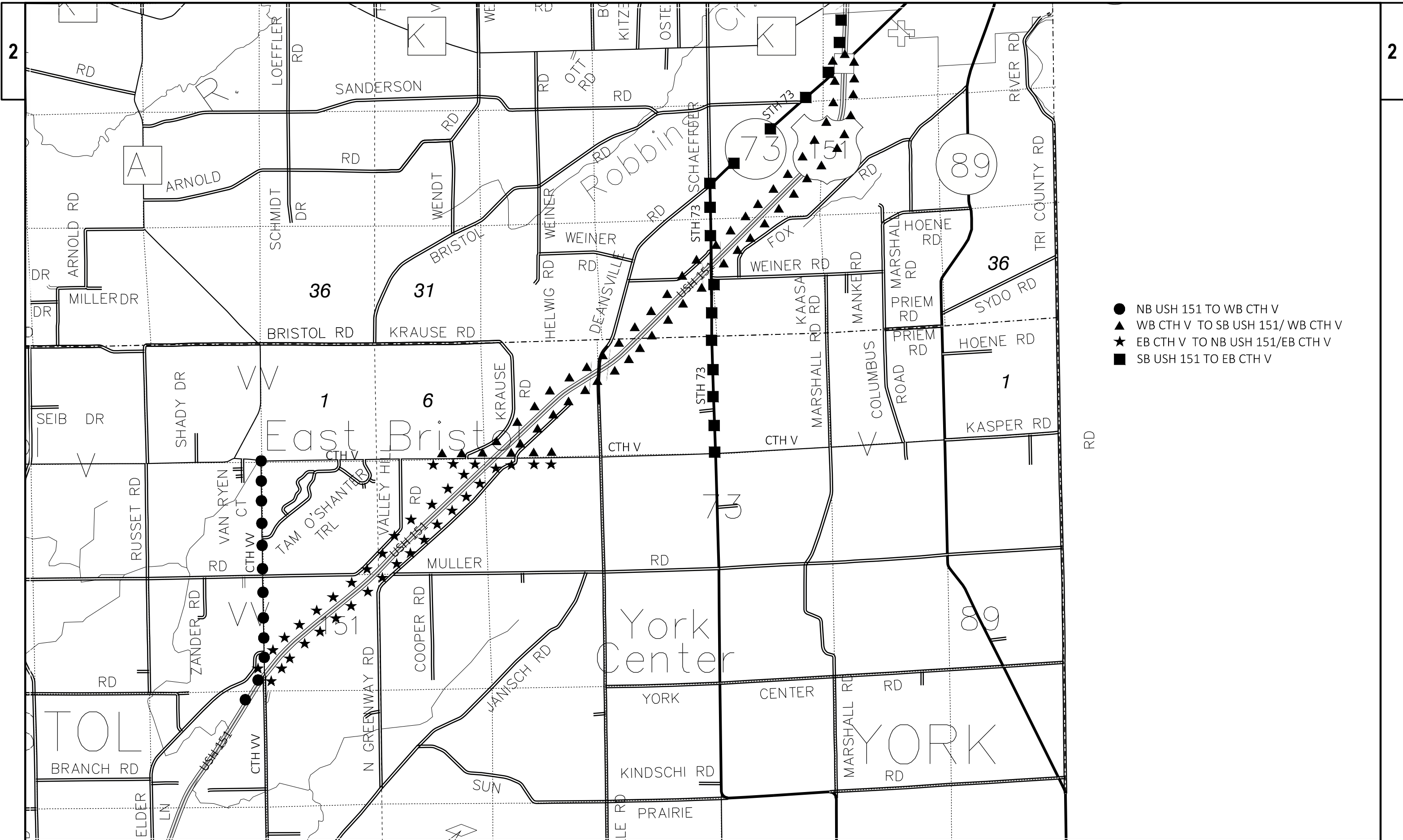
TO BE MOUNTED ON BOTH SIDES OF THE ROADWAY AS PER S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION".

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET).

LEGEND

- (PCMS) PORTABLE CHANGEABLE MESSAGE SIGN
- ➔ DIRECTION OF TRAFFIC FLOW
- ⊙ POST W/ ATTACHED SIGN
- |— TEMPORARY SUPPORT W/ ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- ▨ WORK AREA
- x-x-x- REMOVING PAVEMENT MARKING





- NB USH 151 TO WB CTH V
- ▲ WB CTH V TO SB USH 151/WB CTH V
- ★ EB CTH V TO NB USH 151/EB CTH V
- SB USH 151 TO EB CTH V

PROJECT NO: 1111-05-61

HWY: USH 151




COUNTY: DANE

DETOUR SIGNING OVERVIEW

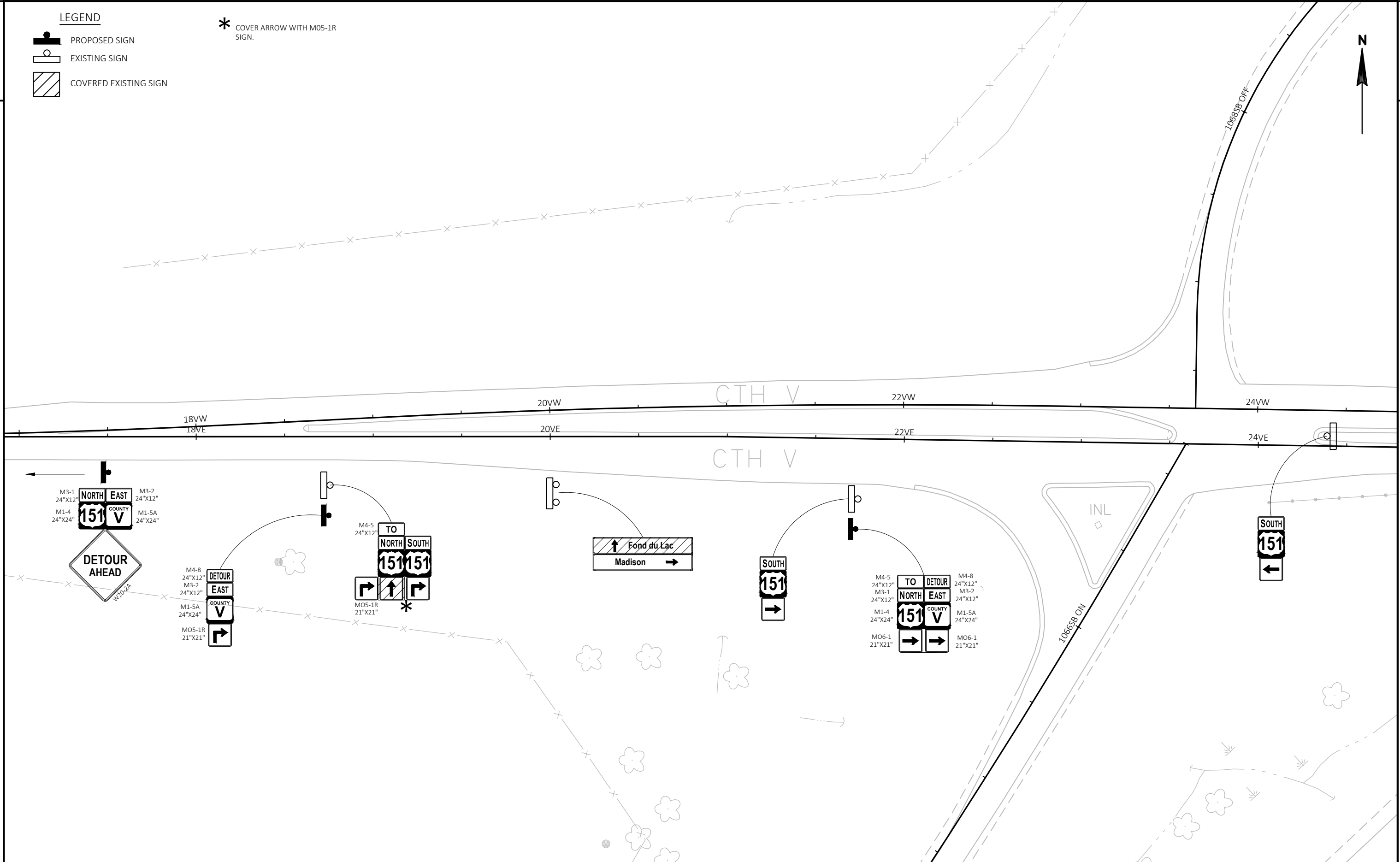
SHEET

E

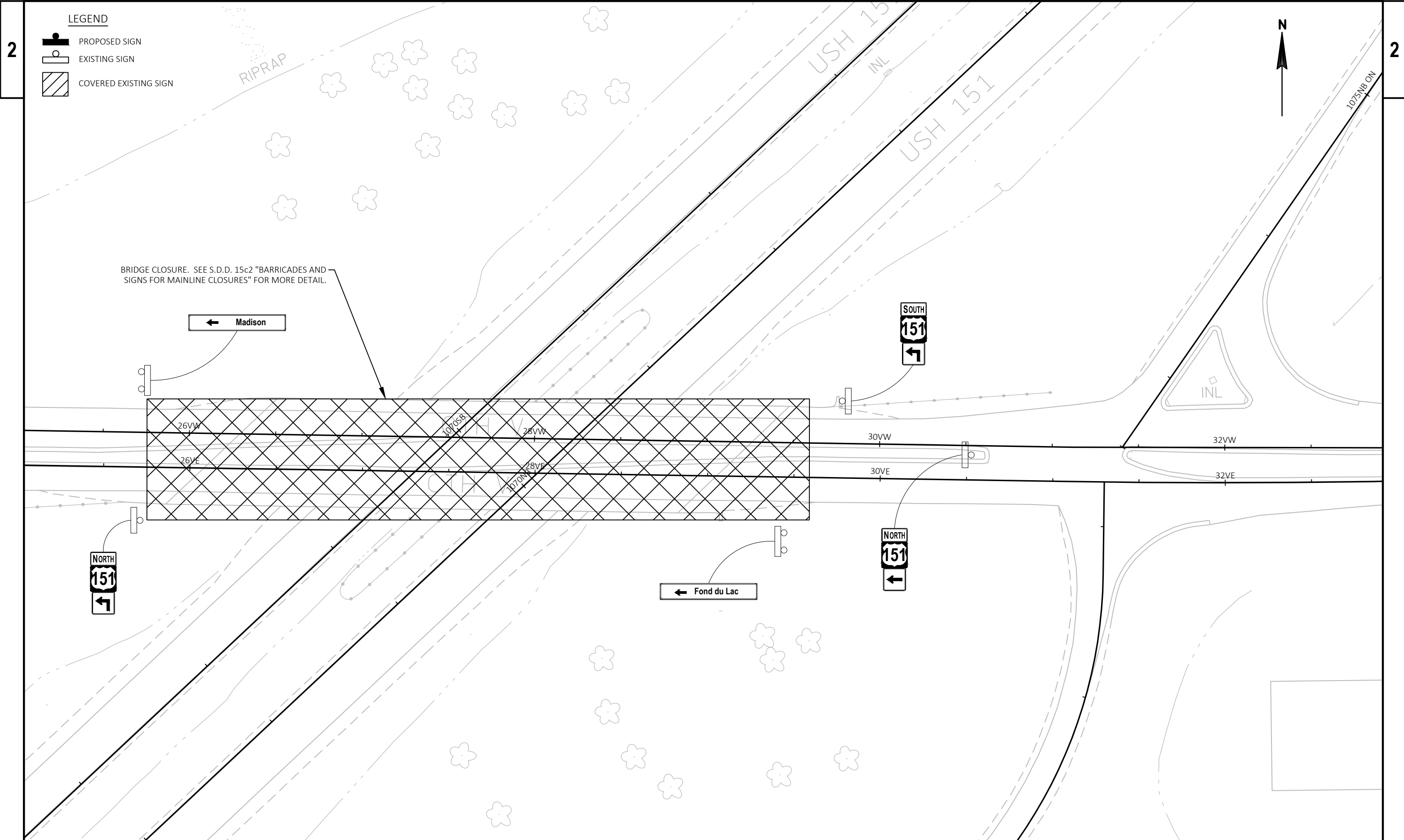
LEGEND




-  PROPOSED SIGN
-  EXISTING SIGN
-  COVERED EXISTING SIGN

\* COVER ARROW WITH M05-1R SIGN.

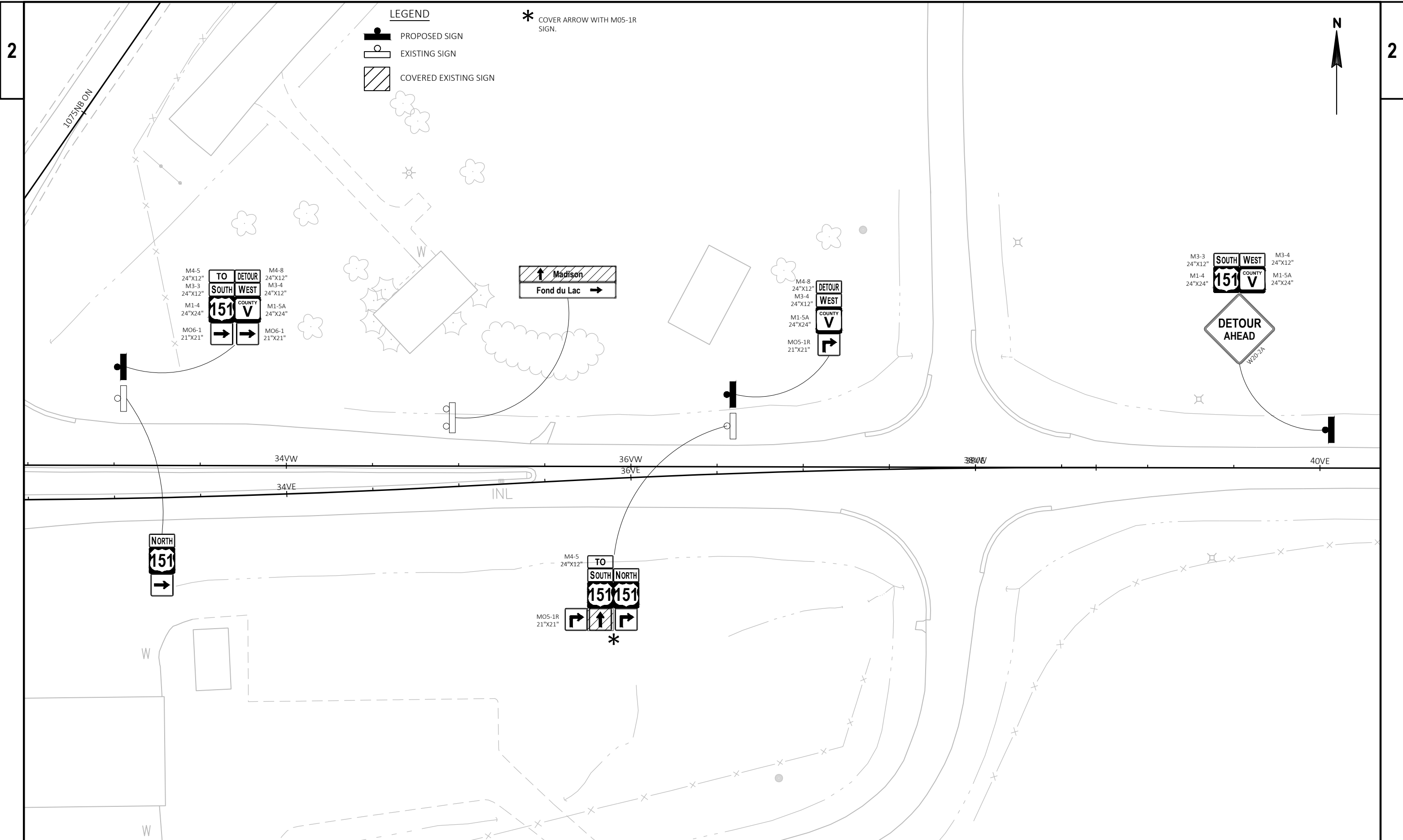






- LEGEND**
-  PROPOSED SIGN
  -  EXISTING SIGN
  -  COVERED EXISTING SIGN

BRIDGE CLOSURE. SEE S.D.D. 15c2 "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR MORE DETAIL.



PROJECT NO: 1111-05-61

HWY: USH 151

COUNTY: DANE

DETOUR SIGNING (CTH V)

SHEET

E

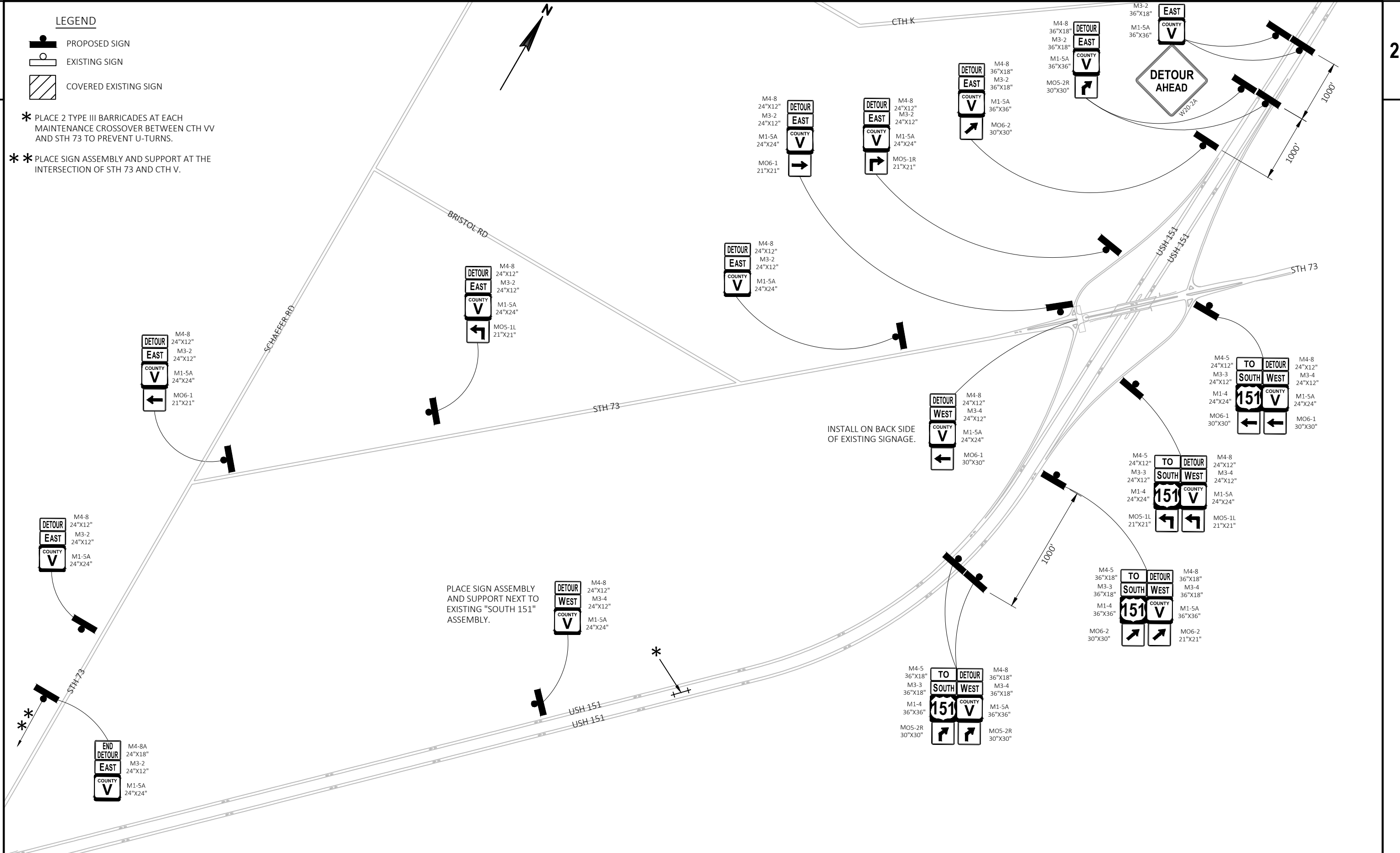


LEGEND

- PROPOSED SIGN
- EXISTING SIGN
- COVERED EXISTING SIGN

\* PLACE 2 TYPE III BARRICADES AT EACH MAINTENANCE CROSSOVER BETWEEN CTH VV AND STH 73 TO PREVENT U-TURNS.

\*\* PLACE SIGN ASSEMBLY AND SUPPORT AT THE INTERSECTION OF STH 73 AND CTH V.



M4-8  
24"x12"  
M3-2  
24"x12"  
M1-5A  
24"x24"

M4-8  
24"x12"  
M3-2  
24"x12"  
M1-5A  
24"x24"  
M06-1  
21"x21"

M4-8  
24"x12"  
M3-2  
24"x12"  
M1-5A  
24"x24"  
M05-1L  
21"x21"

M4-8  
24"x12"  
M3-2  
24"x12"  
M1-5A  
24"x24"

M4-8  
24"x12"  
M3-2  
24"x12"  
M1-5A  
24"x24"  
M06-1  
21"x21"

M4-8  
24"x12"  
M3-2  
24"x12"  
M1-5A  
24"x24"  
M05-1R  
21"x21"

M4-8  
36"x18"  
M3-2  
36"x18"  
M1-5A  
36"x36"  
M05-2R  
30"x30"

M4-8  
36"x18"  
M3-2  
36"x18"  
M1-5A  
36"x36"  
M05-2R  
30"x30"

M3-2  
36"x18"  
M1-5A  
36"x36"

M4-5  
24"x12"  
M3-3  
24"x12"  
M1-4  
24"x24"  
M06-1  
30"x30"

M4-8  
24"x12"  
M3-4  
24"x12"  
M1-5A  
24"x24"  
M06-1  
30"x30"

M4-5  
24"x12"  
M3-3  
24"x12"  
M1-4  
24"x24"  
M05-1L  
21"x21"

M4-8  
24"x12"  
M3-4  
24"x12"  
M1-5A  
24"x24"  
M05-1L  
21"x21"

M4-5  
36"x18"  
M3-3  
36"x18"  
M1-4  
36"x36"  
M06-2  
30"x30"

M4-8  
36"x18"  
M3-4  
36"x18"  
M1-5A  
36"x36"  
M06-2  
21"x21"

M4-5  
36"x18"  
M3-3  
36"x18"  
M1-4  
36"x36"  
M05-2R  
30"x30"

M4-8  
36"x18"  
M3-4  
36"x18"  
M1-5A  
36"x36"  
M05-2R  
30"x30"

PLACE SIGN ASSEMBLY AND SUPPORT NEXT TO EXISTING "SOUTH 151" ASSEMBLY.

M4-8  
24"x12"  
M3-4  
24"x12"  
M1-5A  
24"x24"

INSTALL ON BACK SIDE OF EXISTING SIGNAGE.

## Estimate Of Quantities

1111-05-61

Line	Item	Item Description	Unit	Total	Qty
0002	204.0120	Removing Asphaltic Surface Milling	SY	16,218.000	16,218.000
0004	213.0100	Finishing Roadway (project) 01. 1111-05-61	EACH	1.000	1.000
0006	455.0605	Tack Coat	GAL	1,135.000	1,135.000
0008	460.7424	HMA Pavement 4 HT 58-28 H	TON	1,591.000	1,591.000
0010	465.0400	Asphaltic Shoulder Rumble Strips	LF	26,211.000	26,211.000
0012	502.3101	Expansion Device (structure) 01. B-13-0288	LF	182.000	182.000
0014	502.3200	Protective Surface Treatment	SY	74.000	74.000
0016	502.3210	Pigmented Surface Sealer	SY	12.000	12.000
0018	502.4205	Adhesive Anchors No. 5 Bar	EACH	174.000	174.000
0020	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	7,820.000	7,820.000
0022	509.1000	Joint Repair	SY	82.000	82.000
0024	509.2500	Concrete Masonry Overlay Decks	CY	32.000	32.000
0026	517.1800.S	Structure Repainting Recycled Abrasive (structure) 01. B-11-0074	LS	1.000	1.000
0028	517.1800.S	Structure Repainting Recycled Abrasive (structure) 02. B-11-0075	LS	1.000	1.000
0030	517.1800.S	Structure Repainting Recycled Abrasive (structure) 03. B-13-0288	LS	1.000	1.000
0032	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 01. B-11-0074	LS	1.000	1.000
0034	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 02. B-11-0075	LS	1.000	1.000
0036	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 03. B-13-0288	LS	1.000	1.000
0038	517.6001.S	Portable Decontamination Facility	EACH	3.000	3.000
0040	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,700.000	1,700.000
0042	603.8125	Concrete Barrier Temporary Precast Installed	LF	3,400.000	3,400.000
0044	614.0905	Crash Cushions Temporary	EACH	6.000	6.000
0046	619.1000	Mobilization	EACH	1.000	1.000
0048	642.5001	Field Office Type B	EACH	1.000	1.000
0050	643.0300	Traffic Control Drums	DAY	8,050.000	8,050.000
0052	643.0420	Traffic Control Barricades Type III	DAY	720.000	720.000
0054	643.0705	Traffic Control Warning Lights Type A	DAY	1,160.000	1,160.000
0056	643.0715	Traffic Control Warning Lights Type C	DAY	1,570.000	1,570.000
0058	643.0800	Traffic Control Arrow Boards	DAY	168.000	168.000
0060	643.0900	Traffic Control Signs	DAY	8,925.000	8,925.000
0062	643.0910	Traffic Control Covering Signs Type I	EACH	4.000	4.000
0064	643.0920	Traffic Control Covering Signs Type II	EACH	5.000	5.000
0066	643.1050	Traffic Control Signs PCMS	DAY	91.000	91.000
0068	643.5000	Traffic Control	EACH	1.000	1.000
0070	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	29,475.000	29,475.000

Estimate Of Quantities

1111-05-61

Line	Item	Item Description	Unit	Total	Qty
0072	646.1555	Marking Line Grooved Contrast Permanent Tape 4-Inch	LF	2,625.000	2,625.000
0074	646.3555	Marking Line Grooved Contrast Permanent Tape 8-Inch	LF	2,555.000	2,555.000
0076	646.9000	Marking Removal Line 4-Inch	LF	32,100.000	32,100.000
0078	646.9100	Marking Removal Line 8-Inch	LF	2,555.000	2,555.000
0080	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	64,410.000	64,410.000
0082	649.0250	Temporary Marking Line Removable Tape 8-Inch	LF	1,600.000	1,600.000
0084	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	200.000	200.000
0086	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	175.000	175.000
0088	SPV.0060	Special 01. Mobilizations Emergency Shoulder and Pavement Repair	EACH	3.000	3.000
0090	SPV.0195	Special 01. Asphaltic Pavement Repair Special	TON	45.000	45.000



3

SHOULDER PAVING

CATEGORY	STA. TO STA.	LOCATION	204.0120 REMOVING ASPHALTIC SURFACE MILLING (SY)	455.0605 TACK COAT (GAL)	460.7424 HMA PAVEMENT 4 HT 58-28 H (TON)
0010	1061+97SB - 1071+43SB	OUTSIDE SB SHOULDER	1718	120	168
	1061+97SB - 1071+43SB	MEDIAN SB SHOULDER	687	48	68
	1062+47NB - 1077+93NB	OUTSIDE NB SHOULDER	1718	120	168
	1062+47NB - 1077+93NB	MEDIAN NB SHOULDER	687	48	68
B-13-0288 TOTAL			4810	336	472
	1314+52SB - 1357+82SB	OUTSIDE SB SHOULDER	4811	337	472
	1333+33SB - 1357+82SB	MEDIAN SB SHOULDER	1089	76	107
	1316+14NB - 1359+25NB	OUTSIDE NB SHOULDER	4828	338	473
	1288+65NB - 1303+96NB	MEDIAN NB SHOULDER	680	48	67
B-11-0074 TO B-11-0075 TOTAL			11408	799	1119
PROJECT TOTAL			16218	1135	1591

465.0400

ASPHALTIC SHOULDER RUMBLE STRIPS

CATEGORY	STA. TO STA.	LOCATION	(LF)
0010	1061+97SB - 1071+43SB	OUTSIDE SB SHOULDER	1546
	1061+97SB - 1071+43SB	MEDIAN SB SHOULDER	1546
	1062+47NB - 1077+93NB	OUTSIDE NB SHOULDER	1546
	1062+47NB - 1077+93NB	MEDIAN NB SHOULDER	1546
B-13-0288 TOTAL			6184
	1314+52SB - 1357+82SB	OUTSIDE SB SHOULDER	4330
	1315+24SB - 1357+82SB	MEDIAN SB SHOULDER	4258
	1316+14NB - 1359+25NB	OUTSIDE NB SHOULDER	4345
	1288+65NB - 1359+59NB	MEDIAN NB SHOULDER	7094
B-11-0074 TO B-11-0075 TOTAL			20027
PROJECT TOTAL			26211

603.8000

CONCRETE BARRIER TEMPORARY PRECAST DELIVERED

CATEGORY	STRUCTURE NO.	STAGE	LOCATION	(LF)
0010	B-11-0074	1	NORTHBOUND	300
		1	SOUTHBOUND	300
		2	NORTHBOUND	—
		2	SOUTHBOUND	—
B-11-0074 TOTAL				600
	B-11-0075	1	NORTHBOUND	250
		1	SOUTHBOUND	250
		2	NORTHBOUND	—
		2	SOUTHBOUND	—
B-11-0075 TOTAL				500
	B-13-0288	1	NORTHBOUND	300
		1	SOUTHBOUND	300
		2	NORTHBOUND	—
		2	SOUTHBOUND	—
B-13-0288 TOTAL				600
PROJECT TOTAL				1700

603.8125

CONCRETE BARRIER TEMPORARY PRECAST INSTALLED

CATEGORY	STRUCTURE NO.	STAGE	LOCATION	(LF)
0010	B-11-0074	1	NORTHBOUND	300
		1	SOUTHBOUND	300
		2	NORTHBOUND	300
		2	SOUTHBOUND	300
B-11-0074 TOTAL				1200
	B-11-0075	1	NORTHBOUND	250
		1	SOUTHBOUND	250
		2	NORTHBOUND	250
		2	SOUTHBOUND	250
B-11-0075 TOTAL				1000
	B-13-0288	1	NORTHBOUND	300
		1	SOUTHBOUND	300
		2	NORTHBOUND	300
		2	SOUTHBOUND	300
B-13-0288 TOTAL				1200
PROJECT TOTAL				3400

3

614.0905

CRASH CUSHIONS TEMPORARY

CATEGORY	STRUCTURE NO.	LOCATION	(EACH)
0010	B-11-0074	NORTHBOUND	1
		SOUTHBOUND	1
B-11-0074 TOTAL			2
	B-11-0075	NORTHBOUND	1
		SOUTHBOUND	1
B-11-0075 TOTAL			2
	B-13-0288	NORTHBOUND	1
		SOUTHBOUND	1
B-13-0288 TOTAL			2
PROJECT TOTAL			6

SPV.0060.01

MOBILIZATIONS EMERGENCY SHOULDER AND PAVEMENT REPAIR

CATEGORY	STRUCTURE NO.	(EACH)
0020	.01 B-11-0074	1
0030	.02 B-11-0075	1
0040	.03 B-13-0288	1
PROJECT TOTAL		3

SPV.0195.01

ASPHALTIC PAVEMENT REPAIR SPECIAL

CATEGORY	STRUCTURE NO.	(TON)
0020	.01 B-11-0074	15
0030	.02 B-11-0075	15
0040	.03 B-13-0288	15
PROJECT TOTAL		45

3

3

**TRAFFIC CONTROL**

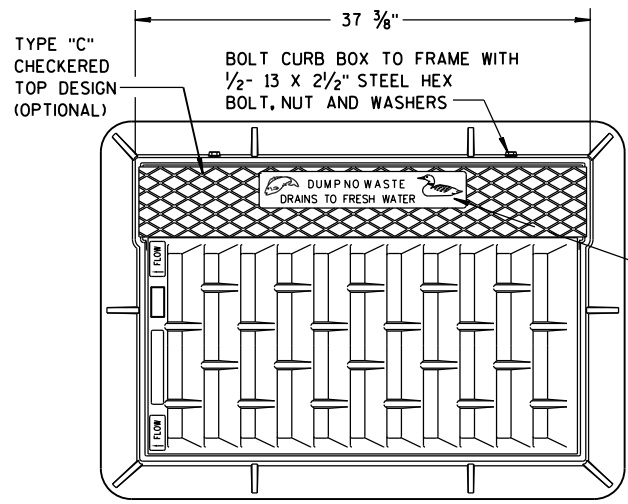
CATEGORY	STRUCTURE NO.	STAGE	LOCATION	DURATION (DAYS)	643.0500 TRAFFIC CONTROL (EACH)		643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C		643.0800 TRAFFIC CONTROL ARROW BOARDS		643.0900 TRAFFIC CONTROL SIGNS		643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I		643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II		643.1050 TRAFFIC CONTROL SIGNS PCMS	
					# REQ'D	(DAYS)	# REQ'D	(DAYS)	# REQ'D	(DAYS)	# REQ'D	(DAYS)	# REQ'D	(DAYS)	# REQ'D	(DAYS)	# REQ'D	(DAYS)	CYCLES	(EACH)	CYCLES	(EACH)	# REQ'D	(DAYS)
0010	B-11-0074	1	NORTHBOUND	10	--	84	840	2	20	4	40	21	210	2	20	26	260	--	--	--	--	1	10	
		1	SOUTHBOUND	10	--	42	420	1	10	2	20	8	80	--	--	6	60	--	--	--	--	--	--	
		2	NORTHBOUND	11	--	75	825	--	--	--	--	13	143	2	22	23	253	--	--	--	--	1	11	
		2	SOUTHBOUND	11	--	26	286	--	--	--	--	--	--	--	--	3	33	--	--	--	--	--	--	
		--	RAMP CLOSURE	21	--	31	651	4	84	4	84	--	--	--	--	10	210	1	4	1	3	1	7	
B-11-0074 TOTAL					0.34	3022		114		144		433		42		816		4		3		28		
B-11-0075	B-11-0075	1	NORTHBOUND	10	--	19	190	--	--	--	--	--	--	--	--	3	30	--	--	--	--	--	--	
		1	SOUTHBOUND	10	--	50	500	1	10	2	20	13	130	2	20	13	130	--	--	--	--	1	10	
		2	NORTHBOUND	11	--	19	209	--	--	--	--	--	--	--	--	3	33	--	--	--	--	--	--	
		2	SOUTHBOUND	11	--	50	550	--	--	--	--	13	143	2	22	13	143	--	--	--	--	1	11	
		B-11-0075 TOTAL					0.33	1449		10		20		273		42		336		0		0		21
B-13-0288	B-13-0288	1	NORTHBOUND	11	--	75	825	2	22	4	44	21	231	2	22	39	429	--	--	--	--	1	11	
		1	SOUTHBOUND	11	--	76	836	2	22	4	44	21	231	2	22	19	209	--	--	--	--	1	11	
		2	NORTHBOUND	10	--	58	580	--	--	--	--	13	130	2	20	36	360	--	--	--	--	1	10	
		2	SOUTHBOUND	10	--	59	590	--	--	--	--	13	130	2	20	16	160	--	--	--	--	1	10	
		--	BRIDGE CLOSURE	21	--	--	--	14	294	20	420	--	--	--	--	4	84	--	--	--	--	--	--	
		--	DETOUR	21	--	--	--	10	210	20	420	--	--	--	--	311	6531	--	--	1	2	--	--	
B-13-0288 TOTAL					0.33	2831		548		928		722		84		7773		0		2		42		
UNDISTRIBUTED					--	748		48		68		142		--		--		--		--		--		
PROJECT TOTAL					1	8050		720		1160		1570		168		8925		4		5		91		

**PAVEMENT MARKING**

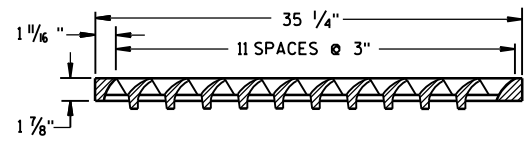
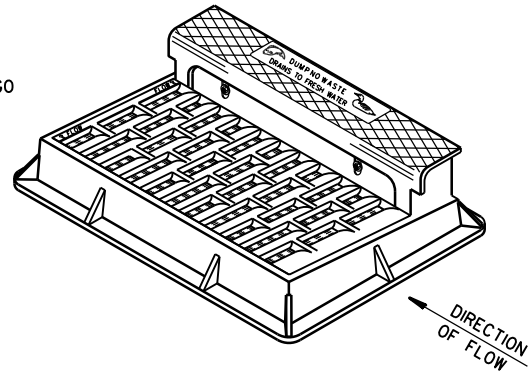
CATEGORY	STRUCTURE NO.	LOCATION	646.9000 MARKING REMOVAL LINE		646.9100 MARKING REMOVAL LINE		646.1040 MARKING LINE GROOVED		646.1555 MARKING LINE GROOVED CONTRAST		646.3555 MARKING LINE GROOVED CONTRAST		649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE		649.0250 TEMPORARY MARKING LINE REMOVABLE TAPE	
			4-INCH (LF)	8-INCH (LF)	WHITE (LF)	YELLOW (LF)	WHITE (LF)	WHITE (LF)	WHITE (LF)	WHITE (LF)	YELLOW (LF)	WHITE (LF)	WHITE (LF)			
0010	B-11-0074	NORTHBOUND	7370	1275	2920	4195	255	1275	7980	8390	400					
		SOUTHBOUND	4415	510	1690	2200	525	510	4400	4400	400					
		B-11-0074 TOTAL	11785	1785	4610	6395	780	1785	12380	12790	800					
B-11-0075	B-11-0075	NORTHBOUND	3110	--	1555	1555	--	--	3110	3110	--					
		SOUTHBOUND	5095	--	2190	2190	715	--	3970	4380	--					
		B-11-0075 TOTAL	8205	0	3745	3745	715	0	7080	7490	0					
B-13-0288	B-13-0288	NORTHBOUND	5640	405	2490	2895	255	405	6625	5990	400					
		SOUTHBOUND	6470	365	2615	2980	875	365	6445	5610	400					
		B-13-0288 TOTAL	12110	770	5105	5875	1130	770	13070	11600	800					
SUBTOTAL			--	--	13460	16015	--	--	32530	31880	--					
PROJECT TOTAL			32100	2555	29475	2625	2555	64410	1600							

## Standard Detail Drawing List

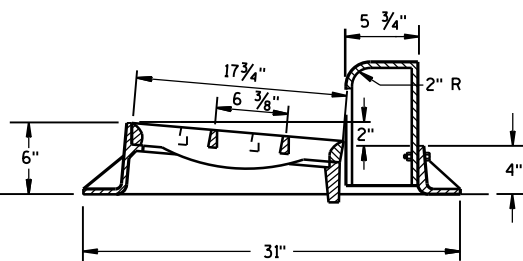
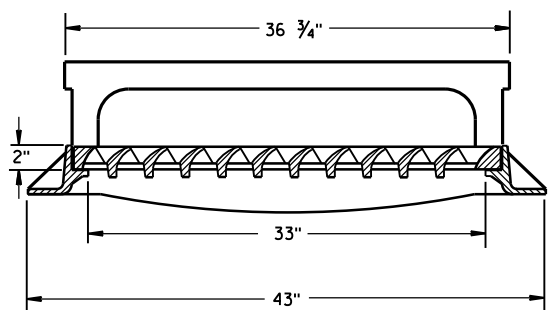
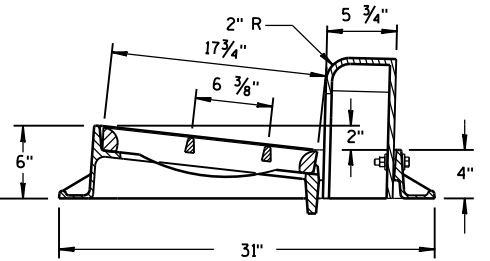
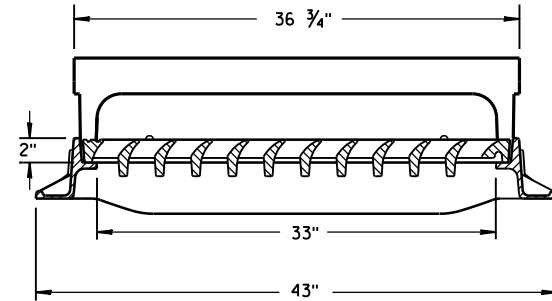
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-05B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-05C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15D03-05	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-07B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D15-05E	TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



**NOTE:  
GRATE IS REVERSIBLE.**

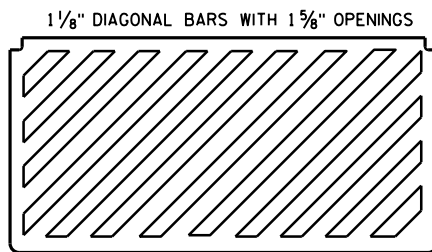


**NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"**

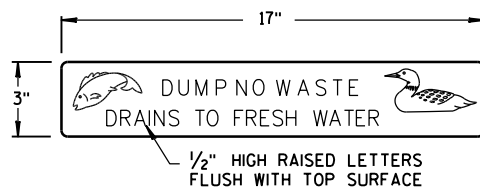


**TYPE "H"**

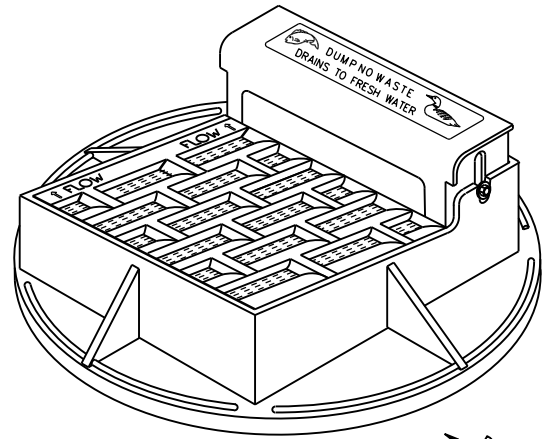
**NOTE: EITHER CASTING IS ACCEPTABLE**



**SPECIAL GRATE FOR  
TYPE "H" COVER**  
(MEASURES 35 1/4" X 17 3/4" X 2")  
(NOTED AS TYPE H-S ON DRAINAGE TABLE)

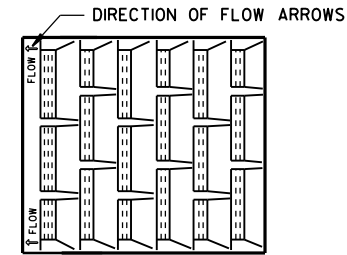


**LOGO DETAIL**

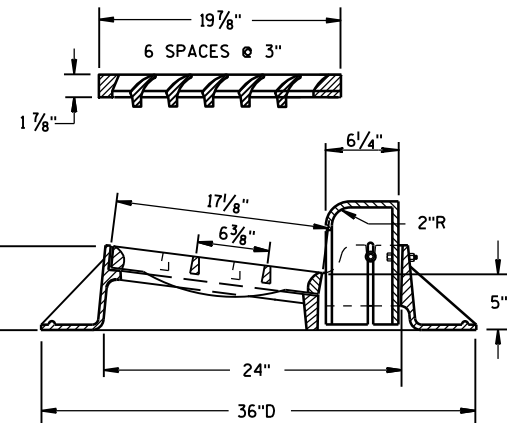
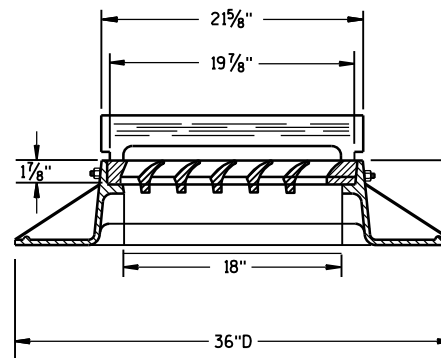


**NOTE: CURB BOX ADJUSTABLE 4" TO 9"**

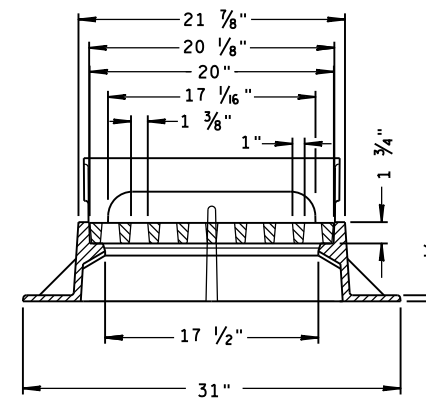
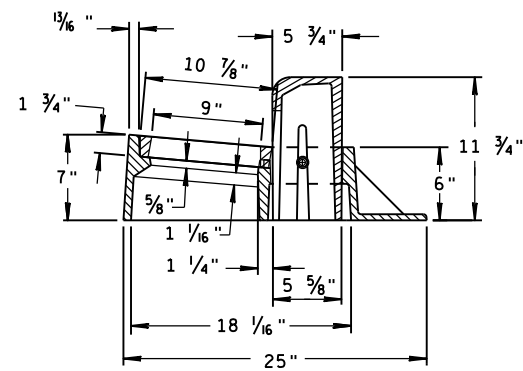
**NOTE:  
GRATE IS REVERSIBLE.**



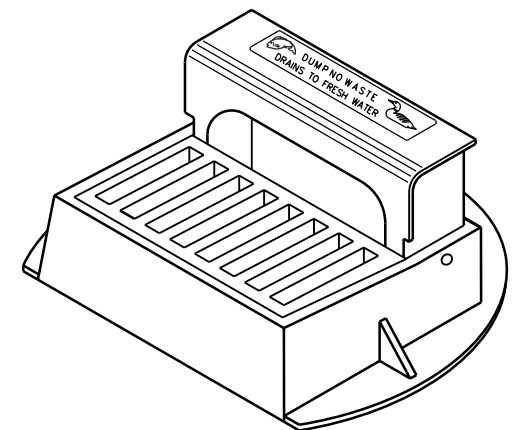
**SPECIAL GRATE FOR  
TYPE "A" COVER**  
(MEASURES 19 3/4" X 17" X 1 1/8")  
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



**TYPE "A"**



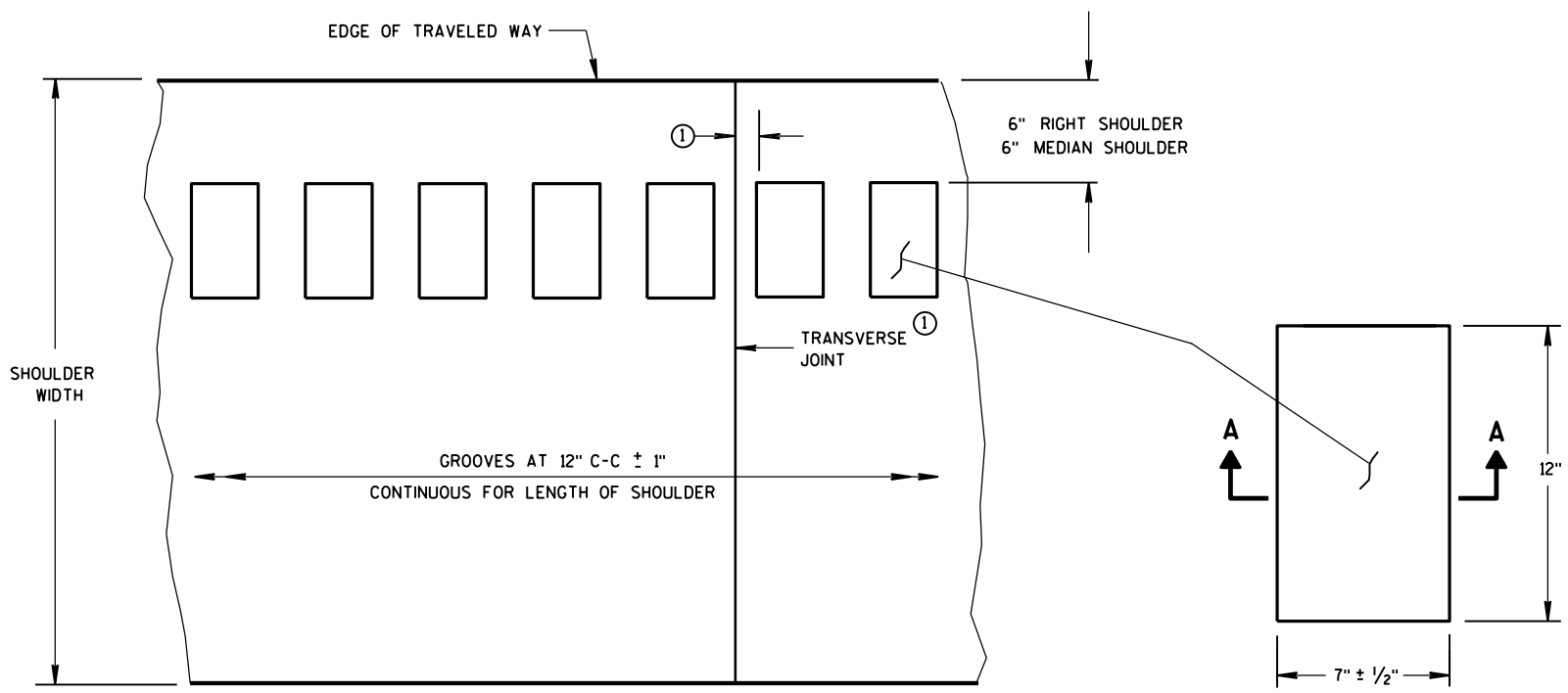
**TYPE "Z"**



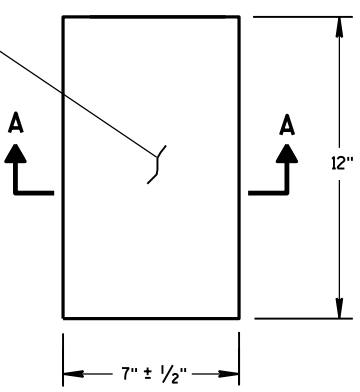
**INLET COVERS  
TYPE A, H, A-S, H-S & Z**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
11-27-13  
DATE  
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



PLAN VIEW  
SHOULDER WITH GROOVES



PLAN VIEW  
(SINGLE GROOVE)

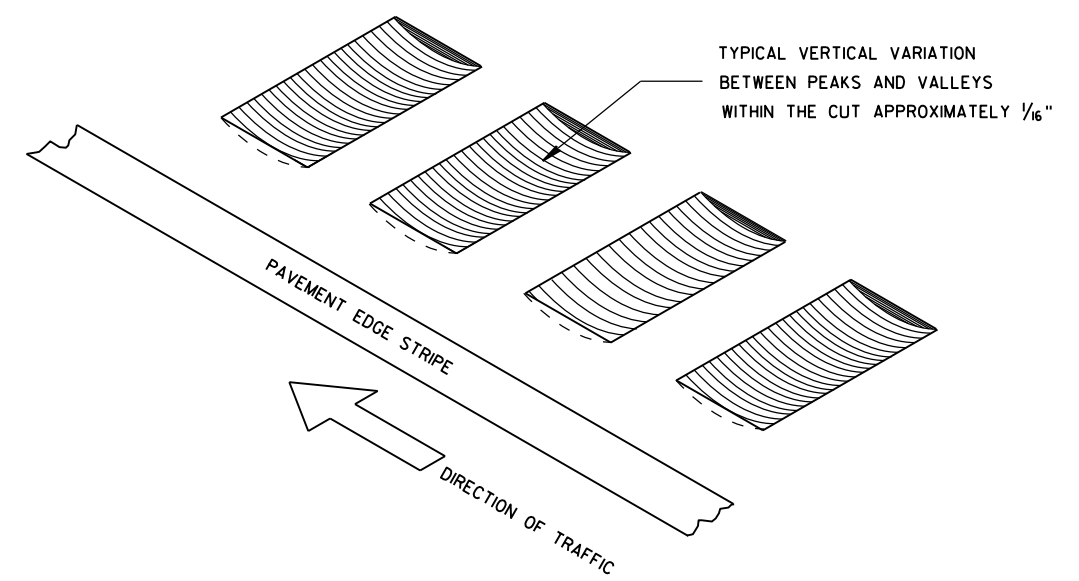
PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

GENERAL NOTES

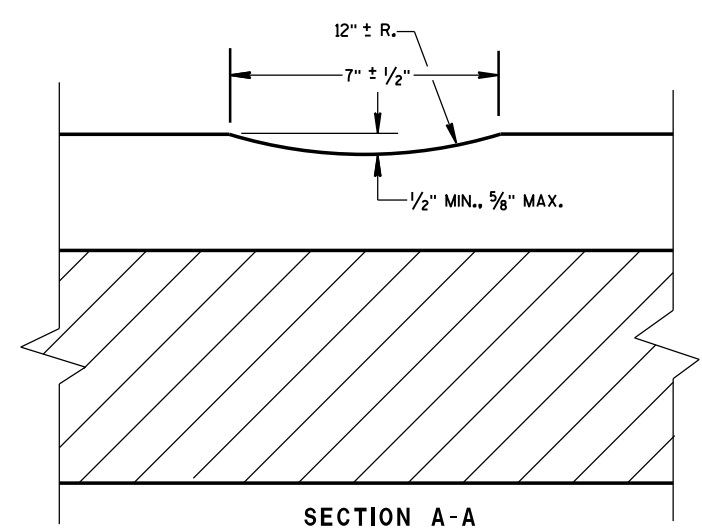
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

RUMBLE STRIPS ON EXPRESSWAYS  
DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

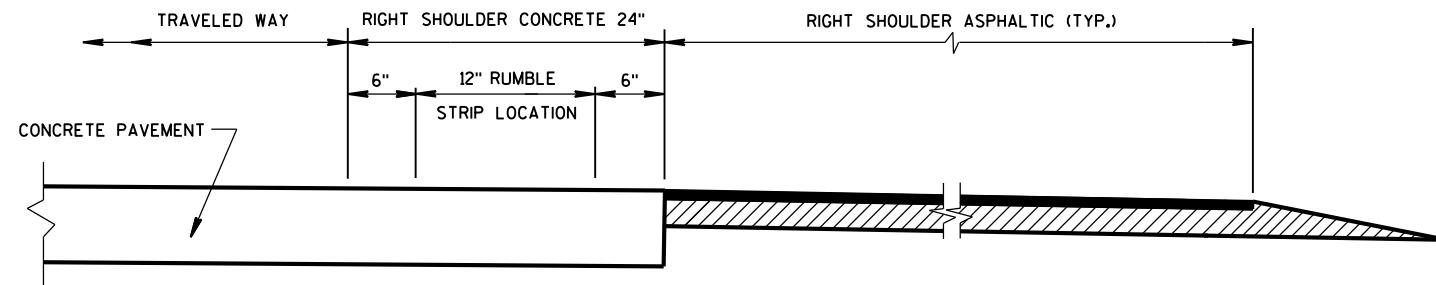
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



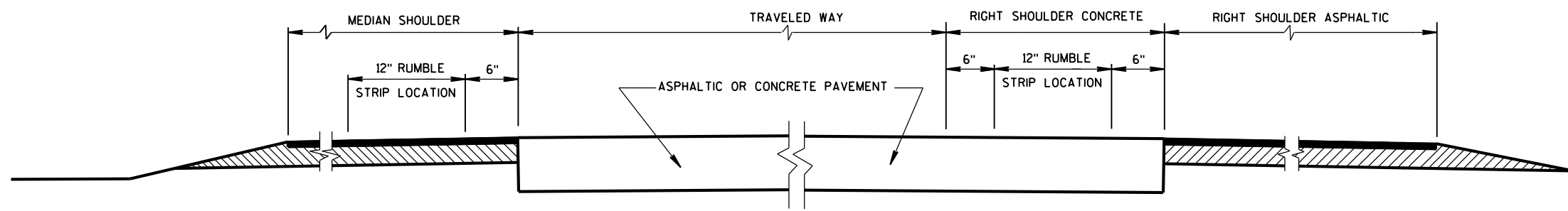
ISOMETRIC



SECTION A-A



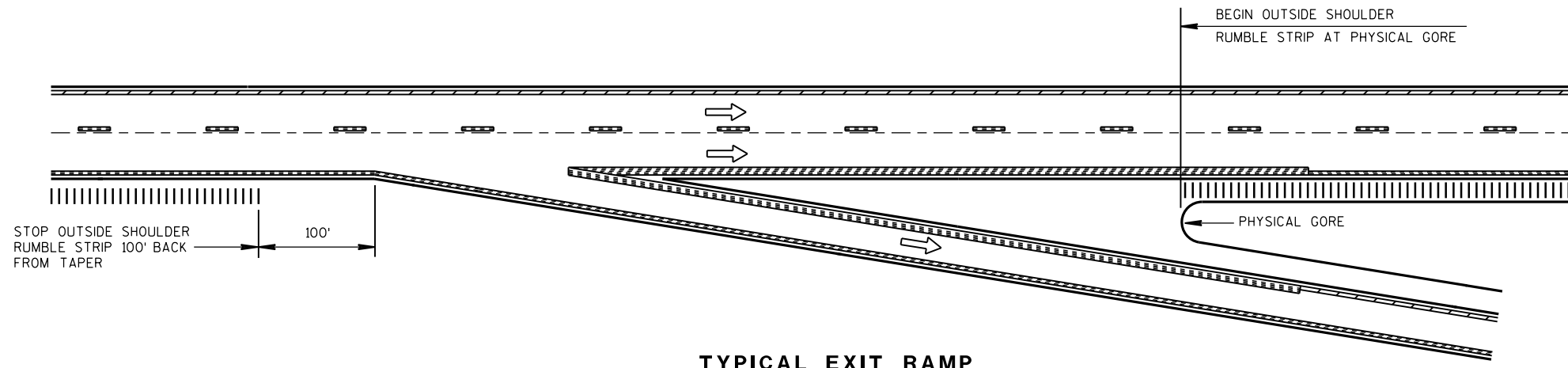
SECTION VIEW  
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW  
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS  
IN RURAL DIVIDED HIGHWAYS  
(ONE ROADWAY IS SHOWN)

SHOULDER RUMBLE STRIP,  
MILLING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

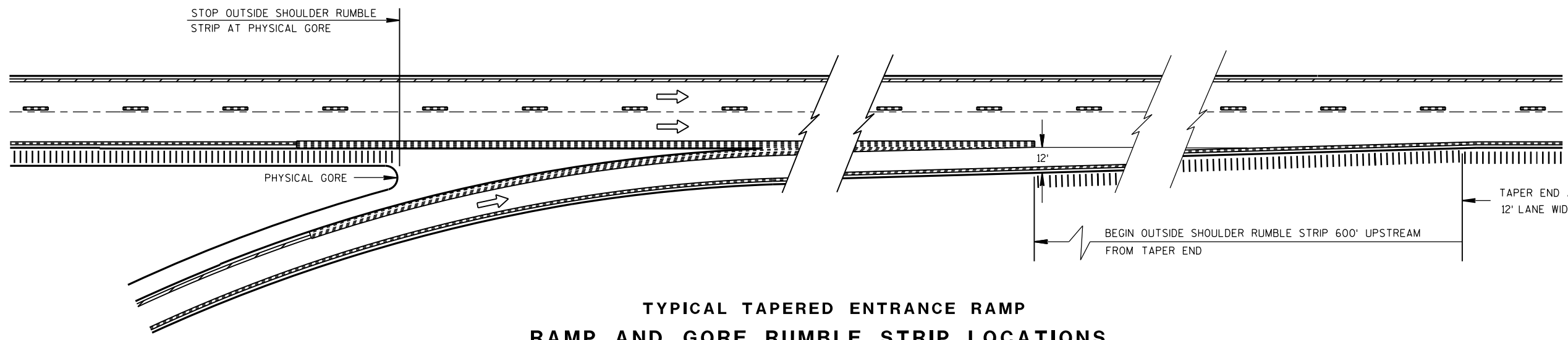


TYPICAL EXIT RAMP

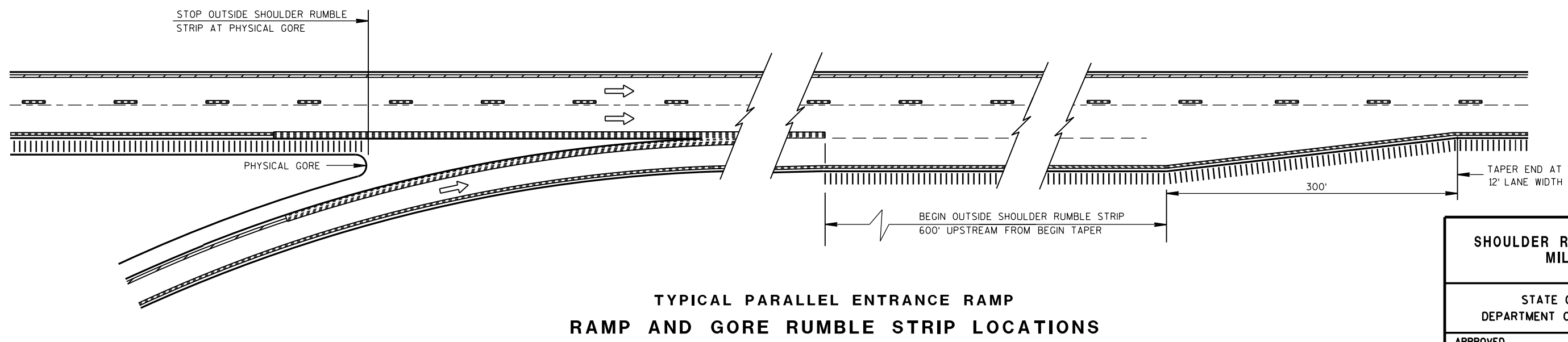
**NOTES:**

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMP, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.  
 PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:  
 ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP  
 RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP  
 RAMP AND GORE RUMBLE STRIP LOCATIONS

6

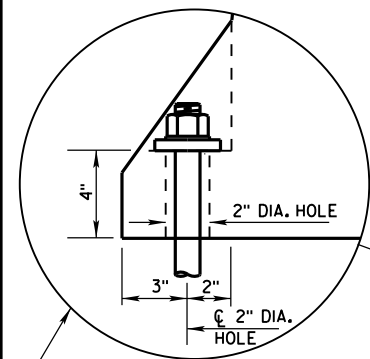
6

S.D.D. 13 A 5-5b

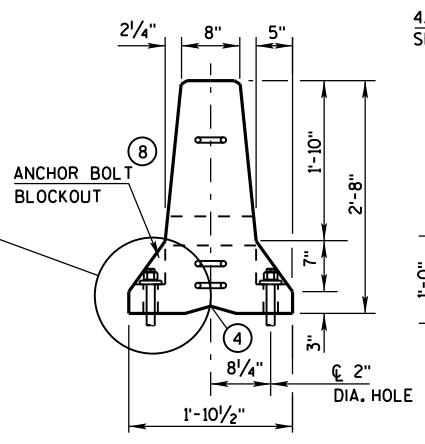
S.D.D. 13 A 5-5b

<b>SHOULDER RUMBLE STRIP, MILLING</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 12/17/2012 FHWA	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

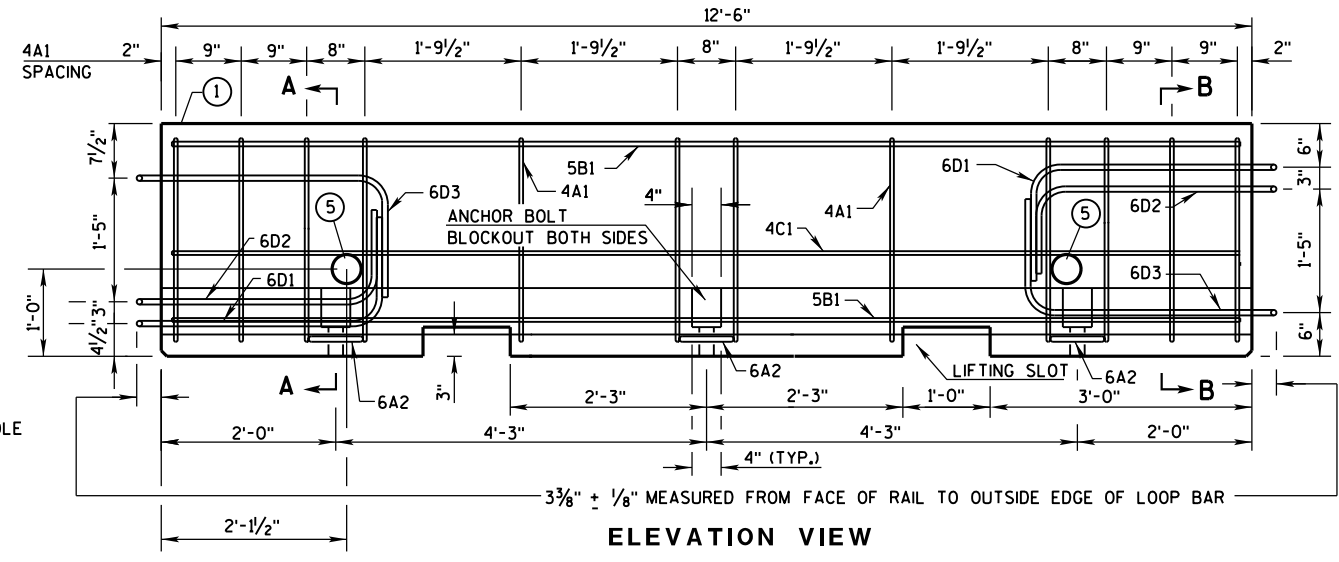




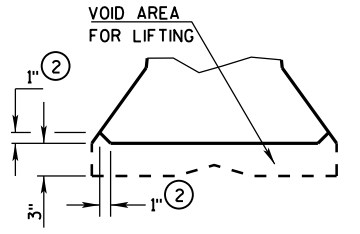
ANCHOR ON TRAFFIC SIDE (8) ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL)



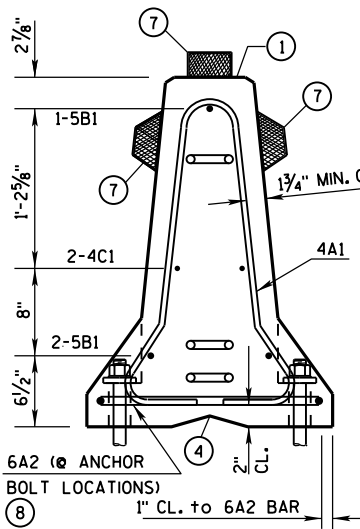
END VIEW



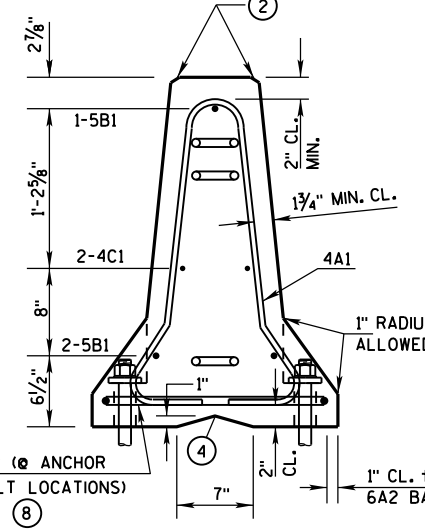
ELEVATION VIEW



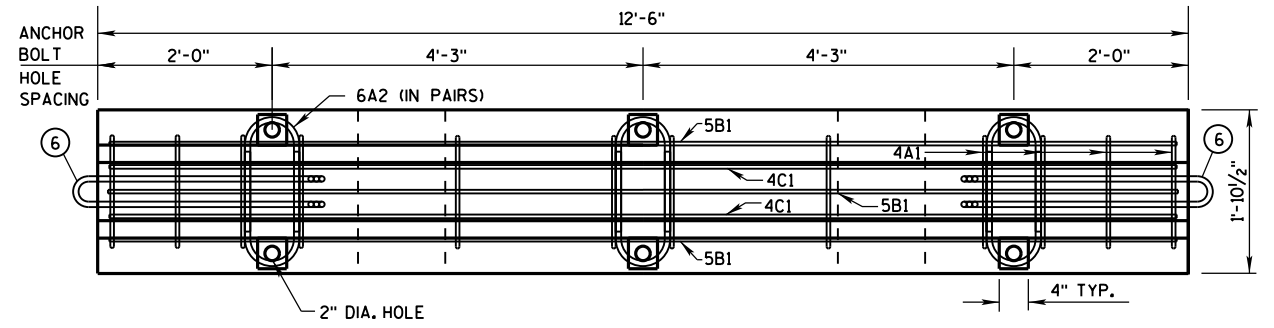
DETAIL "B" LIFTING SLOT DETAIL



SECTION A-A (STIRRUP PLACEMENT)



SECTION B-B (STIRRUP PLACEMENT)



PLAN VIEW

DETAILS OF BARRIER SECTION

GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(d) THRU 14B7-15(i).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

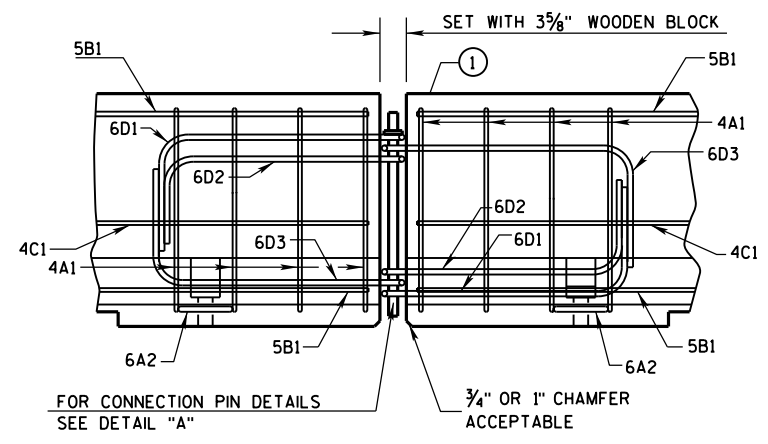
CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

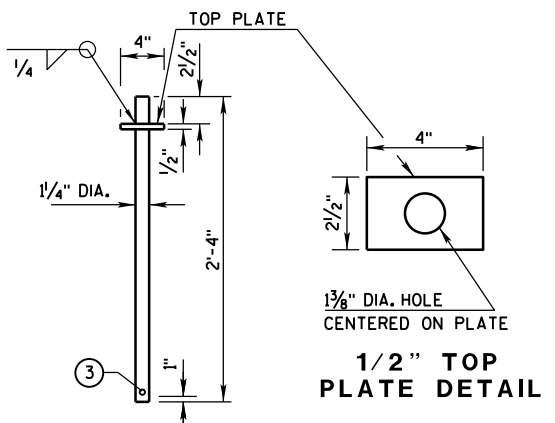
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- 1 MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
  - a. TYPE: WICBTP
  - b. MANUFACTURER
  - c. DATE MANUFACTURED (MONTH AND YEAR)
- 2 1" CHAMFER TO PREVENT SPALLING.
- 3 A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- 4 "V" NOTCH IS OPTIONAL.
- 5 THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- 6 NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- 7 USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURERS INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- 8 SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- 9 1" CHAMFER OPTIONAL.

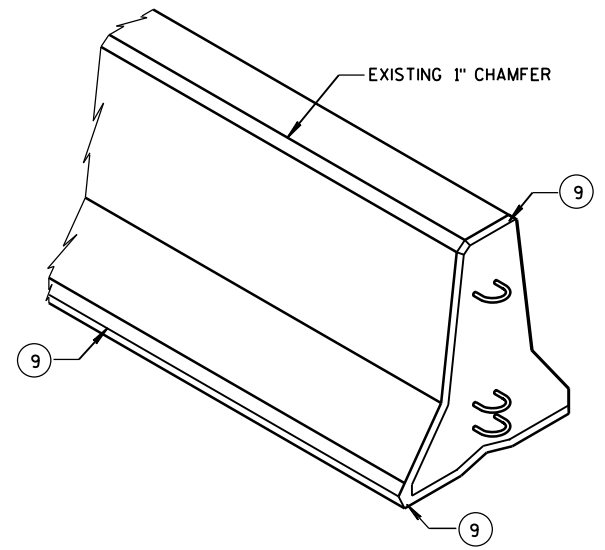
f'c = 4,000 psi



DETAILS OF BARRIER CONNECTION

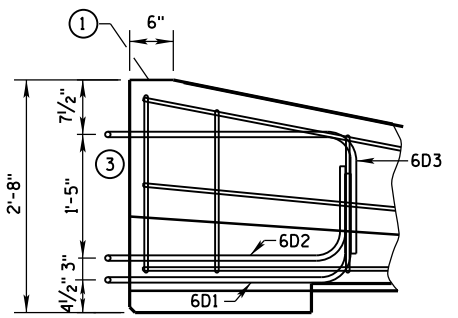
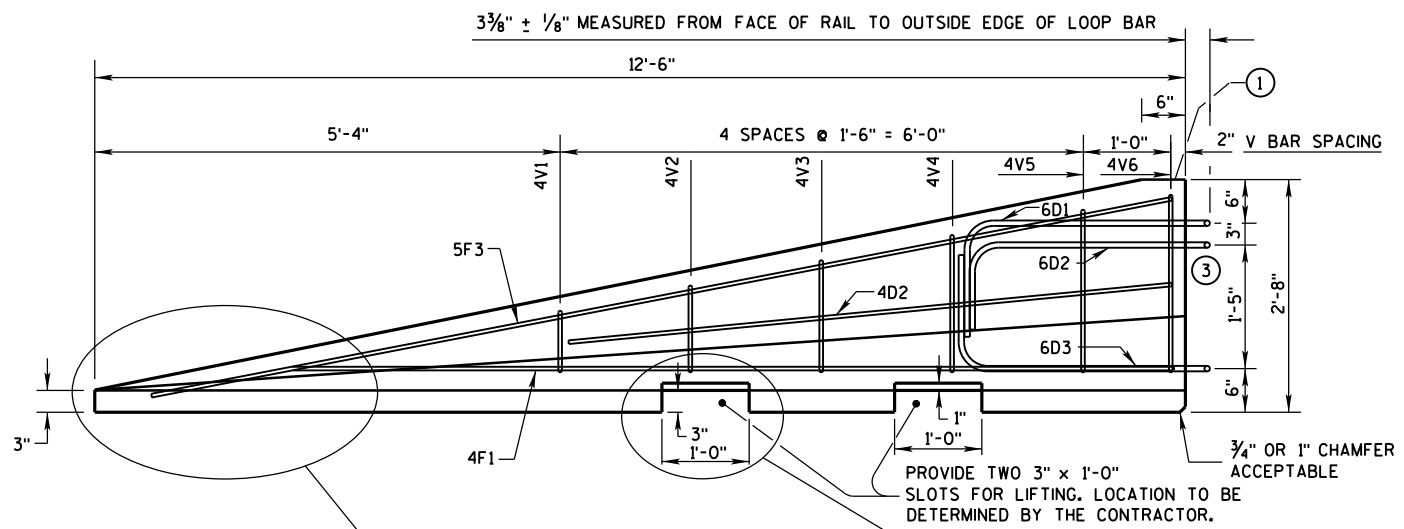


DETAIL "A" CONNECTION PIN (A36 STEEL (10.9 LB EACH))



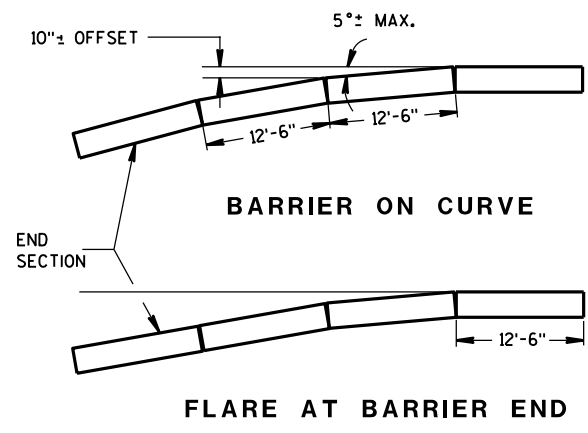
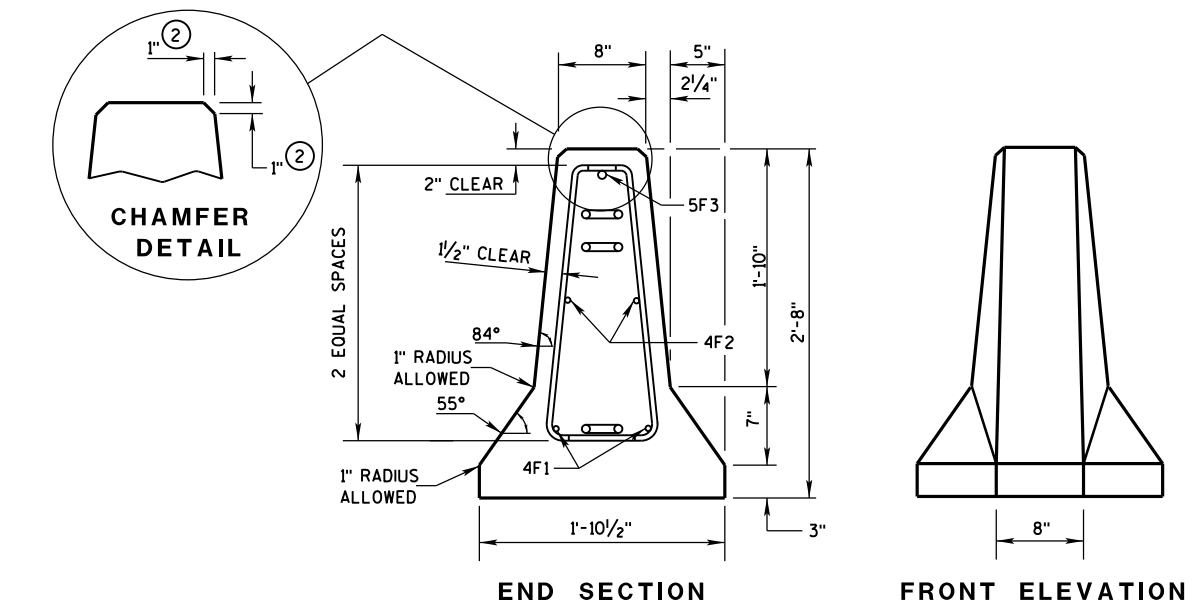
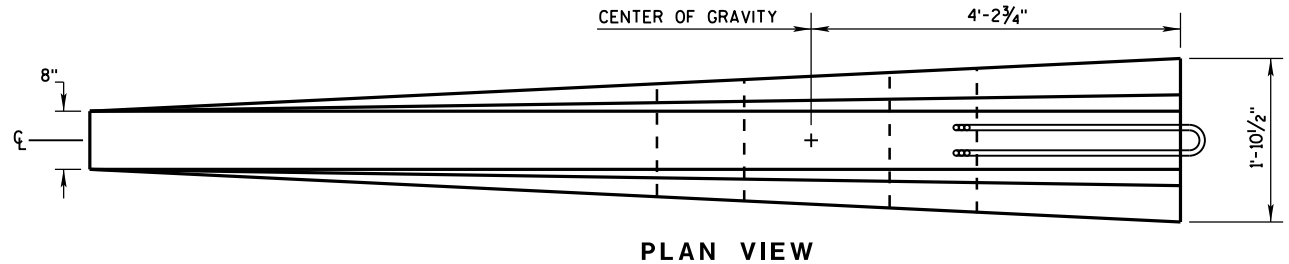
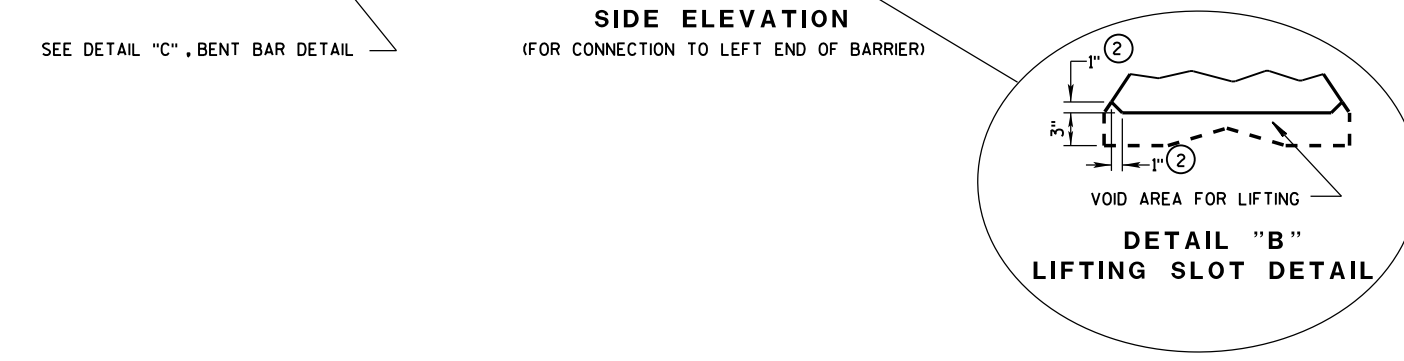
CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**GENERAL NOTES**

- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
  - a. TYPE WICBTP
  - b. MANUFACTURER
  - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

**DETAILS OF BARRIER TAPER SECTION**

CONCRETE BARRIER  
 TEMPORARY PRECAST, 12'-6"  
 STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

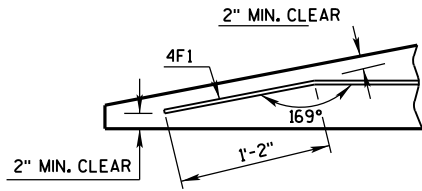
① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

**BARRIER TAPER SECTION  
BILL OF MATERIALS**  
(PER 12'-6" BARRIER TAPER SECTION)

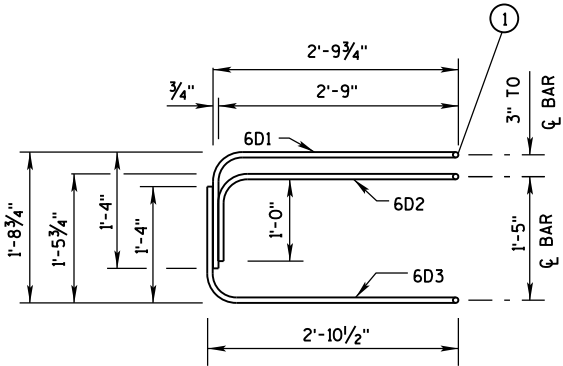
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"

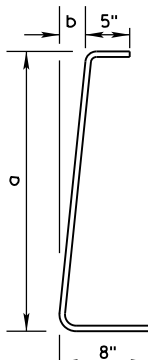
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



**DETAIL "C"  
BENT BAR DETAIL**



**ELEVATION  
LOOP BAR ASSEMBLY**



BAR	a	b
V1	10"	1"
V2	1'-1"	1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

**4V BARS**  
2 AT EACH SIZE REQUIRED FOR STIRRUP ASSEMBLY

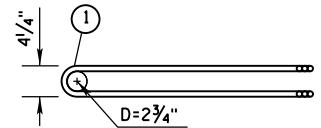
**TAPER BARRIER SECTION**

**BARRIER SECTION  
BILL OF MATERIALS**  
(PER 12'-6" BARRIER SECTION)

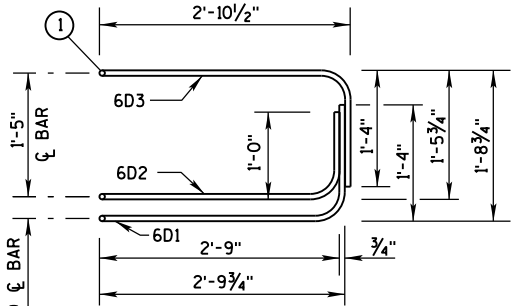
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"

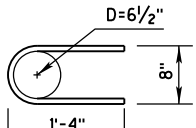
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



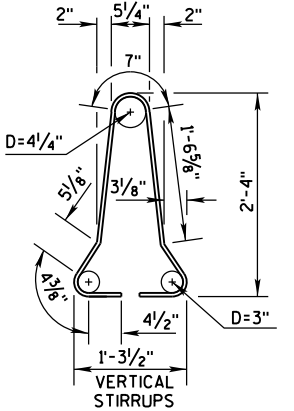
**PLAN VIEW  
LOOP BAR ASSEMBLY**  
(MARKED END SHOWN, INVERT FOR OTHER END)



**ELEVATION VIEW**



**6A2**

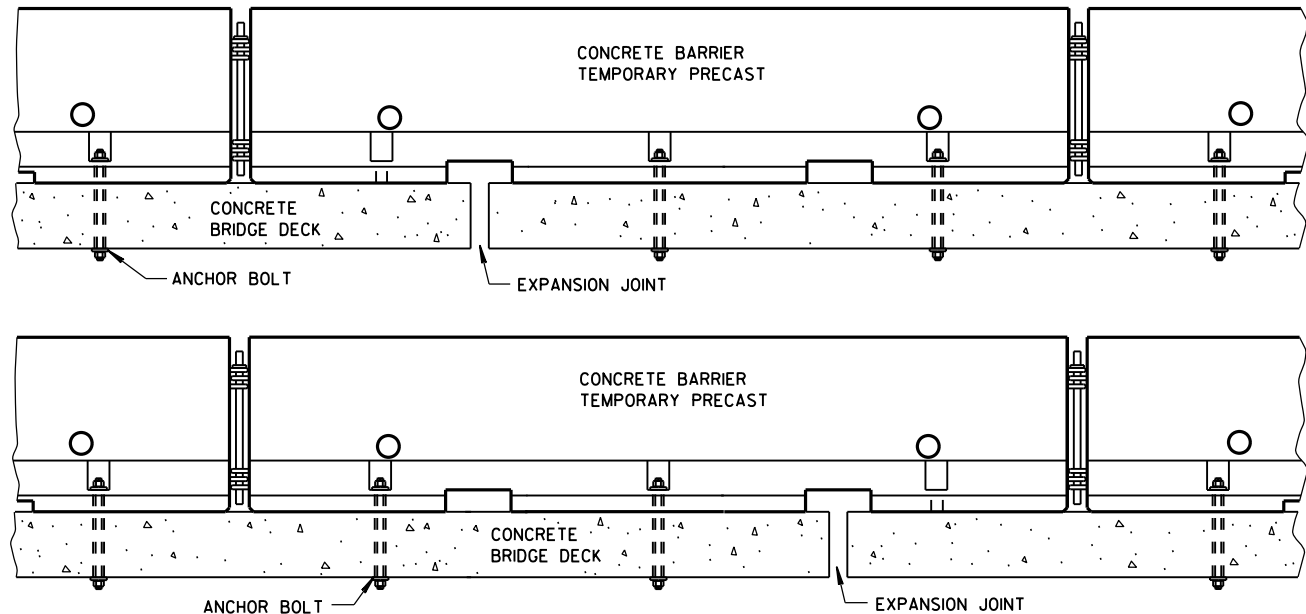


**4A1**

**BARRIER SECTION**

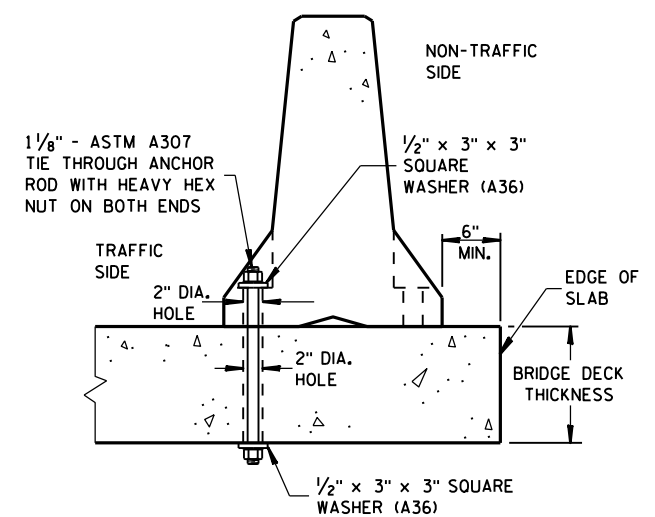
CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



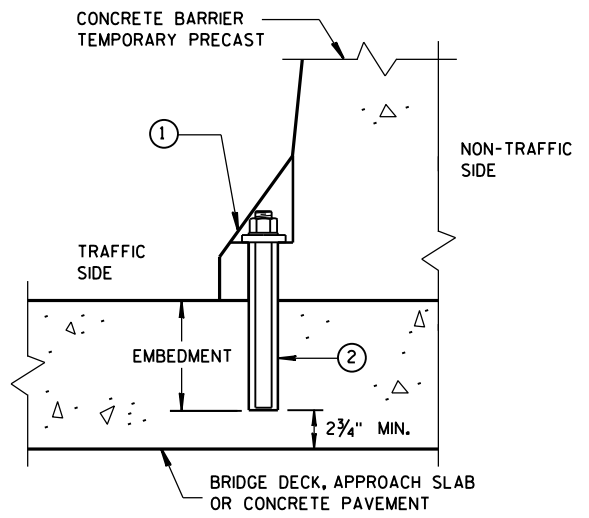
**TREATMENT AT BRIDGE DECK EXPANSION JOINTS**

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



**THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK**

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



**REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT**

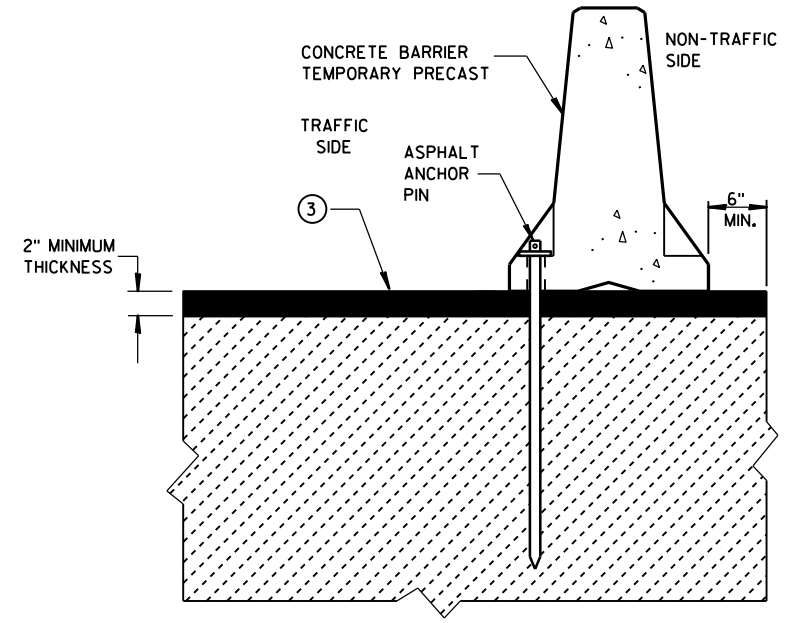
(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

**GENERAL NOTES**

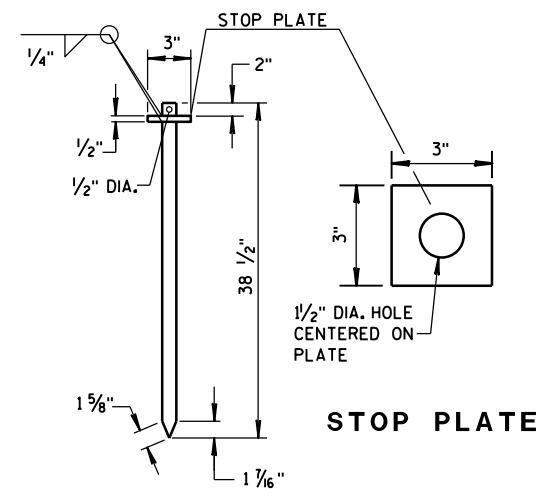
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

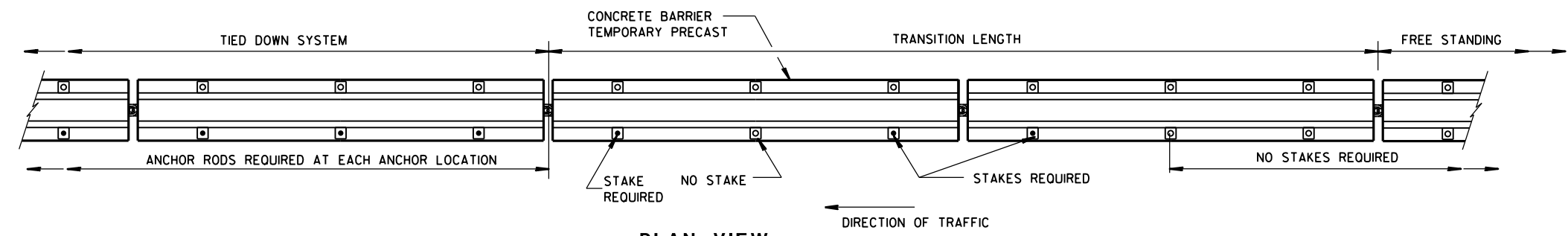
- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



**STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE**



**ASPHALT ANCHOR PIN (ASTM A36 STEEL)**



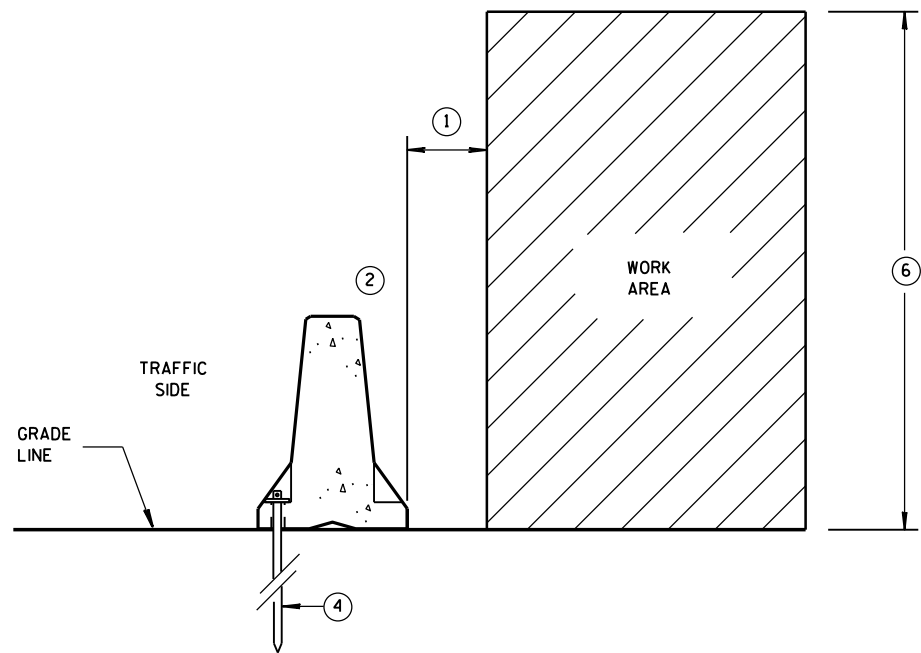
**FREE STANDING TRANSITION TO TIED-DOWN SYSTEM**

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

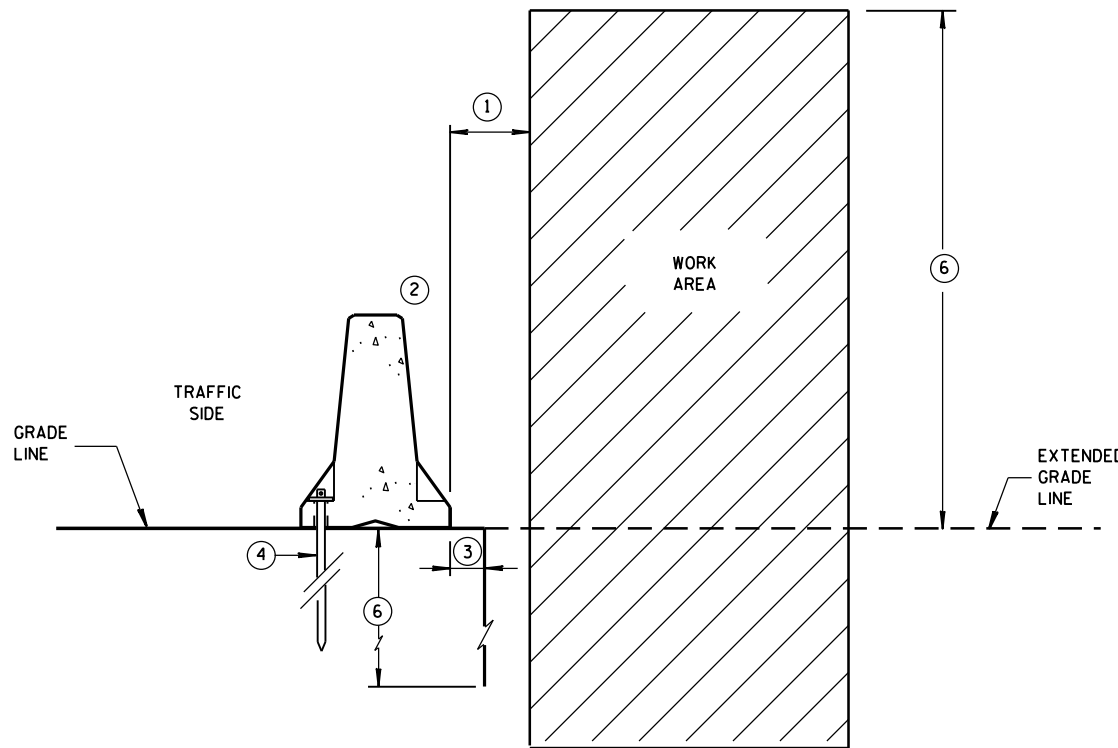
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"  
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

- ① WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
- ② OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
- ③ SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
- ④ SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
- ⑤ DEPTH OF 3 FEET OR MORE.
- ⑥ Y = 6'-6".

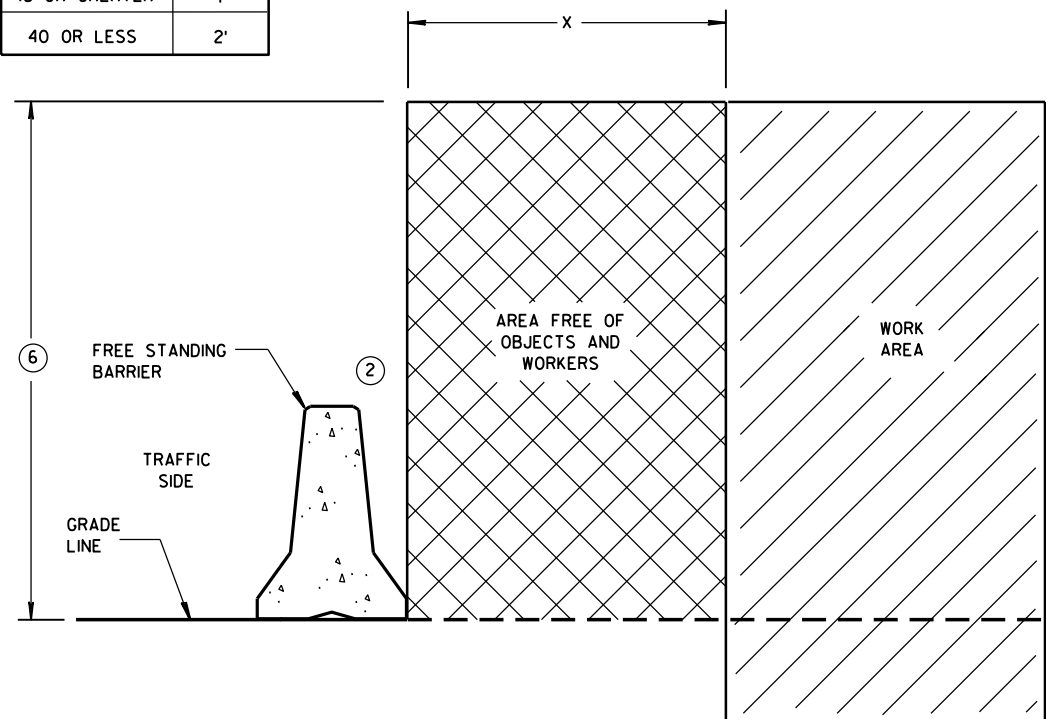


**ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE**

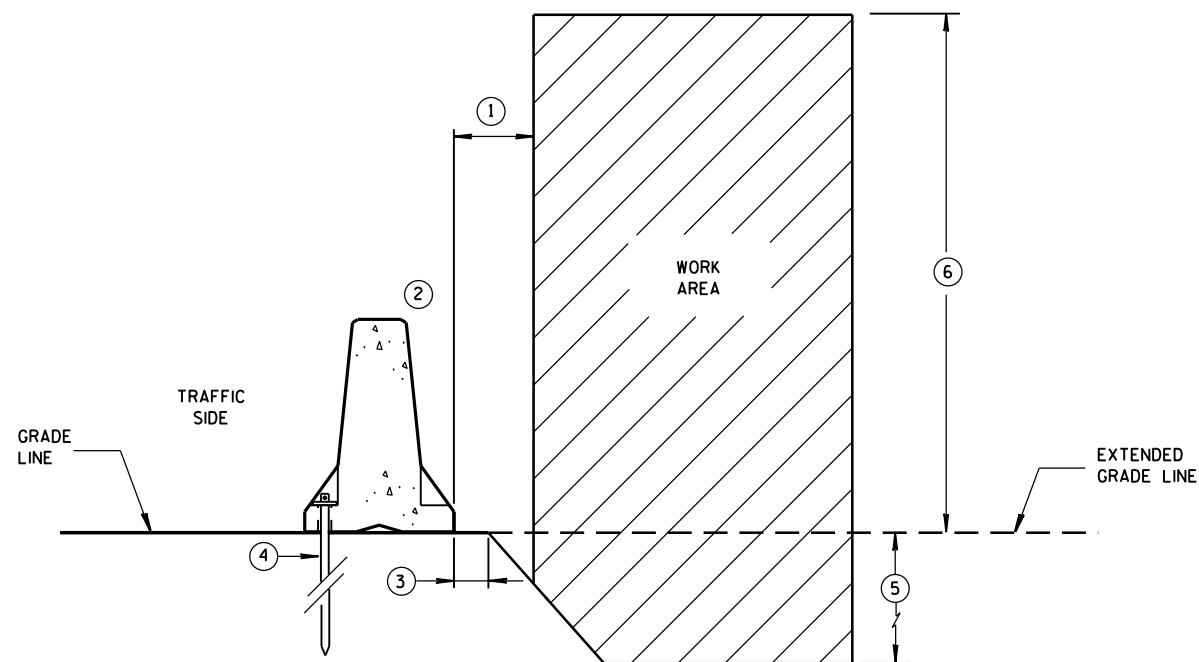


**ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS**

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



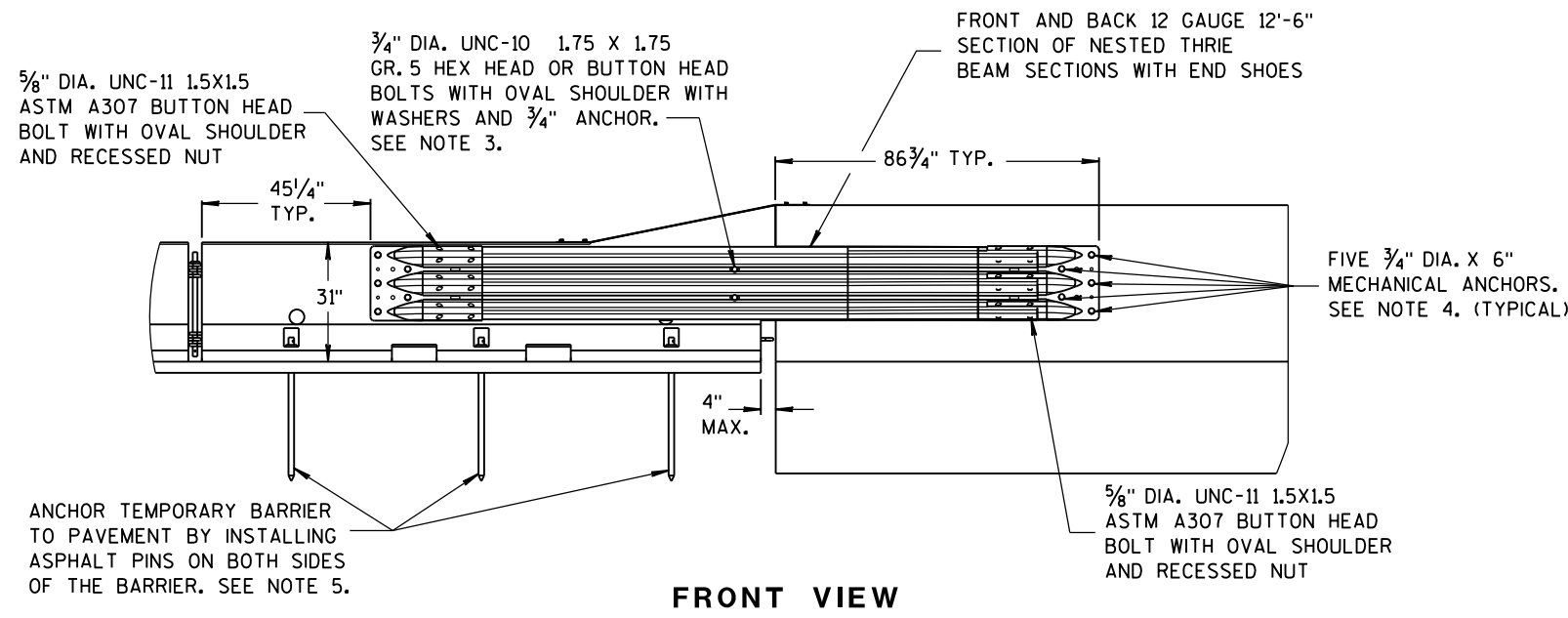
**FREE STANDING BARRIER SPACE REQUIREMENTS**



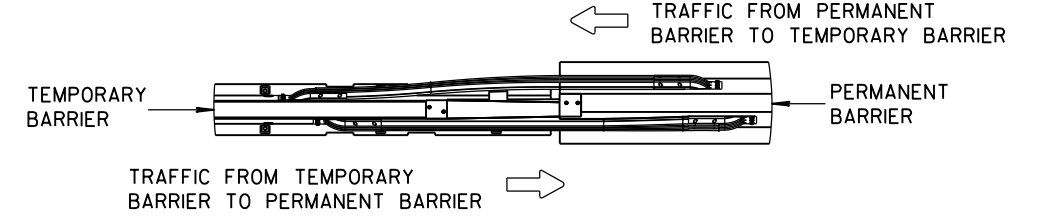
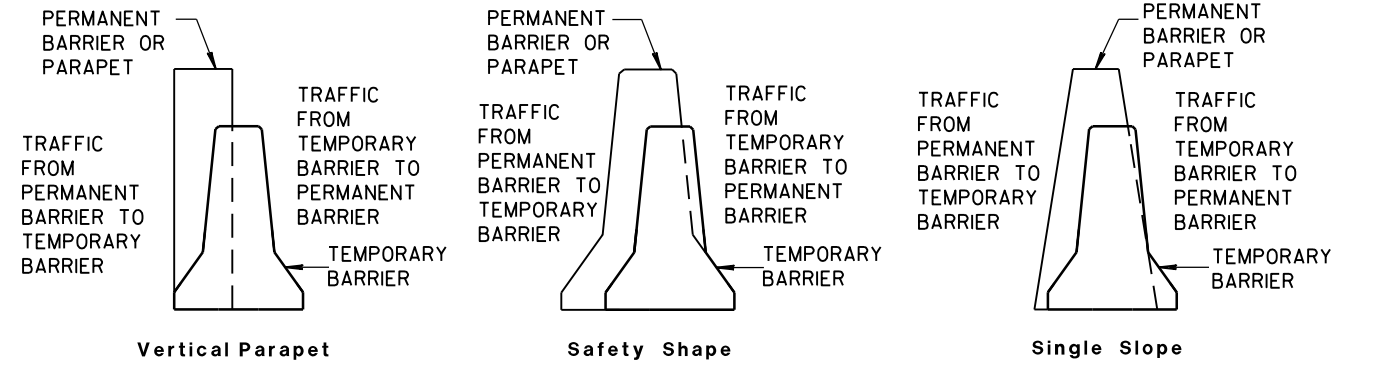
**ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES**

**CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

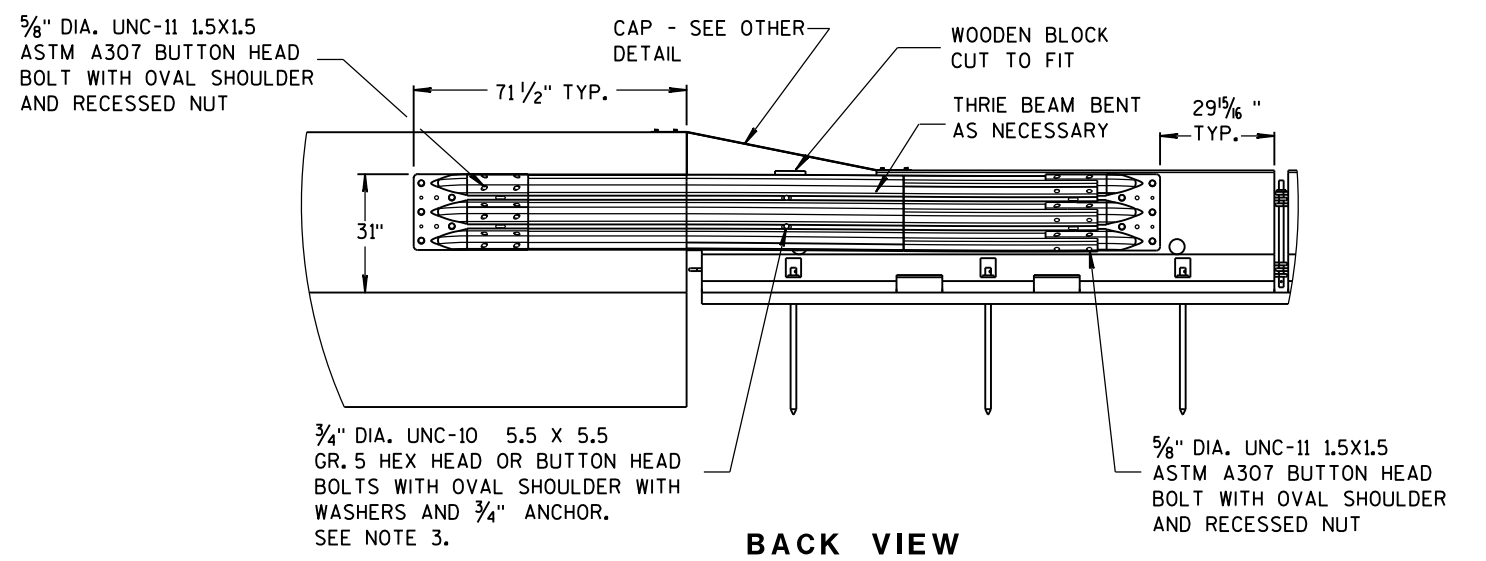


**FRONT VIEW**

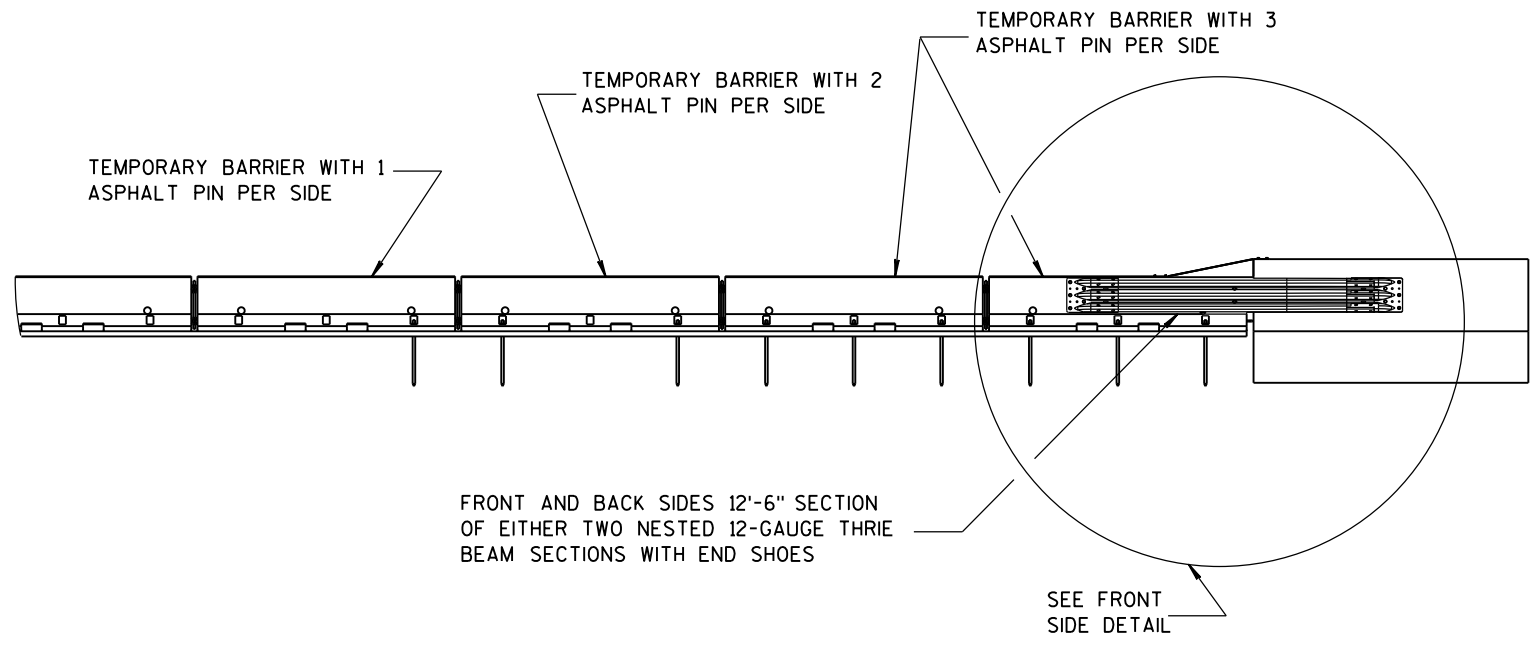


**TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM**

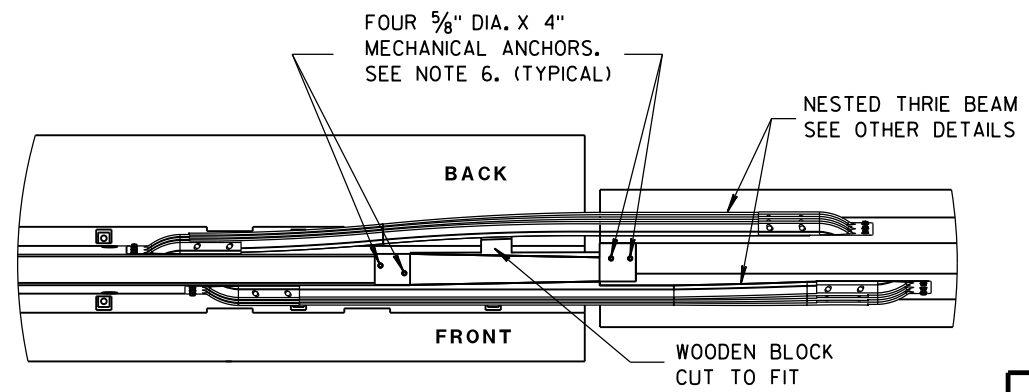
- NOTES**
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
  2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
  3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
  4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
  5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
  6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



**BACK VIEW**



**FRONT VIEW**



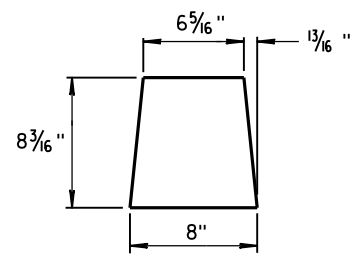
**PLAN VIEW**

**BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM**

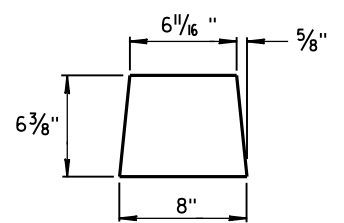
**CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

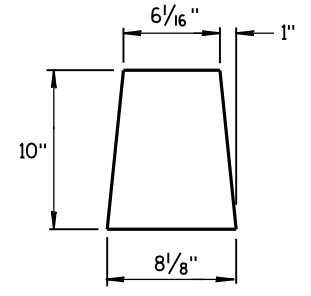




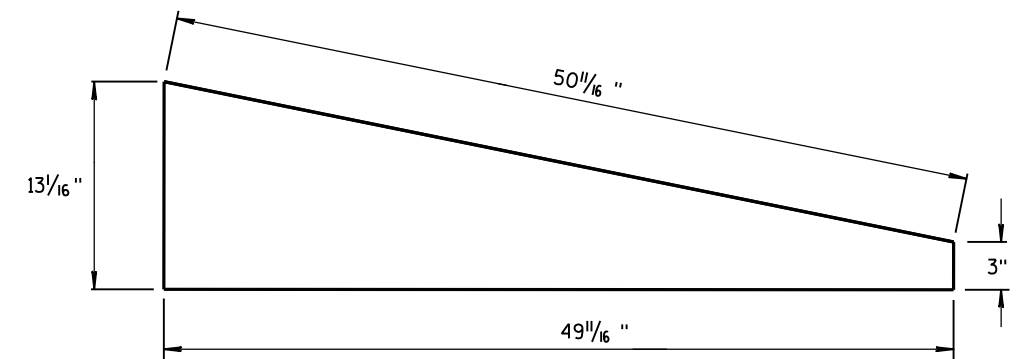
**GUSSET 1**



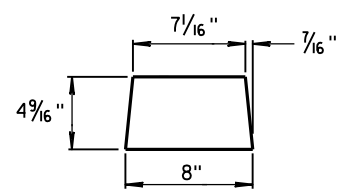
**GUSSET 2**



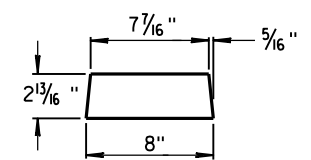
**END PLATE**



**SIDE PLATE**

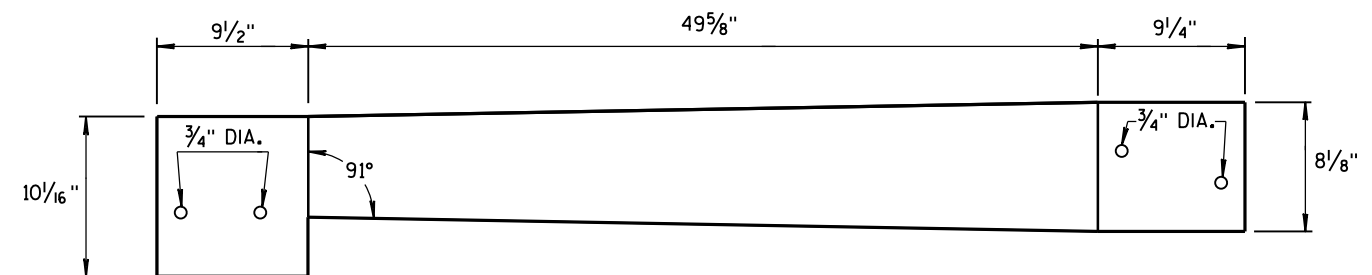


**GUSSET 3**

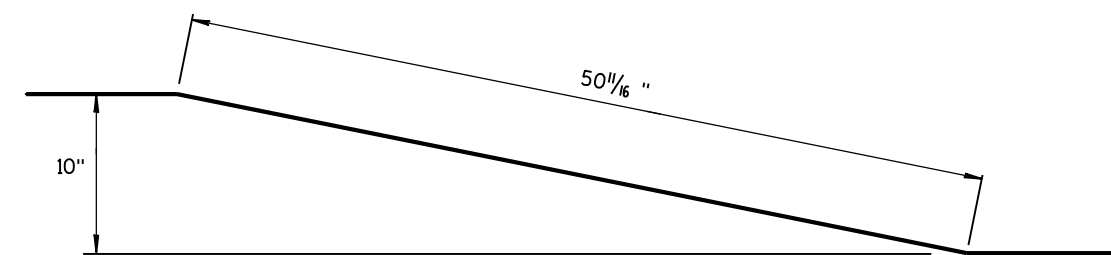


**GUSSET 4**

**GUSSETS**

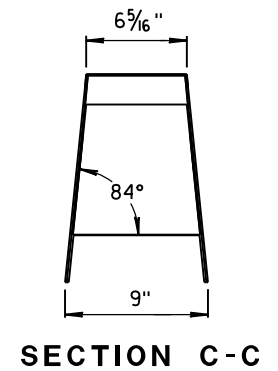
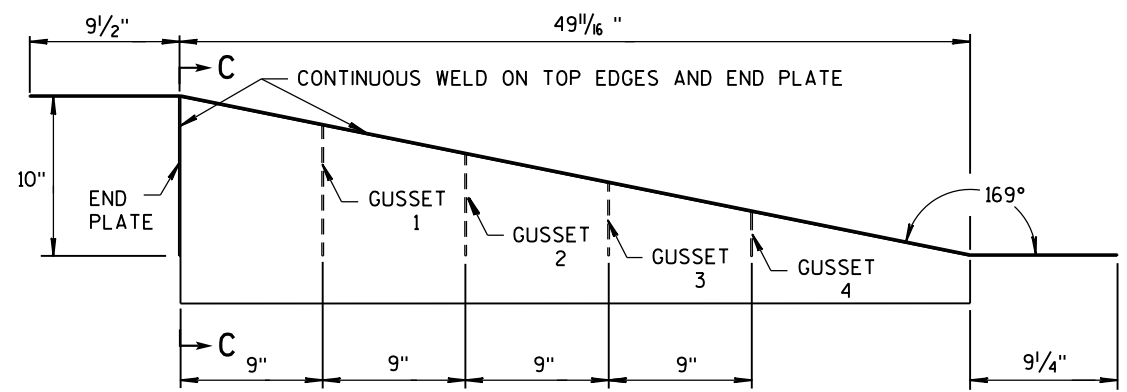
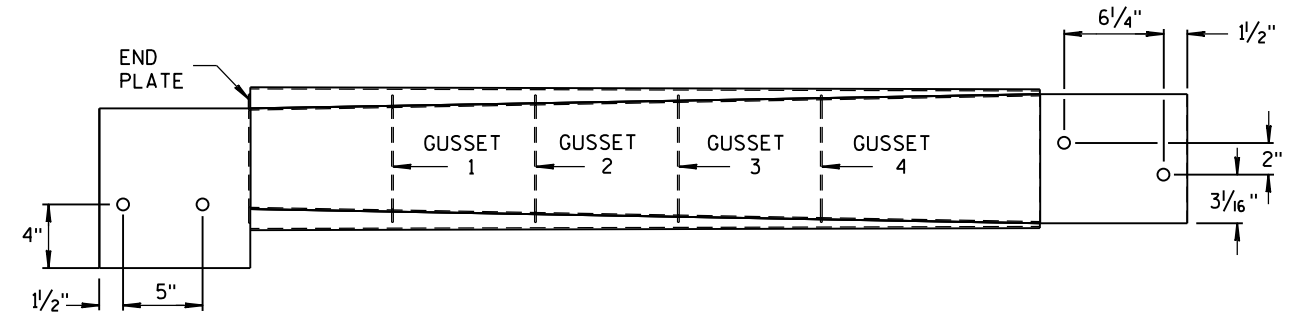


**TOP PLATE**



**SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



**SECTION C-C**

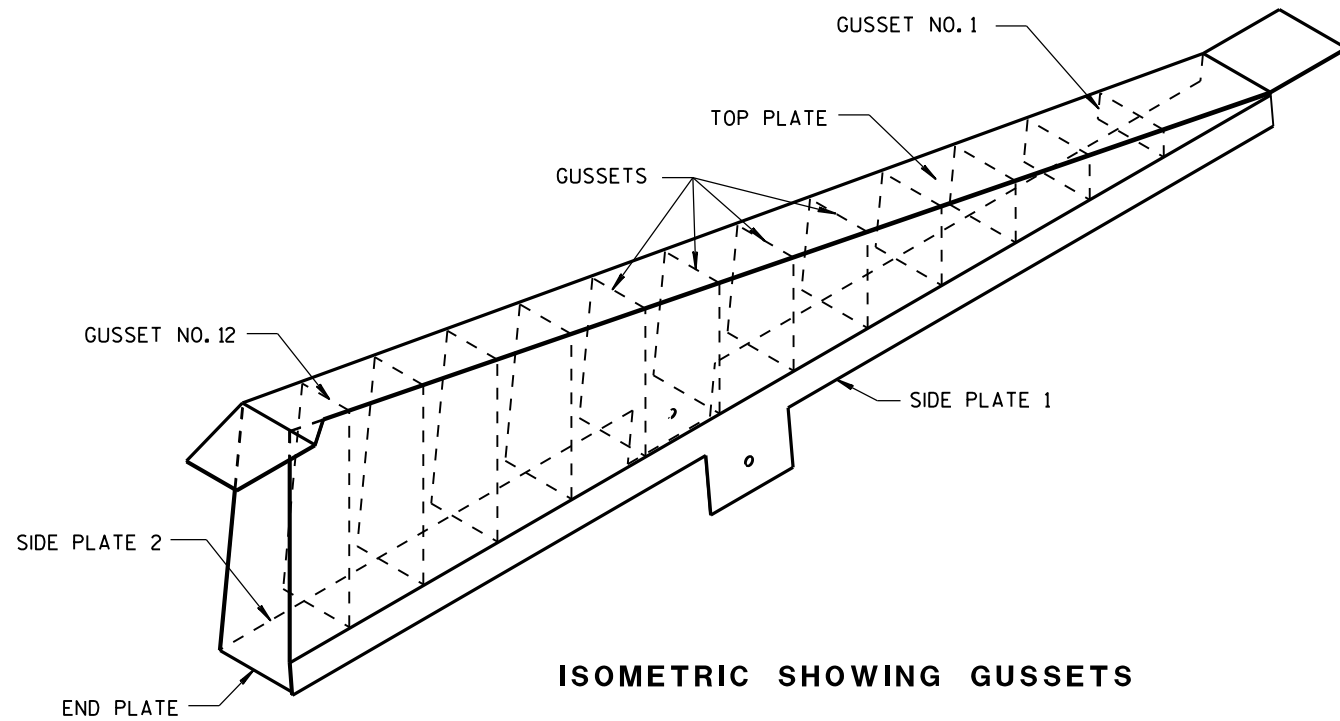
**NOTES**

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

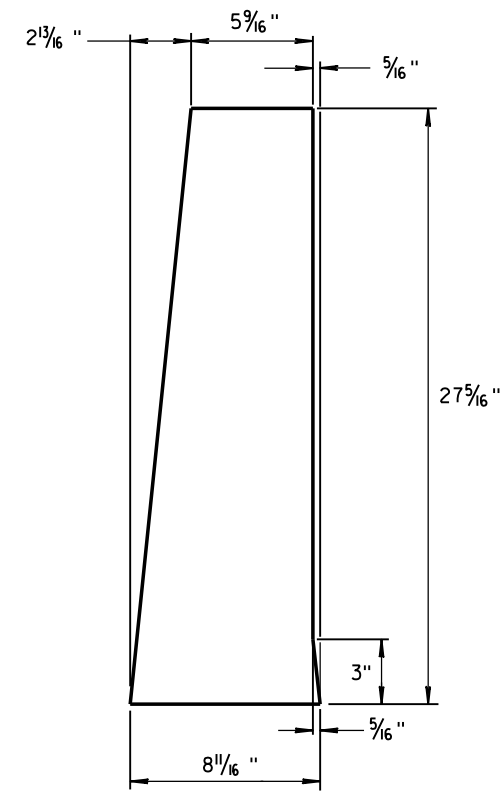
**CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

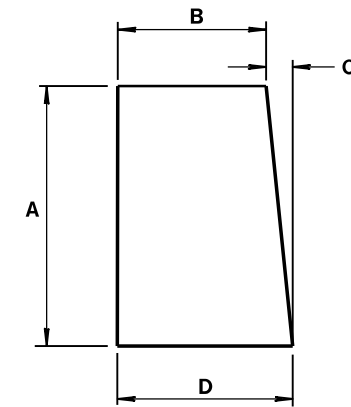


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



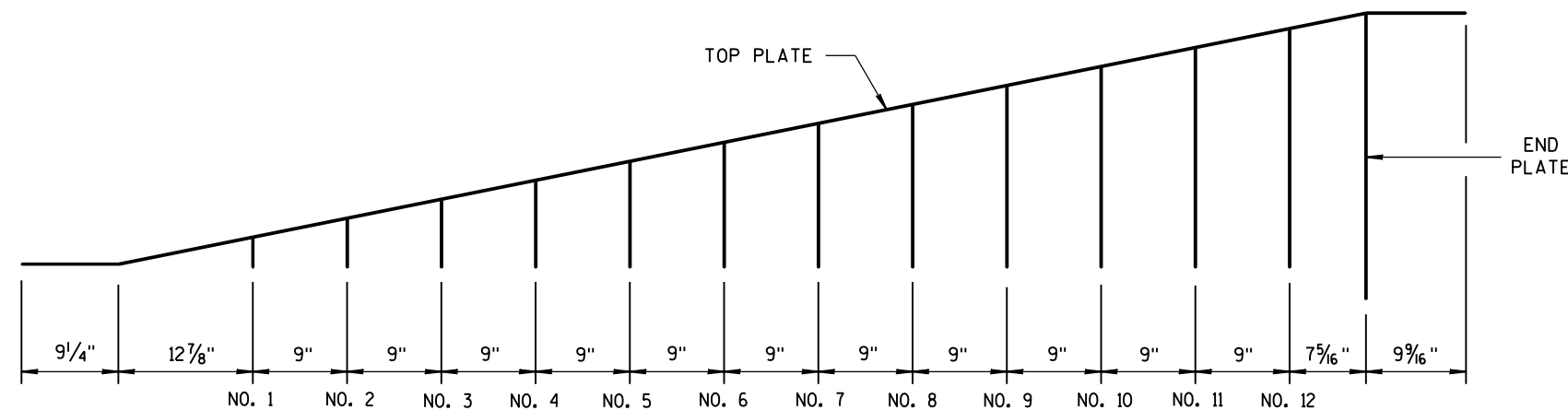
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 7/16 "	1/2"	8
3	6 1/2"	7 3/8 "	1 1/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 3/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 1/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.

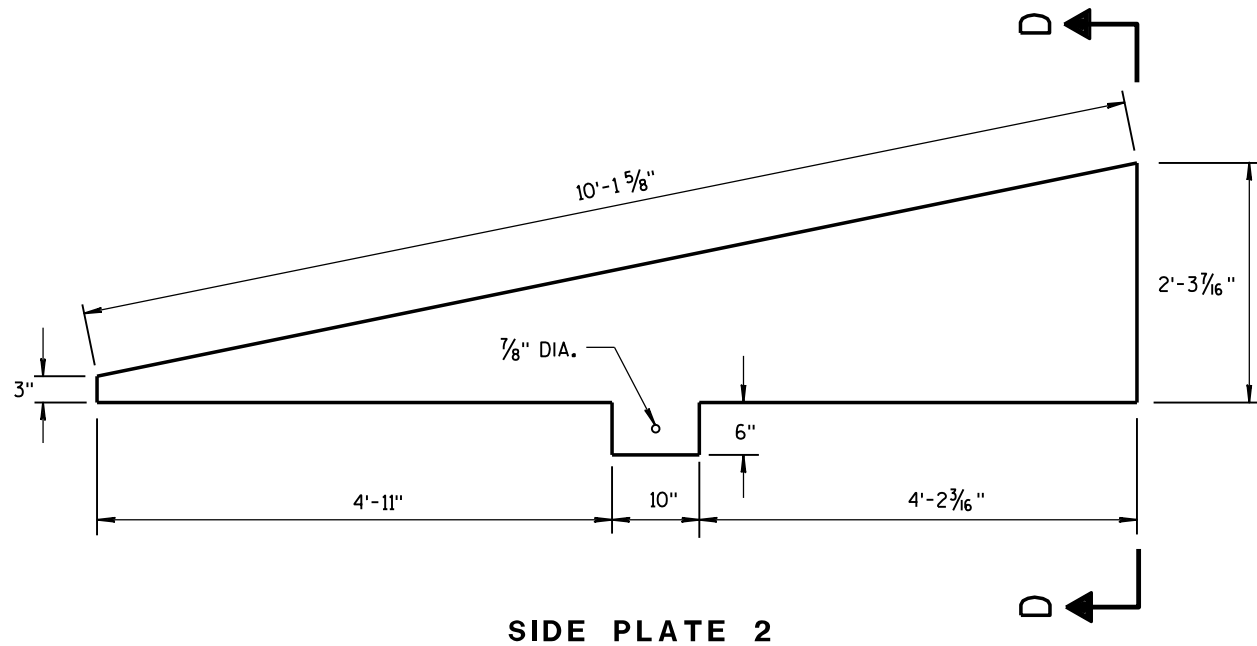


GUSSET LOCATION

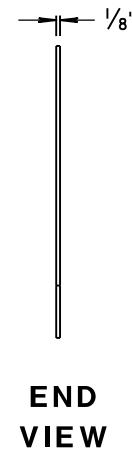
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

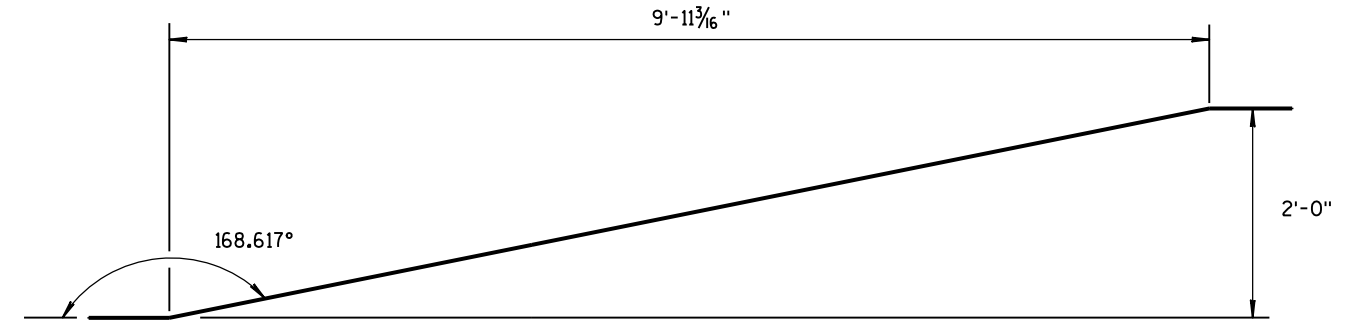
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



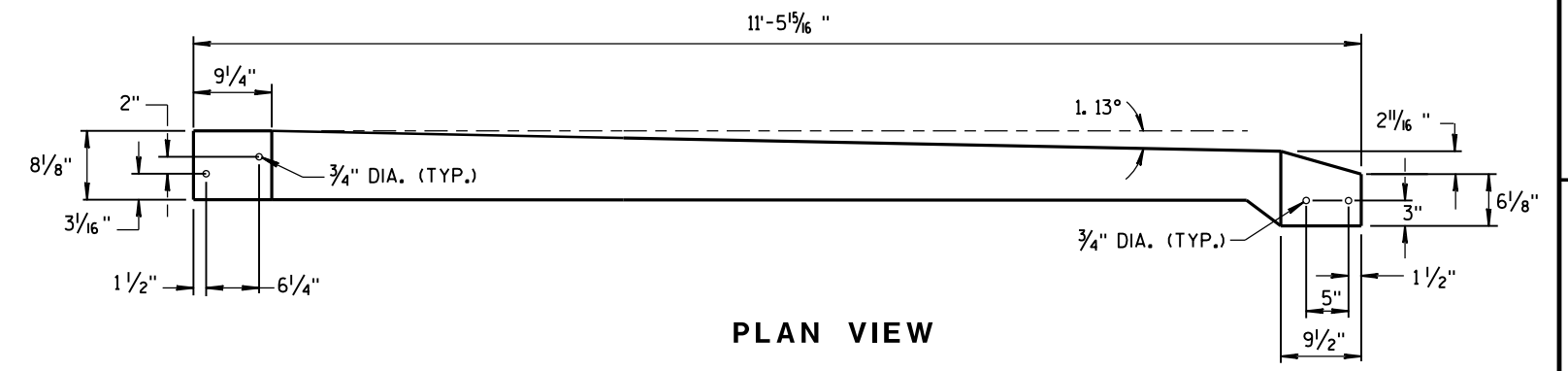
**SIDE PLATE 2**



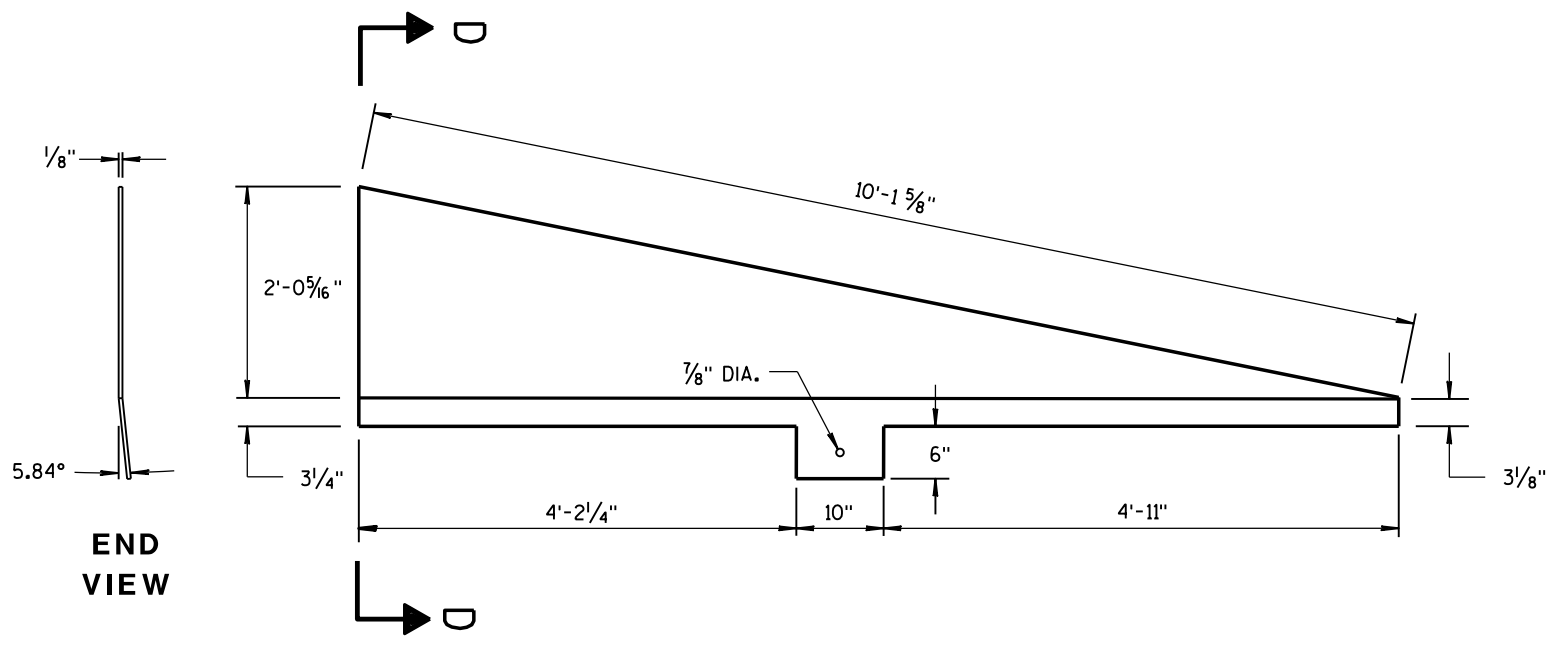
**END VIEW**



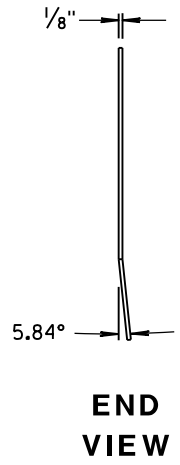
**SIDE VIEW  
TOP PLATE**



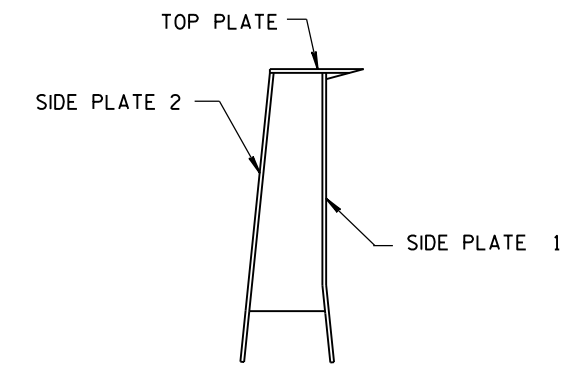
**PLAN VIEW  
TOP PLATE**



**SIDE PLATE 1**



**END VIEW**



**SECTION D-D**

**CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER**

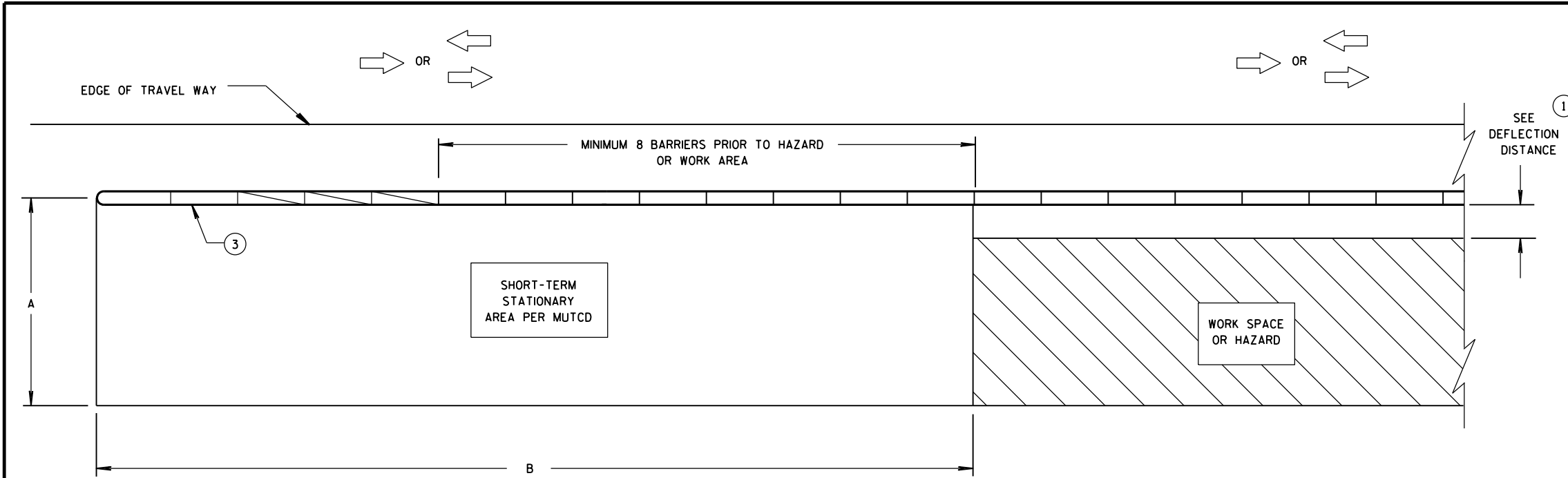
<b>CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARD DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

6

S.D.D. 14 B 7-15i

S.D.D. 14 B 7-15i



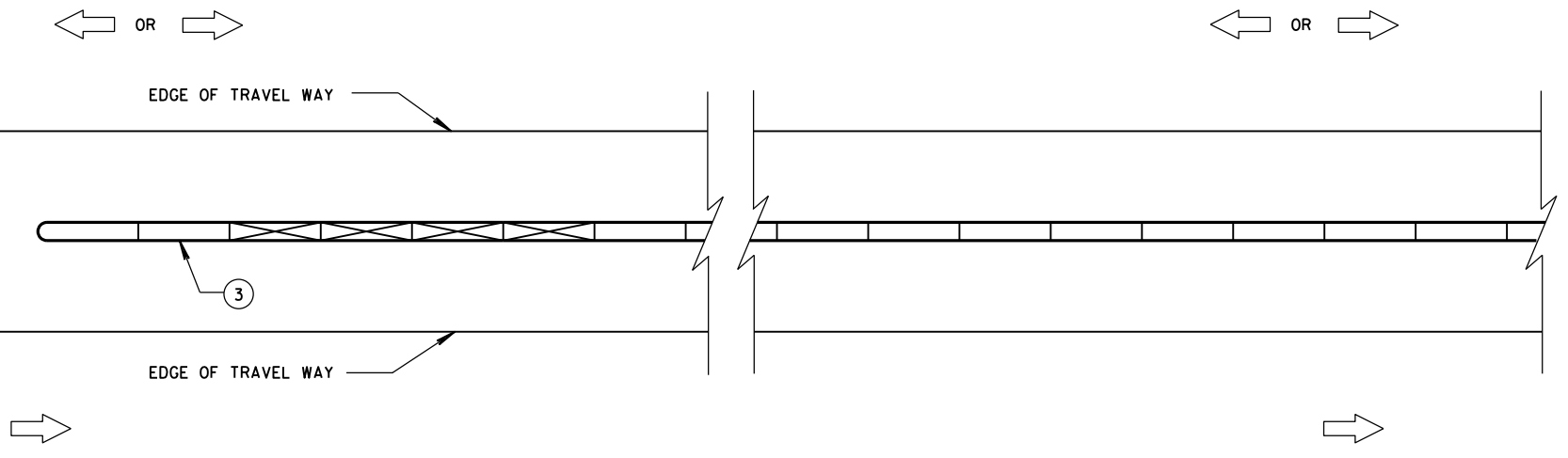
**DIMENSION A TABLE** <sup>②</sup>

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER  
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER**

**DIMENSION B TABLE** <sup>②</sup>

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER  
INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER**

**LEGEND**

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**GENERAL NOTES**

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

**CRASH CUSHION/SAND BARREL  
ARRAY AND OTHER TEMPORARY  
BARRIER LAYOUT DETAILS**

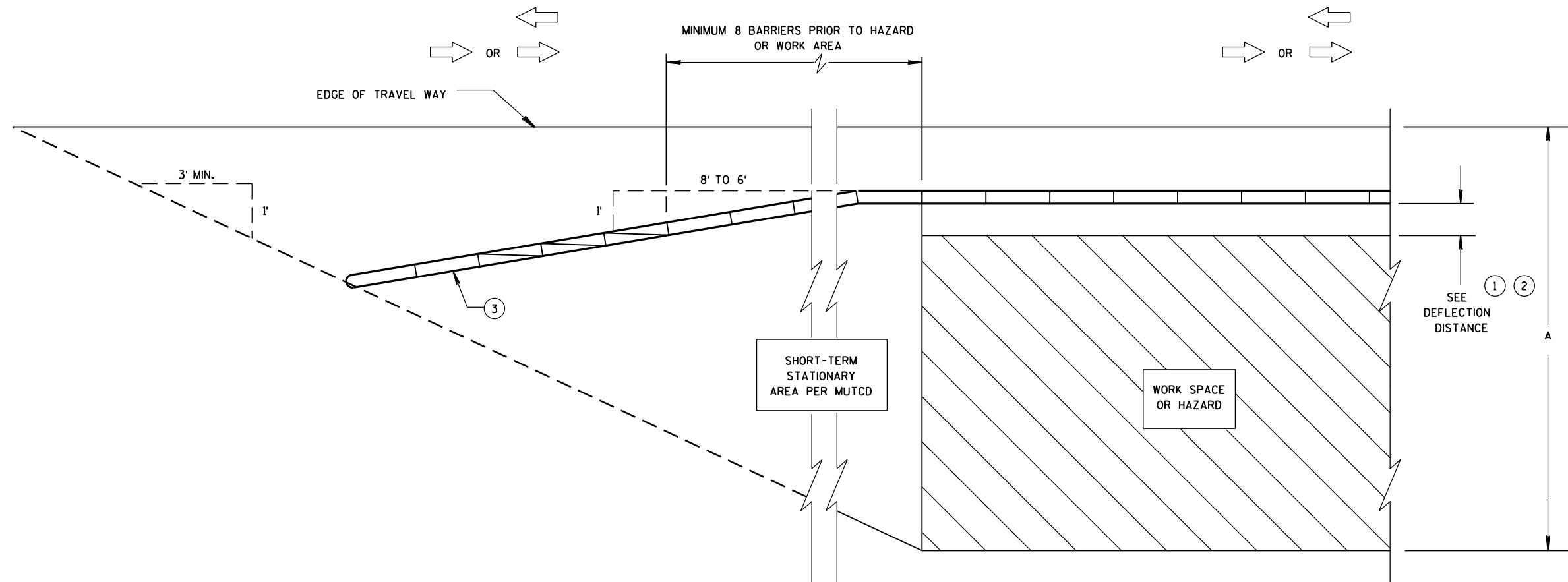
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

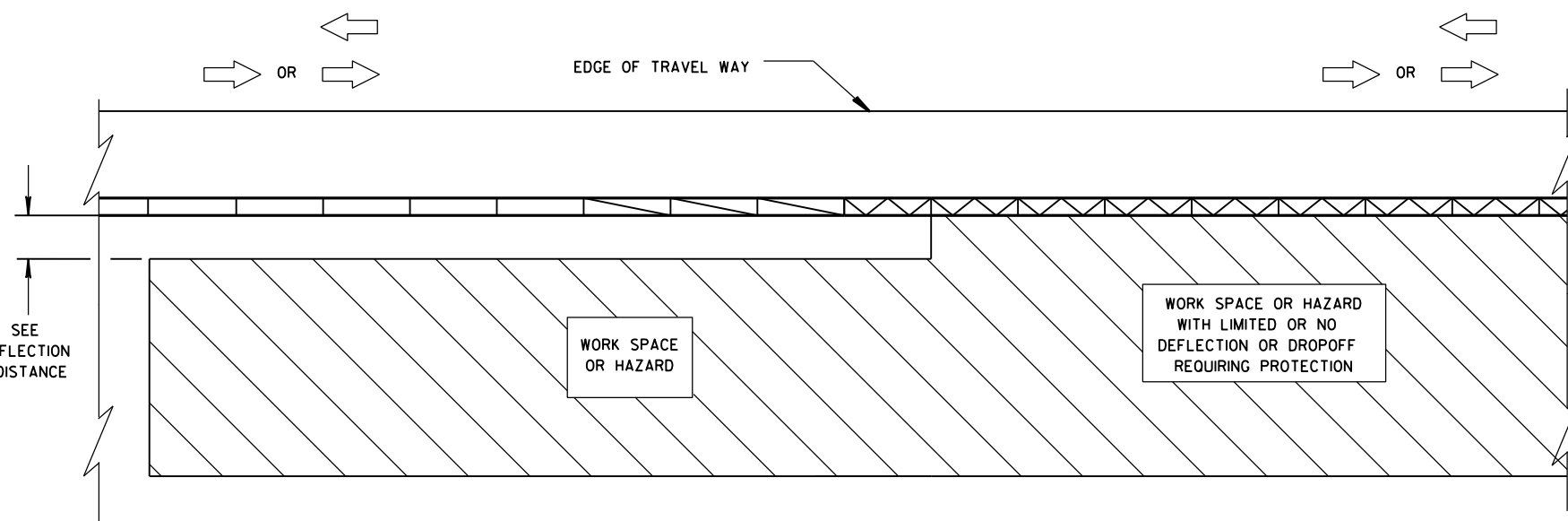
6

S.D.D. 14 B 8-2a

S.D.D. 14 B 8-2a



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER  
INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION**



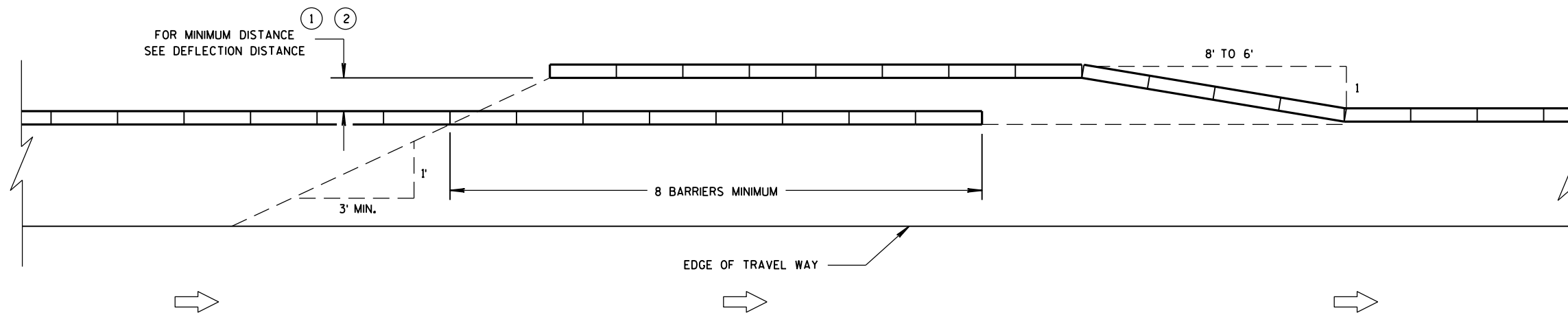
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER  
TO ANCHORED BARRIER**

**LEGEND**

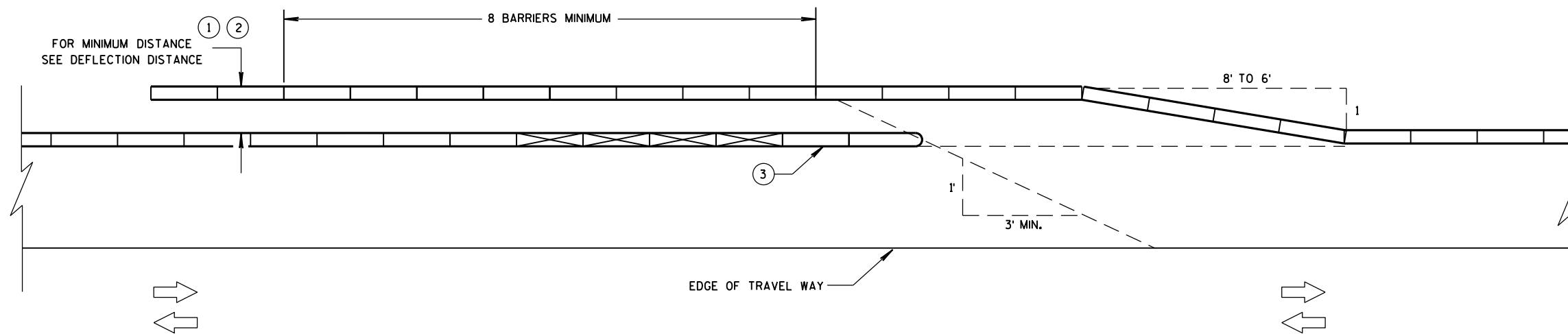
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL  
ARRAY AND OTHER TEMPORARY  
BARRIER LAYOUT DETAILS**

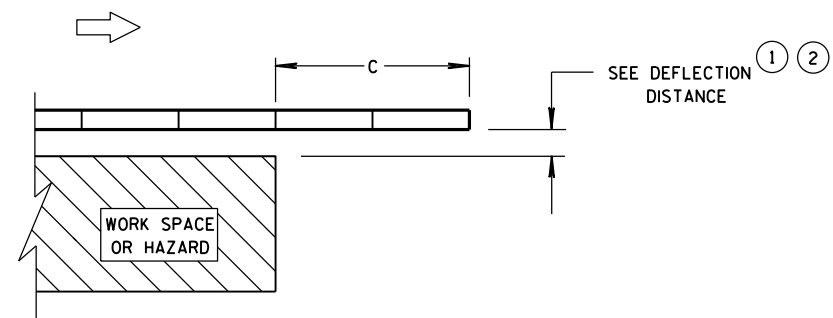
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



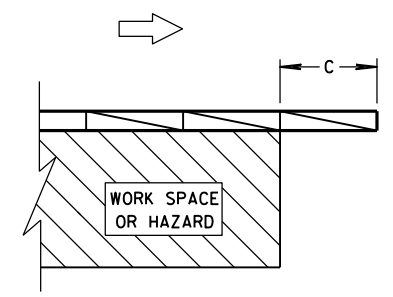
**TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC**



**TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC**



**ENDING TEMPORARY BARRIER  
DOWNSTREAM - UNANCHORED**



**ENDING TEMPORARY BARRIER  
DOWNSTREAM - ANCHORED**

**LEGEND**

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL  
ARRAY AND OTHER TEMPORARY  
BARRIER LAYOUT DETAILS**

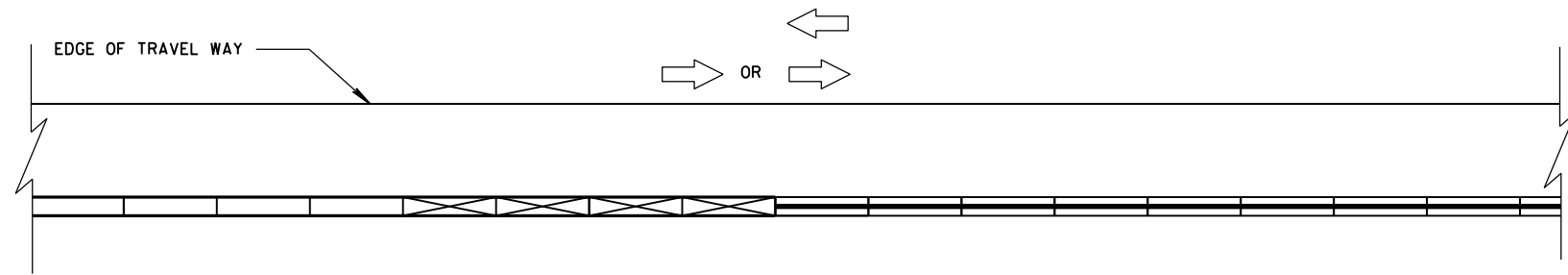
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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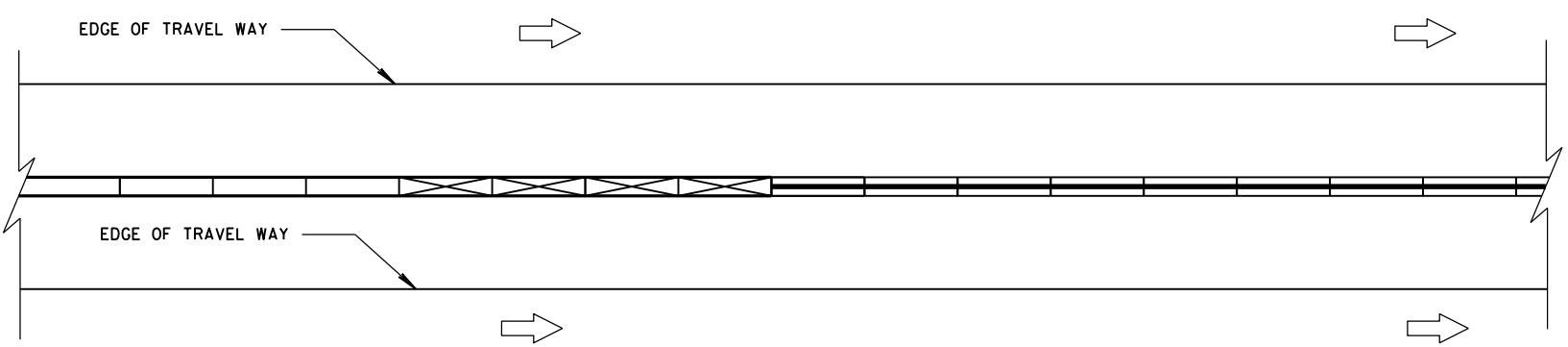
6

S.D.D. 14 B 8-2c

S.D.D. 14 B 8-2c



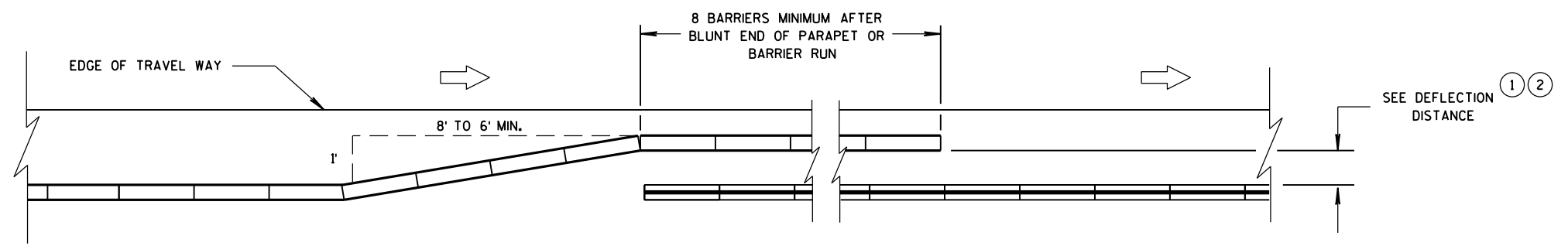
**CONNECTING TEMPORARY BARRIER TO PERMANENT CONCRETE BARRIER-TRAFFIC ON ONE SIDE**



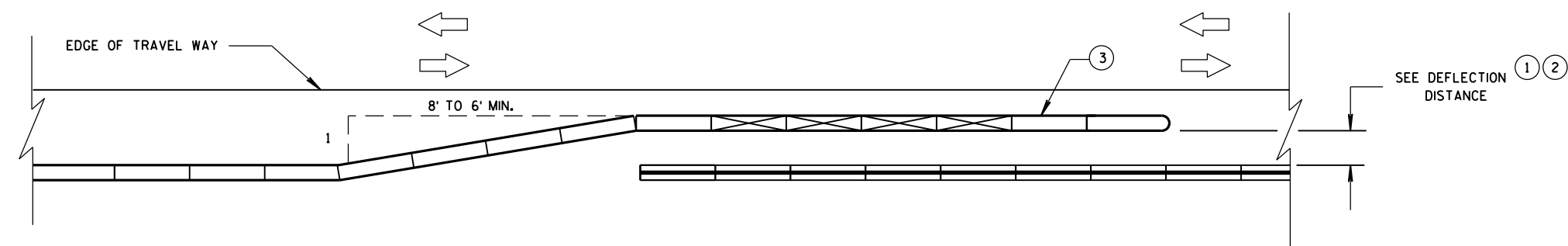
**CONNECTING TEMPORARY BARRIER TO PERMANENT CONCRETE BARRIER-TRAFFIC ON BOTH SIDES**

**LEGEND**

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER - ONE WAY TRAFFIC**



**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER - TWO WAY TRAFFIC**

**CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

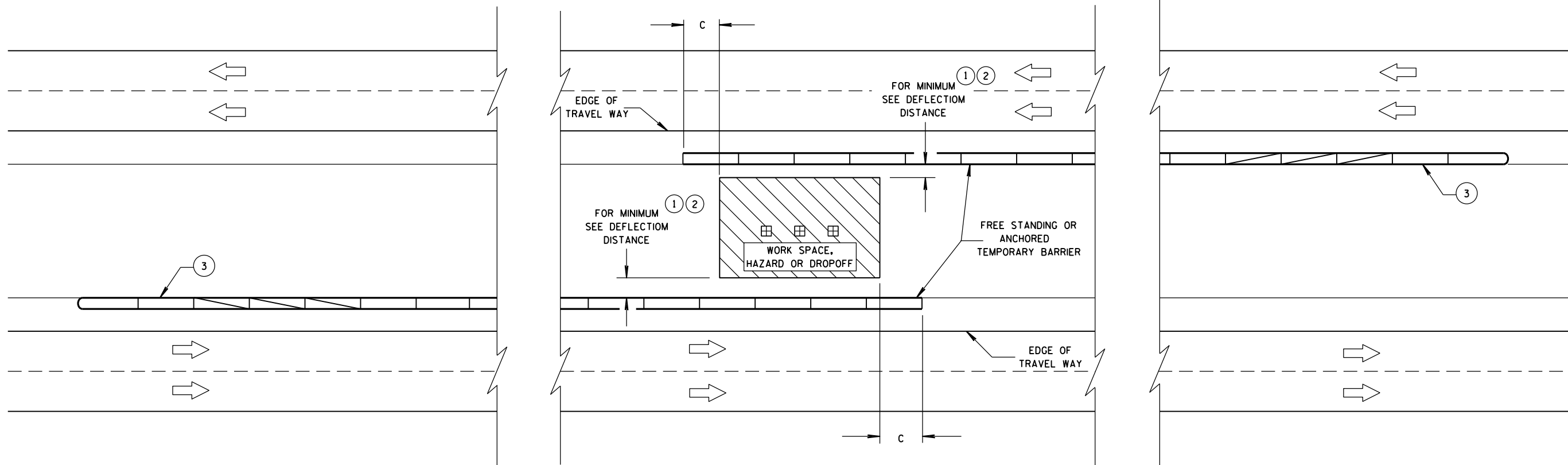


**LEGEND**

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**DIMENSION C TABLE** <sup>2</sup>

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



6

6

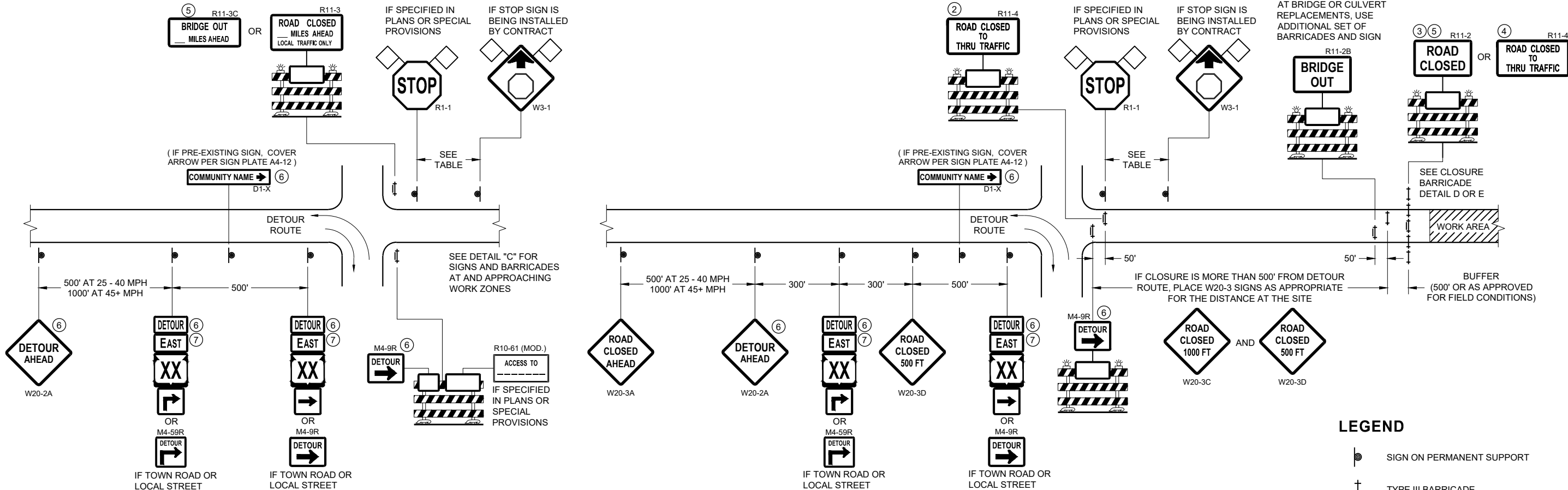
S.D.D. 14 B 8-2e

S.D.D. 14 B 8-2e

**CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June, 2015 DATE /S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT ENGINEER  
FHWA

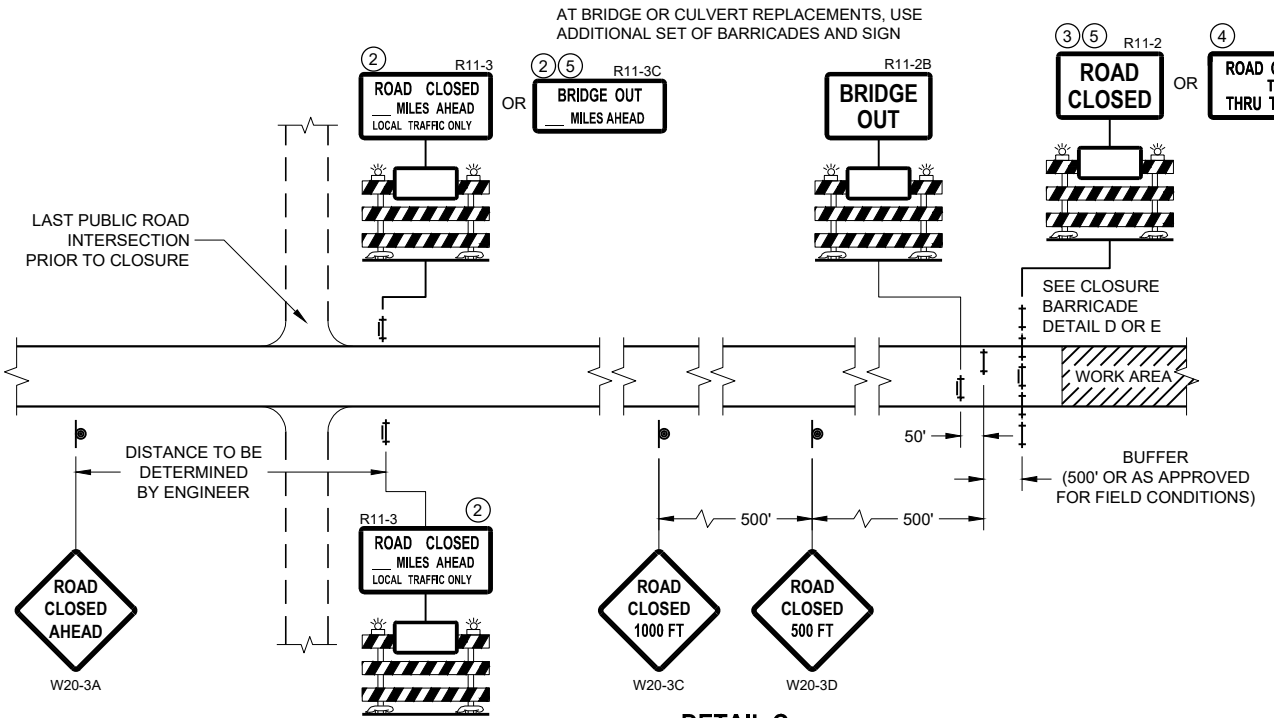
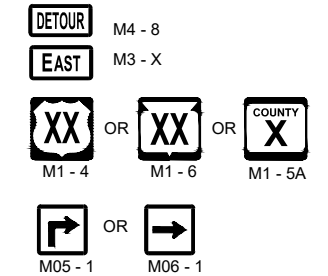


**DETAIL A**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
 WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM  
 DETOUR ROUTE ( 1000 FEET IF URBAN )

**DETAIL B**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
 WORK ZONE LESS THAN 1/2 MILE FROM  
 DETOUR ROUTE ( 1000 FEET IF URBAN )

- LEGEND**
- SIGN ON PERMANENT SUPPORT
  - TYPE III BARRICADE
  - TYPE III BARRICADE WITH ATTACHED SIGN
  - TYPE "A" WARNING LIGHT (FLASHING)
  - WORK AREA
  - FLAGS, 16" X 16" MIN. (ORANGE)

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750



**DETAIL C**  
**MAINLINE CLOSURE, NO POSTED DETOUR**

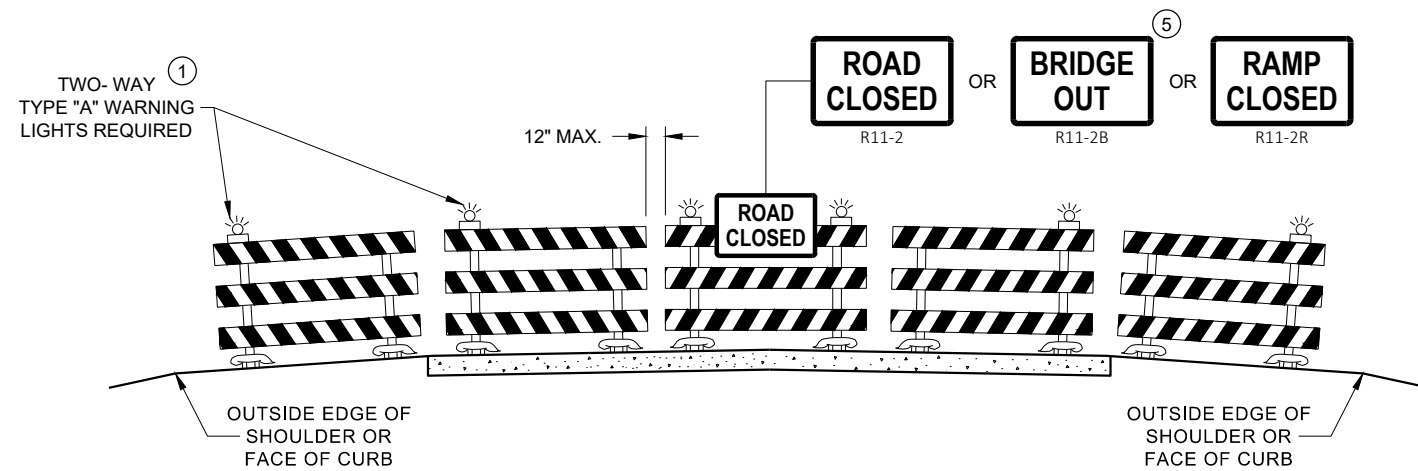
SEE SDD 15C2-SHEET "b"  
 FOR GENERAL NOTES  
 AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS  
 FOR MAINLINE CLOSURES**

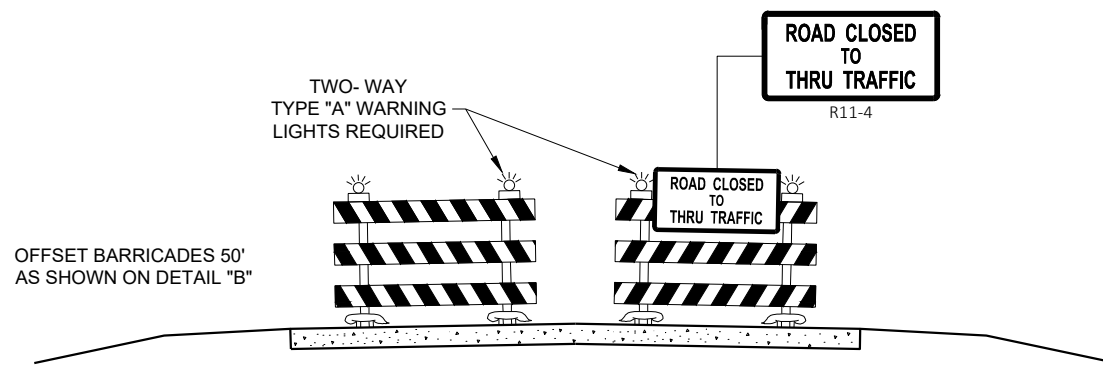
STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 November 2018 /S/ Andrew Heidtke  
 DATE DATE WORK ZONE ENGINEER

FHWA



**DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW**



**DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

### LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4 OR M1 - 6 OR COUNTY X M1 - 5A
- M05 - 1 OR M06 - 1 OR M06 - 1

### GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

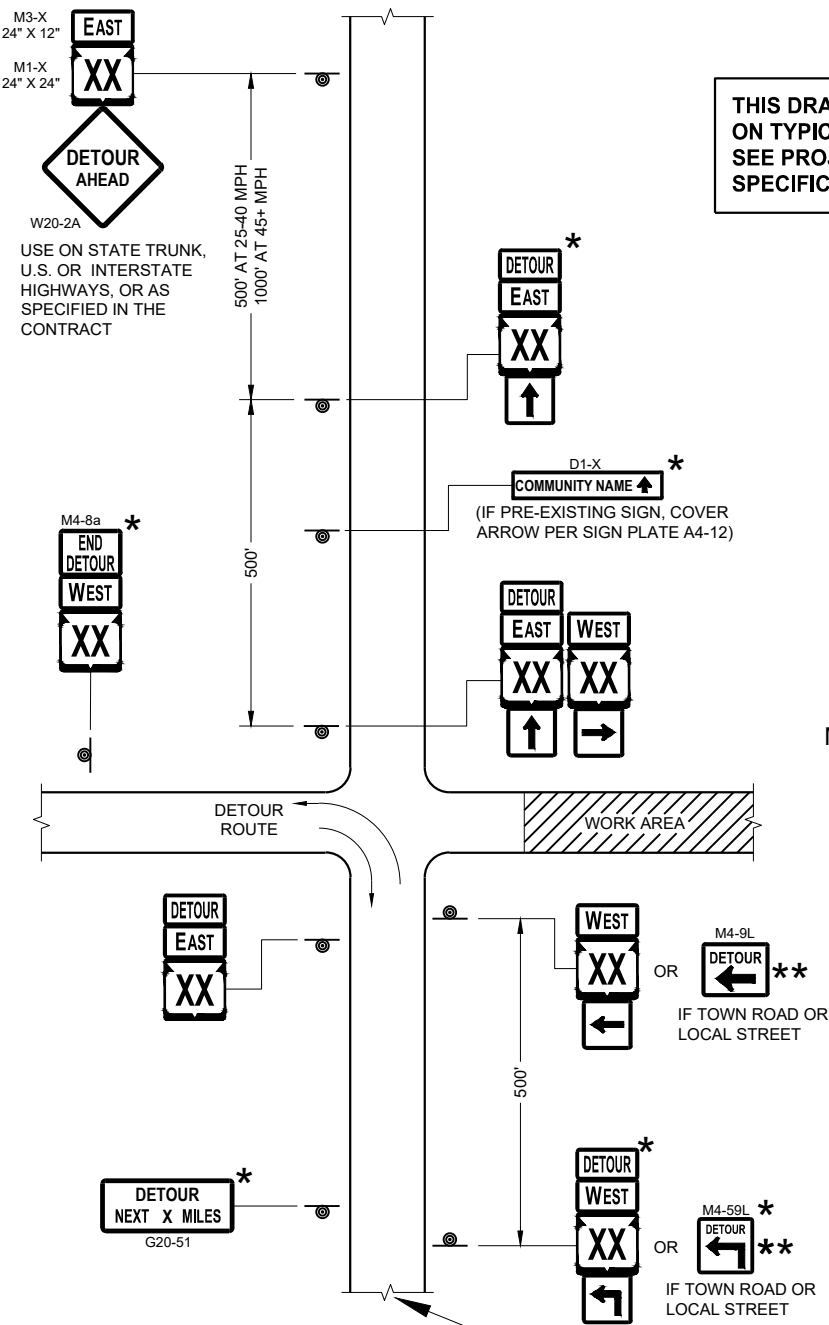
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

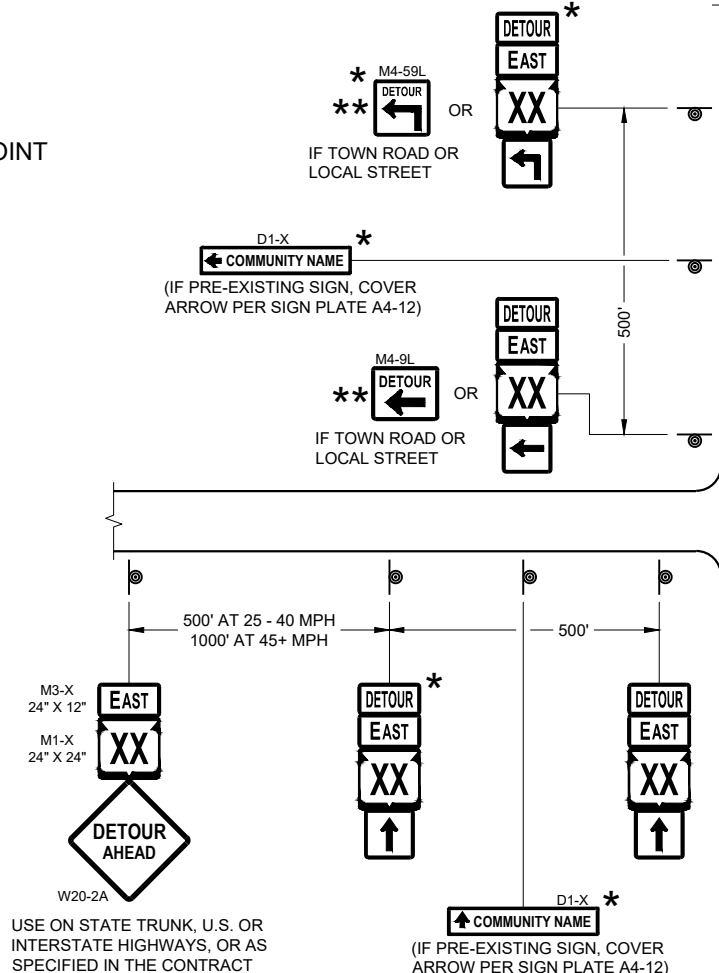
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- \* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- \*\* FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

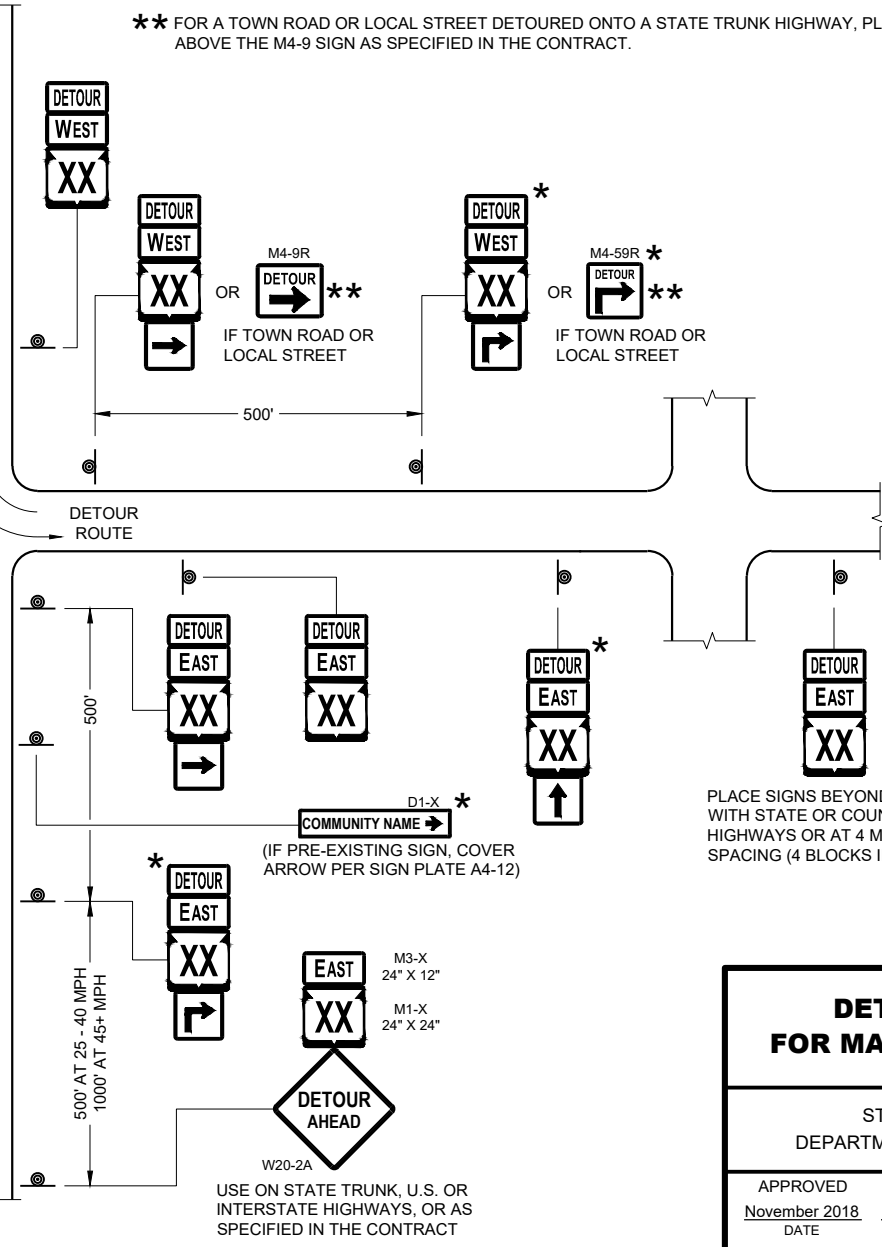
THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.



MATCH POINT



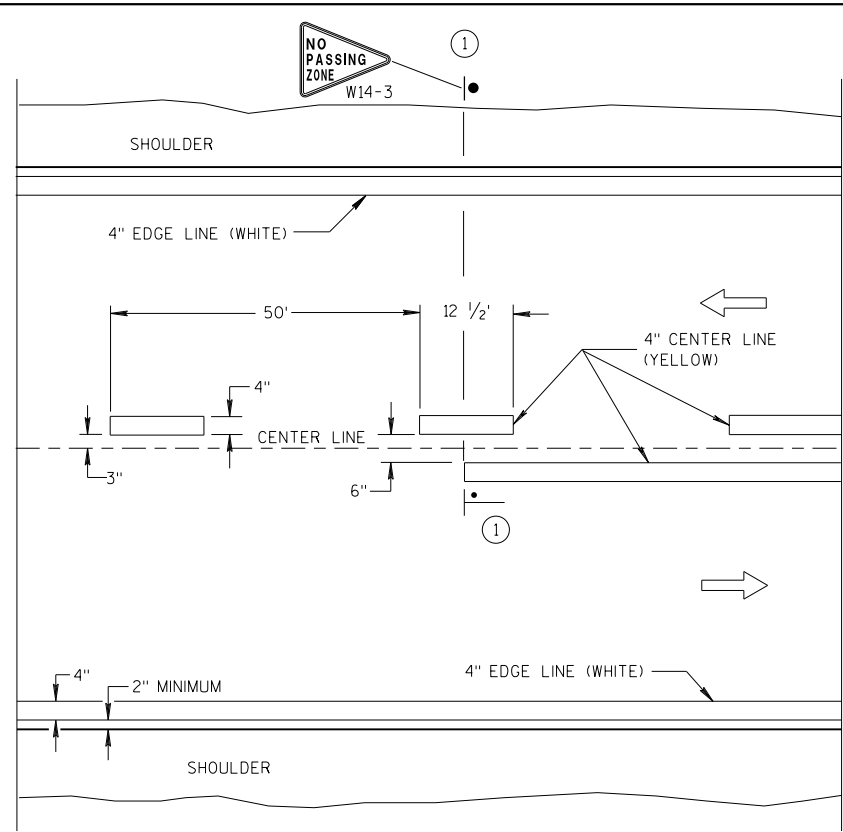
DETAIL F  
DETOUR SIGNING



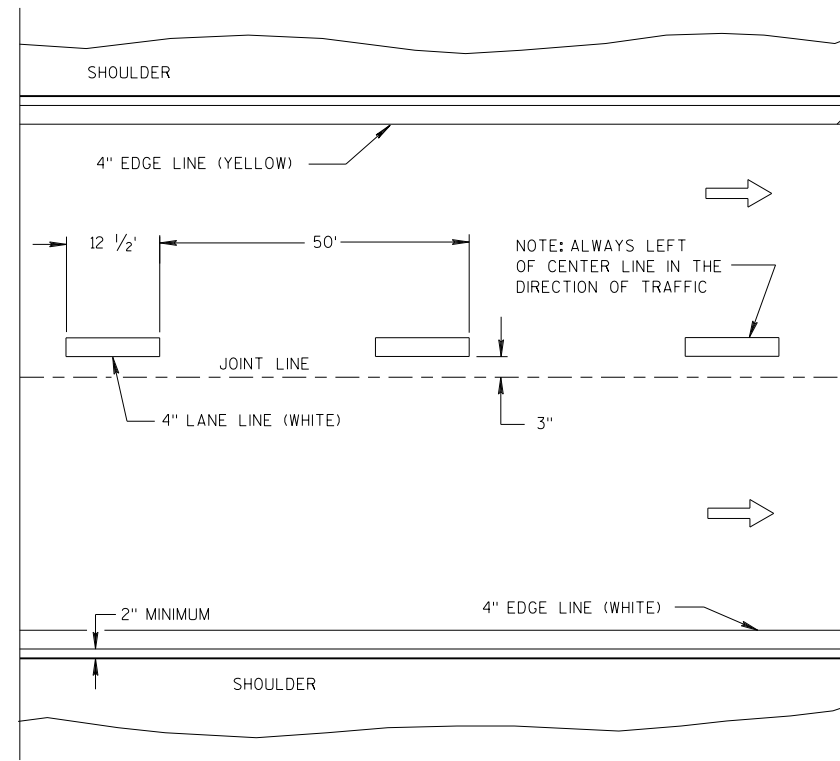
PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

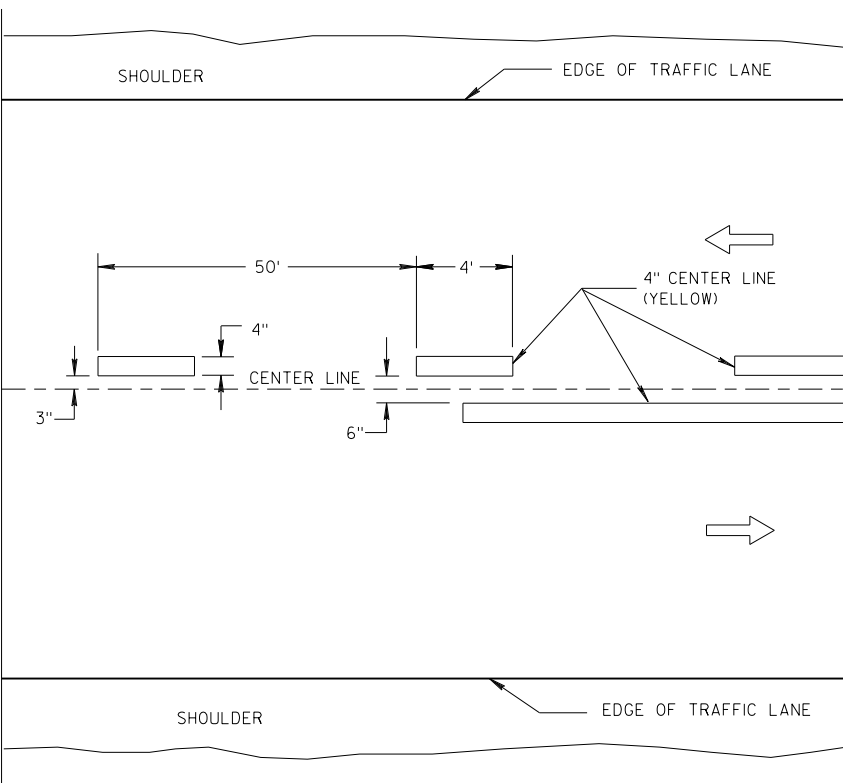


**TWO WAY TRAFFIC**

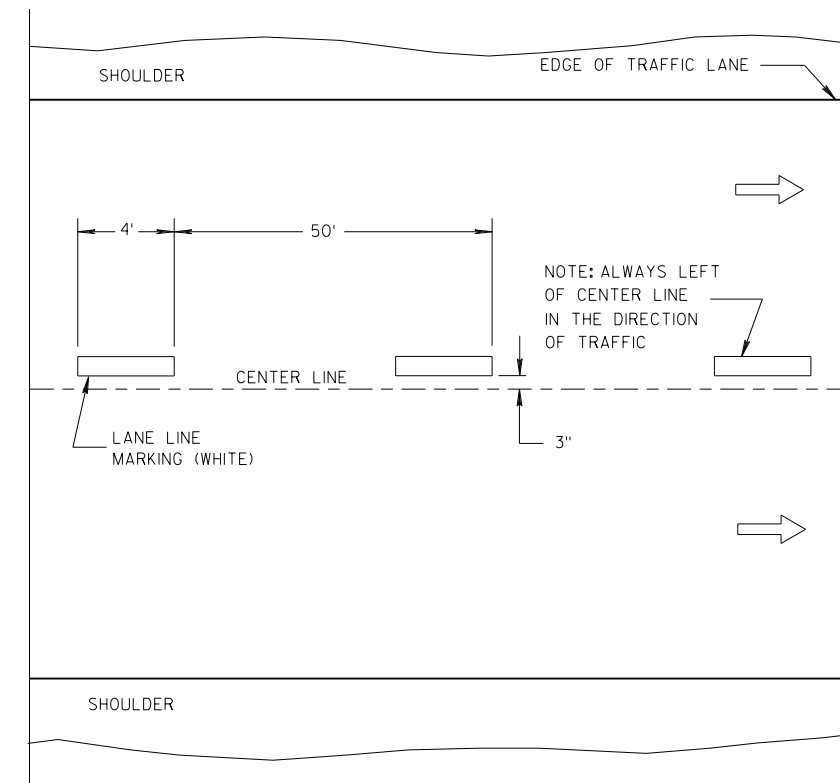


**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**



**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**TEMPORARY PAVEMENT MARKING**

**GENERAL NOTES**

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

**NOTE**

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

**LEGEND**

- "T" MARKING
- POST MOUNTED SIGN

**LONGITUDINAL MARKING (MAINLINE)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 7/2018 /S/ Matthew R. Rauch  
STATE SIGNING AND MARKING ENGINEER  
FHWA

### GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.



ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.






THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

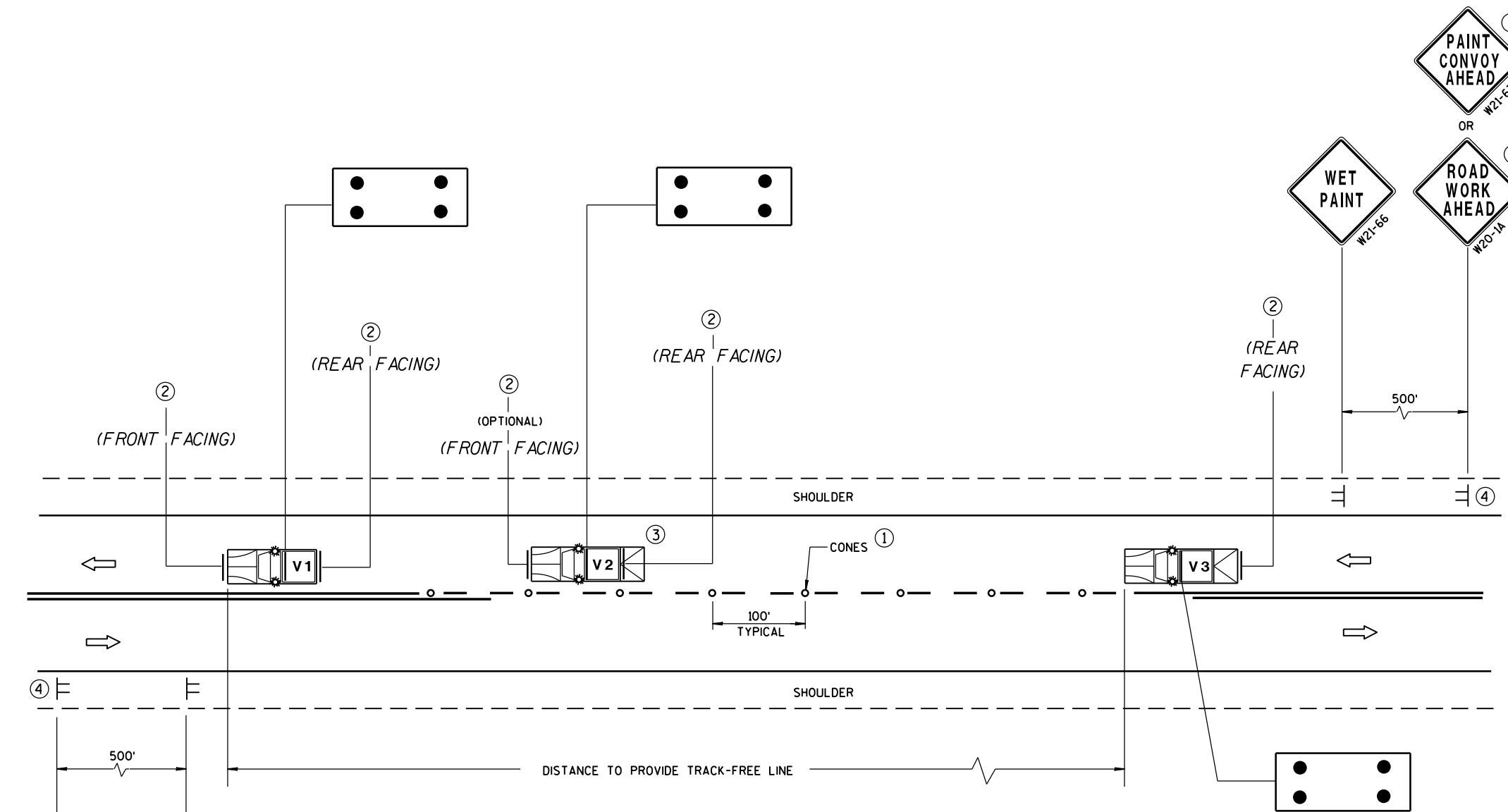
THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.  
 OR   
W21-64 W21-64
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

### LEGEND

- V1** LEAD VEHICLE
- V2** SHADOW VEHICLE
- V3** TRAIL VEHICLE WITH TMA
-  **TMA** TRUCK-MOUNTED ATTENUATOR
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  CONES
-  FLASHING ARROW PANEL (CAUTION)



## MOVING PAVEMENT MARKING OPERATIONS TWO-LANE TWO-WAY ROADWAY

MOVING PAVEMENT MARKING  
OPERATION  
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
 Sept., 2017 /S/ Andrew Heidtke  
 DATE WORK ZONE ENGINEER  
 FHWA

### GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REAR MOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

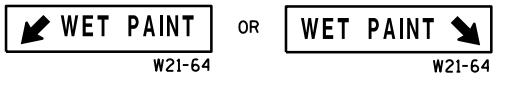
FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REAR MOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE OR LANELINE MARKING FOR MULTILANE UNDIVIDED ROADWAYS.

① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

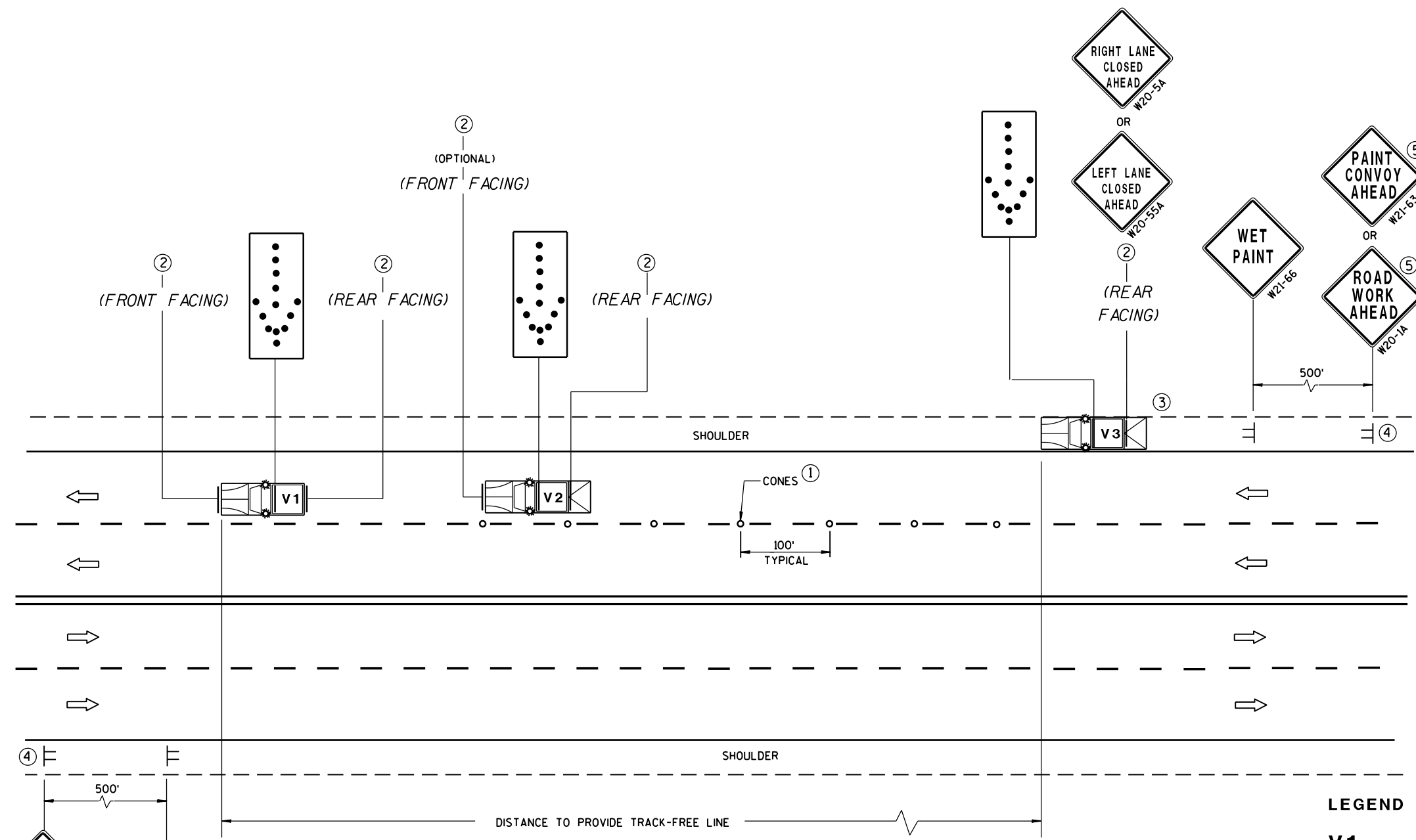
② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.



③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.



## MOVING PAVEMENT MARKING OPERATIONS MULTI-LANE UNDIVIDED ROADWAY

### LEGEND

V1 LEAD VEHICLE

V2 SHADOW VEHICLE

V3 TRAIL VEHICLE WITH TMA

TMA TRUCK-MOUNTED ATTENUATOR

Sign on temporary support

Direction of traffic

Cones

Flashing arrow panel (merge)

### MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Sept., 2017 /s/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA



**GENERAL NOTES**

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.  
 ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.  
 ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.  
 IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.  
 ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

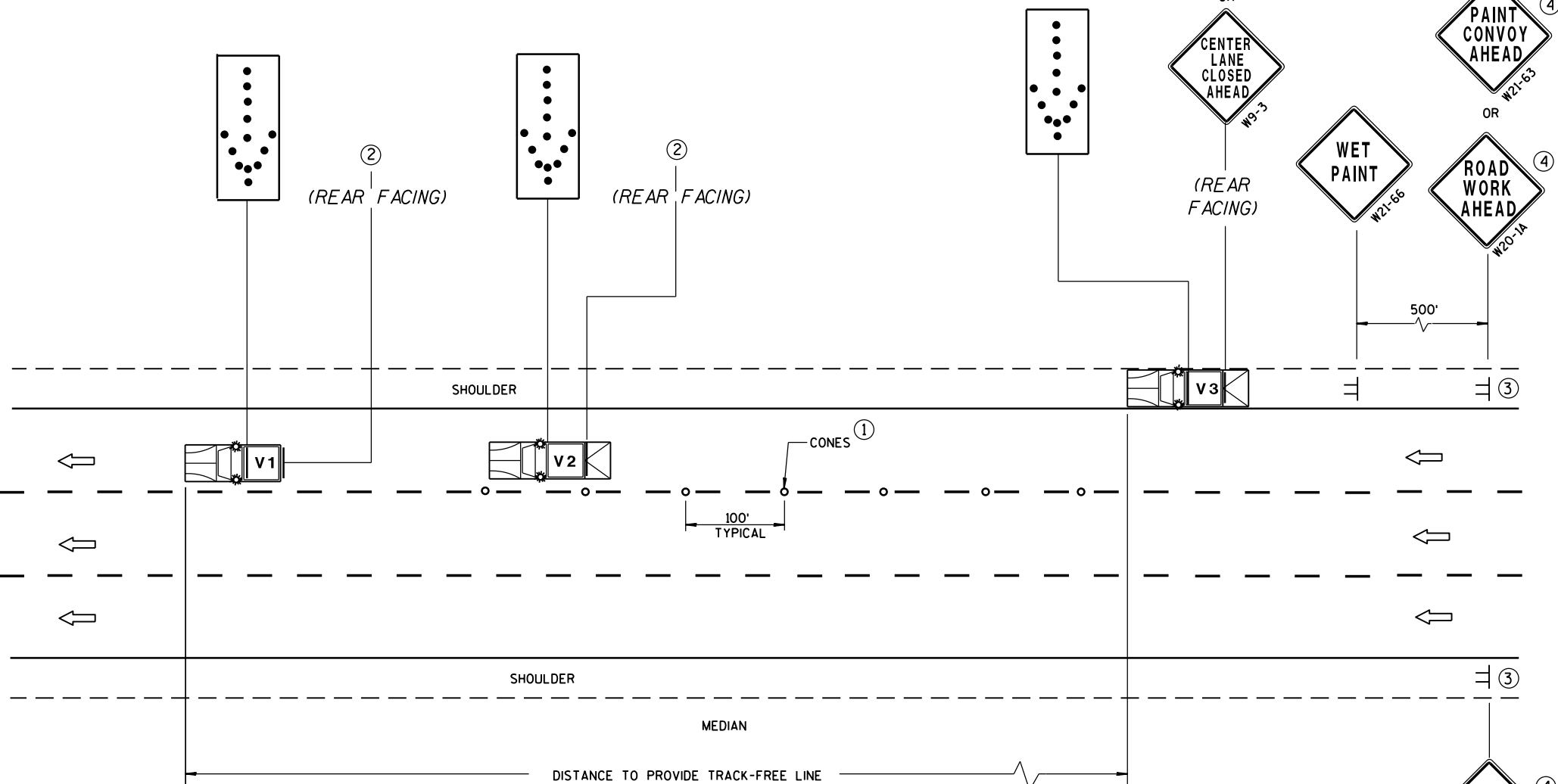
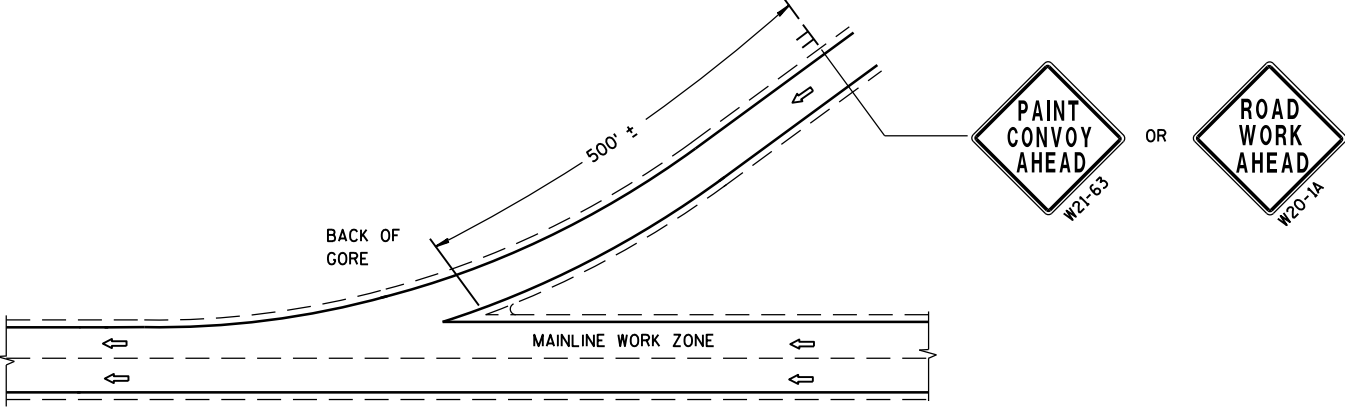
THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
  - ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- OR

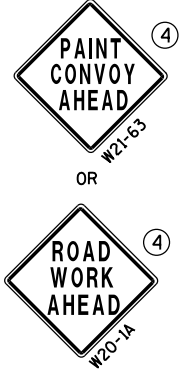
W21-64                      W21-64
- ③ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.
  - ④ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

**LEGEND**

- V1** LEAD VEHICLE
- V2** SHADOW VEHICLE
- V3** TRAIL VEHICLE WITH TMA
- TMA** TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (MERGE)



**MOVING PAVEMENT MARKING OPERATIONS  
 MULTI-LANE DIVIDED ROADWAY**



**MOVING PAVEMENT MARKING  
 OPERATION  
 MULTI-LANE DIVIDED ROADWAY**

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 DATE: Sept. 2017 /S/ Andrew Heldtke  
 WORK ZONE ENGINEER  
 FHWA

# GENERAL NOTES

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

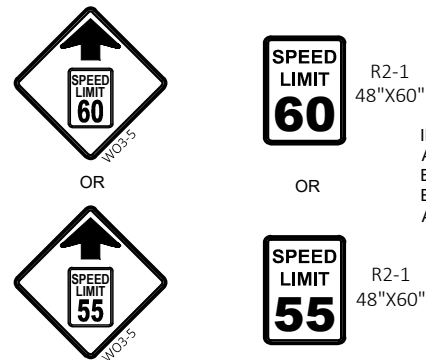
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

- ① CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.
- ② IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH LESS THAN POSTED SPEED.

# LEGEND

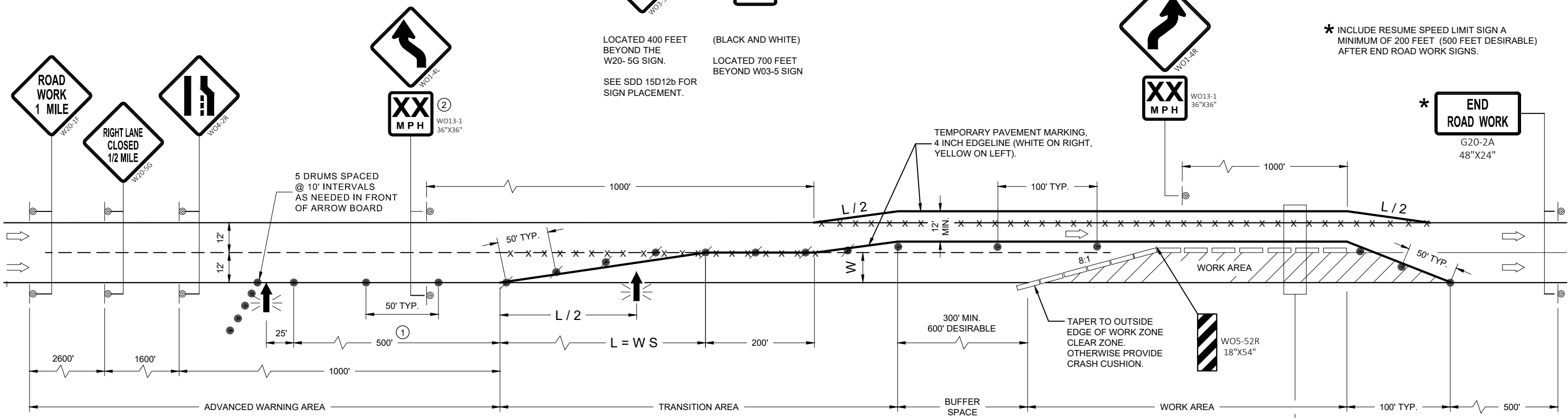
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA



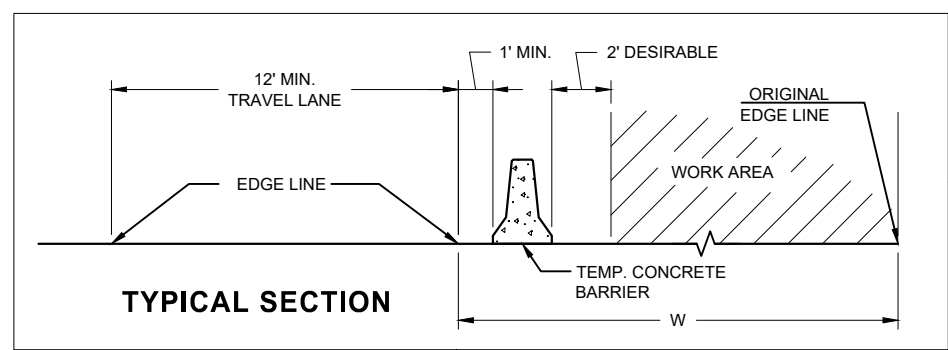
LOCATED 400 FEET BEYOND THE W20-5G SIGN. (BLACK AND WHITE)  
 LOCATED 700 FEET BEYOND W03-5 SIGN  
 SEE SDD 15D12b FOR SIGN PLACEMENT.

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES.

\* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.



SPEED (MPH)	L, TAPER LENGTH (MPH)											
	W, LATERAL OFFSET (FT)											
	1	2	3	4	5	6	7	8	9	10	11	12
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840



**TRAFFIC CONTROL  
LANE CLOSURE, SPEEDS  
GREATER THAN 40 MPH  
WITH BARRIER**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

SDD 15D03-05

SDD 15D03-05

## GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.










WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

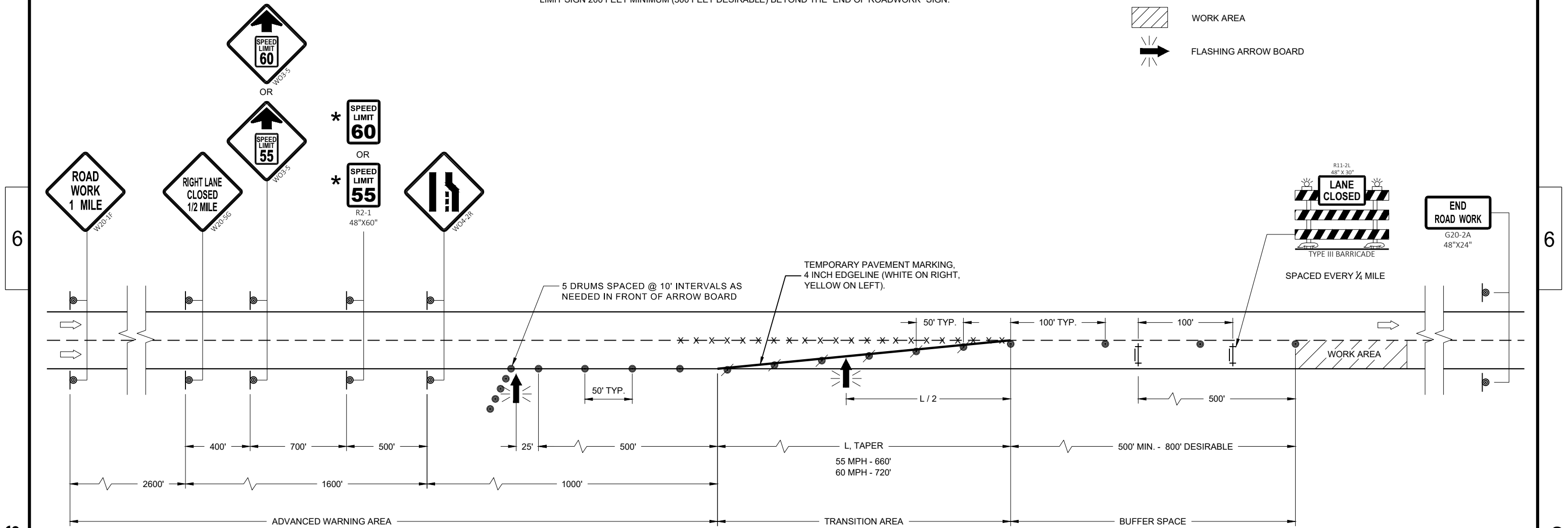
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

\* A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END OF ROADWORK" SIGN.

## LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TRAFFIC CONTROL DRUM
-  TYPE "A" WARNING LIGHT (FLASHING)
-  REMOVING PAVEMENT MARKING
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLASHING ARROW BOARD



SDD 15D12 - 07b

SDD 15D12 - 07b

<b>TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

**LEGEND**

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊞ SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ×-×-× REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- ⊞ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC

**GENERAL NOTES**

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

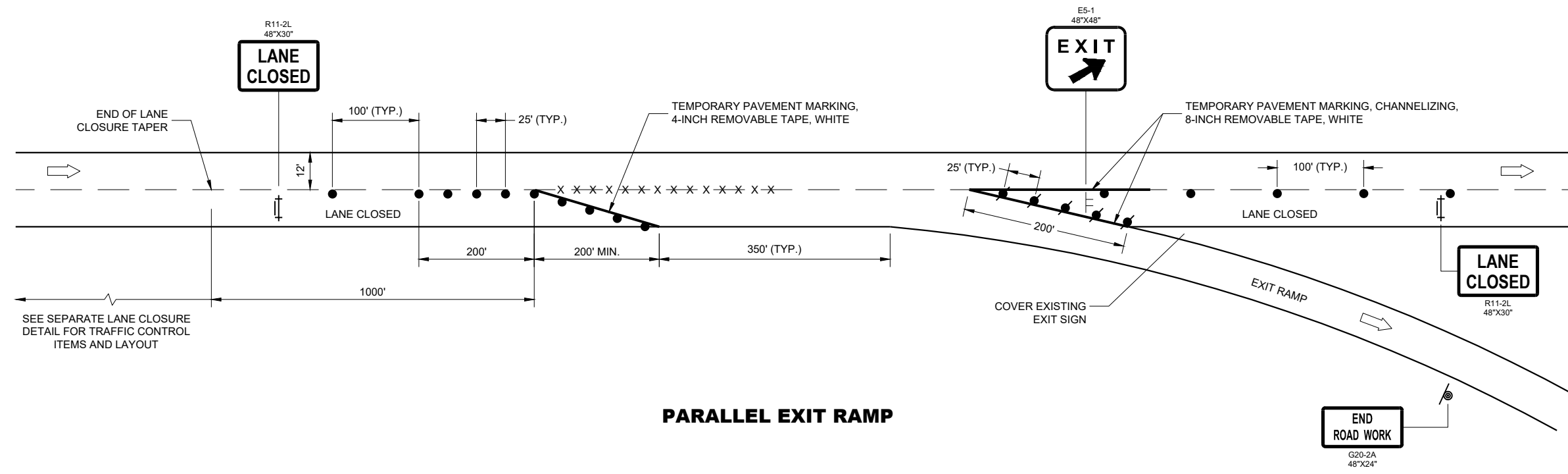
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.



**PARALLEL EXIT RAMP**

6

6

SDD 15D15 - 05e

SDD 15D15 - 05e

<b>TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

### GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

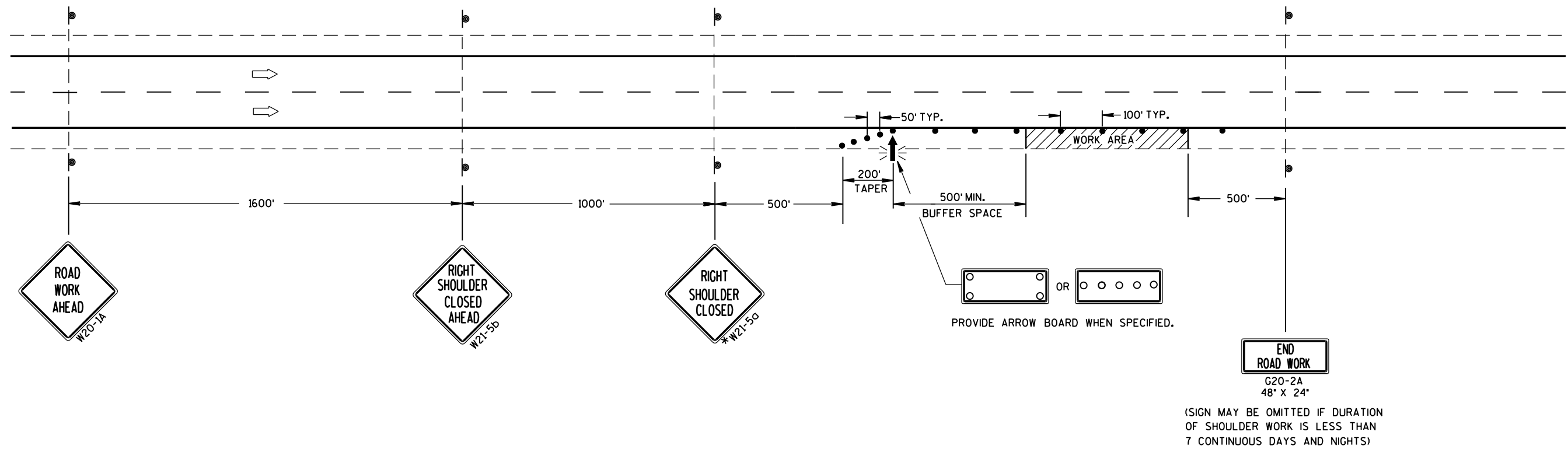
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

\*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-50 SIGN MAY BE OMITTED.

### LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

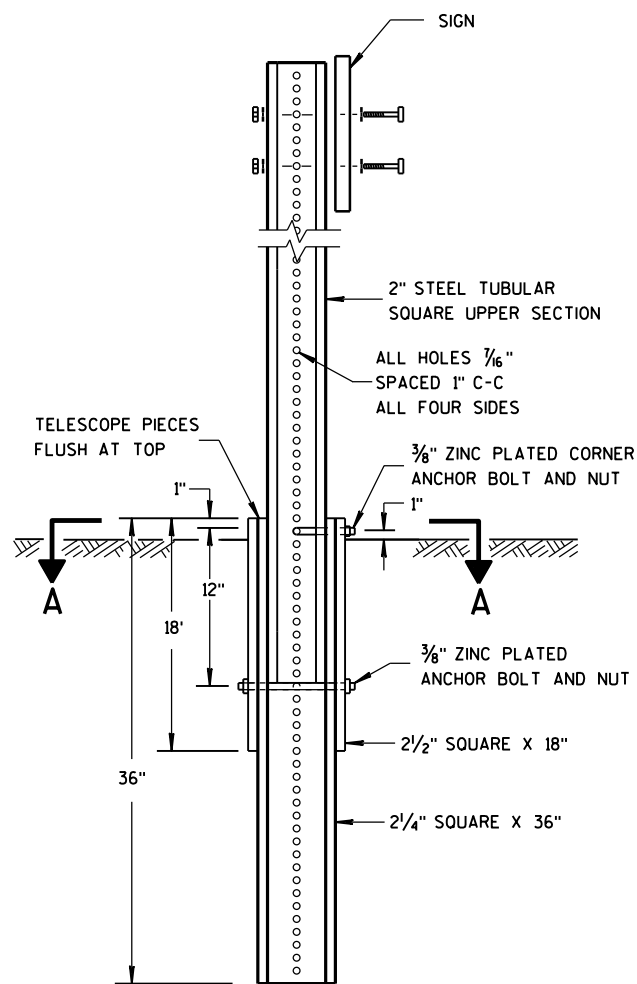


PROVIDE ARROW BOARD WHEN SPECIFIED.

END ROAD WORK  
G20-2A  
48" X 24"

(SIGN MAY BE OMITTED IF DURATION OF SHOULDER WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS)

<b>TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/s/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



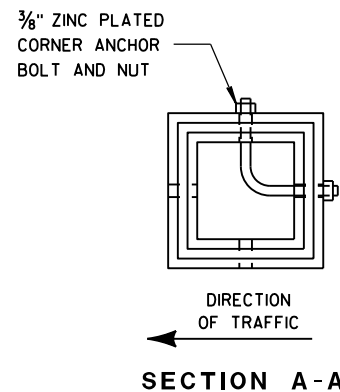
**DETAIL OF TUBULAR STEEL SIGN POST**

**TUBULAR STEEL POSTS**

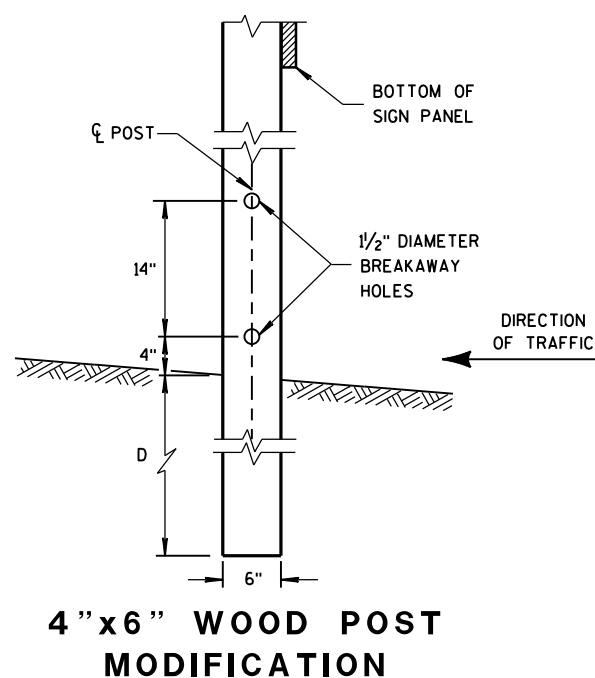
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

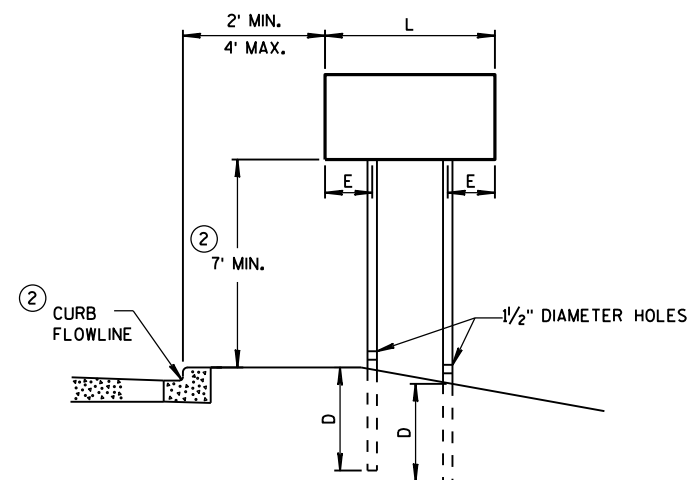
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



**SECTION A-A**



**4" X 6" WOOD POST MODIFICATION**

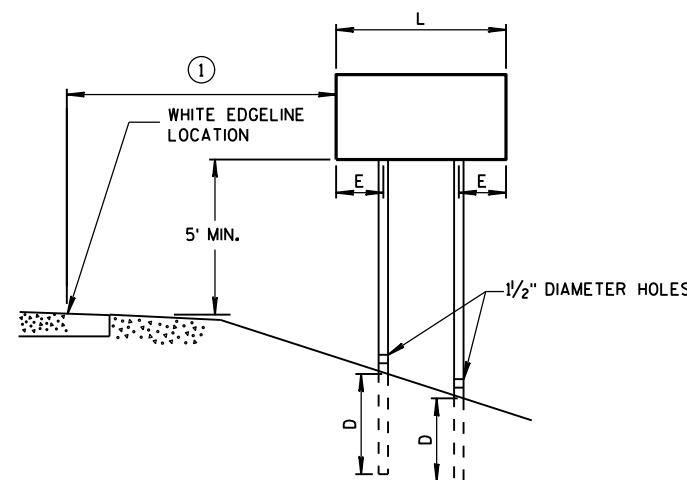


**URBAN AREA**

**POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS**

**WOOD POST EMBEDMENT DEPTH**

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



**RURAL AREA**

**4" X 6" WOOD POST**

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

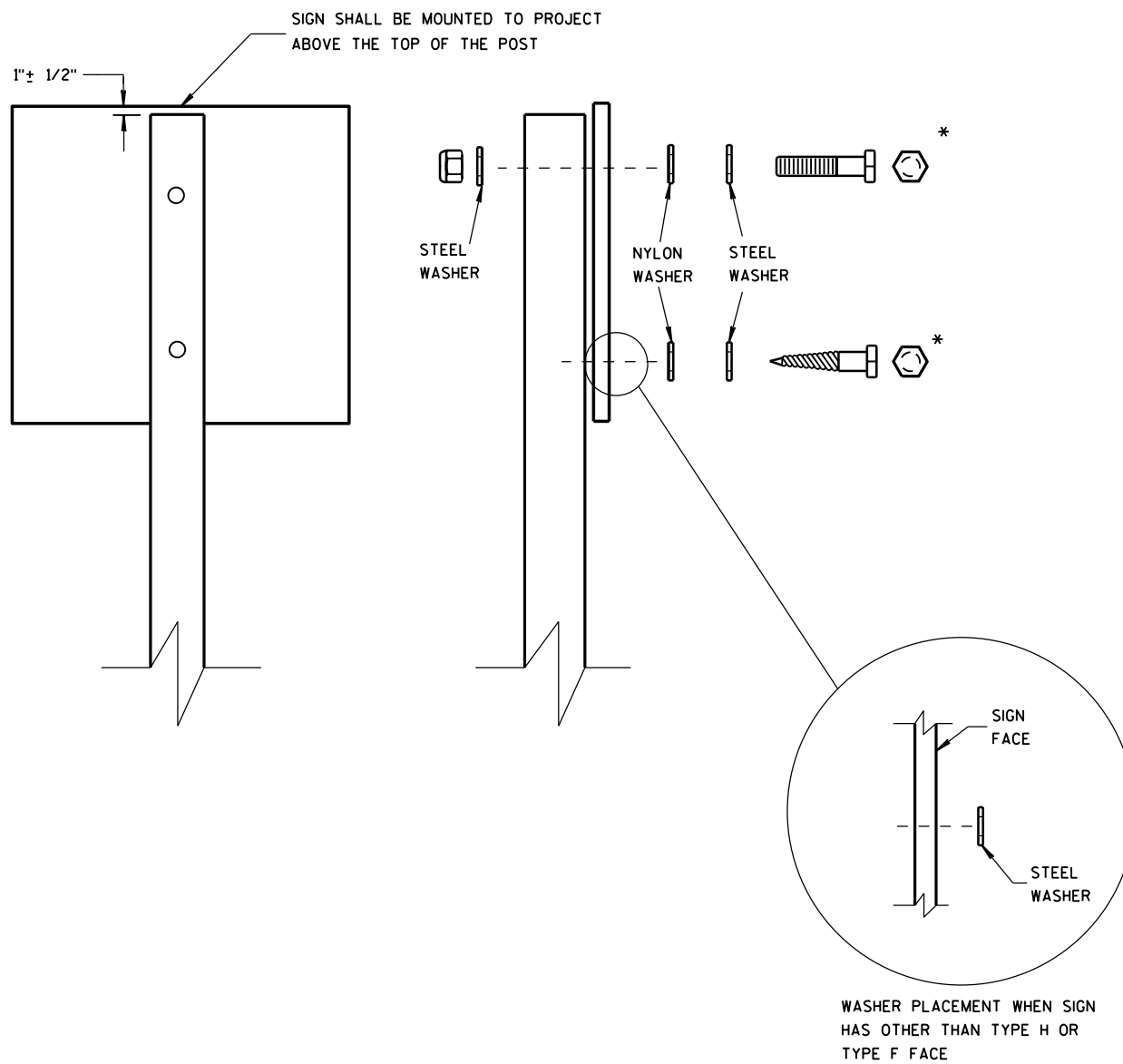
SEE NOTE ③

**GENERAL NOTES**

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

**TEMPORARY TRAFFIC CONTROL SIGN MOUNTING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" x 3"

MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS

RIVETS - 5/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL  
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL

1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

\* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

**GENERAL NOTES:**

DRAWINGS SHALL NOT BE SCALED.  
 DIMENSIONS ARE BASED ON EXISTING STRUCTURE PLANS.  
 ESTIMATED STRUCTURAL STEEL SURFACE AREA = 53,643 S.F.  
 CLEAN AND PAINT ALL BEARINGS.  
 THE COLOR OF THE FINISH TOP COAT SHALL BE GRAY (FEDERAL STANDARD COLOR NO. 26293).  
 RATINGS (FROM HSI 9/24/15)  
 DESIGN LOADING.....HS20  
 INVENTORY RATING.....HS24  
 OPERATING RATING.....HS40  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV).....240 KIPS

**TRAFFIC DATA**  
 A.A.D.T. (2014) = 21,000  
 R.D.S. = 70

**BRIDGE OFFICE CONTACT**

WILLIAM DREHER  
 (608) 266-8489

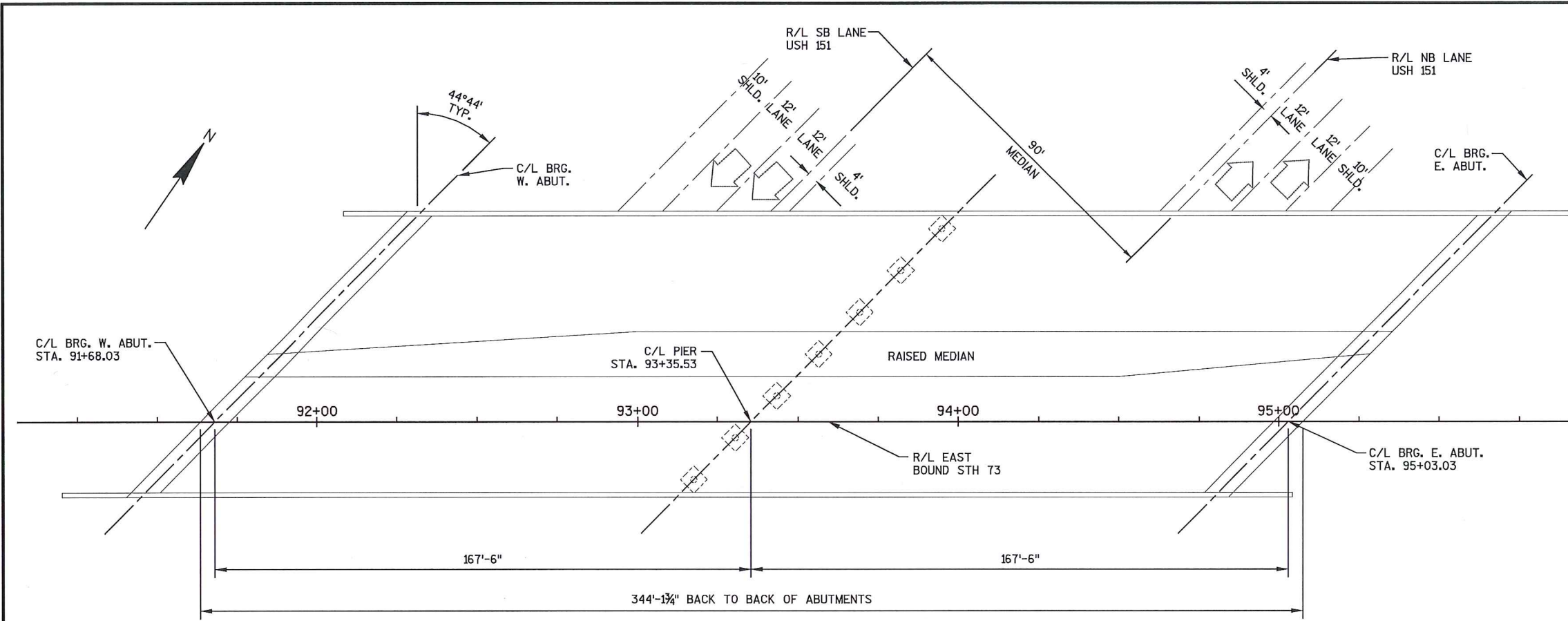
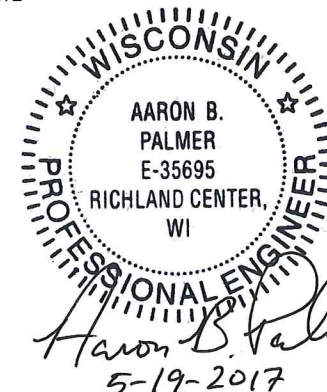
**CONSULTANT CONTACT**

AARON PALMER, P.E.  
 WESTBROOK ASSOCIATED ENGINEERS, INC.  
 (608) 588-7866

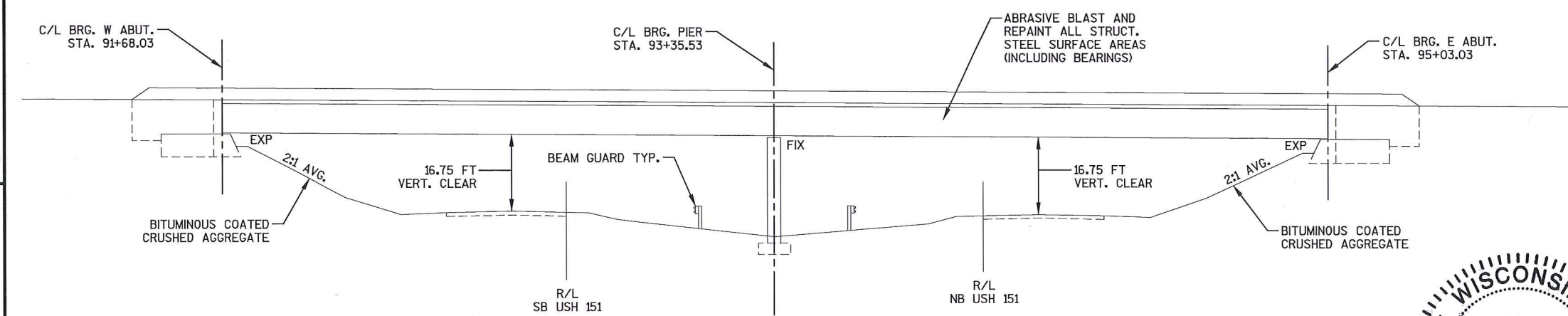
**LIST OF DRAWINGS**

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES

NO.	DATE	REVISION	BY
 619 EAST HOXIE STREET P.O. BOX 429 SPRING GREEN, WI 53588 PHONE (608) 588-7866 FAX (608) 588-7954			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED		William C. Dreher, SR. CHIEF STRUCTURES DESIGN ENGINEER	
		DATE 05/22/17	
STRUCTURE B-11-74			
STH 73 OVER EXISTING U.S.H. 151			
COUNTY	COLUMBIA	TOWN/CITY/VILLAGE	COLUMBUS
DESIGN SPEC.	REHABILITATION N/A		
DESIGNED BY	LCS	DESIGN CK'D.	---
DRAWN BY	JCG	PLANS CK'D.	---
GENERAL PLAN			SHEET 1 OF 1



**PLAN**



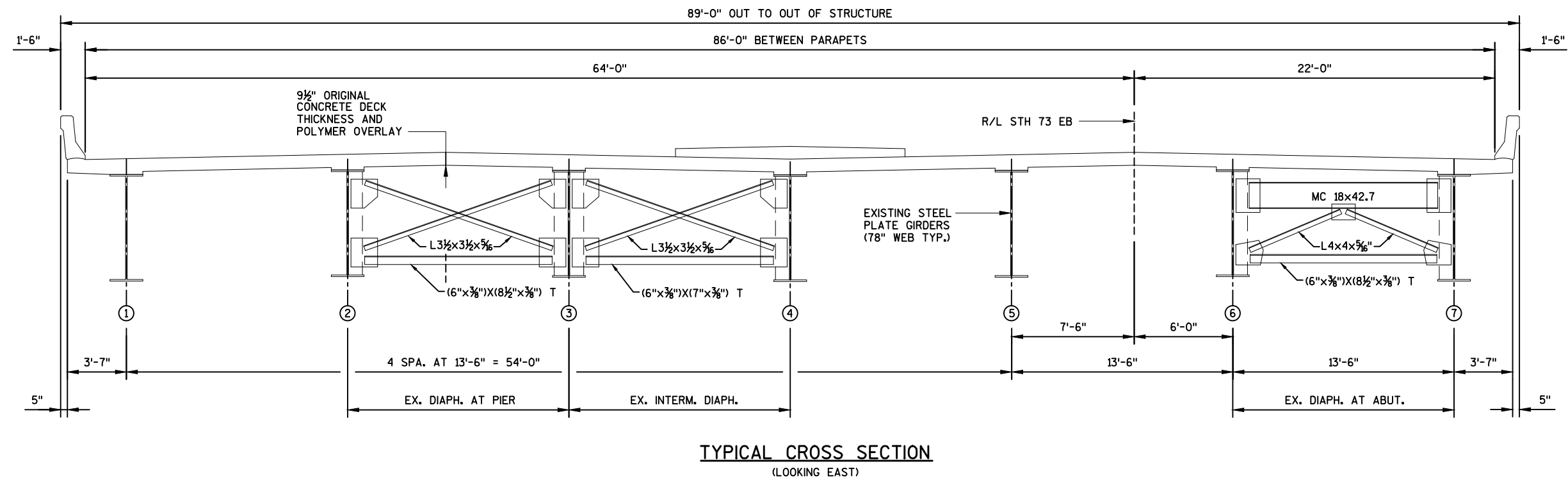
**TYPICAL SECTION THRU U.S.H. 151**

8

8

SCALE = N/A





**TYPICAL CROSS SECTION**  
(LOOKING EAST)

**TOTAL ESTIMATED QUANTITIES**

ITEM NO.	BID ITEMS	UNIT	TOTALS
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-11-74	LS	1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-11-74	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-74</b>			
DRAWN BY LCS		PLANS CK'D ---	
<b>CROSS SECTION AND QUANTITIES</b>			SHEET 2 OF 2

**GENERAL NOTES:**

DRAWINGS SHALL NOT BE SCALED.  
DIMENSIONS ARE BASED ON EXISTING STRUCTURE PLANS.

ESTIMATED STRUCTURAL STEEL SURFACE AREA = 32,200 S.F.

CLEAN AND PAINT ALL BEARINGS.

THE COLOR OF THE FINISH TOP COAT SHALL BE GRAY (FEDERAL STANDARD COLOR NO. 26293).

**RATINGS (FROM HSI 9/29/15)**  
DESIGN LOADING.....HS20  
INVENTORY RATING.....HS28  
OPERATING RATING.....HS46  
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV).....240 KIPS

**TRAFFIC DATA**  
A.A.D.T. (2014) = 21,000  
R.D.S. = 70

**BRIDGE OFFICE CONTACT**

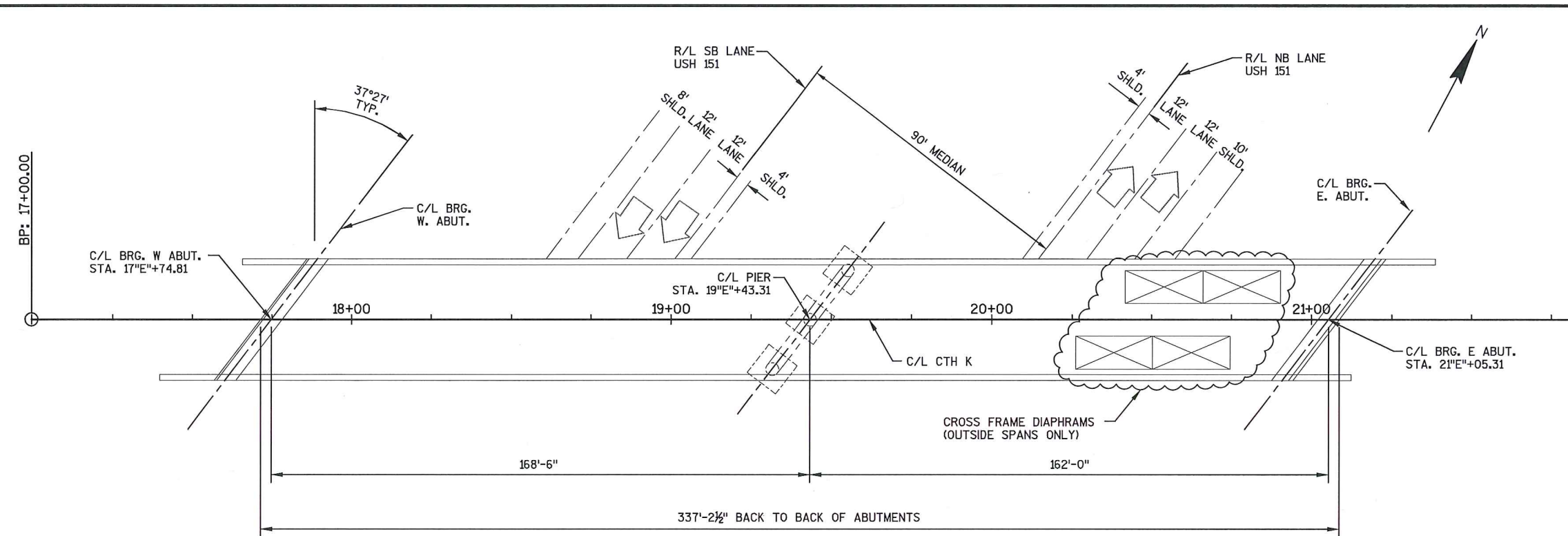
WILLIAM DREHER  
(608) 266-8489

**CONSULTANT CONTACT**

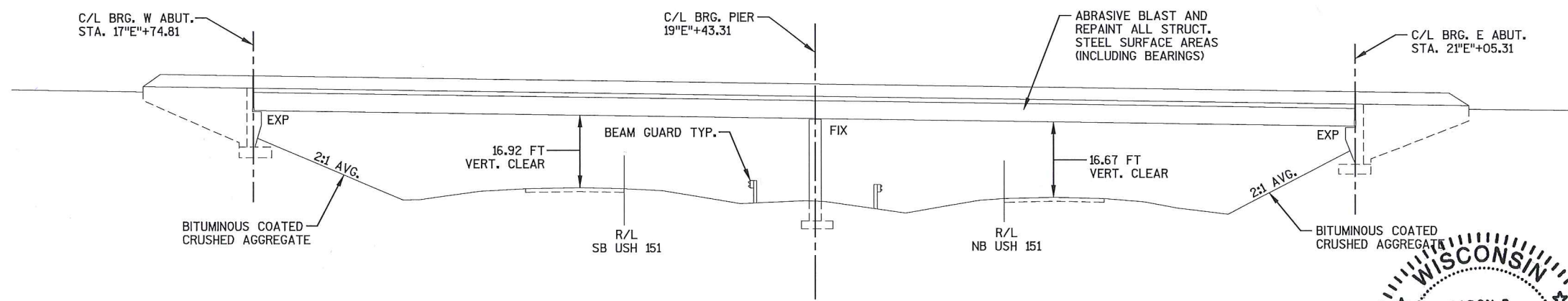
AARON PALMER, P.E.  
WESTBROOK ASSOCIATED ENGINEERS, INC.  
(608) 588-7866

**LIST OF DRAWINGS**

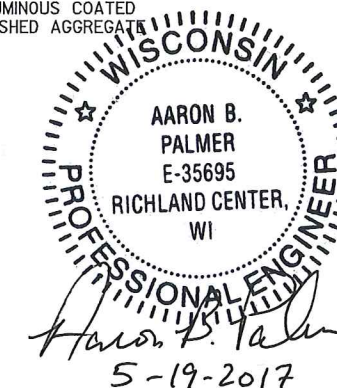
1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES



**PLAN**



**TYPICAL SECTION THRU U.S.H. 151**



NO.	DATE	REVISION	BY

**WESTBROOK**  
Associated Engineers, Inc.  
619 EAST HOXIE STREET  
P.O. BOX 429  
SPRING GREEN, WI 53588  
PHONE (608) 588-7866  
FAX (608) 588-7954

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

ACCEPTED *William C. Dreher* <sup>SR</sup> **05/22/17**  
CHIEF STRUCTURES DESIGN ENGINEER DATE

**STRUCTURE B-11-75**

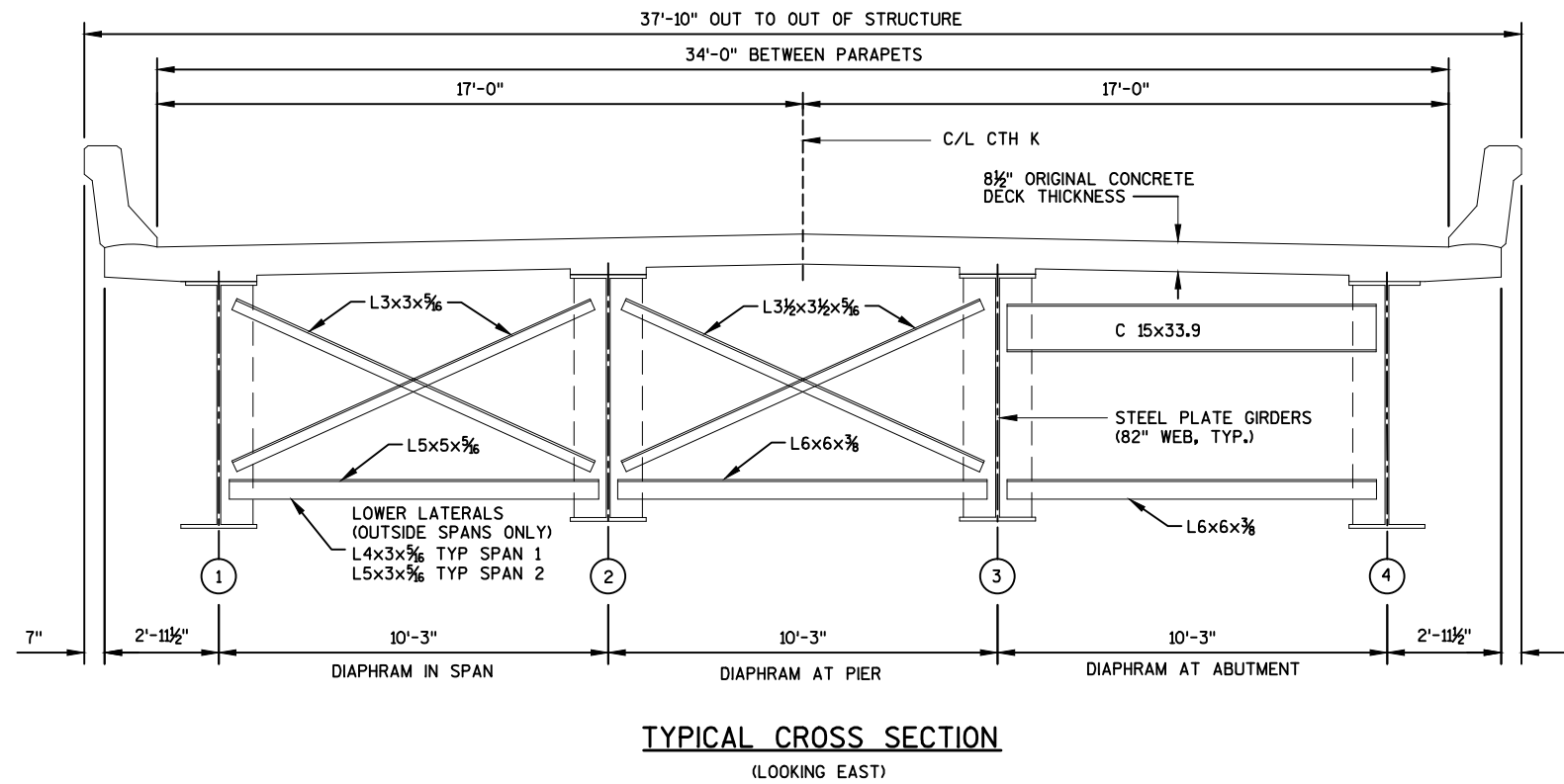
CTH K OVER EXISTING U.S.H. 151

COUNTY COLUMBIA TOWN/CITY/VILLAGE COLUMBUS

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY LCS DESIGN CK'D. --- DRAWN BY JCG PLANS CK'D. ---

GENERAL PLAN SHEET 1 OF 2



**TOTAL ESTIMATED QUANTITIES**

ITEM NO.	BID ITEMS	UNIT	TOTALS
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-11-75	LS	1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-11-75	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-75</b>			
DRAWN BY LCS		PLANS CK'D ---	
<b>CROSS SECTION AND QUANTITIES</b>			SHEET 2 OF 2

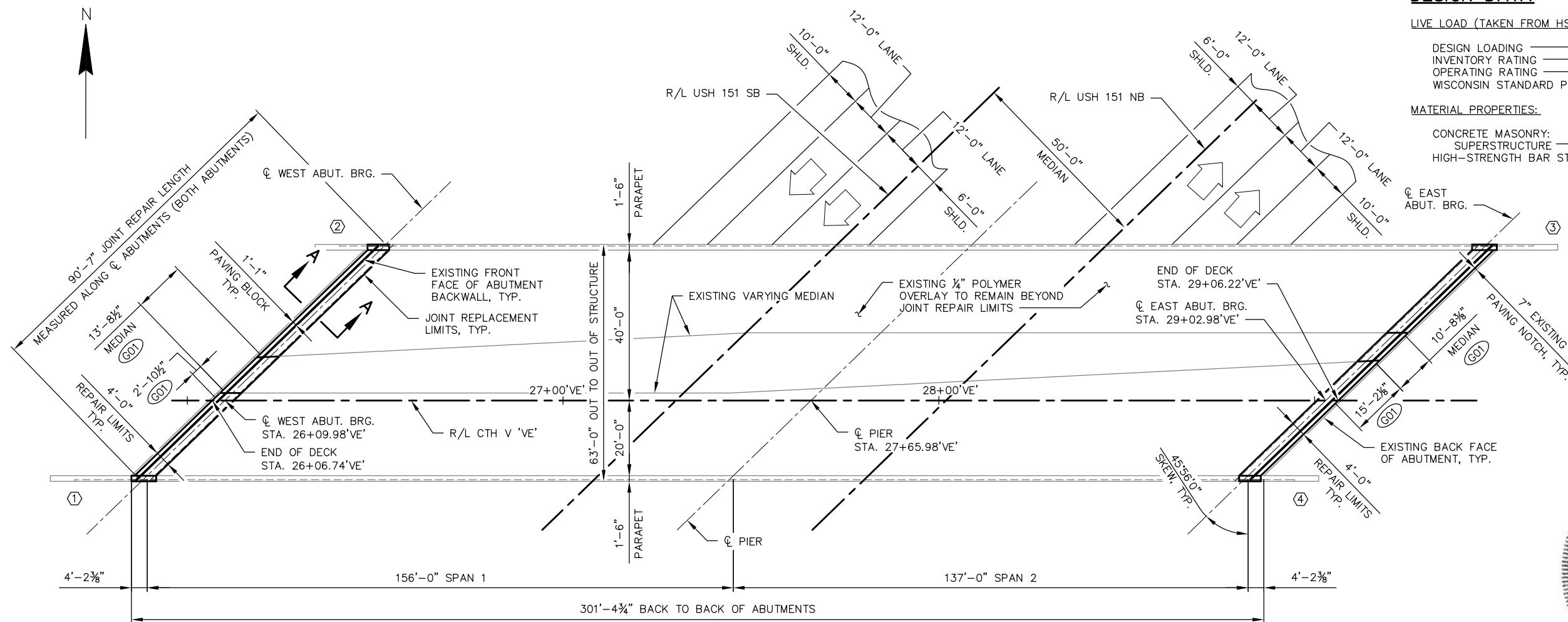
**DESIGN DATA**

LIVE LOAD (TAKEN FROM HSI, 02/28/2017):

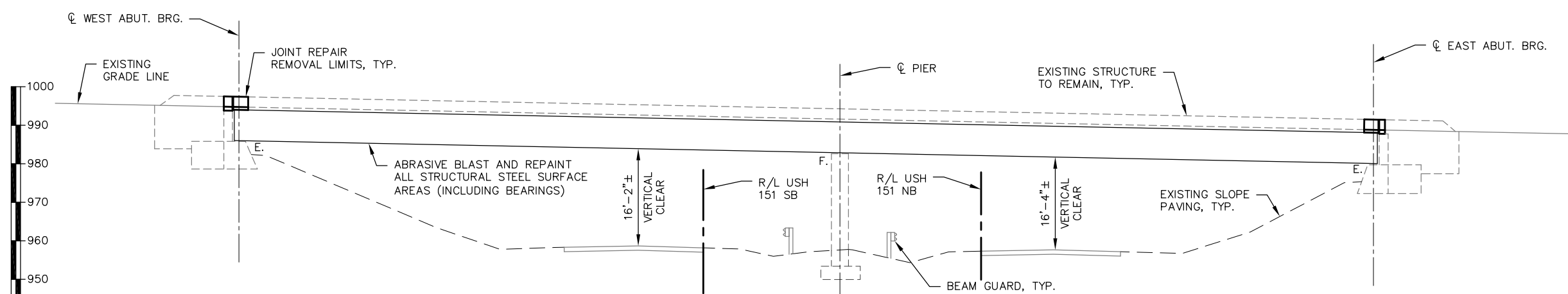
DESIGN LOADING \_\_\_\_\_ HS20  
 INVENTORY RATING \_\_\_\_\_ HS31  
 OPERATING RATING \_\_\_\_\_ HS52  
 WISCONSIN STANDARD PERMIT VEHICLE RATING (WIS.-SPV): 250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY: \_\_\_\_\_  
 SUPERSTRUCTURE \_\_\_\_\_  $f_c = 4,000$  P.S.I.  
 HIGH-STRENGTH BAR STEEL REINFORCEMENT \_\_\_\_\_  $f_y = 60,000$  P.S.I.



**PLAN B-13-288**  
 (TWO SPAN STEEL DECK GIRDER BRIDGE)



**ELEVATION**  
 (LOOKING NORTH)

**NOTES**

FOR SECTION A-A SEE "QUANTITIES AND CROSS SECTION" SHEET.

ROUGHEN EXISTING CONCRETE 1/4" MIN. EVERYWHERE NEW CONCRETE COMES INTO CONTACT WITH EXISTING CONCRETE.

- ⬡ INDICATES WING NUMBER
- ⓪ MEASURED ALONG  $\phi$  ABUTMENT BRG. AT THE FRONT FACE OF THE EXISTING ABUTMENT BACKWALL.

**TRAFFIC DATA:**

USH 151	CTH V
A.A.D.T. (2018) — 25,300	A.A.D.T. (2009) — 1,500
A.A.D.T. (2038) — 31,800	A.A.D.T. (2013) — 1,510
DESIGN SPEED — 70 M.P.H.	DESIGN SPEED — 50 M.P.H.

**LIST OF DRAWINGS**

1. GENERAL PLAN
2. QUANTITIES AND CROSS SECTION
3. STRIP SEAL EXPANSION JOINT DETAILS #1
4. STRIP SEAL EXPANSION JOINT DETAILS #2
5. STRIP SEAL COVER PLATE DETAILS
6. PARAPET DETAILS

CONSULTANT CONTACT: ANDREW KNUTSON, P.E., S.E. (608) 588-7866  
 BRIDGE OFFICE CONTACT: WILLIAM DREHER, P.E. (608) 266-8489

NO.	DATE	REVISION	BY

**WESTBROOK**  
 Associated Engineers, Inc.  
 619 EAST HOXIE STREET  
 P.O. BOX 429  
 SPRING GREEN, WI 53588  
 PHONE (608) 588-7866  
 FAX (608) 588-7954

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION  
 ACCEPTED *William C. Dreher* <sup>SR</sup> **11/13/19**  
 CHIEF STRUCTURES DESIGN ENGINEER DATE

**STRUCTURE B-13-288**

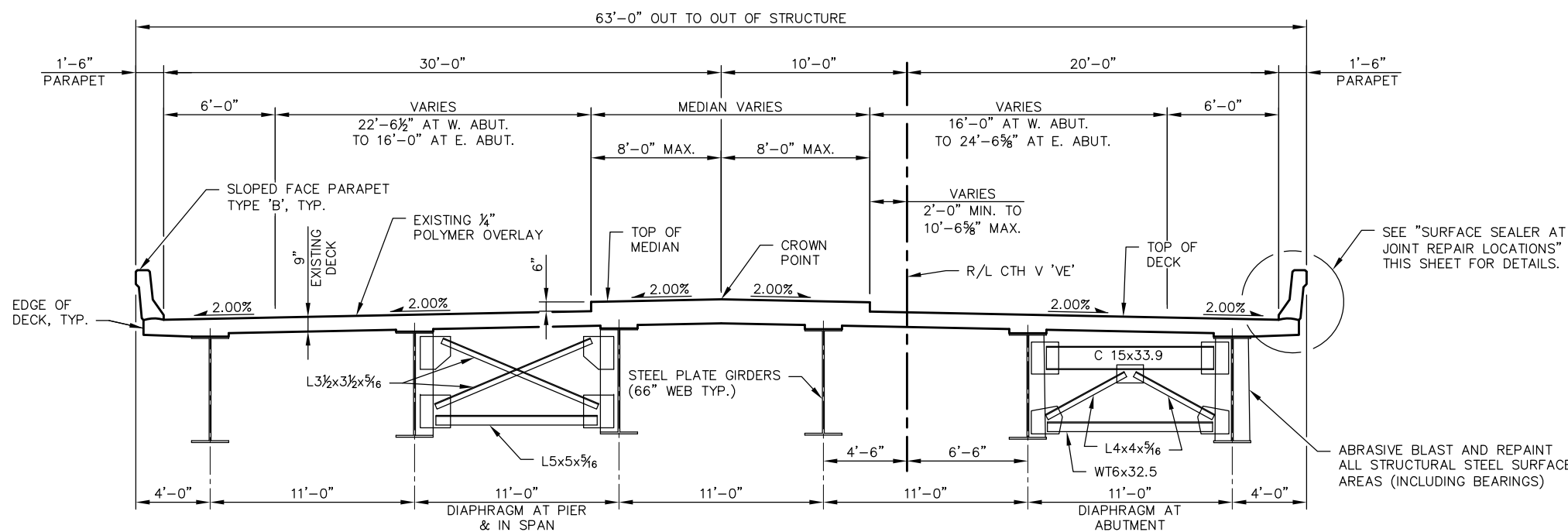
CTH V OVER USH 151

COUNTY: DANE TOWN/CITY/VILLAGE: YORK

DESIGN SPEC: REHABILITATION N/A  
 DESIGNED BY: JDO DESIGN CK'D: CDS DRAWN BY: JDO PLANS CK'D: CDS

**GENERAL PLAN**

SHEET 1 OF 6



**CROSS SECTION THRU ROADWAY**  
(LOOKING EAST)

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS, ELEVATIONS, AND STATIONING SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE EXISTING STRUCTURE, B-13-288 IS A TWO SPAN STEEL DECK GIRDER STRUCTURE WITH AN OVERALL WIDTH OF 63'-0" AND AN OVERALL LENGTH BETWEEN BACK OF ABUTMENTS OF 301'-4 3/4". THE EXPANSION JOINTS SHALL BE REPLACED.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1 INCH DEEP SAW CUT.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP OF DECK AND PAVING BLOCK AT THE JOINT REPAIR AREAS.

PIGMENTED SURFACE SEALER TO BE APPLIED TO FRONT FACE AND TOP OF PARAPET SURFACES IN THE JOINT REPAIR AREAS.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

IF EXISTING BAR STEEL REINFORCEMENT IS SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH EPOXY ANCHORED BARS OF THE SAME SIZE AT THE DIRECTION OF THE ENGINEER. EMBED 1'-6" INTO EXISTING CONCRETE.

SEE "SURFACE SEALER AT JOINT REPAIR LOCATIONS" THIS SHEET FOR DETAILS.

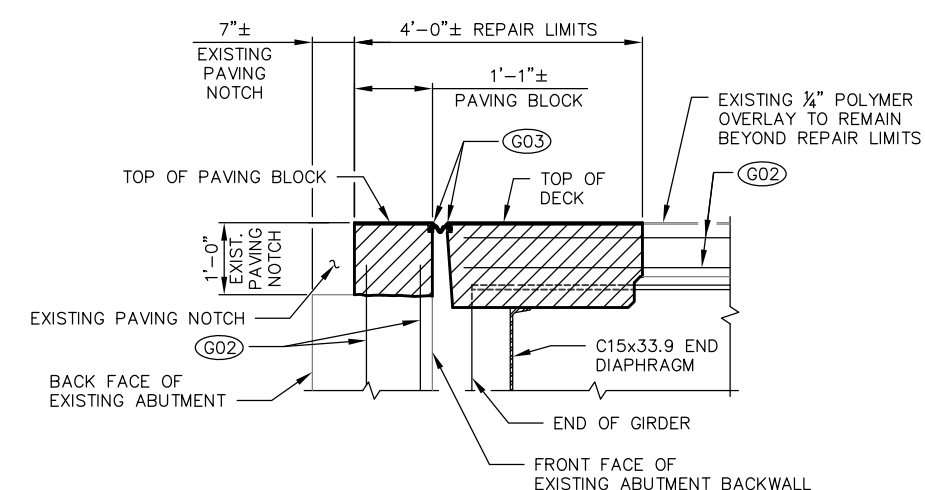
ABRASIVE BLAST AND REPAINT ALL STRUCTURAL STEEL SURFACE AREAS (INCLUDING BEARINGS)

**NOTES**

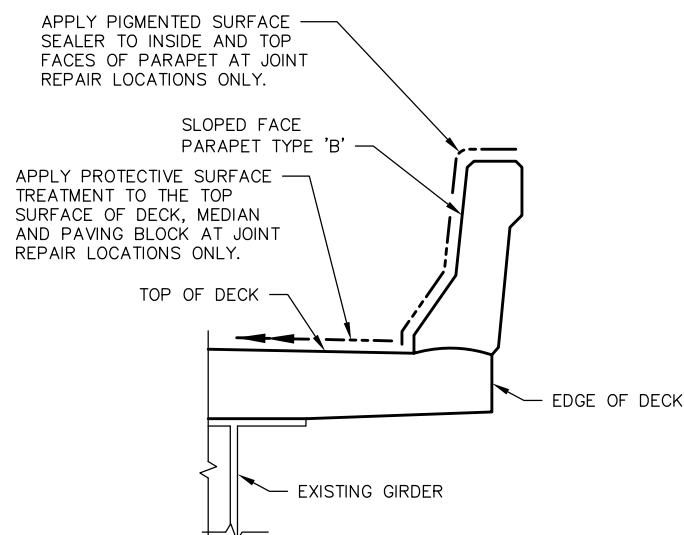
ROUGHEN EXISTING CONCRETE 1/4" MIN. EVERYWHERE NEW CONCRETE COMES INTO CONTACT WITH EXISTING CONCRETE.

(G02) SALVAGE EXISTING REINFORCEMENT & EXTEND FULL LENGTH INTO NEW WORK. TRIM REBAR AS NECESSARY TO ACCOMMODATE NEW JOINT OPENING.

(G03) REMOVE EXISTING STRIP SEAL/STEEL EXTRUSIONS



**SECTION A-A SHOWING EXISTING JOINT REMOVAL**  
(NORMAL TO C SUBSTRUCTURE)



**SURFACE SEALER AT JOINT REPAIR LOCATIONS**

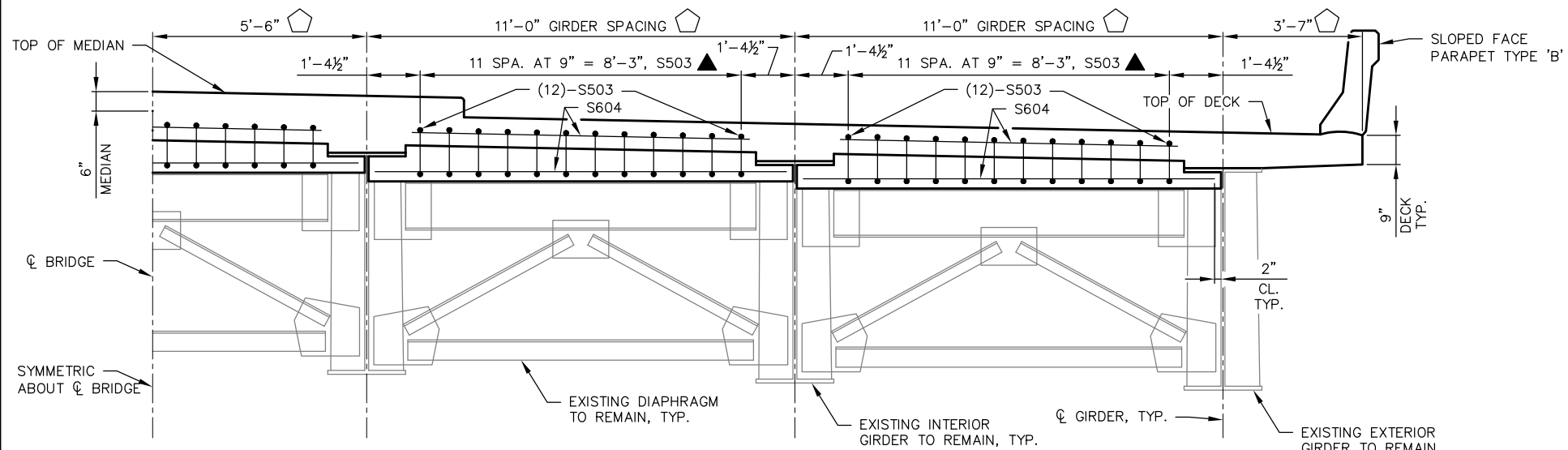
**TOTAL ESTIMATED QUANTITIES**

ITEM NO.	BID ITEMS	UNIT	WEST ABUT.	EAST ABUT.	TOTALS
502.3101	EXPANSION DEVICE B-13-288	LF	91	91	182
502.3200	PROTECTIVE SURFACE TREATMENT	SY	37	37	74
502.3210	PIGMENTED SURFACE SEALER	SY	6	6	12
502.4205	ADHESIVE ANCHORS NO. 5 BARS	EACH	87	87	174
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	3920	3900	7820
509.1000	JOINT REPAIR	SY	41	41	82
509.2100.S	CONCRETE MASONRY DECK REPAIR	CY	16	16	32
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-13-288	LS	---	---	1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-13-288	LS	---	---	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	---	---	1

8

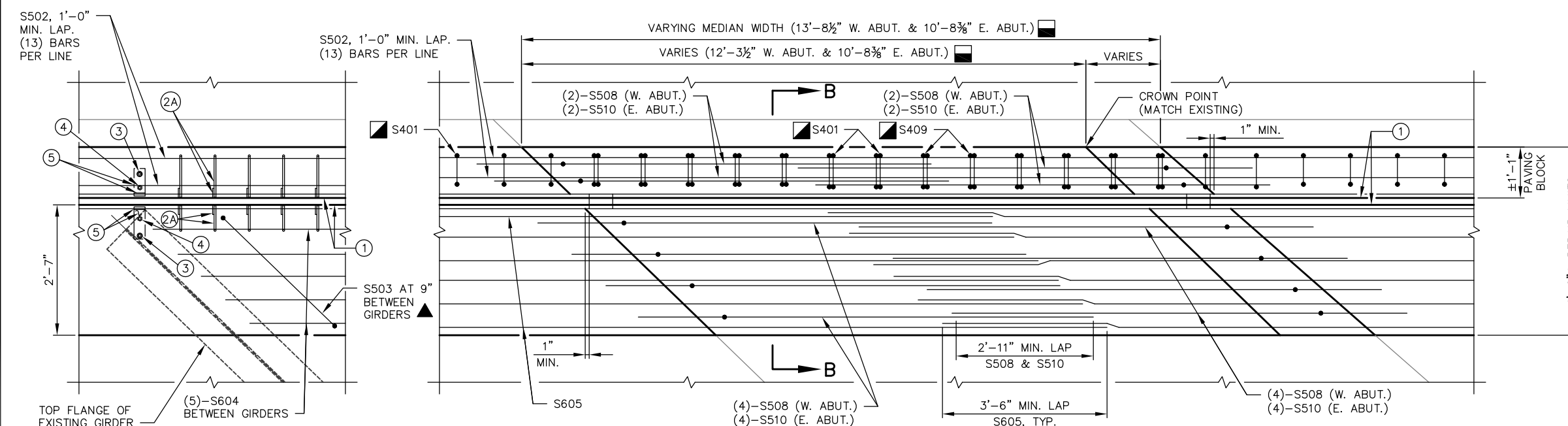
8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-13-288</b>			
DRAWN BY: JDO		PLANS OK'D: CDS	
<b>QUANTITIES AND CROSS SECTION</b>			SHEET 2 OF 6



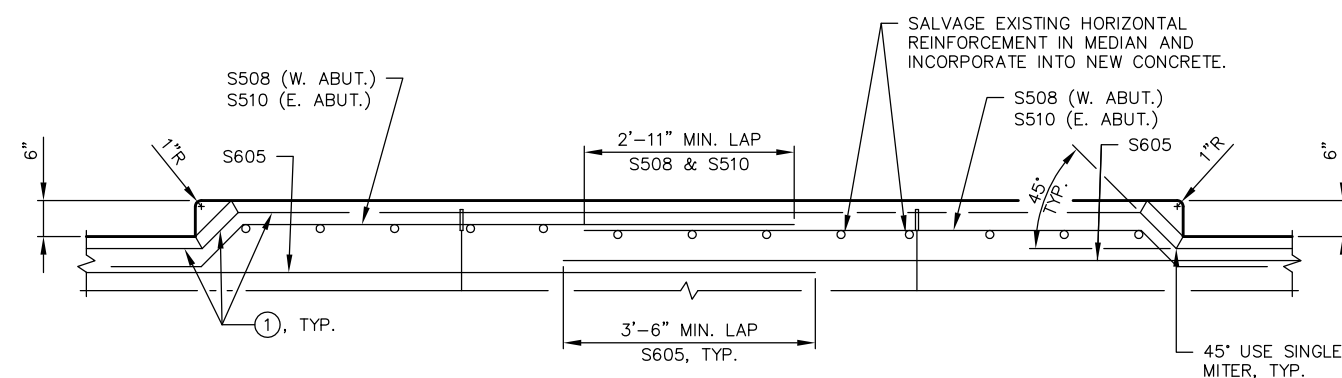
**PART TRANSVERSE SECTION AT ABUTMENT END DIAPHRAGM**

(WEST ABUTMENT SHOWN LOOKING WEST, EAST ABUTMENT SIMILAR)



**PARTIAL PLAN**

(EXISTING DECK STEEL NOT SHOWN FOR CLARITY)



**SECTION AT MEDIAN**

**NOTES**

SECTION B-B IS ON "STRIP SEAL EXPANSION JOINT DETAILS #2" SHEET.

ROUGHEN EXISTING CONCRETE 1/4" MIN. EVERYWHERE NEW CONCRETE COMES INTO CONTACT WITH EXISTING CONCRETE.

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS, HARDWARE AND COVER PLATES WILL BE PAID FOR AT THE PER LINEAR FOOT BID PRICE FOR "EXPANSION DEVICE B-13-288".

◊ DIMENSION IS TAKEN NORMAL TO CL GIRDERS.

▲ BARS PLACED PARALLEL TO GIRDERS. SPACING MEASURED PERPENDICULAR TO CL GIRDERS.

▣ BARS PLACED PERPENDICULAR TO CL ABUTMENT.

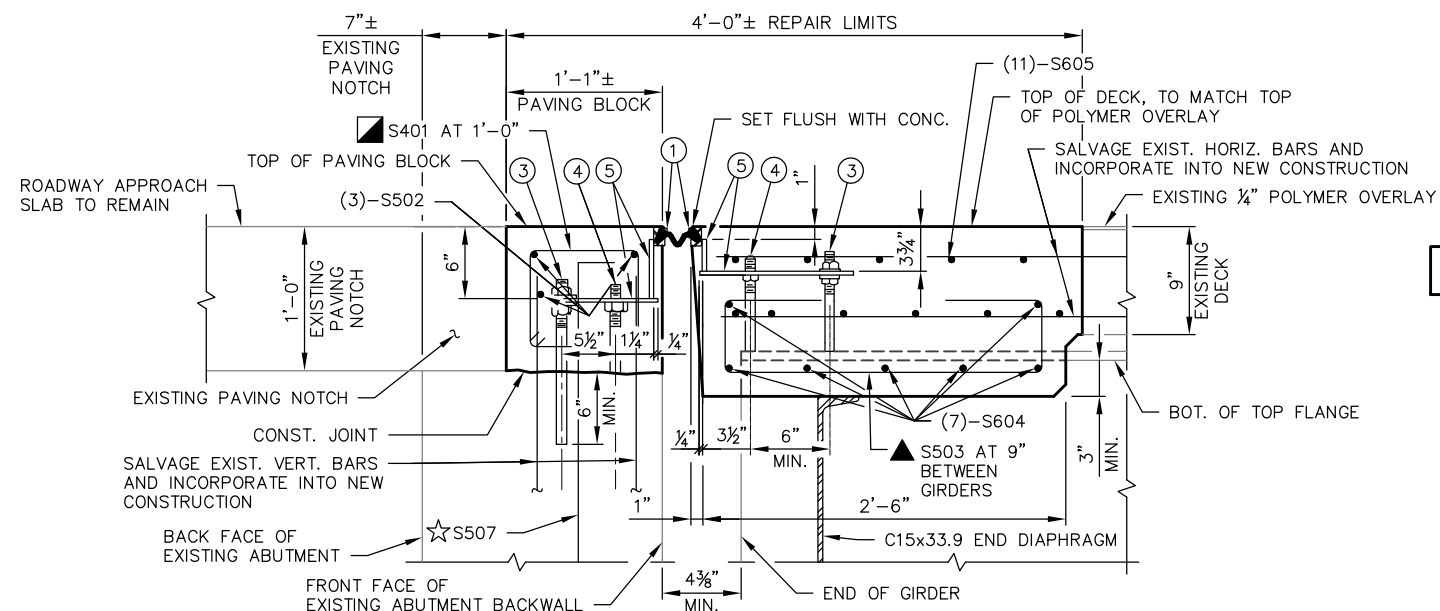
■ MATCH EXISTING FIELD MEASUREMENTS

**LEGEND**

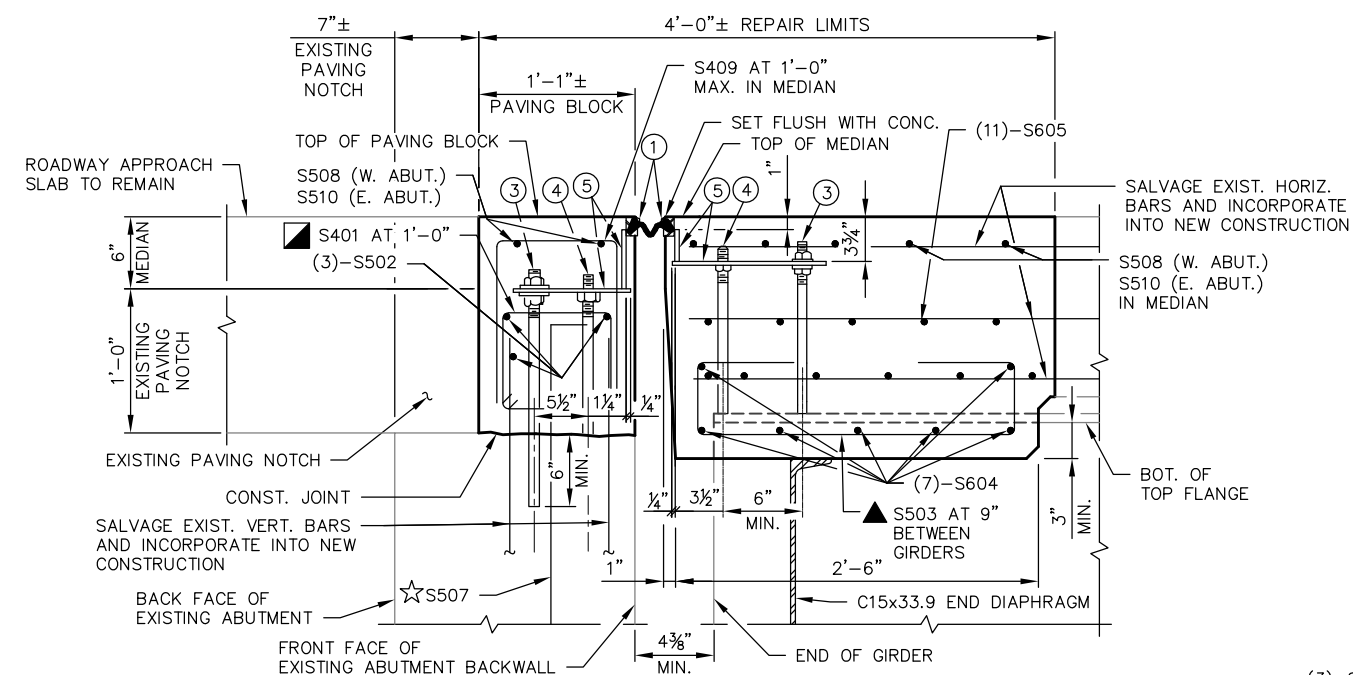
- ① NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING PER TEMPERATURE TABLE ON "STRIP SEAL EXPANSION JOINT DETAILS #2" SHEET. JOINT OPENINGS GIVEN NORMAL TO JOINT.
- ②A 1/2" THICK ANCHOR PLATE WITH 5/8" DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR), WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ③ 3/4" DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- ④ 3/4" DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- ⑤ FABRICATE SUPPORT FROM 3" X 1/2" BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2" DIA. HOLE FOR NO. 3 AND 1" DIA. HOLE FOR NO. 4.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-13-288</b>			
DRAWN BY JDO		PLANS OK'D JJK	
<b>STRIP SEAL EXPANSION JOINT DETAILS #1</b>			SHEET 3 OF 6

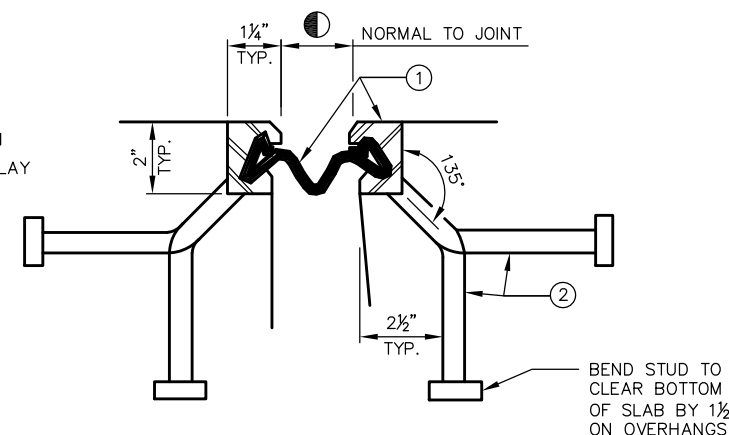




**TYPICAL SECTION THRU JOINT**  
(NORMAL TO Q SUBSTRUCTURE)



**SECTION B-B**  
(NORMAL TO Q SUBSTRUCTURE AT MEDIAN)



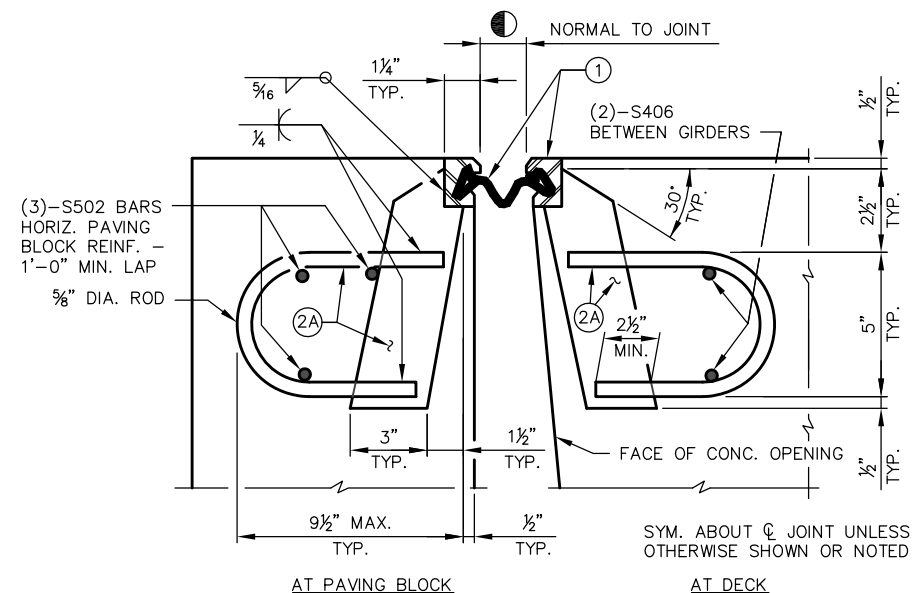
**SECTION THRU JOINT**  
(EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS AND MEDIANS)

**TEMPERATURE TABLE**

TEMPERATURE (°F)	JOINT OPENING (INCH)
85	1 1/16"
75	2"
65	2 1/16"
55	2 3/16"
45	2 1/4"
35	2 5/16"
25	2 7/16"
15	2 1/2"
5	2 5/8"

TEMP. IS THE SHADED UNDERSIDE DECK TEMP.

NOTE: A SMALL JOINT OPENING DUE TO A HIGH TEMPERATURE AT TIME OF CONSTRUCTION MAY REQUIRE NEOPRENE STRIP SEAL INSTALLATION INTO STEEL EXTRUSIONS PRIOR TO SETTING THE EXPANSION JOINT.



**SECTION THRU JOINT**  
(ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS)

**NOTES**

ROUGHEN EXISTING CONCRETE 1/4" MIN. EVERYWHERE NEW CONCRETE COMES INTO CONTACT WITH EXISTING CONCRETE.

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS, HARDWARE AND COVER PLATES WILL BE PAID FOR AT THE PER LINEAR FOOT BID PRICE FOR "EXPANSION DEVICE B-13-288".

☆ S507 ADHESIVE ANCHORS, EMBED 1'-6" IN CONCRETE BACKWALL. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.

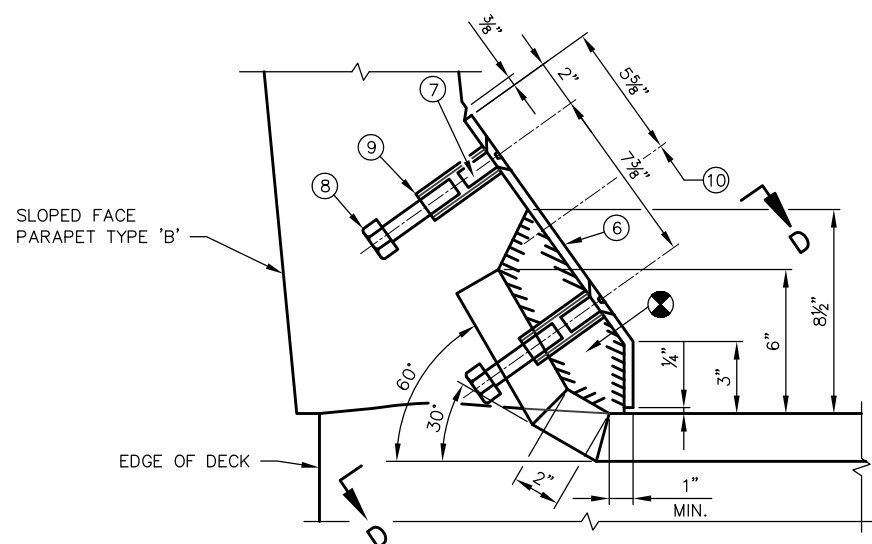
▲ BARS PLACED PARALLEL TO GIRDERS. SPACING MEASURED PERPENDICULAR TO Q GIRDERS.

■ BARS PLACED PERPENDICULAR TO Q ABUTMENT.

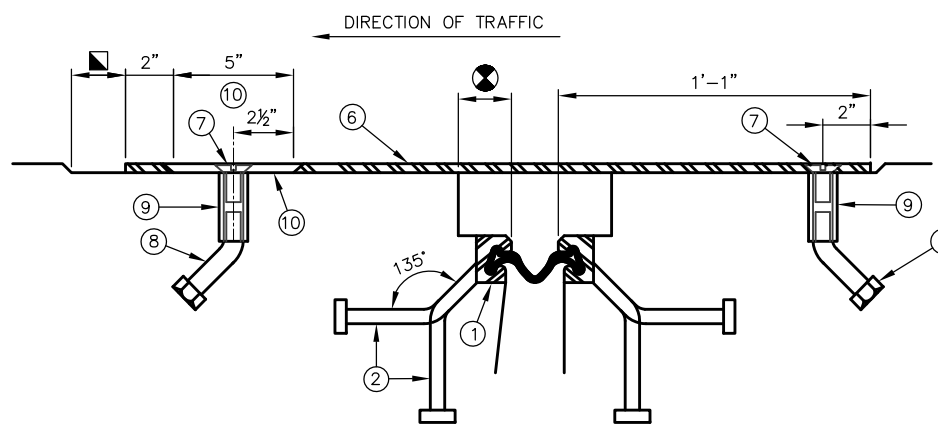
**LEGEND**

- ① NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING PER TEMPERATURE TABLE. JOINT OPENINGS GIVEN NORMAL TO JOINT.
- ② STUDS 5/8" DIA. x 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ②A 1/2" THICK ANCHOR PLATE WITH 5/8" DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR SHOWN ON "STRIP SEAL COVER PLATE DETAILS" SHEET). WELD ROD TO ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ③ 3/4" DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- ④ 3/4" DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- ⑤ FABRICATE SUPPORT FROM 3" x 1/2" BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2" DIA. HOLE FOR NO. 3 AND 1" DIA. HOLE FOR NO. 4.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-13-288</b>			
DRAWN BY JDO		PLANS OK'D JJK	
<b>STRIP SEAL EXPANSION JOINT DETAILS #2</b>			SHEET 4 OF 6



SECTION C-C



SECTION D-D

**LEGEND**

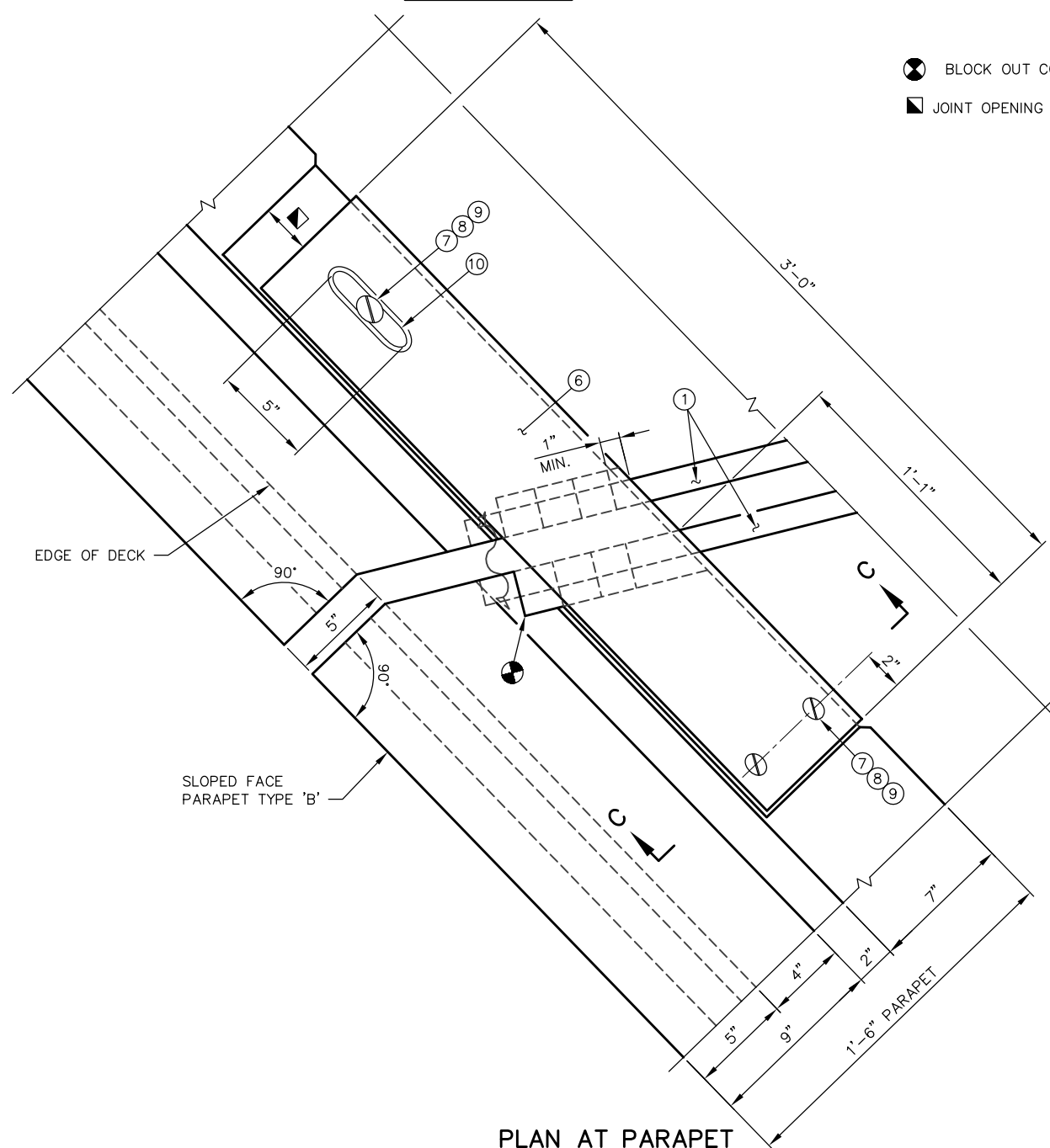
- ① NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING PER TEMPERATURE TABLE ON "STRIP SEAL EXPANSION JOINT DETAILS #2" SHEET. JOINT OPENINGS GIVEN NORMAL TO JOINT.
- ② STUDS 5/8" DIA. x 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ⑥ GALVANIZED PLATE 3/8" x 10" x 3'-0" LONG WITH HOLES FOR NO. 7
- ⑦ 3/4" DIA. x 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/6" BELOW PLATE SURFACE.
- ⑧ 3/4" DIA. x 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- ⑨ 3/4" DIA. x 2 1/4" GALVANIZED THREADED COUPLING.
- ⑩ 1" x 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7, PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

**NOTES**

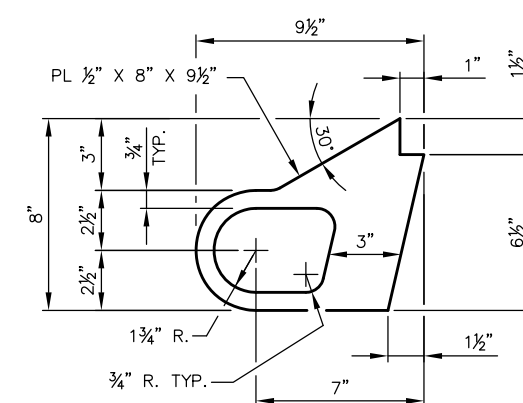
ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS, HARDWARE AND COVER PLATES WILL BE PAID FOR AT THE PER LINEAR FOOT BID PRICE FOR "EXPANSION DEVICE B-13-288".

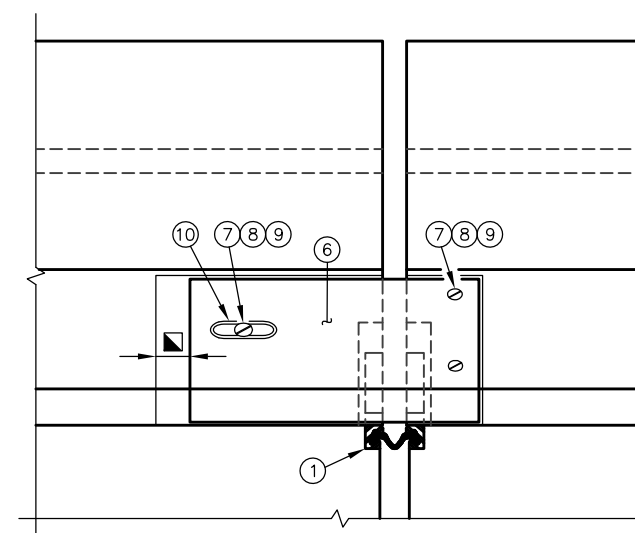
- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING
- ◻ JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2".



PLAN AT PARAPET



ALTERNATE STRIP SEAL ANCHOR



VIEW OF PARAPET PLATE FROM ROADWAY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-13-288</b>			
DRAWN BY JDO		PLANS OK'D JJK	
<b>STRIP SEAL COVER PLATE DETAILS</b>			SHEET 5 OF 6



EAST ABUT. = 3,900 LBS.  
WEST ABUT. = 3,920 LBS.

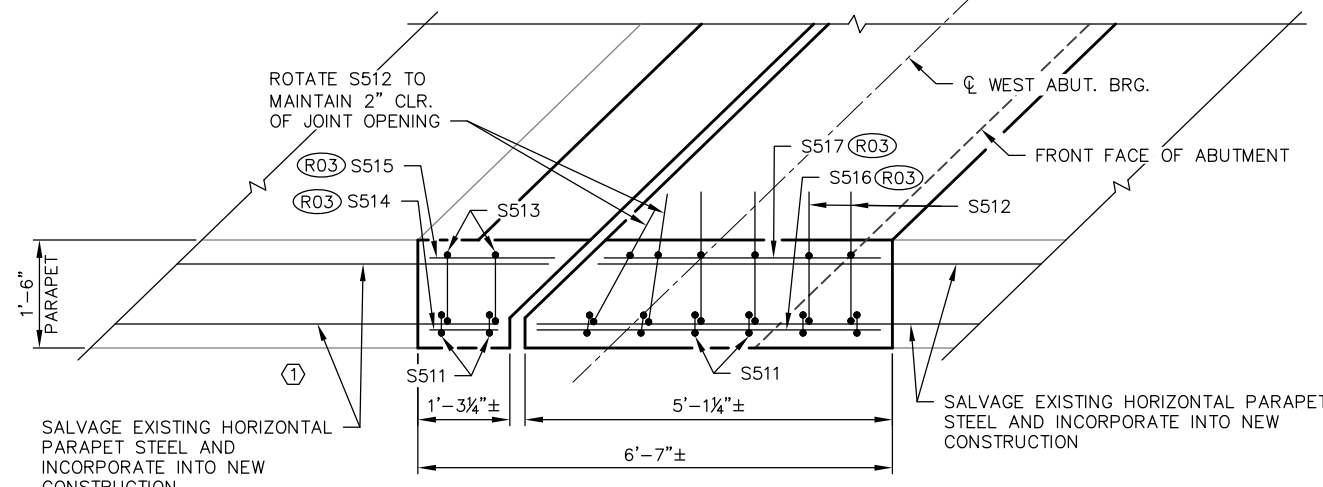
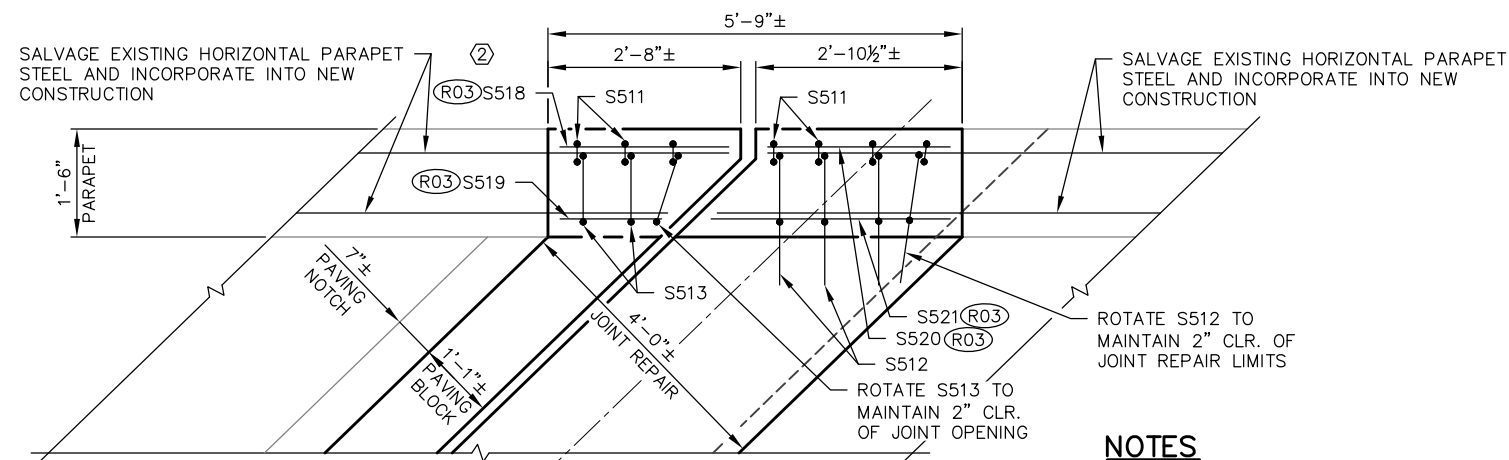
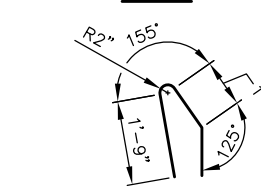
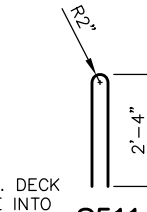
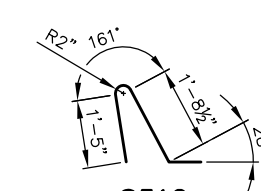
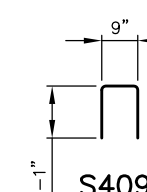
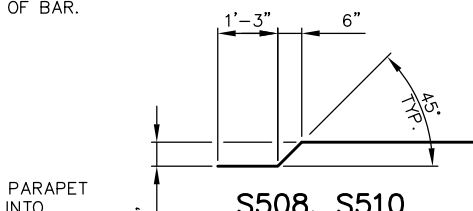
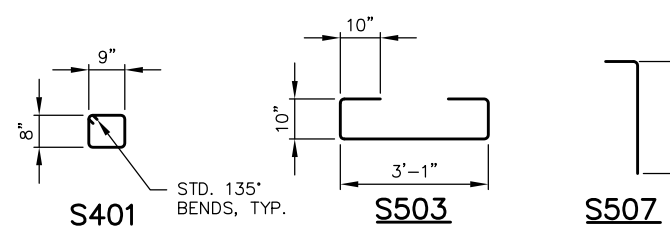
**BILL OF BARS**

MARK	COATED	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
		EAST ABUT.	WEST ABUT.				
S401	X	87	87	3'-4"	X		PAVING BLOCK - STIRRUP VERT.
S502	X	39	39	7'-10"			PAVING BLOCK HORIZ.
S503	X	60	60	5'-11"	X		DIAPHRAGM - STIRRUP VERT.
S604	X	35	35	15'-1"			DIAPHRAGM - BOTTOM BETWEEN GIRDERS HORIZ.
S605	X	22	22	46'-2"			DIAPHRAGM & TRANSVERSE DECK STEEL HORIZ.
S406	X	10	10	15'-1"			DIAPHRAGM AT EXPANSION ASSEMBLY HORIZ.
S507	X	87	87	3'-0"	X		PAVING BLOCK - ADHESIVE ANCHORS VERT.
S508	X	-	12	9'-10"	X		MEDIAN - TRANSVERSE - W. ABUT. HORIZ.
S409	X	13	10	2'-9"	X		MEDIAN - STIRRUP VERT.
S510	X	12	-	8'-4"	X		MEDIAN - TRANSVERSE - E. ABUT. HORIZ.
S511	X	15	15	4'-10"	X		PARAPET - STIRRUP VERT.
S512	X	10	10	4'-3"	X		PARAPET - STIRRUP IN DECK VERT.
S513	X	5	5	4'-2"	X		PARAPET - STIRRUP IN WINGS VERT.
S514	X	2	2	0'-11"	X		PARAPET - OUTSIDE FACE - WING 1 & 3 HORIZ.
S515	X	3	3	1'-2"			PARAPET - INSIDE FACE - WING 1 & 3 HORIZ.
S516	X	2	2	4'-9"			PARAPET - OUTSIDE FACE - WING 1 & 3 HORIZ.
S517	X	3	3	4'-5"			PARAPET - INSIDE FACE - WING 1 & 3 HORIZ.
S518	X	2	2	2'-4"			PARAPET - OUTSIDE FACE - WING 2 & 4 HORIZ.
S519	X	3	3	2'-0"			PARAPET - INSIDE FACE - WING 2 & 4 HORIZ.
S520	X	2	2	2'-6"			PARAPET - OUTSIDE FACE - WING 2 & 4 HORIZ.
S521	X	3	3	2'-8"			PARAPET - INSIDE FACE - WING 2 & 4 HORIZ.

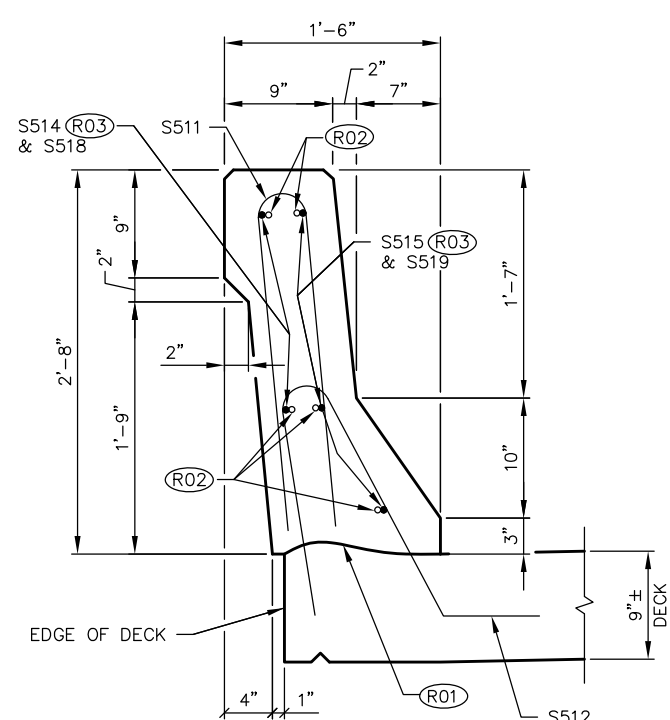
THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.  
ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

**NOTES**

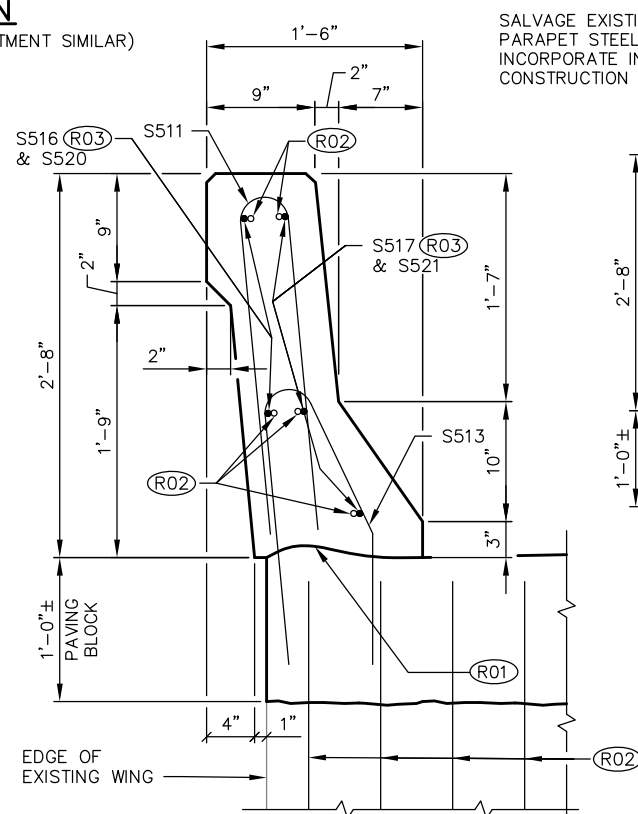
- (R01) CONSTRUCTION JOINT - STRIKE OFF AS SHOWN.
- (R02) SALVAGE EXISTING REINFORCEMENT & EXTEND FULL LENGTH INTO NEW CONSTRUCTION.
- (R03) LAP NEW BAR STEEL WITH SALVAGED EXISTING PARAPET STEEL.
- ⬡ INDICATES WING NUMBER



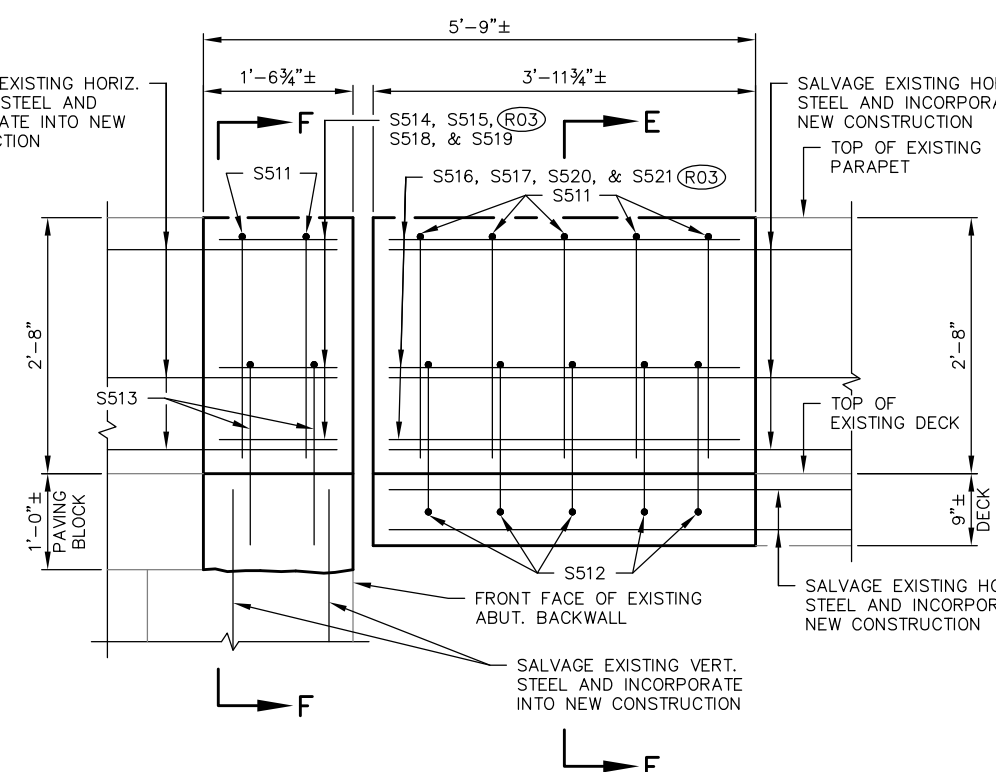
**PARAPET PLAN**  
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)



**SECTION E-E**



**SECTION F-F**



**PARAPET ELEVATION**  
(INTERIOR FACE WING 2 & 4 SHOWN, INTERIOR FACE WING 1 & 3 SIMILAR)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-13-288</b>			
DRAWN BY: JDO		PLANS OK'D: JJK	
<b>PARAPET DETAILS</b>			SHEET 6 OF 6



## *Wisconsin Department of Transportation*

Dedicated people creating transportation solutions through innovation and exceptional service.

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